CRPL-F90

IONOSPHERIC DATA

ISSUED
FEBRUARY 1952

U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
WASHINGTON, D. C.

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CONTENTS

SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1952, the symbols, terminology, and conventions for the determination of median values used in this report (CRPL-F series) conform as far as practicable to those adopted at the Sixth Meeting of the International Radio Consultative Committee (C.C.I.R.) in Geneva, 1951. Excerpts concerning symbols and terminology from Document No. 626-E of this Meeting are given on pages 2-7 of the report CRPL-F89, "Ionospheric Data," issued January 1952. Reprints of these pages are available upon request.

Beginning with data for January 1945, median values are published wherever possible. Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data exists.

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 Document No. 626-E referred to above.

a. For all ionospheric characteristics:

Values missing because of A, C, F, L, M, N, Q, S, or T are omitted from the median count.

b. For critical frequencies and virtual heights:

Values of foF2 (and foE near sunrise and sunset) missing because of E are counted as equal to or less than the lower limit of the recorder. Values of h'F2 (and h'E near sunrise and sunset) missing for this reason are counted as equal to or greater than the median. Other characteristics missing because of E 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 foF2, as equal to or less than foF1.
2. For h'F2, as equal to or greater than the median.

The symbol W is included in the median count only when it replaces a height characteristic. This practice represents a change from that listed in issues previous to CRPL-F78.

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

c. For MUF factor (M-factors):

Values missing because of G or W 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 of E or G (and B when applied to the daytime E region only) are counted as equal to or less than the median foE, or equal to or less than the lower frequency count of the recorder.

Values of fEs missing for any other reason, and values of h'Es 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 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.

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.

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 the errors are due to:

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

b. Omission of values when foF2 is less than or equal to foF1, leading to erroneously high values of monthly averages or median values.

c. Omission of values when 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.

Ordinarily, a blank space in the fEs column of a table is the result of the fact that a majority of the readings for the month are below the lower limit of the recorder or less than the corresponding values of foE. Blank spaces at the beginning and end of columns of h'F1, foF1, h'E, and foE are usually the result of diurnal variation in these characteristics. Complete absence of medians of h'F1 and foF1 is usually the result of seasonal effects.

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. The following points are worthy of note:

a. Predictions for individual stations used to construct the charts may be more accurate than the values read from the charts since some smoothing of the contours is necessary to allow for the longitude effect within a zone. Thus, inasmuch as the predicted contours are for the center of each zone, part of the discrepancy between the predicted and observed values as given in the F series may be caused by the fact that the station is not centrally located within the zone.

b. The final presentation of the predictions is dependent upon the latest available ionospheric and radio propagation data, as well as upon predicted sunspot number.

c. There is no indication on the graphs of the relative reliability of the data; it is necessary to consult the tables for such information.

The following predicted smoothed 12-month running-average Zürich sunspot numbers were used in constructing the contour charts:

Month	Predicted Sunspot Number							
	1952	1951	1950	1949	1948	1947	1946	1945
December		53	86	108	114	126	85	38
November		52	87	112	115	124	83	36
October		52	90	114	116	119	81	23
September		54	91	115	117	121	79	22
August		57	96	111	123	122	77	20
July		60	101	108	125	116	73	
June		63	103	108	129	112	67	
May		68	102	108	130	109	67	
April		74	101	109	133	107	62	
March		78	103	111	133	105	51	
February		82	103	113	133	90	46	
January	53	85	105	112	130	88	42	

WORLD-WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 72 and figures 1 to 144 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL prediction of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data in this issue:

Australian Department of Supply and Shipping, Bureau of Mineral Resources, Geology and Geophysics:
Watheroo, Western Australia

University of Graz:
Graz, Austria

British Department of Scientific and Industrial Research, Radio Research Board:
Falkland Is.
Fraserburgh, Scotland
Singapore, British Malaya
Slough, England

Defence Research Board, Canada:
- Baker Lake, Canada
- Churchill, Canada
- Fort Chimo, Canada
- Ottawa, Canada
- Resolute Bay, Canada
- St. John's, Newfoundland
- Winnipeg, Canada

Radio Wave Research Laboratories, National Taiman University, Taipeh, Formosa, China:
- Formosa, China

National Laboratory of Radio-Electricity (French Ionospheric Bureau):
- Domont, France
- Poitiers, France
- Terre Adelie

Institute for Ionospheric Research, Lindau Uber Northeim, Hannover, Germany:
- Lindau/Harz, Germany

The Royal Netherlands Meteorological Institute:
- De Bilt, Holland

All India Radio (Government of India), New Delhi, India:
- Bombay, India
- Delhi, India
- Madras, India
- Tiruchy (Tiruchirapalli), India

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

Radio Regulatory Commission, Tokyo, Japan:
- Akita, Japan
- Tokyo (Kokubunji), Japan
- Wakkanai, Japan
- Yamagawa, Japan

Christchurch Geophysical Observatory, New Zealand Department of Scientific and Industrial Research:
- Christchurch, New Zealand
- Rarotonga, Cook Is.

Norwegian Defense Research Establishment, Kjeller per Lillestrom, Norway:
- Oslo, Norway
- Tromso, Norway

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

Research Laboratory of Electronics, Chalmers University of Technology, Gothenburg, Sweden:
- Kiruna, Sweden

Post, Telephone and Telegraph Administration, Berne, Switzerland:
- Schwarzenburg, Switzerland

United States Army Signal Corps:
- Adak, Alaska
- Okinawa I.
- White Sands, New Mexico

National Bureau of Standards (Central Radio Propagation Laboratory):
- Anchorage, Alaska
- Baton Rouge, Louisiana (Louisiana State University)
- Fairbanks, Alaska
- Huancayo, Peru (Instituto Geofisico de Huancayo)
- Maui, Hawaii
- Narsarssuak, Greenland
- Panama Canal Zone
- Point Barrow, Alaska
- Puerto Rico, W. I.
- San Francisco, California (Stanford University)
- Washington, D. C.

HOURLY IONOSPHERIC DATA AT WASHINGTON, D. C.

The data given in tables 73 to 84 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 "Symbols, Terminology, Conventions." Beginning with September 1949, the data are taken at Ft. Belvoir, Virginia.

IONOSPHERIC STORMINESS AT WASHINGTON, D.C.

Table 85 presents ionosphere character figures for Washington, D. C., during January 1952, as determined by the criteria given in the report IRPL-R5, "Criteria for Ionospheric Storminess," together with Cheltenham, Maryland, geomagnetic K-figures, which are usually covariant with them.

RADIO PROPAGATION QUALITY FIGURES

Table 86 gives provisional radio propagation quality figures for the North Atlantic and North Pacific areas, for 01 to 12 and 13 to 24 GCT, December 1951, 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, geomagnetic K-figures.

The radio propagation quality figures are prepared from radio traffic and ionospheric data reported to the CRPL, in a manner basically the same as that described in IRPL-R31, "North Atlantic Radio Propagation Disturbances, October 1943 through October 1945," issued February 1, 1946. The scale conversions for each report are revised for use with the data beginning January 1948, and statistical weighting replaces what was, in effect, subjective weighting. Separate master distribution curves of the type described in IRPL-R31 were derived for the part of 1946 covered by each report; data received only since 1946 are compared with the master curve for the period of the available data. A report whose distribution is the same as the master is thereby converted linearly to the Q-figure scale. Each report is given a statistical weight which is the reciprocal of the departure from linearity. The half-daily radio propagation quality figure, beginning January 1948, is the weigted mean of the reports received for that period.

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 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 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.

Note. The North Pacific quality figures have been marked "low weight" beginning with August 1951. This is not because of any discontinuity in the accuracy of the individual reports on which the figures are based nor in the method of derivation of the indexes. However, since the number of suitable reports available for this work has decreased appreciably during 1950 and 1951, it seems appropriate to emphasize now that the North Pacific quality figures do not have as firm a basis as the North Atlantic quality figures.

OBSERVATIONS OF THE SOLAR CORONA

Tables 87 through 89 give the observations of the solar corona during January 1952 obtained at Climax, Colorado, by the High Altitude Observatory of Harvard University and the University of Colorado. Tables 90 through 98 list the coronal observations obtained at Sacramento Peak, New Mexico, during October, November, and December 1951, derived by the High Altitude Observatory from spectrograms taken by Harvard University as a part of its performance of an Air Materiel Command Research and Development Contract administered by the Air Force Cambridge Research Laboratories. The data are listed separately for east and west limbs at 5-degree intervals of position angle north and south of the Solar Equator at the limb. The time of observation is given to the nearest tenth of a day, GCT.

Table 87 gives the intensities of the green (5303A) line of the emission spectrum of the solar corona; table 88 gives similarly the intensities of the first red (6374A) coronal line; and table 89, the intensities of the second red (6702A) coronal line; all observed at Climax in January 1952.

Tables 90, 93, and 96 give the intensities of the green (5303A) coronal line; tables 91, 94, and 97, the intensities of the first red (6374A) coronal line; and tables 92, 95, and 98, the intensities of the second red (6702A) coronal line; all observed at Sacramento Peak in October, November, and December 1951.

The following symbols are used in tables 87 through 98: a, observation of low weight; -, corona not visible; and X, position angle not included in plate estimates.

Table 99 gives details of the Sacramento Peak, observations from July 1951 through December 1951. The first column lists the Greenwich date of observation; the following columns give the threshold or lowest observable intensity of 5303A for each spectrum plate centered at the astronomical position angle indicated; the last two columns indicate the observer and the person responsible for the intensity estimates of the observation. These tables continue the presentation of coronal data in the manner of table 1 of CRPL-1-4 and appear in the F series regularly at intervals of six months.

RELATIVE SUNSPOT NUMBERS

Table 100 lists the daily provisional Zürich relative sunspot number, R_Z, as communicated by the Swiss Federal Observatory. Table 101 continues the new series of American relative sunspot numbers, $R_{A'}$. Beginning with 1951, the observations collected by the Solar Division, AAVSO, have been reduced according to a new procedure, such that only high quality observations of experienced observers are combined into $R_{A'}$. Observatory coefficients for each of the 22 selected observers were recomputed on data for 1948-1950, years when there was a wide range of solar activity. Otherwise, the procedure is that outlined in Publication of the Astronomical Society of the Pacific, 61, 13, 1949. The scale of the American numbers in 1951 differs from that of the reports for earlier years because of these changes, and the new series is designated $R_{A'}$ rather than R_A. The American relative sunspot numbers appear monthly in these pages, as communicated by the Solar Division.

OBSERVATIONS OF SOLAR FLARES

Table 102 gives the preliminary record of solar flares reported to the CRPL. These reports are communicated on a rapid schedule at the sacrifice of detailed accuracy. Definitive and complete records are published later in the Quarterly Bulletin of Solar Activity, I.A.U., in various observatory publications, and elsewhere. The present listing serves to identify and roughly describe the phenomena observed. Details should be sought from the reporting observatory.

Reporting directly to the CRPL are the following observatories: Mt. Wilson, McMath-Hulbert, U. S. Naval, Wendelstein, Kanzel and High Altitude at Sacramento Peak, New Mexico. The remainder report to Meudon (Paris), and the data are taken from the Paris-URSIgram broadcast, monitored fairly regularly by the CRPL. The data on solar flares reported from Sacramento Peak, New Mexico, communicated by the High Altitude Observatory at Boulder, Colorado, are provided by Harvard University as the result of work undertaken on an Air Materiel Command Research and Development Contract administered by the Air Force Cambridge Research Laboratories.

The table lists for each flare the reporting observatory, date, times of beginning and ending of observation, duration (when known), total area (corrected for foreshortening), and heliographic coordinates. For the maximum phase of the flare is given the time, intensity, area relative to the total area, and the importance. The column "SID observed" is to indicate when a sudden ionosphere disturbance, noted elsewhere in these reports, occurred at the time of a flare. Times are in Universal Time (GCT).

INDICES OF GEOMAGNETIC ACTIVITY

Table 103 lists various indices of geomagnetic activity based on data from magnetic observatories widely distributed throughout the world. The indices are: (1) preliminary mean 3-hourly K-indices, Kw; (2) preliminary international character-figures, C; (3) geomagnetic planetary three-hour-range indices, Kp; (4) magnetically selected quiet and disturbed days.

Kw is the arithmetic mean of the K-indices from all reporting observatories for each three hours of the Greenwich day, on a scale 0 (very quiet) to 9 (extremely disturbed). The C-figure is the arithmetic mean of the subjective classification by all observatories of each day's magnetic activity on a scale of 0 (quiet) to 2 (storm). The magnetically quiet and disturbed days are selected by the international scheme outlined on pages 219-227 in the December 1943 issue of Terrestrial Magnetism and Atmospheric Electricity.

Kp is the mean standardized K-index from 11 observatories between geomagnetic latitudes 47 and 63 degrees. The scale is 0 to 9, expressed in thirds of a unit, e.g., 5- is 4 2/3, 5o is 5 0/3, and 5 + is 5 1/3. This planetary index is designed to measure solar particle-radiation by its magnetic effects, specifically to meet the needs of research workers in the ionospheric field. A complete description of Kp has appeared in Bulletin 12b, "Geomagnetic Indices C and K, 1948," published in Washington, D. C., 1949, by the Association of Terrestrial Magnetism and Electricity, International Union of Geodesy and Geophysics. Tables of Kp for 1945-48 are in Bulletin 12b; for 1940-44 and 1949, in these CRPL-F reports, F65-67; for 1950, monthly in F68 and following issues. Current tables are also published quarterly in the Journal of Geophysical Research along with data on sudden commencements (sc) and solar flare effects (sfe).

The diagram showing Kp indices for the year 1951 appears on page 51. Monthly tables of Kp have been given in these CRPL-F reports beginning with January 1951 in F79. The Kp indices are plotted according to 27-day solar rotations.

The Committee on Characterization of Magnetic Disturbance, ATME, IUGG, has kindly supplied this table and diagram. The Meteorological Office, De Bilt, Holland, collects the data and compiles Kw, C and selected days. The Chairman of the Committee computes the planetary index.

SUDDEN IONOSPHERE DISTURBANCES

No sudden ionosphere disturbances were observed during the month of January 1952 at Washington, D. C. Table 105 lists the sudden ionosphere disturbances observed at Colombo, Ceylon, November 1951.

ERRATUM

CRPL-F89, p. 55, fig. 37: At 0600, F2 observation should read < 4.3.

TABLES OF IONOSPHERIC DATA

Table 1

Washington, D. C. (38.7°N, 77.1°W) — January 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(280)	2.4						3.0
01	(280)	2.4						3.0
02	270	2.6						3.0
03	260	2.6						3.0
04	260	2.6						3.0
05	250	2.6						3.1
06	260	[illegible]						3.1
07	240	2.9						3.1
08	220	5.0	---	---	130	1.8		3.5
09	230	6.2	220	---	110	2.4		3.4
10	250	7.0	210	3.5	110	2.7	3.0	3.4
11	[illegible]	8.0	200	3.9	110	2.9		3.3
12	250	8.0	210	4.1	110	3.0		3.3
13	250	8.0	210	4.0	110	3.0		3.2
14	260	7.8	220	3.8	110	2.9		3.2
15	240	7.4	220	---	110	2.6		3.3
16	230	7.2	230	---	120	2.3		3.3
17	220	6.5			---	---		3.3
18	220	5.6						3.2
19	230	4.7						3.2
20	230	3.9						3.1
21	250	3.1						3.0
22	260	2.8						3.0
23	(270)	2.6						3.0

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 2

Point Barrow, Alaska (71.3°N, 156.8°W) — December 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(280)	(3.4)					5.3	(3.0)
01	---	---					5.2	---
02	---	(2.9)					5.0	(3.0)
03	---	(3.4)					4.9	(3.0)
04	(330)	(3.3)					4.4	(3.0)
05	---	---					3.5	---
06	---	(4.2)					3.8	---
07	(310)	(4.4)					4.0	(3.0)
08	(290)	(3.8)					4.4	(3.0)
09	(300)	(3.6)					4.2	(3.0)
10	(280)	(3.4)					4.0	(3.0)
11	(280)	3.7					3.8	3.0
12	260	4.4						3.0
13	240	4.7						3.0
14	240	4.6						3.0
15	260	4.7						3.0
16	260	4.0						3.0
17	260	3.3					3.3	3.0
18	---	2.8					3.8	(3.0)
19	---	(3.5)					4.3	(2.9)
20	300	(3.6)					4.1	(3.1)
21	(300)	3.8					4.4	(3.1)
22	(290)	(3.6)					4.8	(3.0)
23	(300)	(3.3)					7.0	---

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 3

Tromso, Norway (69.7°N, 19.0°E) — December 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(300)	(3.7)					5.0	2.8
01	(335)	(3.9)					5.2	2.9
02	350	(3.8)					5.6	2.8
03	(315)	(3.2)					5.4	3.0
04	310	(3.7)					4.8	2.9
05	310	3.1					4.7	2.9
06	295	2.5					3.2	3.0
07	260	2.2					3.1	3.0
08	300	2.1					3.0	3.1
09	275	2.8			---	---	3.0	3.0
10	240	4.0			130	(1.3)	3.0	3.2
11	245	4.9			110	1.6	3.0	3.2
12	230	4.9			110	1.6	2.9	3.3
13	240	4.4			135	(1.4)	2.6	3.2
14	245	4.1			---	---	2.8	3.2
15	250	3.6					3.1	3.2
16	255	2.8					3.2	3.2
17	270	2.5					3.3	3.2
18	(280)	2.3					3.9	3.1
19	[illegible]	(2.5)					4.6	(3.0)
20	[illegible]	(3.0)					5.0	(2.8)
21	---	(3.2)					5.0	(2.7)
22	[illegible]	(3.0)					4.2	(2.8)
23	[illegible]	(3.8)					5.2	(2.8)

Time: 15.0°E.
Sweep: 0.6 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 4

Anchorage, Alaska (61.2°N, 149.9°W) — December 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	2.7						2.8
01	(300)	2.5					2.3	2.7
02	(320)	2.6					3.2	(2.6)
03	<360	(2.6)					2.6	(2.6)
04	300	(2.6)						(2.7)
05	<300	(2.4)						(2.7)
06	(300)	(2.4)						(2.9)
07	<300	2.3						(2.8)
08	<290	2.3						2.8
09	240	4.1						3.1
10	220	5.5						3.2
11	220	6.4						3.2
12	230	7.0						3.2
13	220	7.3						3.1
14	220	6.6						3.2
15	220	5.7						3.2
16	230	5.0						3.1
17	240	4.2						3.1
18	240	2.8						3.0
19	---	---						---
20	---	---						---
21	---	---						---
22	---	---					2.8	---
23	(290)	(2.7)					3.6	(2.9)

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 5

Narsarssuak, Greenland (61.2°N, 45.4°W) — December 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	---					4.6	---
01	[illegible]	---					4.0	---
02	(390)	---					4.7	---
03	(<410)	(3.5)					4.6	(2.7)
04	400	(3.6)					4.4	(2.7)
05	[illegible]	(3.2)					4.0	(2.8)
06	(320)	2.0					3.4	2.8
07	(320)	(2.3)					2.0	(2.9)
08	(320)	(2.7)					2.1	(2.9)
09	290	4.2						3.0
10	[illegible]	5.3			---	---		3.0
11	[illegible]	6.0			---	---		3.0
12	[illegible]	6.1			---	---		3.0
13	280	5.9			---	---		3.0
14	280	5.4			---	---		3.0
15	280	(4.8)					3.2	(3.0)
16	300	(4.0)					3.4	(2.9)
17	(330)	(3.0)					4.0	(2.7)
18	(300)	(2.6)					4.7	(2.6)
19	[illegible]	(2.9)					5.5	(2.7)
20	[illegible]	(3.0)					6.0	(2.7)
21	[illegible]	(3.0)					5.6	(2.7)
22	[illegible]	(2.9)					4.7	(2.8)
23	---	---					5.6	---

Time: 45.0°W.
Sweep: 1.0 Mc to [illegible] Mc in 15 seconds.

Table 6

Oslo, Norway (60.0°N, 11.0°E) — December 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	<370	(1.8)					2.7	(2.8)
01	350	(1.6)					3.0	(2.9)
02	320	1.5					3.0	2.8
03	<340	1.9					2.1	2.9
04	300	1.8					3.0	2.9
05	<300	1.6					2.7	3.0
06	270	1.7					2.6	3.1
07	<280	(2.0)						[illegible]
08	<275	(2.4)						(3.1)
09	225	4.1			105	1.6	3.2	3.4
10	210	5.4	---	---			3.5	3.5
11	215	6.6	230	---	---	---	3.2	3.5
12	210	7.1	225	---	---	2.1	3.0	3.5
13	210	7.4	245	---	---	---	3.5	3.5
14	210	6.7	---	---	---	---	3.1	3.6
15	210	5.8			---	---	3.2	3.5
16	210	4.9			---	---	2.2	3.4
17	220	4.1						3.4
18	240	3.0						3.2
19	300	2.1						3.1
20	315	1.8						3.0
21	325	(2.0)					2.2	(3.0)
22	325	1.9						(2.9)
23	350	(1.9)					1.8	(2.8)

Time: 15.0°E.
Sweep: 1.3 Mc to 14.0 Mc in 8 minutes, automatic operation.

Table 7

Adak, Alaska (51.9°N, 176.6°W) December 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	2.8					2.2	2.8
01	290	2.8					2.4	2.8
02	290	2.9					2.1	2.8
03	280	2.9					1.9	2.8
04	290	2.7					2.3	2.8
05	270	2.8					2.3	2.8
06	260	2.5					2.2	3.0
07	260	2.6					1.2	3.0
08	230	5.0	---	---	130	1.7	2.8	3.2
09	230	6.6	240	---	140	2.0	2.2	3.4
10	230	7.4	240	---	120	2.3	2.0	3.4
11	230	7.5	220	---	120	2.4		3.3
12	230	7.9	230	---	120	(2.4)	1.7	3.3
13	230	8.2	230	---	120	2.3	2.0	3.3
14	220	7.6	230	---	130	2.2	2.3	3.4
15	210	6.1	220	---	130	1.8	2.1	3.4
16	220	5.4	---	---	140	E	1.8	3.4
17	220	3.7					2.0	3.2
18	230	3.0					2.3	3.2
19	240	2.2					2.4	3.2
20	250	2.2						3.0
21	280	2.4					2.4	2.8
22	270	2.6					1.9	2.9
23	<290	2.7					1.7	2.8

Time: 180.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 18 seconds.

Table 8

Lindau/Harz, Germany (51.6°N, 10.1°E) December 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.7					2.7	2.8
01	290	2.9					2.9	2.8
02	290	2.9					2.8	2.8
03	280	2.6					3.0	2.8
04	280	2.4					3.0	2.9
05	260	2.2					3.0	3.0
06	280	2.0					3.3	3.0
07	300	2.0					3.9	3.0
08	230	3.9			---	E	2.8	3.2
09	210	5.8			110	1.9	3.4	3.4
10	210	6.7			110	2.2	3.4	3.4
11	210	7.3			110	2.4	4.0	3.4
12	220	7.7			100	2.5	4.0	3.4
13	210	7.6			110	2.4	4.0	3.4
14	220	7.4			100	2.3	3.9	3.4
15	210	7.0			120	2.0	3.9	3.4
16	210	6.1			---	E	3.4	3.4
17	210	5.2					3.7	3.2
18	220	4.0					2.7	3.2
19	240	3.2					2.6	3.2
20	260	2.8					2.7	3.0
21	300	2.6					2.4	2.8
22	300	2.6					2.7	2.8
23	300	2.8					2.8	2.8

Time: 15.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 8 minutes.

Table 9

San Francisco, California (37.4°N, 122.2°W) December 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(250)	3.1					3.0	3.0
01	(240)	3.2					3.0	3.0
02	270	3.1					2.6	3.0
03	260	3.1						3.0
04	260	3.2					2.6	3.0
05	(270)	3.2						2.9
06	(250)	3.2					2.3	3.0
07	240	4.0					3.4	3.2
08	230	6.1	---	---	---	---	2.0	3.5
09	230	6.9	220	3.3	120	2.4	2.4	3.5
10	230	8.1	230	3.8	120	2.8	3.6	3.3
11	250	9.5	220	4.2	120	2.9	3.5	3.2
12	250	9.8	230	4.4	120	3.0	3.0	3.2
13	240	9.3	220	4.2	120	3.0	2.6	3.2
14	230	8.6	220	3.6	120	2.8	3.5	3.3
15	230	8.4	230	---	120	2.5	2.6	3.4
16	220	7.6			---	---	2.3	3.4
17	220	5.8					2.9	3.4
18	220	4.0					3.6	3.3
19	240	3.2					3.7	3.4
20	(230)	2.9					4.0	3.3
21	---	2.8					4.4	3.2
22	---	2.7					4.1	3.0
23	(270)	2.8					3.5	2.8

Time: 120.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 10

White Sands, New Mexico (32.3°N, 106.5°W) December 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.2					2.3	3.0
01	260	3.3					2.2	3.0
02	260	3.4						3.1
03	240	3.5						3.1
04	250	3.3						3.1
05	(280)	3.3						2.9
06	270	3.3						3.0
07	230	4.8	---	---	---	---	2.5	3.4
08	220	6.6	---	---	120	2.1	2.0	3.5
09	230	7.3	220	---	110	2.6	3.3	3.5
10	240	7.6	220	---	110	2.8	3.4	3.4
11	250	9.0	210	---	110	3.0	3.7	3.2
12	250	10.0	220	---	110	3.1	3.7	3.3
13	240	9.4	220	---	110	3.1	3.4	3.2
14	240	8.7	210	---	110	2.9	3.5	3.3
15	240	8.4	220	---	120	2.6	2.7	3.3
16	220	7.8			120	2.2	2.8	3.4
17	210	6.6					2.8	3.5
18	230	4.6					3.4	3.4
19	240	3.6					3.3	3.2
20	240	3.3					3.1	3.3
21	250	2.9					2.9	3.2
22	270	3.1					3.0	3.1
23	270	3.2					2.7	3.0

Time: 105.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 11

Baton Rouge, Louisiana (30.5°N, 91.2°W) December 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.7					3.4	3.0
01	270	3.7					3.6	3.0
02	270	3.8					3.2	3.0
03	260	3.8					3.4	3.1
04	270	3.6					3.8	3.0
05	290	3.4					3.2	2.9
06	280	3.6					3.0	2.9
07	250	5.4					3.8	3.3
08	240	5.8	---	---	130	2.2	4.9	3.4
09	250	7.6	240	---	120	2.6	5.7	3.4
10	260	8.0	240	---	120	2.9	6.0	3.2
11	280	9.0	230	---	120	3.1	6.1	3.1
12	270	9.6	230	---	120	3.2	6.0	3.1
13	270	9.3	230	---	120	3.1	6.0	3.2
14	260	9.2	240	---	120	(2.9)	6.3	3.1
15	250	8.8	240	---	120	2.6	5.5	3.2
16	240	8.4			120	2.2	3.6	3.3
17	230	6.8					2.5	3.3
18	240	5.0					3.6	3.2
19	250	4.1					3.6	3.2
20	260	3.6					3.6	3.1
21	270	3.2					3.4	3.0
22	280	3.3					3.6	3.0
23	300	3.6					3.4	2.9

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 12

Okinawa I. (26.3°N, 127.8°E) December 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(330)	(3.2)						2.6
01	(320)	3.0						2.7
02	<310	(3.3)						2.9
03	280	3.3						3.0
04	270	2.8						3.0
05	(310)	2.4						2.6
06	(300)	(2.8)						2.8
07	280	5.9	---	---	---	---		3.1
08	270	8.0	260	---	130	2.5		3.2
09	280	8.8	260	---	120	2.9	3.3	3.2
10	280	8.8	250	---	120	3.1	3.5	3.2
11	290	9.8	(240)	---	120	3.2	3.6	3.0
12	290	10.4	(250)	---	120	3.3	3.8	3.0
13	290	10.5	(260)	---	120	3.2	3.9	3.0
14	290	10.4	250	---	120	3.0	3.6	3.0
15	280	(10.3)	250	---	130	2.9	3.3	3.0
16	260	9.9	260	---	---	---	3.0	3.1
17	240	8.4			---	---	3.0	3.2
18	230	6.0					2.2	3.0
19	250	5.8						2.8
20	260	5.9						3.0
21	260	(4.7)						(3.0)
22	(280)	(3.7)						2.8
23	(300)	(3.2)						(2.7)

Time: 127.5°E.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 13

Maui, Hawaii (20.8°N, 156.5°W) — December 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.0					2.3	2.8
01	270	3.5					2.0	(3.0)
02	240	3.8					1.7	3.3
03	240	(3.4)					2.3	(3.3)
04	270	(2.5)					3.7	(3.1)
05	290	(2.6)					2.6	(2.7)
06	270	2.2					2.9	2.8
07	260	4.5			150	1.7	2.8	3.0
08	260	7.6	240	---	120	2.3	2.9	3.2
09	280	9.8	240	---	110	2.8	4.4	3.1
10	260	10.7	230	(4.6)	110	3.1	4.8	3.3
11	270	10.8	220	(4.7)	110	3.2	5.5	3.2
12	280	10.8	210	(4.7)	110	3.3	5.4	3.0
13	300	11.9	220	4.7	110	3.3	4.9	3.1
14	270	13.4	220	(4.6)	110	3.2	4.8	3.1
15	250	12.1	230	---	110	(3.0)	4.7	3.2
16	230	10.2	230	---	120	(2.7)	4.9	3.3
17	230	9.0			120	2.0	4.4	3.4
18	210	6.9					4.8	3.4
19	220	4.5					4.4	3.3
20	200	4.0					4.2	3.0
21	240	4.8					4.0	3.1
22	230	4.5					3.8	3.2
23	260	3.3					2.4	3.0

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 14

Puerto Rico, W.I. (18.5°N, 67.2°W) — December 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	4.3						3.0
01	250	4.5						3.1
02	220	4.5						3.3
03	220	4.1					2.1	3.3
04	230	3.3					2.0	3.2
05	250	3.6						2.9
06	250	3.6					2.5	2.9
07	230	4.9			---	---		3.3
08	230	7.2	230	---	100	2.2		3.4
09	240	9.1	220	---	100	2.8		3.4
10	240	9.6	220	---	100	3.1		3.4
11	250	9.3	220	4.4	100	3.2		3.4
12	250	8.6	210	4.5	100	3.3	4.1	3.3
13	260	9.2	210	4.6	100	(3.3)	4.4	3.2
14	260	9.2	220	---	100	3.2	4.5	3.2
15	250	8.8	220	---	100	3.1	4.3	3.2
16	240	9.0	220	---	100	2.8	4.6	3.3
17	230	8.6	230	---	100	(2.2)	3.9	3.4
18	210	7.8					3.9	3.5
19	200	5.0					3.2	3.3
20	<240	3.9					2.7	3.1
21	250	4.0					2.7	3.1
22	270	4.2						3.0
23	260	4.2						2.9

Time: 60.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 15

Panama Canal Zone (9.4°N, 79.9°W) — December 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	4.2					1.9	3.2
01	240	3.7					2.0	3.3
02	220	2.8					3.2	3.3
03	260	(2.4)					3.2	2.8
04	300	(2.3)					2.8	2.8
05	310	(2.6)					3.2	2.7
06	280	3.3	---	---	---	---	3.2	2.8
07	<250	6.2	---	---	140	2.2	4.0	3.2
08	260	8.3	240	---	110	2.6	4.2	3.1
09	270	10.0	230	(4.5)	110	3.0	4.2	3.1
10	270	11.2	220	4.8	110	3.3	4.7	3.2
11	280	10.2	210	5.0	110	3.4	5.0	3.1
12	280	9.8	210	5.0	110	3.5	4.8	3.0
13	320	10.6	220	5.1	110	3.5	4.5	2.8
14	290	11.3	230	5.0	110	3.4	5.0	3.0
15	280	11.0	<240	(4.8)	110	3.1	4.5	3.0
16	260	10.3	230	---	110	2.9	5.2	3.1
17	240	9.3	230	---	120	2.3	4.3	3.2
18	220	7.9					4.0	3.3
19	220	5.5					4.1	3.2
20	240	3.8					3.2	3.1
21	250	3.7					2.7	2.8
22	260	4.5						3.0
23	250	(4.4)					2.2	(3.0)

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 16

Huancayo, Peru (12.0°S, 75.3°W) — December 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	(5.7)						(2.8)
01	320	(3.8)						(3.1)
02	320	3.2						(3.2)
03	320	(3.1)						(3.2)
04	300	3.8						(3.2)
05	300	3.1					3.8	(3.0)
06	260	6.0			120	1.8	5.7	3.1
07	240	8.4	240	---	110	2.5	5.8	3.1
08	280	9.7	220	(4.5)	110	3.0	9.2	3.0
09	300	10.1	210	4.6	100	---	11.2	2.7
10	320	10.5	210	4.8	100	---	12.0	2.5
11	330	10.5	200	4.8	100	---	12.2	2.4
12	340	10.4	200	4.8	100	---	12.1	2.4
13	340	10.1	200	4.8	100	---	12.0	2.4
14	330	10.2	200	4.8	100	---	11.1	2.5
15	(300)	10.4	200	---	110	3.2	9.6	2.5
16	220	10.5	220	---	110	3.0	9.0	2.5
17	240	10.7			110	2.6	7.7	2.6
18	270	10.7			120	1.7	4.9	2.7
19	290	10.4						2.6
20	300	9.6						2.6
21	340	8.7						2.6
22	340	8.5						2.6
23	320	(7.8)						(2.7)

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 17

Point Barrow, Alaska (71.3°N, 156.8°W) — November 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	(3.4)					5.2	(2.9)
01	280	(3.4)					5.7	(2.9)
02	320	(3.4)					4.4	(2.9)
03	320	(3.3)					4.1	(2.9)
04	300	(3.4)					4.6	(2.9)
05	340	(3.5)					4.4	2.8
06	(320)	4.0					5.0	2.8
07	330	3.9					4.1	2.9
08	(320)	(3.5)					4.1	2.8
09	310	3.8	---	---			4.7	3.0
10	310	3.9	---	---			3.6	3.0
11	300	4.2	---	---			2.9	3.0
12	300	4.7	---	---				3.0
13	270	5.2	---	---	---	---		3.0
14	260	5.8	---	---				3.1
15	270	5.9	---	---				3.0
16	280	5.4						3.0
17	280	4.3					2.3	3.0
18	300	(3.3)					3.0	2.9
19	310	3.2					4.4	2.9
20	330	3.4					4.4	3.0
21	310	(3.2)					4.4	3.0
22	300	(3.2)					6.1	(3.0)
23	280	(3.3)					6.8	(2.9)

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 18

Fairbanks, Alaska (64.9°N, 147.8°W) — November 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	---					5.0	---
01	---	---					5.8	---
02	---	---					4.6	---
03	(520)	(4.0)					4.8	(2.3)
04	(460)	(4.2)					5.4	(2.4)
05	(440)	(3.2)					1.9	(2.3)
06	420	(3.4)					4.2	(2.3)
07	(380)	(3.4)						(2.4)
08	370	(3.8)						(2.5)
09	350	(4.6)						(2.6)
10	360	5.6						2.6
11	350	(6.0)						2.6
12	330	6.4						2.6
13	340	(6.7)						(2.6)
14	320	(6.6)						(2.6)
15	340	(6.6)						(2.6)
16	340	(5.8)			---	---		(2.6)
17	360	(4.8)						(2.6)
18	(360)	(3.5)						(2.6)
19	(370)	---						---
20	(440)	---					5.0	---
21	---	---					3.7	---
22	(460)	---					4.9	---
23	---	---					5.2	---

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 19

Baker Lake, Canada (64.3°N, 96.0°W) November 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.0					5.2	2.7
01	300	3.0					4.0	2.7
02	310	2.9					4.5	2.7
03	310	2.9			---	---	4.0	2.7
04	310	2.8			---	---	5.2	2.7
05	310	(3.4)			140	2.0	4.0	2.7
06	310	3.5			140	2.0	3.9	2.7
07	300	3.6			130	2.1	3.0	2.7
08	320	3.9			120	2.5	1.8	2.7
09	300	4.0	---	---	110	2.6	2.3	2.8
10	310	4.8	---	---	110	3.0	2.1	2.8
11	310	5.6	---	---	120	2.9	3.0	2.8
12	310	6.0	---	---	120	2.9	3.0	2.8
13	300	6.8	---	---	---	---	2.9	2.7
14	300	6.4	---	---	120	2.6	2.5	2.7
15	300	5.4			130	2.7	2.8	2.8
16	290	5.0			130	2.6	2.2	2.8
17	300	4.9			120	2.5	3.7	2.8
18	300	4.2			130	2.3	4.0	2.8
19	320	3.9			120	2.4	4.3	2.7
20	300	3.9			---	2.0	3.5	2.8
21	290	3.8			---	---	5.4	2.8
22	300	3.6					5.4	2.8
23	300	3.0					4.9	2.8

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 20

Churchill, Canada (58.8°N, 94.2°W) November 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(310)	(3.4)			---	2.2	7.2	---
01	300	3.0			120	2.3	5.0	(3.0)
02	320	3.0			120	2.0	4.8	(2.9)
03	300	3.0			110	2.2	4.0	(3.2)
04	300	(3.1)			120	3.0	2.2	(2.7)
05	310	3.2			120	2.8	3.4	(3.1)
06	320	3.8			120	3.0	4.0	(3.0)
07	340	3.8			120	3.1	3.6	3.0
08	300	4.0			100	3.0	3.1	3.1
09	290	5.2	---	---	110	3.0	2.0	3.1
10	280	5.8	---	---	110	2.6		3.0
11	280	6.1	---	---	110	2.7		3.1
12	280	6.6	240	---	110	2.6	3.0	3.0
13	270	7.6	240	---	120	2.5	3.0	2.9
14	270	8.1	260	---	120	2.6	2.2	3.0
15	270	7.6	---	---	120	2.3	2.0	3.0
16	270	7.0			120	2.8		3.1
17	290	5.8			120	2.5		2.9
18	330	4.5			120	3.0	4.5	3.0
19	310	4.6			120	2.8		3.0
20	300	3.6			110	3.0	5.0	3.0
21	290	4.0			120	2.7	6.0	(3.2)
22	300	3.0			120	2.6	6.4	(2.9)
23	280	3.0			---	---	5.8	3.0

Time: 90.0°W.
Sweep: 0.6 Mc to 20.0 Mc in 15 seconds.

Table 21

De Bilt, Holland (52.1°N, 5.2°E) November 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	2.6						2.8
01	---	(2.9)					2.4	(2.8)
02	---	(2.9)					2.1	(2.8)
03	---	2.2					2.4	(2.8)
04	---	2.2					2.2	3.0
05	---	(2.1)					2.9	(3.1)
06	---	(2.4)					2.4	(3.0)
07	220	4.1			---	1.7	3.0	3.2
08	210	6.0	---	---	---	2.1	3.1	3.4
09	210	6.8	200	3.3	100	2.4	3.1	3.4
10	215	7.6	205	3.3	100	2.5	3.6	3.4
11	215	8.2	205	3.6	100	2.7	3.9	3.4
12	210	8.0	200	3.4	100	2.6	4.0	3.5
13	210	7.8	205	3.0	100	2.6	3.9	3.4
14	215	7.7	---	---	110	2.3	3.5	3.4
15	210	7.0	---	---	130	2.0	3.1	3.4
16	210	6.5			---	E	2.8	3.3
17	210	5.5					2.4	3.3
18	210	4.6					2.7	3.3
19	220	3.3						3.2
20	(250)	2.6						2.9
21	---	2.8						2.8
22	---	2.7						2.8
23	---	2.9						2.8

Time: 0.0°.
Sweep: 1.4 Mc to 16.0 Mc in 7 minutes, automatic operation.

Table 22

Adak, Alaska (51.9°N, 176.6°W) November 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.0					2.8	2.8
01	300	3.0					2.7	2.8
02	290	3.2					2.3	2.7
03	300	3.0					1.5	2.7
04	300	3.0					1.3	2.7
05	(<300)	3.0					1.4	2.7
06	260	3.0					2.0	2.9
07	240	4.2	210	---	---	E	2.7	3.1
08	230	6.6	230	---	120	2.0	2.5	3.3
09	230	8.0	230	---	110	(2.3)	2.6	3.2
10	230	9.0	230	---	110	2.6		3.2
11	240	9.6	230	---	120	2.7	2.7	3.2
12	230	9.4	230	---	120	2.7	2.6	3.3
13	230	8.7	230	---	120	2.6	2.4	3.3
14	230	8.6	230	---	120	2.4	1.9	3.3
15	220	7.6	230	---	130	2.0	2.2	3.3
16	220	6.4	---	---	---	(1.6)	4.0	3.4
17	220	4.4					3.6	3.3
18	230	3.3					3.6	3.3
19	240	2.6					3.6	3.2
20	250	2.4					2.7	3.1
21	270	2.7					3.0	2.9
22	280	2.9					2.4	2.8
23	280	3.1					2.4	2.8

Time: 180.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 18 seconds.

Table 23

Lindau/Harz, Germany (51.6°N, 10.1°E) November 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	2.9					2.8	2.7
01	300	2.9					2.8	2.7
02	290	2.9					2.9	2.7
03	280	2.6					2.8	2.8
04	270	2.4					3.0	2.9
05	260	2.4					2.9	3.0
06	280	2.7					3.0	3.0
07	260	3.7			---	E	2.8	3.0
08	220	5.0			---	1.6	3.0	3.3
09	220	6.6			100	2.1	3.4	3.4
10	220	7.4			100	2.4	3.9	3.3
11	220	7.8			100	2.6	3.9	3.3
12	230	8.1			100	2.6	3.9	3.4
13	220	7.9			100	2.6	4.0	3.3
14	220	7.9			100	2.5	3.9	3.3
15	220	7.5			110	2.2	3.9	3.4
16	215	6.7			150	1.7	3.3	3.4
17	220	6.7					3.0	3.2
18	210	5.2					2.8	3.2
19	220	3.9					2.8	3.1
20	260	3.3					2.7	3.1
21	300	2.6					2.7	2.8
22	310	2.7					2.6	2.8
23	320	2.8					2.7	2.7

Time: 15.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 8 minutes.

Table 24

Winnipeg, Canada (49.9°N, 97.4°W) November 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.0					2.5	2.8
01	280	3.0					2.2	2.8
02	290	2.9					2.2	3.0
03	300	2.5					1.8	(2.8)
04	320	2.5					3.1	2.7
05	310	2.6					2.5	(2.8)
06	320	2.3					1.8	(2.7)
07	300	2.5					1.5	(2.5)
08	260	4.1			---	---	2.1	3.2
09	240	5.8	220	---	120	2.4	2.2	3.1
10	260	6.5	230	3.8	120	2.5	2.5	3.0
11	270	7.1	220	---	120	2.8		3.1
12	280	7.9	230	4.0	120	2.8		3.0
13	260	8.0	230	---	120	2.8		3.0
14	260	8.4	230	---	120	2.7	2.0	3.0
15	240	8.4	240	---	120	2.5	2.4	3.0
16	240	8.4	---	---	---	---	2.2	3.0
17	230	7.5					2.0	3.1
18	240	6.2					1.8	3.0
19	250	5.0					1.8	3.0
20	260	4.0					1.7	3.0
21	270	3.3					1.6	3.0
22	280	3.0					1.7	3.0
23	280	2.8					1.7	2.9

Time: 90.0°W.
Sweep: 0.6 Mc to 20.0 Mc in 15 seconds.

Table 25

St. John's, Newfoundland (47.6°N, 52.7°W) November 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.5					1.2	2.8
01	300	2.6					1.6	2.8
02	300	2.6					1.5	2.8
03	290	2.6					1.5	2.8
04	280	2.5					1.2	2.8
05	270	2.3					1.2	2.8
06	270	2.4			---	---	1.4	2.9
07	240	4.7	---	---	120	1.9	2.0	3.2
08	230	6.6	220	---	120	2.3		3.3
09	240	7.3	220	3.5	110	2.6		3.3
10	250	8.2	220	3.8	110	2.8		3.2
11	260	8.2	220	4.0	110	2.9		3.2
12	250	8.6	220	3.8	120	2.9		3.2
13	240	8.7	230	3.5	120	2.8		3.2
14	250	8.8	240	3.4	120	2.4		3.2
15	230	8.4	---	---	120	2.0	2.2	3.2
16	230	8.0					2.0	3.1
17	230	6.9					1.6	3.0
18	240	5.6					1.2	3.0
19	260	4.4					1.2	2.9
20	280	3.7					1.2	2.8
21	300	3.4					1.2	2.8
22	300	3.0					1.1	2.7
23	300	2.8					1.5	2.8

Time: 60.0°W.
Sweep: 0.6 Mc to 20.0 Mc in 15 seconds.

Table 26

Graz, Austria (47.1°N, 15.5°E) November 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04	290	2.9						
05	260	2.9						
06	(250)	2.7						
07	230	4.4						
08	200	6.5					(3.1)	
09	210	7.6				2.7	4.1	
10	220	8.0	200		120	2.8	3.6	
11	230	8.2	200		120	3.0	3.5	
12	230	8.4	200		120	3.0	3.8	
13	220	7.9	200		110	3.0	3.5	
14	220	8.3			110	2.8	3.3	
15	210	8.0					3.6	
16	200	6.6					3.6	
17	210	5.7					3.9	
18	220	4.5					3.6	
19	250	3.9					3.7	
20	260	3.5					5.0	
21	300	2.8					4.3	
22								
23								

Time: 15.0°E.
Sweep: 2.5 Mc to 12.0 Mc in 2 minutes.

Table 27

Schwarzenburg, Switzerland (46.8°N, 7.3°E) November 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.3						3.1
01	300	3.2						3.1
02	300	3.3						3.1
03	300	3.1						3.1
04	250	3.1						3.3
05	230	2.8						3.4
06	240	2.7						3.4
07	240	3.2			---	---		3.4
08	200	5.1			120	1.8		3.8
09	200	7.1			100	2.2		3.8
10	210	7.6			100	2.6		3.8
11	210	8.1			100	2.8		3.7
12	210	8.4			100	2.9		3.7
13	210	8.5			100	2.9		3.8
14	220	8.0			100	2.8		3.8
15	220	7.9			100	2.5		3.7
16	200	7.1			100	2.1		3.8
17	200	6.2			100	2.0		3.8
18	200	5.0						3.6
19	210	4.4						3.6
20	230	3.6						3.5
21	260	3.1						3.4
22	300	3.0						3.1
23	300	3.0						3.0

Time: 15.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 28

Ottawa, Canada (45.4°N, 75.7°W) November 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	2.9					1.8	2.9
01	300	2.8					1.7	2.8
02	300	2.6					1.7	2.8
03	290	2.5					1.6	2.9
04	300	2.5					1.6	2.9
05	290	2.3					1.6	2.8
06	300	2.3					1.6	2.8
07	250	3.8	---	---	---	---	1.9	3.2
08	230	5.7	230	---	120	2.2	2.2	3.2
09	230	6.7	220	(3.5)	120	2.5		3.3
10	250	7.7	220	3.8	110	2.7	2.9	3.2
11	250	8.0	220	4.0	120	2.8		3.2
12	250	8.4	220	4.0	120	3.0		3.1
13	250	8.5	220	3.9	120	2.8		3.1
14	240	8.4	230	3.7	120	2.7	2.7	3.1
15	240	8.5	230	---	---	2.5	2.6	3.1
16	220	8.2			---	---	2.3	3.1
17	230	7.4					2.0	3.0
18	230	6.4					1.8	3.0
19	240	5.0					1.7	3.0
20	250	4.3					1.7	2.9
21	270	4.0					1.7	2.9
22	280	3.5					1.7	2.9
23	280	3.2					1.7	2.9

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 29

White Sands, New Mexico (32.3°N, 106.5°W) November 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.4					2.4	3.0
01	260	3.4					2.3	3.0
02	250	3.4						3.0
03	240	3.3						3.1
04	250	3.3						3.0
05	(270)	3.3						2.9
06	260	3.4						3.0
07	230	6.0	---	---	120	1.8		3.4
08	230	7.8	220	---	110	2.4	2.4	3.5
09	240	8.4	210	---	110	2.8	2.8	3.3
10	250	9.2	210	---	100	3.0	3.5	3.2
11	250	9.9	210	4.6	110	3.2		3.2
12	250	10.4	210	4.4	110	3.2		3.2
13	250	9.8	220	---	110	3.2	3.0	3.2
14	250	9.4	220	---	110	3.0	3.4	3.2
15	240	9.0	230	---	110	2.7	3.2	3.3
16	230	8.6	230	---	110	2.2	3.1	3.3
17	210	7.6					2.6	3.4
18	210	5.6					2.6	3.4
19	220	4.4					2.3	3.4
20	240	3.6					3.0	3.3
21	(260)	3.0					3.0	3.1
22	(260)	3.2					2.9	3.0
23	270	3.3					2.5	3.0

Time: 105.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 30

Baton Rouge, Louisiana (30.5°N, 91.2°W) November 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.7					2.6	2.9
01	280	3.5					2.2	2.9
02	260	3.7						2.9
03	260	3.6					2.1	3.0
04	270	3.6						2.9
05	300	3.4						2.8
06	290	3.7					2.5	2.9
07	250	6.2			---	---	3.5	3.3
08	250	8.0	240	---	120	2.5	4.8	3.3
09	260	8.6	240	---	120	(2.8)	6.3	3.3
10	260	9.0	220	---	120	3.1	6.0	3.1
11	270	9.8	230	---	120	3.2	5.8	3.1
12	270	10.1	240	4.5	120	3.3	5.8	3.1
13	270	10.4	240	---	120	3.2	5.8	3.1
14	260	10.0	240	---	120	3.1	5.0	3.1
15	250	9.3	240	---	120	2.8	5.6	3.2
16	240	8.6			120	2.3	3.9	3.1
17	240	7.6					2.8	3.2
18	240	6.5					2.9	3.2
19	250	5.0					3.2	3.1
20	260	4.1					2.5	3.1
21	280	3.6					3.1	3.0
22	280	3.5					3.2	3.0
23	280	3.5					2.8	2.9

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 31

Okinawa I. (26.3°N, 127.8°E) — November 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(310)	3.8						2.7
01	(300)	4.1						2.8
02	280	4.0						2.8
03	270	3.6						3.0
04	250	2.9						3.1
05	320	2.4						2.6
06	310	3.5						2.7
07	260	7.3	---	---	130	2.1		3.2
08	270	8.9	260	---	120	2.6		3.2
09	280	9.6	260	---	120	3.0		3.1
10	290	10.7	250	---	120	3.2		3.0
11	300	11.0	250	---	120	3.3		2.9
12	310	12.7	250	---	120	3.3	4.2	2.9
13	290	13.0	250	---	120	3.2	4.3	3.0
14	280	12.8	260	---	130	3.1	4.2	3.0
15	270	12.4	260	---	130	2.8	3.6	3.0
16	260	11.4	260	---	130	2.4	3.3	3.1
17	240	9.2			---	---		3.1
18	220	7.6						3.1
19	250	6.4					2.0	2.8
20	260	6.5						2.9
21	250	5.6						2.9
22	280	4.4						2.8
23	(310)	4.0						2.6

Time: 127.5°E.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 32

Panama Canal Zone (9.4°N, 79.9°W) — November 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	230	3.8						3.1
01	220	3.2						3.2
02	230	2.6						3.2
03	250	2.4					2.0	2.8
04	<300	2.5					2.3	2.8
05	300	2.7					3.2	2.8
06	280	3.6					3.5	2.9
07	240	7.0	240	---	120	2.3	4.2	3.2
08	270	9.3	230	---	110	2.8	3.8	3.1
09	280	10.6	220	(5.0)	110	3.2	4.0	3.1
10	290	11.5	220	5.0	110	3.4	5.0	3.1
11	290	11.9	220	5.0	110	3.6	4.3	3.0
12	280	11.5	220	5.1	110	3.6	4.8	3.0
13	280	11.4	210	5.1	110	3.6	4.8	3.0
14	280	11.4	<220	5.0	110	3.5	5.1	3.0
15	280	11.0	220	5.0	110	3.2	5.0	3.0
16	260	10.7	230	---	110	2.8	4.7	3.0
17	240	10.1	---	---	110	2.3	4.6	3.1
18	230	9.0	---	---			3.8	3.1
19	230	8.0					4.0	3.1
20	230	6.6					3.2	3.1
21	240	5.6					2.8	3.0
22	230	5.2					2.1	3.1
23	230	4.4						3.1

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 33

Huancayo, Peru (12.0°S, 75.3°W) — November 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	(8.8)						(3.1)
01	280	7.3						3.2
02	280	6.0						3.1
03	250	5.1						3.3
04	250	3.6						3.3
05	260	4.1						3.0
06	250	6.8			110	2.0	5.1	3.1
07	230	9.1	---	---	100	(2.6)	8.2	2.9
08	280	10.2	210	---	100	3.1	11.0	2.7
09	300	10.3	200	4.9	100	---	11.9	2.5
10	300	10.0	200	4.9	100	---	12.0	2.5
11	310	10.0	200	5.0	100	---	11.7	2.5
12	300	10.2	200	4.8	100	---	11.0	2.6
13	300	11.0	200	4.8	100	3.7	8.2	2.6
14	290	11.4	200	---	100	3.4	8.8	2.6
15	(250)	11.7	200	---	100	3.2	8.8	2.6
16	210	11.5	210	---	100	2.8	8.2	2.5
17	240	11.4			100	(2.3)	7.2	2.5
18	270	11.0			100	---		2.5
19	300	10.7						2.5
20	300	10.0						2.7
21	300	9.8						2.7
22	320	(9.5)						(2.8)
23	310	(9.1)						(3.1)

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

Table 34

Johannesburg, Union of S. Africa (26.2°S, 28.1°E) — November 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	5.0					1.8	2.9
01	260	4.6					2.0	2.9
02	260	4.2					1.8	2.9
03	270	4.1						2.9
04	260	3.8					1.8	3.0
05	270	4.0			---	---		3.0
06	250	5.8	240	3.4	120	2.1	2.6	3.2
07	280	6.8	220	4.2	110	2.7	3.4	3.1
08	290	7.8	220	4.6	110	3.2	3.9	2.9
09	320	8.8	210	4.9	110	3.4	4.1	2.9
10	320	9.2	200	5.0	110	3.6	4.0	2.8
11	330	9.6	200	5.1	110	3.7	3.8	2.8
12	330	9.8	210	5.0	110	3.8		2.8
13	320	10.0	210	5.0	110	3.7		2.8
14	320	10.0	210	4.9	110	3.6		2.9
15	300	10.0	220	4.8	110	3.4	3.7	2.9
16	290	9.7	220	4.5	110	3.1	3.8	2.9
17	270	9.1	230	4.0	110	2.6	3.3	3.0
18	250	9.2	240	---	100	1.9	2.7	3.0
19	240	8.6			---	---	2.1	3.1
20	230	7.8					1.8	3.1
21	230	6.6					2.0	3.0
22	260	5.7					1.8	2.9
23	270	5.3						2.9

Time: 30.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 35

Capetown, Union of S. Africa (34.2°S, 18.3°E) — November 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	4.2					2.1	2.8
01	300	4.1					2.1	2.8
02	290	4.0					1.8	2.8
03	270	3.9					2.1	2.8
04	270	3.7					2.0	2.9
05	280	3.5						2.9
06	250	4.9	---	---	130	1.8		3.1
07	280	6.1	240	3.9	120	2.4		3.1
08	310	7.3	230	4.4	110	3.0		2.9
09	320	8.0	220	4.7	110	3.2	3.9	2.8
10	330	8.7	210	4.8	110	3.4	3.9	2.8
11	350	9.0	210	5.0	110	3.5	4.1	2.8
12	350	9.4	220	5.1	110	3.6	4.1	2.7
13	330	9.4	210	5.0	110	---	4.0	2.8
14	330	9.5	220	5.0	110	3.6	3.9	2.8
15	320	9.7	220	4.9	110	3.5	3.7	2.9
16	310	9.0	220	4.6	110	3.3		2.9
17	290	8.8	230	4.2	110	3.0	3.3	3.0
18	270	8.5	240	3.6	110	2.5	2.9	3.0
19	250	8.1	240	---	110	1.9	2.5	3.1
20	230	7.1					2.1	3.1
21	230	6.0					2.0	3.1
22	250	4.9					2.0	3.0
23	270	4.4					2.0	2.8

Time: 30.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 36

Resolute Bay, Canada (74.7°N, 94.9°W) — October 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.8						2.8
01	260	4.0						2.8
02	270	3.8						2.8
03	280	3.7						2.9
04	280	3.7						2.8
05	280	3.7						2.9
06	280	3.7						2.8
07	270	3.8	---	---				2.9
08	260	4.2	---	---				2.9
09	260	4.6	---	---				3.0
10	250	4.7	---	---				3.0
11	270	5.0	240	3.3				3.0
12	260	5.2	240	3.4	---	---		3.0
13	250	5.0	240	3.0	---	---		3.0
14	260	5.0	230	2.9	---	---		3.0
15	250	5.1	---	---	---	---		3.0
16	250	5.2	---	---				3.0
17	250	5.2	---	---				3.0
18	260	4.8	---	---				2.8
19	260	4.4						2.9
20	260	4.2						2.8
21	260	4.2						2.8
22	260	4.1						2.9
23	260	4.1						2.9

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 37

Kiruna, Sweden (67.8°N, 20.5°E) — October 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(310)	(3.3)					4.3	
01	(300)	(3.5)					3.8	
02	(290)	(3.2)					3.2	
03	300	3.3					2.0	
04	280	3.2					1.7	
05	265	3.0					1.9	
06	250	3.2						
07	240	4.0			130	2.0		
08	240	4.7	---	---	120	2.2		
09	250	5.4	230	---	110	2.4		
10	250	5.9	220	3.7	110	2.6		
11	250	6.0	225	3.7	110	2.7		
12	240	6.2	220	3.8	110	2.7		
13	240	6.2	---	3.6	110	2.4		
14	235	6.0			110	2.3		
15	230	5.5			130	2.2	1.9	
16	230	5.3			---	2.0	2.3	
17	230	5.2					2.6	
18	230	4.5					2.2	
19	240	3.9					2.9	
20	(250)	3.8					3.4	
21	(270)	(3.1)					3.5	
22	(300)	(2.9)					4.0	
23	---	(2.3)					3.7	

Time: 15.0°E.
Sweep: 0.8 Mc to 15.0 Mc in 30 seconds.

Table 38

Baker Lake, Canada (64.3°N, 96.0°W) — October 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.4					6.0	2.7
01	310	3.6			---	---	6.0	2.6
02	310	3.0			---	---	5.5	2.6
03	300	3.1			---	---	5.2	2.6
04	320	3.0			---	---	5.5	2.6
05	320	3.0			---	---	4.6	2.7
06	310	3.1			130	---	5.0	2.6
07	300	3.5	---	---	120	1.9	2.8	2.7
08	300	4.0	---	---	120	2.5	2.4	2.6
09	300	4.7	300	3.3	110	2.5	1.5	2.7
10	310	5.3	280	3.8	110	2.8		2.7
11	340	5.6	290	3.8	110	2.9		2.7
12	320	6.0	280	3.9	120	2.9		2.7
13	320	6.7	290	3.9	110	2.9		2.7
14	310	6.7	290	3.8	120	2.7		2.7
15	300	6.0	280	3.8	120	2.5		2.7
16	300	5.8	---	---	120	2.4	2.9	2.7
17	300	5.3	---	---	130	2.2	6.0	2.7
18	300	5.0			---	1.8	5.5	2.8
19	300	4.7			---	---	6.1	2.7
20	300	4.3			---	---	8.1	2.6
21	300	4.0			---	---	5.8	2.6
22	300	4.0					5.8	2.7
23	300	3.7					6.0	2.7

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 39

Churchill, Canada (58.8°N, 94.2°W) — October 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.0			---	---	7.8	3.0
01	320	3.5			110	3.0	7.0	3.1
02	300	3.0			140	2.4	5.6	3.2
03	300	3.1			150	2.1	4.0	3.1
04	360	3.2			140	2.1	4.0	3.0
05	320	3.4			120	2.4	3.2	3.0
06	320	3.6			120	2.7	4.0	2.9
07	310	4.0	---	---	120	3.1	4.0	3.0
08	270	4.7	---	---	120	2.5	2.3	3.1
09	270	5.4	230	---	110	2.6		3.1
10	300	5.7	240	4.0	110	2.8		3.0
11	300	6.0	240	4.0	110	2.9		3.0
12	300	6.7	230	4.0	110	2.8		3.0
13	290	7.2	230	4.0	110	2.8		3.0
14	280	7.4	230	3.9	110	2.7		3.0
15	270	7.4	240	---	110	2.7		3.1
16	260	7.0	---	---	120	2.4		3.0
17	280	6.4	---	---	120	2.4		3.0
18	300	5.0			110	2.6	1.8	3.0
19	320	4.8			120	2.4	6.0	3.0
20	290	4.2			120	3.0	5.1	3.0
21	300	4.2			130	2.0	7.8	3.0
22	300	4.0			130	2.0	7.6	2.9
23	280	3.7			140	1.7	8.0	3.1

Time: 90.0°W.
Sweep: 0.6 Mc to 20.0 Mc in 15 seconds.

Table 40

Fort Chimo, Canada (58.1°N, 68.3°W) — October 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.3					4.6	---
01	290	(3.4)			---	---	4.4	---
02	300	3.2			---	---	4.5	---
03	(320)	(3.1)			---	---	4.8	---
04	(300)	(3.2)			---	---	4.3	---
05	320	4.0		---	100	3.4	4.0	(3.0)
06	270	4.2		---	100	3.4	3.8	(2.9)
07	260	4.6		---	100	2.7	3.1	3.2
08	250	5.2		---	100	---	3.3	3.1
09	260	5.8		---	100	2.8	3.2	3.1
10	270	6.2		4.0	100	2.8	3.0	3.0
11	280	6.6		4.0	100	2.9	3.0	3.0
12	280	6.8		4.0	100	2.8	2.9	3.0
13	270	6.4		4.0	100	2.8	1.5	2.9
14	260	6.2		---	100	2.7	1.6	3.0
15	270	6.0		---	100	2.6	2.0	3.0
16	250	5.3		---	100	2.3	3.0	3.0
17	290	5.2			100	2.6	4.3	---
18	280	4.1			110	2.4	5.0	---
19	280	4.1			---	---	5.1	---
20	230	3.8			---	---	6.3	---
21	240	3.3					7.0	---
22	260	3.8					6.2	---
23	260	3.2					4.9	---

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 41

Wakkanai, Japan (45.4°N, 141.7°E) — October 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	330	4.4						2.7
01	330	4.3						2.7
02	320	4.3						2.7
03	310	4.3						2.7
04	300	4.2						2.7
05	300	4.2						2.7
06	280	5.4			---	---		3.0
07	280	7.2	---	---	120	2.2	2.7	3.1
08	280	8.3	---	---	120	2.8		3.1
09	280	8.9	260	4.0	120	2.8	3.2	3.1
10	280	8.8	260	4.4	120	2.9		3.1
11	280	8.8	260	4.4	120	3.0		3.1
12	280	9.0	270	4.3	120	3.1		3.1
13	280	8.5	260	4.2	120	---		3.0
14	280	8.2	260	3.9	120	2.8		3.0
15	280	8.3	---	---	120	2.5		3.1
16	270	7.8			120	2.3		3.1
17	270	7.2			---	---		3.0
18	270	6.2					2.3	3.0
19	290	5.5						3.0
20	300	5.2						2.8
21	300	4.9						2.8
22	300	4.6					2.7	2.7
23	330	4.4					2.4	2.7

Time: 135.0°E.
Sweep: 1.5 Mc to 15.5 Mc in 2 minutes.

Table 42

Akita, Japan (39.7°N, 140.1°E) — October 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	4.2					2.6	2.8
01	290	4.2					2.4	2.9
02	280	4.1					2.4	2.9
03	270	4.1					2.2	2.9
04	260	3.9					2.0	3.0
05	260	3.9					2.1	3.0
06	230	5.2	---	---	---	---		3.3
07	230	7.2	220	---	110	2.2		3.4
08	230	8.5	230	---	110	2.7	3.4	3.5
09	240	8.9	220	---	110	3.0	3.8	3.3
10	250	9.3	220	4.6	110	3.2	3.7	3.3
11	250	9.8	220	4.6	110	3.2	3.4	3.3
12	250	9.6	220	4.6	110	3.2	3.6	3.2
13	250	8.8	230	---	110	3.2	3.4	3.2
14	250	8.5	230	---	110	3.0	3.6	3.2
15	240	8.7	240	---	110	2.8	3.1	3.3
16	230	8.5	230	---	110	2.3	3.0	3.3
17	220	7.2	---	---	110	2.0	2.9	3.3
18	220	5.9					3.1	3.2
19	240	5.2					2.7	3.1
20	250	4.9					3.0	3.1
21	260	4.6					2.7	3.0
22	280	4.5					2.6	2.8
23	280	4.3					2.6	2.8

Time: 135.0°E.
Sweep: 1.0 Mc to 17.0 Mc in 15 minutes, manual operation.

Table 43

Tokyo, Japan (35.7°N, 139.5°E) October 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.8					2.2	2.8
01	300	4.0					2.2	2.8
02	280	3.9					2.4	2.8
03	280	3.8					2.4	2.8
04	280	3.6					2.4	2.9
05	270	3.6					2.2	3.0
06	240	5.7			130	1.4	2.0	3.2
07	230	7.7	---	---	110	2.3	2.8	3.3
08	250	8.8	240	---	110	2.8	3.7	3.4
09	250	8.8	220	---	110	3.0	3.4	3.3
10	260	9.5	220	---	110	3.0	3.7	3.2
11	260	9.8	220	---	110	3.0		3.2
12	260	9.8	230	---	110	3.2		3.2
13	270	9.6	240	---	110	3.1		3.1
14	260	9.3	230	---	110	2.9		3.2
15	250	9.0	240	---	110	2.8		3.2
16	250	8.7	---	---	110	2.4	2.8	3.3
17	230	7.9	---	---	100	1.6	2.8	3.2
18	240	6.3					3.2	3.2
19	260	5.3					3.0	3.1
20	250	4.7					2.9	3.1
21	270	4.2					2.5	3.0
22	290	4.2					2.4	2.8
23	300	3.8					2.4	2.7

Time: 135.0°E.
Sweep: 1.0 Mc to 17.2 Mc in 2 minutes.

Table 44

Yamagawa, Japan (31.2°N, 130.6°E) October 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	4.2					2.4	2.8
01	280	4.3					2.2	2.8
02	280	4.2					1.8	2.9
03	260	4.3					2.0	3.0
04	260	3.8						2.9
05	260	3.1						2.8
06	260	3.4						2.8
07	240	6.5			130	1.8	2.6	3.3
08	240	8.8	---	---	110	2.5	4.0	3.4
09	250	9.6	220	---	110	2.8	4.2	3.2
10	260	10.6	220	---	100	3.1	4.2	3.2
11	270	11.0	210	4.8	100	3.2	3.9	3.2
12	270	10.8	210	---	100	3.3		3.1
13	280	10.6	220	4.5	100	3.3	4.0	3.1
14	270	11.2	230	---	100	3.2	3.6	3.2
15	250	11.2	230	---	100	2.9	3.8	3.1
16	250	9.3	240	---	100	2.6	3.8	3.2
17	240	8.9			110	2.1	3.3	(3.3)
18	220	(8.4)					3.1	(3.4)
19	220	5.9					3.3	3.2
20	250	5.4					3.2	2.9
21	250	5.0					2.9	2.9
22	260	4.3					2.4	2.8
23	300	4.3					2.5	2.8

Time: 135.0°E.
Sweep: 1.0 Mc to 22.0 Mc in 15 minutes, manual operation.

Table 45

Formosa, China (25.0°N, 121.5°E) October 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	6.4					3.0	3.3
01	260	5.8						3.6
02	240	5.0	---	---				3.6
03	230	4.3	---	---				3.8
04	220	3.4	---	---				4.0
05	290	3.0	---	---				3.5
06	250	4.8	---	---	---	---		3.7
07	220	8.0	210	4.4	120	3.0	3.3	3.8
08	230	9.6	200	4.4	110	3.2	3.8	3.8
09	240	10.3	200	4.6	100	3.4	4.2	3.7
10	240	11.5	200	4.7	100	3.2	4.3	3.5
11	260	13.3	200	5.1	100	3.7	4.4	3.5
12	280	13.8	200	5.2	100	3.8	4.6	3.5
13	270	14.2	210	5.0	100	3.4	4.4	3.4
14	260	14.4	200	5.0	100	3.4	4.4	3.5
15	240	14.1	200	4.6	100	3.3	4.2	3.5
16	220	14.1	200	4.5	100	3.0	3.8	3.8
17	220	13.5	200	4.0	100	2.9	3.6	3.8
18	200	12.8	---	---	100	---	3.7	3.8
19	200	11.2	---	---	100	---	2.9	3.7
20	210	9.6					3.5	3.6
21	240	8.8					3.7	3.6
22	260	[illegible]					3.1	3.4
23	280	6.4						3.4

Time: 120.0°E.
Sweep: 2.3 Mc to 14.5 Mc in 15 minutes, manual operation.

Table 46

Rarotonga I. (21.3°S, 159.8°W) October 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	8.9					3.2	3.0
01	250	7.6					2.5	3.0
02	260	6.6					2.4	2.9
03	300	5.8						2.9
04	300	5.9						2.8
05	290	6.1						2.9
06	260	7.6			---	1.7		3.0
07	250	8.7	240	(4.1)	115	2.6	3.5	3.2
08	250	9.0	230	4.6	110	3.0	3.7	3.2
09	280	9.6	230	4.9	110	3.3	4.3	3.1
10	300	10.7	220	5.0	110	3.5	4.4	3.0
11	300	11.5	210	5.0	110	3.6	4.4	3.0
12	300	11.7	210	5.0	110	3.6	4.3	2.9
13	300	12.3	220	5.0	110	3.6	4.4	2.9
14	300	11.1	210	5.0	110	3.5	4.4	3.0
15	300	11.4	230	4.9	110	3.4	4.0	2.9
16	300	11.2	250	4.9	110	3.0	4.0	3.0
17	270	10.8	250	4.5	120	2.5	3.8	2.9
18	270	10.5			---	E	4.1	2.9
19	260	9.7					4.1	2.9
20	290	9.3					3.7	2.8
21	270	9.0					3.6	2.8
22	290	8.5					3.5	2.9
23	280	8.3					3.5	2.9

Time: 157.5°W.
Sweep: 2.0 Mc to 16.0 Mc, manual operation.

Table 47

Watheroo, W. Australia (30.3°S, 115.9°E) October 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	4.6					3.0	2.8
01	260	4.5					3.0	2.9
02	260	4.2					3.0	2.8
03	260	3.8					3.0	2.8
04	280	3.5					3.0	2.8
05	280	3.6					3.0	2.8
06	260	5.0	250	3.0		2.0	2.8	3.1
07	280	5.9	240	3.9		2.6	2.8	3.1
08	320	6.5	230	4.3		3.0	3.3	3.1
09	330	6.8	220	4.7		3.2	3.4	3.0
10	330	7.4	220	4.9		3.3	4.0	3.0
11	320	7.9	220	4.9		3.3	3.9	2.9
12	320	8.1	220	4.9		3.3	3.6	2.9
13	320	8.4	220	4.9		3.3	3.8	2.9
14	310	8.3	230	4.8		3.3	3.6	3.0
15	300	8.0	230	4.6		3.3	3.3	2.9
16	290	7.8	230	4.3		3.0	3.1	3.1
17	270	7.4	250	3.5		2.5	2.9	3.1
18	260	7.3	---	---		1.8	2.8	3.1
19	240	6.8					2.7	3.0
20	240	5.8					2.4	3.0
21	260	5.3					2.4	2.8
22	280	5.0					2.5	2.8
23	270	4.8					2.8	2.7

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

Table 48

Christchurch, New Zealand (43.6°S, 172.7°E) October 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	5.3						2.8
01	280	4.8						2.8
02	280	4.5					2.5	2.8
03	260	4.0					2.5	[illegible]
04	270	3.4					3.0	2.8
05	290	3.4				1.3	2.8	3.0
06	260	4.6	---	---		1.9		3.1
07	290	5.4	240	4.0		2.5		3.1
08	310	6.0	230	4.4		2.9		3.1
09	310	6.8	230	4.5		3.2		3.0
10	310	7.1	220	4.7		3.3		3.1
11	310	7.4	220	4.8		3.4		3.1
12	310	7.5	220	4.8		3.4		3.0
13	300	7.6	220	4.7		3.3		3.1
14	300	7.6	230	4.7		3.2		3.1
15	300	7.5	240	4.5		3.1		3.0
16	280	7.0	240	4.2		2.8		3.0
17	260	7.3	250	3.8		2.3		3.0
18	260	7.2				1.4		2.9
19	260	7.2					3.0	2.9
20	270	7.0					2.8	2.8
21	270	6.5						2.8
22	270	6.1					2.7	2.8
23	280	5.8					2.4	2.7

Time: 172.5°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 49

Kiruna, Sweden (67.8°N, 20.5°E) — September 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(310)	4.2					4.6	
01	(330)	4.3					4.7	
02	(320)	(4.2)					4.4	
03	(295)	(4.3)					2.8	
04	275	3.9					2.7	
05	255	4.2					2.0	
06	250	4.4	---	3.7	110	2.3		
07	270	4.9	230	4.0	110	2.5		
08	285	5.4	220	4.0	110	2.7		
09	340	5.5	215	4.2	105	2.9		
10	330	5.8	225	4.3	100	3.0		
11	315	6.0	210	4.4	100	3.1		
12	315	5.8	210	4.4	105	3.1		
13	295	5.8	220	4.2	110	3.0		
14	290	5.7	220	4.1	110	2.9		
15	260	5.6	220	4.0	105	2.7		
16	255	4.8	230	3.8	105	2.5	1.6	
17	250	4.9	---	---	110	2.2	3.9	
18	250	5.1			120	2.0	4.3	
19	(250)	5.2					4.4	
20	(240)	(5.5)					4.6	
21	(250)	(4.8)					4.3	
22	(300)	(4.4)					4.7	
23	(300)	(4.4)					4.5	

Time: 15.0°E.
Sweep: 0.8 Mc to 15.0 Mc in 30 seconds.

Table 50

Baker Lake, Canada (64.3°N, 96.0°W) — September 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.8					4.8	2.7
01	300	3.9					4.7	2.7
02	300	3.6					4.5	2.7
03	330	3.3			---	---	4.4	2.6
04	360	3.0			---	---	4.6	2.6
05	310	3.2			---	---	3.8	2.7
06	300	3.5	---	---	120	2.0	3.0	2.8
07	300	3.8	290	3.1	120	2.3	2.9	2.9
08	325	4.2	260	3.7	120	2.6		2.8
09	420	4.3	260	3.9	120	2.8		2.6
10	490	4.6	270	4.0	120	2.9		2.5
11	450	5.0	270	4.0	120	3.0		2.6
12	450	5.1	270	4.0	110	3.1		2.6
13	400	5.6	250	4.0	120	3.0		2.7
14	400	5.9	270	4.0	120	3.0		2.6
15	410	5.4	250	4.0	120	2.8		2.6
16	380	5.2	270	3.8	120	2.8		2.7
17	320	5.0	280	3.7	120	2.6		2.7
18	300	4.9	280	---	120	2.3	5.3	2.8
19	300	4.5			130	2.4	5.0	2.7
20	300	4.0			---	---	7.0	2.7
21	300	4.2					6.8	2.6
22	300	3.7					4.0	2.6
23	300	3.8					5.0	2.6

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 51*

Fraserburgh, Scotland (57.6°N, 2.1°W) — September 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	330	3.0						2.6
01	320	2.8					2.6	2.5
02	330	(2.7)					2.7	2.6
03	320	(2.3)					2.7	2.7
04	325	(2.4)					2.6	2.7
05	300	(2.6)			135	1.3	2.8	2.9
06	275	3.5	285 #	(3.0)#	125	1.9	2.7	3.0
07	280	4.4	240	3.5	125	2.2	2.8	3.0
08	340	4.3	235	3.8	115	2.6	2.9	3.0
09	380	5.2	225	4.1	115	2.8		3.0
10	365	5.5	230	4.2	115	3.0		3.0
11	375	5.7	225	4.4	110	3.1		3.0
12	360	5.6	225	4.4	110	3.1		3.0
13	350	6.1	225	4.4	110	3.1		3.0
14	350	6.0	230	4.3	115	3.0		2.9
15	340	5.8	230	4.2	115	2.9		3.0
16	315	5.6	235	3.9	120	2.6		3.0
17	280	6.0	245	3.6	130	2.4	2.5	3.1
18	260	5.7			140	2.0		3.0
19	260	5.2					2.5	2.9
20	260	4.8						2.8
21	280	3.8						2.8
22	295	3.2						2.7
23	325	3.6						2.6

Time: 0.0°.
Sweep: 0.67 Mc to 15.0 Mc in 4 minutes.
*Average values except foF2 and fEs, which are median values.
#One or two observations only.

Table 52*

Slough, England (51.5°N, 0.6°W) — September 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	3.5					2.5	2.6
01	315	3.3					2.8	2.6
02	325	3.0					2.6	2.5
03	320	2.9					2.6	2.6
04	320	2.4					3.6	2.6
05	300	2.4					3.8	2.8
06	275	3.7	255	3.0	135	1.8	3.8	3.0
07	325	4.6	245	3.6	130	2.3	4.0	3.0
08	350	5.0	235	4.0	120	2.7	3.9	3.0
09	375	5.4	230	4.3	115	2.9	3.9	3.0
10	390	5.4	225	4.5	120	3.1	4.1	3.0
11	365	5.8	220	4.5	115	3.3	3.8	3.0
12	370	6.1	225	4.6	120	3.3	4.6	3.0
13	350	6.2	230	4.6	120	3.2	4.2	3.0
14	340	6.2	230	4.5	120	3.2	4.0	3.0
15	315	6.4	230	4.3	120	3.0	3.8	2.9
16	300	6.1	245	4.1	120	2.7	3.6	3.0
17	275	6.2	250	3.9	125	2.3	3.4	3.0
18	265	6.7	250#	3.4#	155	1.9	3.3	3.0
19	260	6.3					2.6	2.9
20	265	5.4					2.6	2.8
21	280	4.6					2.4	2.8
22	295	4.0					2.6	2.6
23	320	3.6					2.5	2.6

Time: 0.0°.
Sweep: 0.55 Mc to 16.5 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.
#One or two observations only.

Table 53*

Singapore, British Malaya (1.3°N, 103.8°E) — September 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	230	8.8						3.0
01	245	6.4						2.9
02	240	5.6						3.0
03	260	4.6						3.0
04	265	3.9						3.0
05	260	3.3						3.1
06	270	4.8					2.4	3.0
07	245	8.9			125	2.6	3.8	2.9
08	240	10.2	235		115	3.3	4.4	2.7
09	290	11.0	220		120#	3.3 #	4.8	2.6
10	300	(10.5)	210	4.8#	120#	3.5 #	4.8	(2.5) #
11	340	10.0	205	(5.0)			4.8	2.4
12	330	10.2	205	4.9			4.4	2.3
13	330	10.5	210	4.9	120 #	4.1 #	4.2	2.3
14	325	10.5	210	(4.7) #	110 #	(3.7) #	4.4	2.2
15	270	11.0	215		115	3.3	4.1	2.3
16	260	(10.9)	245		125	3.0	3.8	2.4
17	260	(11.1)	250		125	2.6	3.3	2.4
18	265	(11.1)					2.8	2.6 #
19	280	11.2						(2.5) #
20	265	(11.3)						
21	240	(11.1)						3.4 #
22	230	10.7						(3.2)
23	225	10.0						2.7

Time: 105.0°E.
Sweep: 2.2 Mc to 16.0 Mc in 1 minute.
*Average values except foF2 and fEs, which are median values.
#One or two observations only.

Table 54

Rarotonga I. (21.3°S, 159.8°W) — September 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	7.0						2.9
01	260	6.5						2.9
02	250	5.8						2.9
03	280	4.6						3.0
04	300	4.4						2.9
05	300	4.2					2.4	2.8
06	280	4.8			---	E		2.9
07	260	7.8	---	---	---	2.2	3.0	3.1
08	260	9.1	240	4.3	110	2.8		3.2
09	270	9.5	230	4.8	110	3.2	3.8	3.2
10	280	9.6	220	5.0	110	3.4	4.0	3.2
11	280	9.2	220	5.0	110	3.6		3.1
12	280	9.4	210	5.1	110	3.6		3.1
13	290	9.4	210	4.9	110	3.6	4.2	3.0
14	290	9.2	210	4.8	110	3.5	4.0	3.0
15	290	9.0	220	4.8	110	3.4	4.0	2.9
16	300	9.4	240	4.7	110	3.0	3.9	3.0
17	260	9.2	260	4.1	120	2.5	3.2	2.9
18	270	9.3			---	1.8	3.3	2.9
19	260	9.0					3.2	2.9
20	260	8.4					3.0	2.9
21	280	8.2					2.9	2.8
22	280	7.7					2.6	2.9
23	270	7.5						2.9

Time: 157.5°W.
Sweep: 2.0 Mc to 16.0 Mc, manual operation.

Table 55

Delhi, India (28.6°N, 77.1°E) August 1951

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2**
00	320	5.5						3.4
01	---	---						
02	---	---						
03	---	---						
04	300	5.6						3.4
05	300	5.8						
06	280	6.2						
07	280	7.3						
08	280	7.8						3.6
09	300	7.8						
10	320	8.8						
11	320	9.8						
12	320	9.9						3.2
13	320	10.1						
14	320	10.4						
15	320	10.8						
16	300	10.5						3.3
17	310	10.1						
18	300	9.6						
19	320	8.8						
20	310	7.6						3.4
21	320	6.8						
22	320	6.2						3.1
23	320	5.8						

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 56

Bombay, India (19.0°N, 73.0°E) August 1951

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2**
00								
01								
02								
03								
04								
05								
06								
07	270	7.7						
08	300	8.2						3.2
09	330	8.6						
10	390	9.5						
11	420	10.7						
12	450	11.6						2.6
13	480	12.0						
14	450	12.4						
15	420	12.8						
18	390	13.1						2.8
17	380	13.3						
18	360	13.0						
19	330	11.7						
20	330	9.8						3.1
21	330	7.4						
22	300	6.1						3.2
23	300	5.6						

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 57

Madras, India (13.0°N, 80.2°E) August 1951

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2**
00								
01								
02								
03								
04								
05								
06								
07	360	7.7						
08	390	8.8						2.8
09	420	9.3						
10	440	9.6						
11	450	9.6						
12	480	9.5						2.4
13	480	9.8						
14	480	10.2						
15	510	10.5						
16	510	11.0						2.4
17	510	11.6						
18	480	12.2						
19	450	12.0						
20	420	10.8						2.5
21	390	9.2						
22	---	8.3						2.6
23								

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 58

Tiruchy, India (10.8°N, 78.8°E) August 1951

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2**
00								
01								
02								
03								
04								
05								
06	360	6.6						
07	420	7.9						
08	450	9.2						2.5
09	480	9.3						
10	520	9.2						
11	540	9.4						
12	540	9.4						2.2
13	540	9.8						
14	540	10.1						
15	(540)	(10.0)						
16	540	10.6						2.5
17	540	11.0						
18	520	10.9						
19	510	10.5						
20	500	9.8						2.5
21	480	9.0						
22	460	8.2						
23								

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 59

Rarotonga I. (21.3°S, 159.8°W) August 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	4.5					2.0	2.8
01	300	4.4						2.8
02	290	4.4						2.8
03	260	4.4						3.0
04	270	3.5						2.9
05	290	3.3						2.8
06	290	3.2			---	---		2.8
07	250	6.0	---	---	---	1.7	2.6	3.1
08	250	7.5	240	4.4	110	2.5	3.7	3.2
09	270	8.5	230	4.5	110	3.0	4.0	3.2
10	270	9.2	210	4.7	110	3.3	4.2	3.3
11	270	8.6	210	4.8	110	3.4	4.3	3.3
12	290	8.0	210	4.9	110	3.5	4.0	3.2
13	290	7.9	210	4.9	110	3.5	4.5	3.2
14	300	8.0	210	4.8	110	3.4	4.3	3.1
15	300	8.4	230	4.9	110	3.2	4.1	3.0
16	280	8.6	240	4.2	110	3.0	4.5	3.0
17	250	8.7	240	4.2	120	2.5	4.0	3.0
18	250	7.8			---	E	3.6	3.0
19	250	6.8					3.2	2.9
20	250	6.5					3.1	2.9
21	260	5.6					3.0	2.8
22	280	5.3					2.8	2.8
23	300	4.7					2.2	2.8

Time: 157.5°W.
Sweep: 2.0 Mc to 16.0 Mc, manual operation.

Table 60*

Falkland Is. (51.7°S, 57.8°W) August 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	360	2.9					2.6	2.6
01	360	2.8						2.6
02	350	2.9						2.6
03	330	2.9						2.7
04	300	3.0						2.9
05	260	2.8						3.2
06	280	2.4						2.9
07	250	4.1						3.2
08	230	5.5	200	2.9#	160	2.4		3.5
09	240	6.3	220#	4.5#	130	2.6		3.4
10	240	6.5	220	4.2	130	2.8	4.1	3.3
11	250	7.2	200#	3.8#	120	2.9	3.8	3.3
12	250	7.7	220	4.2	120	3.0	4.0	3.3
13	250	7.2	220	3.8	120	3.0	3.9	3.3
14	240	6.8	220	3.8	130	2.8	2.8	3.4
15	240	6.8	230#	3.6#	140	2.5	2.8	3.4
16	230	6.4			---	2.3#	2.5	3.4
17	230	5.3					2.8	3.3
18	240	3.8					2.8	3.1
19	270	3.2						3.0
20	280	3.0						2.9
21	320	2.6						2.7
22	350	2.7						2.6
23	350	2.8						2.8

Time: 60.0°W.
Sweep: 2.2 Mc to 16.0 Mc in 1 minute.
*Average values except foF2 and fEs, which are median values.
#One or two observations only.

Table 61

Delhi, India (28.6°N, 77.1°E) July 1951

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2 **
00	330	5.4						3.4
01	---	---						
02	---	---						
03	---	---						
04	310	5.3						3.5
05	300	5.8						
06	300	6.0						
07	280	7.2						
08	300	7.4						3.4
09	300	8.2						
10	320	8.7						
11	330	9.2						
12	330	9.8						3.1
13	320	9.8						
14	330	10.5						
15	320	10.4						
16	320	9.8						3.2
17	320	9.1						
18	320	8.9						
19	320	8.4						
20	320	7.5						3.0
21	320	6.9						
22	320	6.4						
23	320	5.7						

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 62

Bombay, India (19.0°N, 73.0°E) July 1951

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2 **
00								
01								
02								
03								
04								
05								
06								
07	270	6.8						
08	300	8.5						3.3
09	330	8.8						
10	390	9.3						
11	440	10.0						
12	450	10.6						2.5
13	480	11.0						
14	450	11.6						
15	440	12.0						
16	420	12.2						2.7
17	390	12.5						
18	360	12.2						
19	330	11.0						
20	330	8.7						3.1
21	330	7.1						
22	300	6.3						3.2
23	300	5.8						

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 63

Madras, India (13.0°N, 80.2°E) July 1951

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2 **
00								
01								
02								
03								
04								
05								
06								
07	360	7.1						
08	390	8.8						2.8
09	420	9.1						
10	440	9.0						
11	450	8.6						
12	480	8.9						2.4
13	480	9.1						
14	510	9.4						
15	510	9.8						
16	490	10.2						2.4
17	480	10.9						
18	480	11.4						
19	450	11.1						
20	420	9.9						2.8
21	390	(8.1)						
22	(390)	(7.0)						
23								

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 64

Tiruchy, India (10.8°N, 78.8°E) July 1951

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2 **
00								
01								
02								
03								
04								
05								
06	390	6.4						
07	390	7.6						
08	450	9.2						2.5
09	510	9.9						
10	540	9.5						
11	540	9.5						
12	570	9.1						2.2
13	570	9.5						
14	570	9.6						
15	600	10.4						
16	570	10.4						2.3
17	540	10.7						
18	540	11.0						
19	510	10.5						
20	480	9.8						2.4
21	480	8.8						
22	450	8.0						
23								

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 65

Delhi, India (28.6°N, 77.1°E) June 1951

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2 **
00	330	5.7						
01	---	---						
02	---	---						
03	---	---						
04	310	5.6						3.3
05	300	5.9						
06	280	6.8						
07	290	7.1						
08	300	7.6						3.3
09	300	8.0						
10	320	8.6						
11	320	9.0						
12	320	9.1						3.0
13	340	9.6						
14	340	10.3						
15	340	10.1						
16	340	10.4						3.2
17	340	9.9						
18	320	9.4						
19	320	8.1						
20	310	7.5						3.5
21	320	7.0						
22	320	6.5						
23	320	5.8						

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 66

Calcutta, India (22.6°N, 88.4°E) June 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	255	(6.6)						2.8
01	280	(6.6)					4.1	
02	(255)	(6.0)						
03	(300)	(5.8)						2.8
04	(235)	(5.2)				---	(3.8)	
05	(240)	(5.2)				---		
06	(270)	(6.6)				2.7	(4.2)	3.0
07	(240)	(7.4)				3.0	4.5	
08	(225)	(8.4)				3.4	(5.0)	
09	(270)	(9.0)				3.8	(4.2)	2.8
10	(300)	(9.2)				---	(4.6)	
11	---	---				---		
12	---	---				---		---
13	---	---				---		
14	---	---				---		
15	---	---				---		---
16	(270)	(9.2)					(7.1)	
17	270	9.2					6.6	
18	270	9.2					3.9	---
19	240	9.0					4.8	
20	(240)	(9.0)					5.4	
21	(240)	(8.7)					(4.3)	2.9
22	(270)	(8.1)					(5.2)	
23	(270)	(7.5)					(4.6)	

Time: Local.

Table 67

Bombay, India (19.0°N, 73.0°E) June 1951

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2**
00								
01								
02								
03								
04								
05								
06								
07	300	7.4						
08	330	8.6						3.0
09	360	8.9						
10	420	9.6						
11	450	10.5						
12	450	11.2						2.6
13	450	11.6						
14	440	12.2						
15	420	12.5						
16	420	12.6						2.7
17	360	12.3						
18	360	11.6						
19	360	10.4						
20	330	8.6						3.0
21	330	7.4						
22	330	6.6						3.0
23	330	5.9						

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 68

Madras, India (13.0°N, 80.2°E) June 1951

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2**
00								
01								
02								
03								
04								
05								
06								
07	360	7.8						
08	390	8.6						2.8
09	390	9.2						
10	420	9.4						
11	450	9.3						
12	450	9.3						2.6
13	450	9.8						
14	450	10.0						
15	450	10.0						
16	450	11.0						2.5
17	450	11.6						
18	450	11.4						
19	450	11.1						
20	420	10.0						2.3
21	380	(8.8)						
22	(360)	(8.2)						
23								

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 69

Tiruchy, India (10.8°N, 78.8°E) June 1951

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2**
00								
01								
02								
03								
04								
05								
06	390	6.5						
07	420	8.2						
08	450	9.4						2.6
09	480	9.4						
10	540	9.6						
11	540	9.2						
12	540	9.0						2.3
13	540	9.1						
14	540	9.7						
15	540	10.4						2.4
16	520	10.7						
17	500	10.8						
18	480	11.1						
19	460	10.2						2.6
20	480	9.6						
21	420	8.1						
22	(420)	(10.1)						
23								

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 70

Domont, France (49.0°N, 2.3°E) May 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	5.4						2.8
01	<280	5.3						2.8
02	<270	4.8						2.9
03	<250	4.8						2.9
04	260	4.4	260	---	100	1.6	2.8	2.9
05	250	4.8	220	---	100	1.8	3.0	3.1
06	260	5.2	200	3.8	90	2.3		3.2
07	300	5.8	200	4.0	90	2.8	3.1	3.1
08	300	6.2	200	4.2	80	3.0	3.2	3.1
09	300	6.4	200	4.5	80	3.1		3.1
10	320	6.9	190	4.6	80	3.2		2.9
11	330	6.4	200	4.6	80	3.2		3.0
12	310	6.9	200	4.8	80	3.2		3.0
13	300	6.8	200	4.8	80	3.2		3.0
14	300	6.8	200	4.6	80	3.2		3.0
15	300	7.0	200	4.5	80	3.1		3.1
16	300	7.1	200	4.2	80	3.0		3.1
17	270	7.6	200	---	90	2.7	3.1	3.2
18	240	7.4	220	---	100	2.2	3.2	3.2
19	230	7.8	220	---	100	1.7	3.1	3.2
20	230	7.6	210	---	---	---	2.8	3.2
21	210	6.2						3.1
22	230	6.0						3.0
23	240	6.0						2.8

Time: 0.0°.
Sweep: 1.5 Mc to 16.0 Mc in 1 minute 30 seconds.

Table 71

Poitiers, France (46.6°N, 0.3°E) May 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	5.7						---
01	320	5.4						(2.7)
02	320	5.2						(2.8)
03	300	4.9						(2.8)
04	300	4.7						(2.8)
05	270	4.5	---	---				2.8
06	270	5.4	240	4.0				3.0
07	310	5.8	230	4.1			3.8	3.0
08	320	6.0	230	4.4			4.3	3.0
09	320	6.4	220	4.6			4.1	3.0
10	320	6.6	220	4.6			4.2	3.0
11	330	7.0	220	4.8			4.3	3.0
12	330	6.9	220	4.7				2.9
13	330	7.0	230	4.7				2.9
14	330	7.0	230	4.6				3.0
15	320	7.0	230	4.6			4.2	3.0
16	310	7.2	235	4.4			4.4	3.0
17	290	7.8	230	4.0			4.1	3.0
18	270	7.5	---	---				3.0
19	270	7.4						3.0
20	260	7.3						(2.9)
21	270	6.9						---
22	280	6.4						---
23	310	6.0						---

Time: 0.0°.
Sweep: 3.1 Mc to 11.8 Mc in 1 minute 15 seconds.

Table 72

Terre Adelie (66.8°S, 141.4°E) May 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	5.0	250					
01	270	5.5	250		150	E		
02	270	5.8	250	(3.5)	150	2.0		
03	265	5.3	250		150	E		
04	280	5.5	250		120	E		
05	270	5.3	250				2.6	
06	260	5.4					2.8	
07	250	5.2					3.0	
08	250	5.2					2.8	
09	250	4.9					3.0	
10	260	5.0					2.8	
11	250	4.5					2.7	
12	270	4.2					2.6	
13	265	3.1						
14	300	2.6					2.2	
15	295	2.7						
16	300	2.6						
17	300	2.7						
18	300	2.5					2.4	
19	300	2.5					3.0	
20	295	2.6					2.5	
21	290	2.6					2.6	
22	300	3.5					2.8	
23	285	4.0	250				2.4	

Time: 0.0°.
Sweep: 1.5 Mc to 16.3 Mc in 1 minute.

Form adopted June 1946

TABLE 73

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

IONOSPHERIC DATA

h'F2 (Characteristic), Km (Unit), January (Month), 1952

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC.

Calculated by: McC., A.C.K.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	290	(240)S	(260)S	(260)S	(310)S	(300)A	(270)A	240	230	230	230	230	230	240	250	240	220	(240)A	(250)A	(240)A	(220)A	(260)S	(280)S	(290)S
2	(270)S	(290)S	(270)S	260	260	240	220	230	210	230	250	240	250	240	250	240	220	200	220	220	A	A	A	(300)S
3	(320)S	(270)S	(280)S	A	A	230	240	200	210	210H	[230]C	250	240	260	240	[220]C	210	210	210	220S	(240)S	(250)S	(260)S	(270)S
4	(240)S	290	(260)S	250	250	230	220	(240)S	220	220	(250)L	250	260	240	250	230	220	210	230	240	220	250	260	250
5	280	S	S	270K	240K	KS	KS	KS	270K	240K	340K	310K	300K	280K	270K	260K	230K	230K	230K	220K	250K	KS	KS	KS
6	KS	KS	(300)KS	(300)KS	230K	KS	KE	KS	230K	230K	240	270	260	270	240	240	230	210	210	230	230S	S	S	S
7	(250)S	S	S	S	250	260	250	220	210	220	270	260	250	260	240	240	240	220	230	220	230	240	(280)S	(290)S
8	A	S	S	270	250	250	[260]S	(280)S	220	230	240	250	240	260	250	240	220	210K	230	220	(230)S	E	E	S
9	S	S	S	S	A	A	(270)A	230	220	240	240	250	250	230	290	260	240	240	220	210	B	S	S	S
10	S	S	S	290	(260)S	(240)S	260S	230S	230	260	250	270	280	270	260	250	240	210	220	250	(270)S	(290)S	260S	300
11	(310)S	[300]S	270	(280)S	[270]S	250	(300)S	240	230	230	250	270	280	260	260	240H	250	220	220	230	250	290	270	270
12	290	250	260	[270]S	(280)S	[270]A	(260)S	250S	230	220	220	280	240	250	260	260	230	220	210	230	250	270	260	(290)S
13	[280]S	(280)S	S	S	300	S	S	270	220	240	270H	240H	270	250	260	250	250	220	230	240	240	230	230	S
14	S	300	240	230	260	240	[240]S	(250)S	220	210	240	230	250	260	240	240	230	230	200	220	270	250	(300)S	(270)S
15	S	S	S	S	(270)S	S	S	(300)S	230	230H	250	290	270	250	260	230	230	220	240	240	240	240	230	220
16	270	(300)S	[290]S	(290)S	(290)S	250S	250	260	220	230	230	250	250	240	230	250	280	220	210	240	240	(250)S	250	(260)S
17	(300)S	(290)S	(290)S	270	240	(250)S	(290)S	(260)S	220	230	220	230	250	250	250	230	230	220	220	220	220	(280)S	270	270
18	(200)S	(270)S	260	260	260	260	240	230	230	240	310	250	240	240	250	250	240	220	240	(240)S	240	270	(260)S	(280)S
19	270	260S	250	250	250	240S	270S	240S	220	240	250	240	260	260	260	250	240	220	240	220	230	(240)S	(270)S	(290)S
20	(280)S	(290)S	(240)S	(240)S	260	240	250	240	230	250H	[260]F	270	230	250	250	[240]L	240	220	280	210	220	(250)S	(260)S	(280)S
21	(300)S	270	270	260	250	260	250	230	230	240	240	250	260	260	260	250	240	230	280	220	230	240	230	250
22	290	(310)S	(290)S	280	250	240	(250)S	270	240	230	270	260	260	260	270	240	250	230	230	230	220	250	260	280
23	280	260	240	220	250	(260)S	[260]S	250	230	240	310H	250	280H	300	260	280	250	220	220	240	250	240	(250)S	(290)S
24	280	270	260	250	250	260	260	240	220	310H	230	270	[240]	260	250	260	250	220	220	240	230	(250)S	240	(260)S
25	(260)S	[260]S	260	250	(290)A	(280)S	(290)A	240	220	220H	260	(280)A	250	260	250	280	230H	220	210	250	220	210	(290)S	(260)S
26	270	C	S	S	A	(260)S	(250)S	240	230	240H	240	250H	260	270	(260)L	250	230	210	210	230	240	230	S	S
27	S	290	280	260	240	240	280	250	230HK	260HK	260HK	(370)HK	320K	270K	260K	240K	260K	260K	260	250	230	230	230	(290)S
28	(280)S	(300)S	280	280	260	230	250	250	210	230	240	300H	260	260	250	240	230	210	230	[220]C	230	(240)S	[240]S	(250)S
29	(280)S	270	250	280	260	S	S	250	210	230	260	260	270	270	290	260	230	220	210	270	230	(280)A	A	S
30	S	250	270	230	230	(260)S	[270]S	280	220	230	250	250	250	250	270	250	230	220	210	230	(230)S	(270)S	(280)S	(270)S
31	(290)S	280	270	260	240	(280)S	250	230	220	250	240	250	230	280	260	240	230	220	230	240	(270)A	270	A	A
Median	(280)	(280)	270	260	260	250	260	240	220	230	250	250	250	260	260	240	230	220	220	230	230	250	260	(270)
Count	23	23	23	25	28	25	27	24	31	31	31	31	31	31	31	31	31	31	31	31	29	26	23	23

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE: 1949 O - 703319

Form adopted June 1946

TABLE 74

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

IONOSPHERIC DATA

foF2 (Characteristic), Mc (Unit), January (Month), 1952

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC.

Calculated by: McC, A.C.K.

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	2.2	2.1	2.1F	2.0F	2.1F	2.2F	2.3F	2.5F	5.4	6.8	8.4	9.3	8.2	7.8	9.0	8.4	7.4S	6.6	5.8	4.8JF	3.3F	2.3F	2.5	2.4
2	2.5	2.5	2.5F	2.5F	2.6F	2.7F	(2.9)JF	2.6F	5.4	6.6	(8.0)Z	8.8	9.1	8.0	8.2	8.2	7.0	5.4	6.2	3.7J	3.3	[2.8]A	(2.3)A	2.5
3	2.3	2.5F	2.6	[2.8]A	3.0	3.3F	3.2SF	3.0	4.8Z	5.6JH	[7.1]C	8.0	8.0	7.5	7.8	[7.4]C	(7.1)PS	5.5	6.1S	4.2	2.7	2.8	3.0	2.6F
4	2.7F	2.9F	(3.4)PF	3.2F	3.5F	3.4	3.0F	2.7F	5.1S	6.4	8.2Z	8.4	8.0	8.1	9.0	8.3	7.6	6.6	6.8	6.2S	4.5S	4.2SF	(4.0)S	3.4F
5	2.9	2.3F	2.3F	2.4FK	3.2FK	FK	SK	2.0FK	3.5K	4.1SK	5.0K	5.8K	5.8K	6.0K	6.2K	6.4K	6.3K	K5.5SF	4.9K	4.0K	3.4K	2.5SK	2.2K	2.3K
6	2.1K	1.9K	1.9K	2.0K	1.9FK	SK	EK	2.2FK	4.5K	5.4K	5.4F	7.5	8.0	8.2	7.4	6.6	6.4	5.8	4.7	3.5	2.5F	2.2	2.3	2.2FS
7	2.2F	1.9	1.8	1.9FS	2.1F	2.8	3.2JF	3.0JF	4.7F	6.0	7.2	8.0	9.0	8.0	8.2	7.8	7.4	6.6	5.2	5.0SF	3.6	2.6F	2.2F	2.2F
8	[2.0]A	1.9	2.0	2.1	2.3F	2.2F	1.7S	2.3F	4.7	5.6	6.6	8.8	7.6	7.4	7.0	7.5	6.6	5.8JH	4.9	(4.1)PS	3.3	[2.6]SF	(2.0)S	2.1
9	2.1	1.9	2.0F	2.1	2.2	2.8	2.5F	3.1F	5.2	6.6	7.5	8.8	8.5	7.4	7.2	7.4	8.2	7.4	7.0	(4.2)S	(3.4)B	(2.2)S	(2.2)S	(2.2)SF
10	(2.3)FS	(2.2)SF	2.7FH	3.0F	(3.3)FH	(3.6)SF	3.0	3.1	5.0	5.8S	6.5	8.1	8.7	8.4	8.4	8.0	7.8	6.0	5.4	(3.9)SP	3.3	3.2S	3.2S	2.9
11	2.5F	2.4F	2.4F	2.2F	2.3F	2.4F	2.0F	3.0F	4.9	6.2JF	7.0	8.0F	8.0F	8.4	8.0	7.4H	7.2	7.0	5.6	4.6F	3.9J	3.4	3.5	3.4J
12	3.1F	3.5F	3.2	(2.0)H	1.9F	2.1	2.0	2.4F	5.6J	6.0H	7.0	8.2	8.7	8.3	7.9	8.5	8.0	6.6	5.8	5.2	4.3	4.0	3.8J	2.8
13	2.3F	2.1FH	2.1	1.9J	1.9	1.7J	[2.0]F	2.4	4.7F	5.8	6.4H	7.4H	8.8	8.6	7.4	7.6	7.3	7.2	6.6	6.2	5.2	4.4	3.3	1.9F
14	2.3H	2.5F	3.0F	2.8	2.5	2.5	2.0	2.3JF	5.6	6.2J	8.2	8.5	9.0	9.8	9.4	9.2	8.6	8.6	5.8	4.6	4.1S	3.8	2.8	2.6J
15	2.2	1.9	2.0	2.0	2.0	1.7J	(1.6)JB	2.4	4.7	6.2H	6.4	7.1	8.5	8.0	7.8	7.1	6.8	6.0	5.4	5.3	5.0	4.5	(4.5)S	3.3
16	2.4	2.1	2.1	2.2F	2.4F	2.6F	2.3F	2.8F	5.2	6.6	7.3	8.2	9.2	8.0	7.8	8.2	7.7	6.6	5.0	5.0	4.2	3.6	3.3	2.8F
17	2.5F	2.4F	(2.7)S	2.6	2.6F	2.2F	2.1F	2.8F	5.2	7.0	7.2F	8.2	9.2	8.4	8.0	7.2	7.5	6.4	5.6	5.0JS	4.0	3.1FS	3.0	3.0
18	2.8	2.7F	2.7F	2.8F	3.0F	3.2S	2.9F	3.0F	5.5	6.2	6.8	7.6	8.5	8.4	7.1	7.3	6.8	6.0	4.5	3.7	3.4	3.1	3.8	2.6
19	2.7	2.8F	2.8F	2.9F	3.1S	3.1S	2.7F	2.9	5.0	6.2Z	7.3	9.0	8.2	8.0	7.7	7.4	7.1	6.0	6.0	5.6	3.7	2.8	2.4S	2.6S
20	2.5	2.6S	2.6	2.6S	3.0	3.1	3.2	3.3	6.3	6.6H	5.7H	8.6	7.3	7.2	6.5	6.8	7.3	6.6	5.3	4.7S	3.8J	2.7	2.5	2.3
21	2.3	2.4	2.5	2.9	3.0	3.1	3.5	3.7	5.9	7.1	6.9	7.1	8.1	8.8	7.8	7.4	7.5	7.4	6.6	6.0	4.4	(3.8)S	3.0	2.6
22	2.5	2.6F	3.2	3.2F	3.5F	3.3	2.7	3.0	5.6	6.4	8.2	7.8	7.8	7.6	7.5	8.0	7.3	7.4	7.2	6.2	5.0	3.9	3.0	2.6F
23	2.8F	3.1F	3.3JS	3.1F	2.5F	2.6F	2.7F	3.0F	4.8	6.0F	6.0H	7.0H	8.0H	7.4F	8.4	7.2	7.5	7.2	5.2F	4.0	3.9	3.6	2.5F	2.7F
24	(3.4)S	3.4	3.4F	3.5	3.3	3.1F	2.9F	3.6	5.4	(6.2)H	6.0	7.4	8.3	7.4	7.2	8.0	6.8	6.5	4.6	4.7	4.0	3.0	3.0	2.7
25	2.4	2.4S	2.5	2.4	2.5	2.5	2.7	3.1	5.3	6.0H	6.4	7.4	7.6	7.6	7.6	7.4	7.2H	6.0	5.9	4.7	4.2	2.7	2.4	2.5
26	2.3	[2.2]C	1.9	2.0F	2.4V	2.4F	2.1	3.0	5.0	5.6H	6.4	6.6H	7.4	7.4	6.2	6.8	7.0	6.5	4.6	4.0	3.9JS	3.6JB	2.4	2.4
27	2.0F	(2.5)F	(3.0)FP	3.0JF	2.9JF	3.0JF	2.5F	2.5F	5.0HK	5.8HK	6.5HK	5.6K	8.0FK	8.4K	6.5K	6.0K	6.2K	5.8K	6.2	5.8	4.7F	3.9JS	3.2	2.2F
28	2.3F	2.3F	2.5F	3.0F	3.4JH	3.5JF	(3.0)S	3.1F	(4.4)S	5.7S	6.2	7.1H	7.5	7.0	7.2	6.2	6.4	5.4	4.8	[4.3]C	3.3	2.7F	2.3	2.3F
29	2.5	2.5	2.7F	2.8F	2.7JF	(1.7)JF	(1.4)JS	2.8F	5.0	5.4	7.0	7.0F	7.2	8.1	8.0	9.0	8.8	8.4	(6.2)JS	4.8JS	4.9	3.5Z	2.6H	2.2F
30	2.3H	3.1F	3.7	3.2F	3.0F	2.2F	2.0F	2.5F	5.0	6.0	7.2	8.0	7.1	6.8	7.2	7.8	6.5	6.0	6.4	4.3	3.0	2.5	2.4	2.4
31	2.5	2.7	3.0	2.9	2.7	2.4	2.4	3.0	5.8	6.8	7.0	7.5	6.9	7.4	8.0	7.8	6.8	6.0	5.4	5.2	4.3	3.7	[3.8]A	[3.8]A
Median	2.4	2.4	2.6	2.6	2.6	2.6	2.5	2.9	5.0	6.2	7.0	8.0	8.0	8.0	7.8	7.4	7.2	6.5	5.6	4.7	3.9	3.1	2.8	2.6
Count	31	31	31	31	31	29	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 75

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

IONOSPHERIC DATA

foF2 (Characteristic), Mc (Unit), January (Month), 1952

Observed at Washington, D. C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: Mc C.

Calculated by: Mc C., A.C.K.

Day	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130	1230
1	2.0 F	2.1 F	2.3 F	1.7 F	2.2	(2.3) A	2.3 F	4.0 S	6.2	7.3	9.8	9.0	8.0
2	2.5 F	2.5	2.5 F	2.6 F	2.7 F	2.8 F	2.7 SJ	4.0	5.8	7.0	8.4	9.0	8.6
3	2.4	2.6 F	[2.7] A	2.8	3.3 F	3.1 F	3.6	4.0	5.2	6.6	8.0	8.4	7.8
4	2.8 F	3.0 F	(3.5) F	3.2 F	3.5	3.4 FS	2.7 JF	4.1	5.8	7.5	7.3	8.3 F	8.1
5	2.7 F	2.4	2.4 F	2.0 FK	2.5 FK	S K	S K	2.9 K	4.0 K	4.5 K	5.3 K	5.8 K	5.6 K
6	2.2 FK	1.9 K	2.0 K	2.0 K	1.7 K	E K	E K	3.9 FK	5.0 K	K 5.6 FS	6.2 F	7.5	7.0
7	2.3 F	1.9	1.9	2.0 F	2.2 J	2.4 JF	2.7 F	3.6 F	5.3	5.7	7.6	7.9	7.5
8	1.9	2.0	2.1	2.3	2.3 F	1.9	1.8	3.7	5.4	6.0	7.2	8.7	(6.6) H
9	2.0	1.9	2.2	2.0 F	2.6 F	2.5 F	2.7 F	4.4	6.7	6.8	(7.4) H	8.3	7.8
10	(2.3) SF	(2.4) F	2.9	[3.1] F	4.7 F	3.2	2.9	(3.8) S	5.6	7.0	7.5	8.3	9.0
11	2.5 F	2.4 F	2.4 F	2.1 F	2.3 F	2.1 F	1.9 F	3.8	6.2 J	6.4	7.0 F	8.0	8.8 JH
12	3.6 S	3.2 F	2.8 F	2.0 F	2.0	2.2	1.8 F	3.7 S	6.2 JH	6.6	8.3	9.2	8.4
13	2.8	2.1 F	2.0	1.9	(1.7) SF	1.7 J	[1.9] F	3.9 S	5.0	6.2	7.4	8.0	8.4
14	2.2 F	3.6 F	3.0 F	2.4 F	2.5 F	2.2 F	1.9 J	4.0	6.1	6.5	8.4	9.0	9.0
15	2.0	2.0	2.0	2.0	1.9	1.7 J	1.5 J	3.8	6.0	6.5 H	6.6	8.6	8.3
16	2.3	2.1 J	2.1	2.4 F	2.7 F	2.6 F	2.2 F	4.5 F	5.8	6.2	7.0	8.6	8.8
17	2.4 F	2.6 F	2.7 SF	2.6 F	2.6 JF	2.0 F	2.2 F	4.5	6.4	7.0	8.6	8.4	9.0
18	2.8	2.7 F	2.8	2.8	3.0	(3.1) S	2.7 F	4.2	5.6	6.2	7.4 V	8.6	9.1
19	2.7 F	2.7 F	3.0	3.0	3.1	2.8 F	2.5 F	4.3 S	5.5	6.4	7.3 S	7.5	8.0
20	2.6	2.6	2.5	2.4	3.1	3.1	3.1	4.5	(6.5) PS	6.6	7.1	9.2	7.0
21	2.3 S	2.5	2.6	3.0	3.0	3.3 J	3.5	4.4	6.4	7.0	7.0	7.8	8.0
22	2.4	2.9 J	3.2 F	3.3 F	3.5 F	2.9	2.3 F	4.4	6.8	7.5	8.3	8.4	8.2
23	3.1	3.2 F	3.2 F	2.5 F	2.5 F	2.5 F	2.6 F	4.0	5.8	6.4	7.4	7.2	7.2 F
24	3.3	3.5	3.3 F	3.3	3.2	3.0 F	2.4 F	4.8	5.3	6.8	6.6	8.6	7.6
25	2.3	2.4 F	2.5	2.4	2.5	2.5 F	2.8	4.4	5.8	6.0	6.4 H	7.9	9.0
26	2.2	1.9	2.0 F	2.1 F	2.4 F	2.2 JF	2.2	4.0	5.6	5.8 JS	6.1	7.0	7.4
27	2.4	(2.6) F	2.4 F	2.7 JF	3.1 JF	2.3 JF	(2.3) F	4.0	5.7 SK	6.4 K	5.8 FK	8.0 K	9.0 K
28	2.0 F	2.3 F	3.1	3.0 F	4.2 F	2.4 F	2.4 JS	4.2	5.2 H	5.7	6.7	[7.4] C	7.0
29	2.4	2.6 F	3.0 F	2.9 JF	2.8 JF	(1.1) JF	(1.6) JF	4.1	5.5	6.6	7.2	7.2	7.5
30	3.0	3.2 F	4.0	3.0	2.4 F	2.1 F	2.0 F	4.0 JS	5.8	6.6	7.6	7.6	6.8
31	2.5 F	2.4	2.9	2.7	2.5	2.4	2.3	4.4	5.9	7.4 H	7.3	7.5	6.8
Median	2.4	2.5	2.7	2.6	2.6	2.5	2.3	4.0	5.8	6.5	7.3	8.3	8.0
Count	31	31	31	31	31	30	30	31	31	31	31	31	31

Day	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330
1	8.0	9.2	8.0	6.4	6.2 S	(5.5) S	H [illegible] JS	A	A	2.4	2.4
2	8.3	8.2	7.6	6.4	6.0 S	5.0	3.5 S	(2.6) A	[2.5] A	2.4	2.4
3	7.8	[7.7] C	7.6	[7.0] C	6.4 S	4.9 S	3.6	2.8	2.7	2.7 F	2.6 F
4	9.0	9.0	8.4	7.6	6.6	6.2	6.0	4.1	4.2	(3.4) S	3.0
5	6.0 K	6.2 K	6.5 K	6.0 K	5.2 K	4.6 K	5.4 K	2.7 K	2.3 K	2.2 K	2.1 K
6	8.2	7.0	6.4	6.0	5.2	3.6 FS	(3.1) S	2.5	(2.2) S	2.3 F	2.2 F
7	8.8 E	8.0	7.2	7.4	5.6 F	5.6	4.5	3.1	2.3 F	2.2 F	2.0 J
8	7.2	7.6 H	6.8	6.6	5.3 S	4.6	3.3	2.0	E	2.0	2.2 F
9	7.3	7.4	8.0	7.4	7.0	5.3	3.0	(2.4) S	(2.2) S	(2.2) S	(2.4) JF
10	8.5	8.2	7.8	7.8	6.0	4.2	3.5	3.3	3.3	2.8 F	2.5 F
11	7.6	8.2	7.2	7.0	5.8	5.0	4.2	3.7 S	3.5	3.4	3.3
12	7.6	8.1	[8.2] M	7.3	6.6	5.2 JS	4.5 S	4.1	4.1 J	3.4 J	2.4 F
13	7.4	8.0	7.6	7.8	7.0	6.4	5.6	5.4	3.9 S	2.6 F	2.1 F
14	10.0	9.2	9.0	7.8	8.1	5.6	4.0	4.1	3.2	2.8	2.4
15	7.5	7.6	6.7	6.3	5.3	5.5	5.2	5.0	4.4 SF	4.1	2.8
16	9.0	8.0	8.4	7.2	5.6	5.0	4.5	3.8	3.4	3.1	2.7 F
17	8.4	8.3	7.4	7.0 S	6.0	5.3	(4.8) S	3.3	3.1	(3.0) S	2.7
18	7.6	7.2	6.4	6.6	5.1 S	3.8	3.6	3.2	2.9	2.7	2.7
19	7.4	7.8	7.2	6.6	5.7	6.0 S	4.7 S	3.2	2.9 JS	2.3	2.6 S
20	6.7	6.8	7.4	6.8	5.4	5.1 S	4.2 S	3.3	2.6 S	2.3	2.3
21	8.2	7.4	7.4	7.3	7.5	6.6	4.6	3.4 JS	3.5	2.7 F	2.3 F
22	7.2	8.2	7.7	7.4	6.9	6.8	5.5	4.0	3.3	2.7	2.7
23	7.8	7.2	7.2	8.2	5.8	4.2 F	4.3	3.8	3.1 F	2.5	3.0 F
24	7.4	7.0	7.4	6.8	5.3	4.7	4.7	(3.4) S	3.0	2.6	2.3 F
25	[7.6] C	7.6 JS	7.4	6.0	5.2	4.8	4.6	3.4	2.4	2.4	2.5
26	6.6	7.0	6.8	7.2	5.6	4.5	3.4	(3.5) S	2.7	2.5	2.1 F
27	7.1 K	6.6 K	5.8 K	5.3 K	5.8 K	6.0	5.2	4.1 F	3.5	2.4	2.2 F
28	7.0 H	6.5	6.8	6.2	4.9	4.7	3.9	3.0	2.5 F	2.3	2.4
29	8.2	8.5	10.0	8.0	6.6	4.5 SF	5.4	3.4 JS	2.7	2.2 F	2.3 F
30	6.6	7.2	7.0	6.6	5.2	4.4	3.5	2.6	2.4	2.3	2.3
31	7.8	8.3	7.2	6.2	6.0	5.3	4.9	3.4	3.8	3.4	3.7 JS
Median	7.6	7.7	7.4	7.0	5.9	5.0	4.5	3.4	3.0	2.3	2.4
Count	31	31	31	31	31	31	31	30	30	31	31

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 76

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

Form adopted June 1946

IONOSPHERIC DATA

h'F1 (Characteristic), Km (Unit), January (Month), 1952

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC.

Calculated by: McC., A.C.K.

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										220	A	B	(220) B	[220] B	(230) A	A								
2										200	220 H	210	190 H	210	220	230								
3										200	[200] C	200	200 H	220	210	C								
4										Q	210	200	220	200 H	220	240								
5										Q K	270 K	260 K	230 K	210 HK	220 K	230 K	(230) AK							
6										220 K	200	200 H	210	210	210	200 H								
7										Q	A	A	E	A	230	210								
8										220	200 H	200 H	230	230	230	Q								
9										230 H	210 H	240	230	200	220	230	230							
10										230	A	A	(220) B	(220) B	230	220	230							
11										220	[210] A	200	210	210	220	200								
12										Q	Q	200	220	210	200	(230) B								
13										220	220 H	200	250	220	220	240								
14										Q	200	220	200	200	210	220								
15										Q	230	210	200	220	230	210								
16										Q	210 H	200	210	210	210	230								
17										Q	210	[210] A	210	210	200	210								
18										200	200 H	200	190 H	200	210	220	230							
19										220	220	190 H	220	210	220	220								
20										230	210 H	220	210	190	200	210								
21										230	220	210 H	200 H	210	210	220	Q							
22										220	230	210	200	220	220	230	220							
23										230	210	230	A	A	230	230	230							
24										210 H	220	220	240	190 H	200	220	Q							
25										Q	210	[200] A	200	210	210	220	200							
26										190	200	220 H	200 H	200	210	230	220							
27										230 K	210 K	200 K	220 K	230 K	230 K	230 K	230 K							
28									200	190	200	220	200	190 H	200 H	200 H	Q							
29									200	210	190 H	200	210 H	200 H	200 H	220	220							
30									Q	220	230	230	210	200	200	230	Q							
31									Q	210 H	210	200	210	210	230	200	Q							
Median									—	220	[illegible]	200	[illegible]	210	220	220	230							
Count									2	[illegible]	[illegible]	28	[illegible]	29	31	28	10							

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 77

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

IONOSPHERIC DATA

foFl (Characteristic), Mc (Unit), January (Month), 1952

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Scaled by: McC.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

Calculated by McC., A.C.K.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1										L	L	L	L	L	L	A	Q							
2										L	L	L	L	L	L	L								
3										L	C	L	L	L	L	C								
4										Q	L	L	L	(3.4) H	L	L								
5										Q K	3.7 K	3.9 K	3.8 K	4.0 H K	3.6 K	3.2 K	L K							
6										L K	L	L	4.0	4.0	3.9	L								
7										Q	L	L	L	L	L	L								
8										L	L	L	L	L	L	Q								
9										L	L	L	L	4.2	L	L	L							
10										L	L	L	3.9	4.1	L	L	L							
11										L	A	L	L	4.0	3.7	3.3								
12										Q	Q	3.7	L	L	L	L								
13										L	L	3.3	L	L	L	L								
14										Q	3.2	[3.6] L	4.0	3.4	L	L								
15										Q	L	3.7	3.7	L	L	L								
16										Q	L	4.0	4.1	4.0	L	L								
17										Q	L	L	L	L	L	L								
18										L	L	L	L	3.7	L	L	L							
19										L	L	3.4 H	4.1	L	L	L								
20										L	L	4.0 L	4.3	3.7	3.6	L								
21										L	L	L	L	(4.1) L	L	L	Q							
22										L	L	4.0	4.0	4.1	L	L	L							
23										L	4.4	L	A	A	3.8	L	L							
24										L	L	L	L	L	L	L	Q							
25										Q	L	A	L	4.0	L	L	2.9							
26										3.0 H	3.8	L	L	L	L	L	L							
27										L K	L K	L K	4.2 K	4.1 K	L K	L K	2.7 K							
28									2.4	3.0	3.2	L	4.2	4.0 H	L	L	Q							
29									L	L	3.3 H	4.1	L	L	3.8 H	L	L							
30									Q	L	L	L	4.1	L	L	L	Q							
31									Q	L	L	4.1	4.1	L	L	L	Q							
Median									—	—	3.5	3.9	[illegible]	4.0	3.8	—	—							
Count									1	2	6	11	13	15	6	2	2							

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 78

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

IONOSPHERIC DATA

Form adopted June 1946

h'E (Characteristic), KM (Unit), January (Month), 1952

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Scaled by: Mc C.

Lat. 38.7°N, Long. 77.1°W

75°W Mean Time

Calculated by: Mc C., ACK

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									A	A	A	B	B	B	B	A	A							
2									(160)S	130B	110	[100]A	100H	[100]A	110	120	B							
3									S	110	[120]C	(120)A	100	110S	(120)S	[120]C	(130)S							
4									S	120	A	A	110	120	110	110	110							
5									120K	120K	110K	120K	120K	110K	[110]KB	110K	120K							
6									(160)SK	110K	110	(110)P	110	110	110	110	A							
7									(170)S	A	A	A	B	A	A	100	B							
8									S	120	(120)A	120	110	110	[120]B	140H	140							
9									120	120	110	110	110	110	110	120	A							
10									A	110H	A	A	B	B	B	120	B							
11									130	120	110	110H	110	120	(120)B	130	B							
12									S	110	A	A	110	110	120	[120]B	120							
13									S	110	110	110	110H	110	110	110	120H							
14									120	110H	100	100	100	110	100	100	100							
15									140	110H	110	110	120B	120	110	110	110							
16									130H	110	(110)A	100	100	120	100	120	B							
17									130	110	110	110	110	110	110	120	120							
18									120H	120H	[110]A	110	(110)A	120	120B	(130)B	B							
19									A	120	[120]A	120	120	120H	B	A	120H							
20									130S	120H	[110]A	110H	110	120	[120]B	120	130							
21									130	A	A	A	130	110	110	110	110							
22									130H	120	110H	110	110	110	110	120	120							
23									120	110	110	110	110	(110)H	[110]A	110	120							
24									140	110H	110	110	110	110	110	110	110							
25									120	110	110	110	110	(110)A	[110]A	100	A							
26									(130)A	110H	100	100	100	110	110	110	120							
27									AK	110K	110K	110K	120K	110K	110K	120K	110K	120K						
28									120	110	110	110	110	110	110	110	120	(130)S						
29									120	110	110	110	110	110	110	110	110							
30									130	110	110	110	110	100	110	110	130	120						
31									120	120	110	120	120	110	110	110	110	110						
Median									130	110	110	110	110	110	110	110	120	—						
Count									22	28	25	25	28	28	27	29	21	4						

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 79

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

IONOSPHERIC DATA

foE (Characteristic) Mc (Unit) January (Month) 1952

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Scaled by: McC

Lat 38.7°N, Long 77.1°W

75° W Mean Time

Calculated by: McC, A.C.K.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									A	A	A	B	B	B	B	A	A							
2									2.0H	(2.3)B	2.6	[2.8]A	3.0	[2.9]A	2.8	2.5	B							
3									1.8	A	C	2.8	2.9	2.9	2.8	[2.4]C	1.9H							
4									1.8H	B	A	A	3.0	2.9	2.7	2.4	1.9S							
5									1.9K	2.2K	2.5K	2.9K	3.0K	3.0K	[2.8]BK	2.6K	1.9K							
6									1.9K	[2.2]BK	2.6	2.8	(3.1)P	3.0	2.6	(2.6)P	A							
7									1.8	A	A	A	B	A	A	2.5	B							
8									1.8	2.5	2.7	3.0	3.0	3.0	[2.8]B	2.6H	2.2							
9									2.0	2.4	(2.8)P	(3.0)P	3.0	3.1	3.0	2.5	A							
10									A	2.3H	A	A	B	B	B	2.5	B							
11									1.8	2.3	2.6	3.0H	3.0	2.8	(2.7)B	2.5	2.3H							
12									1.7	2.5	A	A	3.0	3.0	2.9	[2.6]B	2.2							
13									S	2.3	2.7	2.9	3.0H	3.0	2.9	2.7	2.2H							
14									1.8	2.5H	2.7	3.0	3.1	3.1	2.7	2.7	2.1							
15									1.8	2.4H	2.7	2.9	3.0	3.0	2.8	2.6	2.3							
16									2.0H	2.3	[2.6]A	3.0	3.1	3.0	3.0	2.8	B							
17									2.0H	2.4	2.7	2.8	3.0	3.0	3.0	2.8	2.3							
18									2.0H	2.5H	[2.7]A	3.0	[3.0]A	3.0	2.9	(2.7)B	B							
19									A	2.7F	[2.9]A	3.1	2.9	2.8H	A	A	2.2H							
20									1.7	2.3H	[2.7]A	3.1H	3.1	3.1	[2.9]B	2.7	2.3							
21									1.8	A	A	A	3.1	3.1	3.0	2.8	2.3							
22									1.8H	[2.8]A	2.9H	2.9	3.0	3.1	2.9	(2.7)P	2.3							
23									1.8	2.6	3.1	3.1	(3.0)A	A	A	B	2.3							
24									1.9	2.4H	[2.7]A	3.0	2.9	3.0	2.8H	2.7	2.3							
25									(1.9)H	2.3	2.7	2.8	A	B	A	2.5	A							
26									1.8	2.4H	2.8	3.0	3.0	3.0	2.9	2.6	2.3							
27									AK	2.4K	2.7K	2.9K	3.1K	3.0K	2.9K	2.7K	2.2K	1.7K						
28									1.9	2.3	2.8	2.9	3.0	2.8	2.7	2.6	2.4	1.7						
29									1.9	2.4	2.7	2.9	3.0	3.0	2.7	2.5	2.2							
30									2.0H	2.3	2.8	3.0	3.0	3.0	[2.8]B	2.6H	2.3	1.7						
31									2.1H	2.5	2.7	2.9	3.0	2.9	2.9	(2.8)B	2.4	A						
Median									1.8	2.4	2.7	2.9	3.0	3.0	2.9	2.6	2.3	—						
Count									26	26	24	25	27	26	25	28	22	3						

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 80

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

Form adopted June 1946

IONOSPHERIC DATA

Es (Characteristic), Mc, Km (Unit), January (Month), 1952

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: Mc C.

Calculated by: Mc C.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E	E	E	E	2.4Y/100	76/100	7.6/100	4.8H/100	25/100	2.7Y/110	4.0/100	B	B	B	4.1Y/100	58/100	33/100	47/110	64/110	84H/110	84Y/110	30Y/110	1.7/100	E
2	E	E	E	40/100	E	E	9.2/100	E	G	G	G	58H/100	G	33/110	G	G	B	E	E	38Y/110	43/110	33/110	33Y/110	18/110
3	1.9/110	E	2.0/110	37/110	39/110	28/100	2.9/110	29H/110	G	24/110	C	30Y/100	G	G	G	C	G	E	E	E	E	E	E	E
4	E	E	E	E	E	49Y/110	E	E	G	G	30/110	2.9YH/110	G	G	90Y/110	G	G	E	E	E	E	E	E	E
5	E	E	E	E	E	E	2.3/100	25/100	G	24/120	120/100	G	G	G	G	G	2.1/120	E	E	E	E	E	E	3.7Y/120
6	E	E	E	E	E	E	E	E	G	G	G	G	G	G	G	G	2.0/110	1.8/100	33Y/100	E	E	E	E	E
7	E	E	E	38/90	E	E	E	E	G	26/130	30/120	58/110	G	35/100	31/100	G	B	E	E	E	E	E	E	E
8	46/120	40/120	E	E	E	E	E	E	G	G	30/120	G	G	G	B	G	G	E	E	E	E	E	E	E
9	E	E	E	E	105/100	48/100	32/100	E	G	G	37/110	G	G	G	G	2.7/120	23/110	3.7Y/110	36Y/110	30Y/110	E	E	E	E
10	E	E	E	E	E	E	26Y/130	35Y/110	19/110	G	31/100	33/100	B	B	B	G	B	1.7/100	E	25/120	E	E	E	E
11	E	E	24/110	25/120	E	E	E	E	G	30/130	34/120	G	G	G	G	G	G	E	E	E	E	E	E	E
12	E	E	E	E	E	35/100	E	3.0/130	G	G	4.1Y/110	39/110	G	G	G	B	G	E	E	E	E	E	E	35Y/110
13	3.4/120	E	E	E	E	E	E	5.8/110	G	G	G	G	G	G	G	G	G	E	E	E	E	E	E	E
14	E	E	E	170/120	E	11.0/100	E	E	G	G	G	G	G	G	G	G	G	E	E	E	E	31Y/130	E	E
15	E	E	E	E	E	E	E	E	G	G	G	G	G	G	G	G	G	E	E	E	E	E	E	E
16	E	E	E	E	E	E	E	E	G	30/130	47Y/110	31/100	G	G	G	G	B	E	E	E	E	E	E	E
17	E	E	2.9/110	1.8/120	E	E	30Y/140	E	G	25/110	41/120	47Y/120	30/110	G	G	31/130	G	E	E	E	E	E	E	27/120
18	1.9/110	28Y/110	E	E	E	E	E	E	G	30/120	31/120	G	31/110	G	G	G	B	175/100	E	E	25Y/110	E	E	E
19	E	E	E	E	E	E	E	E	34Y/130	G	34/120	G	G	G	29Y/120	26/120	G	E	E	E	E	E	E	E
20	E	E	E	E	E	E	E	E	G	G	33/120	G	G	G	B	G	G	1.8/100	27Y/100	E	E	E	E	E
21	E	E	E	E	E	E	E	E	G	32/110	49/120	30/120	G	G	G	G	G	28Y/110	E	E	E	E	E	E
22	E	E	E	E	E	E	38/120	E	G	26/120	G	G	G	G	G	G	G	E	E	17/100	E	E	E	E
23	E	E	E	E	E	E	E	E	G	G	G	G	56/110	5.2/110	32/110	G	G	40/100	E	E	E	E	E	E
24	E	E	E	E	E	27Y/120	E	E	G	G	29/110	G	G	G	G	G	G	E	19Y/110	E	E	E	E	E
25	E	E	E	E	34/110	23/110	49H/100	37H/110	G	34H/130	44/120	76/110	40/110	30/110	3.7Y/110	44H/120	28/100	E	E	E	E	E	E	E
26	E	C	E	E	17/110	23/110	E	70Y/110	33/110	45H/110	G	G	G	G	G	42H/120	25/120	E	E	E	E	E	E	20/110
27	E	E	E	E	E	E	E	E	26/110	G	G	G	G	G	G	G	G	G	E	E	E	E	E	E
28	E	E	E	E	E	E	E	E	G	46/110	G	G	G	G	G	G	G	G	E	C	E	E	E	E
29	E	E	E	E	E	E	E	36/110	G	33Y/130	G	G	G	G	G	G	G	E	E	34/130	32/130	36/120	29/120	E
30	E	E	E	E	E	E	E	E	G	G	22/100	20/100	21/100	G	G	G	G	G	E	E	E	E	E	E
31	E	E	E	E	E	E	E	E	G	G	G	G	G	G	G	G	G	22/110	37/110	E	37/110	32/120	47/110	72/110
Median	**	**	**	**	**	**	**	**	**	**	3.0	**	**	**	**	**	**	**	**	**	**	**	**	**
Count	31	30	31	31	31	31	31	31	31	31	30	31	31	31	31	30	31	31	31	30	31	31	31	31

X X MEDIAN fEs LESS THAN MEDIAN foE, OR LESS, THAN LOWER FREQUENCY LIMIT OF RECORDER.

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 81

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

IONOSPHERIC DATA

(M1500) F2 (Characteristic), (Unit), January (Month), 1952

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC.

Calculated by: McC., A.C.K.

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
[illegible]	[illegible]	[illegible]	1.9^{F}	2.3^{F}	1.9^{F}	1.9^{F}	2.0^{F}	2.0^{F}	2.3	2.4	2.2	2.4	2.3	2.2	2.2	2.2	2.4^{S}	2.3	2.2	2.2^{S}_{F}	2.3^{F}	2.0^{F}	2.0	1.9
[illegible]	[illegible]	[illegible]	2.0^{F}	2.1^{F}	1.9^{F}	2.1^{F}	$(2.3)^{J}_{F}$	2.0^{F}	2.5	2.4	(2.2)Z	2.2	2.4	2.2	2.3	2.3	2.4	2.3	2.3	$(2.3)^{J}$	2.3	A	$(1.9)^{A}$	1.9
[illegible]	[illegible]	$[illegible]^{F}$	2.0	A	2.0	2.2^{F}	2.1^{S}_{F}	2.4	2.5Z	$(2.4)^{J}_{H}$	C	2.4	2.2	2.3	2.3	C	$(2.4)^{F}_{S}$	2.1	2.3^{S}	2.2	2.0	2.0	2.0	2.0^{F}
[illegible]	$[illegible]^{F}$	$[illegible]^{F}$	$(2.2)^{P}_{F}$	2.1^{F}	2.1^{F}	2.3	2.4^{F}	2.2^{F}	2.6S	2.5	2.4Z	2.3	2.3	2.2	2.2	2.3	2.3	2.2	2.2	2.2^{S}	2.3^{S}	2.0^{F}_{S}	$(2.1)^{S}$	2.1^{F}
[illegible]	[illegible]	1.9^{F}	1.9^{F}	2.1^{F}_{K}	2.2^{F}_{K}	F^{K}	S^{K}	1.9^{F}_{K}	2.0^{K}	2.0^{S}_{K}	2.0^{K}	2.1^{K}	2.1^{K}	2.3^{K}	2.3^{K}	2.2^{K}	2.2^{K}	$^{S}2.2^{F}_{K}$	2.0^{K}	2.2^{K}	2.1^{K}	1.9^{S}_{K}	1.8^{A}	1.9^{K}
[illegible]	$[illegible]^{K}$	1.9^{K}	1.9^{K}	1.9^{K}	2.3^{F}_{K}	S^{K}	E^{K}	1.9^{F}_{K}	2.4^{K}	2.4^{K}	2.3^{F}	2.2	2.3	2.2	2.4	2.4	2.3	2.5	2.3	2.1	2.1^{F}	1.9	2.0	2.0^{F}_{S}
[illegible]	$[illegible]^{F}$	[illegible]	2.0	1.9^{F}_{S}	2.2^{F}	2.1	$(2.0)^{J}_{F}$	$(2.2)^{J}_{F}$	2.4^{F}	2.4	2.2	2.2	2.4	2.2	2.3	2.3	2.2	2.2	2.0	2.2^{S}_{F}	2.3	2.3^{F}	2.0^{F}	2.0^{F}
[illegible]	A	1.9	1.9	2.0	2.1^{F}	2.3^{F}	$(2.1)^{J}$	2.0^{F}	2.4	2.3	2.3	2.3	2.4	2.2	2.2	2.3	2.3	$(2.2)^{J}_{H}$	2.2	$(2.4)^{P}_{S}$	2.4	S^{F}	$(1.8)^{S}$	2.0
9	1.9	1.9	2.0^{F}	2.1	2.0	2.0	2.0^{F}	2.2^{F}	2.1	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.1	2.3	2.4	$(2.4)^{S}$	$(1.9)^{B}$	$(2.0)^{S}$	$(1.9)^{S}$	$(1.9)^{S}_{F}$
10	$(2.2)^{F}_{S}$	$(1.7)^{S}_{F}$	1.9^{F}_{H}	1.9^{F}	$(2.0)^{F}_{H}$	$(2.2)^{S}_{F}$	2.2	2.0	2.3	2.3^{S}	2.3	2.3	2.1	2.0	2.1	2.2	2.3	2.4	2.2	$(1.9)^{S}_{F}$	1.9	1.9^{S}	2.0^{S}	1.9
[illegible]	1.9^{F}	2.0^{F}	2.1^{F}	2.1^{F}	2.0^{F}	2.3^{F}	2.1^{F}	2.1^{F}	2.4	$(2.3)^{J}_{F}$	2.4	2.0^{F}	2.1^{F}	2.2	2.2	2.3^{H}	2.3	2.4	2.3	2.2^{F}	$(2.0)^{J}$	1.8	2.0	$(1.9)^{J}$
12	2.0^{F}	2.1^{F}	1.9	$(2.0)^{H}$	2.0^{F}	1.9	2.1	2.2^{F}	$(2.4)^{J}$	2.3^{H}	2.0	2.2	2.3	2.3	2.2	2.2	2.3	2.2	2.3	2.2	2.0	2.0	$(2.0)^{J}$	1.9
13	2.0^{F}	2.1^{F}_{H}	1.9	$(1.9)^{J}$	1.9	$(2.0)^{J}$	F	2.1	2.5^{F}	2.3	2.2^{H}	2.0^{H}	2.2	2.2	2.1	2.3	2.1	2.1	2.0	2.2	2.1	2.3	2.3	2.0^{F}
14	1.9^{H}	1.9^{F}	2.3^{F}	2.2	2.0	2.3	2.1	$(2.2)^{J}_{F}$	2.5	$(2.3)^{J}$	2.4	2.3	2.1	2.1	2.2	2.3	2.3	2.2	2.2	2.1	2.0^{S}	2.0	1.9	$(2.0)^{J}$
15	1.9	1.8	1.8	1.9	2.1	$(1.9)^{J}$	$(2.0)^{J}_{B}$	1.9	2.2	2.0^{H}	2.2	1.9	2.1	2.1	2.3	2.3	2.4	2.3	2.0	2.1	2.1	2.1	$(2.3)^{S}$	2.3
16	2.1	2.0	1.9	1.9^{F}	1.9^{F}	2.0^{F}	2.2^{F}	2.1^{F}	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.2	2.4	2.3	2.2	2.1	2.2	2.0	2.1	2.1^{F}
17	2.0^{F}	2.0^{F}	$(2.0)^{S}$	2.0	2.2^{F}	2.1^{F}	2.0^{F}	2.0^{F}	2.3	2.4	2.1^{F}	2.4	2.3	2.2	2.3	2.3	2.4	2.3	2.1	$(2.2)^{J}_{S}$	2.2	1.9^{F}_{S}	2.0	2.0
18	1.9	2.0^{F}	2.0^{F}	2.0^{F}	2.0^{F}	2.0^{S}	2.1^{F}	2.2^{F}	2.4	2.4	2.1	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.0	2.2	2.1	2.1	2.0
19	2.0	2.1^{F}	2.1^{F}	2.1^{F}	2.1^{S}	2.2^{S}	2.1^{F}	2.2	2.5	2.4^{Z}	2.3	2.5	2.2	2.2	2.3	2.3	2.4	2.3	2.2	2.3	2.1	2.1	2.1^{S}	2.0^{S}
20	2.0	2.0^{S}	1.9	2.0^{S}	2.0	2.2	2.2	2.3	2.4	2.5^{H}	2.4^{H}	2.2	2.4	2.4	2.2	2.1	2.3	2.4	2.1	2.2^{S}	$(2.3)^{J}$	2.1	2.0	2.0
21	1.9	2.1	2.0	2.1	2.1	2.0	2.1	2.3	2.4	2.5	2.5	2.2	2.2	2.3	2.3	2.2	2.2	2.3	2.2	2.3	2.3	$(2.2)^{S}$	2.3	2.2
22	2.1	1.9^{F}	1.9	2.0^{F}	2.0^{F}	2.1	2.1	2.0	2.2	2.3	2.3	2.3	2.3	2.2	2.2	2.3	2.3	2.2	2.0	2.2	2.3	2.2	2.1	2.0^{F}
23	1.9^{F}	2.1^{F}	$(2.2)^{J}_{S}$	2.3^{F}	2.1^{F}	2.1^{F}	1.9^{F}	2.2^{F}	2.3	2.3^{F}	2.0^{H}	2.3^{H}	2.1^{H}	2.0^{F}	2.1	2.1	2.1	2.4	2.2^{F}	2.0	2.1	2.1	1.9^{F}	1.9^{F}
24	$(2.1)^{S}$	2.0	2.0^{F}	2.0	2.1	2.0^{F}	2.0^{F}	2.2	2.4	$(2.2)^{H}$	2.2	2.2	2.4	2.3	2.1	2.3	2.2	2.4	2.0	2.0	2.3	2.0	2.2	2.1
25	2.1	1.9^{S}	2.0	2.1	2.0	2.0	2.0	2.1	2.4	2.2^{H}	2.4	2.2	2.3	2.2	2.3	2.3	2.3^{H}	2.4	2.3	2.2	2.4	2.4	1.9	2.0
26	2.0	C	1.9	1.9^{F}	2.0^{V}	1.9^{P}	2.2	2.2	2.5	2.3^{H}	2.4	2.2^{H}	2.3	2.3	2.1	2.2	2.4	2.4	2.1	2.2	$(2.3)^{J}_{S}$	$(2.3)^{J}_{R}$	2.0	2.1
27	1.9^{F}	$(1.8)^{F}$	$(2.0)^{F}_{P}$	$(2.1)^{J}_{F}$	$(2.2)^{J}_{F}$	$(2.1)^{J}_{F}$	2.0^{F}	2.1^{F}	2.1^{H}_{K}	2.1^{H}_{K}	2.2^{H}_{K}	1.7^{K}	1.8^{F}_{K}	2.1^{K}	2.3^{K}	2.2^{K}	2.4^{K}	2.2^{K}	2.0	2.0	2.1^{F}	$(2.1)^{J}_{S}$	2.3	1.9^{F}
28	1.9^{F}	1.8^{F}	2.0^{F}	2.0^{F}	$(2.0)^{J}_{H}$	$(2.2)^{J}_{F}$	$(2.1)^{S}$	2.0^{F}	$(2.7)^{S}$	2.4^{S}	2.3	2.0^{H}	2.2	2.3	2.3	2.2	2.2	2.3	2.1	C	2.2	2.0^{F}	1.9	2.0^{F}
29	2.0	2.1	2.0^{F}	1.9^{F}	$(2.1)^{J}_{F}$	$(1.7)^{J}_{F}$	$(1.9)^{J}_{S}$	2.0^{F}	2.4	2.4	2.3	2.3^{F}	2.1	2.1	2.0	2.0	2.3	2.3	$(2.3)^{J}_{S}$	$(1.9)^{J}_{S}$	2.1	2.0Z	1.8^{H}	1.9^{F}
30	1.8^{H}	2.2^{F}	2.0	2.3^{F}	2.3^{F}	2.0^{F}	2.0^{F}	2.0^{F}	2.3	2.2	2.1	2.3	2.3	2.2	2.1	2.4	2.3	2.3	2.1	2.1	2.1	2.0	2.0	2.0
31	2.0	1.9	2.0	2.0	2.0	1.9	2.2	2.2	2.5	2.2	2.4	2.2	2.6	2.1	2.1	2.3	2.3	2.3	2.0	2.1	2.1	2.0	A	A
Median	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.4	2.3	2.3	2.3	2.3	[illegible]	2.2	2.3	2.3	2.3	2.2	2.2	2.1	2.0	2.0	2.0
Count	30	30	31	30	31	29	28	31	31	31	30	31	31	31	31	30	31	31	31	30	31	29	30	30

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 82

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

IONOSPHERIC DATA

Form adopted June 1946

(M3000)F2 (Characteristic), ____ (Unit), January (Month), 1952

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

Scaled by: McC.

Calculated by: McC., A.C.K.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	3.0	2.9	2.9^{F}	3.3^{F}	2.9^{F}	2.8^{F}	30^{F}	30^{F}	34	3.4	3.2	3.5	34	32	32	3.2	34^{S}	33	32	3.2$^{S}_{F}$	33^{F}	30^{F}	3.0	28
2	3.1	2.9	3.0^{F}	3.1^{F}	29^{F}	3.1^{F}	(34)$^{J}_{F}$	30^{F}	3.6	3.5	(3.2)^{Z}	3.2	3.5	32	33	3.4	34	33	34	(3.3)^{J}	3.3	A	(2.9)^{A}	2.9
3	2.9	3.0^{F}	3.0	A	30	32^{F}	31$^{S}_{F}$	34	36^{Z}	(34)$^{J}_{H}$	C	3.5	32	34	34	C	(35)$^{P}_{S}$	31	34^{S}	33	30	30	30	30^{F}
4	2.9^{F}	31^{F}	(3.2)$^{P}_{F}$	3.1^{F}	3.2^{F}	33	34^{F}	3.2^{F}	36^{S}	36	3.4^{Z}	34	33	32	32	33	33	3.2	32	32^{S}	33^{S}	3.0$^{F}_{S}$	(31)^{S}	31^{F}
5	2.8	2.7^{F}	2.7^{F}	3.1$^{F}_{K}$	32$^{F}_{K}$	F^{K}	S^{K}	27$^{F}_{K}$	30^{K}	3.0$^{S}_{K}$	30^{K}	3.1^{K}	31^{K}	33^{K}	33^{K}	32^{K}	32^{K}	^{K}32$^{S}_{F}$	30^{K}	32^{K}	31^{K}	2.9$^{S}_{K}$	2.7^{K}	2.9^{K}
6	2.9^{K}	2.9^{K}	2.9^{K}	2.9^{K}	3.4$^{F}_{K}$	S^{K}	E^{K}	29$^{F}_{K}$	35^{K}	35^{K}	34^{F}	32	34	32	35	34	34	35	33	31	31^{F}	29	30	30$^{F}_{S}$
7	34^{F}	2.9	30	29$^{S}_{F}$	32^{F}	31	(30)$^{J}_{F}$	(32)$^{J}_{F}$	35^{F}	34	33	33	34	32	34	34	3.2	32	30	3.2$^{S}_{F}$	33	33^{F}	30^{F}	29^{F}
8	A	2.9	29	3.0	31^{F}	3.3^{F}	(31)^{J}	30^{F}	35	34	33	34	34	3.2	32	33	3.3	(32)$^{J}_{H}$	32	(34)$^{P}_{S}$	34	S^{F}	(27)^{S}	2.9
9	2.9	2.9	3.0^{F}	3.1	30	3.0	30^{F}	3.2^{F}	31	33	34	34	34	34	32	3.2	3.1	34	35	(35)^{S}	(29)^{B}	(30)^{S}	(28)^{S}	(29)$^{S}_{F}$
10	(3.2)$^{F}_{S}$	(28)$^{S}_{F}$	2.8$^{F}_{H}$	2.9^{F}	(30)$^{F}_{H}$	(33)$^{S}_{F}$	3.2	30	33	33^{S}	33	33	32	31	31	32	33	34	32	(2.9)$^{S}_{P}$	28	28^{S}	30^{S}	28
11	28^{F}	3.0^{F}	3.1^{F}	3.1^{F}	30^{F}	33^{F}	31	31^{F}	35	(33)$^{J}_{F}$	34	30^{F}	3.1^{F}	32	32	34^{H}	3.3	3.5	3.3	32^{F}	(30)^{J}	2.7	3.0	(2.9)^{J}
12	3.0^{F}	3.1^{F}	2.9	(2.9)^{H}	3.0^{F}	2.9	32	32^{F}	(34)^{J}	34^{H}	3.0	32	33	33	32	32	3.3	32	34	32	30	29	(30)^{J}	28
13	3.0^{F}	31$^{F}_{H}$	2.8	(2.9)^{J}	28	(2.9)^{J}	F	31	35^{F}	33	32^{H}	30^{H}	32	3.2	31	33	31	31	30	32	31	33	3.3	3.0^{F}
14	2.9^{H}	28^{F}	32^{F}	3.2	30	33	31	(32)$^{J}_{F}$	36	(34)^{J}	3.5	34	31	31	3.2	33	34	32	32	31	30^{S}	3.0	28	(30)^{J}
15	2.8	2.7	2.8	29	3.1	(29)^{J}	(30)$^{J}_{B}$	28	3.2	30^{H}	32	29	31	31	33	34	34	34	30	31	31	31	(34)^{S}	34
16	31	3.0	2.9	2.8^{F}	29^{F}	30^{F}	32^{F}	31^{F}	35	35	34	34	34	33	34	3.3	35	33	3.2	31	32	30	31	31^{F}
17	30^{F}	30^{F}	(30)^{S}	30	32^{F}	31^{F}	30^{F}	30^{F}	33	34	31^{F}	35	33	32	33	33	34	3.4	31	(32)$^{J}_{S}$	32	28$^{F}_{S}$	30	30
18	2.9	30^{F}	3.0^{F}	30^{F}	30^{F}	30^{S}	31^{F}	32^{F}	35	35	31	32	34	34	3.3	34	34	34	3.2	30	32	30	3.1	2.9
19	30	31^{F}	31^{F}	3.1^{F}	31^{S}	32^{S}	31^{F}	32	3.6	35^{Z}	34	36	33	32	34	34	34	34	32	33	31	31	31^{S}	30^{S}
20	30	30^{S}	2.9	2.9^{S}	30	32	32	33	35	35^{H}	34^{H}	32	34	35	32	3.2	34	35	31	32^{S}	(33)^{J}	3.1	30	30
21	29	3.1	3.0	31	3.1	3.0	3.1	33	35	35	36	34	33	33	33	32	3.2	34	3.2	33	33	(32)^{S}	33	3.2
22	30	28^{F}	2.8	3.0^{F}	3.0^{F}	31	31	30	32	33	34	33	33	3.2	32	34	33	32	3.0	32	33	32	31	30^{F}
23	2.9^{F}	31^{F}	(3.2)$^{J}_{S}$	3.3^{F}	31^{F}	3.1^{F}	29^{F}	32^{F}	34	33^{F}	30^{H}	33^{H}	31^{H}	30^{F}	31	3.1	31	34	3.2^{F}	30	31	31	29^{F}	28^{F}
24	(3.1)^{S}	3.0	3.0^{F}	3.0	31	30^{F}	30^{F}	3.2	35	(32)^{H}	3.4	32	35	33	31	33	32	35	3.0	30	33	30	3.2	3.1
25	3.1	2.9^{S}	30	3.1	3.0	30	30	3.1	3.5	3.2^{H}	34	32	3.3	3.2	33	34	33^{H}	34	33	32	34	35	2.9	30
26	30	C	2.9	28^{F}	30^{V}	29^{F}	3.2	32	35	33^{H}	3.5	32^{H}	34	33	31	32	34	34	31	32	(33)$^{J}_{S}$	(33)$^{J}_{B}$	30	31
27	2.9^{F}	(27)^{F}	(3.0)$^{F}_{P}$	(31)$^{J}_{F}$	(3.2)$^{J}_{F}$	(31)$^{J}_{F}$	30^{F}	31^{F}	31$^{H}_{K}$	31$^{H}_{K}$	32$^{H}_{K}$	26^{K}	27$^{F}_{K}$	3.1^{K}	34^{K}	32^{K}	35^{K}	32^{K}	30	30	3.1^{F}	(3.1)$^{J}_{S}$	3.3	2.9^{F}
28	2.9^{F}	27^{F}	3.0^{F}	3.0^{F}	(3.0)$^{J}_{H}$	(32)$^{J}_{F}$	(31)^{S}	30^{F}	(37)^{S}	35^{S}	33	30^{H}	32	33	33	3.2	32	33	31	C	32	30^{F}	29	30^{F}
29	2.9	31	30^{F}	2.9^{F}	(31)$^{J}_{F}$	(26)$^{J}_{F}$	(28)$^{J}_{S}$	30^{F}	3.5	3.4	34	33^{F}	31	31	3.0	30	33	3.3	(33)$^{J}_{S}$	(29)$^{J}_{S}$	31	30^{Z}	2.8^{H}	2.9^{F}
30	2.7^{H}	3.2^{F}	3.0	33^{F}	3.4^{F}	30^{F}	3.0^{F}	30^{F}	33	32	31	3.3	34	34	31	35	33	33	3.1	31	3.1	30	30	30
31	30	28	2.9	3.0	3.0	29	32	32	35	32	3.5	34	3.6	31	31	34	34	3.3	30	31	31	30	A	A
Median	3.0	3.0	3.0	3.0	30	3.1	31	31	35	34	34	33	33	3.2	32	33	33	33	32	32	31	30	30	30
Count	30	30	31	30	31	29	28	31	31	31	30	31	31	31	31	30	31	31	31	30	31	29	30	30

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 83

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

Form adopted June 1946

(M3000)F1 ; ______ (Unit) January (Month), 1951 (Characteristic)

IONOSPHERIC DATA

National Bureau of Standards (Institution)

Observed at Washington, D. C.

Scaled by: Mc C.

Lat 38. 7°N, Long 77.1°W

75°W Mean Time

Calculated by: Mc C., A.C.K.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1										L	L	L	L	L	L	A								
2										L	L	L	L	L	L	L								
3										L	C	L	L	L	L	C								
4										Q	L	L	L	$(42)^H$	L	L								
5										Q^K	33^K	34^K	36^K	38^{HK}	38^K	38^K	L^K							
6										L^K	L	L	37	38	40	L								
7										Q	L	L	L	L	L	L								
8										L	L	L	L	L	L	Q								
9										L	L	L	L	40	L	L	L							
10										L	L	L	40	38	L	L	L							
11										L	H	L	L	40	4.0	4.1								
12										Q	Q	41	L	L	L	L								
13										L	L	43	L	L	L	L								
14										Q	41	L	40	4.0	L	L								
15										Q	L	39	41	L	L	L								
16										Q	L	39	40	40	L	L								
17										Q	L	L	L	L	L	L								
18										L	L	L	L	41	L	L	L							
19										L	L	41^H	39	L	L	L								
20										L	L	39^L	40	42	41	L								
21										L	L	L	L	$(38)^L$	L	L	Q							
22										L	L	39	41	39	L	L	L							
23										L	37	L	A	A	38	L	L							
24										L	L	L	L	L	L	L	Q							
25										Q	L	A	L	3.9	L	L	4.1							
26										41^H	40	L	L	L	L	L	L							
27										L^K	L^K	L^K	34^K	35^K	L^K	L^K	39^K							
28									4.3	41	4.2	L	37	39^H	L	L	Q							
29									L	L	4.1^H	38	L	L	39^H	L	L							
30									Q	L	L	L	39	L	L	L	Q							
31									Q	L	L	38	39	L	L	L	Q							
Median									—	—	40	39	39	39	40	—	—							
Count									1	2	6	10	13	15	6	2	2							

Sweep 1.0 Mc to 25.0 Mc In 0.25 min

Manual ☐ Automatic ☒

TABLE 84

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

Form adopted June 1946

IONOSPHERIC DATA

(M1500) E, ______ (Unit), January (Month), 1952 — (Characteristic)

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: Mc C.

Calculated by: Mc C., A.C.K.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									A	A	A	B	B	B	B	A	A							
2									3.5^{H}	$(4.1)^{B}$	4.2	A	4.1	A	4.2	4.1	B							
3									3.6	A	C	4.1	4.2	4.1	4.1	C	4.1^{H}							
4									3.8^{H}	B	A	A	4.4	4.4	4.1	4.3	4.2^{S}							
5									4.1^{K}	4.1^{K}	4.0^{K}	3.9^{K}	4.0^{K}	4.0^{K}	B^{K}	4.1^{K}	4.2^{K}							
6									3.5^{K}	B^{K}	4.2	4.2	$(3.8)^{A}$	4.1	4.3	$(4.3)^{A}$	A							
7									3.6	A	A	A	B	A	A	4.3	B							
8									3.8	4.0	4.2	4.2	4.1	4.0	B	3.8^{H}	3.9							
9									4.2	4.0	$(4.0)^{P}$	$(4.1)^{P}$	4.1	4.0	4.0	4.4	A							
10									A	4.0^{H}	A	A	B	B	B	4.1	B							
11									4.2	4.2	4.2	4.1^{H}	4.2	4.2	$(4.3)^{B}$	4.0	B							
12									S	4.0	A	A	4.0	4.1	4.1	B	4.0							
13									S	4.2	4.0	4.0	4.1^{H}	4.2	4.2	4.2	4.0^{H}							
14									4.2	4.3^{H}	4.0	4.2	4.2	4.1	4.1	4.2	4.3							
15									3.9	4.0^{H}	4.0	3.9	4.1	4.1	4.2	4.2	4.2							
16									4.3^{H}	4.3	A	4.0	3.7	4.1	4.3	4.2	B							
17									3.8^{H}	4.0	4.3	4.2	4.2	4.3	4.2	4.2	4.0							
18									3.8^{H}	4.1^{H}	A	4.2	A	4.1	4.1	$(4.0)^{B}$	B							
19									A	3.8^{F}	A	4.1	4.3	4.3^{H}	A	A	4.2^{H}							
20									4.2	4.3^{H}	A	4.2^{H}	4.2	4.2	B	4.1	4.1							
21									4.0	A	A	A	4.2	4.0	4.1	4.2	4.2							
22									4.1^{H}	A	3.9^{H}	4.1	4.2	4.0	4.0	$(4.2)^{A}$	4.2							
23									4.2	4.0	4.2	4.2	$(4.2)^{A}$	A	A	B	4.3							
24									3.9	4.1^{H}	A	4.0	4.1	4.0	4.1^{H}	3.8	4.0							
25									$(3.9)^{H}$	4.0	4.1	4.3	A	B	A	4.2	A							
26									4.0	4.0^{H}	4.0	4.1	4.2	4.1	4.2	4.1	4.1							
27									A^{K}	4.1^{K}	4.2^{K}	4.1^{K}	4.1^{K}	4.1^{K}	4.1^{K}	4.2^{K}	4.2^{K}	4.3^{K}						
28									4.0	4.2	3.9	4.0	4.2	4.3	4.0	4.0	3.7	4.0						
29									4.2	4.1	4.0	4.1	4.2	4.2	4.1	4.0	4.2							
30									3.6^{H}	4.2	4.2	4.2	4.3	4.1	B	4.0^{H}	3.9	4.2						
31									3.8^{H}	4.0	4.1	4.1	4.2	4.1	4.1	$(4.1)^{B}$	4.0	A						
Median									3.9	4.1	4.1	4.1	4.2	4.1	4.1	4.2	4.1	—						
Count									25	24	19	24	26	25	21	26	21	3						

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

5

Table 85

Ionospheric Storminess at Washington, D. C.

January 1952

Day	Ionospheric character* 00-12 GCT	Ionospheric character* 12-24 GCT	Principal storms Beginning GCT	Principal storms End GCT	Geomagnetic character** 00-12 GCT	Geomagnetic character** 12-24 GCT
1	2	1			4	3
2	1	1			2	2
3	2	2			2	2
4	1	1			2	3
5	1	5	0800	----	5	3
6	4	3	----	1500	4	3
7	3	1			2	3
8	3	1			3	2
9	3	2			2	3
10	3	2			3	4
11	1	2			4	3
12	3	1			4	4
13	2	1			4	5
14	2	2			4	4
15	2	2			4	4
16	2	1			3	2
17	2	1			2	2
18	0	1			1	1
19	1	1			1	1
20	2	3			1	1
21	2	1			1	1
22	2	1			1	2
23	1	3			3	4
24	1	2			2	3
25	1	2			3	2
26	2	3			1	1
27	2	4	1300	2300	3	4
28	2	3			4	2
29	2	3			2	4
30	2	2			3	2
31	2	2			1	2

*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, geomagnetic K-figures on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

----Dashes indicate continuing storm.

Table 86

Provisional Radio Propagation Quality Figures
(Including Comparisons with CRPL Warnings and Forecasts)
December 1951

Day	North Atlantic quality figure Half day GCT (1)	(2)	CRPL* Warning Half day GCT (1)	(2)	CRPL** Forecasts (J-reports)	North Pacific quality figure Half day GCT (1)	(2)	Geo-mag-netic K_{Ch} Half day GCT (1)	(2)
1	5	5						3	2
2	5	5						3	2
3	5	5						2	2
4	6	5						3	3
5	(4)	5						2	2
6	5	5						1	2
7	6	6						2	2
8	5	(4)		U				(5)	(4)
9	(3)	(3)	U	U				(4)	(4)
10	(3)	(3)	W	U	X			(4)	(4)
11	(3)	(4)	U	U	X			(4)	3
12	(3)	(4)	U	(U)	X			2	2
13	(4)	5	U		X	Insufficient data received		2	1
14	5	5						2	2
15	5	5						3	3
16	5	5						2	2
17	5	5						3	3
18	5	5						(4)	3
19	(4)	5						3	3
20	(4)	5	U					(4)	1
21	5	6			X			1	2
22	5	(4)			X			(4)	(4)
23	5	5			X			(4)	2
24	5	6						1	1
25	5	6						1	1
26	5	7						1	1
27	6	6						2	3
28	(4)	(3)	U	W				(5)	(4)
29	(4)	5	W	U				2	2
30	(4)	5						1	2
31	5	(4)						(4)	(4)

Score:	Warning N.A.	Warning N.P.	Forecast N.A.	Forecast N.P.
H	10		8	
(M)	5		0	
M	5		11	
G	42		37	
O	0		6	

*Broadcast on WWV, Washington, D.C. Times of warnings recorded to nearest half day as broadcast. ( ) broadcast for one-quarter day. Blanks signify N.

**In addition to dates marked X, the following were designated as probable disturbed days on forecast more than three or four days in advance of said dates: December 1, 2, 3.

Scales:
Quality Figures
(1)- Useless
(2)- Very poor
(3)- Poor
(4)- Poor to fair
5 - Fair
6 - Fair to good
7 - Good
8 - Very good
9 - Excellent

Geomagnetic K_{Ch} - 0 to 9, 9 representing the greatest disturbance; $K_{Ch} \geq 4$ indicates significant disturbance, enclosed in ( ) for emphasis.

Symbols:
W Disturbed conditions expected
U Unstable conditions expected
N No disturbance expected
X Probable disturbed date

Scoring:
H Storm ($Q \leq 4$) hit
(M) Storm severer than predicted
M Storm missed
G Good day forecast
O Overwarning

Scoring by half day according to following table:

	Quality Figure ≤3	4	5	≥6
W	H	H	O	O
U	(M)	H	H	O
N	M	M	G	G
X	H	H	O	O

Table 87a

Coronal observations at Climax, Colorado (5303A), east limb

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Jan. 1.7a	-	-	-	-	-	-	-	-	-	3	3	4	4	3	3	6	8	5	3	3	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.7a	2	2	-	-	-	-	-	-	3	3	4	3	3	3	4	5	5	3	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.7	-	-	-	-	-	3	3	3	3	3	3	3	4	4	3	5	3	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.7	-	-	-	-	-	2	2	2	2	2	3	3	3	4	4	5	3	3	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.7	-	-	-	-	-	-	-	-	-	-	-	-	-	2	[illegible]	3	9	18	14	15	12	5	5	3	2	-	-	-	-	-	-	-	-	-	-	-	-
9.8a	-	-	-	2	2	3	3	3	3	3	2	5	6	9	12	21	18	20	15	9	6	3	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-
11.7a	-	-	-	2	2	2	2	3	3	2	6	9	6	4	15	17	15	9	5	4	4	3	3	2	2	2	2	2	2	2	2	-	-	-	-	-	-
14.7	-	-	-	-	-	-	2	2	[illegible]	3	3	4	3	3	3	3	3	3	4	4	3	3	3	2	2	2	-	-	-	-	-	-	-	-	-	-	-
27.9	-	-	-	-	-	-	-	-	2	3	3	5	3	3	9	18	15	9	4	3	3	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-
28.7	-	-	-	-	-	-	-	-	-	-	3	3	3	3	5	12	18	10	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29.7	-	-	-	-	-	-	-	-	3	4	6	5	3	3	8	10	18	12	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30.7	-	-	-	-	-	-	-	3	3	5	3	3	3	4	6	10	6	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: Data for this month are of low reliability because of disturbances to the adjustments of the coronagraph.

Table 88a

Coronal observations at Climax, Colorado (6374A), east limb

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Jan. 1.7a	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	3	6	3	2	2	3	3	3	4	3	3	2	2	2	3	3	3	2	2	2	2	2
2.7a	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	2	2	2	3	5	3	3	3	3	2	2	2	2	2	2	2	2	2	2
4.7	2	3	3	3	2	2	2	2	2	-	-	-	-	-	-	2	4	3	3	3	3	3	3	3	4	3	2	3	2	2	2	2	2	2	3	4	2
5.7	2	3	2	2	-	-	-	-	-	2	-	-	-	-	2	3	5	3	3	3	4	5	5	7	6	5	3	3	3	2	2	2	2	2	2	3	2
8.7	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	6	9	6	3	6	3	2	3	4	2	2	2	2	2	2	2	-	-	-	-	2
9.8a	2	3	3	-	-	-	-	-	-	-	-	-	-	-	2	14	3	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
11.7a	2	3	3	3	2	2	2	-	-	-	-	-	-	-	5	10	2	5	2	2	3	3	3	3	2	2	-	-	-	-	-	-	-	2	2	2	2
14.7	2	2	2	2	-	-	-	-	-	-	-	-	2	3	2	6	8	3	2	2	2	2	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2
27.9	2	3	3	3	3	3	3	3	3	3	2	-	-	-	2	18	15	12	3	3	3	4	3	4	3	3	3	3	3	4	3	3	3	3	3	3	3
28.7	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	15	12	2	3	3	3	4	4	4	4	3	3	3	3	3	4	4	3	3	3	3
29.7	5	2	2	2	2	2	2	2	4	2	2	2	2	3	13	6	9	2	3	3	4	4	5	3	3	2	2	3	2	3	3	3	3	3	3	3	3
30.7	3	3	2	2	-	-	-	-	-	-	-	-	-	-	2	6	4	2	2	2	3	4	4	4	3	3	3	3	3	3	3	3	3	3	3	3	3

Table 89a

Coronal observations at Climax, Colorado (6702A), east limb

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Jan. 1.7a	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.7	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.7	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.7	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	4	5	5	5	4	3	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-
9.8a	-	-	-	-	-	2	2	2	2	2	2	2	3	3	3	6	6	6	3	3	3	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-
11.7a	-	-	-	-	-	2	2	2	2	2	2	2	2	3	5	5	5	3	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.7	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27.9	-	-	-	-	-	-	-	-	2	2	2	2	2	2	4	4	3	3	3	3	3	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-
28.7	-	-	-	-	-	-	-	-	-	2	2	2	2	3	3	3	4	4	2	2	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-
29.7	-	-	-	-	-	-	-	-	-	-	2	2	2	2	3	3	4	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30.7	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 87b

Coronal observations at Climax, Colorado (5303A), west limb

Date GCT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Jan. 1.7	–	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–
2.7	–	–	3	3	3	3	3	3	3	3	3	3	3	3	6	4	4	3	4	5	9	12	15	17	8	3	3	3	3	–	–	–	–	2	2	2	2
4.7a	–	–	–	2	2	2	2	2	2	2	2	2	2	2	3	2	2	2	2	3	4	6	4	4	3	3	3	2	2	3	3	2	2	–	–	–	–
5.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	3	3	4	12	9	5	3	3	2	3	2	–	–	–	–	–	–	–	–	–	–
8.7a	–	–	–	–	–	–	–	–	–	–	–	2	3	3	3	3	4	5	5	5	4	5	5	3	2	3	3	3	–	–	–	–	–	–	–	–	–
9.8a	–	–	–	–	2	2	3	3	3	3	3	3	3	4	6	9	12	9	5	6	5	3	3	3	2	2	2	2	–	–	–	–	–	–	–	–	–
11.7a	–	–	–	–	–	2	3	3	3	3	3	4	6	9	16	15	12	14	12	8	5	4	5	3	3	–	–	–	–	–	–	–	–	–	–	–	–
14.7	–	–	–	–	–	–	–	–	–	–	–	3	3	3	3	3	3	3	3	3	6	8	4	3	2	2	–	–	–	–	–	–	–	–	–	–	–
27.9	–	–	–	–	–	–	–	–	–	–	–	–	3	3	3	3	6	5	6	5	4	5	4	6	7	6	3	3	5	4	3	3	–	–	–	–	–
28.7	–	–	–	–	–	3	3	3	3	3	3	3	3	3	3	3	5	4	3	3	3	3	3	5	5	4	3	3	3	3	3	3	–	–	–	–	–
29.7	–	–	–	–	–	3	3	3	3	3	3	3	4	3	3	4	3	3	3	3	4	4	5	5	4	5	3	3	4	5	3	3	–	–	–	–	–
30.7	–	–	–	–	–	2	2	2	2	2	3	3	2	3	3	4	3	3	3	3	4	3	6	6	3	3	5	6	5	5	3	3	3	–	–	–	–

Table 88b

Coronal observations at Climax, Colorado (6374A), west limb

Date GCT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Jan. 1.7	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–
2.7	2	2	2	2	2	3	4	3	2	2	2	2	2	2	2	2	2	3	2	4	3	15	25	5	2	3	3	3	2	–	–	2	2	2	3	3	2
4.7a	2	2	2	2	2	2	2	2	2	3	2	2	–	–	–	–	–	–	2	2	2	3	6	2	2	3	3	3	2	–	2	2	3	3	2	2	2
5.7	2	2	2	2	–	–	–	–	–	–	–	–	–	2	2	2	2	2	2	3	5	2	3	2	2	2	2	2	2	2	2	2	2	3	2	2	2
8.7a	2	2	2	2	2	2	2	2	3	3	3	3	3	2	–	–	–	–	2	9	2	2	5	12	3	2	2	2	3	3	3	3	3	2	2	2	3
9.8a	3	3	3	3	3	3	3	3	3	2	2	2	2	2	2	2	7	3	2	2	4	5	3	3	3	3	3	2	3	2	2	2	3	3	3	3	2
11.7a	2	2	2	2	3	3	3	3	3	3	2	2	2	3	3	6	2	3	5	6	2	2	2	3	3	2	2	2	2	2	2	2	2	4	3	2	2
14.7	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	2	2	2	6	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
27.9	3	–	–	–	–	2	2	2	2	2	2	2	2	2	2	3	3	5	6	4	3	5	3	4	3	2	2	2	–	–	–	2	2	2	3	2	2
28.7	3	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2	2	2	2	3	4	8	5	2	2	–	–	–	–	2	2	2	2	2	2
29.7	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2	7	3	3	8	4	3	2	2	2	–	–	2	2	2	2	2	3	5	5
30.7	3	3	–	–	–	–	–	–	–	–	–	–	–	–	3	3	3	3	4	3	4	3	5	3	3	3	3	–	–	–	2	2	2	2	2	3	3

Table 89b

Coronal observations at Climax, Colorado (6702A), west limb

Date GCT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Jan. 1.7	–	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–
2.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2	2	2	2	2	2	2	–	–	–	–	–	–	–	–	–	–	–	–
4.7a	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2	2	2	2	2	2	–	–	–	–	–	–	–	–	–	–	–	–
5.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	3	3	3	3	2	2	2	–	–	–	–	–	–	–	–	–	–	–	–	–
8.7a	–	–	–	–	–	–	–	–	–	–	2	2	2	2	2	2	2	2	2	2	2	2	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–
9.8a	–	–	–	–	–	–	–	–	–	–	–	2	2	2	2	2	2	2	2	2	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
11.7a	–	–	–	–	–	–	–	–	2	2	2	2	3	3	3	3	2	2	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
14.7	–	–	–	–	–	–	–	–	–	–	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	–	–	–	–	–	–	–	–	–	–
27.9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	3	2	2	2	2	2	2	2	2	2	2	2	–	–	–	–	–
28.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2	2	2	2	2	2	2	2	–	–	–	–	–
29.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2	2	2	2	2	2	2	2	2	–	–	–	–	–	–
30.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2	2	2	2	2	2	2	2	–	–	–	–	–	–

Table 90a

Coronal observations at Sacramento Peak, New Mexico (5303A), east limb

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1951																																					
Oct. 1.8a	3	5	5	4	3	3	3	3	4	4	5	8	11	10	14	16	16	16	14	10	5	10	6	5	8	8	11	11	8	10	5	6	10	5	5	3	3
2.7	3	2	2	3	3	3	3	2	2	3	8	14	12	11	14	23	23	23	20	18	14	12	11	10	5	5	5	5	8	5	5	5	5	8	5	3	3
3.7	4	3	2	2	2	–	3	3	3	2	2	11	14	11	11	14	20	23	28	16	11	11	11	11	8	3	3	3	5	5	3	3	5	3	3	3	2
4.7	5	3	2	2	2	2	3	3	3	2	3	11	14	11	14	20	39	42	42	33	22	18	23	23	11	8	6	5	8	5	5	3	5	8	8	5	3
5.7	5	3	3	3	3	3	3	3	2	3	6	8	11	12	10	14	15	23	36	32	28	23	28	36	28	8	5	3	5	3	3	2	3	5	5	5	3
6.7	3	–	–	–	–	–	–	–	–	–	–	5	8	8	8	10	10	22	28	33	27	30	43	43	20	10	8	8	8	5	3	3	5	5	3	–	–
7.7	4	–	–	–	–	–	–	–	–	–	3	3	3	5	8	5	8	14	14	14	16	20	16	20	14	11	5	3	5	5	5	3	3	3	–	–	–
8.7	5	3	3	3	–	–	–	–	–	–	3	3	8	11	14	14	14	14	14	14	16	18	20	16	16	14	11	5	3	3	3	3	3	2	2	2	3
9.7	2	2	2	2	2	2	–	–	3	3	3	5	5	5	5	6	16	16	14	14	14	14	11	8	8	4	3	3	3	3	3	3	2	2	2	2	2
10.7	3	3	2	2	2	2	2	–	3	6	5	8	11	15	20	20	36	36	32	23	20	23	16	14	11	8	8	11	8	5	5	3	8	5	3	–	–
11.8	4	6	5	3	3	3	3	3	3	5	5	8	5	11	14	16	20	18	20	8	5	6	6	3	3	4	4	3	–	–	–	–	–	–	–	–	–
13.7a	3	4	3	3	–	–	3	3	8	8	5	5	5	8	14	20	23	28	32	16	11	8	6	4	3	3	3	3	2	2	2	–	–	–	–	–	–
16.8	2	5	4	5	5	5	5	4	3	8	5	5	6	8	5	11	20	11	10	11	8	5	3	3	4	3	3	3	–	–	–	–	–	–	–	–	–
17.7	2	3	3	3	5	8	5	5	8	11	6	5	5	5	8	16	16	12	11	10	6	5	5	5	5	5	4	4	3	3	–	–	–	–	–	–	–
20.8	4	3	3	3	3	11	8	6	5	5	3	8	11	14	20	16	16	18	18	11	5	5	5	6	6	5	5	4	–	–	–	–	–	–	–	–	–
23.7	–	3	2	3	11	15	15	11	5	5	11	14	16	18	16	16	18	16	14	11	15	18	20	11	11	11	6	3	3	5	5	6	5	5	5	3	2
24.7	3	3	3	5	6	6	6	8	8	8	10	11	16	11	11	16	16	18	16	14	16	28	23	16	14	11	5	3	5	4	5	5	5	4	4	3	3
25.7	3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
29.7	3	5	5	5	5	3	5	3	3	3	5	5	11	8	8	16	23	23	20	16	12	11	8	6	6	5	4	4	3	3	3	4	5	4	4	4	4

Table 91a

Coronal observations at Sacramento Peak, New Mexico (6374A), east limb

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1951																																					
Oct. 1.8a	3	2	2	2	3	2	2	2	–	2	2	3	2	3	5	2	3	3	4	4	5	4	–	–	2	2	2	2	2	2	2	2	2	3	3	2	2
2.7	4	3	3	3	2	3	3	4	3	2	2	2	3	2	2	3	3	14	8	5	5	3	5	3	3	2	–	2	2	3	3	3	3	4	3	3	2
3.7	3	3	2	2	2	3	5	2	3	3	3	3	5	2	–	3	4	23	16	14	2	3	3	3	3	3	2	–	–	–	3	2	2	2	2	2	–
4.7	5	3	3	3	2	2	3	3	2	3	5	3	2	2	3	5	5	23	23	8	–	–	5	5	8	3	3	3	2	5	5	3	3	3	3	2	–
5.7	2	4	2	3	2	2	3	2	2	2	2	–	3	2	3	5	5	16	16	8	5	3	3	8	5	–	–	–	–	5	3	3	3	3	3	2	3
6.7	5	5	3	3	4	5	4	2	2	3	2	3	2	3	10	5	16	16	8	8	16	14	23	8	2	–	–	–	3	8	6	5	3	3	4	4	3
7.7	3	–	–	–	–	–	–	–	–	–	–	–	3	5	8	11	11	14	11	8	10	8	3	5	4	3	2	2	–	3	5	3	2	2	3	2	–
8.7	–	–	3	5	3	3	–	–	–	–	3	3	5	–	3	4	11	16	14	3	8	10	3	–	8	8	3	3	3	5	5	2	2	2	2	2	–
9.7	–	–	–	–	–	–	–	–	–	–	–	–	2	2	2	3	8	6	5	3	5	3	4	–	5	5	3	2	3	4	3	3	3	2	2	2	2
10.7	2	3	3	4	4	2	3	2	2	3	3	5	8	5	3	16	16	14	11	8	8	8	5	5	8	14	5	4	5	3	5	4	3	3	4	4	3
11.8	3	2	3	2	3	3	2	2	3	5	3	2	2	3	2	3	3	14	16	3	3	5	5	3	5	4	4	2	3	3	3	3	3	3	3	3	3
13.7a	–	–	–	–	–	–	–	–	–	3	2	3	3	3	3	11	5	11	23	–	2	3	2	2	5	6	5	4	5	3	3	2	2	2	2	3	–
16.8	–	2	2	2	2	–	–	–	–	–	–	–	–	–	5	4	14	2	2	–	–	–	–	–	5	8	6	4	5	5	3	3	2	2	2	2	–
17.7	–	–	2	2	3	–	–	2	2	–	–	–	–	–	11	11	5	3	2	–	–	2	2	3	5	8	6	6	5	5	5	5	3	3	3	2	–
20.8	2	3	3	3	3	2	2	3	2	2	–	–	–	5	3	2	3	3	5	3	2	2	2	3	3	3	5	5	8	6	4	2	3	2	3	3	3
23.7	2	3	5	3	3	2	–	–	–	–	–	2	3	6	6	4	8	3	4	4	5	11	8	3	3	4	5	4	5	4	2	–	–	–	4	3	3
24.7	3	3	3	3	3	3	3	3	2	–	2	3	4	3	3	–	11	11	5	5	10	11	14	2	2	2	5	8	5	3	–	2	–	–	2	2	3
25.7	5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
29.7	3	5	5	2	3	3	3	3	3	3	3	2	–	–	–	3	8	5	8	5	5	8	10	5	3	2	2	2	2	5	2	2	3	2	3	3	2

Table 92a

Coronal observations at Sacramento Peak, New Mexico (6702A), east limb

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1951																																					
Oct. 1.8a	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
2.7	–	–	–	–	–	–	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	–	–	–	–	–	–	2	2	2	2	2	2	2	2	2	2
3.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	3	3	3	3	2	3	2	–	–	2	2	–	–	–	–	–	–	–	–	–	–	–
4.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	5	5	4	2	–	3	2	2	–	–	–	–	–	–	–	–	–	–	–	–	–
5.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	3	3	3	2	2	2	2	2	–	–	2	–	–	–	–	–	–	–	–	–	–
6.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	4	4	4	5	4	3	2	–	–	–	–	–	–	–	–	–	–	–
7.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2	2	2	3	3	3	3	3	2	2	–	–	–	–	–	–	–	–	–	–
8.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	2	2	3	2	3	3	2	–	–	–	–	–	–	–	–	–	–	–	–	–
9.7	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	–	–	–	–	–	–	–	–	–
10.7	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2	2	2	3	3	2	2	2	2	2	2	2	2	–	–	–	–	–	–	–	–	–	–
11.8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	4	4	4	2	2	–	3	–	–	–	2	2	2	–	–	–	–	–	–	–	–	–
13.7a	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2	3	3	2	2	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
16.8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	–	3	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
17.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	3	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
20.8	–	–	–	–	–	–	–	–	–	–	2	2	3	2	2	2	2	2	2	2	3	2	2	3	2	2	2	2	–	–	–	–	–	–	–	–	–
23.7	–	–	–	–	–	–	–	–	–	–	–	–	2	2	2	3	2	3	2	2	2	2	2	2	–	–	–	–	–	–	–	–	–	–	–	–	–
24.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	3	3	3	3	3	2	2	2	–	–	–	–	–	–	–	–	–	–	–	–
25.7	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
29.7	2	–	–	–	–	–	2	–	–	–	–	–	–	2	2	2	3	3	2	2	3	2	2	3	3	3	–	–	–	–	–	–	–	–	–	–	–

Table 90b

Coronal observations at Sacramento Peak, New Mexico (5303A), west limb

Date GCT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1951																																					
Oct. 1.8	3	3	3	3	3	4	5	5	3	2	3	3	3	5	5	5	4	5	14	14	X	X	X	X	X	X	11	8	6	8	8	8	6	5	3	3	3
2.7	3	3	2	2	2	-	-	-	3	3	3	5	5	6	6	6	5	5	11	20	28	23	20	16	15	11	11	11	11	10	8	8	6	5	4	3	3
3.7	2	2	2	2	2	2	-	-	-	-	-	-	3	3	3	3	3	3	11	14	16	20	16	12	11	10	8	8	8	11	14	11	8	5	5	4	4
4.7	3	3	2	2	-	-	-	-	3	3	3	3	5	8	8	5	5	6	11	16	28	23	20	11	16	11	11	8	5	8	11	11	11	11	3	5	5
5.7	3	3	3	3	-	-	-	-	5	5	3	3	8	8	8	6	6	5	5	16	23	32	28	16	14	14	14	10	8	5	11	12	14	11	5	6	5
6.7	-	-	-	-	-	-	-	-	-	-	-	-	3	8	8	8	6	8	14	20	28	28	28	23	16	14	18	10	11	8	10	11	20	18	16	5	3
7.7	-	-	-	-	-	-	-	-	3	5	5	5	5	6	6	6	6	8	14	16	32	32	28	23	23	18	14	14	12	8	10	10	14	12	8	5	4
8.7	3	-	-	-	-	-	-	-	-	-	3	3	5	5	5	5	16	14	14	14	16	23	20	16	20	20	16	11	11	8	5	5	11	11	10	8	5
9.7	2	-	-	-	-	-	3	3	3	3	3	3	3	8	8	8	11	14	11	12	14	20	20	14	16	14	14	10	8	8	8	5	8	5	5	3	2
10.7	-	-	-	-	3	5	8	11	8	6	5	6	8	8	11	14	16	16	18	20	20	23	32	20	16	23	20	16	16	14	11	8	8	6	8	5	3
11.8	-	-	-	-	-	-	5	8	4	4	4	4	5	11	14	11	12	12	14	14	11	14	15	14	14	16	15	14	8	8	5	6	6	5	3	3	4
13.7a	-	-	-	-	3	3	3	4	3	3	3	3	3	5	5	6	11	14	16	16	11	10	8	8	8	6	6	5	3	3	3	3	4	5	4	3	3
16.8	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	3	11	14	11	14	20	20	20	20	16	8	5	8	8	5	5	5	5	3	3	3	2
17.7a	-	-	-	-	-	-	-	-	-	3	3	3	3	3	3	5	6	11	11	11	14	14	14	11	11	11	8	8	6	5	5	4	4	3	3	2	2
20.8	-	-	-	-	-	-	-	-	-	-	3	3	3	3	5	11	14	11	14	14	14	20	16	12	3	8	8	5	4	4	5	4	4	3	3	3	4
23.7	2	-	-	-	-	-	-	-	2	2	3	3	4	5	11	12	14	15	16	16	20	28	28	23	14	11	10	6	5	5	4	3	2	-	-	-	-
24.7	3	-	-	-	-	-	-	-	-	-	3	3	3	3	8	10	10	12	12	14	28	41	39	23	14	11	8	6	5	5	5	5	4	3	3	3	3
25.7a	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	11	12	12	8	8	6	3	3	5	5	4	3	3
29.7a	4	3	3	3	3	3	3	3	3	3	3	3	3	5	5	4	4	5	5	8	11	11	11	11	10	11	11	8	8	8	8	10	11	6	5	4	3

Table 91b

Coronal observations at Sacramento Peak, New Mexico (6374A), west limb

Date GCT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1951																																					
Oct. 1.8	2	3	3	3	2	2	2	2	-	-	2	3	3	4	5	5	4	3	3	X	X	X	X	X	2	4	4	3	3	3	3	2	2	3	3	3	3
2.7	2	2	3	2	2	-	-	-	3	3	4	4	5	4	5	4	3	3	3	3	3	4	8	5	4	3	-	-	-	2	2	2	2	3	3	3	4
3.7	-	-	-	-	-	-	-	-	-	5	3	3	5	4	3	3	2	-	-	-	-	3	3	5	5	-	-	-	-	-	-	-	-	3	3	5	3
4.7	-	3	3	2	-	-	2	-	3	3	8	6	11	6	6	5	2	-	-	3	5	-	5	16	-	-	-	3	-	2	3	3	3	3	3	3	5
5.7	3	2	2	2	2	2	-	-	3	5	5	8	5	5	4	3	-	-	-	5	8	5	-	11	14	-	-	-	-	-	-	-	-	3	2	3	2
6.7	3	3	3	3	-	-	-	-	3	3	5	8	8	6	4	3	5	3	3	3	20	23	3	-	3	3	-	-	-	-	-	3	3	3	3	3	5
7.7	-	-	-	2	-	-	2	-	-	-	3	2	2	3	3	2	2	3	3	5	14	16	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.7	-	-	-	2	2	-	-	-	-	2	3	2	2	2	-	3	3	-	-	-	14	16	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.7	2	2	2	2	3	2	2	2	2	3	2	2	2	2	-	-	-	5	2	2	2	3	3	2	3	-	-	-	-	-	-	-	-	-	-	-	-
10.7	3	4	4	4	3	2	2	2	2	2	3	3	4	3	2	2	2	8	5	5	3	3	3	5	5	3	3	2	-	-	-	-	3	3	3	3	2
11.8	3	-	-	-	-	-	3	2	-	-	3	3	3	2	-	5	2	2	3	3	5	3	3	5	3	3	5	3	3	2	-	-	3	3	3	5	3
13.7a	-	3	2	2	2	2	2	-	-	-	-	-	-	-	-	-	3	-	-	8	5	-	-	8	3	2	-	3	3	2	2	-	-	2	-	-	-
16.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	11	-	8	11	-	5	-	-	-	3	3	5	4	2	2	3	3	2	-	-
17.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	2	3	5	4	3	8	4	3	3	2	-	-	3	3	2	3	2	2	3	3	3	-
20.8	3	2	2	2	2	-	3	5	5	5	2	2	3	3	-	2	5	11	8	3	14	16	12	12	8	5	3	2	2	2	2	2	2	3	3	2	2
23.7	3	3	3	2	-	-	3	3	4	5	4	5	6	5	5	4	5	5	8	6	3	5	5	4	5	5	8	4	3	2	2	3	3	5	4	3	2
24.7	3	2	2	2	-	2	2	2	3	3	3	3	2	2	3	3	3	4	4	6	8	14	18	5	4	3	3	5	3	3	2	2	3	2	3	2	3
25.7a	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	8	8	6	5	5	4	3	4	2	3	3	4	5
29.7a	2	3	2	2	5	2	-	-	-	2	2	3	5	3	2	2	3	2	2	3	5	6	4	3	-	-	-	2	2	2	3	3	3	2	3	2	3

Table 92b

Coronal observations at Sacramento Peak, New Mexico (6702A), west limb

Date GCT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1951																																					
Oct. 1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-
2.7	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-
4.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	2	2	-	-	-	-	-	-	-	-	-	-	-
5.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-
6.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	5	6	5	4	4	3	4	3	2	2	-	-	-	-	-	-	-
7.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	5	3	2	3	3	-	-	-	-	-	-	-	-	-	-
8.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	3	5	3	3	3	3	-	-	-	-	-	-	-	-	-	-
9.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-
10.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	3	3	3	3	2	2	2	2	2	2	3	2	-
11.8	-	-	-	-	-	-	-	3	2	-	-	2	2	2	3	3	2	-	3	-	2	2	2	2	2	3	5	5	4	3	3	2	2	-	-	-	-
13.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2	2	-	-	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-
16.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	2	3	3	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-
17.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20.8	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	3	3	3	3	3	3	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-
23.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	3	4	4	4	3	2	2	-	-	-	-	-	-	-	-	-	-	-
24.7	-	-	-	-	-	-	-	-	-	-	-	2	2	2	3	3	3	2	2	2	3	5	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-
25.7a	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	3	3	3	2	2	2	2	-	-	2	2	2	2
29.7a	-	-	-	-	-	-	-	-	-	-	3	3	2	2	2	3	-	-	2	-	-	2	2	2	2	3	2	2	2	2	3	2	2	3	2	2	2

Table 93a

Coronal observations at Sacramento Peak, New Mexico (5303A), east limb

Date GCT	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1951																																					
Nov. 1.7	5	4	4	4	3	2	3	3	3	3	5	6	6	8	11	15	23	28	36	20	28	36	23	20	12	14	8	6	5	3	3	2	3	3	3	3	3
2.7	2	3	3	3	5	4	4	4	3	4	5	5	5	5	6	11	12	18	16	16	20	20	22	23	18	11	5	8	5	5	5	5	4	3	3	5	4
3.8	3	3	3	3	5	5	3	3	3	2	3	3	5	5	5	8	14	16	18	14	28	28	23	28	28	22	8	6	3	2	2	2	2	–	–	–	–
4.7	5	5	5	4	3	3	3	3	3	3	5	6	6	8	14	16	22	28	20	16	28	23	20	18	18	15	8	5	5	5	3	3	3	3	3	2	2
5.8	4	5	5	5	8	5	5	6	5	5	5	5	5	5	5	5	16	16	8	8	11	11	11	8	8	8	5	5	5	5	8	8	8	8	11	11	10
6.7	4	5	4	3	4	3	3	4	4	4	5	5	6	8	11	16	23	36	20	8	10	14	11	12	11	8	5	5	4	3	3	3	3	3	3	3	2
7.7	4	5	4	3	3	3	2	3	3	3	5	10	12	12	14	16	16	32	23	8	5	5	6	5	5	4	3	3	3	3	3	3	3	3	2	2	2
8.8	3	3	3	3	3	3	3	3	3	3	5	5	8	11	14	14	12	14	16	5	5	6	6	8	6	5	5	6	3	3	3	3	4	5	5	5	5
9.7	5	5	5	5	5	4	4	5	5	5	5	8	8	10	11	14	11	12	14	11	8	5	5	5	5	5	5	5	3	4	5	5	5	5	5	5	4
12.7	3	4	4	5	5	4	5	10	10	8	11	11	11	11	12	12	12	14	11	8	5	3	3	5	4	4	3	3	3	3	5	4	3	3	3	3	3
13.9a	–	3	3	3	3	3	3	3	3	3	5	5	5	3	3	3	5	5	10	3	3	3	3	3	2	2	2	2	3	3	3	3	3	3	3	3	3
14.8	3	3	3	4	8	8	8	8	11	6	8	8	11	16	15	16	16	23	32	11	8	5	3	3	3	3	3	3	5	5	6	5	4	3	3	3	4
15.7	3	3	3	4	5	11	11	11	11	11	5	8	11	14	16	18	28	32	23	11	5	5	5	4	3	4	4	3	3	3	3	3	3	3	3	3	3
18.8	3	3	3	3	5	6	11	12	8	5	11	14	16	16	20	20	16	16	16	14	8	8	6	8	6	5	5	5	4	4	4	3	3	3	3	3	3
19.8	2	3	3	3	4	5	11	14	12	8	14	16	20	20	20	16	16	16	11	11	11	12	14	11	11	5	5	5	5	5	5	5	3	3	3	2	2
20.7	3	3	3	3	4	5	8	11	8	5	8	11	14	14	11	11	14	11	11	14	14	16	15	14	8	5	5	3	3	3	5	3	3	3	3	3	3
26.7a	3	4	5	4	4	4	3	6	5	5	8	8	6	8	12	26	41	26	26	16	14	10	11	8	5	6	8	5	5	4	4	5	5	5	5	5	4
27.7	5	5	5	3	3	3	5	5	5	6	8	8	6	11	14	28	28	23	28	16	16	16	16	14	11	8	8	8	6	6	8	8	6	5	3	3	3
28.9	5	3	3	3	3	3	3	4	3	3	5	5	5	6	11	16	14	14	14	14	20	23	18	16	15	11	12	11	8	5	4	5	4	4	5	5	5
30.8	3	3	3	3	3	3	3	3	3	2	3	3	3	5	6	8	8	11	14	20	32	36	28	28	23	14	11	11	8	5	8	8	5	3	3	3	3

Table 94a

Coronal observations at Sacramento Peak, New Mexico, (6374A), east limb

Date GCT	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1951																																					
Nov. 1.7	5	5	4	4	3	4	4	3	3	5	4	3	2	2	2	2	3	5	8	5	8	11	8	6	8	5	6	6	5	8	4	4	3	2	2	2	2
2.7	4	5	5	2	2	3	3	2	3	2	2	3	3	3	3	4	3	3	2	8	11	14	11	3	2	11	6	6	5	5	6	4	4	2	2	2	2
3.8	2	3	3	4	3	3	3	3	2	–	–	–	3	3	3	3	3	2	2	20	23	8	8	5	5	10	5	8	8	6	5	4	4	3	2	2	2
4.7	2	3	4	4	3	3	2	3	–	2	–	3	3	5	5	3	5	14	8	8	11	3	4	2	14	11	8	5	11	14	6	5	3	2	2	–	–
5.8	–	2	2	2	2	2	2	3	3	3	5	5	3	3	3	3	10	11	5	5	4	3	2	–	4	5	5	4	5	4	4	3	3	3	3	3	3
6.7	2	3	5	3	2	3	3	2	3	3	3	5	3	4	4	5	8	12	8	8	5	5	4	3	5	8	4	4	5	4	3	3	2	2	2	–	–
7.7	2	4	5	3	2	3	3	2	4	4	3	–	2	–	–	–	–	14	11	3	3	5	3	3	3	5	4	4	3	3	4	3	2	2	–	–	–
8.8	–	–	–	–	–	2	3	2	2	–	–	–	–	–	–	2	2	2	5	–	–	–	–	–	–	–	2	3	3	2	3	–	2	–	–	–	2
9.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	3	3	4	4	3	3	3	2	2	–	2
12.7	2	3	3	4	3	2	2	2	–	–	–	–	–	–	–	2	2	2	2	3	3	3	3	4	3	5	6	6	5	4	4	2	2	2	2	2	2
13.9a	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	2	3	4	2	2	2	2	2	3	2	3	3	4	3	3	2	3	2	3	–	–
14.8	3	2	2	5	2	3	2	2	–	–	–	–	–	–	2	14	3	5	14	14	5	4	4	4	5	4	6	5	3	3	3	2	2	2	2	–	2
15.7	3	3	3	2	3	2	2	–	–	–	–	–	–	–	2	8	11	11	14	11	3	–	3	–	–	2	5	6	8	5	3	3	3	3	4	2	2
18.8	3	2	3	3	3	2	–	–	–	–	–	–	–	–	2	4	5	4	6	5	5	8	5	4	3	2	3	3	3	2	2	3	3	2	2	3	2
19.8	2	3	3	3	3	2	2	3	2	–	–	–	–	–	3	5	6	5	3	5	8	14	14	3	3	–	–	–	–	–	3	2	2	2	2	–	–
20.7	–	3	3	2	2	3	2	2	2	–	–	–	–	3	2	3	5	5	3	8	5	16	11	–	–	–	–	–	–	–	2	2	2	2	2	2	3
26.7a	5	3	3	2	2	2	2	2	3	2	3	2	2	2	2	23	20	10	2	–	2	3	2	3	3	2	–	4	3	2	2	2	3	3	2	3	3
27.7	5	4	8	5	5	5	4	3	3	3	3	2	–	–	3	14	8	4	2	–	–	–	2	–	2	3	8	8	6	3	3	3	3	2	2	2	2
28.9	5	4	3	5	4	2	2	2	2	3	5	2	–	2	3	8	5	4	2	3	2	3	5	2	–	–	2	11	14	8	5	5	4	4	4	4	2
30.8	2	–	3	2	3	–	–	–	–	–	–	2	2	–	2	3	3	2	3	2	2	3	6	2	3	3	3	3	4	5	3	2	2	2	–	–	–

Table 95a

Coronal observations at Sacramento Peak, New Mexico (6702A), east limb

Date GCT	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1951																																					
Nov. 1.7	2	2	–	–	–	–	–	2	2	2	–	–	2	2	3	4	5	4	5	5	5	4	4	4	3	3	3	2	–	–	–	–	–	–	–	–	–
2.7	–	2	2	2	2	2	2	2	2	2	2	3	3	2	3	3	3	4	3	3	4	5	5	6	5	4	3	2	–	–	–	–	–	–	–	–	–
3.8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2	3	5	5	4	4	5	3	3	2	–	–	–	–	–	–	–	–	–
4.7	2	–	–	–	–	–	–	–	–	–	2	3	2	2	2	3	3	3	2	3	5	5	3	4	4	4	3	2	2	2	2	2	2	2	2	2	2
5.8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2	3	3	2	2	2	2	2	–	–	–	–	–	–	–	–	–
6.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	4	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
7.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	3	2	–	–	–	–	–	–	–	–	–	3	3	3	2	2	–	–	–	–
8.8	–	–	–	–	–	2	–	–	–	2	–	–	2	2	3	3	3	2	3	2	3	2	2	2	–	2	–	–	–	–	–	–	–	–	–	–	–
9.7	–	–	–	–	–	–	–	–	–	–	3	3	3	2	2	3	4	4	4	2	3	3	3	2	2	2	2	3	–	–	–	–	–	–	–	–	–
12.7	2	2	2	2	2	3	2	2	2	2	2	2	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	–	–	–	–	–	–	–	–	–	–
13.9a	–	–	–	–	–	–	–	–	–	–	–	–	2	–	3	2	2	3	3	2	2	2	3	3	3	2	2	2	–	–	–	–	–	–	–	–	–
14.8	–	–	–	–	2	2	2	2	2	3	2	2	2	2	2	3	3	3	3	2	2	2	–	–	2	2	2	–	–	–	–	–	–	–	–	–	–
15.7	–	–	–	2	2	3	3	2	2	2	3	3	3	3	3	3	4	4	4	2	2	2	2	2	–	–	–	–	–	–	–	–	–	–	–	–	–
18.8	–	–	–	–	–	–	–	–	–	–	–	2	2	2	3	3	2	3	2	2	2	2	–	2	2	2	2	2	3	2	2	2	2	–	–	–	–
19.8	–	2	2	2	2	2	–	–	–	2	2	2	2	3	3	2	2	2	2	3	3	2	2	2	2	2	2	–	–	–	–	–	–	–	–	–	–
20.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2	2	2	2	2	2	2	2	–	–	–	–	–	–	–	–	–
26.7a	2	2	2	3	2	3	2	3	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	2	2	2	2	–	–	–	–	–	–	–	–	–
27.7	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	4	3	2	3	2	2	2	2	2	2	2	2	2	2	2	2	2
28.9	–	–	–	–	2	3	3	2	2	2	2	3	3	2	–	3	3	3	2	3	3	3	3	4	2	2	2	2	2	2	–	–	2	2	–	2	2
30.8	2	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2	–	–	2	3	5	4	4	4	4	4	2	2	–	–	2	–	–	–	–	–	2

Table 93b

Coronal observati..s at Sacramento Peak, New Mexico (5303A), west limb

Date	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1951																																					
Nov. 1.7	3	3	3	3	5	5	4	4	5	4	5	5	5	5	4	5	5	6	6	14	18	36	20	20	18	18	16	11	11	14	15	18	20	18	16	5	5
2.7	4	5	5	5	4	5	5	5	4	4	5	4	5	6	5	5	5	5	4	8	20	39	23	28	20	23	14	8	5	8	11	14	15	14	11	3	2
3.8	-	-	-	-	-	-	-	-	2	2	-	-	-	-	-	-	-	8	10	10	25	40	38	28	20	18	20	14	8	10	11	16	20	15	10	5	3
4.7	2	2	3	3	3	3	5	3	3	3	5	5	5	8	8	6	6	8	12	14	38	44	38	30	28	28	25	20	14	11	14	15	16	14	11	5	5
5.8a	10	8	8	8	8	8	6	6	6	6	5	5	5	8	8	8	5	5	5	8	8	10	11	10	8	14	14	12	11	8	5	5	11	11	6	5	4
6.7	2	3	3	3	3	2	3	4	5	5	5	5	5	8	11	11	20	20	16	14	11	14	16	16	16	16	16	14	14	8	11	12	14	10	8	5	4
7.7	2	3	3	3	3	4	4	3	3	5	5	5	5	8	10	15	38	33	15	11	11	20	16	14	11	11	23	16	14	8	11	12	14	8	5	4	4
8.8	5	5	5	4	5	5	5	5	5	5	5	5	5	5	6	8	16	23	23	16	11	16	16	11	5	11	11	8	8	6	8	8	6	6	5	4	3
9.7	4	5	5	5	5	5	5	3	3	3	5	5	6	6	8	5	14	16	18	8	6	6	6	5	5	8	8	6	5	5	5	6	8	8	6	5	5
12.7	3	3	3	3	3	3	3	3	3	3	4	5	5	6	6	10	11	11	11	16	16	20	23	20	14	5	8	6	6	5	5	4	4	3	2	2	3
13.9	3	3	3	2	2	3	4	4	4	4	5	5	6	5	5	5	5	6	8	8	11	14	12	11	8	8	6	3	5	5	3	3	3	3	2	2	-
14.8	4	3	3	3	2	2	3	3	5	6	5	11	11	11	11	14	15	16	16	11	14	20	23	20	16	8	8	8	8	5	5	5	4	4	3	3	3
15.7	3	3	2	2	2	2	3	3	3	3	8	14	15	14	16	20	20	20	20	14	12	12	11	14	11	6	5	5	6	5	5	4	3	3	4	3	3
18.8	3	3	3	3	3	3	3	3	3	3	3	5	5	8	16	23	20	23	28	28	28	32	28	16	16	11	5	3	4	4	3	3	3	3	3	3	3
19.8	2	2	2	2	2	2	2	3	3	3	3	3	5	8	11	14	14	16	20	23	14	28	28	28	16	12	8	5	3	3	3	3	3	3	3	3	2
20.7	3	3	3	3	3	3	3	3	3	3	3	3	3	5	6	6	5	5	5	10	11	14	14	14	11	8	8	5	3	3	3	3	5	5	5	3	3
26.7	4	4	3	4	5	5	5	5	4	5	5	5	5	5	5	5	5	5	5	12	11	12	16	14	11	8	8	8	8	6	8	6	5	5	4	4	3
27.7	3	3	3	3	3	3	3	3	3	3	3	3	4	4	5	4	5	6	6	16	23	20	20	16	14	12	11	11	11	11	6	5	5	5	5	5	5
28.9	5	3	3	3	3	3	3	3	3	3	3	5	5	5	4	4	4	4	4	14	20	32	36	32	18	14	11	8	5	5	5	3	3	3	3	5	5
30.8	3	3	2	3	3	4	4	4	3	3	3	3	4	5	4	5	5	11	11	16	23	16	20	28	28	16	11	11	5	5	6	4	5	3	3	3	3

Table 94b

Coronal observations at Sacramento Peak, New Mexico (6374A), west limb

Date	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1951																																					
Nov 1.7	2	3	2	2	2	3	-	-	-	-	4	5	5	6	6	4	2	2	2	6	16	20	3	3	-	-	-	-	-	-	-	-	-	-	3	3	5
2.7	2	2	2	3	-	2	2	-	-	2	3	3	5	5	3	5	3	3	4	8	20	14	5	-	2	3	-	-	-	-	-	-	3	3	3	3	3
3.8	2	2	2	3	2	-	-	-	3	2	4	3	5	4	4	4	5	4	3	-	11	14	8	-	-	-	2	-	-	-	2	-	2	2	3	3	2
4.7	-	3	5	4	4	3	3	2	2	3	5	8	10	8	5	5	12	10	3	3	11	11	4	3	-	2	2	3	2	-	-	-	-	2	3	3	3
5.8a	3	3	3	3	2	2	2	2	2	2	2	2	3	2	3	3	8	5	4	2	3	5	2	-	3	-	-	-	-	-	-	-	-	-	-	-	-
6.7	-	2	3	2	2	2	-	-	-	-	-	-	3	2	-	-	8	14	8	8	11	8	8	2	2	-	-	-	-	-	-	2	3	2	2	2	2
7.7	-	2	2	2	2	3	3	2	2	2	-	3	3	-	-	-	20	16	5	5	14	8	5	3	-	3	3	-	-	-	-	-	2	2	2	2	2
8.8	2	2	-	2	2	-	-	-	-	-	-	-	-	-	-	-	20	16	14	8	8	12	8	3	-	2	3	2	-	-	-	-	-	-	-	-	-
9.7	2	2	3	2	3	-	-	-	-	2	-	-	-	-	-	-	11	16	11	5	5	8	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.7	2	2	2	2	2	2	-	-	-	2	-	2	2	2	3	3	5	3	2	-	-	3	5	-	-	-	-	2	2	2	2	-	-	-	-	-	2
13.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	2	2	-	-	-	-	-	-	-	2	2	2	2	2	2	-	-	2	2	-
14.8	2	3	3	4	2	2	2	3	2	4	5	5	4	4	2	3	3	2	2	2	-	-	3	-	2	2	2	3	3	3	4	3	2	3	2	2	3
15.7	2	2	3	3	2	2	2	2	2	3	8	8	5	5	8	5	11	8	8	4	-	-	-	-	-	-	3	3	2	3	2	2	2	2	2	2	3
18.8	2	2	3	5	2	3	2	3	3	4	5	8	11	8	8	5	4	5	8	16	8	16	3	2	5	3	4	4	4	4	3	3	3	4	4	2	3
19.8	-	2	3	3	2	3	2	2	3	3	3	5	6	5	5	5	4	4	3	11	14	11	8	5	5	5	5	4	3	3	3	2	4	3	3	3	2
20.7	3	-	-	-	-	2	-	-	2	2	3	4	3	2	3	2	3	5	4	2	3	5	8	5	2	2	2	2	3	2	2	2	2	-	3	-	-
26.7	3	3	3	3	3	2	3	3	3	3	5	5	5	6	5	2	3	3	3	3	3	8	11	3	2	2	2	2	2	3	3	4	5	4	4	5	5
27.7	2	3	2	3	2	2	-	-	-	2	5	4	8	6	6	6	6	6	8	8	5	3	5	4	4	2	-	-	-	2	3	3	3	4	5	5	5
28.9	2	3	3	3	3	2	2	3	2	3	8	8	10	6	10	11	5	5	5	5	14	8	5	5	3	3	2	-	-	3	4	8	4	4	5	6	5
30.8	-	-	-	-	2	2	-	-	-	-	3	2	3	3	3	3	10	3	2	14	11	11	8	-	-	-	-	-	-	-	2	2	2	-	2	2	2

Table 95b

Coronal observations at Sacramento Peak, New Mexico (6702A), west limb

Date	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1951																																					
Nov. 1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	3	3	2	2	3	2	2	2	2	3	3	2	2
2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	4	4	5	3	3	3	2	3	2	2	2	2	2	2	2	-
3.8	-	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	2	2	3	3	3	4	4	2	2	-	-	-	-	-	-	-	-	-
4.7	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	8	8	5	4	4	3	2	2	3	3	4	4	3	2	2	2
5.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	2	3	3	3	3	3	3	2	2	-	-	-	-	-	-	-	-
6.7	-	-	-	-	-	-	-	-	-	-	2	3	2	-	2	3	-	3	3	2	3	2	2	2	2	2	3	3	2	2	2	3	2	-	-	-	-
7.7	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4	3	3	2	2	2	2	2	2	3	4	4	5	3	2	2	2	2	-	3	-
8.8	-	-	-	3	3	2	3	2	2	2	2	2	2	2	3	3	3	4	4	2	2	2	2	2	-	-	2	3	3	2	2	2	2	-	-	-	-
9.7	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	-	-	-	-	-	-	-	-	-	-	-
12.7	-	-	-	-	-	-	-	-	-	-	-	2	2	2	3	2	3	3	2	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
13.9	-	2	2	2	2	2	2	3	2	2	2	2	3	3	3	3	2	2	2	2	3	3	3	2	3	3	2	2	-	-	-	-	-	-	-	-	-
14.8	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	3	3	3	2	2	2	3	3	3	2	2	-	-	-	-	-	-	-	-	-	-	-
15.7	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	4	4	4	3	3	3	2	3	3	2	2	2	3	2	2	2	2	2	2	2	2	-
18.8	-	2	2	2	-	-	-	-	-	-	-	2	2	2	3	3	4	4	4	2	3	3	3	2	2	2	-	-	-	-	-	-	-	-	-	-	-
19.8	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	3	3	2	2	3	2	2	2	2	2	2	3	2	3	2	2	-	-	-	-
20.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	-	2	2	-	-	-	-	-	-	-	-	-	-
26.7a	-	-	-	-	-	-	-	-	-	-	3	2	2	2	2	2	2	-	-	2	3	3	3	2	3	3	3	3	3	2	2	2	3	2	2	-	2
27.7	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	2	2	3	2	2	3	2	2	2	2	3	2	2	2	2
28.9	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	2	3	3	5	5	4	3	-	3	-	-	-	-	-	-	-	-	-
30.8	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	4	3	4	5	4	3	3	3	3	2	2	2	2	2	-	-	2

Table 96a

Coronal observations at Sacramento Peak, New Mexico (5303A), east limb

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1951 Dec. 1.9	3	2	2	2	2	2	2	–	–	2	2	2	3	4	7	10	20	15	12	18	28	28	20	25	20	14	8	6	4	3	4	5	4	3	2	2	2
2.7	2	5	4	4	3	3	3	3	3	3	4	3	3	8	12	14	16	15	13	20	25	20	15	17	15	15	10	5	3	3	3	4	5	3	2	2	2
3.7	2	3	3	3	3	3	3	3	2	2	3	3	4	5	10	14	15	14	8	8	9	7	8	14	12	4	5	4	3	3	3	3	4	5	4	2	2
10.8a	4	5	5	5	5	4	4	4	4	4	5	5	5	5	8	11	10	8	6	4	4	3	3	3	4	3	3	3	3	3	4	4	3	3	3	3	3
14.9	4	4	5	4	5	4	4	7	7	8	7	6	10	10	14	20	24	23	28	15	8	5	5	4	5	5	4	4	4	4	3	3	3	4	5	4	4
15.7	3	2	3	3	3	3	11	12	11	10	10	11	11	11	25	28	26	16	18	16	11	9	6	7	8	5	5	5	5	4	3	3	3	3	3	2	2
16.7	3	3	2	2	3	3	7	11	10	8	13	14	11	10	16	20	20	15	19	20	14	12	8	9	8	5	4	4	4	4	4	4	3	3	3	3	3
18.8	3	2	3	3	4	5	4	5	8	6	9	12	11	11	14	14	20	23	22	16	15	16	13	12	8	6	5	4	3	3	5	5	5	4	4	3	3
21.8	3	3	3	3	3	3	3	3	3	2	3	4	4	5	6	15	14	15	14	10	4	5	6	6	6	6	5	5	4	3	3	4	3	3	4	4	3
22.7	4	4	5	5	4	4	4	5	4	4	5	5	6	8	8	11	15	16	16	11	6	6	5	8	9	6	5	5	4	4	4	3	3	3	4	4	3
23.7	3	3	3	2	2	2	2	3	4	4	3	3	4	4	4	11	14	16	18	13	12	12	11	8	8	7	5	4	4	4	4	4	3	3	3	3	3
25.9	2	3	3	3	2	2	2	2	3	3	3	3	3	4	5	4	4	5	6	8	16	16	14	11	10	8	6	11	6	5	5	5	3	–	–	–	–
26.7	2	2	2	2	–	–	2	2	2	2	3	3	3	4	5	8	7	7	8	13	17	18	14	14	12	11	10	8	5	5	4	3	2	2	2	2	3
27.8	3	2	3	2	2	–	–	–	2	3	3	3	4	5	8	8	8	11	13	28	32	30	20	17	20	16	14	11	6	5	5	5	2	2	–	–	–
28.8	2	2	3	3	2	2	2	2	2	2	2	2	2	3	3	5	5	11	11	38	39	36	32	36	28	16	14	11	6	5	5	4	2	–	–	–	–

Note: Observation low weight: Dec. 25.9 at N00 - N20.

Table 97a

Coronal observations at Sacramento Peak, New Mexico (6374A), east limb

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1951 Dec. 1.9	2	2	–	–	2	2	3	2	–	–	2	2	–	–	2	3	2	2	2	–	–	–	–	2	8	8	5	3	5	8	5	3	2	2	–	–	2
2.7	3	4	3	3	4	2	3	2	3	2	3	3	3	4	4	3	3	4	5	2	2	2	2	–	3	6	5	4	5	5	6	4	–	2	2	2	2
3.7	3	3	3	3	3	3	2	–	–	2	3	3	3	3	2	2	4	8	5	3	5	5	4	4	4	3	3	4	3	4	3	2	3	2	–	2	–
10.8a	2	3	3	3	3	2	–	–	–	2	–	–	–	2	3	12	8	6	3	8	4	3	5	5	5	3	4	4	5	5	4	4	4	3	2	2	2
14.9	2	2	2	2	–	–	–	–	–	–	–	–	–	–	–	5	8	11	20	14	4	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2
15.7	2	2	2	4	2	2	2	2	–	–	–	–	–	–	–	5	5	12	15	5	5	6	4	2	2	–	2	3	3	2	2	3	3	3	2	3	2
16.7	2	2	2	3	2	2	2	2	–	–	–	–	2	3	2	2	3	3	7	5	8	11	5	–	–	–	–	–	–	2	2	3	3	2	3	3	3
18.8	4	4	4	2	3	4	2	2	–	2	2	–	–	3	4	8	11	15	5	4	5	11	10	2	–	–	–	–	2	2	2	2	3	3	3	2	3
21.8	2	2	2	3	2	2	2	2	2	2	3	3	2	2	6	12	14	6	3	2	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
22.7	2	2	3	3	2	2	3	3	2	2	2	3	2	3	3	5	8	4	2	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
23.7	3	3	4	4	3	3	2	2	2	3	4	4	4	4	4	2	2	2	2	4	3	2	2	3	4	3	2	3	4	4	3	3	2	3	2	2	2
25.9	2	2	2	2	2	–	–	–	2	2	4	3	2	2	2	–	–	2	2	2	2	–	–	–	–	–	–	–	4	3	2	2	2	2	3	3	2
26.7	3	3	4	2	3	3	2	2	2	3	4	4	3	3	2	3	3	3	2	3	3	–	–	–	–	–	2	2	4	7	4	2	2	2	2	2	2
27.8	3	4	3	5	5	4	3	3	3	3	4	4	4	4	4	5	5	3	2	4	5	5	–	–	–	–	–	2	5	5	3	3	2	2	2	2	2
28.8	3	3	4	4	4	3	3	3	3	2	2	3	3	4	4	4	4	2	2	4	5	3	6	5	4	5	2	2	4	4	3	3	2	2	–	–	3

Note: Observation low weight: Dec. 25.9 at N00 - N20.

Table 98a

Coronal observations at Sacramento Peak, New Mexico (6702A), east limb

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1951 Dec. 1.9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2	3	4	5	3	3	3	2	2	2	–	–	–	–	–	–	–	–	–
2.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	3	3	3	3	3	2	2	–	–	–	–	–	–	–	–	–	–
3.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2	2	2	3	2	–	–	–	–	–	–	–	–	–	–	–	–
10.8a	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	–	2	2	2	2	–
14.9	–	–	–	–	–	–	–	–	–	–	2	2	3	2	2	3	5	4	4	4	3	2	2	2	2	2	2	2	2	–	–	–	–	–	–	–	–
15.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2	2	2	2	2	2	–	2	2	2	2	2	2	2	–	–	–	–	–	–	–	–
16.7	–	–	–	–	–	–	–	–	–	–	2	2	2	2	2	3	3	2	3	2	2	2	2	2	2	2	2	2	2	–	–	–	–	–	–	–	–
18.8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
21.8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
22.7	2	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2	2	2	2	2	2	2	2	–	–	–	–	–	–	–	–
23.7	–	–	–	–	–	–	–	–	–	–	2	2	2	2	2	2	2	–	2	2	2	2	2	2	2	2	–	–	–	–	–	–	–	–	–	–	–
25.9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2	3	3	3	2	2	2	–	–	–	–	–	–	–	–	–	–
26.7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2	2	2	2	2	2	2	2	–	–	–	–	–	–	–	–
27.8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2	3	3	3	2	3	3	2	–	–	–	–	–	–	–	–	–
28.8	–	–	–	–	–	–	–	–	–	–	2	2	2	2	2	2	2	2	2	3	4	4	3	3	2	2	2	2	2	2	2	2	–	–	–	–	–

Table 96b

Coronal observations at Sacramento Peak, New Mexico (5303A), west limb

Date GCT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1951																																					
Dec. 1.9	2	2	2	3	3	3	4	4	4	4	5	5	6	5	6	5	4	10	12	13	15	12	14	18	20	14	14	12	5	6	8	12	7	3	2	2	2
2.7	2	3	3	3	3	3	3	5	5	4	4	4	5	5	5	8	5	8	8	8	14	15	18	25	26	16	15	14	10	8	8	10	12	5	2	2	2
3.7	2	3	3	3	3	3	5	5	5	5	3	3	3	4	5	10	10	15	14	12	10	8	13	15	16	13	10	11	10	7	5	6	8	4	3	3	2
10.8a	3	5	5	5	5	5	5	4	5	5	3	3	5	5	6	8	18	16	15	14	15	16	12	8	6	5	3	3	3	4	4	5	5	5	5	5	4
14.9	4	3	3	3	3	3	4	4	5	4	4	5	5	12	13	13	11	15	14	16	10	11	8	11	9	8	5	3	3	4	5	5	5	6	5	4	4
15.7	2	2	2	2	3	3	4	5	4	4	4	4	11	14	13	16	18	23	26	23	11	11	8	9	8	8	4	4	4	3	3	3	3	3	3	3	3
16.7	2	2	2	2	2	2	5	5	4	4	3	4	3	5	8	12	11	11	17	18	11	12	11	11	11	11	6	2	2	2	2	2	2	2	2	3	3
18.8	3	3	2	3	3	4	3	3	3	2	3	3	3	3	4	4	4	3	12	11	8	12	11	11	11	11	10	5	4	3	3	2	3	3	3	2	3
21.8	3	3	3	3	3	3	3	3	4	4	4	4	3	3	2	2	2	3	4	4	4	8	11	13	10	8	6	6	8	5	4	4	4	4	5	3	3
22.7	3	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	5	11	11	10	8	7	6	10	8	6	5	4	5	4	4	4
23.7	3	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	3	3	3	5	5	5	8	7	6	8	6	8	5	8	6	6	5	5	4	4	3
25.9	-	-	-	-	-	-	-	-	-	-	2	2	3	3	3	3	3	3	8	17	20	20	10	8	8	6	5	5	4	4	5	5	4	4	3	3	2
26.7	3	2	2	2	2	2	-	-	-	2	3	3	3	3	3	4	8	15	16	28	32	20	18	11	10	8	6	4	5	5	8	8	8	5	3	3	2
27.8	-	-	2	2	2	2	3	4	4	4	3	3	2	3	3	5	14	16	14	20	23	20	17	16	16	14	15	11	5	11	11	12	12	8	3	3	3
28.8	-	-	2	3	3	3	3	3	4	4	3	3	4	4	3	5	5	6	8	15	20	22	18	16	14	12	14	12	4	5	5	8	11	6	3	3	2

Note: Yellow line (5694A): Dec. 1.9 at N12 - N14, intensity 2; Dec. 27.8 at N10 - N13, intensity 3.

Table 97b

Coronal observations at Sacramento Peak, New Mexico (6374A), west limb

Date GCT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1951																																					
Dec. 1.9	2	3	2	2	-	-	-	-	-	-	2	3	-	2	-	3	6	8	5	3	8	6	2	-	-	-	-	-	-	-	-	-	-	-	2	3	2
2.7	3	3	2	3	-	2	-	-	-	-	-	-	2	2	-	3	8	11	8	4	6	8	-	2	-	-	-	-	-	-	-	-	-	3	3	3	3
3.7	-	3	2	2	-	-	-	-	-	-	-	-	-	-	-	3	12	14	3	3	5	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
10.8a	2	2	3	2	-	-	-	-	-	3	4	3	2	2	2	3	4	5	2	2	3	2	2	-	2	-	3	3	2	2	2	2	3	3	3	4	2
14.9	2	2	2	3	3	2	2	-	4	3	2	2	2	2	5	2	2	2	3	6	5	2	3	-	2	-	2	2	2	2	3	2	2	2	2	3	2
15.7	2	2	3	3	2	2	5	3	3	4	4	4	3	8	14	-	-	6	12	14	5	3	-	-	-	2	4	5	3	3	2	2	2	2	4	3	2
16.7	3	3	3	2	2	3	3	3	3	5	4	4	3	5	8	8	3	5	6	8	13	3	2	2	2	2	2	2	2	-	-	2	2	-	2	3	2
18.8	3	3	3	2	3	3	2	3	2	3	4	3	4	2	3	4	4	8	14	9	3	2	-	-	-	-	2	2	3	2	3	3	5	3	4	4	4
21.8	-	-	-	-	-	2	2	2	2	2	3	3	3	3	3	3	3	2	2	2	-	-	-	-	-	-	-	2	2	2	2	2	2	3	3	3	2
22.7	-	2	2	3	2	2	2	3	3	2	3	3	2	3	4	3	3	5	3	5	4	2	2	3	2	2	2	2	2	2	-	-	2	2	2	3	2
23.7	2	4	5	5	3	3	2	2	2	3	4	4	4	5	6	5	6	6	7	7	7	13	13	11	-	-	-	2	2	2	2	3	2	3	5	5	3
25.9	2	3	3	2	2	-	-	-	-	-	2	2	2	-	-	-	7	11	5	6	22	11	14	-	-	-	-	-	-	-	-	-	-	-	2	2	2
26.7	2	3	3	3	-	-	2	-	-	2	3	5	4	3	2	2	5	8	13	32	30	16	11	3	-	-	-	-	-	-	-	-	2	2	2	3	3
27.8	2	2	2	3	3	2	2	2	-	-	6	6	8	2	2	3	6	3	28	28	23	11	16	5	3	-	-	-	-	-	-	2	2	3	3	2	3
28.8	3	3	2	4	2	2	2	2	2	2	3	2	2	2	3	3	3	3	4	10	11	20	14	2	-	-	-	-	-	-	2	2	2	3	2	2	3

Table 98b

Coronal observations at Sacramento Peak, New Mexico (6702A), west limb

Date GCT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1951																																					
Dec. 1.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	4	5	3	3	2	2	2	2	2	2	2	-	-	-
2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2	-	-	-	-	-	-	-	-	-	-	-	-
3.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	3	3	2	2	2	2	2	-	-	-	-	-	-
10.8a	-	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
14.9	-	-	-	-	-	-	-	-	-	-	2	2	3	3	2	3	3	3	4	2	2	2	2	2	2	-	-	-	-	X	X	X	X	X	-	-	-
15.7	-	-	-	-	-	-	-	-	-	-	-	-	2	3	2	2	2	3	3	3	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
16.7	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	2	2	3	3	2	2	-	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-
18.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.8	-	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	2	2	2	2	3	3	3	2	2	3	3	2	-	-	-	-	-	-
22.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2
23.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-
25.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	3	2	2	2	2	-	-	-	-	-	-	-	-	-	-
26.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	6	6	5	3	2	2	2	2	-	-	-	-	-	-	-	-	-	-
27.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	2	5	5	4	4	3	3	2	2	2	-	-	-	-	-	-	-	-	-
28.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	4	2	3	2	2	2	2	2	2	-	-	-	-	-	-

Table 99

Particulars of Observations, Sacramento Peak, New Mexico
July - December 1951

Date GCT	Greenline threshold intensity at 0°	45°	90°	135°	180°	225°	270°	315°	Obs.	Meas.
1951										
Jul. 1.8	11	9	8	10	11	11	10	10	R	W
2.7	9	9	9	9	9	9	9	9	R	W
5.8	8	8	8	8	8	9	8	8	H	W
6.7	9	8	9	10	8	10	11	11	R	W
8.7	15	15	15	15	15	15	14	13	R	W
14.6	[illegible]	7	7	8	8	8	6	6	R	W
16.6	8	8	-	-	-	-	-	-	R	W
17.9	13	12	14	13	13	14	14	14	R	W
19.7	9	9	8	8	12	9	9	10	R	W
20.7	12	12	12	-	12	-	-	14	R	W
21.6	11	9	10	11	11	9	9	9	S	W
25.7	5	4	4	4	5	5	5	5	R	W
26.6	-	-	15	-	-	-	-	-	R	W
28.0	9	10	-	-	12	13	-	-	S	W
28.7	8	8	8	9	8	8	8	8	R	W
Aug. 3.0	-	-	-	13	-	-	14	-	S	W
4.8	8	8	-	8	8	8	8	8	R	W
5.6	6	6	12	8	7	7	7	6	R	W
6.7	9	8	8	8	8	9	9	8	R	W
9.9	13	11	10	12	14	13	12	12	R	W
10.7	11	10	10	10	11	11	12	13	S	W
11.7	7	6	7	7	7	7	7	7	R	W
13.7	8	7	7	8	8	7	8	8	R	W
14.7	8	8	8	9	8	8	9	8	S	W
15.7	13	-	-	-	-	-	-	-	R	W
17.6	9	8	8	9	8	8	8	8	R	W
18.7	9	7	8	8	8	8	3	-	R	W
19.9	13	12	12	12	12	12	13	12	R	W
20.7	10	9	9	9	10	10	10	10	R	W
21.6	11	10	10	11	11	11	11	11	R	W
22.7	5	5	5	5	6	5	6	-	R	W
24.6	4	3	4	4	5	5	5	5	R	W
29.6	5	5	5	5	5	5	6	5	R	W
30.9	5	4	4	5	6	6	6	6	S	W
31.7	3	3	3	5	5	5	4	3	R	W
Sep. 1.6	3	3	3	3	4	4	4	3	R	W
2.7	2	3	3	4	5	4	4	3	R	W
4.7	7	6	6	7	6	7	7	6	R	W
5.7	6	6	6	7	7	7	7	6	R	W
6.7	8	8	7	7	6	7	8	7	R	W
9.8	4	5	5	5	5	5	5	5	R	W
10.7	8	7	7	8	8	7	8	7	R	W
11.9	6	5	4	4	5	6	5	6	R	W
12.6	7	7	7	7	9	8	7	7	S	W
13.7	11	12	11	11	10	11	11	12	S	W
15.7	9	9	9	8	10	10	10	9	R	W
17.7	6	5	4	3	6	5	6	8	R	W
18.7	8	7	7	8	8	9	8	8	S	W
19.7	8	7	7	9	8	9	8	10	Cr.	W
20.7	12	11	13	12	12	11	13	12	Cr.	W
21.8	11	9	10	11	12	12	11	11	Cr.	W
22.7	7	7	7	7	7	7	8	7	Cr.	W
23.[illegible]	11	10	11	11	11	12	12	12	R	W
24.7	12	10	10	11	-	-	-	-	R	W
25.7	11	11	11	10	11	11	11	11	R	W
26.9	12	12	11	11	13	11	12	12	R	W
27.7	6	6	6	5	7	6	7	6	R	W

Date GCT	Greenline threshold intensity at 0°	45°	90°	135°	180°	225°	270°	315°	Obs.	Meas.
1951										
Sep. 28.8	10	10	10	10	10	10	10	11	R	W
30.9	10	6	6	6	7	8	9	8	R	W
Oct. 1.8	5	7	7	>15	10	10	10	-	S	Y
2.7	6	6	6	5	6	7	7	6	S	Y
3.7	7	7	5	6	7	8	9	8	R	Y
4.7	7	6	5	6	6	7	7	6	R	Y
5.7	4	4	4	4	6	6	5	4	R	Y
6.7	7	6	6	6	8	8	8	7	R	Y
7.7	11	11	10	10	11	11	11	11	R	Y
8.7	10	9	9	9	11	10	11	10	R	Y
9.7	11	12	9	9	10	10	9	7	Cr.	Y
10.7	5	4	4	4	5	6	5	5	R	Y
11.8	8	6	13	9	9	8	7	9	R	Y
13.7	6	6	5	5	5	5	5	4	S	Y
16.8	9	8	8	8	8	10	10	9	Cr.	Y
17.7	8	8	8	8	11	15	14	15	R	Y
20.8	7	7	7	7	8	11	11	9	S	Y
23.7	5	5	5	6	7	7	7	7	R	Y
24.7	8	7	7	8	8	8	9	8	R	Y
25.7	5	-	-	-	-	-	-	-	S	Y
29.7	8	6	5	5	11	8	10	10	R	Y
Nov. 1.7	5	5	5	5	7	7	7	5	R	Y
2.7	10	7	8	9	10	10	10	7	R	Y
3.8	8	8	8	8	9	10	9	8	Co.	Y
4.7	6	6	7	10	9	8	9	7	Co.	Y
5.8	14	13	15	14	>15	>15	>15	>15	R	Y
6.7	9	7	8	7	10	9	10	8	R	Y
7.7	8	7	8	8	10	9	9	8	R	Y
8.8	8	7	8	11	11	10	8	9	Cr.	Y
9.7	12	12	11	13	11	10	10	13	Cr.	Y
12.7	6	5	5	7	6	7	6	6	Cr.	Y
13.9	14	13	14	14	14	13	13	13	R	Y
14.8	6	6	5	6	8	6	9	7	R/Cr.	Y
15.7	6	5	6	6	8	6	6	8	Cr.	Y
18.8	8	6	6	7	10	8	8	8	R	Y
19.8	7	7	7	8	8	7	7	7	R	Y
20.7	8	6	7	7	8	7	6	6	Cr.	Y
26.7	8	8	8	8	11	10	10	9	R	Y
27.7	7	5	6	7	8	6	6	6	R	Y
28.9	7	7	6	8	6	7	5	6	S	Y
30.8	4	4	4	4	5	4	5	5	C	Y
Dec. 1.9	3	3	3	4	3	3	2	3	S	Y
2.7	3	2	3	3	3	4	4	4	R	Y
3.7	5	4	4	3	5	5	5	5	R	Y
10.8	7	8	8	6	6	7	7	10	R	Y
14.9	8	7	8	8	9	8	9	9	S	Y
15.7	3	3	4	4	4	4	4	5	R	Y
16.7	5	4	3	5	6	4	5	6	C	Y
18.8	5	4	4	4	5	4	5	5	S	Y
21.8	7	6	6	7	9	8	8	8	S	Y
22.7	8	7	7	8	8	8	7	8	C	Y
23.7	3	3	3	4	4	4	4	4	R	Y
25.9	7	5	4	5	5	6	6	9	C	Y
26.7	2	2	2	2	5	5	5	5	R	Y
27.8	4	3	3	4	5	4	4	4	R	Y
28.8	4	3	3	4	5	4	4	5	R	Y

Co. - Cook
Cr. - Crawford
H - Hansen
R - Ramsey
S - Schnable
W - I. Witte
Y - YH

Table 100

Zürich Provisional Relative Sunspot Numbers

January 1952

Date	R_Z*	Date	R_Z*
1	66	17	55
2	63	18	53
3	58	19	44
4	40	20	38
5	32	21	33
6	18	22	12
7	27	23	24
8	35	24	28
9	47	25	29
10	43	26	28
11	55	27	22
12	57	28	18
13	61	29	15
14	65	30	22
15	72	31	17
16	70	Mean:	40.2

*Dependent on observations at Zürich Observatory and its stations at Locarno and Arosa.

Table 101

American Relative Sunspot Numbers

December 1951

Date	R_A'*	Date	R_A'*
1	29	17	47
2	28	18	51
3	28	19	62
4	25	20	97
5	46	21	72
6	36	22	66
7	44	23	71
8	41	24	67
9	25	25	44
10	28	26	46
11	20	27	27
12	27	28	35
13	30	29	38
14	34	30	45
15	36	31	57
16	30	Mean:	43.0

*Combination of reports from 22 observers; see page 10.

Table 102

Solar Flares, December 1951

Observatory	Date 1951	Time Observed Beginning (GCT)	Time Observed Ending (GCT)	Duration (Min)	Area (Mill of Visible Hemisph)	Position Latitude (Deg)	Position Longitude Diff (Deg)	Time of Maximum (GCT)	Int. of Maximum	Relative Area of Maximum (Tenths)	Importance	SID Observed
Sac.Peak	Dec. 4	2130	2140	10	20	N11	W70	2136	8	0	1 -	
Schauins.	7	1300	1315	15	-	S20	W20	-	-	-	-	
Sac.Peak	15	1600	1705	65	112	N09	E69	1633	14	2	1	
"	18	1800	1814	14	56	N13	E30	1805	8	8	1 -	
Schauins.	21	1152B	1203	App.11	192	N02	W29	1156	-	-	1	
Sac.Peak	23	1545	1600	15	19	N07	W30	1552	8	0	1 -	
"	26	1520	1559	39	56	N07	W60	1539	7	8	1 -	
"	26	1718	1835	77	67	N03	E60	1819	9	7	1 -	
"	30	1515	1534	19	127	N19	E23	1522	10	2	1	

Sac.Peak = Sacramento Peak
Schauins.= Schauinsland

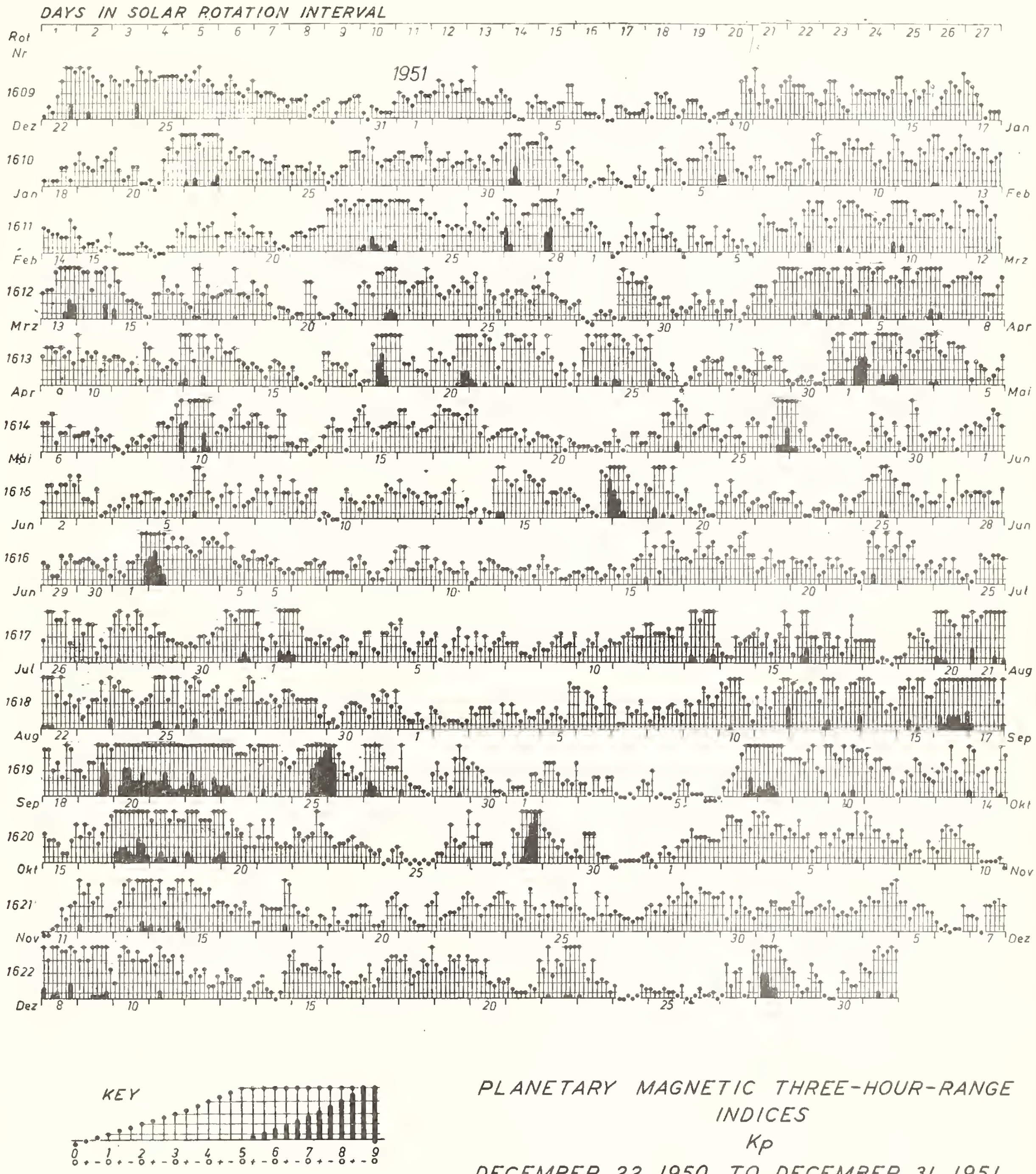
B Flare started before given time
A Flare ended after given time
Q Time reported as questionable

Table 103

Indices of Geomagnetic Activity for December 1951

Preliminary values of mean K-indices, Kw, from 34 observatories;
Preliminary values of international character-figures, C;
Geomagnetic planetary three-hour-range indices, Kp;
Magnetically selected quiet and disturbed days

Gr. Day 1951	Values Kw	Sum	C	Values Kp	Sum	Final Sel. Days
1	2.3 2.0 1.9 3.0 2.7 2.5 2.6 2.7	19.7	0.7	3-3-2+3+ 3+3-3-3-	22+	Five
2	2.4 3.2 2.4 1.8 2.2 2.8 2.9 2.3	20.0	0.7	3+4o4-2+ 2+3-3o3-	24o	Quiet
3	2.8 1.9 1.4 2.0 1.6 2.1 2.3 3.3	17.4	0.7	3+3-2o2+ 2o3-2+3+	21-	
4	3.1 3.1 2.6 3.1 4.0 4.0 4.5 4.4	28.8	1.3	3o4-3+3+ 4+4+5-5o	32-	6
5	3.2 2.7 1.4 2.2 2.4 2.7 2.1 2.6	19.3	0.7	3+3+2-3- 3o3o2+2+	22-	13
						24
6	0.9 0.6 0.8 0.6 0.9 0.9 2.7 1.7	9.1	0.1	1+1-1o0+ 1-1-3o2o	10-	25
7	1.5 1.1 0.7 2.4 2.9 3.6 3.4 3.0	18.6	0.8	2o2-0+3o 3o3+4-3o	20o	26
8	5.1 3.3 4.0 4.9 4.4 4.6 5.5 4.1	35.9	1.6	6o4o5+6- 5-5-6+5-	41+	
9	3.3 4.0 3.3 4.5 4.8 5.1 5.0 2.9	32.9	1.5	4o5o4o5+ 5+5+6-3+	38o	
10	1.9 3.5 3.8 3.9 3.6 4.5 3.7 4.0	28.9	1.2	2o4+5o5- 4o5-4o4o	33-	
11	3.4 2.9 4.2 3.4 3.4 4.2 2.9 3.8	28.2	1.1	4+4-6-4+ 4o4+3o4+	34-	Five
12	1.8 1.9 2.6 2.2 2.7 1.5 1.9 2.3	16.9	0.5	2o3-3+3- 3+2-2-3-	20o	Dist.
13	1.6 2.3 1.9 1.8 2.0 0.7 1.4 2.0	13.7	0.2	2o3+3-2+ 2+0+1o2-	16-	
14	1.6 2.1 1.4 1.0 0.6 1.0 3.2 4.4	15.3	0.7	2o3-1+1o 0+1o3o4+	16-	8
15	3.9 2.4 2.6 3.1 3.1 3.0 4.8 2.8	25.7	1.1	5-3+4-4- 3+3+5o3o	30o	9
						22
16	2.6 2.7 2.2 1.9 1.8 2.0 2.1 2.5	17.8	0.4	3-4-3o2o 2-2o2o3-	20-	28
17	1.9 2.7 1.3 2.1 3.2 3.9 4.2 3.9	23.2	1.0	2+4-2-2+ 3+4o4+4+	26o	31
18	3.4 3.6 2.9 2.3 2.8 3.5 3.2 4.4	26.1	1.0	4o4+3+3- 3o4o4-5o	30o	
19	3.2 2.4 2.6 3.6 3.9 4.0 3.2 4.0	26.9	1.2	4-3o3+4+ 4o4+3+4+	30+	
20	3.3 3.1 2.2 3.2 2.1 1.8 2.2 2.1	20.0	0.6	4o4o3o4o 2o2-2+2o	23o	
						Ten
21	1.8 1.1 1.1 1.2 1.4 1.6 1.5 3.6	13.3	0.4	2+1+1o1o 1o2-1+4o	14-	Quiet
22	2.7 3.8 2.0 3.5 3.5 5.2 5.0 4.2	29.9	1.4	3+5+3-4o 4-5+5+5o	35-	
23	4.2 3.0 2.0 3.4 2.0 2.3 2.1 1.1	20.1	0.7	5+4-2+4o 2o2+2o1o	23-	6
24	1.4 0.6 0.4 0.7 0.5 0.7 1.9 1.5	7.7	0.0	2-0+0+1- 0+1-2-1+	7o	12
25	1.3 0.9 0.7 1.3 1.1 1.1 0.9 1.5	8.8	0.0	1+1o1o1+ 1o1o1-2-	9o	13
						16
26	0.5 0.3 0.8 1.2 1.1 0.8 1.1 0.6	6.4	0.0	0+0o1-1+ 1-1-1o0+	5o	21
27	0.7 2.7 1.6 2.6 3.3 1.0 2.1 4.5	18.5	0.9	1-4-2-3o 3+1-2o5-	20-	24
28	3.6 6.1 5.8 5.0 5.6 4.6 4.0 2.9	37.6	1.8	4+7o7o6o 6o5-4o3+	42+	25
29	2.6 1.3 0.8 1.4 3.1 2.5 1.7 1.2	14.6	0.5	3o2-1o1+ 4-3-2o1-	16o	26
30	0.6 0.7 1.1 2.6 2.4 1.7 1.9 3.6	14.6	0.6	0+0+1+3o 2+2-2-4-	14+	29
31	3.3 2.8 3.6 4.5 3.7 4.4 4.7 4.1	31.1	1.5	3+3o5-6- 4+5-5+5-	36-	30
Mean	2.45 2.41 2.13 2.59 2.67 2.72 2.93 2.97	2.61	0.80			



PLANETARY MAGNETIC THREE-HOUR-RANGE INDICES

Kp

DECEMBER 22, 1950 TO DECEMBER 31, 1951

Table 104

Sudden Ionosphere Disturbances Observed at Washington, D. C.

January 1952

No sudden ionosphere disturbances were observed during the month of January 1952.

Table 105

Sudden Ionosphere Disturbances Reported by Engineer-in-Chief,

Cable and Wireless, Ltd., as Observed at Colombo, Ceylon

1951 Day	GCT Beginning	GCT End	Location of transmitter
November 6	0945	1000	England

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.

GRAPHS OF IONOSPHERIC DATA

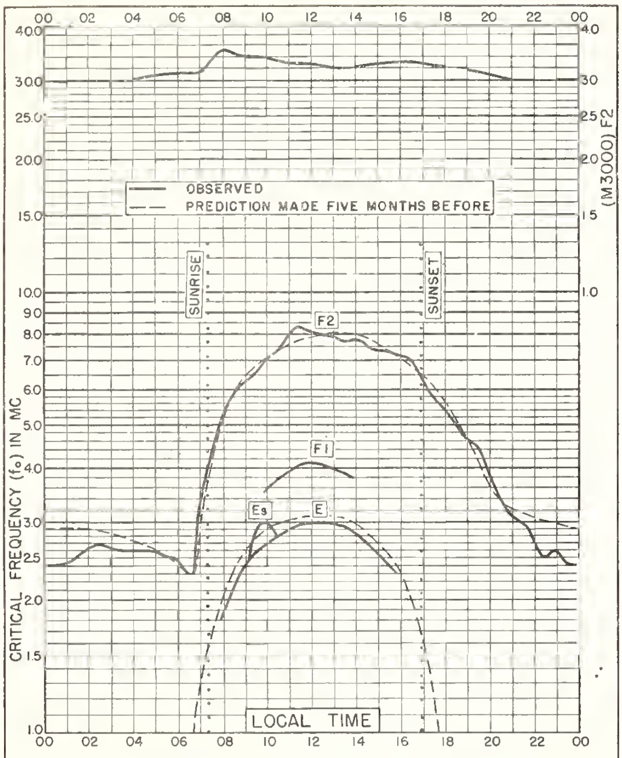


Fig. 1. WASHINGTON, D. C.
38.7° N, 77.1° W JANUARY 1952

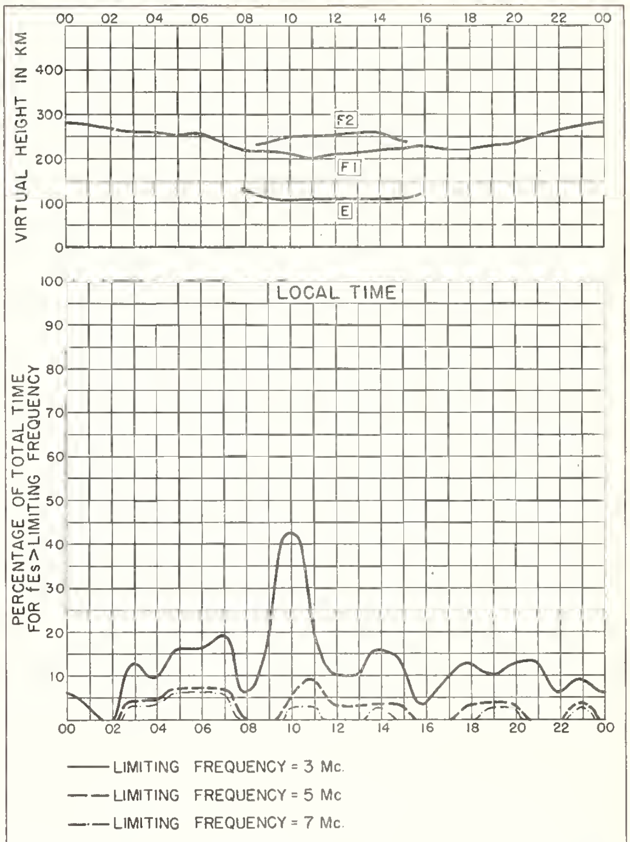


Fig. 2. WASHINGTON, D. C. JANUARY 1952

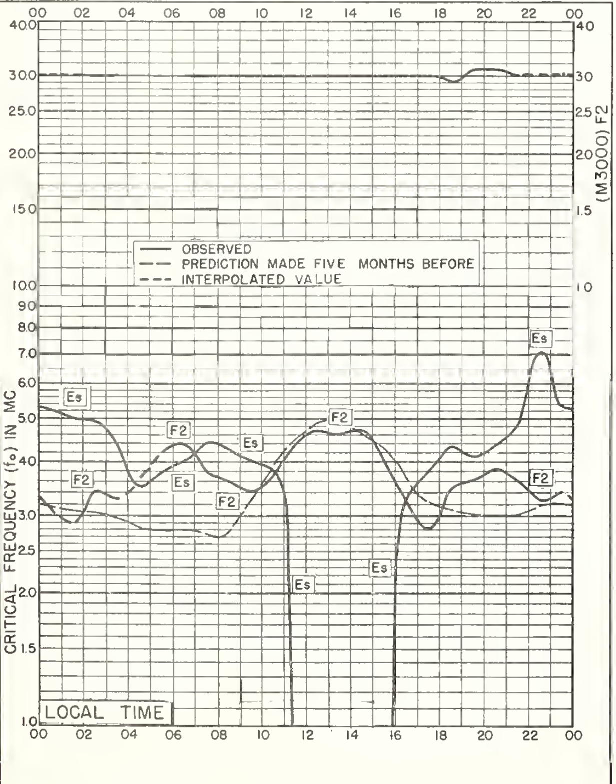


Fig. 3. POINT BARROW, ALASKA
71.3° N, 156.8° W DECEMBER 1951

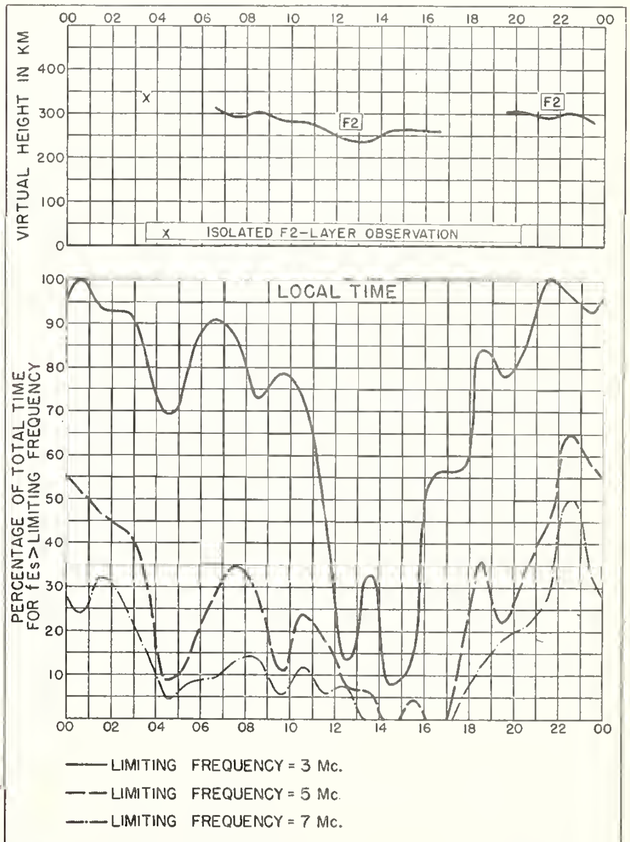


Fig. 4. POINT BARROW, ALASKA DECEMBER 1951

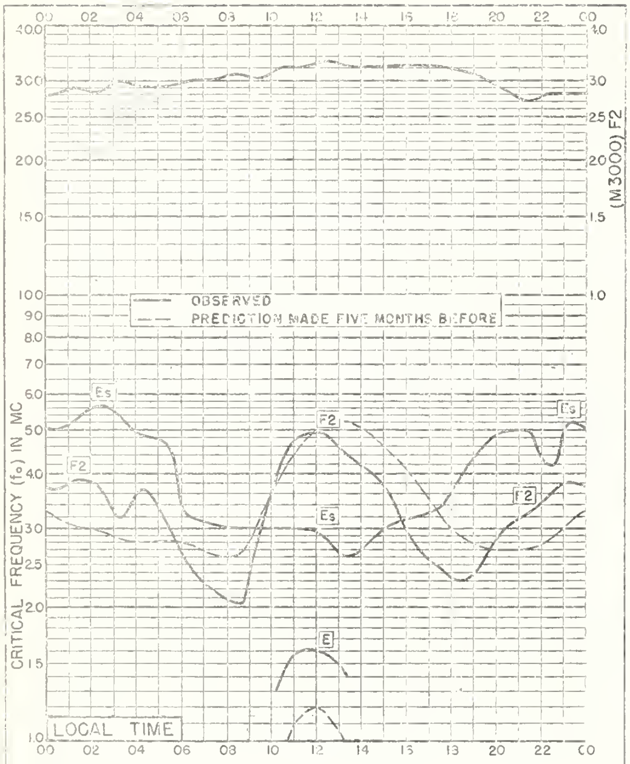


Fig. 5. TROMSO, NORWAY
69.7°N, 19.0°E DECEMBER 1951

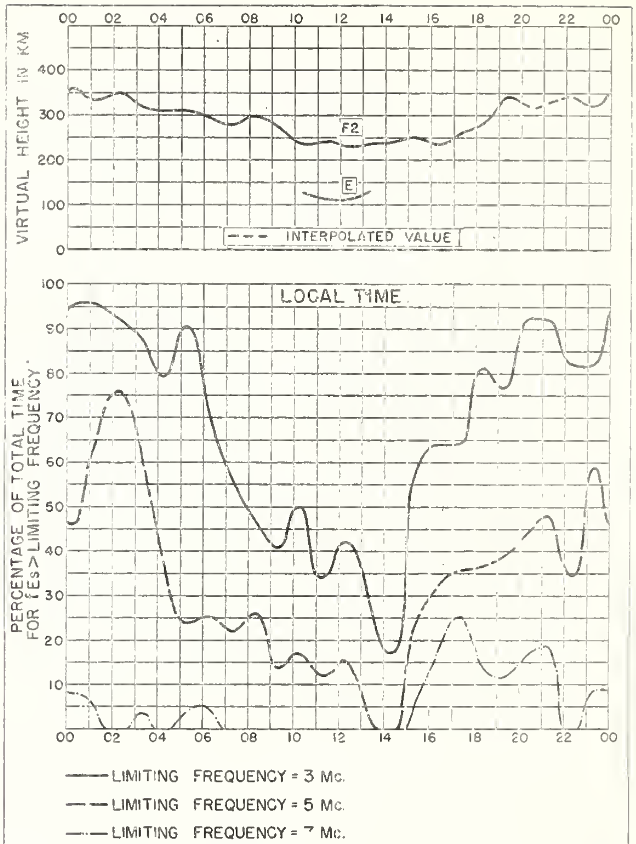


Fig. 6. TROMSO, NORWAY DECEMBER 1951

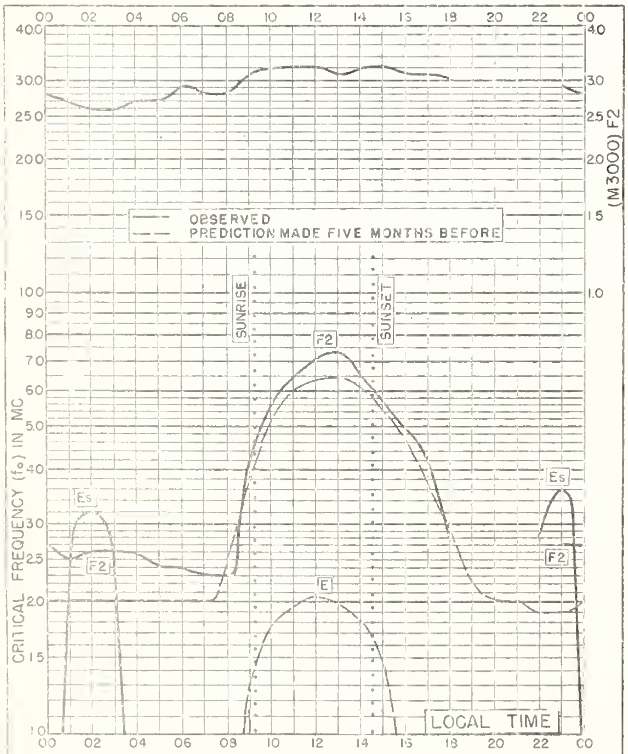


Fig. 7. ANCHORAGE, ALASKA
61.2°N, 149.9°W DECEMBER 1951

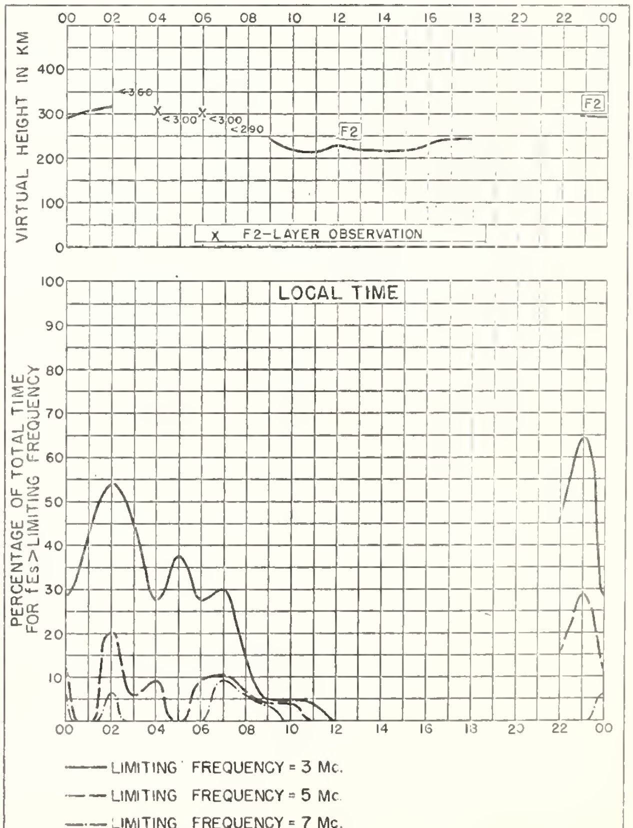


Fig. 8. ANCHORAGE, ALASKA DECEMBER 1951

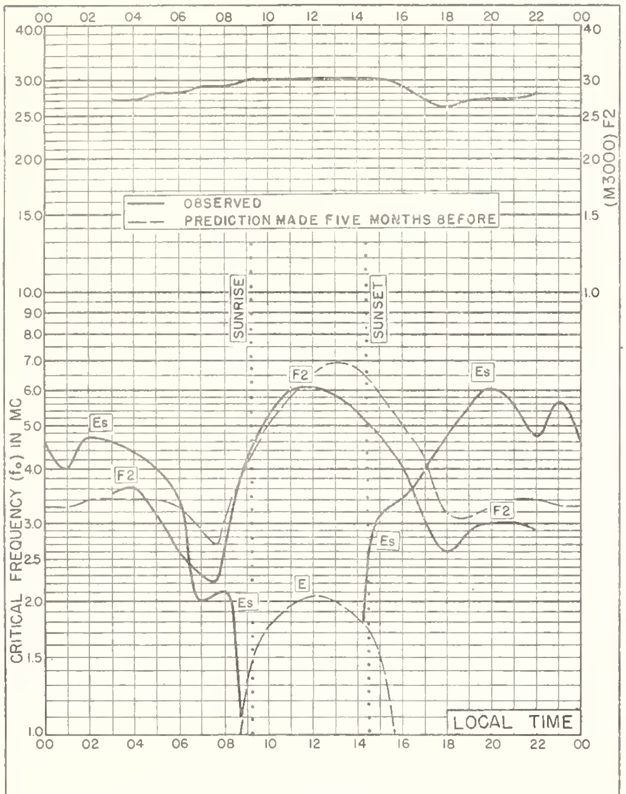


Fig. 9. NARSARSSUAK, GREENLAND
61.2° N, 45.4° W DECEMBER 1951

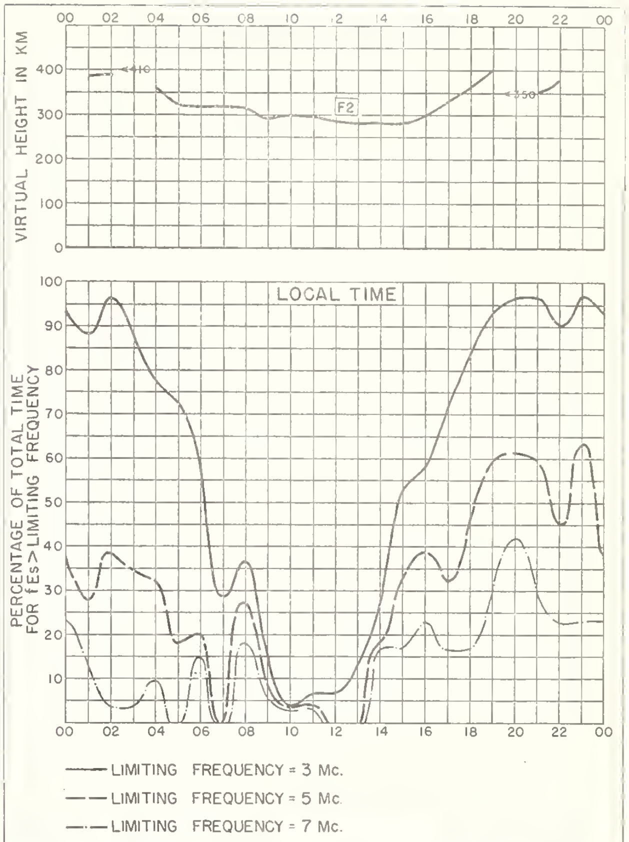


Fig. 10. NARSARSSUAK, GREENLAND DECEMBER 1951

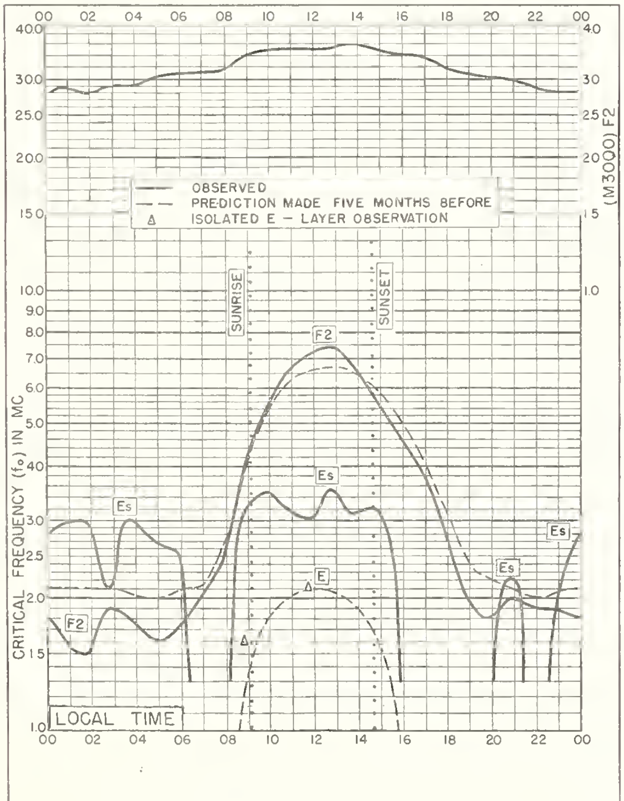


Fig. 11. OSLO, NORWAY
60.0° N, 11.0° E DECEMBER 1951

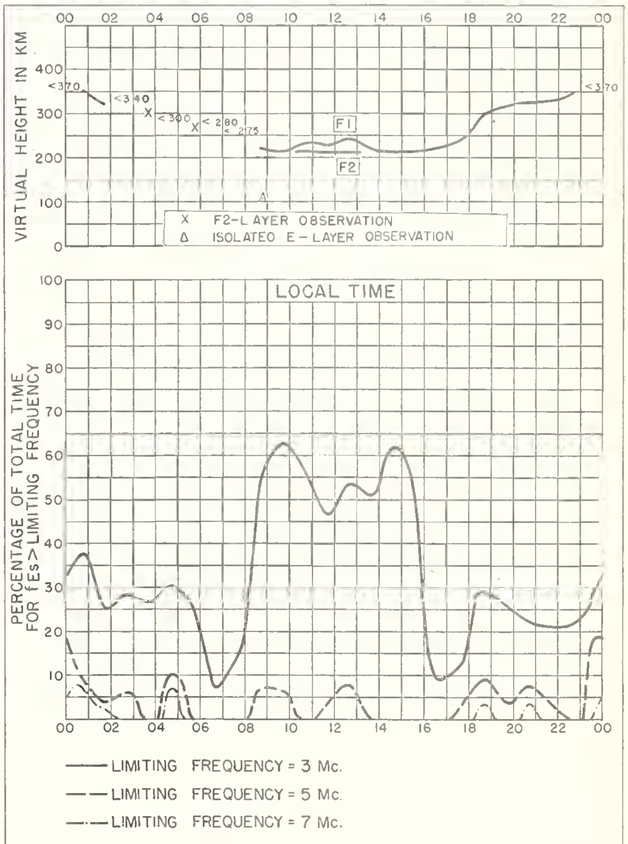


Fig. 12. OSLO, NORWAY DECEMBER 1951

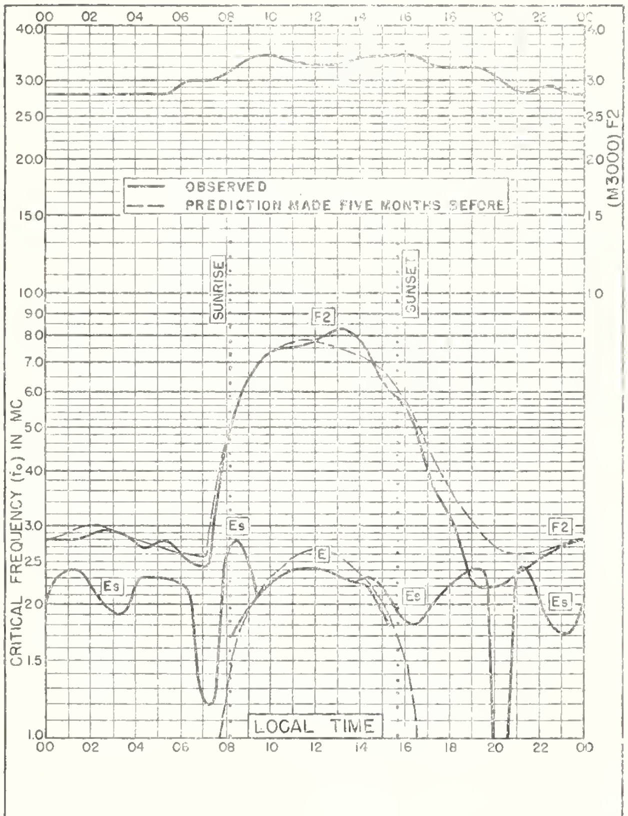


Fig 13. ADAK, ALASKA
51.9°N, 176.6°W DECEMBER 1951

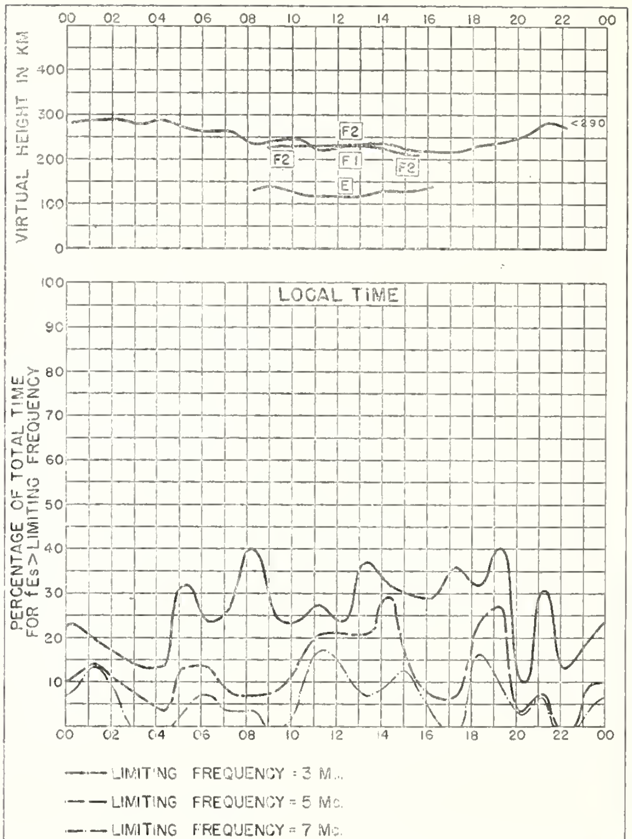


Fig. 14. ADAK, ALASKA DECEMBER 1951

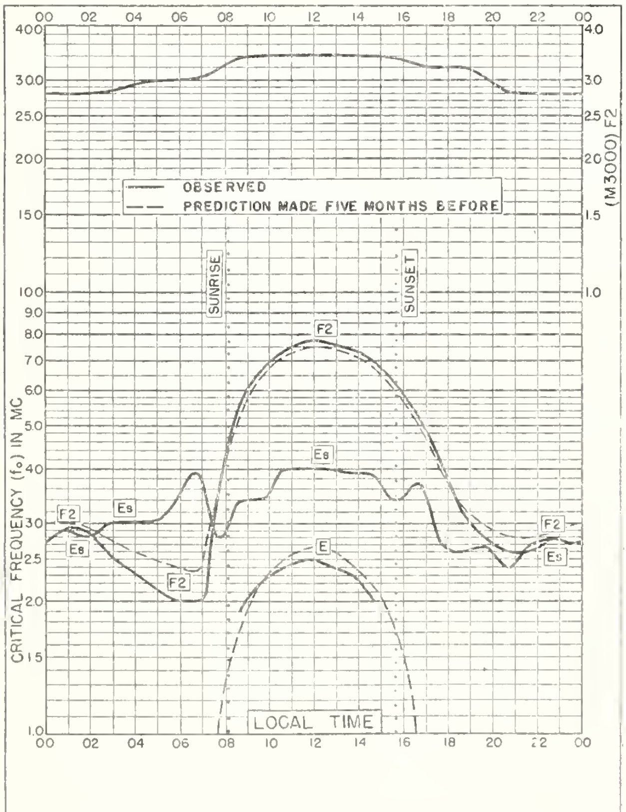


Fig. 15. LINDAU/HARZ, GERMANY
51.6°N, 10.1°E DECEMBER 1951

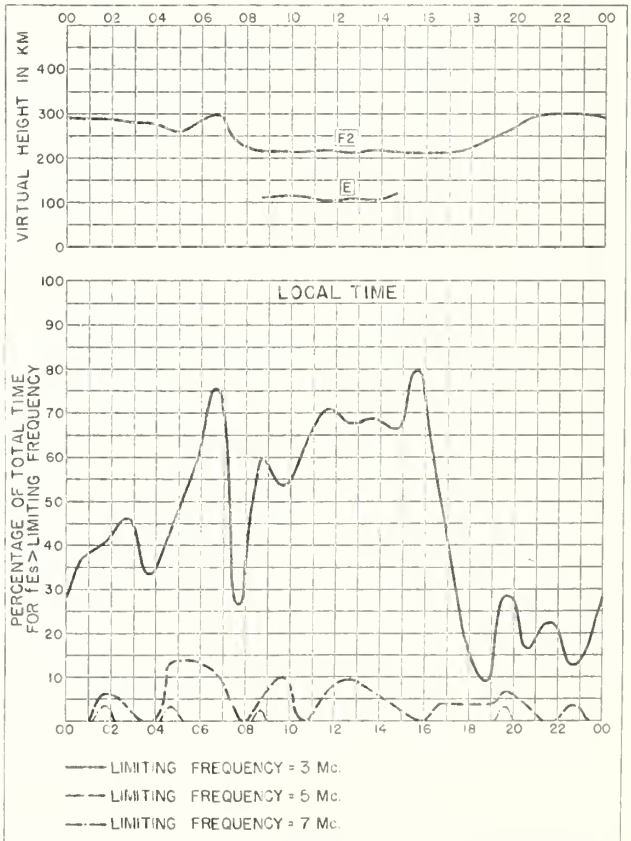


Fig. 16. LINDAU/HARZ, GERMANY DECEMBER 1951

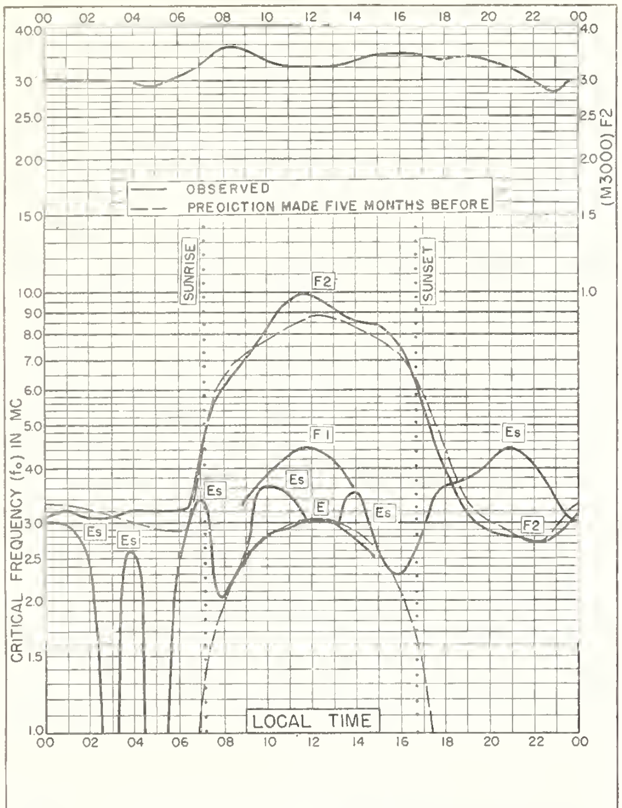


Fig. 17. SAN FRANCISCO, CALIFORNIA
37.4° N, 122.2° W DECEMBER 1951

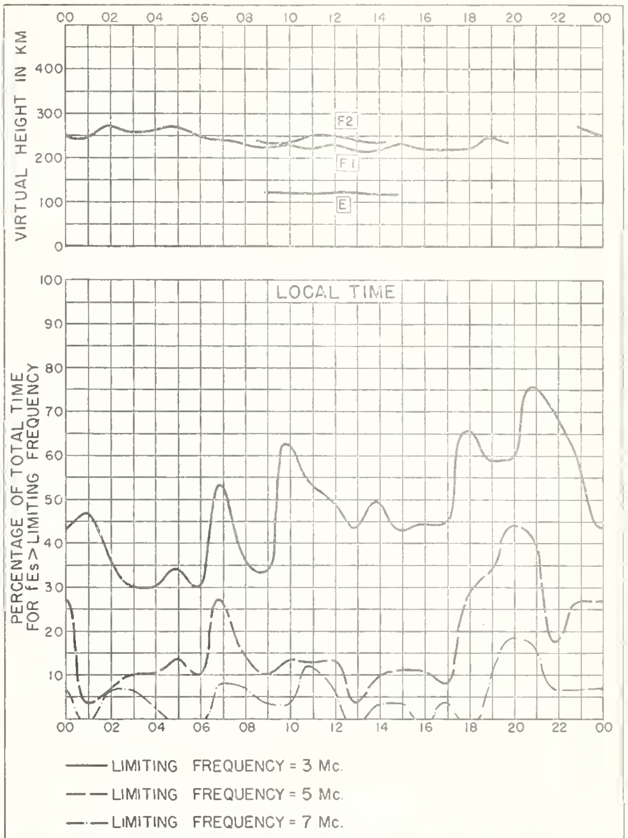


Fig. 18. SAN FRANCISCO, CALIFORNIA DECEMBER 1951

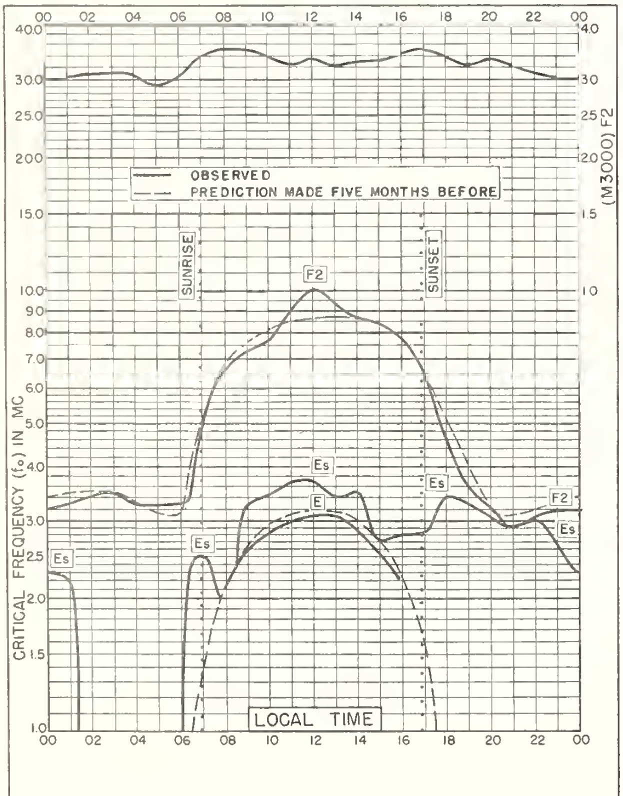


Fig. 19. WHITE SANDS, NEW MEXICO
32.3° N, 106.5° W DECEMBER 1951

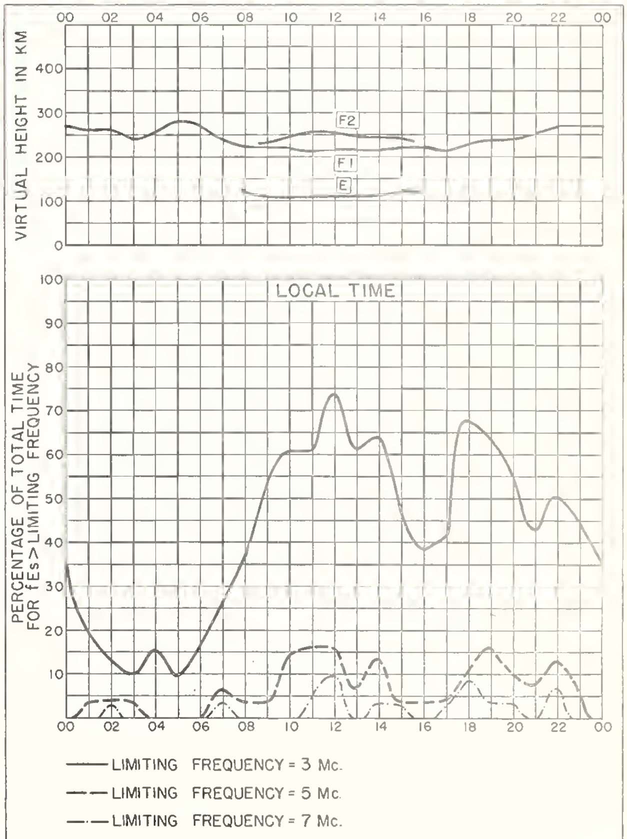


Fig. 20. WHITE SANDS, NEW MEXICO DECEMBER 1951

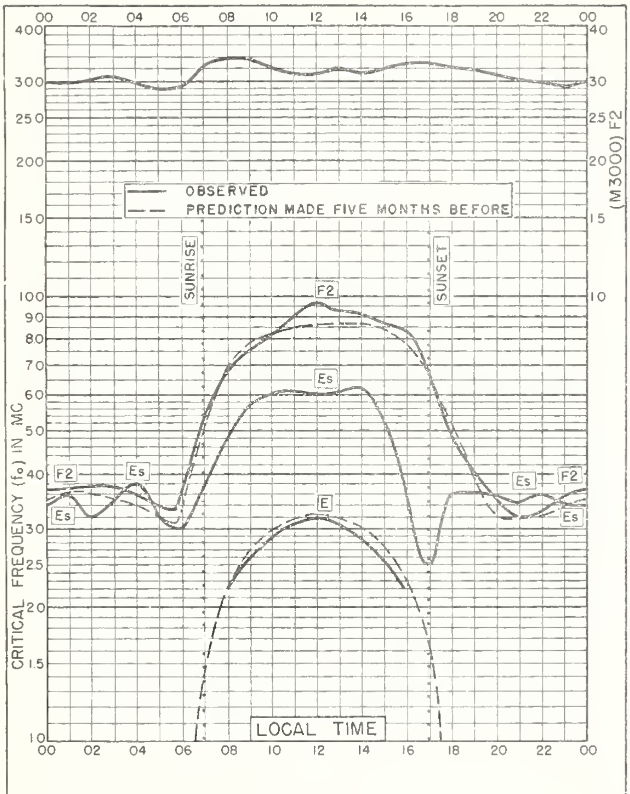


Fig. 21. BATON ROUGE, LOUISIANA
30.5°N, 91.2°W DECEMBER 1951

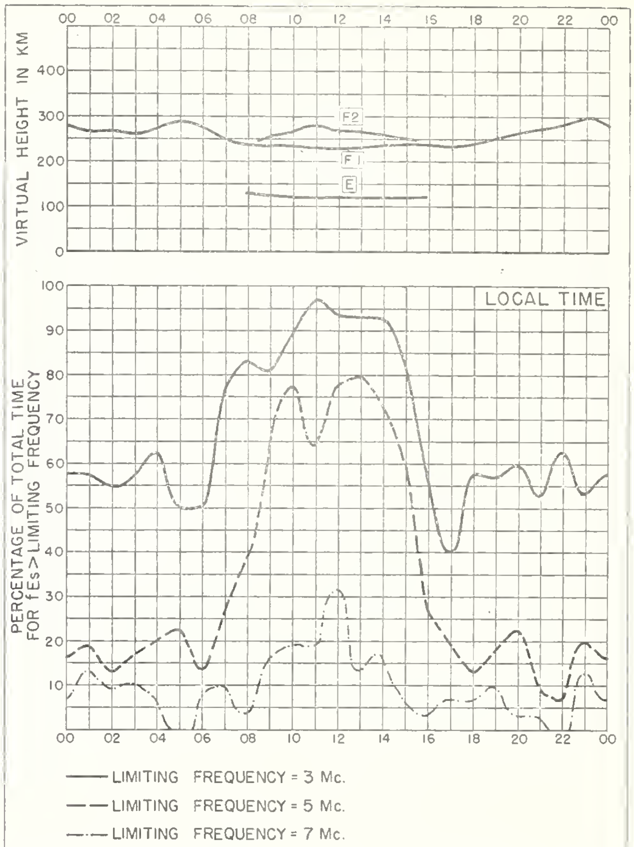


Fig. 22. BATON ROUGE, LOUISIANA DECEMBER 1951

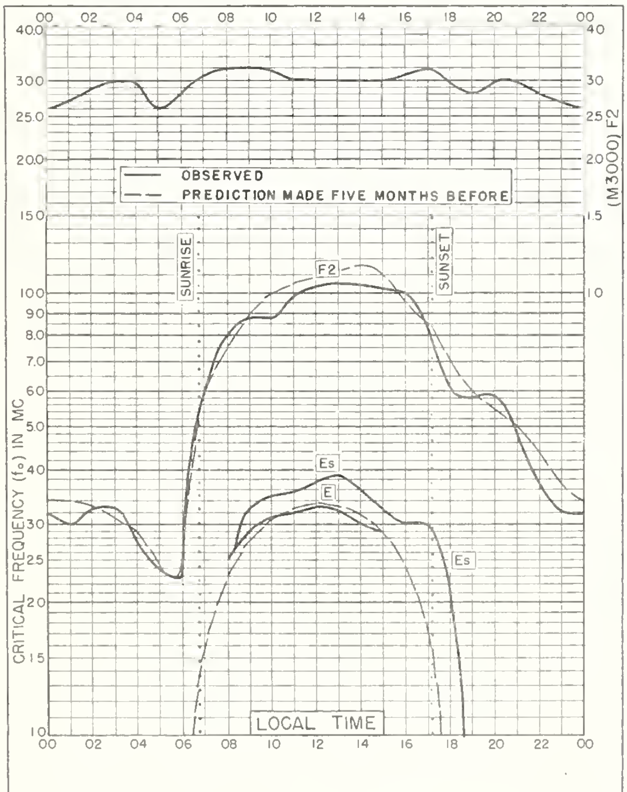


Fig. 23. OKINAWA I.
26.3°N, 127.8°E DECEMBER 1951

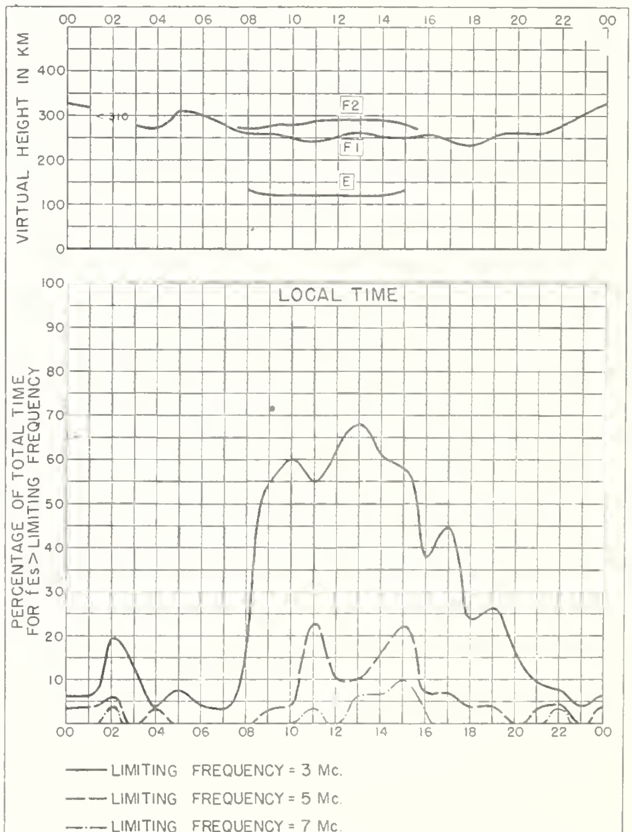


Fig. 24. OKINAWA I. DECEMBER 1951

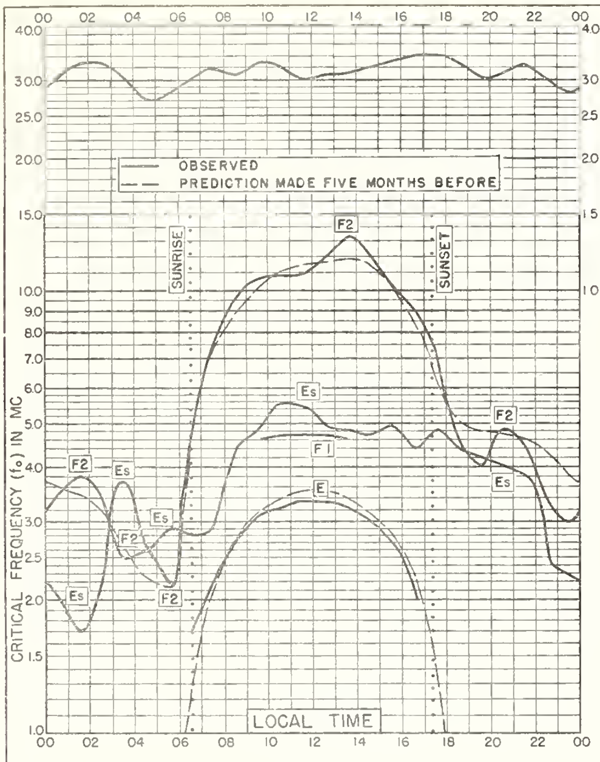


Fig. 25. MAUI, HAWAII
20.8°N, 156. 5°W DECEMBER 1951

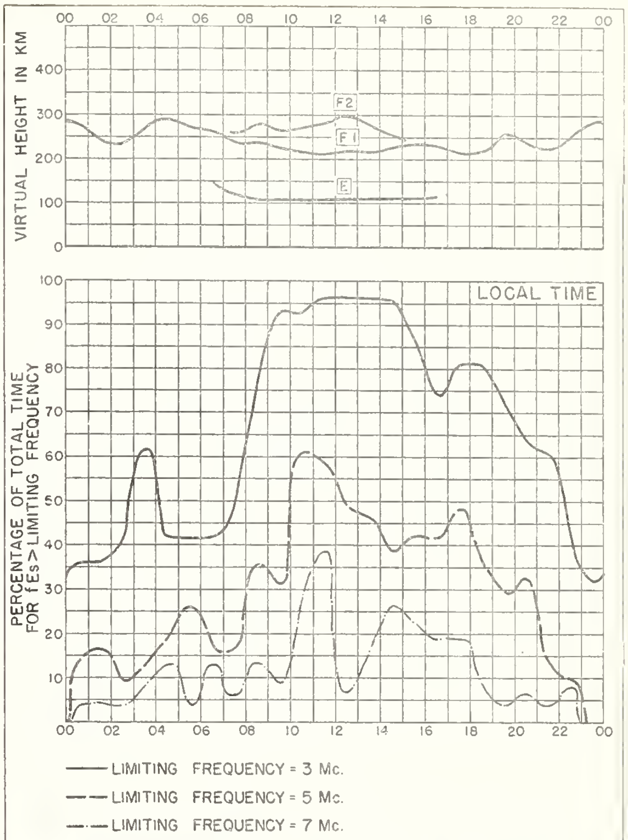


Fig. 26. MAUI, HAWAII DECEMBER 1951

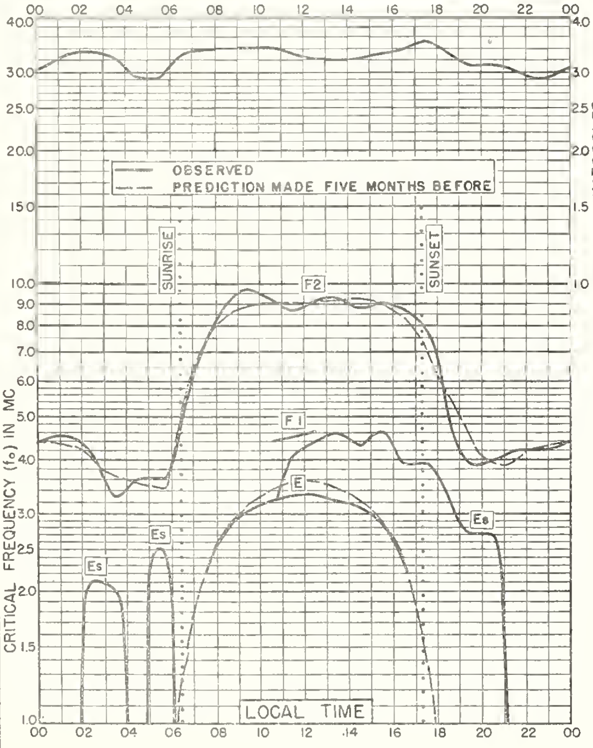


Fig. 27. PUERTO RICO, W.I.
18.5°N, 67. 2°W DECEMBER 1951

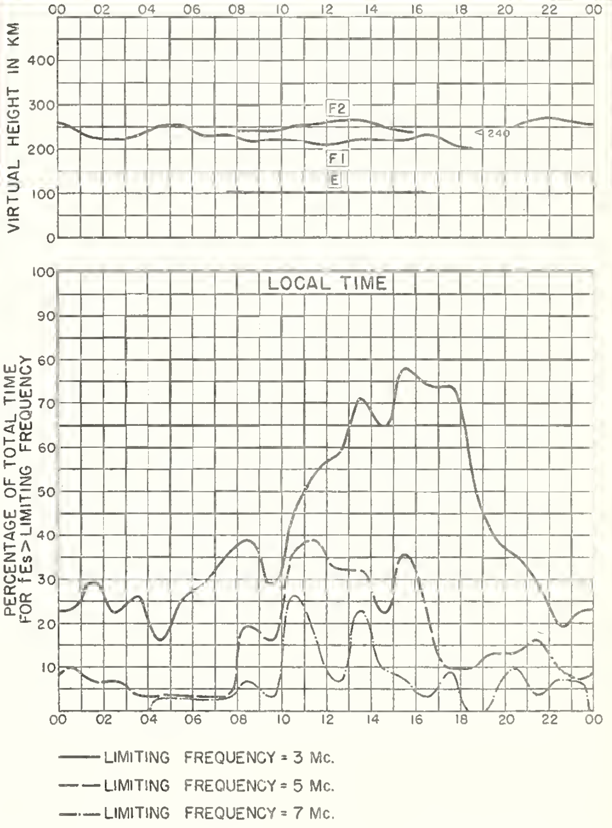


Fig. 28. PUERTO RICO, W.I. DECEMBER 1951

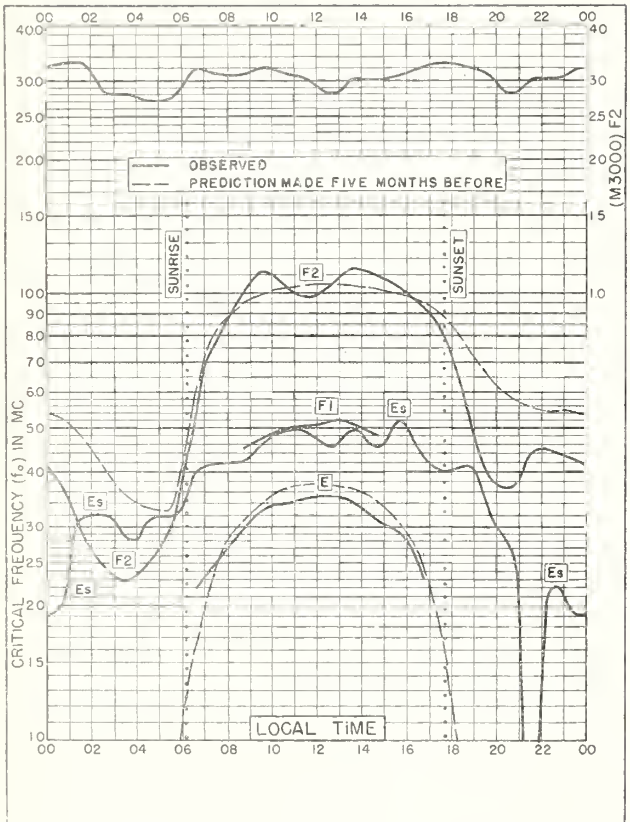


Fig. 29. PANAMA CANAL ZONE
9.4°N, 79.9°W DECEMBER 1951

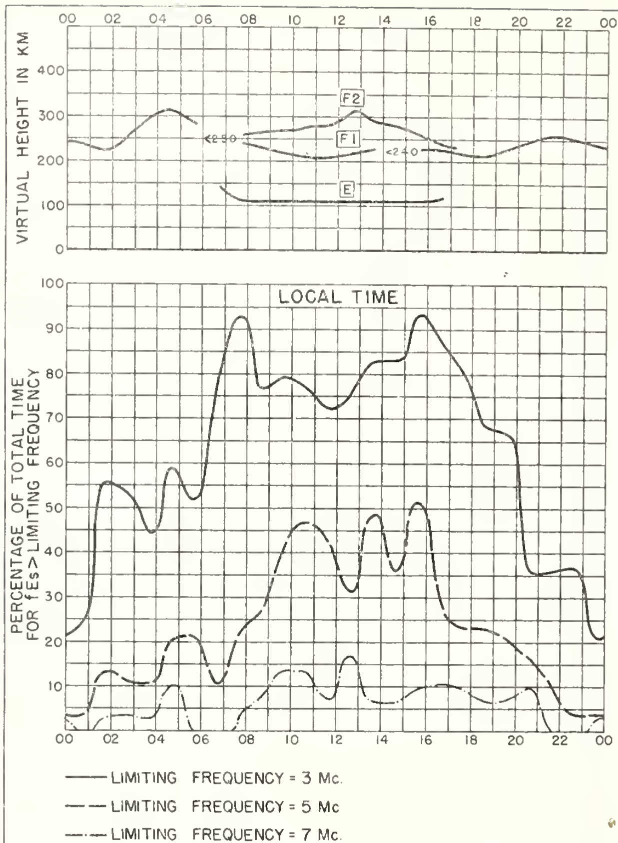


Fig. 30. PANAMA CANAL ZONE DECEMBER 1951

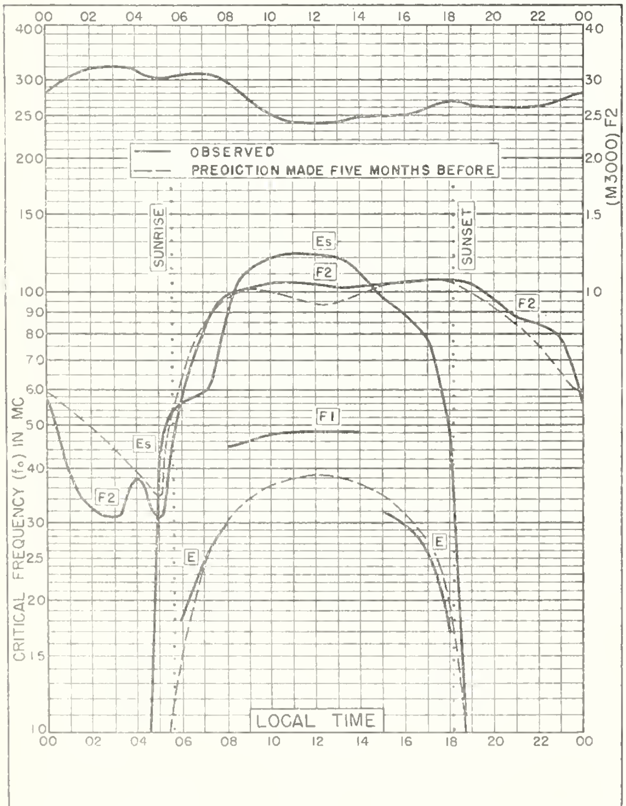


Fig 31. HUANCAYO, PERU
12.0°S, 75.3°W DECEMBER 1951

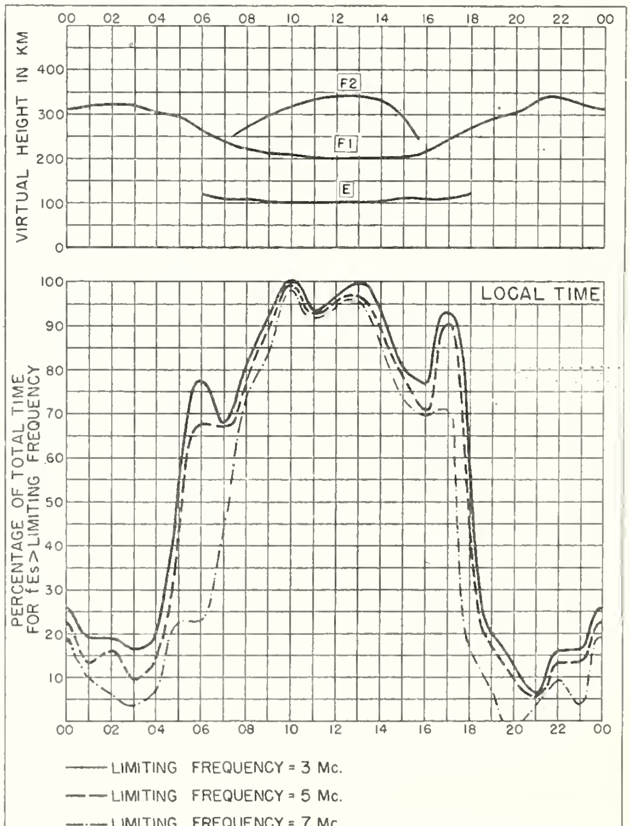


Fig. 32. HUANCAYO, PERU DECEMBER 1951

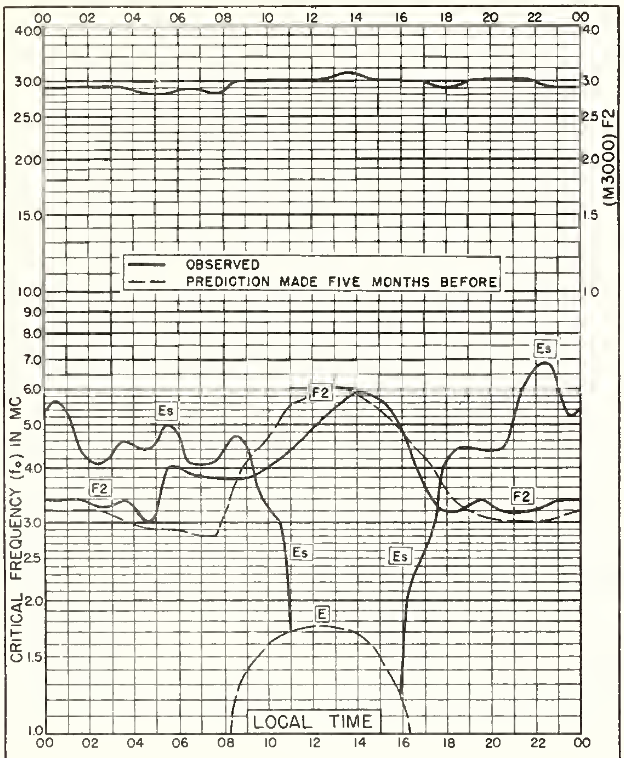


Fig. 33. POINT BARROW, ALASKA

71.3°N, 156.8°W NOVEMBER 1951

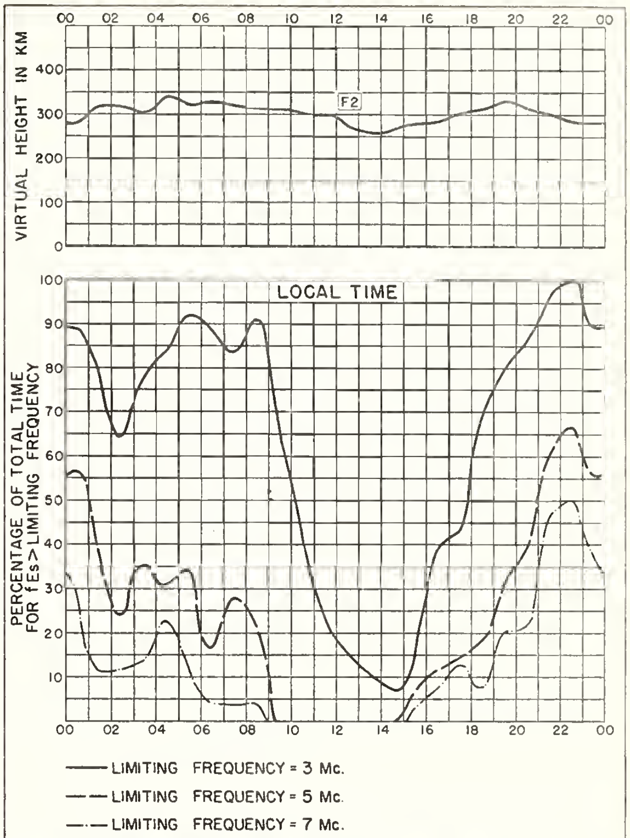


Fig. 34. POINT BARROW, ALASKA NOVEMBER 1951

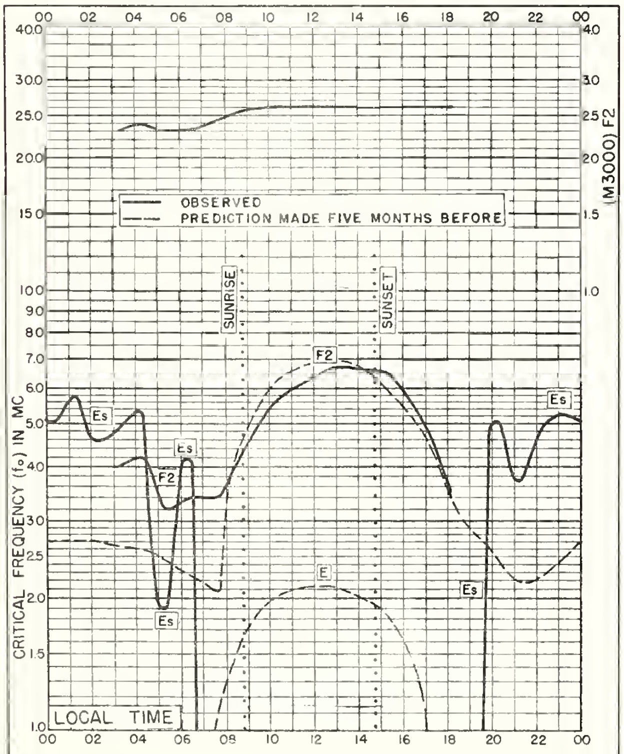


Fig. 35. FAIRBANKS, ALASKA

64.9°N, 147.8°W NOVEMBER 1951

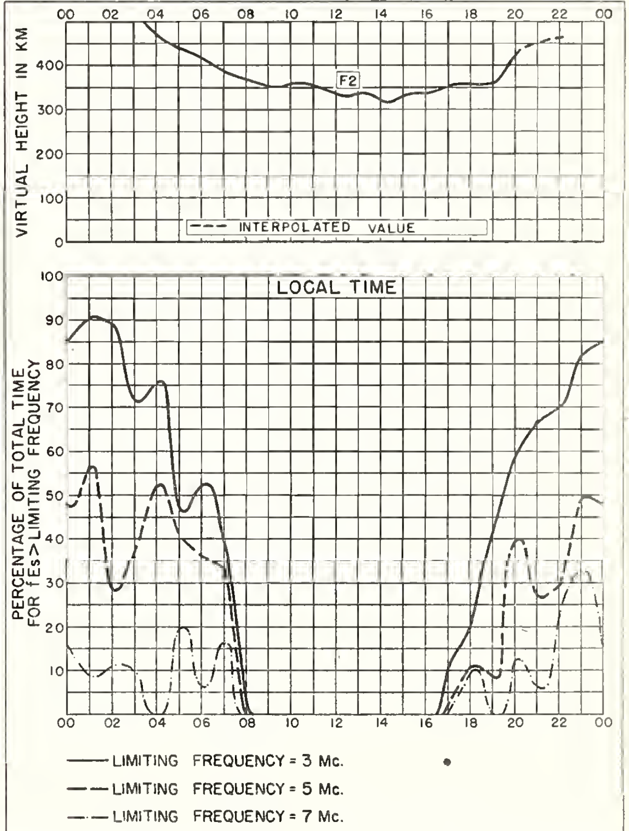


Fig. 36. FAIRBANKS, ALASKA NOVEMBER 1951

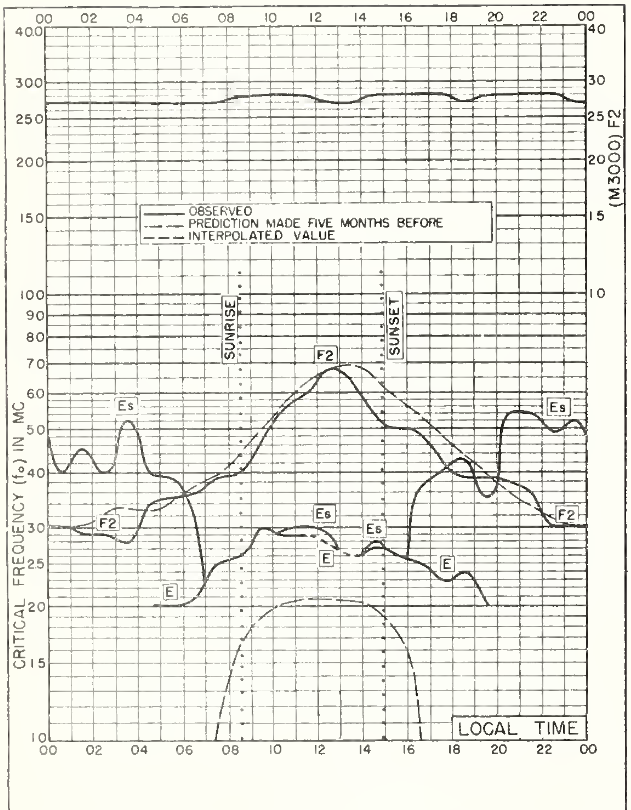


Fig. 37 BAKER LAKE, CANADA
64.3°N, 96.0°W NOVEMBER 1951

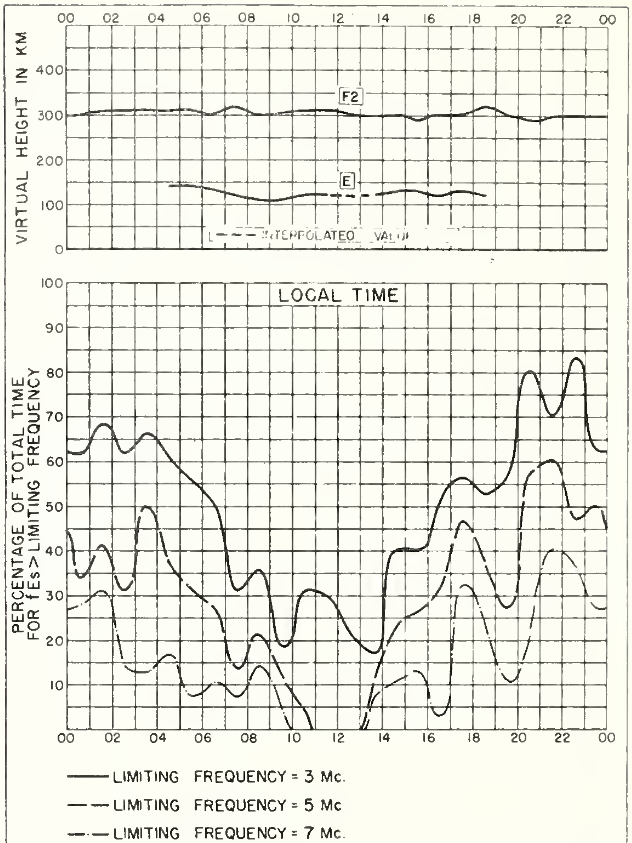


Fig. 38 BAKER LAKE, CANADA NOVEMBER 1951

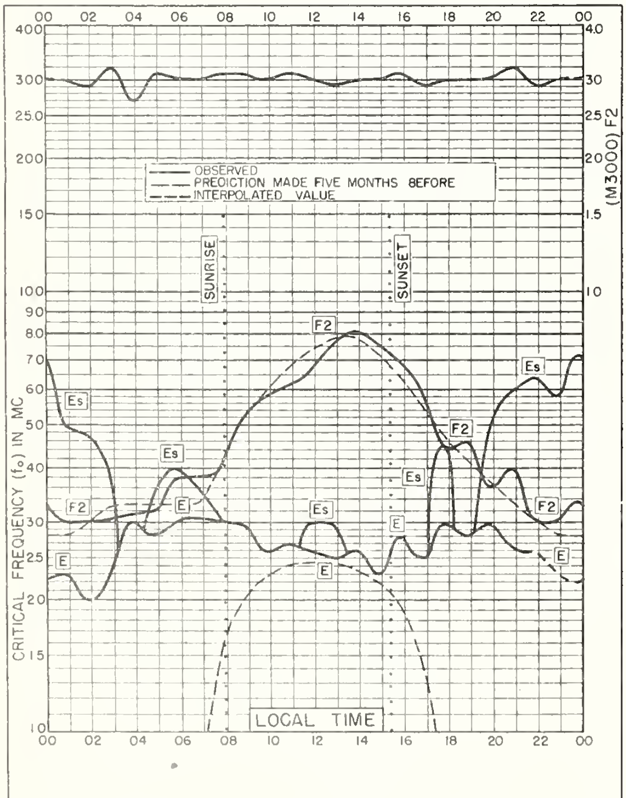


Fig. 39 CHURCHILL, CANADA
58.8°N, 94.2°W NOVEMBER 1951

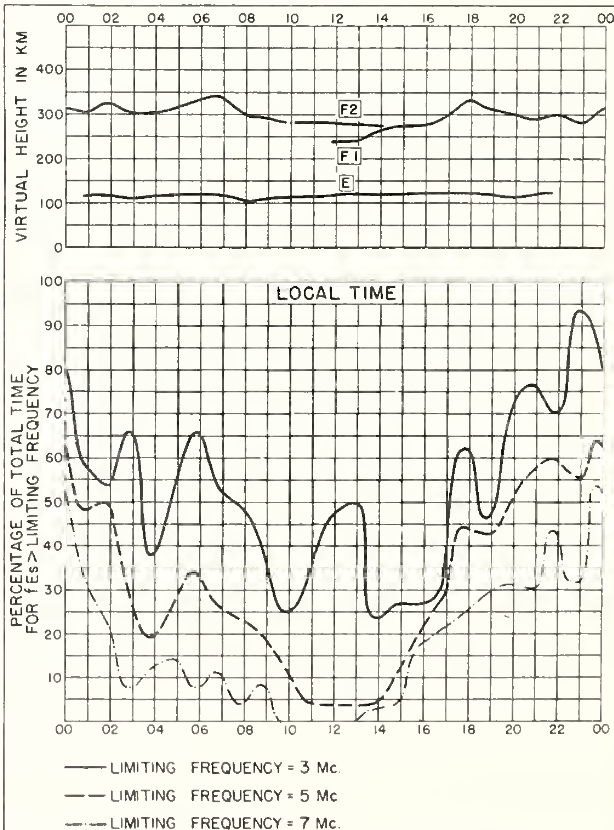


Fig. 40 CHURCHILL, CANADA NOVEMBER 1951

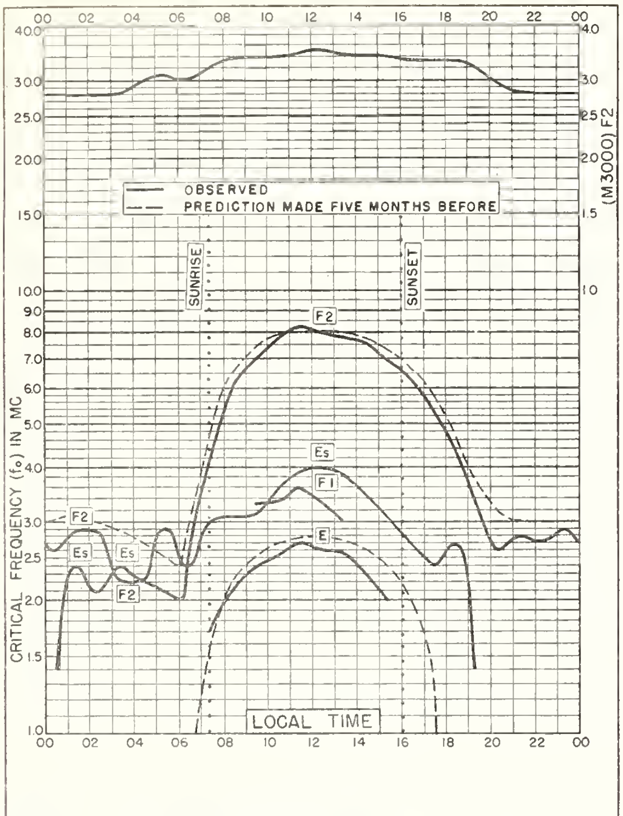


Fig. 41. De BILT, HOLLAND 52.1°N, 5.2°E NOVEMBER 1951

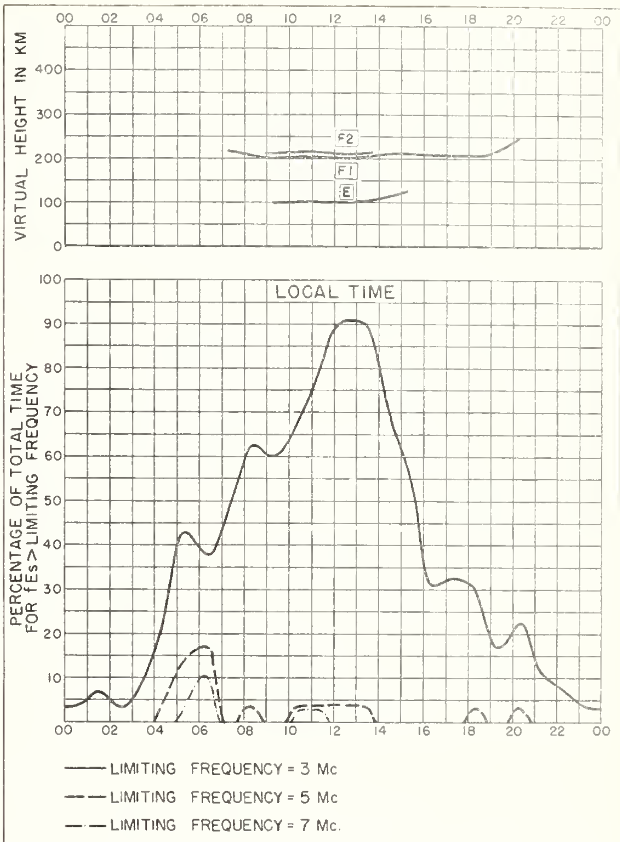


Fig. 42. De BILT, HOLLAND NOVEMBER 1951

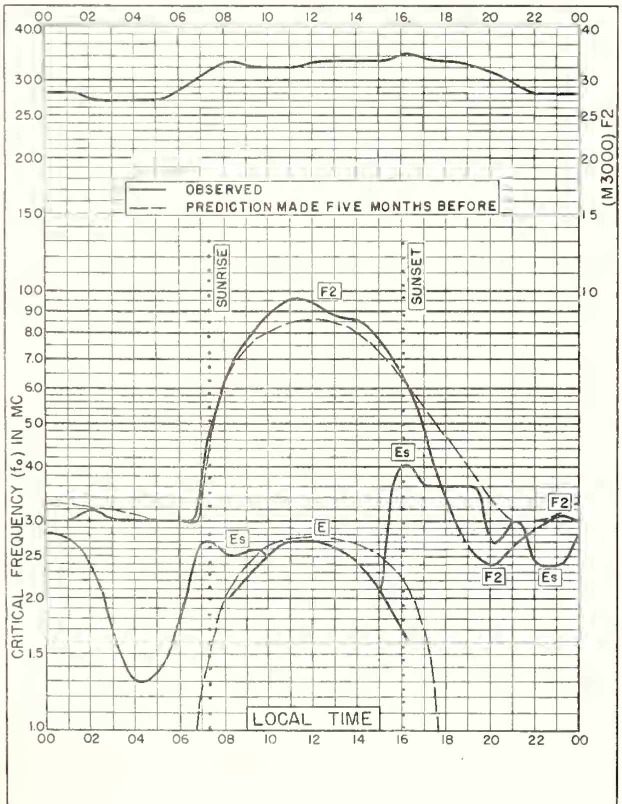


Fig. 43. ADAK, ALASKA 51.9°N, 176.6°W NOVEMBER 1951

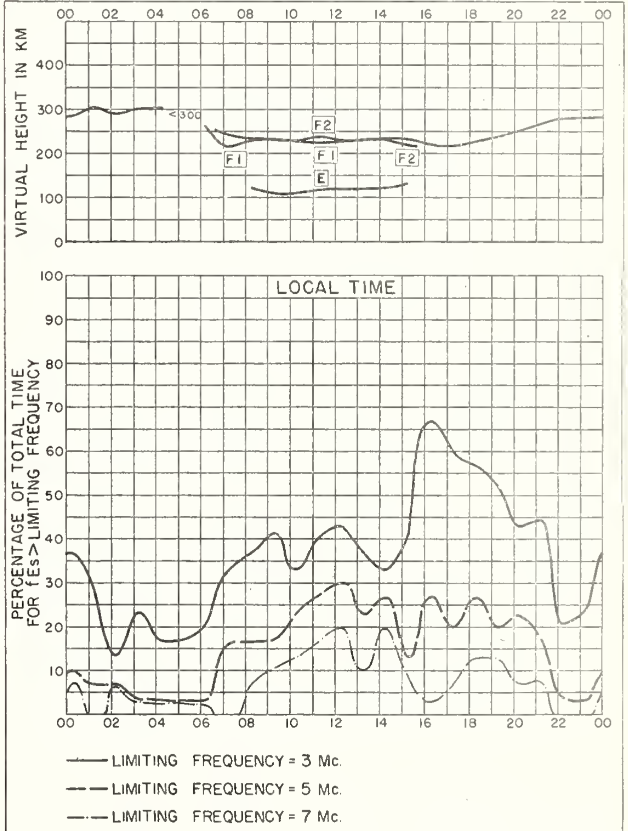


Fig. 44. ADAK, ALASKA NOVEMBER 1951

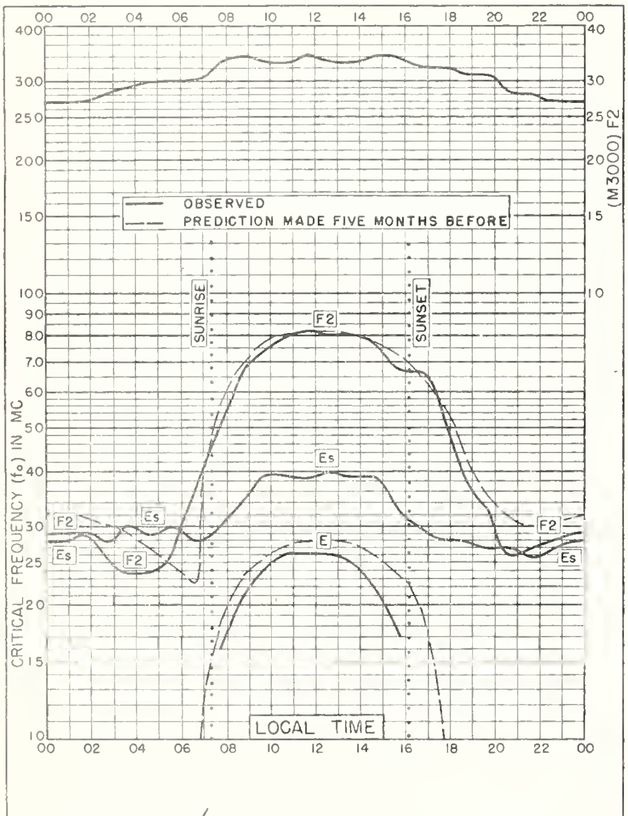


Fig. 45. LINDAU/HARZ, GERMANY
51.6°N, 10.1°E NOVEMBER 1951

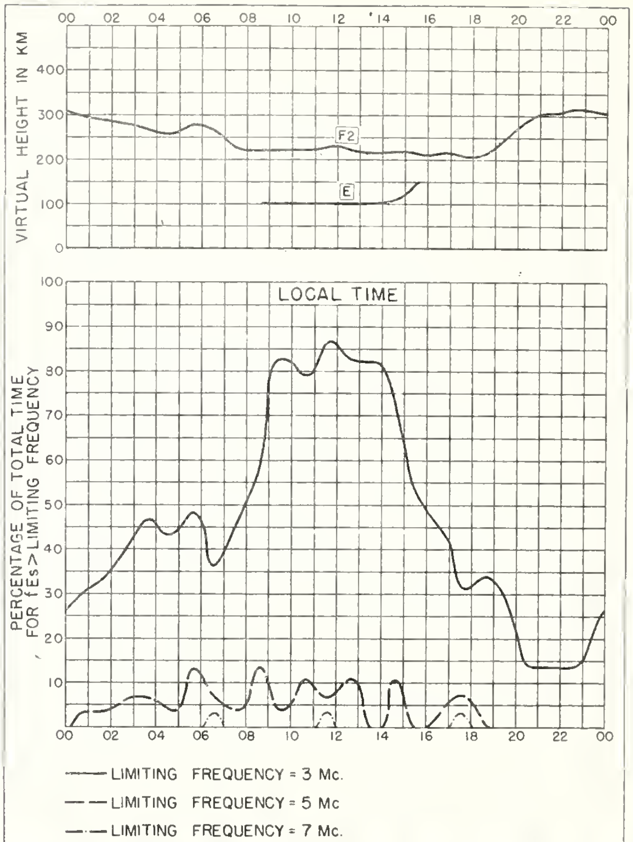


Fig. 46. LINDAU/HARZ, GERMANY NOVEMBER 1951

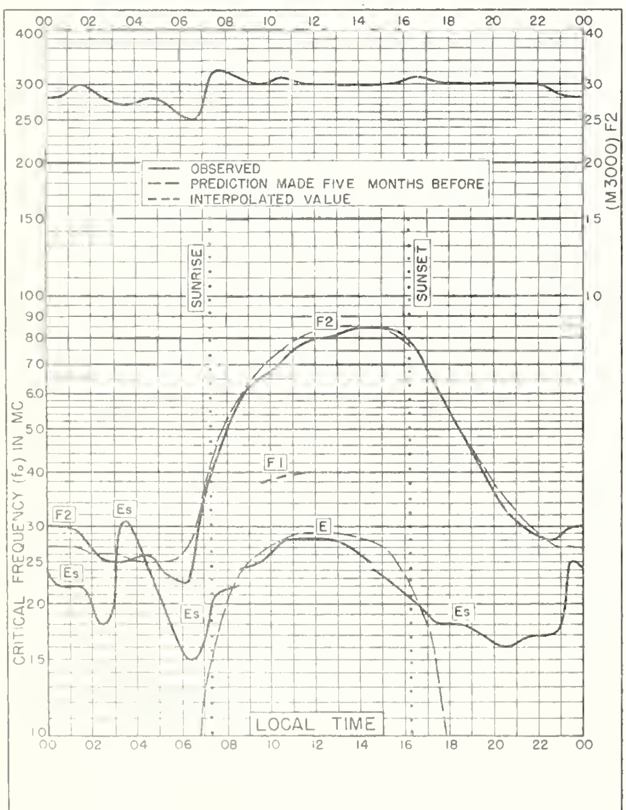


Fig 47 WINNIPEG, CANADA
49.9° N, 97.4° W NOVEMBER 1951

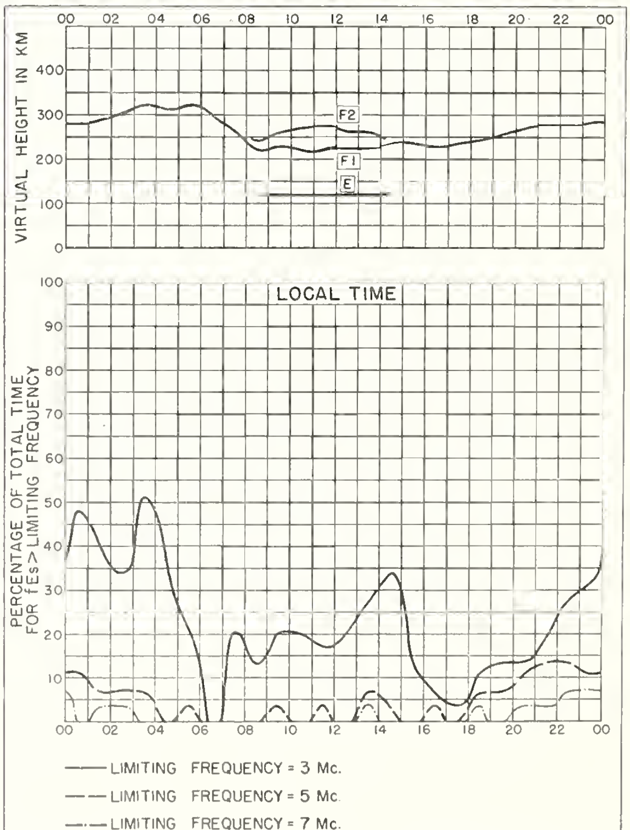


Fig. 48. WINNIPEG, CANADA NOVEMBER 1951

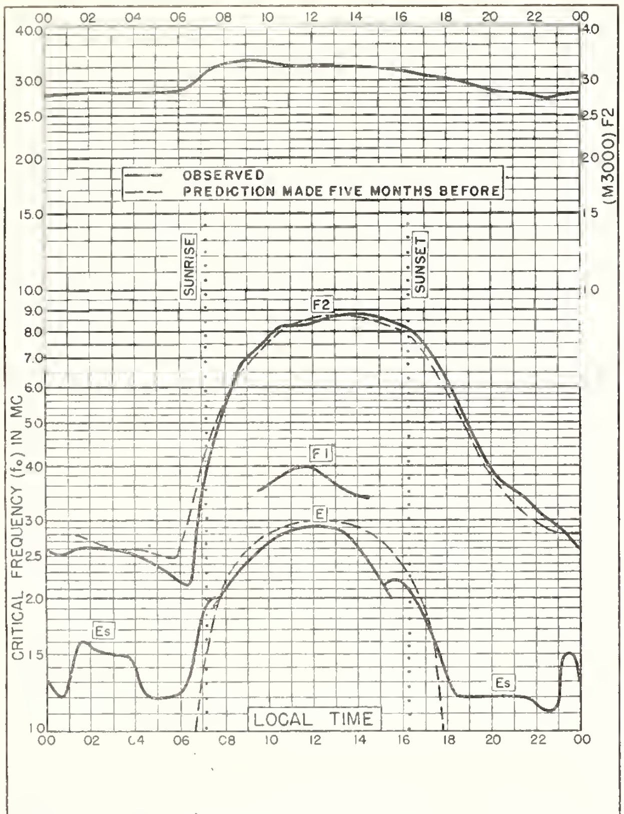


Fig 49. ST. JOHN'S, NEWFOUNDLAND
47.6°N, 52.7°W NOVEMBER 1951

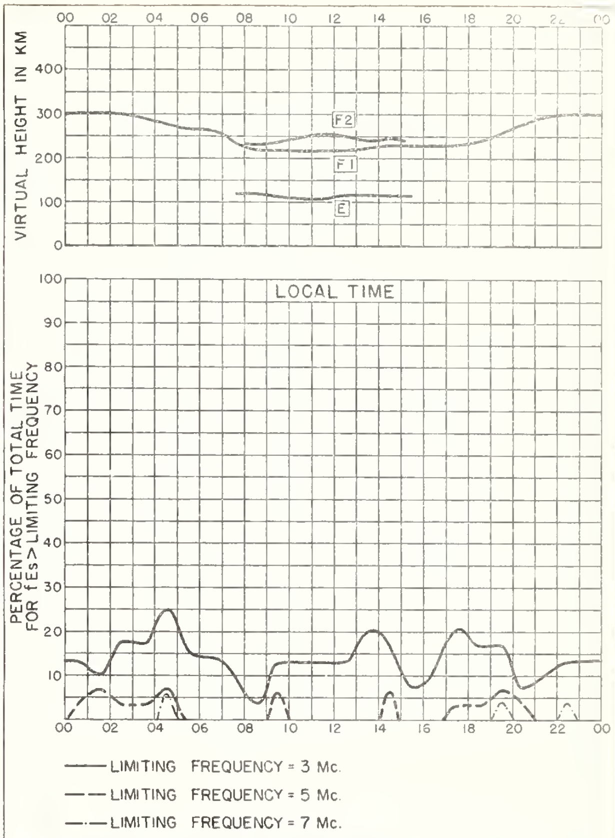


Fig. 50. ST. JOHN'S, NEWFOUNDLAND NOVEMBER 1951

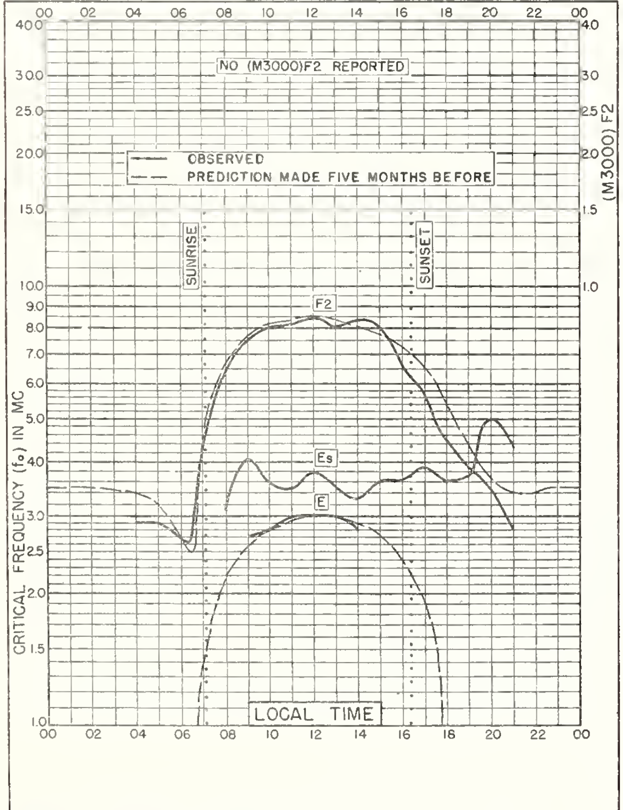


Fig. 51. GRAZ, AUSTRIA
47.1°N, 15.5°E NOVEMBER 1951

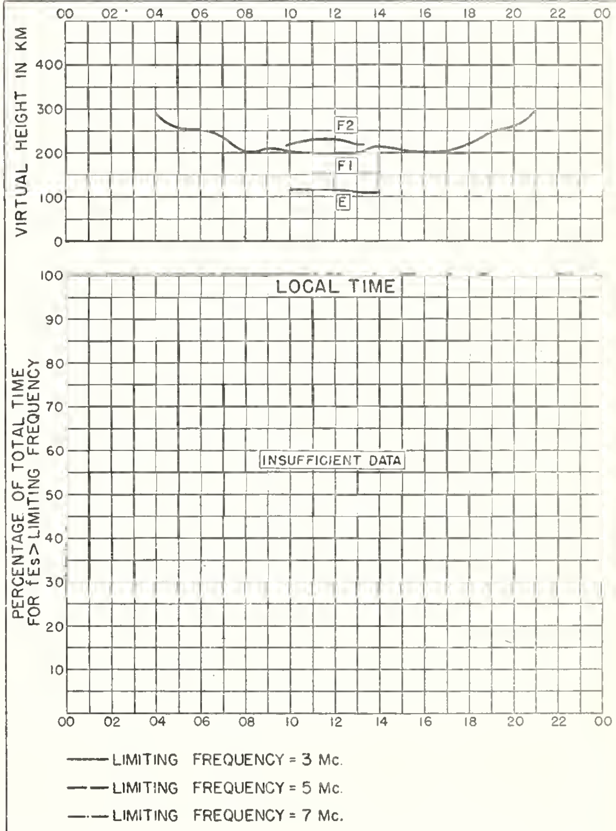


Fig. 52. GRAZ, AUSTRIA NOVEMBER 1951

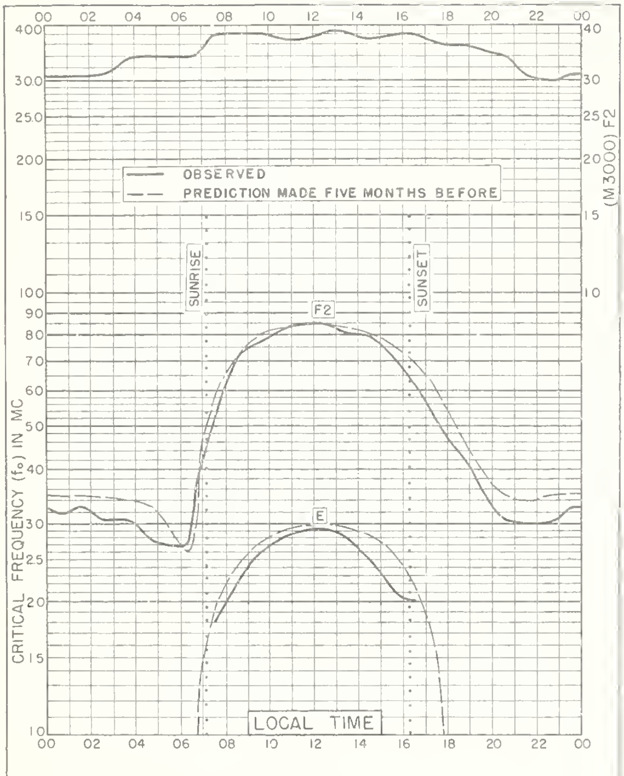


Fig. 53. SCHWARZENBURG, SWITZERLAND
46.8°N, 7.3°E NOVEMBER 1951

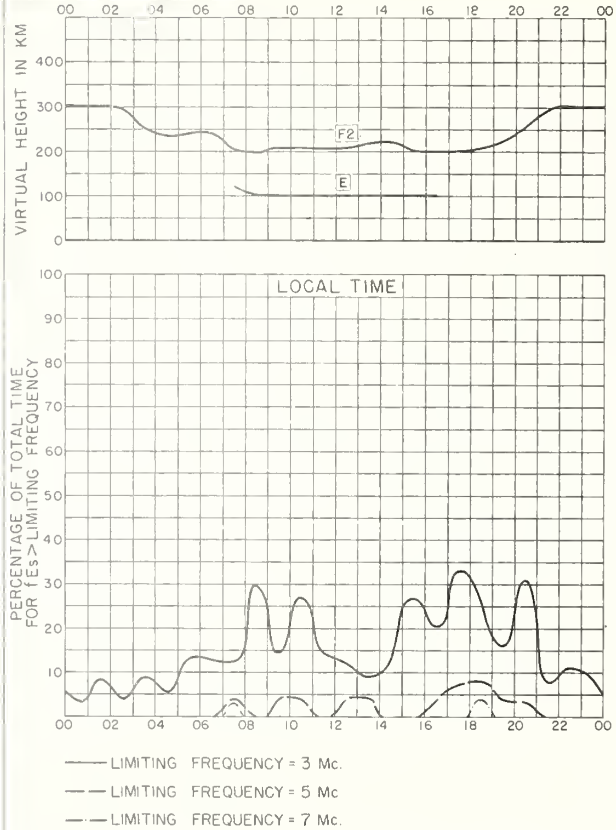


Fig. 54. SCHWARZENBURG, SWITZERLAND NOVEMBER 1951

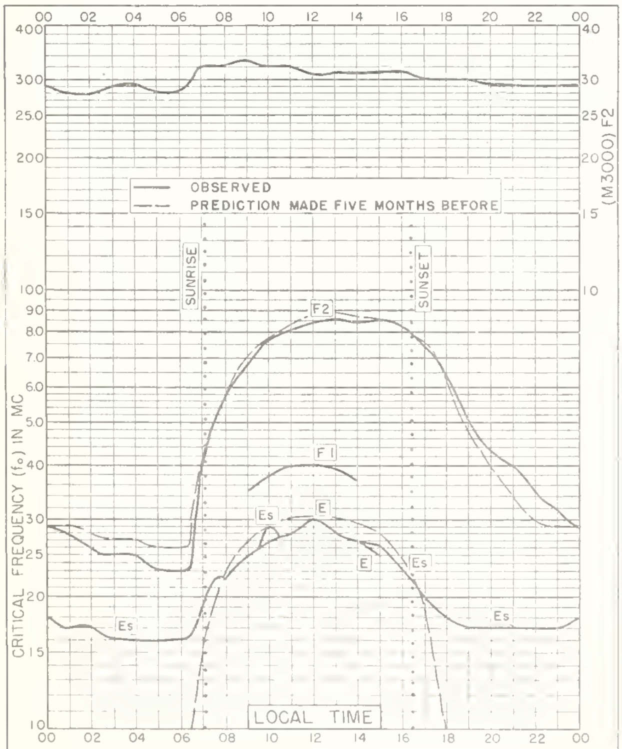


Fig 55. OTTAWA, CANADA
45.4°N, 75.7°W NOVEMBER 1951

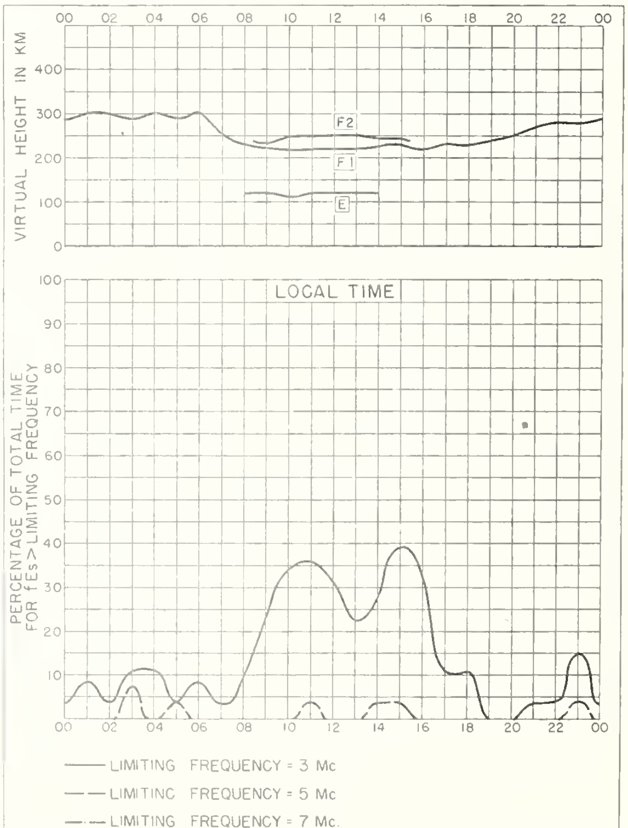


Fig. 56. OTTAWA, CANADA NOVEMBER 1951

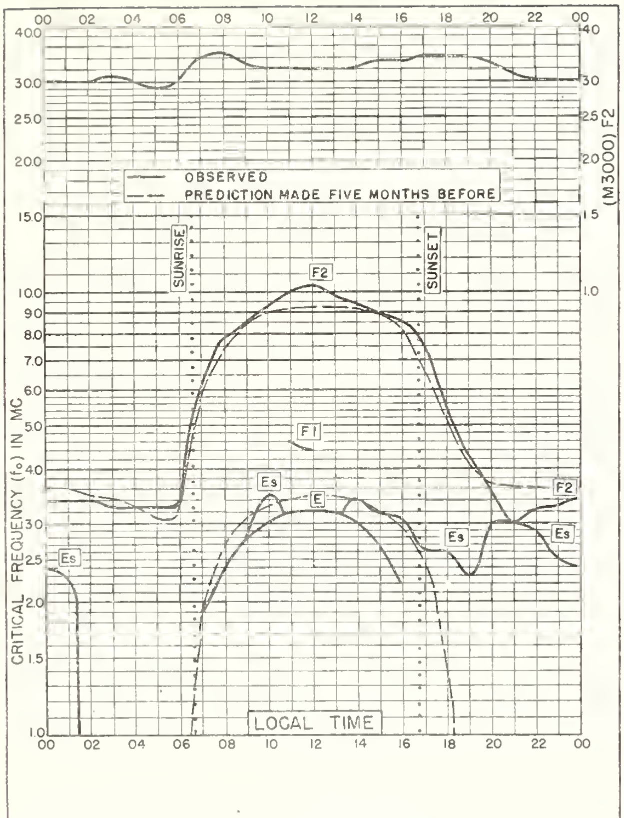


Fig. 57. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W NOVEMBER 1951

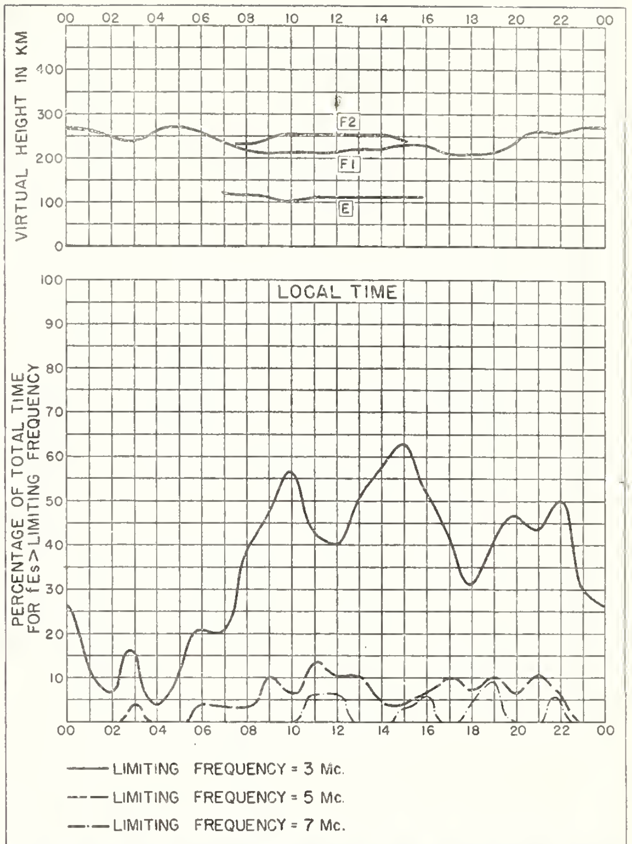


Fig. 58. WHITE SANDS, NEW MEXICO NOVEMBER 1951

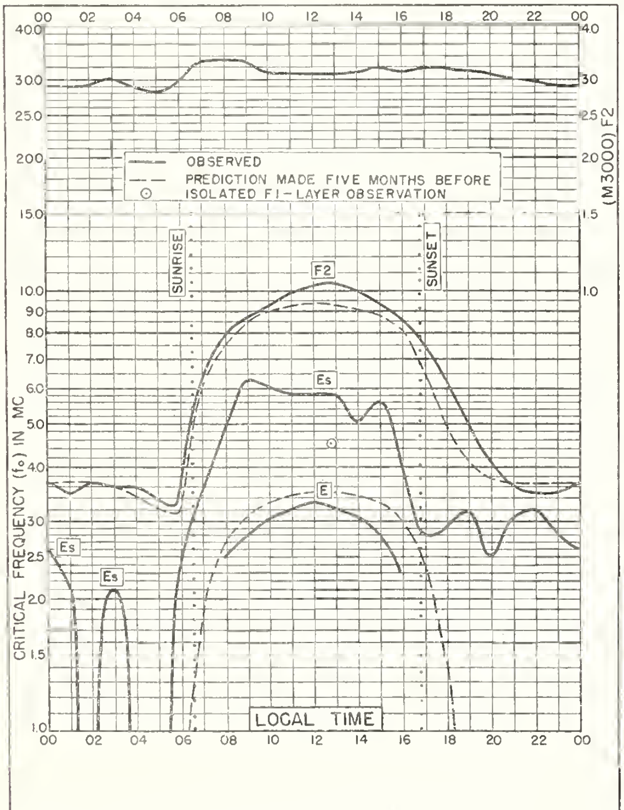


Fig. 59. BATON ROUGE, LOUISIANA
30.5°N, 91.2°W NOVEMBER 1951

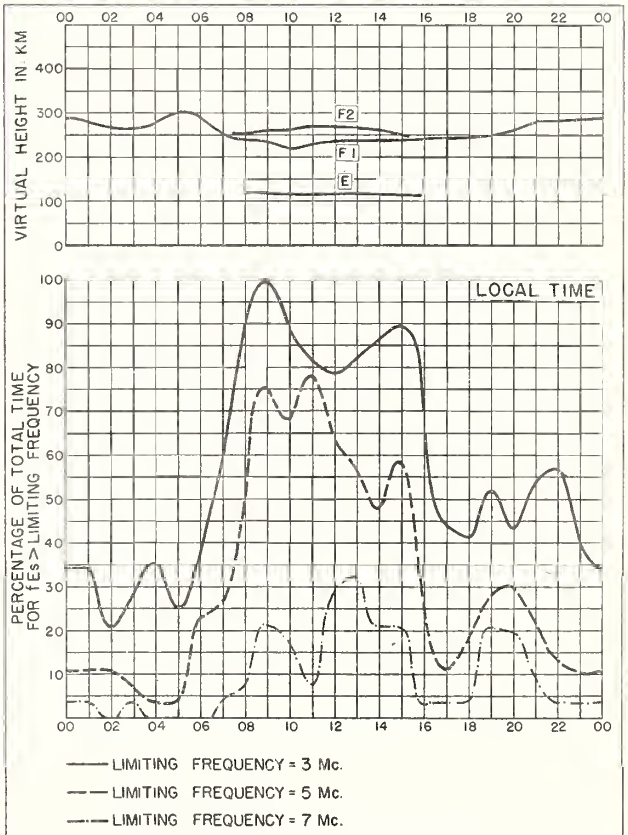


Fig. 60. BATON ROUGE, LOUISIANA NOVEMBER 1951

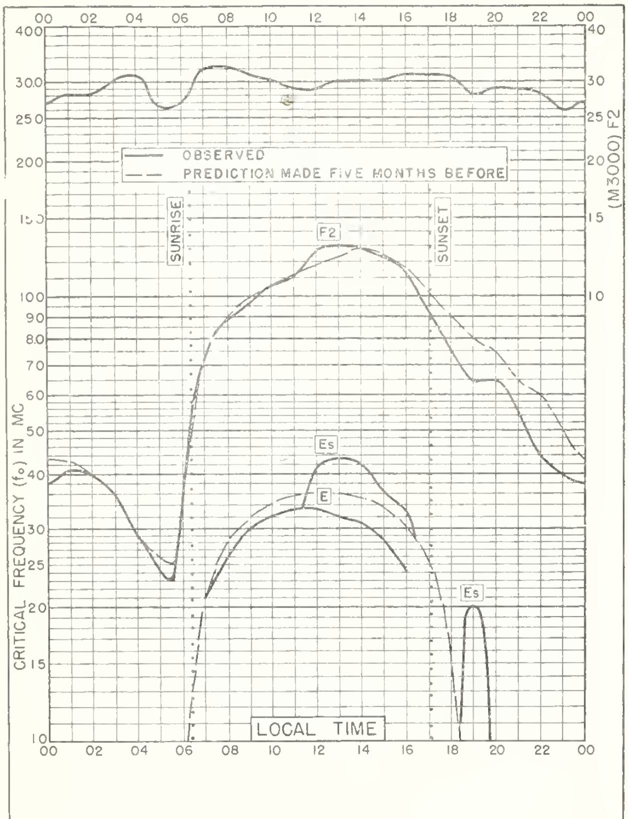


Fig. 61. OKINAWA I. 26.3°N, 127.8°E NOVEMBER 1951

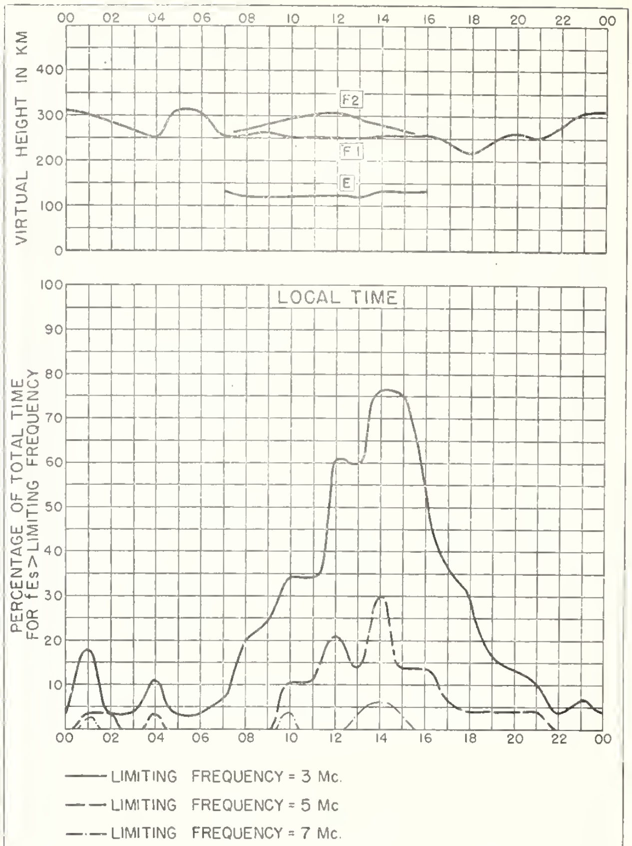


Fig. 62. OKINAWA I. NOVEMBER 1951

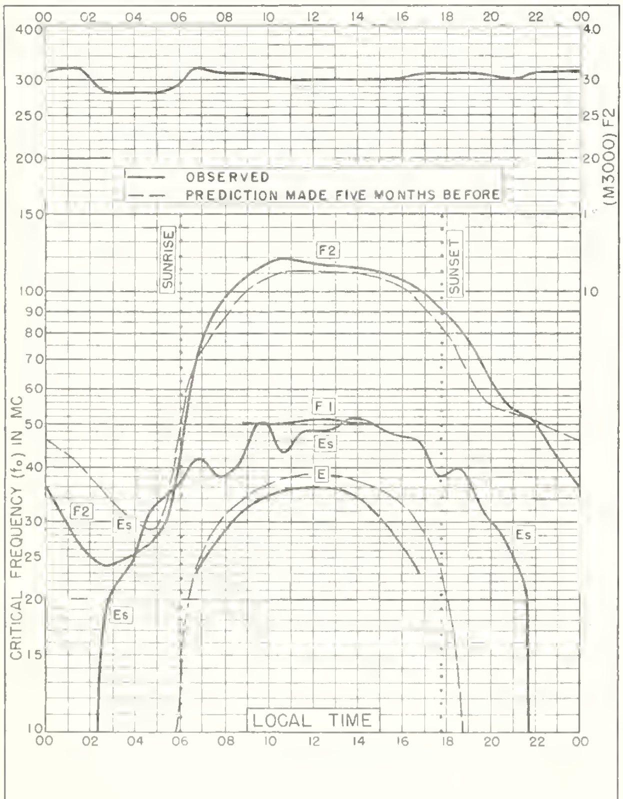


Fig. 63. PANAMA CANAL ZONE 9.4°N, 79.9°W NOVEMBER 1951

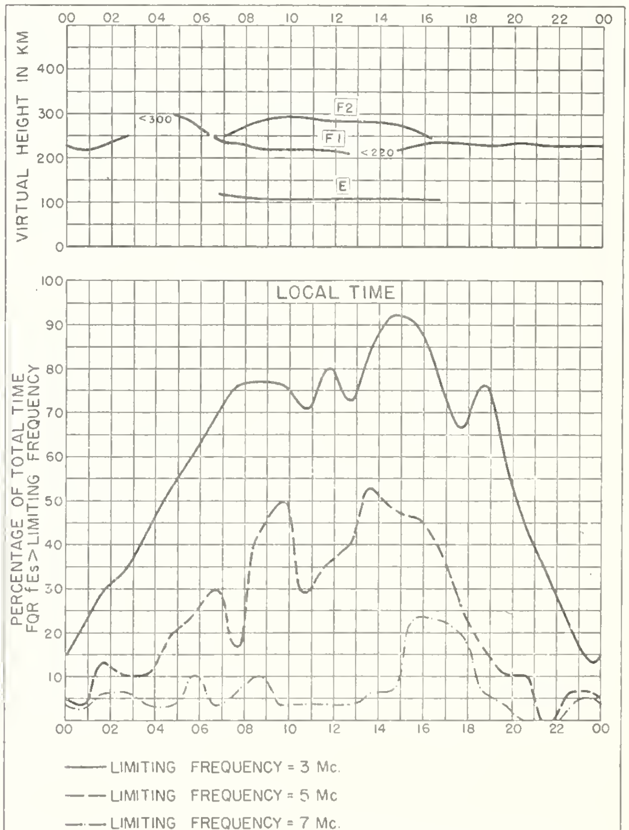


Fig. 64. PANAMA CANAL ZONE NOVEMBER 1951

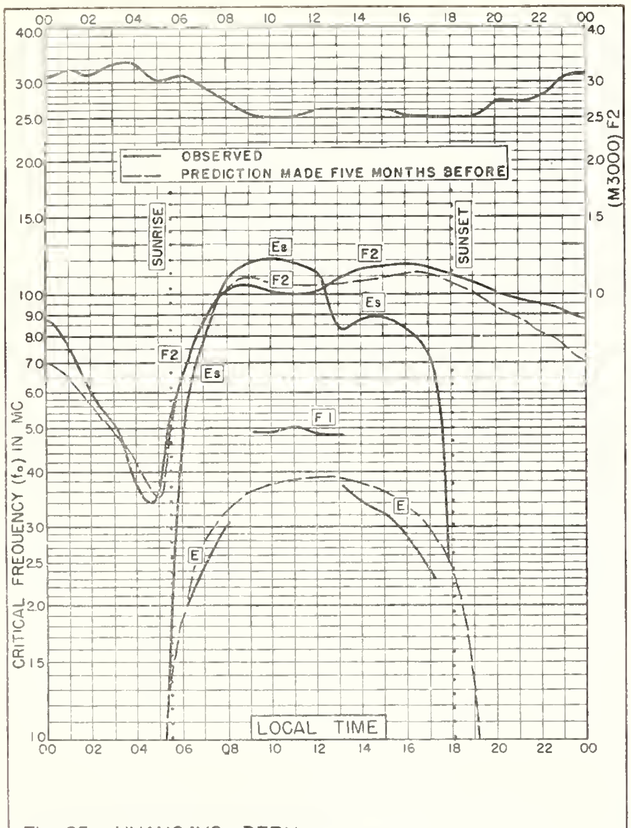


Fig. 65. HUANCAYO, PERU
12.0° S, 75.3°W NOVEMBER 1951

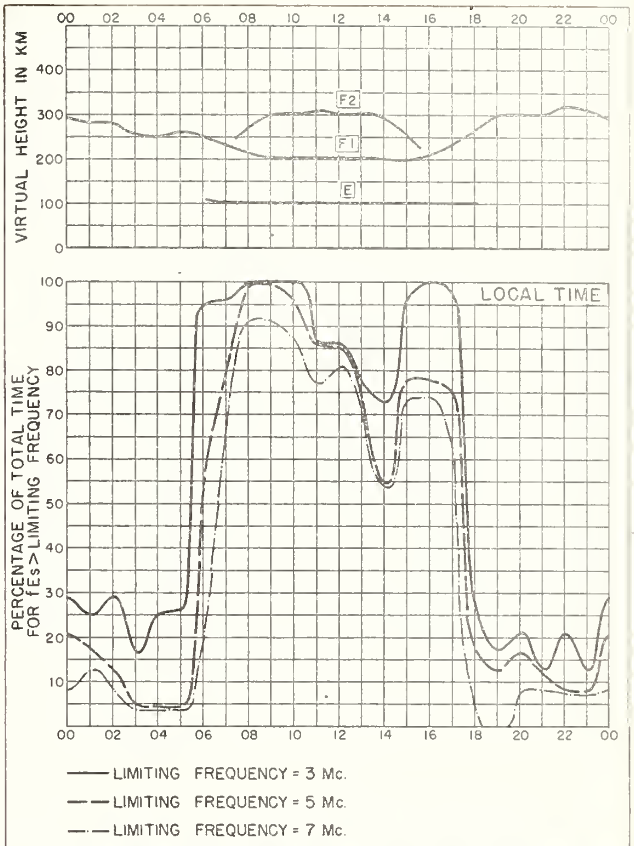


Fig. 66. HUANCAYO, PERU NOVEMBER 1951

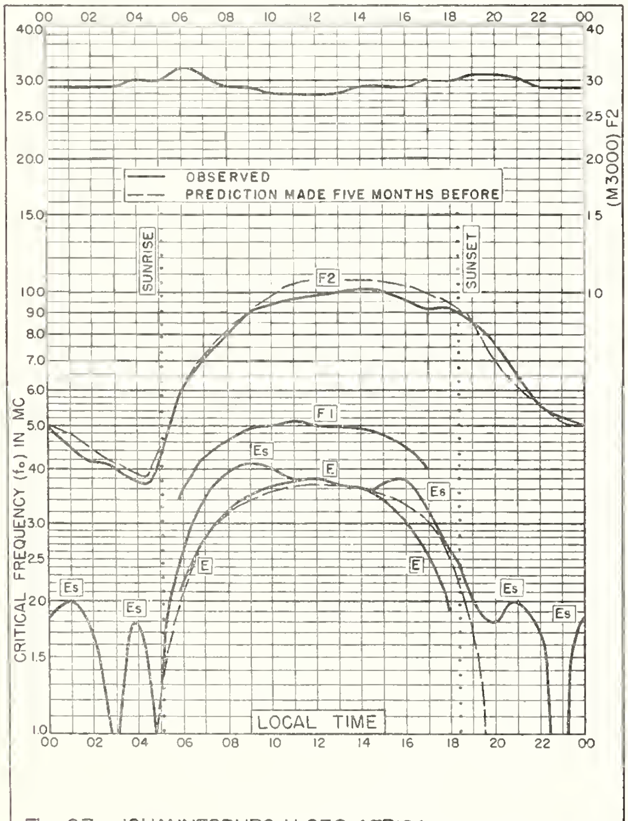


Fig. 67. JOHANNESBURG, U. OF S. AFRICA
26.2°S, 28.1°E NOVEMBER 1951

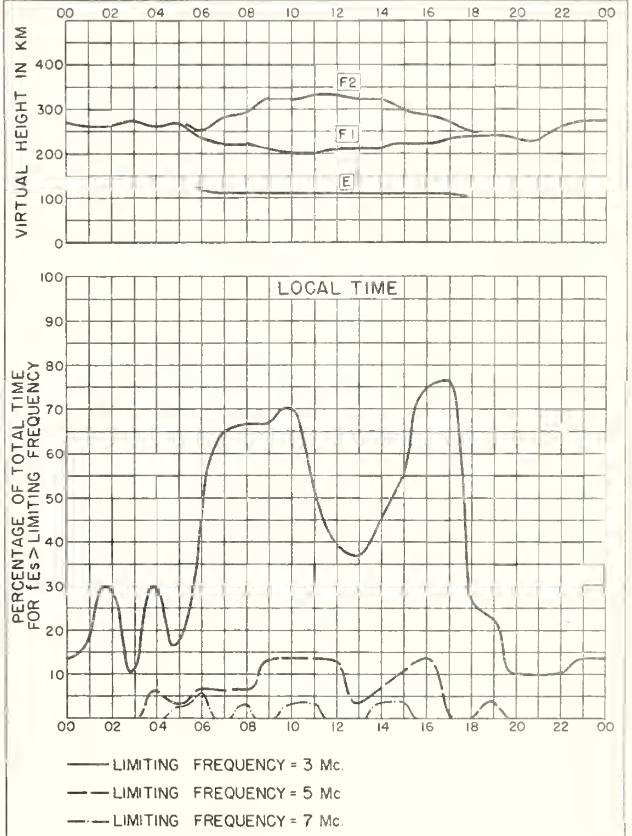


Fig. 68. JOHANNESBURG, U. OF S. AFRICA NOVEMBER 1951

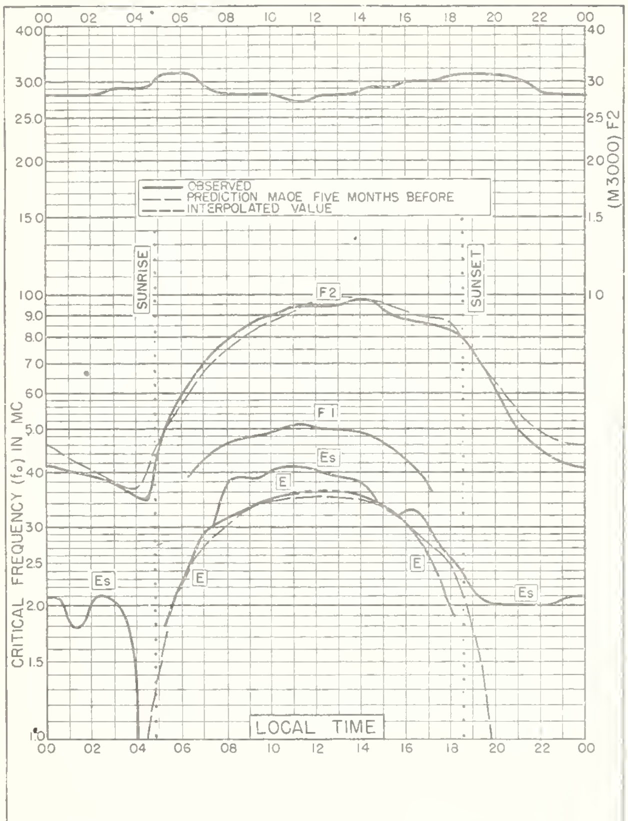


Fig 69. CAPETOWN, U. OF S. AFRICA
34.2°S, 18.3°E NOVEMBER 1951

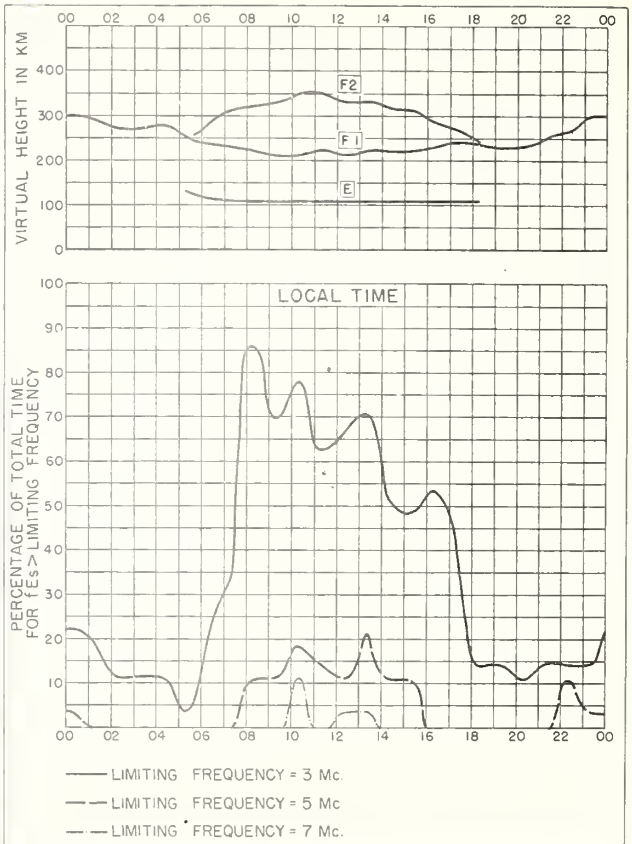


Fig. 70. CAPETOWN, U. OF S. AFRICA NOVEMBER 1951

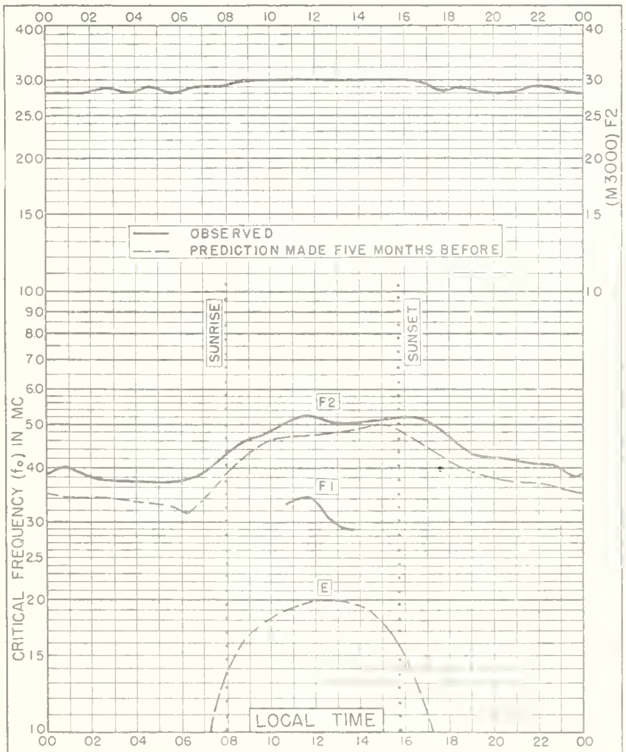


Fig. 71. RESOLUTE BAY, CANADA
74.7°N, 94.9°W OCTOBER 1951

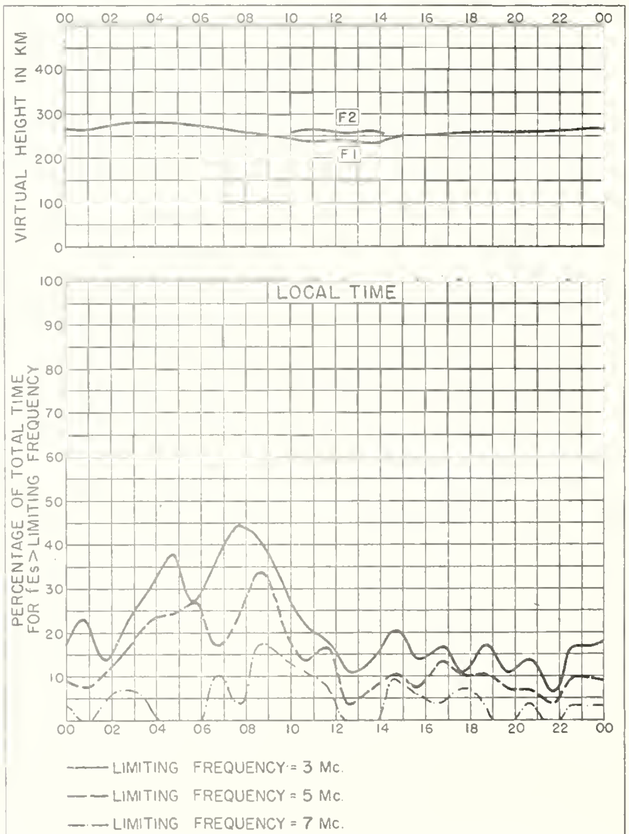


Fig. 72. RESOLUTE BAY, CANADA OCTOBER 1951

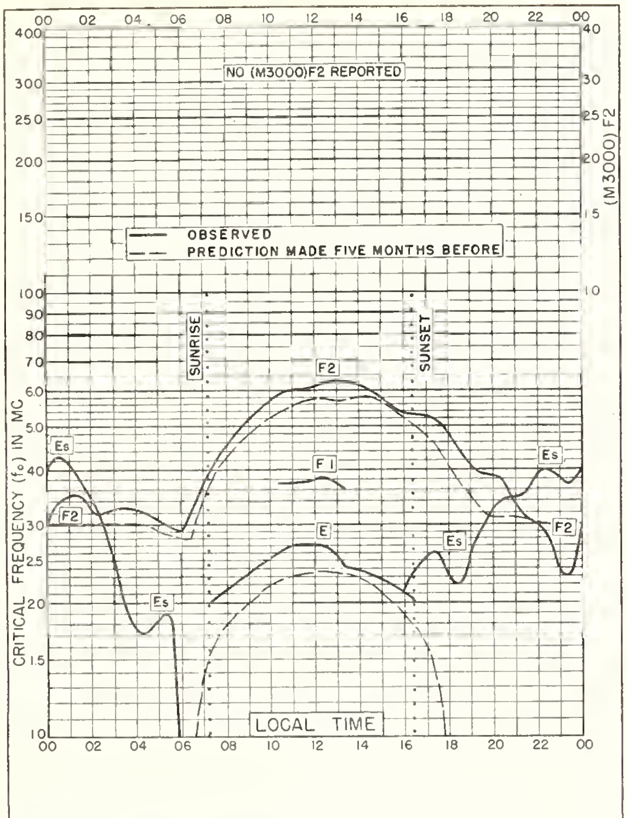


Fig. 73. KIRUNA, SWEDEN
67.8°N, 20.5°E OCTOBER 1951

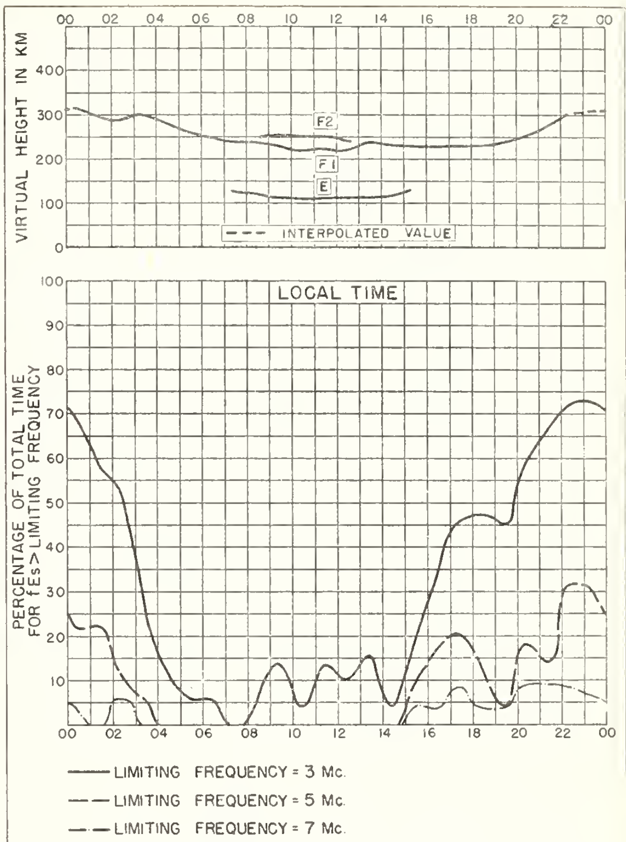


Fig. 74. KIRUNA, SWEDEN OCTOBER 1951

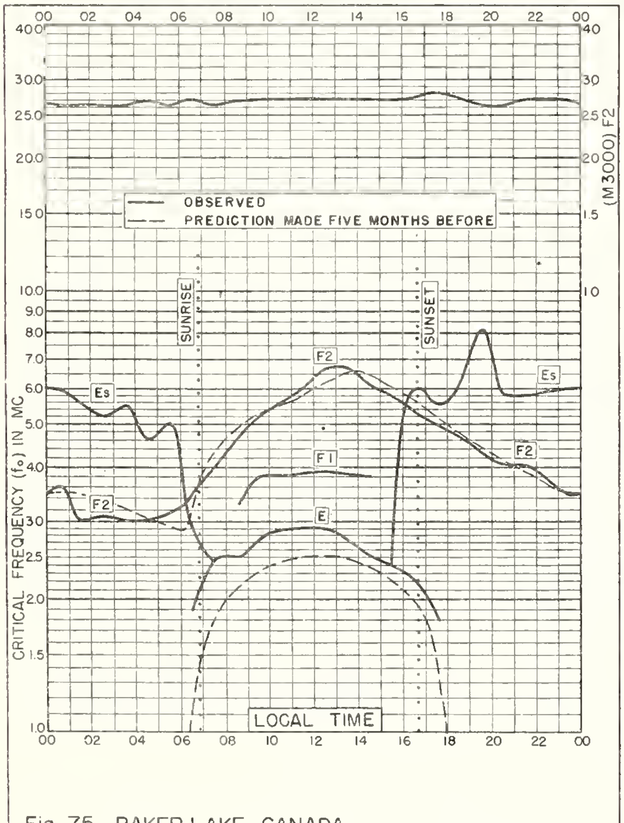


Fig. 75. BAKER LAKE, CANADA
64.3°N, 96.0°W OCTOBER 1951

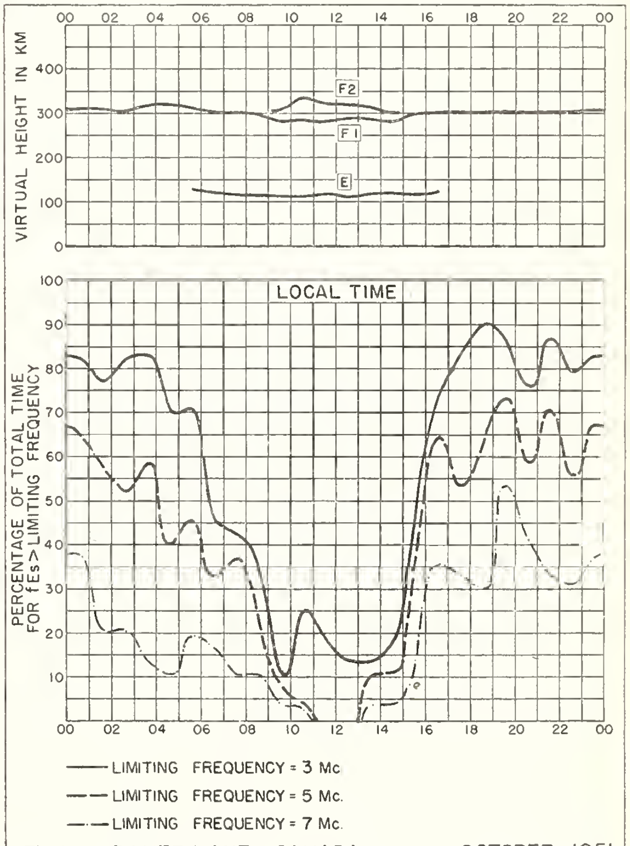


Fig. 76. BAKER LAKE, CANADA OCTOBER 1951

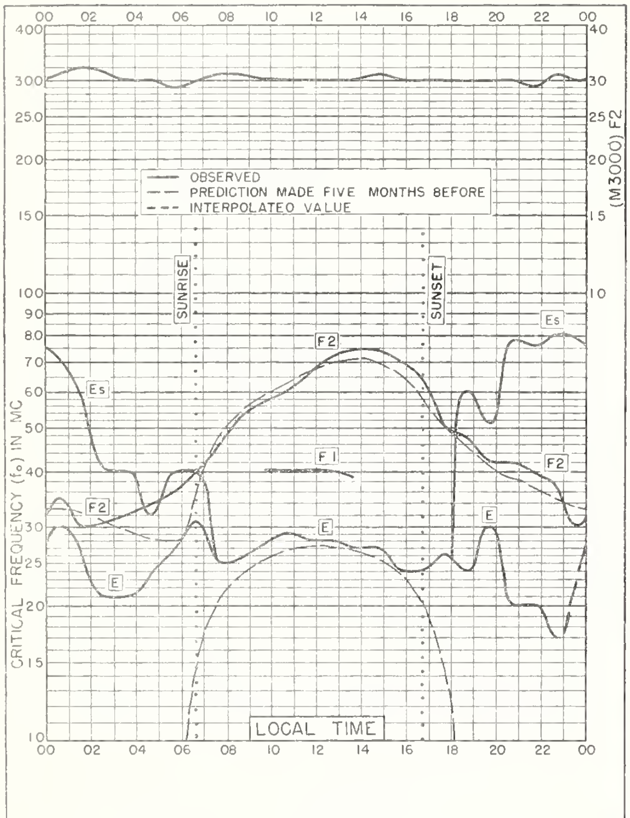


Fig. 77. CHURCHILL, CANADA
58.8°N, 94.2°W OCTOBER 1951

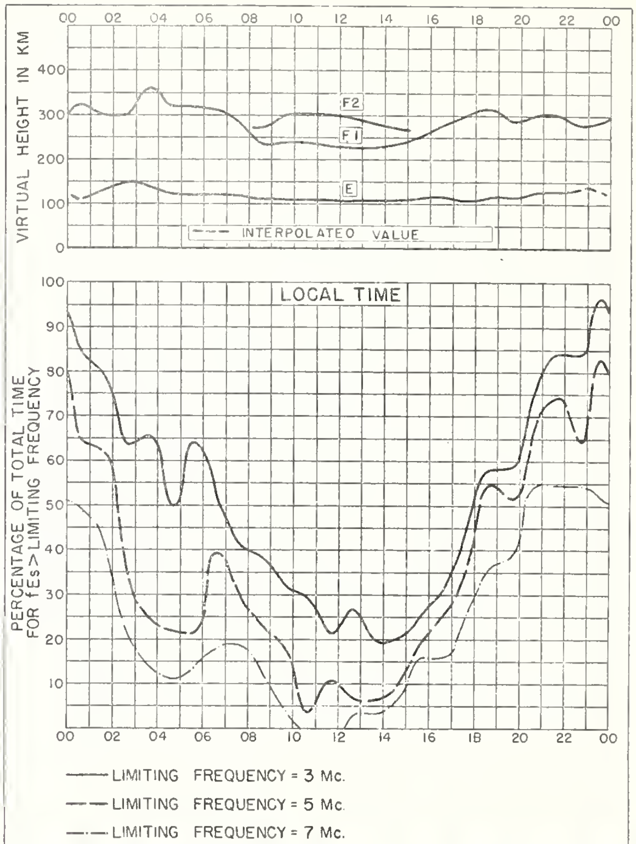


Fig. 78. CHURCHILL, CANADA OCTOBER 1951

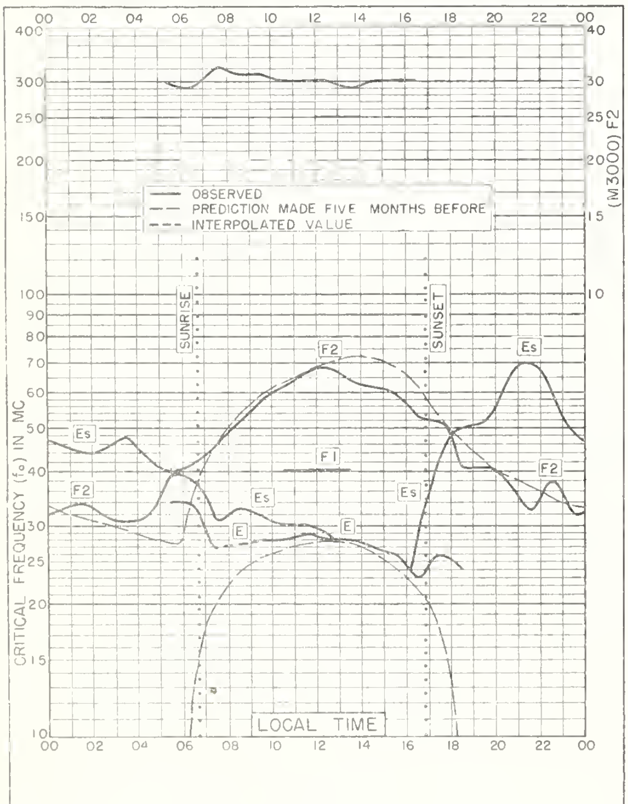


Fig 79. FORT CHIMO, CANADA
58.1°N, 68.3°W OCTOBER 1951

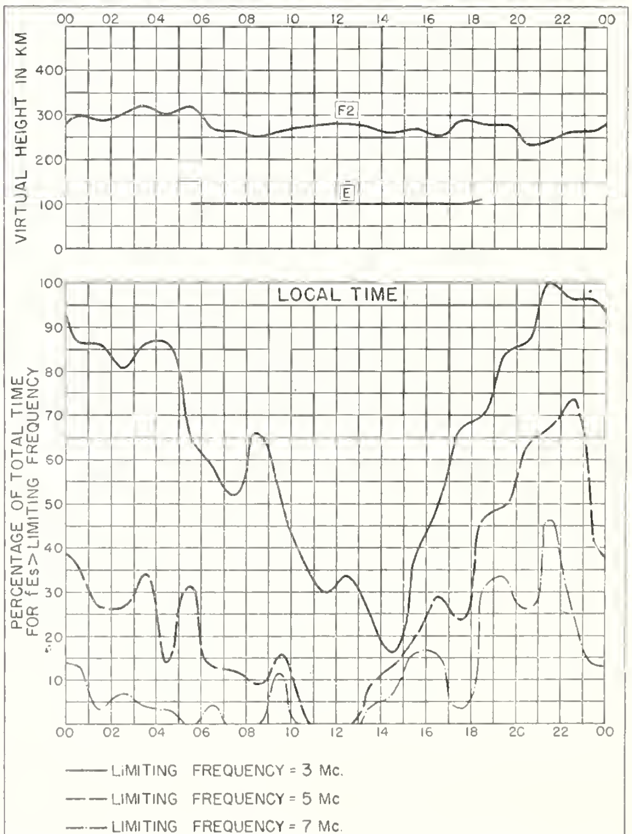


Fig. 80. FORT CHIMO, CANADA OCTOBER 1951

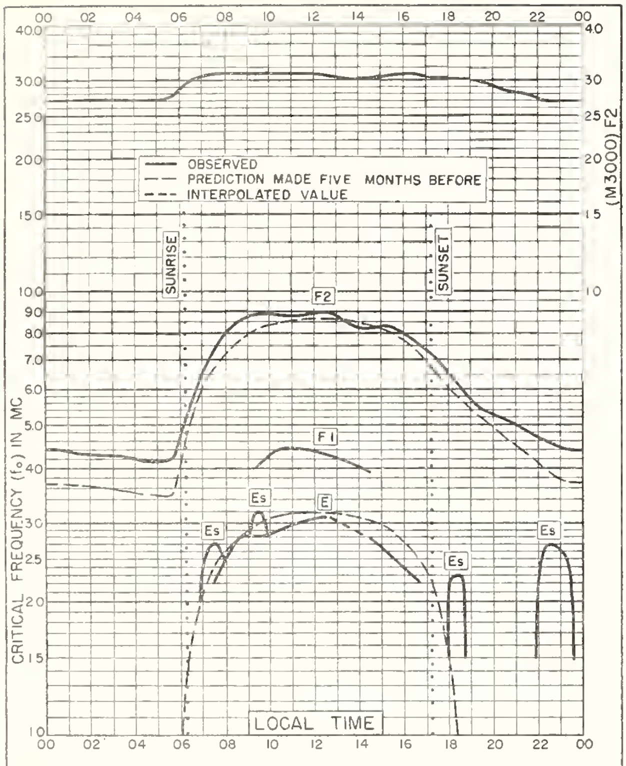


Fig. 81. WAKKANAI, JAPAN
45.4°N, 141.7°E OCTOBER 1951

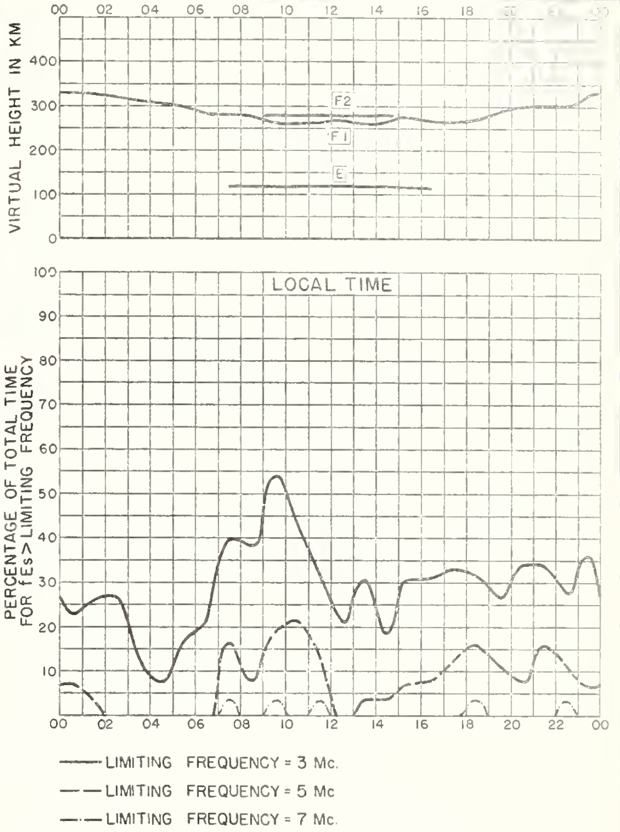


Fig.82. WAKKANAI, JAPAN OCTOBER 1951

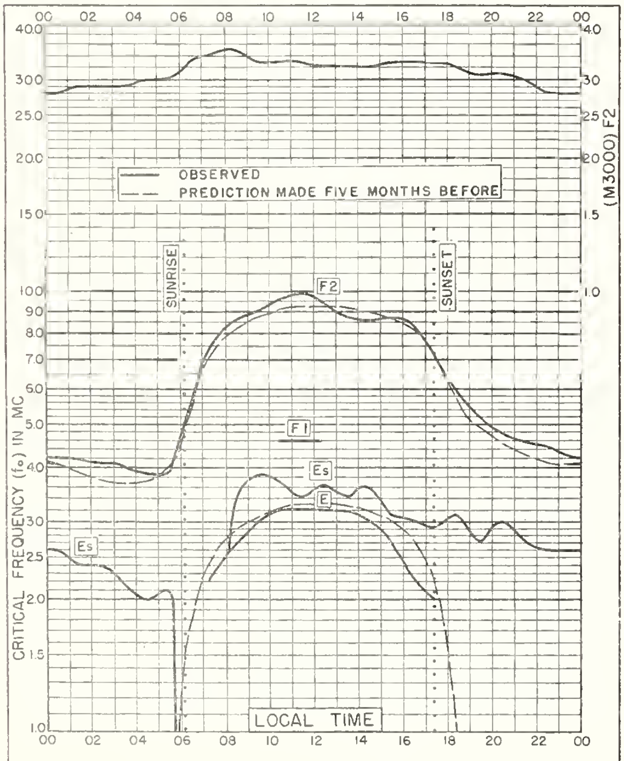


Fig. 83. AKITA, JAPAN
39.7°N, 140.1°E OCTOBER 1951

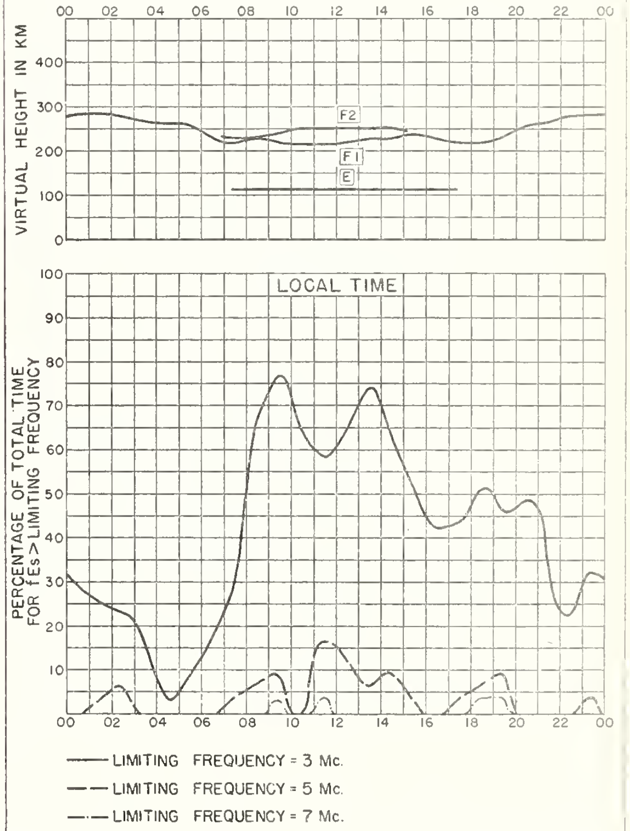


Fig 84. AKITA, JAPAN OCTOBER 1951

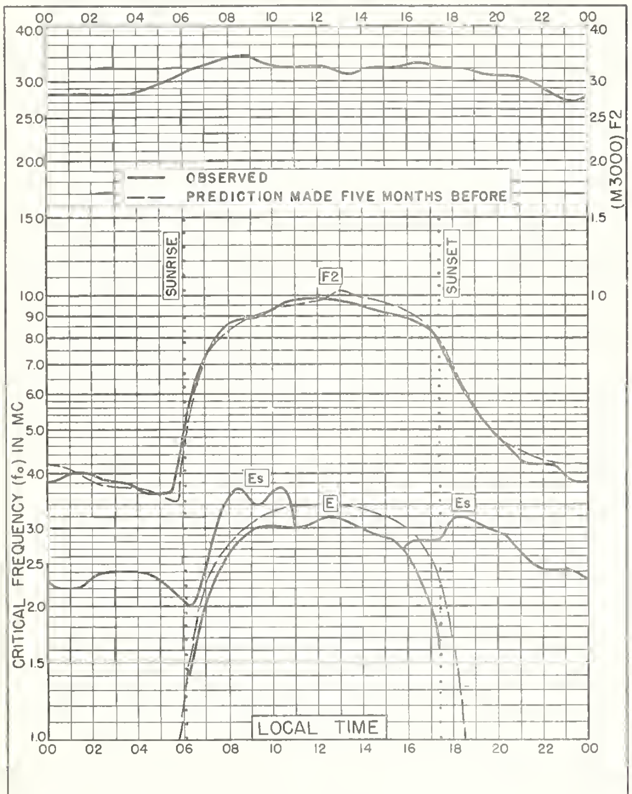


Fig. 85. TOKYO, JAPAN
35.7°N, 139.5°E OCTOBER 1951

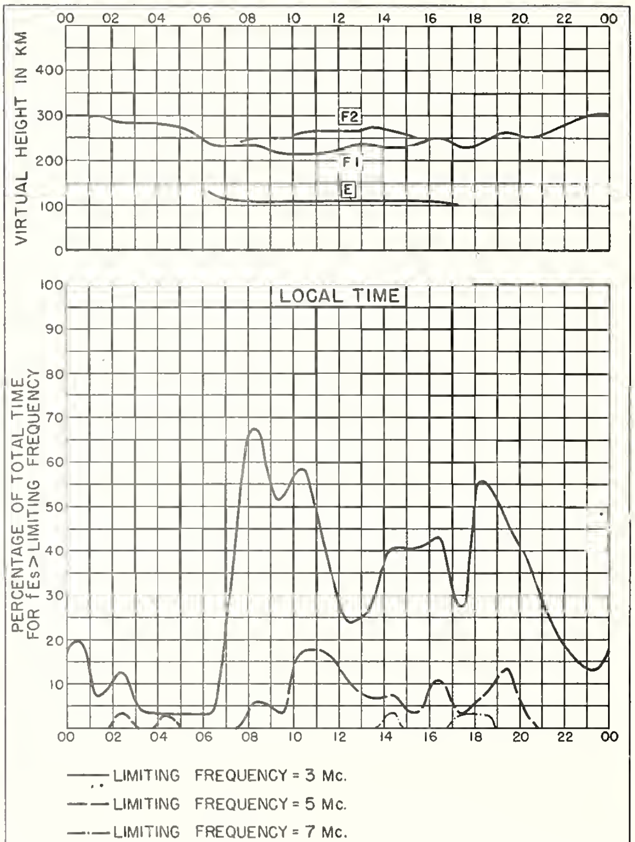


Fig. 86. TOKYO, JAPAN OCTOBER 1951

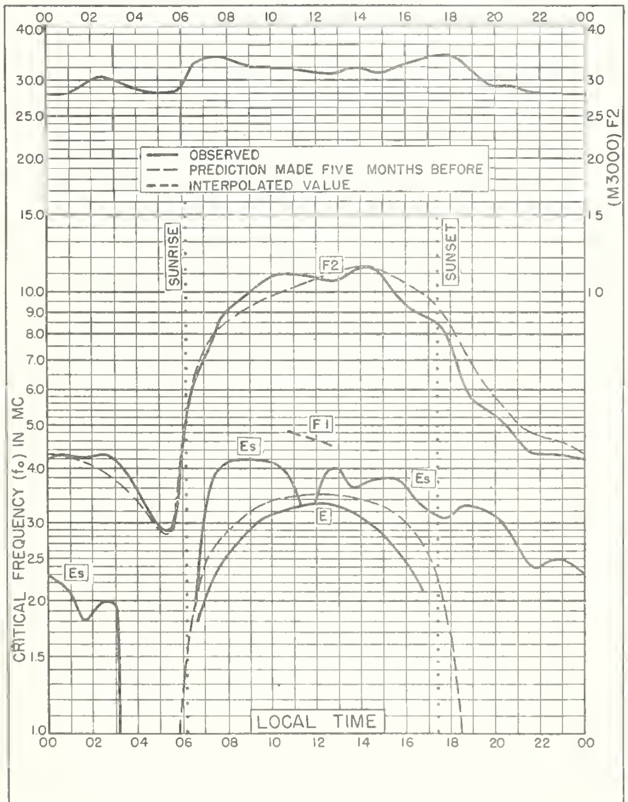


Fig. 87. YAMAGAWA, JAPAN
31.2°N, 130.6°E OCTOBER 1951

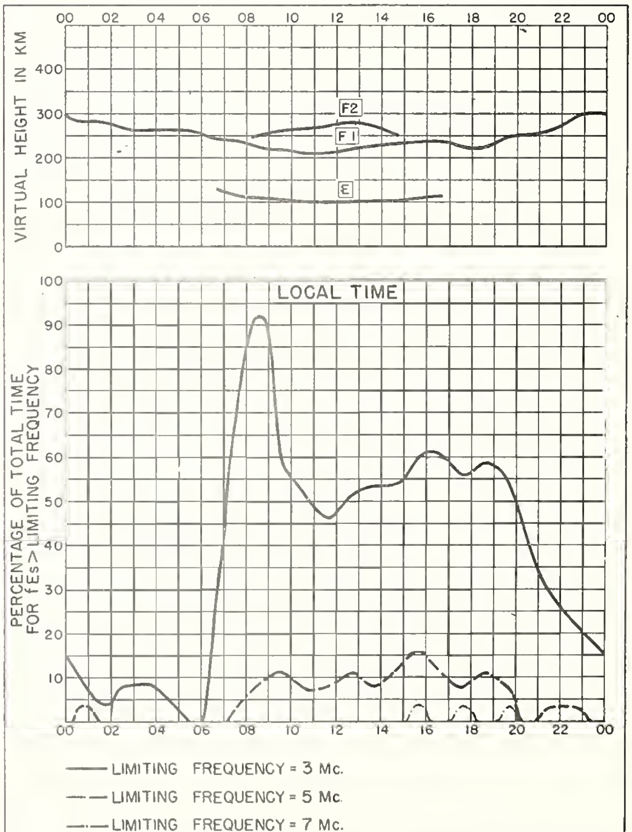


Fig. 88. YAMAGAWA, JAPAN OCTOBER 1951

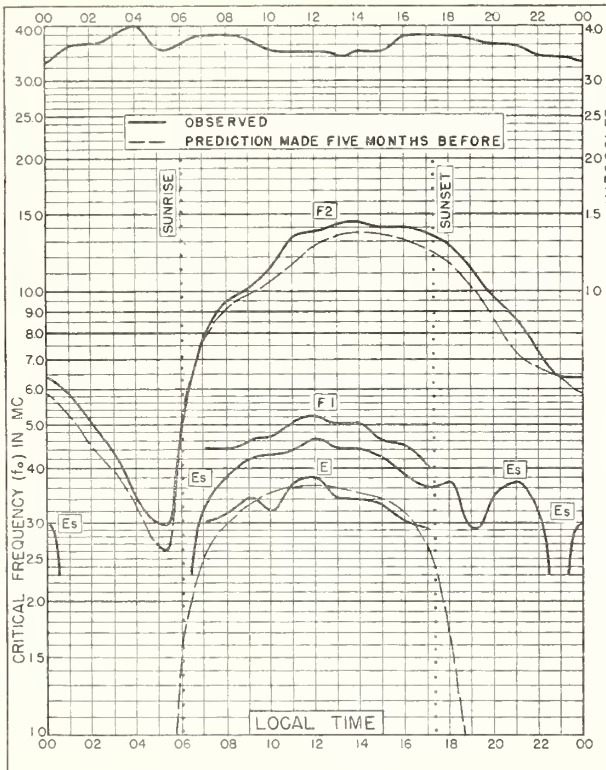


Fig. 89. FORMOSA, CHINA
25.0°N, 121.5°E OCTOBER 1951

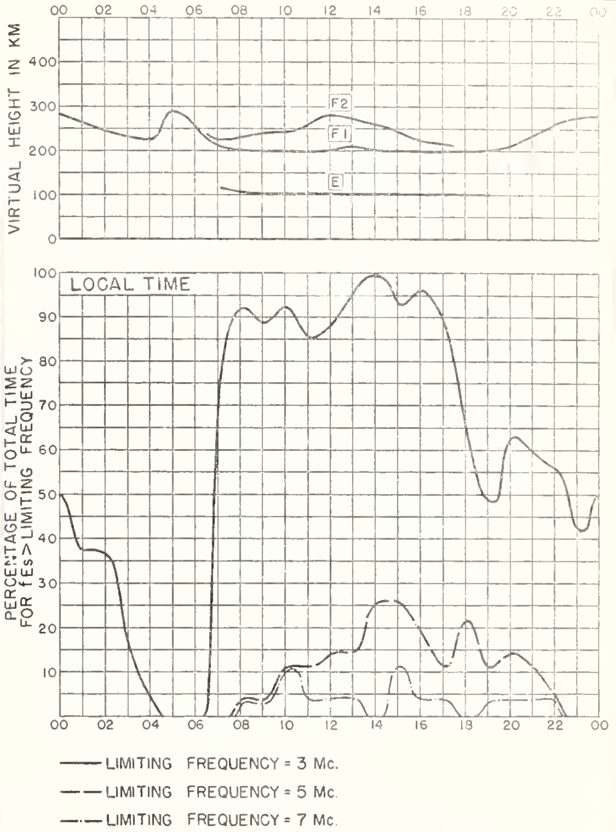


Fig. 90. FORMOSA, CHINA OCTOBER 1951

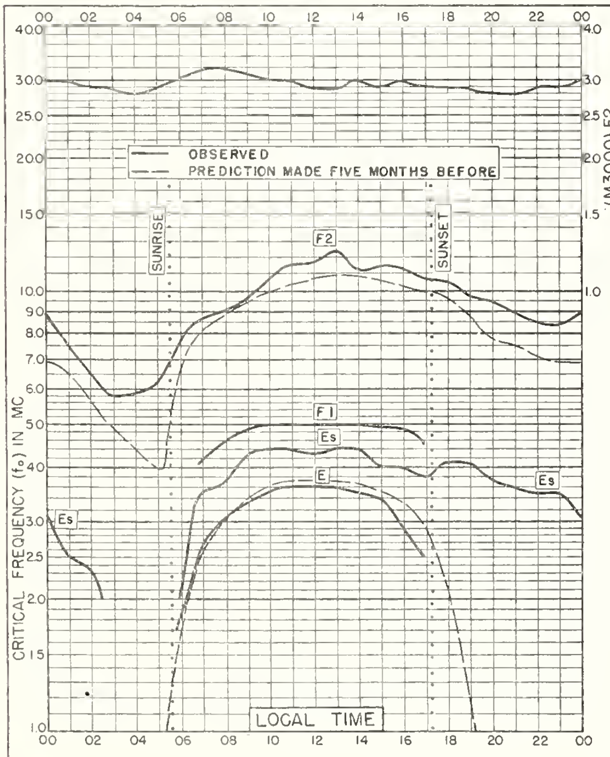


Fig. 91. RAROTONGA I.
21.3°S, 159.8°W OCTOBER 1951

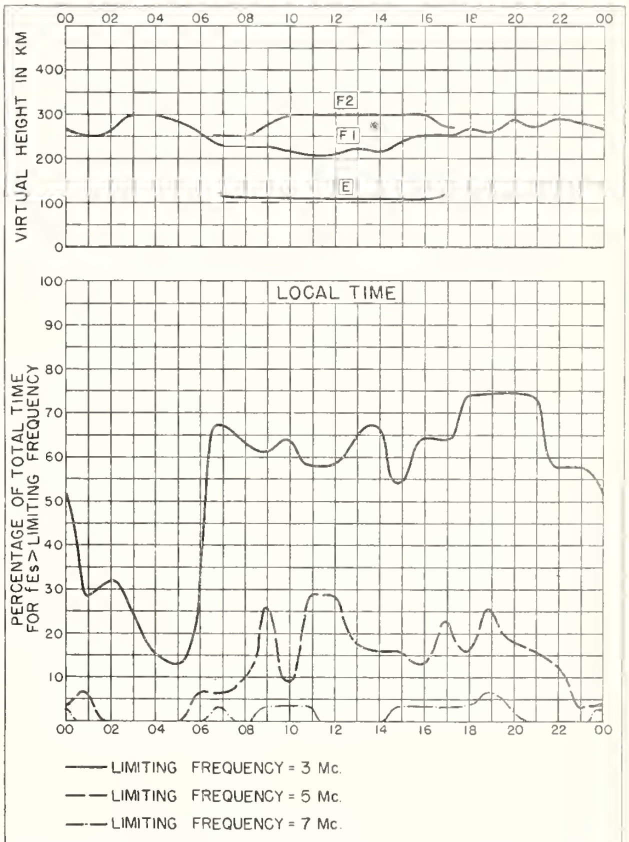


Fig. 92. RAROTONGA I. OCTOBER 1951

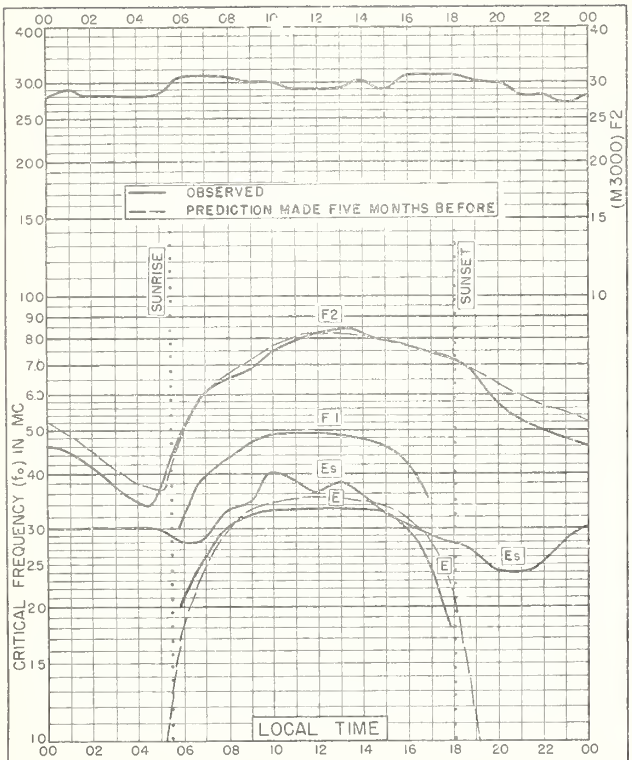


Fig 93. WATHEROO, W. AUSTRALIA
30.3° S, 115.9°E OCTOBER 1951

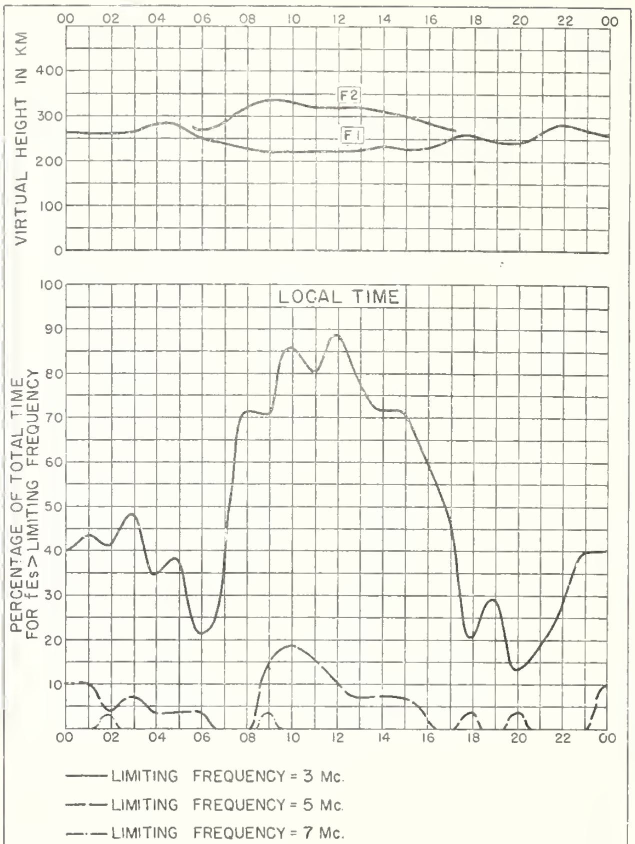


Fig 94. WATHEROO, W AUSTRALIA OCTOBER 1951

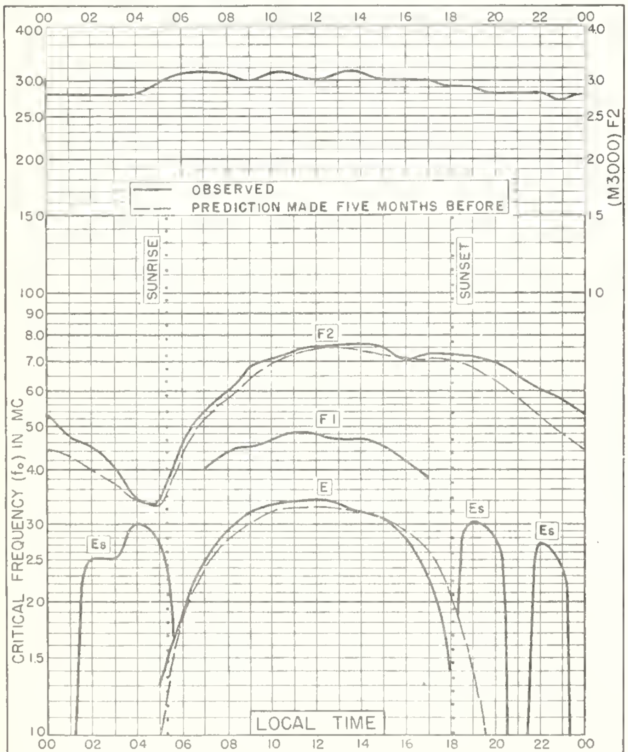


Fig. 95 CHRISTCHURCH, N. Z.
43.6°S, 172.7°E OCTOBER 1951

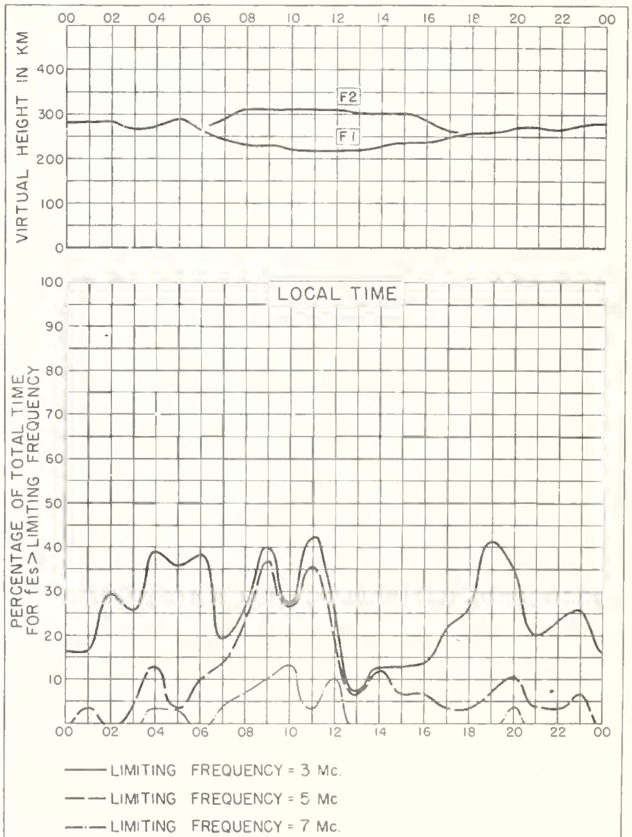


Fig. 96. CHRISTCHURCH, N. Z. OCTOBER 1951

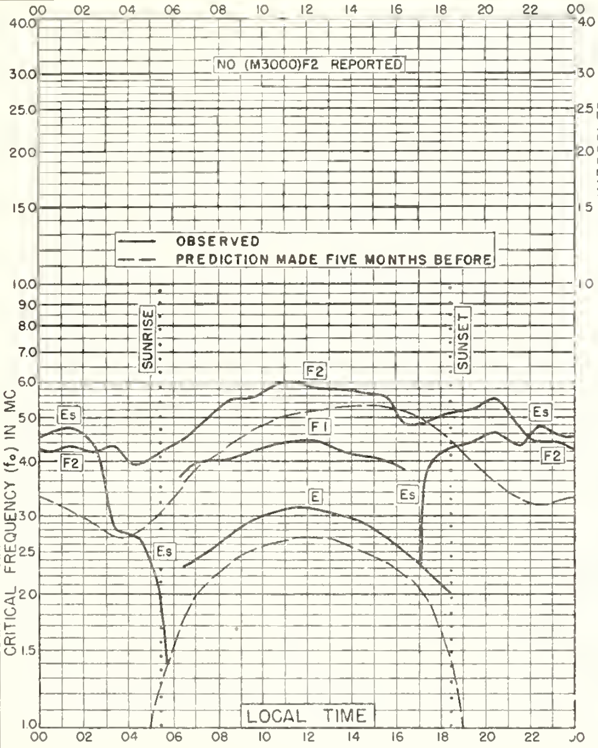


Fig. 97. KIRUNA, SWEDEN
67. 8°N, 20. 5°E SEPTEMBER 1951

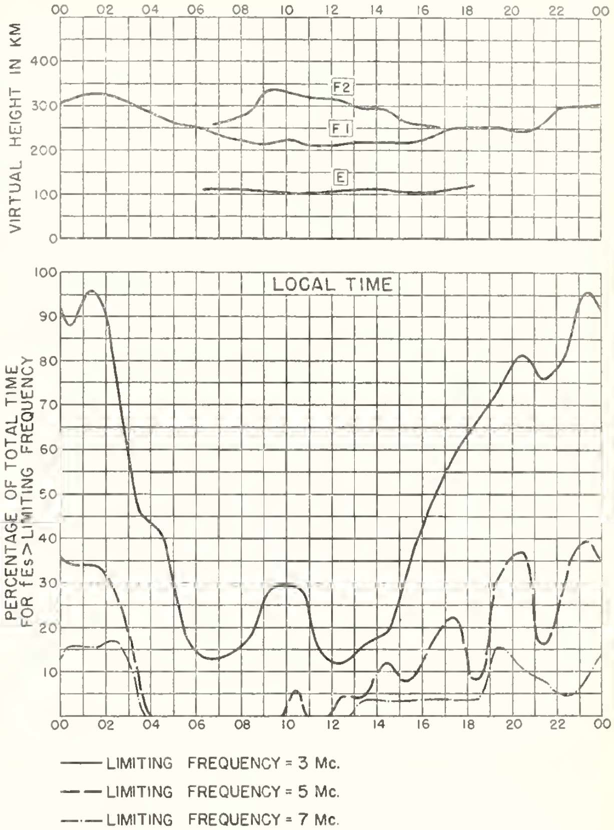


Fig. 98. KIRUNA, SWEDEN SEPTEMBER 1951

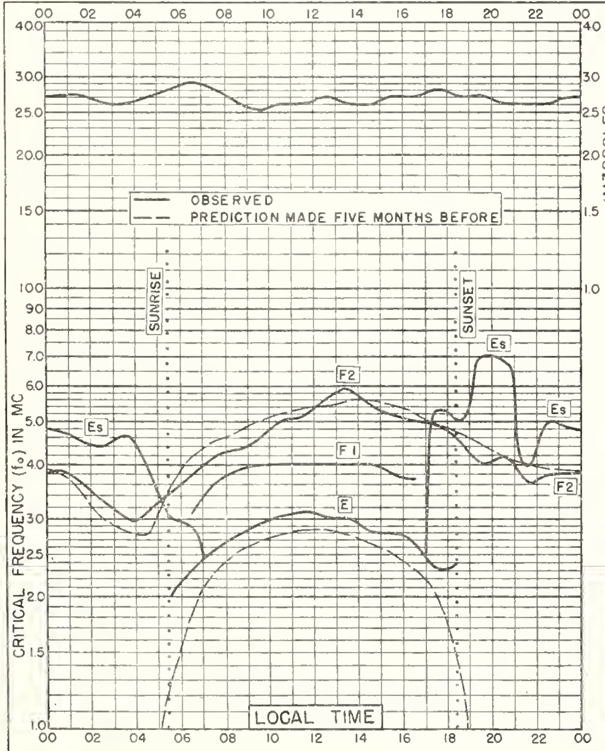


Fig. 99. BAKER LAKE, CANADA
64.3°N, 96.0°W SEPTEMBER 1951

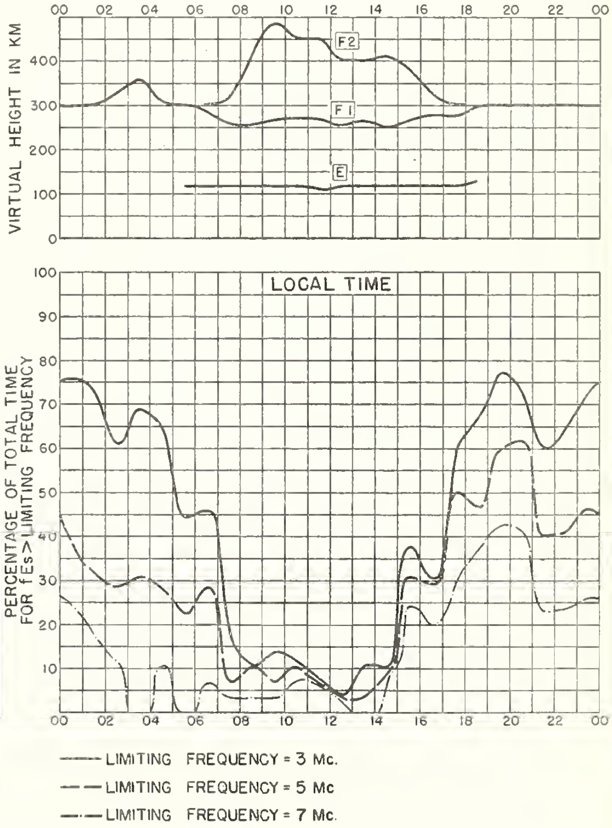


Fig.100. BAKER LAKE, CANADA SEPTEMBER 1951

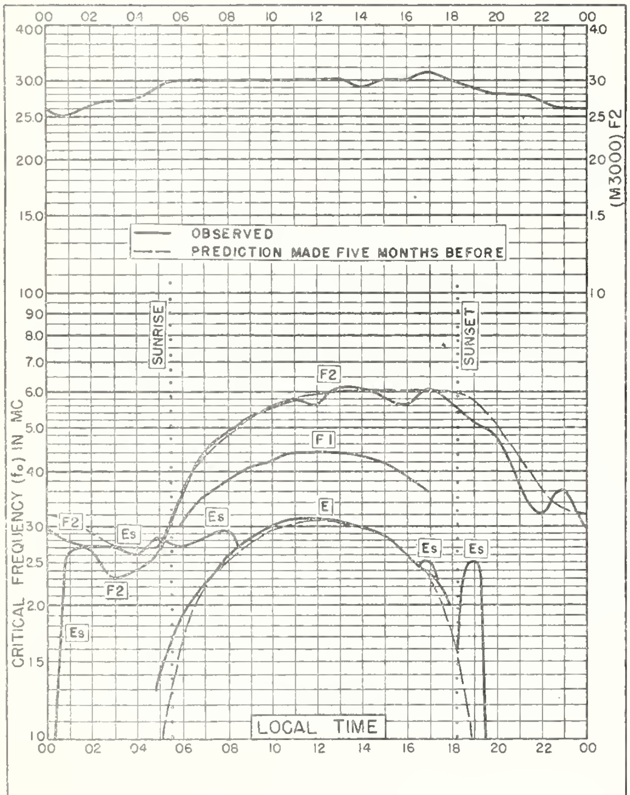


Fig. 101. FRASERBURGH, SCOTLAND
57.6°N, 2.1°W SEPTEMBER 1951

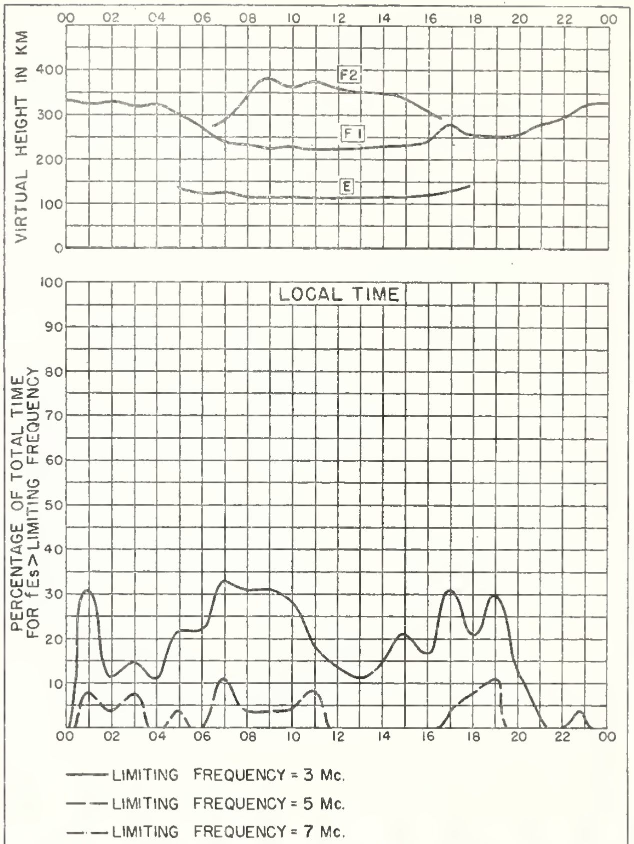


Fig. 102. FRASERBURGH, SCOTLAND SEPTEMBER 1951

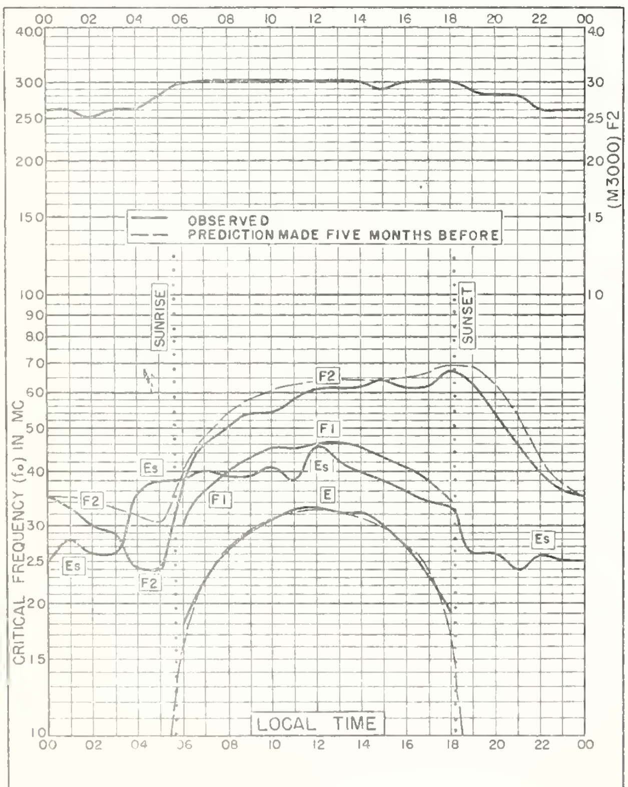


Fig. 103. SLOUGH, ENGLAND
51.5°N, 0.6°W SEPTEMBER 1951

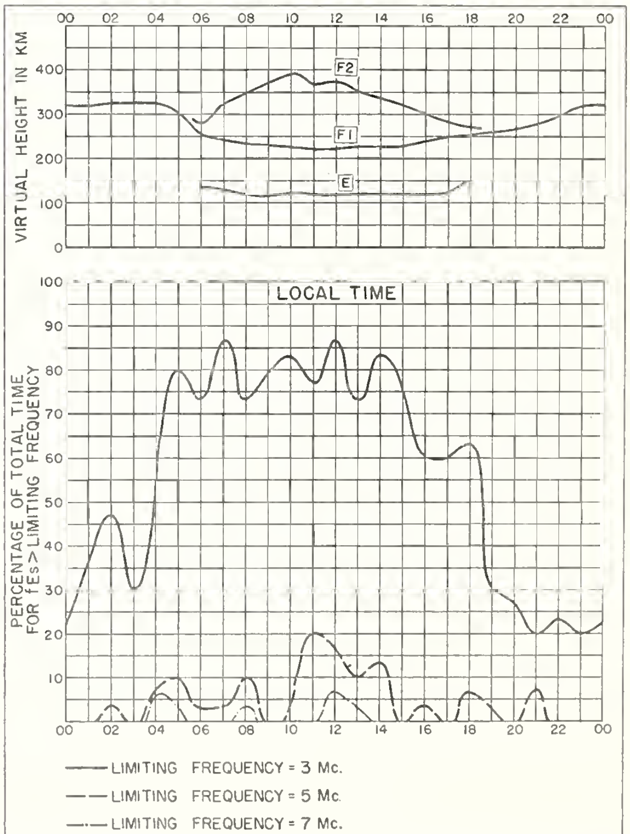


Fig. 104. SLOUGH, ENGLAND SEPTEMBER 1951

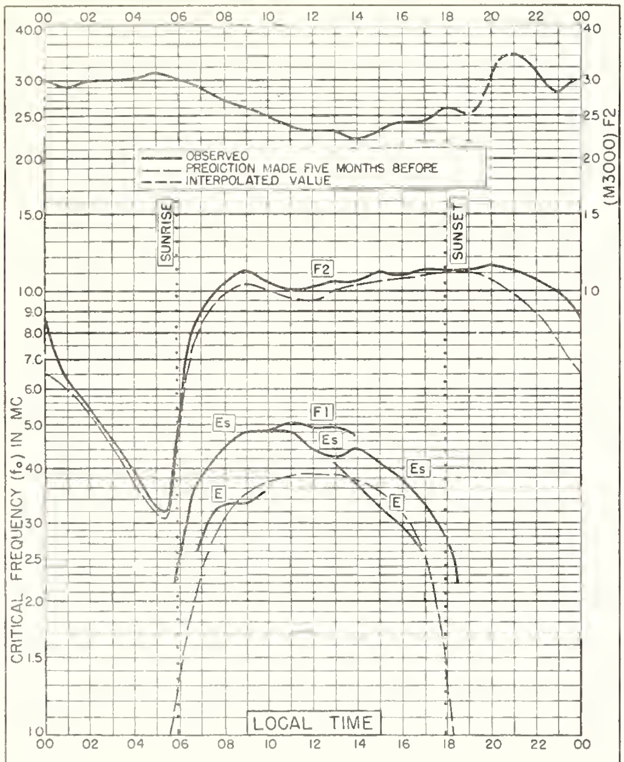


Fig. 105. SINGAPORE, BRIT MALAYA
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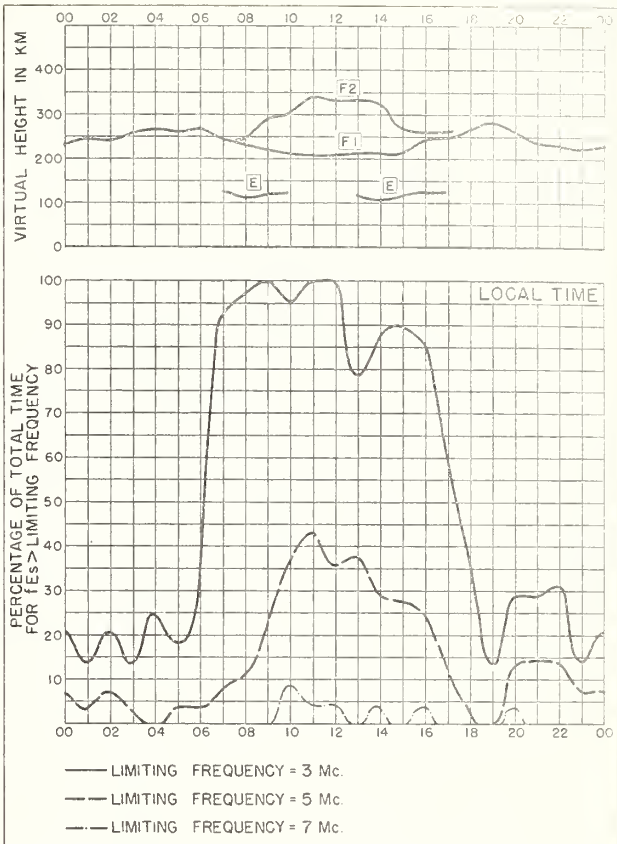
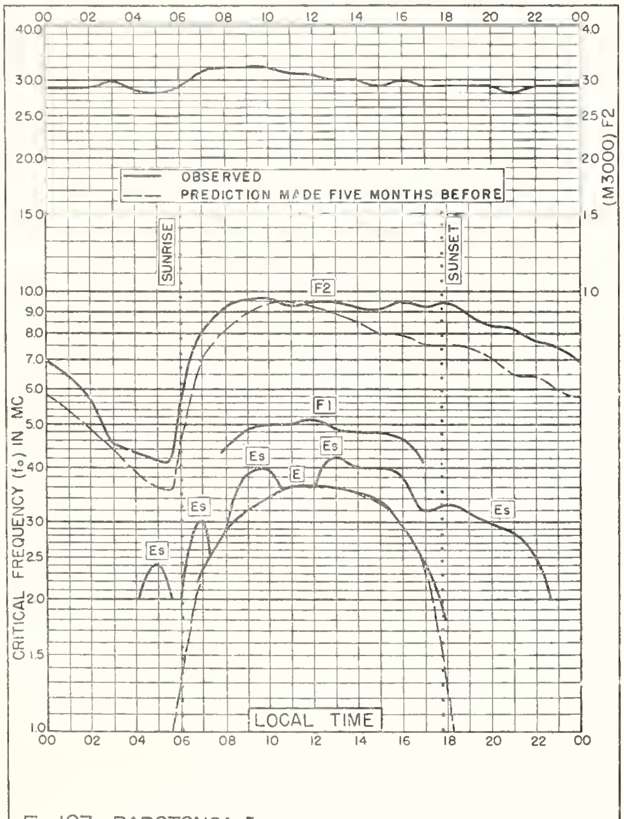


Fig. 106. SINGAPORE, BRIT. MALAYA SEPTEMBER 1951



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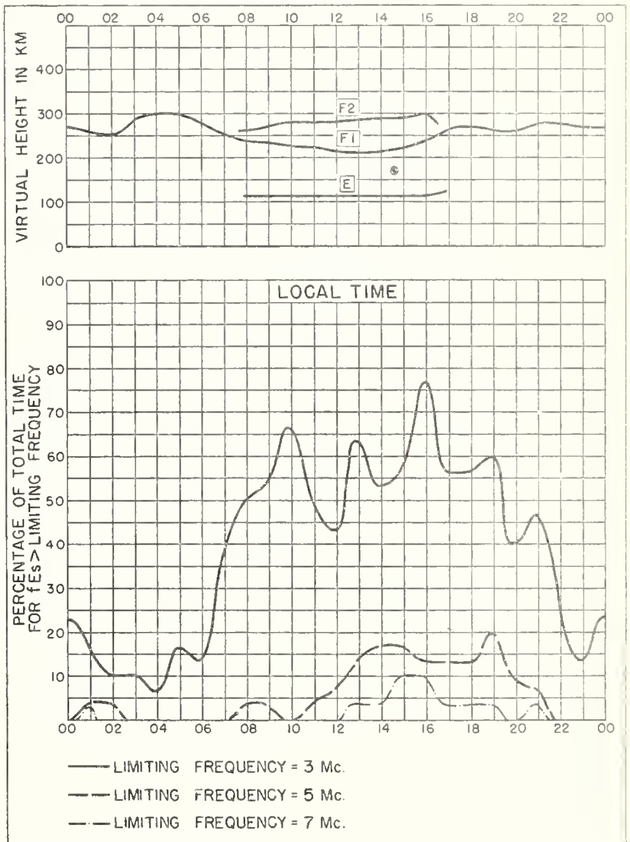
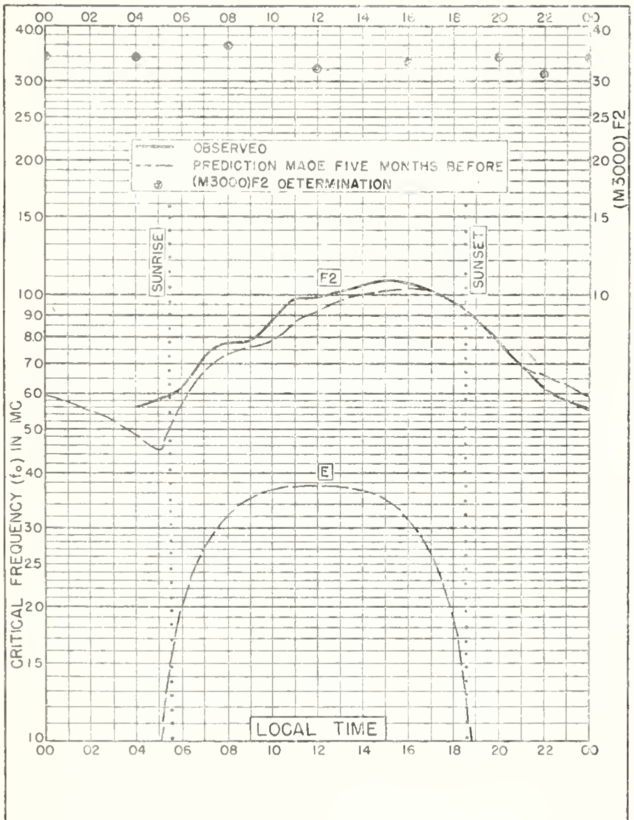


Fig. 108. RAROTONGA I. SEPTEMBER 1951



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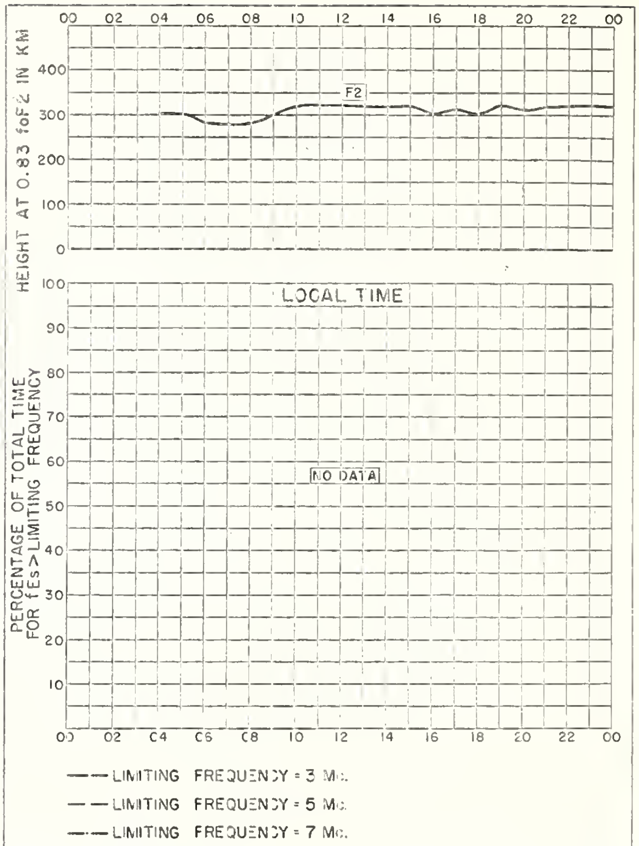

Fig. 110. DELHI, INDIA AUGUST 1951

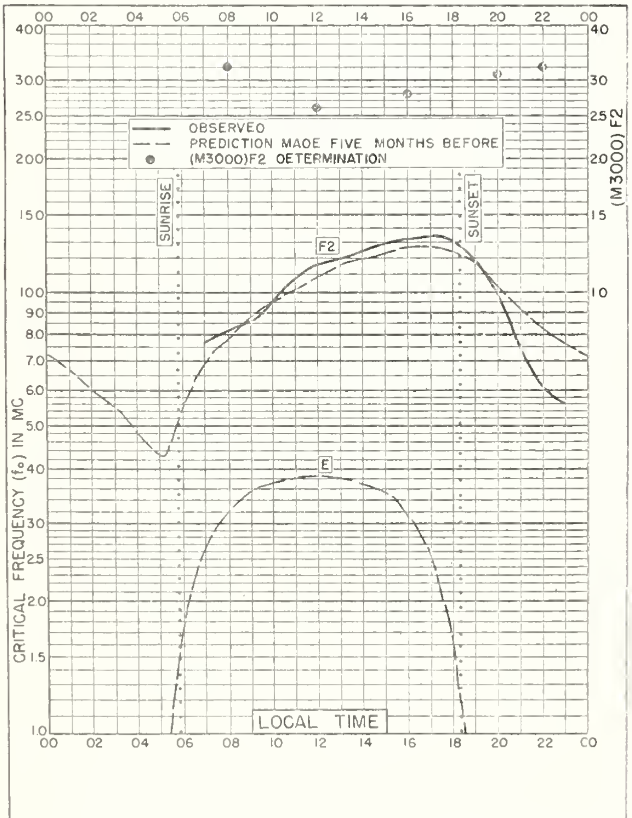

Fig. 111. BOMBAY, INDIA
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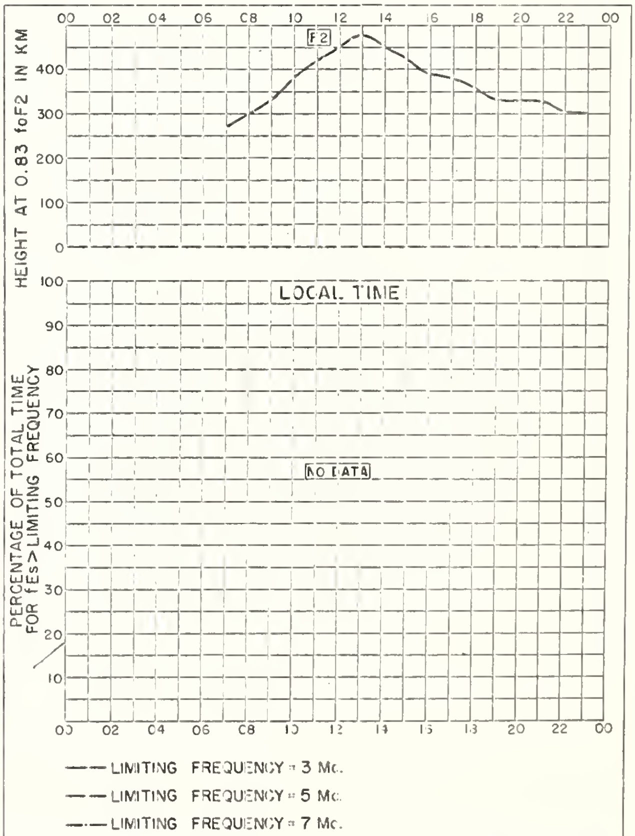

Fig. 112. BOMBAY, INDIA AUGUST 1951

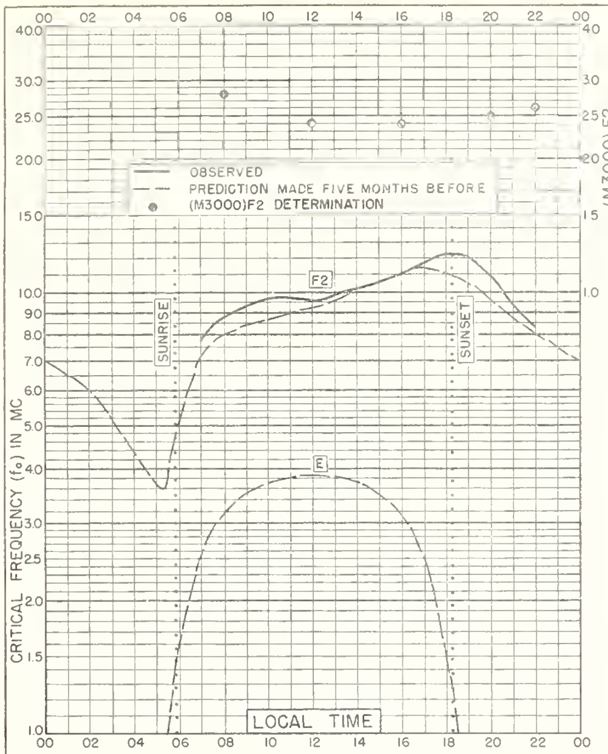

Fig 113. MADRAS, INDIA
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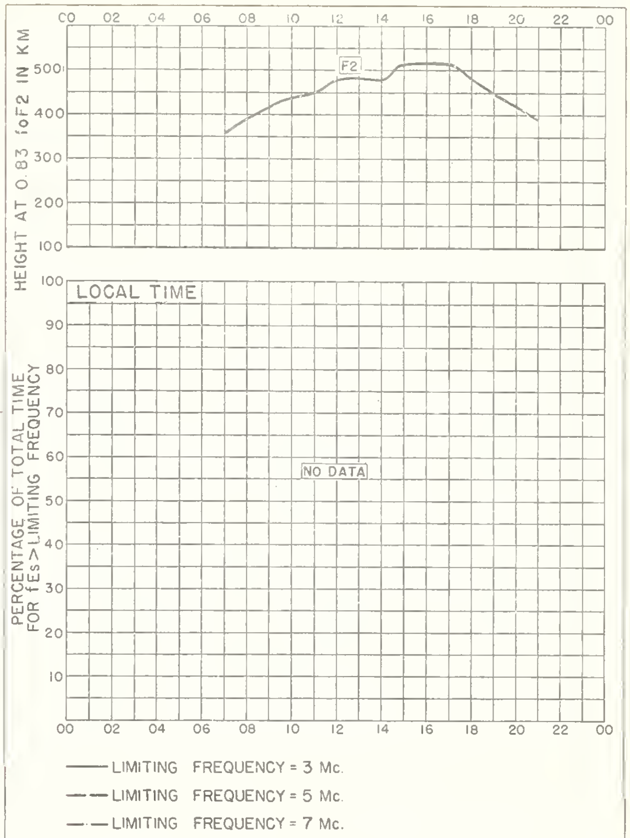

Fig. 114. MADRAS, INDIA AUGUST 1951

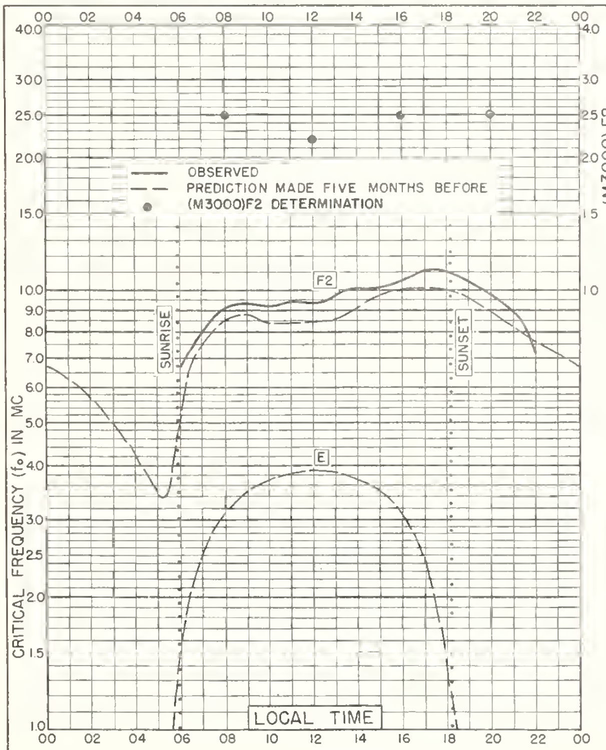

Fig. 115. TIRUCHY, INDIA
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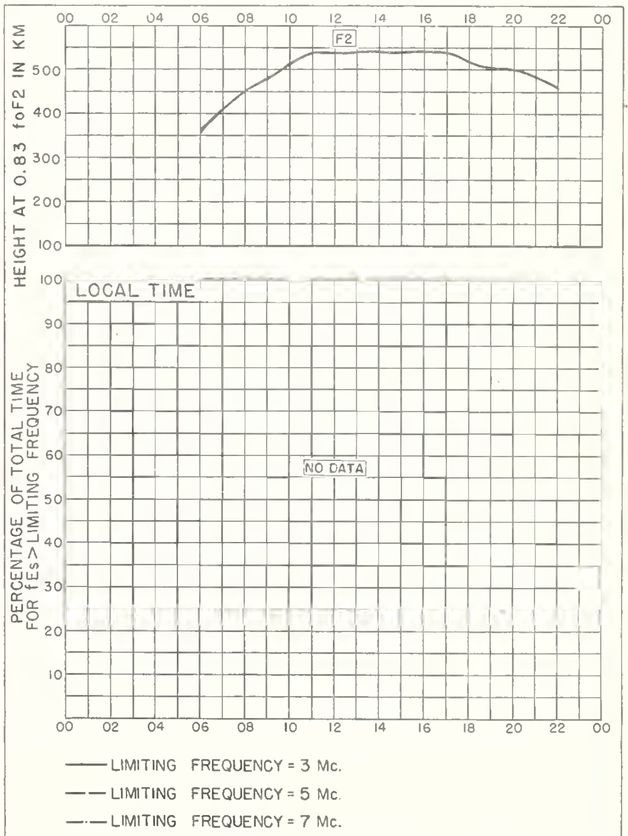

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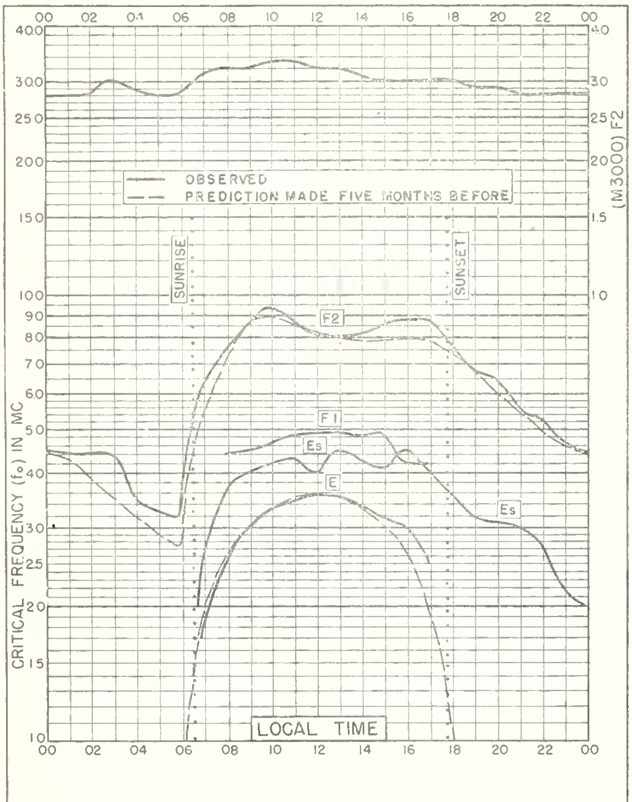

Fig. 117. RAROTONGA I.
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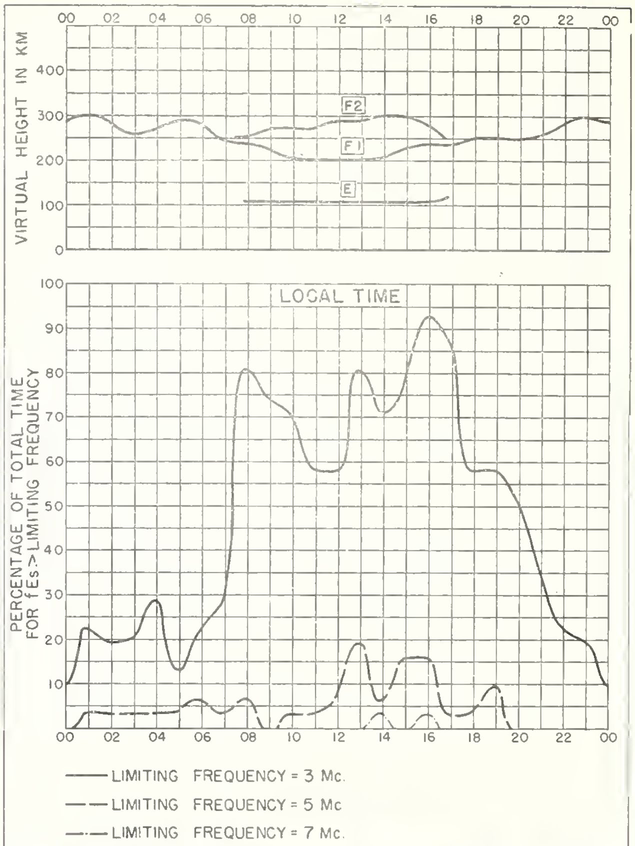

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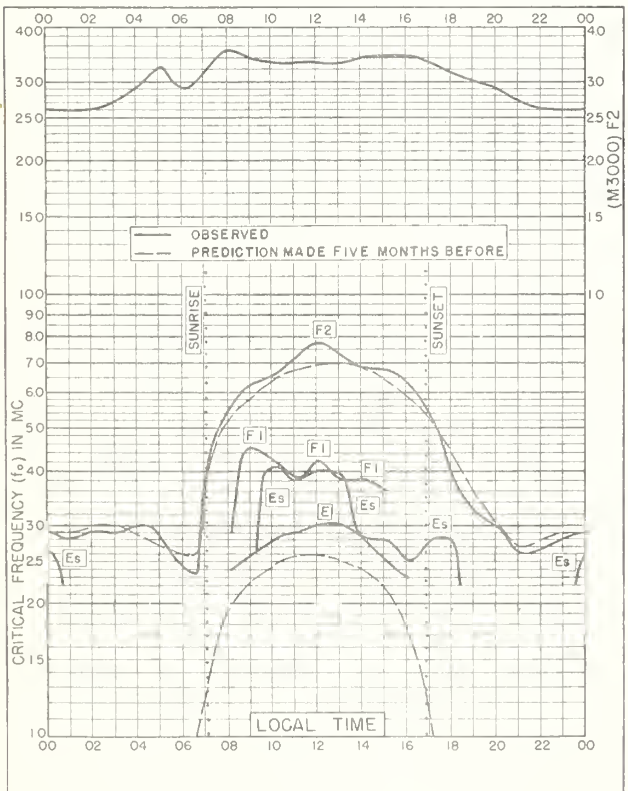

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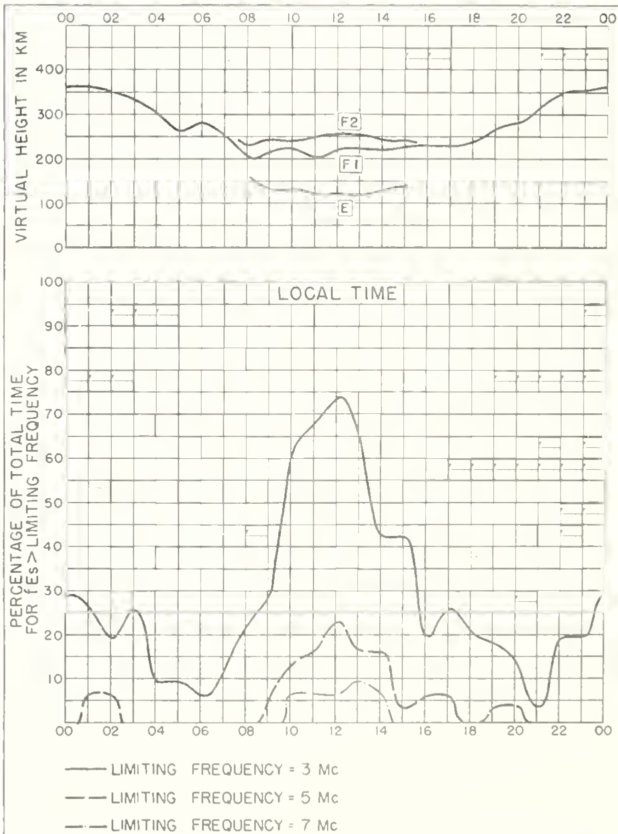

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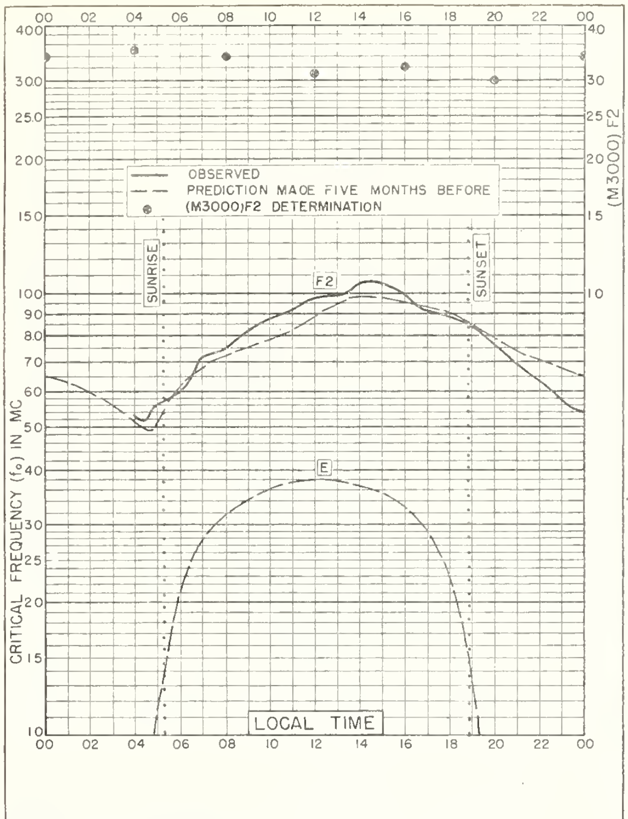

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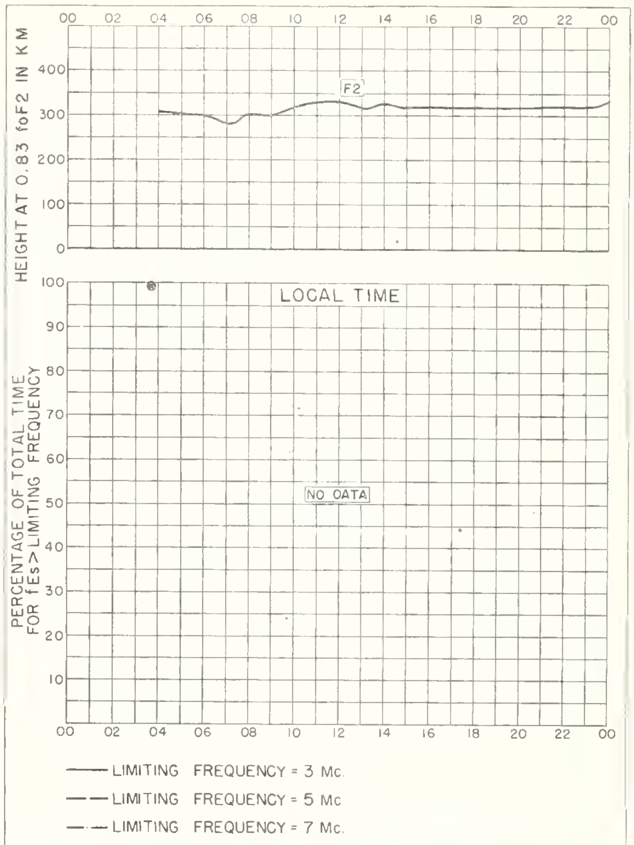

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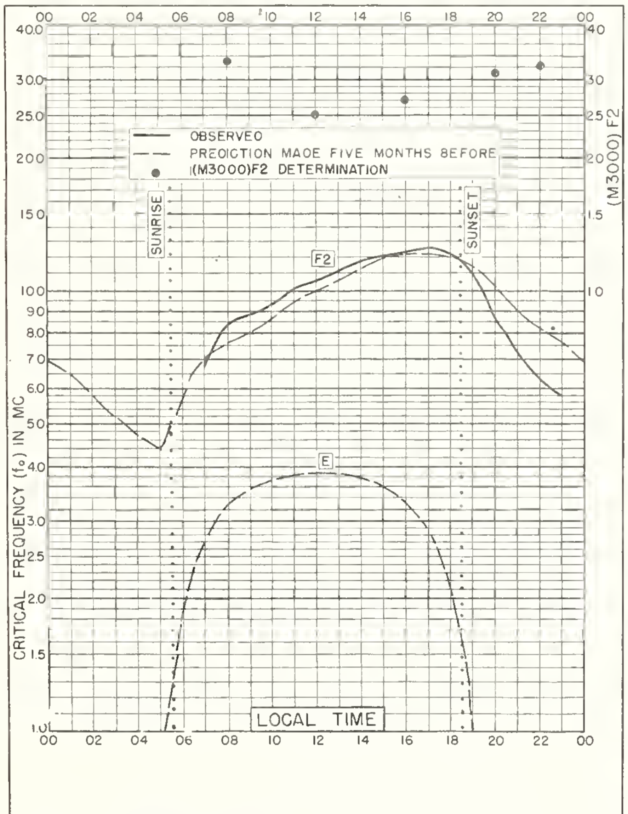

Fig. 123. BOMBAY, INDIA
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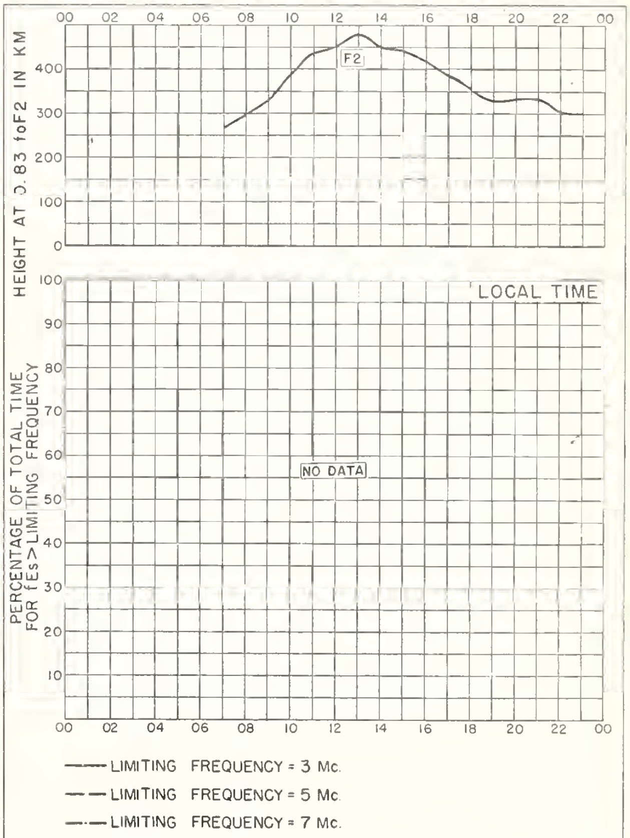

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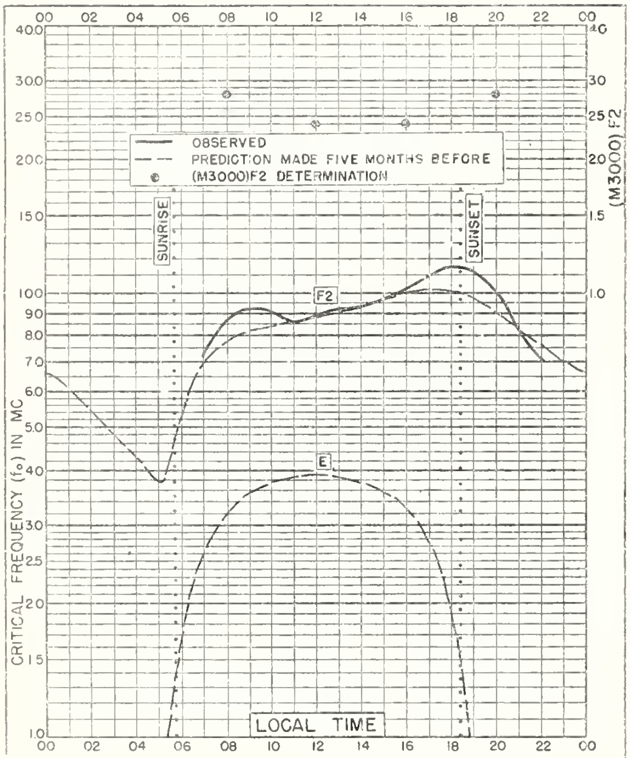

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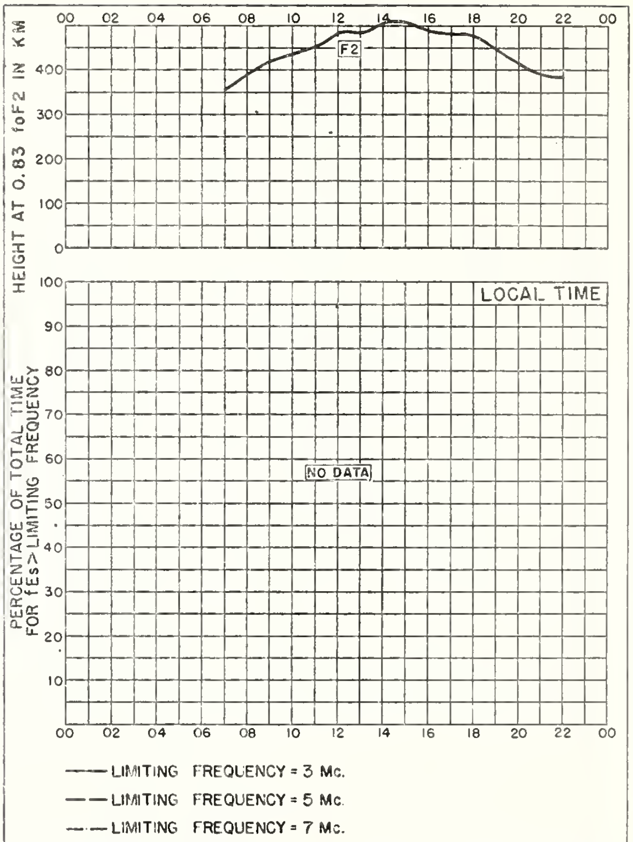

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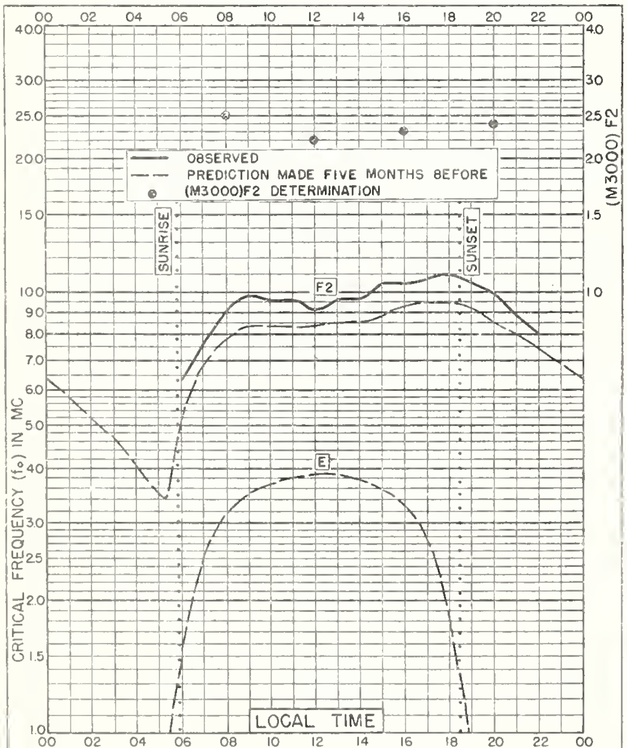

Fig. 127. TIRUCHY, INDIA
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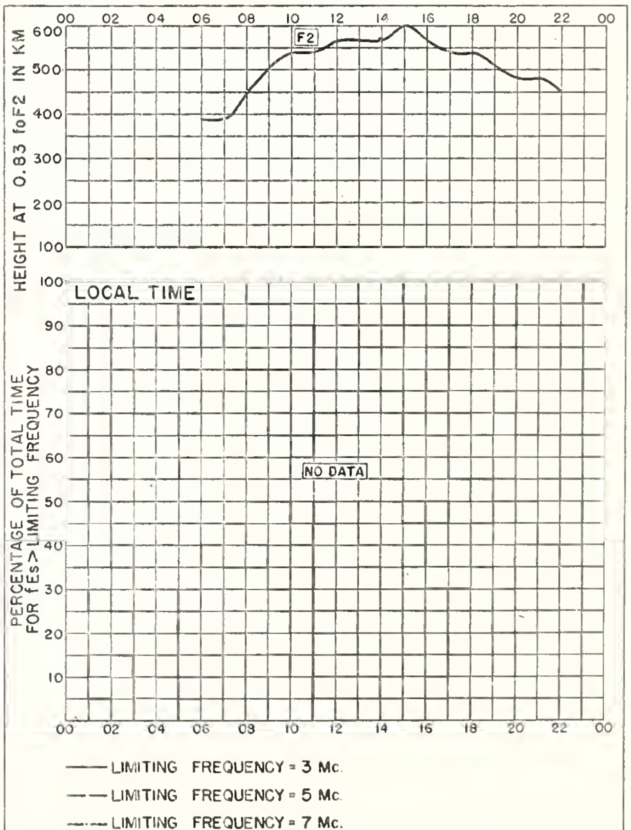
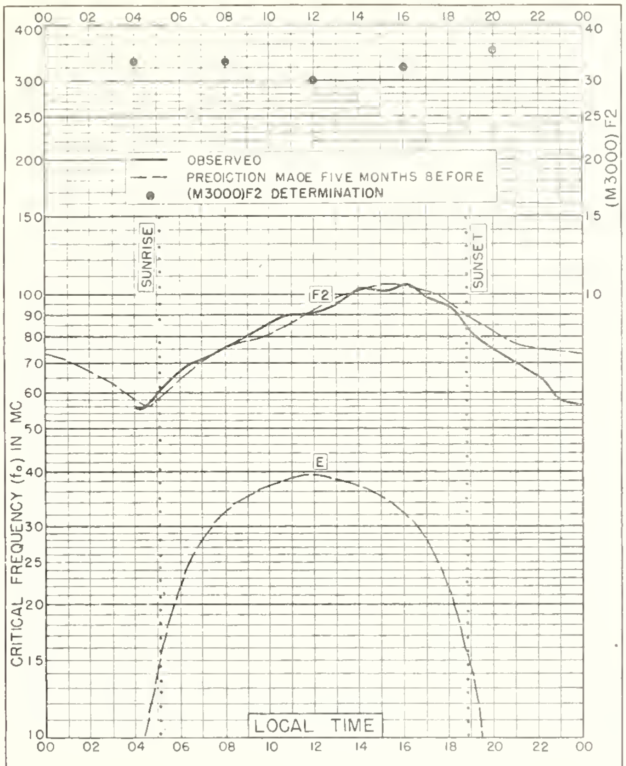


Fig. 128. TIRUCHY, INDIA JULY 1951



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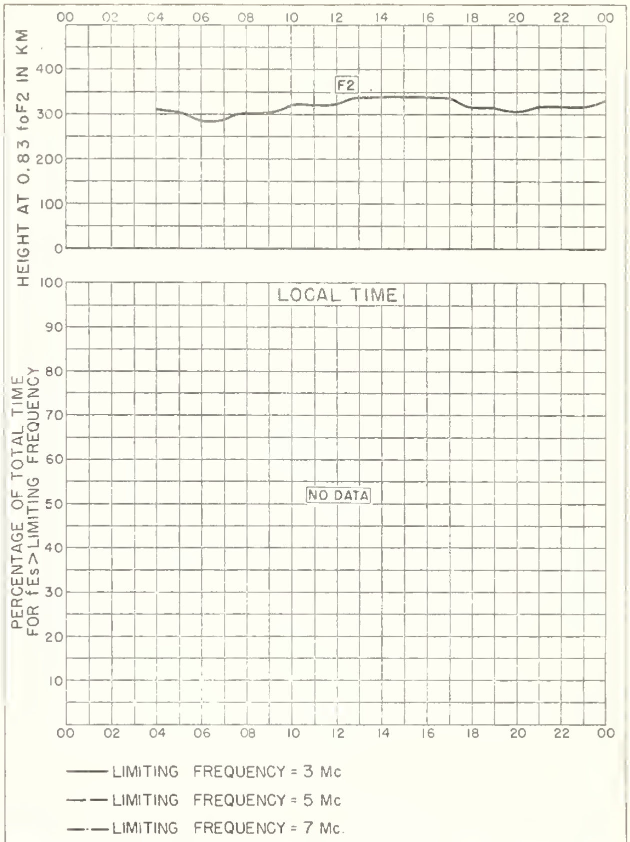

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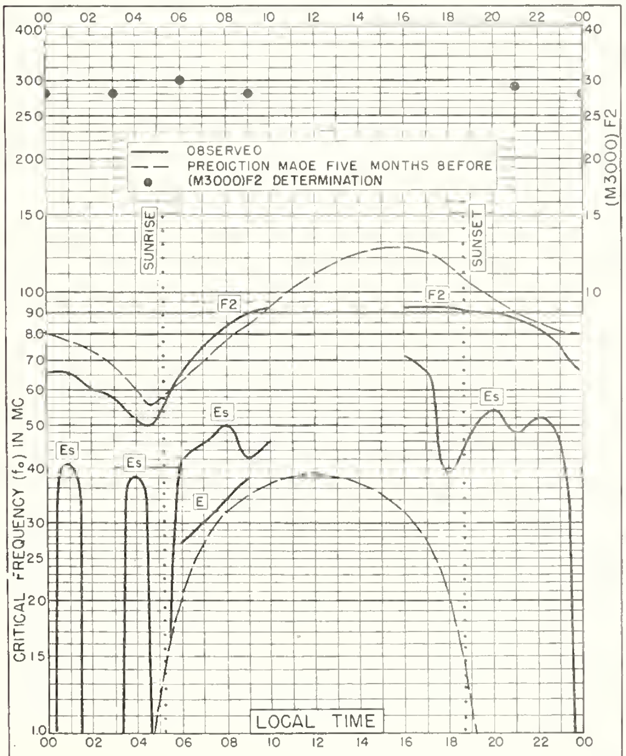

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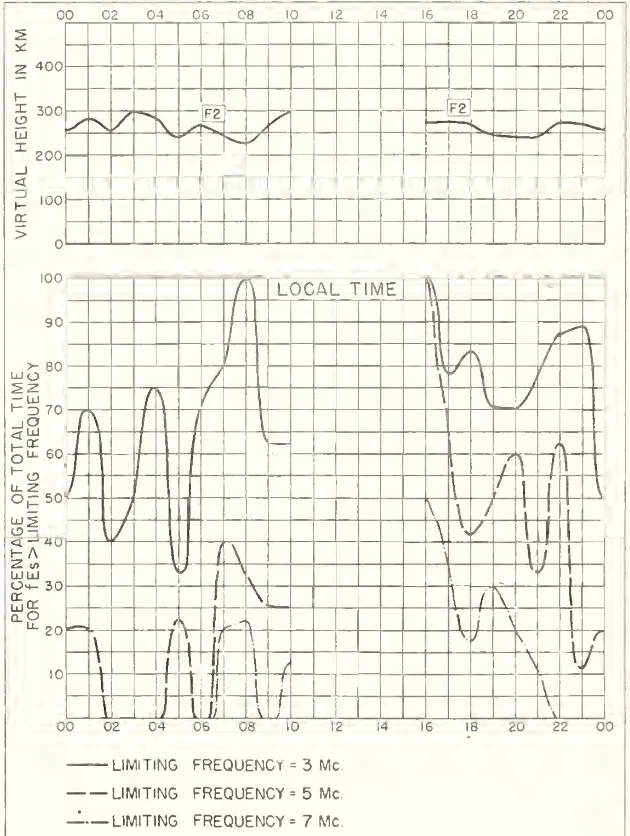

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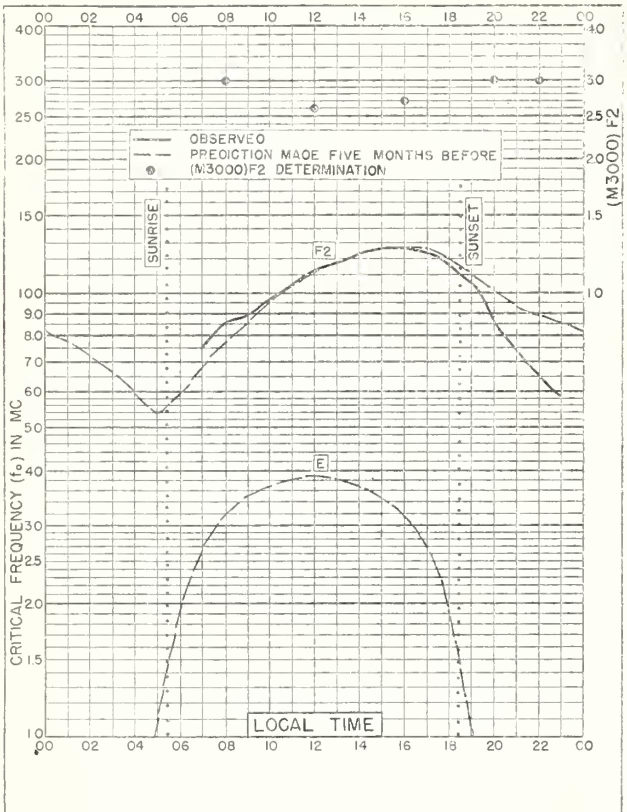

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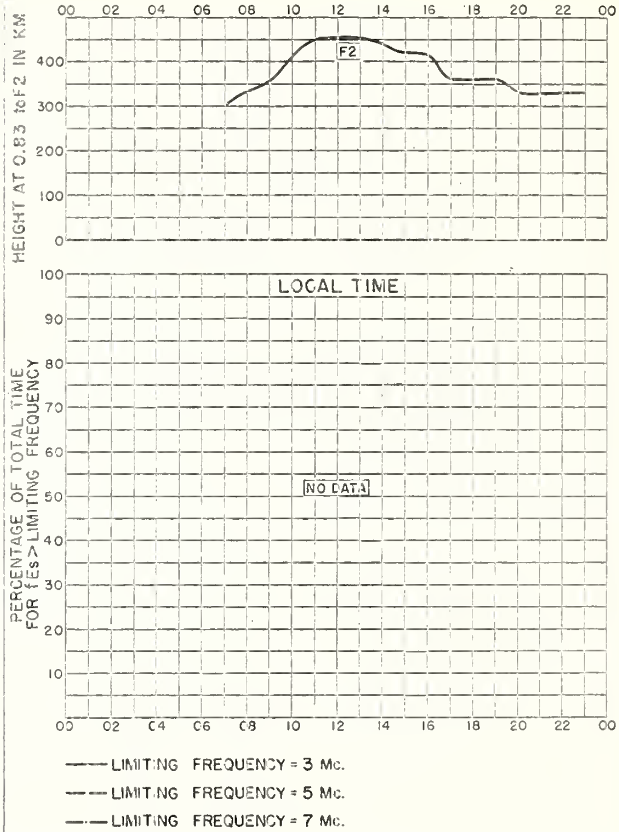

Fig. 134. BOMBAY, INDIA JUNE 1951

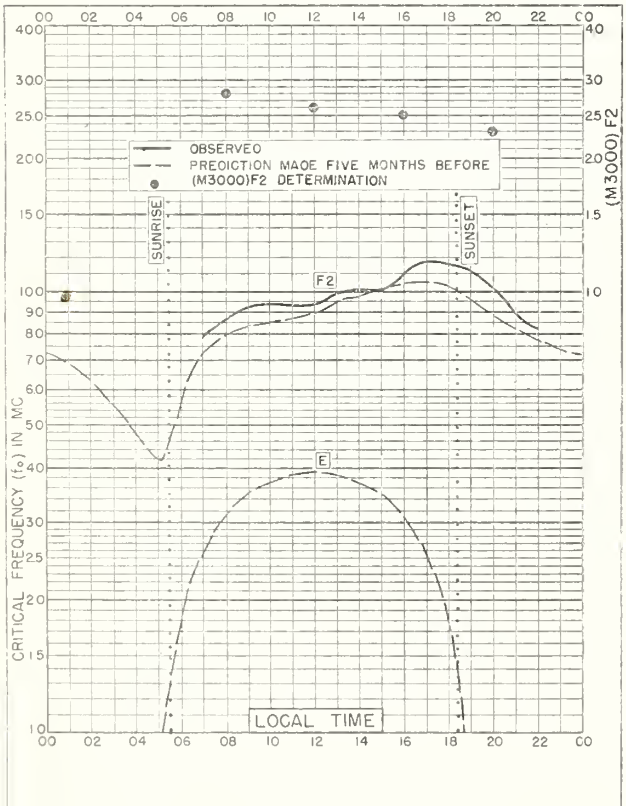

Fig. 135. MADRAS, INDIA
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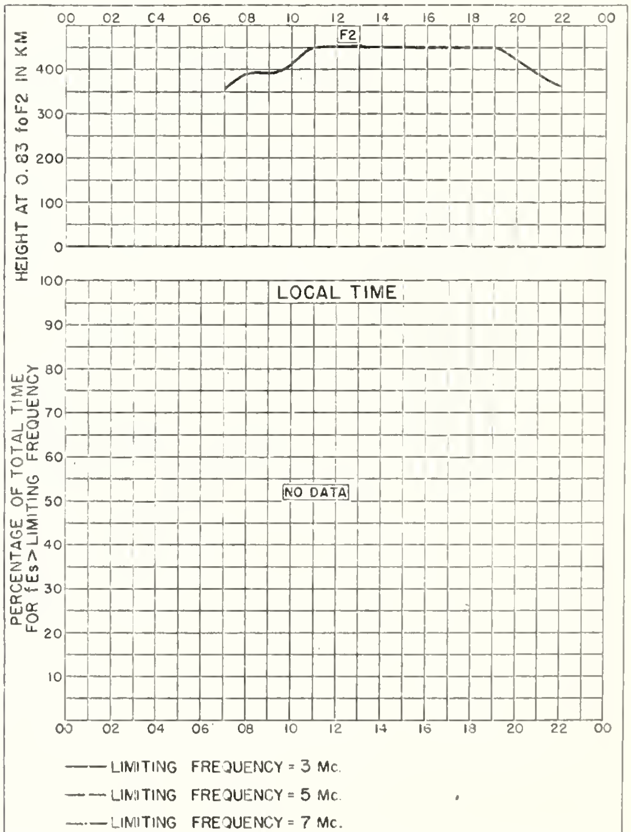

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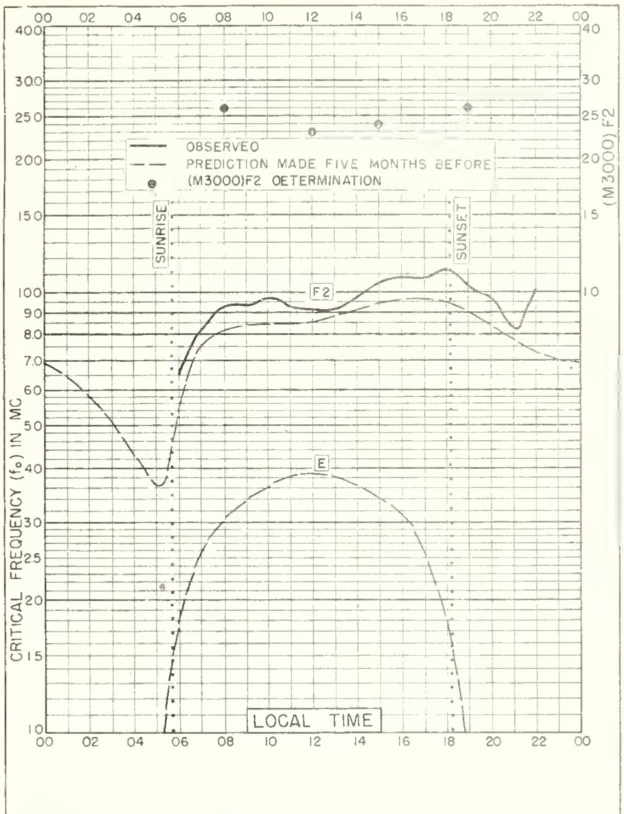

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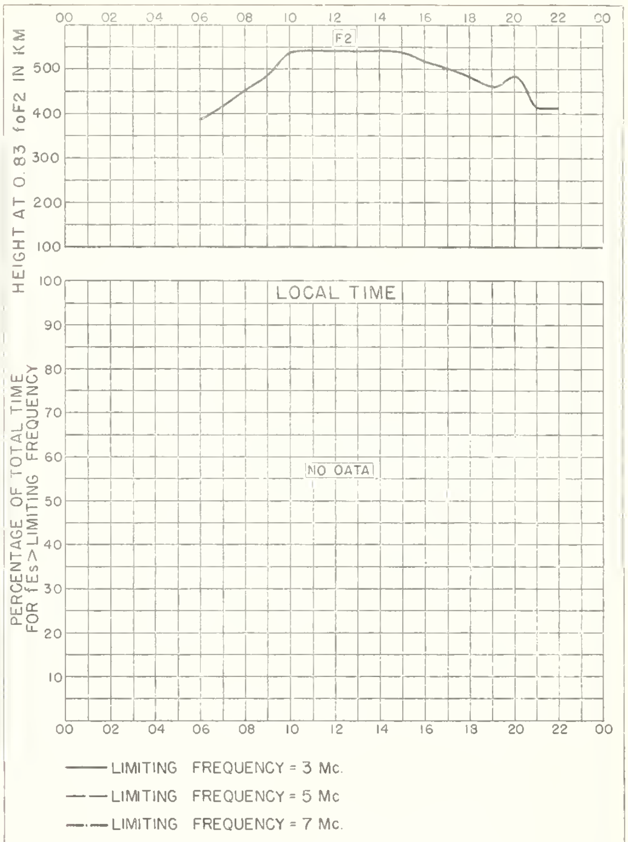

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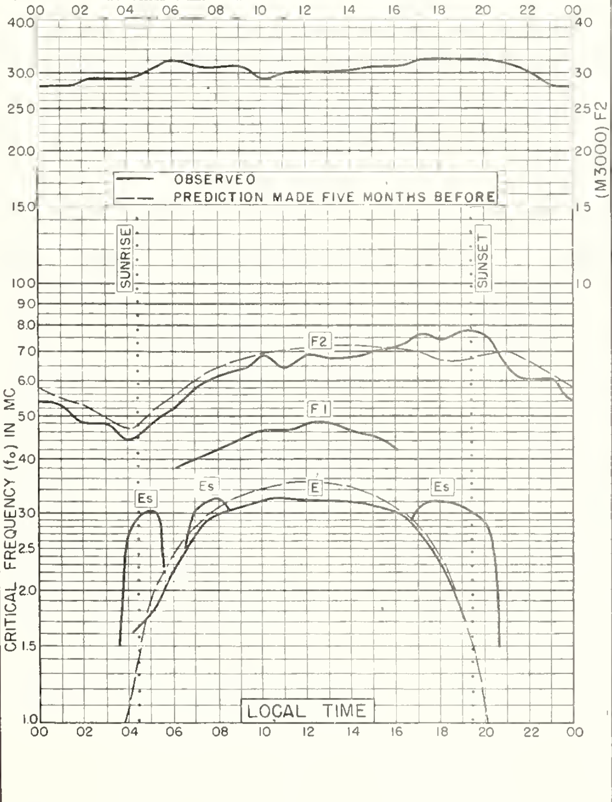

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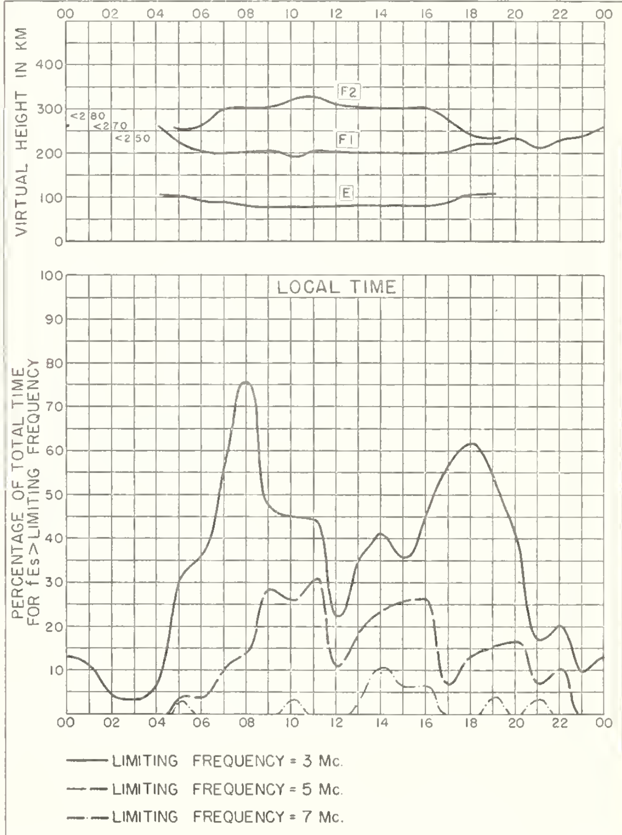

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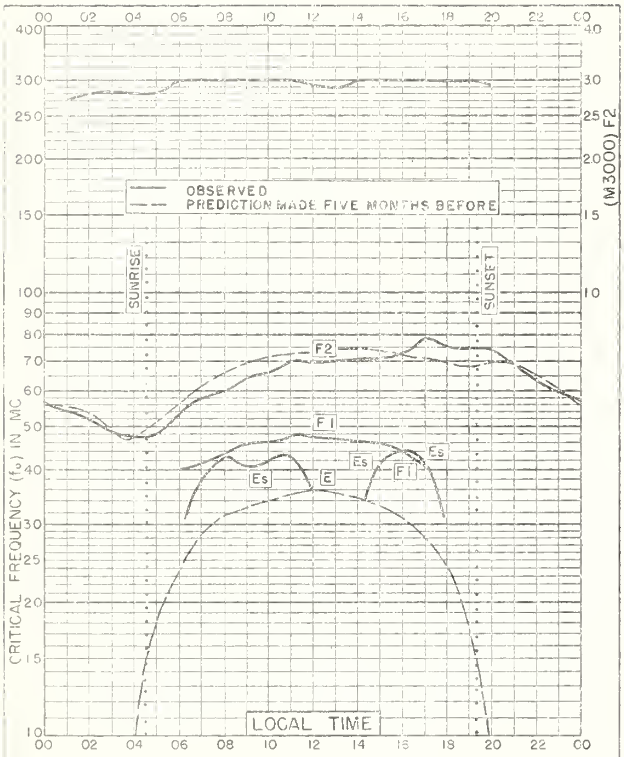

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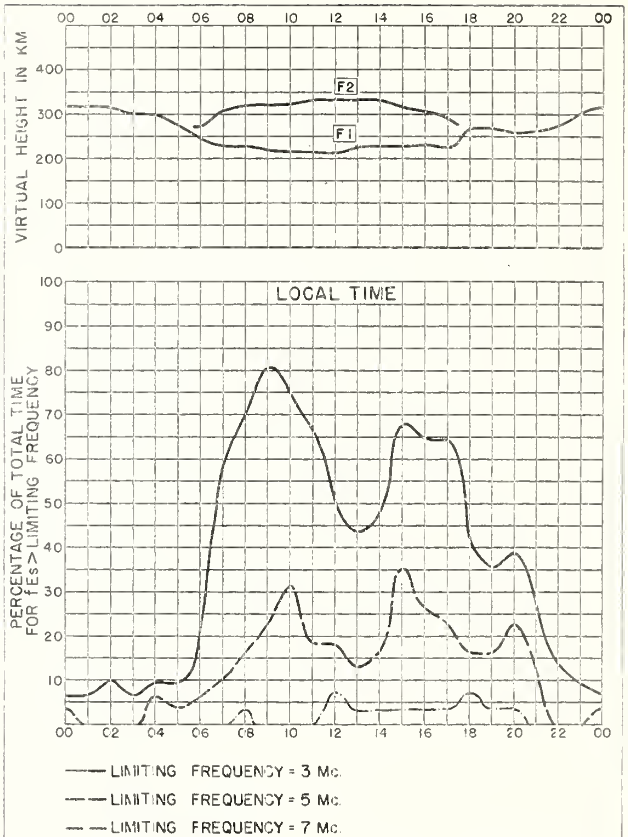

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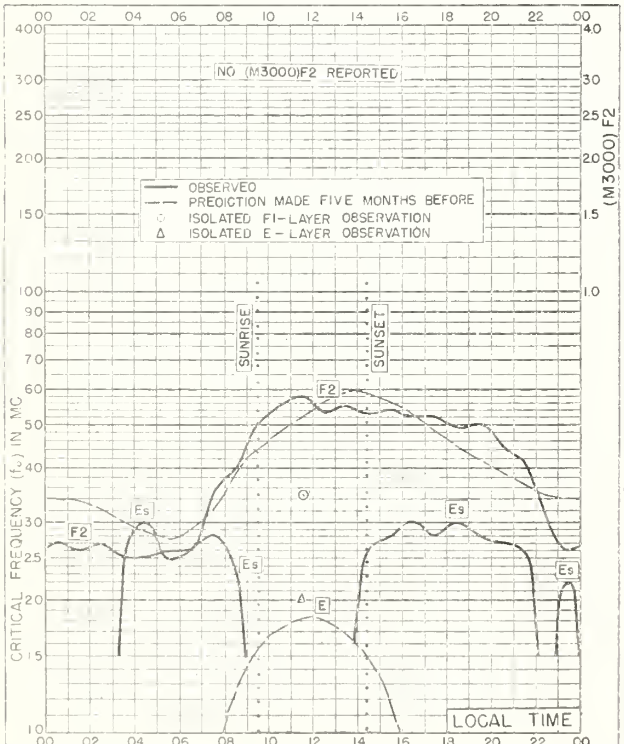

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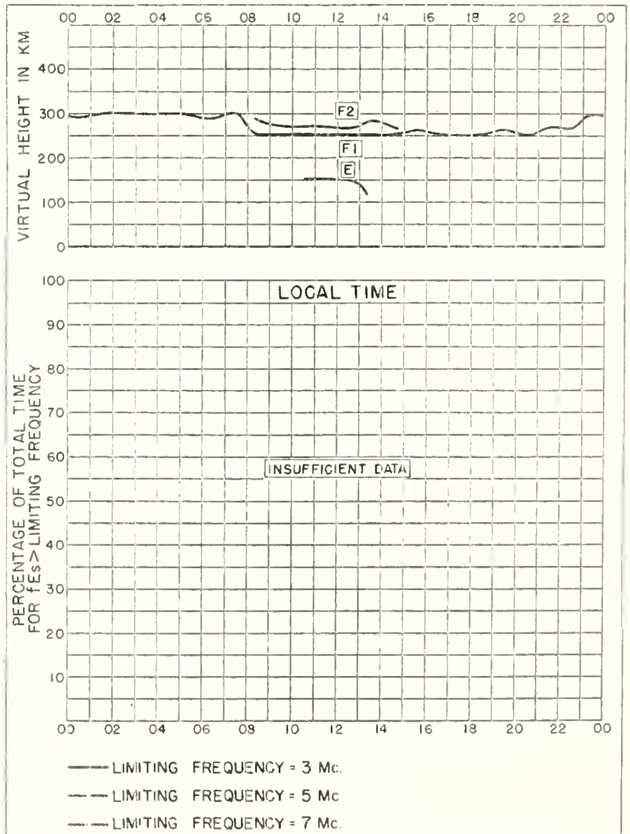

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CRPL and IRPL Reports

[A list of CRPL Section Reports is available from the Central Radio Propagation Laboratory upon request]

Daily:

Radio disturbance warnings, every half hour from broadcast station WWV of the National Bureau of Standards. Telephoned and telegraphed reports of ionospheric, solar, geomagnetic, and radio propagation data.

Weekly:

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

Semimonthly:

CRPL—Ja. Semimonthly Frequency Revision Factors For CRPL Basic Radio Propagation Prediction Reports.

Monthly:

CRPL—D. Basic Radio Propagation Predictions—Three months in advance. (Dept. of the Army, TB 11–499–, monthly supplements to TM 11–499; Dept. of the Navy, DNC 13 ( ) series; Dept. of the Air Force, TO 16-1B-2 series.)
CRPL—F. Ionospheric Data.
*IRPL—A. Recommended Frequency Bands for Ships and Aircraft in the Atlantic and Pacific.
*IRPL—H. Frequency Guide for Operating Personnel.

Circulars of the National Bureau of Standards:

NBS Circular 462. Ionospheric Radio Propagation.
NBS Circular 465. Instructions for the Use of Basic Radio Propagation Predictions.

Reports issued in past:

IRPL—C61. Report of the International Radio Propagation Conference, 17 April to 5 May 1944.
IRPL—G1 through G12. Correlation of D. F. Errors With Ionospheric Conditions.
IRPL—R. Nonscheduled reports:
R4. Methods Used by IRPL for the Prediction of Ionosphere Characteristics and Maximum Usable Frequencies.
R5. Criteria for Ionospheric Storminess.
**R6. Experimental Studies of Ionospheric Propagation as Applied to the Loran System.
R7. Second Report on Experimental Studies of Ionospheric Propagation as Applied to the Loran System.
R9. An Automatic Instantaneous Indicator of Skip Distance and MUF.
R10. A Proposal for the Use of Rockets for the Study of the Ionosphere.
**R11. A Nomographic Method for both Prediction and Observation Correlation of Ionosphere Characteristics.
**R12. Short Time Variations in Ionospheric Characteristics.
R14. A Graphical Method for Calculating Ground Reflection Coefficients.
**R15. Predicted Limits for F2-Layer Radio Transmission Throughout the Solar Cycle.
**R17. Japanese Ionospheric Data—1943.
R18. Comparison of Geomagnetic Records and North Atlantic Radio Propagation Quality Figures—October 1943 Through May 1945.
**R21. Notes on the Preparation of Skip-Distance and MUF Charts for Use by Direction-Finder Stations. (For distances out to 4000 km.)
**R23. Solar-Cycle Data for Correlation with Radio Propagation Phenomena.
**R24. Relations Between Band Width, Pulse Shape and Usefulness of Pulses in the Loran System.
**R25. The Prediction of Solar Activity as a Basis for the Prediction of Radio Propagation Phenomena.
R26. The Ionosphere as a Measure of Solar Activity.
R27. Relationships Between Radio Propagation Disturbance and Central Meridian Passage of Sunspots Grouped by Distance From Center of Disc.
**R30. Disturbance Rating in Values of IRPL Quality-Figure Scale from A. T. & T. Co. Transmission Disturbance Reports to Replace T. D. Figures as Reported.
R31. North Atlantic Radio Propagation Disturbances, October 1943 Through October 1945.
**R33. Ionospheric Data on File at IRPL.
**R34. The Interpretation of Recorded Values of *fEs*.
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.)
T2. Radar coverage and weather. (Superseded by JANP 102.)
CRPL—T3. Tropospheric Propagation and Radio-Meteorology. (Reissue of Columbia Wave Propagation Group WPG—5.)

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