IONOSPHERIC DATA

ISSUED

March 1953

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

CRPL-F 103

NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
WASHINGTON, D.C.

Issued
24 MARCH 1953

IONOSPHERIC DATA

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 exist.

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 limit 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 foFl, 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'Fl, foFl, h'E, and foE are usually the result of diurnal variation in these characteristics. Complete absence of medians of h'Fl and foFl 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								
	1953	1952	1951	1950	1949	1948	1947	1946	1945
December		33	53	86	108	114	126	85	38
November		38	52	87	112	115	124	83	36
October		43	52	90	114	116	119	81	23
September		46	54	91	115	117	121	79	22
August		49	57	96	111	123	122	77	20
July		51	60	101	108	125	116	73	
June		52	63	103	108	129	112	67	
May		52	68	102	108	130	109	67	
April		52	74	101	109	133	107	62	
March		52	78	103	111	133	105	51	
February	29	51	82	103	113	133	90	46	
January	30	53	85	105	112	130	88	42	

WORLD-WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 62 and figures 1 to 124 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:

Commonwealth of Australia, Ionospheric Prediction Service of the Commonwealth Observatory:
- Brisbane, Australia
- Canberra, Australia
- Hobart, Tasmania
- Townsville, Australia

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

University of Graz:
Graz, Austria

Radio Wave Research Laboratories, National Taiwan University, Taipeh, Formosa, China:
Formosa, China

Danish National Committee of URSI:
Godhavn, Greenland

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

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

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

The Royal Netherlands Meteorological Institute:
De Bilt, Holland

Icelandic Post and Telegraph Administration:
Reykjavik, Iceland

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

Ministry of Postal Services, Radio Research Laboratories, Tokyo, Japan:
Tokyo (Kokubunji), Japan
Yamagawa, Japan

Norwegian Defence Research Establishment, Kjeller per Lillestrom, Norway:
Oslo, Norway
Tromso, Norway

Manila Observatory:
Baguio, P. I.

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

Research Institute of National Defence, Stockholm, Sweden:
Upsala, 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
Guam I.
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 63 to 74 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 75 presents ionosphere character figures for Washington, D. C., during February 1953, 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.

SUDDEN IONOSPHERE DISTURBANCES

Table 76 shows that no sudden ionosphere disturbances were observed during the month of February 1953 at Washington, D. C.

RADIO PROPAGATION QUALITY FIGURES

Tables 77a and 77b give for January 1953 the radio propagation quality figures for the North Atlantic area, CRPL advance and short-term forecasts, a summary geomagnetic activity index and sundry comparisons, specifically as follows:

(a) radio propagation quality figures, separately for each 6-hour interval of the Greenwich day, viz. 00-06, 06-12, 12-18, 18-24 hours UT (Universal Time or GCT).
(b) whole-day radio quality indices (beginning October 1952). Each index is a weighted average of the four quarter-day Q-figures, before rounding off, with half weight given to quality grades 5 and 6. This procedure tends to give whole-day indices suitable for comparison with whole-day advance forecasts which designate whenever possible the days when significant disturbance or unusually quiet conditions will occur.
(c) short-term forecasts, issued by CRPL every six hours (nominally one hour before 00^h, 06^h, 12^h, 18^h UT) and applicable to the period 1 to 13 (especially 1 to 7) hours ahead. Note that new scoring rules have been adopted beginning with October 1952 data.
(d) advance forecasts, issued semiweekly (CRPL-J reports) and applicable 1 to 3 or 4 days ahead, 4 or 5 to 7 days ahead, and 8 to 25 days ahead. These forecasts are scored against the whole-day quality indices.
(e) half-day averages of the geomagnetic K indices measured by the Cheltenham Magnetic Observatory of the U. S. Coast and Geodetic Survey.
(f) illustration of the comparison of short-term forecasts and Q-figures.
(g) illustration of the outcome of advance forecasts (1 to 3 or 4 days ahead) and for comparison the outcome of a type of "blind" forecast. For the latter the frequency for each quality grade, as determined from the distribution of quality grades in the four most recent months of the current season, is partitioned among the grades observed in the current month in proportion to the frequencies observed in the current month.

The radio propagation quality figures are prepared from radio traffic data reported to CRPL by American Telephone and Telegraph Company, Mackay Radio and Telegraph Company, RCA Communications, Inc., Marconi Company, British Admiralty Signal and Radar Establishment, and the following agencies of the U. S. government:-- FCC, Coast Guard, Navy, Army Signal Corps, and State Department. The method of calculation, summarized below, is similar to that described in a 1946 report, IRPL-R31, now out of print. Beginning with recalculated figures for January 1952, only reports of radio transmission on North Atlantic paths closely approximating New York-London are included in the estimation of quality. Observations of selected ionospheric characteristics, even though strongly correlated with radio transmission quality, and traffic reports for paths such as New York-Stockholm or New York-Tangier, previously included in the quality-figure determination with low weight, have been left out of the present calculations inasmuch as a sufficient number of homogeneous reports are now available.

The original reports are submitted on various scales and for various time intervals. The observations for each 6-hour interval are averaged on the quality scale of the original reports. These 6-hour indices are then adjusted to the 1 to 9 quality-figure scale by a conversion table prepared by comparing the distribution of these indices for at least four months, usually a year, with a master distribution determined from analysis of the reports originally made on the 1 to 9 quality-figure scale. A report whose distribution is the same as the master is thereby coverted linearly to the Q-figure scale. The 6-hourly quality figures are (subjectively) weighted means of the reports received for that period. These 6-hourly quality figures replace, beginning January 1953, the half-daily quality figures which formerly appeared in this table.

These quality figures are, in effect, a consensus of reported radio propagation conditions in the North Atlantic area. The reasons for low quality are not necessarily known and may not be limited to ionospheric storminess. For instance, low quality may result from improper frequency usage for the path and time of day. Although, wherever it is reported, frequency usage is included in the rating of reports, it must often be an assumption that the reports refer to optimum working frequencies. It is more difficult to eliminate from the indices conditions of low quality because of multipath, interference, etc. These considerations should be taken into account in interpreting research correlations between the Q-figures and solar, auroral, geomagnetic or similar indices.

Note. The North Pacific quality figures, which were published through October 1951, have been temporarily discontinued. Since the establishment of the North Pacific Radio Warning Service at Anchorage, Alaska, a larger number of reports are being received than were previously available in Washington. The preparation of the quality figures will be resumed when sufficient data have been accumulated for determination of conversion tables for these new reports.

OBSERVATIONS OF THE SOLAR CORONA

Tables 78 through 80 give the observations of the solar corona during February 1953, obtained at Climax, Colorado, by the High Altitude Observatory of Harvard University and the University of Colorado. Tables 81 through 83 list the coronal observations obtained at Sacramento Peak, New Mexico, during February 1953, 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 78 gives the intensities of the green (5303A) line of the emission spectrum of the solar corona; table 79 gives similarly the intensities of the first red (6374A) coronal line; and table 80, the intensities of the second red (6702A) coronal line; all observed at Climax in February 1953.

Table 81 gives the intensities of the green (5303A) coronal line; table 82, the intensities of the first red (6374A) coronal line; and table 83, the intensities of the second red (6702A) coronal line; all observed at Sacramento Peak in February 1953.

The following symbols are used in tables 78 through 83: a, observation of low weight; -, corona not visible; and X, position angle not included in plate estimates.

RELATIVE SUNSPOT NUMBERS

Table 84 lists the daily provisional Zürich relative sunspot number, R_Z, as communicated by the Swiss Federal Observatory. Table 85 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 28 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 86 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 heligraphic 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 87 lists various indices of geomagnetic activity based on data from magnetic observatories widely distributed throughout the world. The indices are: (1) preliminary international character-figures, C; (2) geomagnetic planetary three-hour-range indices, Kp; (3) magnetically selected quiet and disturbed days.

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. The details of the currently used method follow. For each day of a month, its geomagnetic activity is assigned by weighting equally the following four criteria: (1) C; (2) the sum of the eight Kp's; (3) the greatest Kp; and (4) the sums of the squares of the eight Kp's.

Kp is the mean standardized K-index from 11 observatories between geomagnetic latitudes 47 and 63 degrees. The scale is 0 (very quiet) to 9 (extremely disturbed), 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 Committee on Characterization of Magnetic Disturbance, ATME, IUGG, has kindly supplied this table. The Meteorological Office, De Bilt, Holland, collects the data and compiles C and selected days. The Chairman of the Committee computes the planetary index. At the meeting of ATME held in Brussels in August 1951, it was decided that the computation of Kw would be discontinued after the month of December 1951 since Kp is available from January 1, 1940. Kw, therefore, no longer appears in these reports.

TABLES OF IONOSPHERIC DATA

Table 1

Washington, D. C. (38.7°N, 77.1°W) February 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(270)	2.6						3.0
01	(270)	2.6						3.0
02	260	2.6						3.1
03	250	2.8						3.1
04	250	2.7						3.1
05	250	2.6						3.1
06	(250)	2.6						3.2
07	230	3.6						3.3
08	230	4.8	220	---	120	1.9		3.5
09	240	5.3	220	3.5	110	2.4	2.2	3.5
10	260	5.8	200	3.8	110	2.7		3.4
11	260	5.9	210	4.0	110	2.9		3.4
12	270	6.2	210	4.0	110	3.0		3.3
13	260	6.4	210	4.0	110	3.0		3.4
14	260	6.4	210	4.0	110	2.9		3.3
15	260	6.2	220	3.6	110	2.7		3.4
16	240	6.0	220	3.3	110	2.3		3.4
17	220	5.6	220	---	(120)	1.9		3.4
18	220	4.8						3.3
19	220	3.9						3.2
20	240	3.3						3.2
21	240	2.8						3.2
22	(260)	2.6						3.0
23	(260)	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) January 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	---					7.9	---
01	---	---					7.6	---
02	---	---					6.0	---
03	---	---					6.0	---
04	---	---					5.0	---
05	---	---					4.8	---
06	---	---					4.8	---
07	---	---					4.9	---
08	---	---					4.7	---
09	---	(2.3)					4.4	(2.8)
10	(280)	3.0			---	---	4.3	3.0
11	(260)	3.2			---	---	3.6	(3.1)
12	260	3.6			---	---	2.9	3.1
13	260	3.9			---	---		3.2
14	250	4.3						3.2
15	240	4.0						3.2
16	250	3.4					2.3	3.1
17	270	2.8					2.5	3.0
18	280	(2.0)					2.6	(3.0)
19	---	---					3.4	---
20	---	---					3.9	---
21	---	---					4.4	---
22	---	---					4.5	---
23	---	---					6.0	---

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) January 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	---					4.4	---
01	---	---					4.6	---
02	(320)	3.0					3.4	(3.0)
03	290	2.9					3.1	(3.1)
04	280	2.6					3.0	3.1
05	290	2.3					3.0	3.1
06	290	2.1					2.8	3.0
07	(290)	1.8					2.8	3.1
08	275	1.8					2.8	3.1
09	245	2.9			---	---	1.4	3.2
10	230	4.0			150	1.2	1.7	3.4
11	225	4.8			---	1.5	1.8	3.5
12	220	5.0			---	1.4	2.7	3.5
13	225	4.6			---	1.4	2.5	3.4
14	225	4.1			---	1.3	2.4	3.4
15	230	3.3			---	---	3.0	3.2
16	250	2.3					3.0	3.2
17	280	2.0					3.0	3.1
18	(290)	(1.7)					3.1	(3.1)
19	---	---					4.0	---
20	---	---					4.6	---
21	---	---					4.1	---
22	---	---					4.4	---
23	---	---					4.0	---

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

Table 4

Kiruna, Sweden (67.8°N, 20.5°E) January 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(310)	3.8					3.6	3.0
01	310	3.4					3.0	2.9
02	300	3.3					2.6	2.9
03	295	3.3					2.6	2.9
04	290	3.1					1.6	3.0
05	270	2.9						3.1
06	290	2.7						3.1
07	280	2.2						3.0
08	280	2.6						3.0
09	230	3.9						3.2
10	220	4.4			---	---		3.4
11	220	5.2			---	---	2.0	3.4
12	210	5.4			---	---		3.3
13	220	5.2			---	---		3.3
14	220	4.9			---	---		3.4
15	220	4.0						3.3
16	240	2.8					1.9	3.2
17	270	2.3					3.6	3.3
18	---	(2.2)					3.9	(3.2)
19	---	---					3.8	---
20	(290)	3.8					3.9	(2.9)
21	(285)	3.0					3.4	(3.0)
22	(310)	(3.3)					4.0	(3.0)
23	(320)	4.0					4.0	2.9

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

Table 5

Anchorage, Alaska (61.2°N, 149.9°W) January 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	(2.6)					3.5	(3.0)
01	300	(2.8)					3.6	(3.0)
02	310	(2.8)					4.1	(3.0)
03	300	(3.0)					4.0	(2.9)
04	310	(2.6)					3.9	(2.9)
05	300	(2.5)					2.0	(2.9)
06	(320)	(3.0)					3.6	(3.0)
07	(310)	(2.8)					(2.4)	(2.8)
08	260	2.4						3.0
09	230	3.8			---	---		3.3
10	230	4.4	---	---	---	---		3.4
11	230	4.8	220	2.2	---	---		3.5
12	220	5.2	220	---	---	---		3.5
13	220	5.4	230	---	---	---		3.5
14	210	5.3	220	---				3.5
15	210	4.8						3.5
16	210	4.4						3.5
17	220	3.2						3.4
18	230	2.2						3.3
19	---	---					(5.2)	---
20	---	---					(6.9)	---
21	---	---					(4.3)	---
22	---	---					3.7	---
23	(300)	(2.2)					3.4	(3.1)

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

Table 6

Narsarssuak, Greenland (61.2°N, 45.4°W) January 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	(3.0)					5.1	(3.1)
01	---	(3.2)					4.7	---
02	---	(3.4)					4.3	(3.0)
03	---	(3.6)					4.4	(2.9)
04	(280)	(3.1)					4.4	(3.0)
05	(280)	(3.0)					4.6	(3.1)
06	---	(2.4)					3.5	(3.1)
07	---	(1.8)					3.0	---
08	(260)	(2.2)					(1.7)	(3.0)
09	240	3.9						3.4
10	230	5.0			---	---		3.5
11	230	6.0	---	---	---	---		3.5
12	230	6.1	---	---	---	---		3.5
13	230	6.0	---	---	---	---		3.4
14	230	(5.4)			---	---		3.4
15	230	(5.0)						(3.3)
16	250	(4.5)					3.0	(3.2)
17	(280)	(3.6)					3.8	(2.8)
18	(290)	(3.3)					4.6	(3.0)
19	(320)	(3.4)					4.7	(3.0)
20	(320)	(3.4)					5.6	(3.0)
21	(290)	(3.1)					6.6	(3.2)
22	(280)	(3.2)					7.3	(3.0)
23	---	(3.4)					5.8	---

Time: 45.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 7

Oslo, Norway (60.0°N, 11.1°E) — January 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(305)	(1.6)					2.6	(3.1)
01	310	1.6					2.9	2.9
02	310	1.6					2.9	2.9
03	300	1.6					3.0	2.9
04	300	1.6					3.0	2.9
05	275	1.6					2.9	3.0
06	265	1.6					2.8	3.0
07	(280)	1.6					2.5	(3.1)
08	260	2.1			---	---	2.7	3.1
09	225	4.0			---	---	3.0	3.5
10	220	5.1	235	---	150	1.8	3.0	3.6
11	220	5.6	230	---	140	2.0	3.0	3.6
12	225	6.2	230	---	135	2.1	3.0	3.5
13	220	6.0	230	---	140	2.0	3.1	3.6
14	220	5.6	235	---	135	1.9	3.1	3.6
15	215	5.2	240	---	---	1.8	3.0	3.6
16	215	4.6			---	---	3.0	3.5
17	225	3.4			---	---		3.4
18	240	2.6						3.3
19	270	2.0						3.1
20	---	1.6						(3.0)
21	---	(1.6)						---
22	---	(1.6)						---
23	---	(1.8)						---

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

Table 8

Upsala, Sweden (59.8°N, 17.6°E) — January 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(350)	1.8					1.7	2.8
01	345	(1.8)					3.1	2.8
02	345	(1.8)					2.7	2.9
03	300	1.8					3.5	2.9
04	320	1.6					3.0	2.8
05	320	1.6					3.0	2.9
06	310	1.6					2.4	(3.0)
07	305	1.6					2.5	(3.0)
08	235	2.7			---	E	2.4	3.2
09	220	4.5	---	---	---	(1.5)	2.4	3.5
10	220	5.4	---	---	---	(1.8)	2.3	3.6
11	220	5.7	230	(2.7)	125	1.9		3.5
12	225	6.3	225	2.8	130	2.0		3.5
13	225	6.0	230	(2.8)	130	1.9	1.8	3.5
14	220	5.6	225	(2.5)	130	(1.8)	1.9	3.5
15	215	5.0			---	E	2.4	3.5
16	220	4.2			---	E	2.6	3.4
17	230	2.9						3.3
18	250	2.1						3.2
19	(280)	1.7					2.2	3.0
20	(330)	1.6						(3.0)
21	(350)	(1.6)						(2.9)
22	(320)	(1.6)						(3.0)
23	(350)	(1.7)						(2.8)

Time: 15.0°E.
Sweep: 1.4 Mc to 17.0 Mc in 6 minutes, automatic operation.

Table 9

Adak, Alaska (51.9°N, 176.6°W) — January 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	2.4						3.0
01	270	2.4						3.0
02	280	2.6						2.9
03	280	2.6						2.9
04	270	2.7						3.0
05	260	2.6						3.0
06	240	2.4						3.1
07	240	2.4					2.2	3.1
08	230	4.2			---	---	1.8	3.5
09	230	5.2	230	---	---	---		3.5
10	240	5.9	230	---	120	2.2		3.5
11	230	6.0	220	3.5	110	2.4		3.5
12	230	6.0	210	(3.5)	110	2.5		3.5
13	230	6.0	210	3.1	110	(2.4)		3.6
14	230	5.7	---	---	110	2.2		3.6
15	220	5.1	---	---	110	(2.0)		3.6
16	210	4.4	---	---	---	---		3.5
17	220	3.6						3.4
18	220	2.6						3.5
19	230	2.1						3.4
20	240	2.1						3.2
21	260	2.2						3.0
22	260	2.4						3.0
23	<260	2.5						3.1

Time: 180.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 10

Graz, Austria (47.1°N, 15.5°E) — January 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.2						
01	290	3.1						
02	290	3.1						
03	290	3.1						
04	270	3.1						
05	250	2.6						
06	270	2.4						
07	255	2.5						
08	200	5.0						
09	200	5.8						
10	210	6.2	200	(3.4)				
11	220	6.5	200	3.6				
12	220	6.3	200	3.6				
13	220	6.1	200	3.6				
14	220	6.0	200	3.5				
15	210	5.8						
16	200	5.2						
17	200	4.4						
18	240	3.5						
19	250	3.0						
20	260	2.9						
21	295	3.0						
22	290	3.0						
23	300	2.9						

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

Table 11

San Francisco, California (37.4°N, 122.2°W) — January 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(240)	(3.0)						(3.3)
01	(250)	(2.6)						(3.2)
02	(250)	(2.8)						(3.2)
03	(240)	(2.9)						(3.2)
04	(250)	(2.9)						(3.2)
05	(260)	(2.8)						(3.2)
06	(240)	(2.7)						(3.3)
07	(230)	(3.0)						(3.3)
08	220	4.8	210	(2.5)	130	1.9	2.0	3.6
09	220	5.7	220	(3.6)	120	2.3	2.9	3.5
10	240	6.2	220	(4.0)	110	(2.6)	2.7	3.5
11	260	7.4	210	(4.1)	110	(2.9)	2.6	3.3
12	240	7.5	210	(4.1)	110	2.9	2.6	3.4
13	250	6.9	200	(4.1)	110	3.0	2.0	3.4
14	250	6.8	200	(4.0)	110	(2.8)	2.5	3.5
15	230	6.0	220	(3.6)	110	(2.6)	2.6	3.5
16	220	5.4	---	---	110	2.1	2.2	3.6
17	210	(4.8)			---	---	1.9	3.6
18	(210)	(3.6)					2.9	(3.5)
19	(210)	(2.8)					2.6	(3.5)
20	(220)	(2.2)					2.0	3.4
21	(250)	(2.4)					2.4	(3.1)
22	(270)	(2.5)						(3.1)
23	(260)	(2.8)						(3.2)

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

Table 12

White Sands, New Mexico (32.3°N, 106.5°W) — January 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.1						3.1
01	250	3.2						3.1
02	250	3.2						3.2
03	240	3.4						3.2
04	240	3.3						3.2
05	250	2.8						3.0
06	260	2.8						3.1
07	240	3.6						3.4
08	230	5.0	---	---	120	2.0		3.6
09	240	5.6	230	---	110	2.5	2.2	3.5
10	270	6.4	220	4.2	110	2.8	2.3	3.4
11	270	7.2	220	4.3	110	3.0	2.2	3.3
12	270	7.3	210	4.3	110	3.0		3.3
13	270	7.0	210	4.3	110	3.0		3.3
14	260	7.0	210	4.1	110	2.9	1.8	3.4
15	250	6.4	220	3.8	110	2.7		3.5
16	230	5.9	210	3.3	110	2.3		3.6
17	220	5.0						3.6
18	210	3.8						3.4
19	220	3.1						3.5
20	240	2.6						3.4
21	280	2.5						3.0
22	300	2.9						3.0
23	280	3.2						3.0

Time: 105.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 13

Maui, Hawaii (20.8°N, 156.5°W) January 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	(3.2)					1.7	(3.0)
01	260	3.2					1.8	(3.2)
02	230	3.0					1.8	3.4
03	230	2.4					1.6	3.4
04	280	1.9					1.7	3.0
05	280	1.9					1.2	2.9
06	300	1.8					1.8	2.9
07	270	3.3			150	1.3	1.8	3.1
08	260	6.0	240	---	120	2.2	1.9	3.4
09	280	7.6	230	4.2	110	2.7	3.6	3.3
10	280	8.7	220	4.3	110	3.0	4.5	3.2
11	290	9.3	200	4.4	110	3.2	5.0	3.1
12	290	9.8	200	4.5	110	3.3	4.5	3.0
13	280	11.2	210	4.6	110	3.2	5.0	3.1
14	260	10.4	220	4.4	110	3.1	5.1	3.2
15	260	8.3	230	4.2	110	3.0	4.7	3.3
16	250	6.7	230	---	110	2.7	4.0	3.4
17	240	6.0	230	---	110	2.2	4.2	3.5
18	220	5.0			---	---	3.9	3.6
19	(220)	3.4					4.7	3.5
20	250	3.0					4.0	3.1
21	(260)	3.3					4.1	3.2
22	250	3.2					3.7	3.1
23	280	(3.2)					2.8	(2.9)

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

Table 14

Okinawa I. (26.3°N, 127.8°E) January 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	2.8					1.6	3.0
01	260	2.8					1.7	3.1
02	270	2.7					2.0	3.1
03	250	2.5					2.1	3.4
04	260	2.2					2.1	3.2
05	300	1.9					1.8	3.0
06	310	1.9						3.0
07	260	4.3	250	---	---	---		3.4
08	260	6.2	240	---	120	2.1		3.5
09	270	7.2	230	---	120	2.4		3.3
10	270	9.0	220	(4.2)	120	2.7	4.0	3.3
11	270	9.8	220	4.3	120	3.0	4.0	3.2
12	270	10.2	220	4.4	120	3.0	4.3	3.2
13	280	9.2	220	4.3	120	2.9	4.1	3.3
14	270	8.8	220	4.2	120	2.7	4.0	3.2
15	260	7.8	230	---	120	2.5	4.1	3.4
16	250	6.6	240	---	120	2.3	3.9	3.4
17	230	5.7	---	---	---	---	2.9	3.5
18	230	4.6					3.2	3.3
19	250	4.7					3.2	3.2
20	240	4.3					3.2	3.2
21	250	3.6					2.9	3.2
22	270	3.2					2.7	3.0
23	280	3.1					2.0	3.1

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

Table 15

Puerto Rico, W.I. (18.5°N, 67.2°W) January 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	4.1						3.1
01	250	4.4						3.2
02	230	4.6						3.4
03	220	4.1					1.8	3.4
04	240	3.7						3.2
05	250	3.3					1.7	3.0
06	250	3.3			---	---		3.1
07	220	4.2			(100)	---		3.5
08	220	5.8	220	---	100	2.0		3.6
09	240	6.8	220	---	100	2.6		3.6
10	250	7.0	200	4.3	100	2.9		3.6
11	250	7.2	200	4.4	100	3.2		3.4
12	270	6.7	200	4.4	100	3.3		3.4
13	270	7.0	200	4.5	100	3.3		3.3
14	270	7.0	220	4.4	100	3.2		3.4
15	260	6.8	210	4.3	100	3.1		3.4
16	250	6.5	210	(4.0)	100	2.8		3.4
17	240	6.5	220	---	100	2.3	2.9	3.4
18	220	6.1	---	---	100	---	2.7	3.6
19	210	4.5					3.1	3.6
20	210	3.6					2.4	3.3
21	250	3.6						3.1
22	270	3.7						3.0
23	270	4.0						3.0

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

Table 16

Guam I. (13.6°N, 144.9°E) January 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	4.2						3.1
01	250	4.0						3.3
02	250	3.6						3.4
03	230	2.6						3.4
04	270	2.0						3.2
05	310	1.6						3.0
06	300	1.6					1.6	3.2
07	250	4.2			120	(1.7)		3.2
08	(280)	6.6	230	---	120	2.4	3.0	3.0
09	310	7.9	210	4.2	110	2.8	4.6	2.7
10	320	7.8	200	4.4	110	(3.0)	4.5	2.7
11	340	7.2	190	4.4	110	3.1	4.4	2.6
12	340	7.2	190	4.5	110	(3.2)	4.1	2.6
13	350	7.6	180	4.4	110	(3.2)	4.0	2.6
14	320	7.8	200	4.4	110	3.2	3.9	2.7
15	310	8.6	220	4.3	110	3.0	4.1	3.0
16	280	8.7	230	4.1	120	2.8	4.6	3.2
17	260	8.6	240	---	120	2.4	4.3	3.3
18	240	8.3					3.0	3.4
19	220	7.6					2.3	3.3
20	230	6.9					3.0	3.2
21	230	6.2						3.2
22	240	5.5						3.3
23	240	4.8						3.2

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

Table 17

Panama Canal Zone (9.4°N, 79.9°W) January 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.7					2.2	3.2
01	250	(3.5)					2.4	(3.3)
02	230	(3.4)					2.0	3.2
03	230	2.8					2.8	3.1
04	240	2.4					1.8	2.9
05	280	2.3					1.8	2.9
06	260	2.8						2.9
07	240	5.0			150	1.9		3.3
08	260	6.6	230	---	110	2.4	2.7	3.3
09	270	7.9	220	4.3	110	2.9		3.2
10	270	7.8	200	4.5	110	3.1		3.2
11	280	7.4	200	4.5	110	3.4		3.1
12	320	7.6	200	4.6	110	3.4		2.9
13	330	8.0	220	4.7	110	3.4	3.7	2.8
14	330	8.4	220	4.5	110	3.3	4.1	2.9
15	300	9.4	<230	4.5	110	3.1	4.3	3.0
16	270	9.0	230	4.2	110	2.8	4.1	3.1
17	240	7.6	220	---	120	2.4	3.9	3.3
18	220	6.4					3.9	3.5
19	220	4.1					3.3	3.4
20	240	3.1					3.2	3.1
21	260	2.7					2.2	2.8
22	<280	2.9					2.1	2.8
23	280	3.0					2.2	2.8

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

Table 18

Huancayo, Peru (12.0°S, 75.3°W) January 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	(5.6)						(3.1)
01	270	4.6						(3.1)
02	280	3.6						3.2
03	280	3.2						3.3
04	260	2.3						(3.2)
05	260	2.0					6.0	3.3
06	260	4.4			110	1.4	5.2	3.2
07	260	6.5	220	---	110	2.3	8.4	3.2
08	310	7.3	210	4.3	100	2.8	10.8	2.9
09	360	7.5	200	4.3	100	---	12.0	2.5
10	390	7.0	200	4.4	100	---	13.0	2.5
11	400	7.0	200	4.5	100	---	12.5	2.5
12	400	7.0	200	4.4	100	---	12.2	2.5
13	400	7.5	190	4.4	100	3.4	12.0	2.5
14	380	8.0	200	4.3	100	3.4	11.5	2.5
15	360	8.3	200	4.2	110	3.2	10.6	2.6
16	330	8.4	200	---	110	2.9	9.8	2.7
17	290	8.2	220	---	110	2.5	7.4	2.8
18	260	8.1			120	1.8	4.4	2.8
19	260	8.0						2.9
20	290	7.1						2.8
21	310	6.6						2.8
22	320	6.4						(2.9)
23	320	6.0						(2.9)

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

Table 19

Kiruna, Sweden (67.8°N, 20.5°E) December 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(310)	(2.4)					4.1	(2.9)
01	(320)	(2.8)					3.9	(2.8)
02	300	2.3					2.9	2.9
03	300	2.1					2.0	2.9
04	300	2.2						2.9
05	295	2.1						3.0
06	---	(1.8)						(3.2)
07	---	---					(2.1)	---
08	(290)	(1.9)						(2.8)
09	240	2.4						3.2
10	220	3.6						3.3
11	215	4.3						3.4
12	220	4.5						3.4
13	210	4.0						3.3
14	220	3.3						3.4
15	240	2.9						3.1
16	(250)	(2.0)					2.3	(3.2)
17	---	(1.8)					3.3	(3.0)
18	---	---					2.4	---
19	---	---					4.1	---
20	---	---					4.1	---
21	---	---					4.0	---
22	---	---					4.0	---
23	(310)	(2.9)					3.7	(2.8)

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

Table 20

Anchorage, Alaska (61.2°N, 149.9°W) December 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(300)	(2.8)					3.3	(3.2)
01	300	3.0					4.0	3.1
02	320	2.9					3.0	2.9
03	320	2.7					2.5	2.8
04	(320)	2.5					3.2	2.9
05	310	2.7					2.2	3.0
06	320	2.6					1.9	3.0
07	310	2.3						3.0
08	300	2.5						3.0
09	240	3.4						3.3
10	240	4.2	---	---				3.4
11	230	4.9	---	---				3.5
12	230	5.4	---	---	---	---		3.5
13	230	5.3			---	---		3.4
14	220	5.4						3.5
15	220	4.7						3.4
16	220	3.7						3.3
17	230	2.9						3.3
18	240	2.2						3.3
19	(260)	(2.2)					(3.4)	---
20	---	---					(3.8)	---
21	---	---					(4.8)	---
22	---	---					(3.8)	---
23	---	---					(5.0)	---

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

Table 21

De Bilt, Holland (52.1°N, 5.2°E) December 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	2.6						3.0
01	285	2.7					2.2	3.0
02	275	2.5					2.2	3.0
03	280	2.3					2.2	3.0
04	(260)	2.0					2.4	3.0
05	250	1.9					2.6	3.1
06	---	1.8					2.3	3.1
07	240	2.3						3.1
08	205	4.2	---	---	---	1.6	2.9	3.6
09	205	5.3	200	---	115	2.0	3.1	3.6
10	210	5.8	210	3.0	115	2.2	3.1	3.7
11	210	6.0	200	3.0	110	2.3	3.2	3.6
12	210	5.8	200	3.0	110	2.3	3.3	3.6
13	210	6.0	215	3.0	110	2.2	3.3	3.6
14	210	5.8	---	---	115	2.0	3.2	3.6
15	210	5.2			---	1.7	2.5	3.6
16	205	4.6					1.9	3.4
17	210	3.5						3.4
18	225	2.9					2.2	3.2
19	< 230	2.7						3.2
20	(225)	2.6						3.1
21	< 240	2.4						3.0
22	(240)	2.6						3.0
23	< 250	2.6						3.0

Time: 0.0°.
Sweep: 1.4 Mc to 11.2 Mc in 6 minutes, automatic operation.

Table 22

Lindau/Harz, Germany (51.6°N, 10.1°E) December 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	275	2.8					2.5	3.0
01	260	2.8					2.3	3.0
02	260	2.8					2.4	3.0
03	260	2.7					2.3	3.0
04	260	2.4					2.6	3.0
05	255	2.0					2.6	3.0
06	260	2.0					2.6	3.2
07	260	2.0			---	E	2.5	3.3
08	225	3.4			---	---	2.3	3.4
09	210	4.8			---	1.8	3.0	3.6
10	215	6.0			120	2.0	3.1	3.6
11	215	6.1			110	2.2	3.2	3.7
12	215	6.2			110	2.3	3.4	3.7
13	220	6.1			115	2.2	3.5	3.6
14	220	6.0			120	2.1	3.4	3.5
15	210	5.8			120	1.8	3.2	3.6
16	210	4.7			---	E	3.1	3.5
17	215	4.2					2.5	3.4
18	230	3.4					2.6	3.4
19	250	2.6					2.6	3.2
20	250	2.8					2.2	3.3
21	260	2.6					2.1	3.2
22	270	2.5					2.2	3.1
23	275	2.6					2.2	3.0

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

Table 23

Schwarzenburg, Switzerland (46.8°N, 7.3°E) December 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.2						3.2
01	290	3.3						3.2
02	300	3.2						3.2
03	290	3.2						3.2
04	260	3.0						3.3
05	240	2.5						3.4
06	230	2.4						3.5
07	215	2.4						3.7
08	200	3.8						3.9
09	200	5.2			---	---		3.9
10	200	6.0			100	2.2		3.8
11	200	6.4			100	2.4		3.9
12	200	6.4			100	2.5		4.0
13	200	5.9			100	2.6		3.8
14	200	5.9			100	2.4		3.8
15	200	6.0			100	2.2		3.8
16	200	5.4			---	---		3.9
17	200	4.5						3.7
18	200	3.8						3.7
19	220	3.2						3.6
20	220	3.2						3.6
21	220	3.0						3.5
22	290	2.9						3.2
23	270	3.1						3.3

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

Table 24

Formosa, China (25.0°N, 121.5°E) December 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.0					1.8	2.8
01	280	2.9					1.7	3.0
02	260	3.1						3.2
03	240	2.8					1.7	3.2
04	<260	2.4						3.0
05	<270	2.4					1.7	2.8
06	<270	2.5					2.2	2.8
07	240	5.5			120	1.8	2.4	3.4
08	240	7.0	240	---	120	2.4	3.2	3.4
09	260	7.5	240	4.2	120	2.8	3.6	3.4
10	260	8.6	220	4.2	(120)	3.0	4.1	3.4
11	260	8.8	210	4.3	(120)	---	4.2	3.4
12	270	9.6	210	4.4	(120)	---	4.2	3.2
13	270	11.8	220	4.4	(120)	---	4.4	3.4
14	270	12.5	230	4.3	(120)	---	4.2	3.3
15	240	10.5	230	3.9	(120)	2.7	4.2	3.5
16	240	9.6	200	---	(120)	---	3.6	3.5
17	210	8.0			(110)	(1.7)	3.2	3.7
18	210	6.2					3.2	3.3
19	230	5.4					3.0	2.9
20	240	5.6					3.0	3.0
21	230	5.2					2.3	3.3
22	240	3.7					2.2	3.2
23	240	2.9					1.9	3.0

Time: 120.0°E.
Sweep: 1.5 Mc to 19.5 Mc in 15 minutes, manual operation.

Table 25

Huancayo, Peru (12.0°S, 75.3°W) December 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	(4.7)						(3.1)
01	300	—						—
02	300	—						—
03	300	—						—
04	290	—						—
05	290	(2.8)						—
06	260	5.2			120	1.7	4.8	3.2
07	(280)	7.4	230	—	110	2.5	6.6	3.2
08	310	8.4	220	4.2	100	2.9	9.6	3.0
09	330	8.7	210	4.3	100	—	12.0	2.8
10	360	8.8	200	4.5	100	—	12.8	2.5
11	370	8.3	200	4.5	100	—	12.9	2.5
12	360	8.6	200	4.5	100	—	12.9	2.5
13	360	9.0	200	4.4	100	—	12.5	2.5
14	360	9.0	200	4.4	100	3.3	12.0	2.6
15	330	9.3	200	4.2	100	3.1	10.5	2.7
16	300	9.3	210	—	110	2.9	7.5	2.7
17	240	9.4			110	2.4	7.6	2.8
18	260	9.1			120	—	5.0	2.8
19	270	8.7						2.8
20	300	8.3						2.7
21	330	8.3						2.7
22	330	(7.6)						(2.9)
23	310	(5.6)						(3.2)

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

Table 26

Reykjavik, Iceland (64.1°N, 21.8°W) November 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(340)	(2.1)					4.1	—
01	—	(2.7)					4.6	—
02	(350)	(2.8)					4.7	(2.8)
03	(320)	2.5					4.4	2.9
04	320	2.4					3.5	3.0
05	300	2.3			—	—		3.1
06	280	2.0			—	—		3.1
07	280	(1.7)			—	—		3.2
08	260	2.5			—	—		3.2
09	240	3.8	—	—	—	—		3.3
10	240	4.4	250	—	—	—		3.4
11	240	4.8	240	—	120	—		3.4
12	240	5.3	230	—	—	—		3.4
13	240	5.0	230	—	—	—		3.4
14	240	4.7	—	—	130	—		3.3
15	240	4.5	—	—	120	—		3.3
16	250	3.7	—	—	—	—		3.2
17	260	(3.6)			120	—	2.0	(3.1)
18	240	3.3			110	—	3.6	3.2
19	260	(2.9)					3.8	(3.2)
20	(320)	(3.0)					4.0	(3.1)
21	(300)	(2.6)					3.8	(3.0)
22	(310)	(3.2)					4.8	(3.0)
23	—	(2.4)					4.6	—

Time: 15.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 18 seconds.

Table 27

Anchorage, Alaska (61.2°N, 149.9°W) November 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(310)	(3.5)					3.4	(3.1)
01	(300)	(2.8)					2.0	(3.0)
02	(320)	(3.0)					3.2	(2.9)
03	340	2.8					2.6	2.9
04	340	2.7					2.7	(2.9)
05	(320)	(2.5)					1.4	(2.9)
06	(310)	(2.7)						(3.0)
07	(300)	(2.2)						(3.0)
08	260	3.1						3.2
09	250	4.2	—	—	—	—		3.3
10	240	5.0	240	—	—	—		3.3
11	240	5.6	240	—	—	—		3.4
12	240	5.6	240	—	—	—		3.3
13	230	5.7	—	—	—	—		3.4
14	220	5.6			—	—		3.4
15	220	5.6			—	—		3.4
16	230	4.5						3.4
17	240	3.4						3.3
18	250	2.6						3.2
19	250	2.2						3.3
20	—	—						—
21	(310)	(1.8)						(3.1)
22	—	—					(2.6)	—
23	—	—					(3.4)	—

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

Table 28

Tokyo, Japan (35.7°N, 139.5°E) November 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.0					2.6	2.9
01	300	3.1					2.5	2.9
02	300	3.0					2.5	2.8
03	270	3.2					2.5	2.9
04	250	3.0					2.5	3.0
05	260	2.8					2.5	2.9
06	250	3.3					2.5	3.1
07	230	6.1	—	—	130	2.0	2.5	3.4
08	240	7.3	230	3.5	120	2.4	3.2	3.4
09	240	7.5	230	4.0	110	2.6	3.7	3.4
10	250	8.0	230	4.2	110	2.8	3.8	3.4
11	250	8.0	220	4.2	110	3.0	3.8	3.3
12	250	8.1	230	4.2	110	3.0	3.8	3.4
13	250	7.6	230	4.0	110	2.9	3.7	3.3
14	250	7.3	240	4.0	110	2.7	4.0	3.4
15	240	6.7	230	3.2	120	2.4	3.7	3.4
16	230	6.1	—	—	140	1.9	3.5	3.4
17	220	4.4					3.2	3.4
18	240	3.7					3.0	3.1
19	250	3.1					2.8	3.2
20	260	3.2					3.1	3.0
21	260	3.0					2.5	3.0
22	290	3.0					2.6	3.0
23	300	3.0					2.5	2.9

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

Table 29

Yamagawa, Japan (31.2°N, 130.6°E) November 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	2.8					2.4	3.0
01	280	2.8					2.5	3.0
02	290	2.9					2.3	3.0
03	<280	2.9					2.5	3.2
04	250	3.0					2.4	3.2
05	250	2.5					2.4	3.2
06	260	2.5					2.2	3.2
07	220	4.5	—	—	—	1.6	2.2	3.5
08	220	(6.0)	220	3.4	110	2.3	3.1	(3.5)
09	250	7.0	220	4.0	100	2.5	3.5	(3.5)
10	250	7.8	220	4.2	100	2.9	3.8	3.4
11	250	8.0	210	4.4	100	3.0	3.8	3.4
12	250	8.4	210	4.5	100	3.0	3.8	3.3
13	260	8.6	220	4.4	100	3.0	3.8	3.3
14	250	8.5	230	4.3	100	2.9	3.8	3.4
15	240	7.8	220	3.8	100	2.6	3.8	3.5
16	220	6.5	220	3.4	120	2.2	3.8	3.6
17	210	5.8					3.5	3.6
18	200	4.4					3.0	3.5
19	240	3.6					3.0	3.2
20	250	3.4					3.0	3.2
21	240	3.4					2.5	3.3
22	250	2.8					2.5	3.2
23	290	2.7					2.3	3.1

Time: 135.0°E.
Sweep: 1.0 Mc to 22.0 Mc in 2 minutes.

Table 30

Baguio, P.I. (16.4°N, 120.6°E) November 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	5.3						3.2
01	230	4.8						3.4
02	220	3.8						3.5
03	210	3.4						3.6
04	220	2.4					1.7	3.5
05	(250)	(2.2)					2.1	(3.1)
06	250	3.6						3.2
07	230	6.5	—	—	120	2.2	2.6	3.4
08	(260)	8.0	230	—	110	2.6	3.2	3.3
09	290	9.2	220	(4.3)	110	(2.9)	3.8	3.1
10	300	9.8	210	4.4	110	(3.1)	4.4	2.9
11	300	9.8	200	4.5	100	3.3	4.7	2.7
12	320	9.8	210	4.5	110	(3.3)	4.4	2.6
13	300	10.2	200	4.4	100	3.3	4.4	2.9
14	280	10.6	200	4.2	100	(3.0)	4.8	3.0
15	270	11.0	220	—	100	(2.7)	4.3	3.1
16	240	10.9	220	—	—	—	5.0	3.3
17	220	10.5					2.8	3.5
18	220	9.3					2.7	3.5
19	220	8.2					3.6	3.3
20	220	7.4					3.6	3.1
21	240	7.2					2.6	3.3
22	230	6.2						3.2
23	240	5.5						3.2

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

Table 31

Johannesburg, Union of S. Africa (26.2°S, 28.1°E) November 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.9					1.7	2.9
01	260	3.9						3.0
02	250	3.7						3.0
03	260	3.3					1.8	3.1
04	250	3.0						3.0
05	250	3.3						3.2
06	240	4.9	230	---	120	2.0		3.3
07	290	5.8	220	4.0	110	2.6		3.1
08	310	6.4	220	4.3	110	3.0	3.7	3.0
09	310	7.2	200	4.5	110	3.2	3.8	3.0
10	320	7.4	200	4.6	110	3.4	3.8	2.9
11	320	8.0	200	4.6	110	3.5		2.9
12	320	8.5	200	4.6	110	3.5	3.7	2.9
13	320	8.7	210	4.6	110	3.5	3.7	2.9
14	310	8.7	210	4.5	110	3.4	3.8	2.9
15	300	8.6	220	4.4	110	3.2	3.6	3.0
16	280	8.0	220	4.1	110	2.9	3.6	3.0
17	270	7.9	230	3.7	110	2.4	3.3	3.1
18	250	7.6	250	---	100	1.9	3.0	3.2
19	230	7.3			---	---	2.4	3.2
20	230	6.5					2.0	3.2
21	240	5.2					1.9	3.2
22	250	4.3					2.2	3.0
23	270	4.0					1.8	2.9

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

Table 32

Watheroo, W. Australia (30.3°S, 115.9°E) November 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	4.2					3.2	3.0
01	265	4.0					3.2	2.9
02	260	3.8					3.0	3.0
03	260	3.6					2.4	3.0
04	260	3.2					2.8	3.0
05	280	3.5					2.4	3.1
06	250	4.2	250	---		2.0	2.2	3.3
07	270	5.0	230	3.8		2.5	3.0	3.3
08	300	5.5	220	4.3		3.0	3.6	3.2
09	310	5.8	210	4.4		3.2	4.0	3.0
10	310	6.3	210	4.5		3.4	4.0	3.1
11	310	6.8	200	4.5		3.4	3.9	3.1
12	320	6.6	200	4.5		3.5	4.2	3.0
13	320	6.8	200	4.6		3.4	4.2	3.0
14	310	7.1	210	4.5		3.4	3.9	3.1
15	300	7.0	220	4.4		3.2	3.9	3.1
16	300	6.7	220	4.3		3.0	3.6	3.1
17	290	6.4	240	3.8		2.6	3.4	3.2
18	270	6.1	250	3.4		2.2	3.6	3.2
19	250	6.2					2.7	3.3
20	250	5.8					2.8	3.3
21	250	4.8					2.6	3.2
22	270	4.2					2.6	3.0
23	290	4.3					2.8	3.0

Time: 120.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 2 minutes.

Table 33

Capetown, Union of S. Africa (34.2°S, 18.3°E) November 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.6						2.9
01	280	3.6					2.2	2.8
02	280	3.6						2.9
03	270	3.6					2.0	2.9
04	260	3.5						3.0
05	260	3.3						2.9
06	240	4.2	250	---	---	1.7		3.2
07	280	5.4	240	3.7	120	2.3		3.2
08	310	5.8	230	4.1	110	2.8	3.1	3.0
09	320	6.5	220	4.3	110	3.1	3.5	3.0
10	330	7.0	220	4.4	110	3.2	3.6	2.9
11	340	7.2	200	4.5	110	3.4	3.7	2.9
12	340	7.9	210	4.6	110	3.4	3.7	2.9
13	330	8.1	210	4.6	110	3.4	3.7	2.9
14	320	8.6	220	4.5	110	3.4	3.4	2.9
15	310	8.4	220	4.4	110	3.2		2.9
16	300	7.6	220	4.2	110	3.1	3.4	3.0
17	290	7.4	230	4.0	110	2.8		3.1
18	270	6.8	230	3.5	120	2.3	2.8	3.2
19	250	6.7	---	---	---	1.8	2.3	3.2
20	230	6.4					1.7	3.2
21	230	5.2					1.6	3.2
22	240	4.3					1.8	3.1
23	260	3.8						3.0

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

Table 34

Baguio, P.I. (16.4°N, 120.6°E) October 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	230	7.6						3.3
01	220	6.8						3.5
02	200	6.4						3.7
03	200	4.2						3.7
04	220	3.2					2.0	3.3
05	(230)	(2.9)					2.4	3.4
06	230	4.5					2.3	3.4
07	220	7.0			120	(2.3)	3.2	3.5
08	250	8.2	210	---	110	(2.7)	3.8	3.3
09	(280)	9.3	200	---	---	---	4.2	3.0
10	300	10.0	200	---	---	---	4.6	2.8
11	290	9.8	200	---	100	(3.4)	4.7	2.6
12	300	9.6	190	---	---	---	4.4	2.6
13	280	10.0	200	---	100	---	4.0	2.8
14	290	10.7	200	---	100	3.2	4.4	3.0
15	270	11.3	210	---	110	3.0	4.1	3.1
16	240	(11.6)	220	---	110	2.5	4.1	(3.3)
17	220	(10.6)					2.4	(3.4)
18	220	(10.5)						(3.3)
19	220	(10.0)						(3.4)
20	210	9.6						3.4
21	210	8.7						3.3
22	230	7.8					2.1	3.3
23	230	7.4						3.3

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

Table 35

Townsville, Australia (19.3°S, 146.8°E) October 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	5.3					2.0	3.2
01	230	4.9					2.6	3.2
02	245	3.8					2.5	3.0
03	250	3.4					2.2	3.0
04	270	3.4						3.0
05	270	3.4			---	---		3.0
06	250	4.6	---	---	130	1.7	3.0	3.2
07	260	6.2	230	3.8	110	2.4	3.8	3.3
08	270	7.2	230	4.2	110	2.8	4.4	3.3
09	290	7.6	210	4.4	110	3.2	4.5	3.3
10	300	7.5	200	4.5	110	3.3	4.8	3.2
11	290	7.9	200	4.5	110	3.4	4.4	3.2
12	300	8.0	200	4.5	110	3.5	4.0	3.2
13	300	7.8	200	4.5	110	3.4	4.0	3.2
14	300	7.1	200	4.4	110	3.3	4.2	3.1
15	290	7.5	220	4.3	110	3.1	4.2	3.2
16	280	7.4	240	4.0	110	2.8	4.2	3.2
17	250	6.9	240	---	110	2.2	4.2	3.3
18	240	6.8			---	---	3.3	3.3
19	250	5.6					2.8	3.2
20	270	5.4						3.1
21	260	5.4					2.6	3.1
22	260	5.4					2.3	3.0
23	250	5.3					2.4	3.0

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

Table 36

Brisbane, Australia (27.5°S, 153.0°E) October 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	4.5					2.5	3.0
01	250	4.3					2.0	3.1
02	240	4.0					2.0	3.1
03	270	3.5					2.0	3.0
04	270	3.3					2.0	3.0
05	260	3.5			---	---		3.0
06	240	4.8	230	---	130	2.1		3.4
07	280	5.8	230	4.0	110	2.6		3.3
08	290	6.2	220	4.3	110	3.0		3.2
09	290	6.5	210	4.5	110	3.2		3.2
10	300	6.8	200	4.5	110	3.3		3.2
11	310	6.8	200	4.6	110	3.4		3.1
12	300	6.8	200	4.6	110	3.5		3.1
13	290	6.9	200	4.5	110	3.4		3.1
14	305	6.4	210	4.5	110	3.3		3.1
15	290	6.5	220	4.4	110	3.1		3.1
16	280	6.3	220	4.0	110	2.7		3.2
17	250	6.6	240	3.3	120	2.1		3.2
18	230	6.4					3.1	3.1
19	250	5.8					2.4	3.0
20	260	5.3					1.8	2.9
21	270	5.0						2.9
22	275	5.0					2.0	2.9
23	270	4.8					2.3	3.0

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

Table 37

Canberra, Australia (35.3°S, 149.0°E) October 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(260)	4.0					2.8	3.0
01	250	3.7					2.7	3.0
02	240	3.4					2.8	3.1
03	(240)	3.1					2.7	3.1
04	(250)	3.0					2.5	2.9
05	250	3.1			---	---	2.5	3.0
06	240	4.1	---	---	110	1.6	3.0	3.4
07	280	4.7	240	3.9	110	2.2	3.6	3.3
08	320	5.2	220	4.1	100	2.8	3.6	3.2
09	320	5.5	200	4.2	100	3.0	3.6	3.2
10	330	5.8	200	4.4	100	3.2	3.8	3.1
11	340	5.9	190	4.4	100	3.3	3.5	3.0
12	310	6.1	200	4.4	100	3.3	3.8	3.2
13	305	6.1	200	4.4	100	3.3	3.4	3.1
14	310	6.1	210	4.4	100	3.2	3.3	3.2
15	300	5.9	210	4.2	100	3.0	3.4	3.2
16	290	5.8	220	4.0	100	2.8	2.9	3.2
17	250	5.8	240	---	110	2.0	2.7	3.2
18	240	5.7			---	1.6	2.6	3.2
19	240	5.6					2.6	3.1
20	240	5.0					2.9	(3.1)
21	250	4.4					3.2	3.0
22	250	4.2					3.4	2.9
23	(250)	4.0					3.0	2.9

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

Table 38

Hobart, Tasmania (42.9°S, 147.3°E) October 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	2.8						2.9
01	300	2.6						2.9
02	280	2.5						3.0
03	300	2.3						2.9
04	300	2.1						2.9
05	280	2.5			---	---		3.0
06	250	3.7			110	2.0		3.1
07	230	4.5			100	2.4		3.0
08	210	4.5	205	4.0	100	2.8		3.0
09	400	5.0	200	4.4	100	3.1		2.8
10	365	5.1	200	4.5	100	3.3		2.8
11	370	5.5	200	4.5	100	3.4	3.8	2.9
12	345	5.6	200	4.5	100	3.4	4.0	2.9
13	350	5.7	200	4.5	100	3.4	3.9	2.9
14	350	5.7	200	4.5	100	3.3		2.9
15	330	5.6	200	4.4	100	3.1		2.9
16	210	5.6	---	4.1	100	2.8		3.0
17	220	5.5			100	2.4		3.1
18	250	5.5			105	1.8		3.1
19	250	5.5						3.0
20	250	4.8						3.0
21	250	4.0						2.9
22	260	3.6						2.9
23	270	3.0						2.9

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

Table 39

Godhavn, Greenland (69.2°N, 53.5°W) September 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	(2.9)					3.0	(3.0)
01	(280)	(2.8)					2.8	(3.0)
02	(300)	(2.8)					3.2	(3.0)
03	(310)	(2.8)					3.2	(2.8)
04	(300)	(2.8)					3.6	(3.0)
05	(280)	(3.0)					3.8	(3.0)
06	(270)	(3.0)	260	---	---	---	2.9	(3.1)
07	270	(3.4)	250	---	(120)	---	2.7	(3.1)
08	(330)	(4.0)	240	3.3	120	---		(3.1)
09	(300)	(4.4)	230	(3.5)	(120)	(2.2)	2.3	(3.2)
10	(310)	(4.4)	230	3.6	120	2.4	3.5	3.1
11	340	(4.6)	220	3.7	110	2.4		(3.1)
12	320	(4.8)	220	(3.7)	110	2.5	3.3	(3.1)
13	(360)	(4.7)	220	(3.7)	110	(2.6)	6.0	(3.0)
14	(310)	(4.6)	(220)	(3.6)	110	2.4	6.2	(3.1)
15	(330)	(4.6)	230	3.6	(110)	(2.2)	4.0	(3.2)
16	(270)	4.6	230	3.3	110	---	5.4	3.2
17	270	4.4	240	3.1	---	---	4.5	3.2
18	260	(4.3)	240	---	---	---	4.4	(3.2)
19	250	(4.2)					4.6	(3.2)
20	260	(3.6)					3.6	(3.1)
21	260	(3.6)					4.0	(3.1)
22	(260)	(3.3)					3.6	(3.0)
23	260	(3.2)					3.4	(3.0)

Time: 45.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 18 seconds.

Table 40

Calcutta, India (22.6°N, 88.4°E) September 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	5.2						3.0
01	(240)	(4.8)						
02	(240)	(4.0)						
03	(270)	(3.5)						(3.0)
04	(240)	(3.0)						
05	(270)	(2.8)						
06	255	4.5						3.0
07	210	7.4				2.3		
08	230	8.0				2.5	3.4	
09	240	8.7				3.0		(3.0)
10	240	9.7				3.2		
11	210	10.2				3.6		
12	210	10.8				3.7		3.0
13	210	10.8				3.8		
14	225	(10.8)				3.4		
15	(210)	(10.3)				3.2		(2.9)
16	(210)	(9.8)				3.0		
17	220	(9.5)				2.3	3.5	
18	(225)	(9.5)						(3.2)
19	(220)	(8.6)						
20	210	(8.0)						
21	(240)	(6.5)						(2.9)
22	(240)	(5.7)						
23	255	5.5					2.5	

Time: Local.

Table 41

Baguio, P.I. (16.4°N, 120.6°E) September 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	6.4					2.2	3.0
01	240	6.8						3.3
02	210	6.1						3.6
03	220	4.0						3.5
04	230	3.1					1.9	3.5
05	(240)	2.6					2.0	3.4
06	240	4.8					2.9	3.4
07	230	6.9			120	2.2	3.6	3.4
08	(270)	7.4	220	---	110	(2.8)	4.5	3.2
09	(300)	8.2	220	---	(120)	(3.1)	5.2	2.8
10	320	9.0	210	---	110	(3.2)	5.1	2.6
11	(340)	9.5	200	4.6	120	3.4	4.8	2.5
12	350	9.8	200	4.6	120	(3.5)	4.6	2.5
13	350	10.0	210	4.5	120	3.4	4.4	2.7
14	340	10.5	210	(4.5)	120	3.2	5.0	2.7
15	310	(11.4)	210	(4.4)	110	(3.0)	4.0	(3.0)
16	280	(12.3)	220	---	110	2.6	5.1	(3.1)
17	240	(10.7)			---	---	3.0	(3.3)
18	240	(10.2)					2.7	(3.2)
19	250	(9.8)					2.4	(3.1)
20	240	9.1					2.0	3.1
21	250	8.8						3.0
22	280	7.8					2.0	3.0
23	300	6.7						2.9

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

Table 42

Calcutta, India (22.6°N, 88.4°E) August 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	6.0						(3.0)
01	240	5.3						
02	(240)	(4.7)						
03	(210)	(3.9)						(3.0)
04	(210)	(3.6)						
05	240	3.3					2.4	
06	220	5.5				---		(3.0)
07	210	6.8				2.2	3.6	
08	240	8.2				2.5	3.8	
09	240	8.5				2.8		(3.0)
10	(240)	(8.5)				3.0		
11	(225)	(8.5)				---		
12	(225)	8.5				---		---
13	(225)	(9.0)				4.0		
14	(210)	---				3.8		
15	---	---				---	(4.4)	---
16	210	---				---		
17	(240)	(9.6)				3.0	(4.2)	
18	(210)	(9.2)						---
19	(210)	(9.6)						
20	(225)	(8.6)						
21	(240)	(7.6)						(3.0)
22	(240)	(6.2)						
23	(270)	6.0						

Time: Local.

Table 43

Baguio, P.I. (16.4°N, 120.6°E) August 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	5.7						2.9
01	270	5.4						3.1
02	250	[illegible]						3.1
03	250	[illegible]						3.2
04	230	[illegible]						3.3
05	240	2.8						3.4
06	240	4.8					2.9	3.3
07	230	[illegible]			110	2.3	3.7	3.2
08	290	7.1	210	---	110	2.8	4.5	3.1
09	(310)	7.5	200	4.4	110	(3.1)	4.0	2.8
10	360	8.0	210	4.6	100	3.2	4.6	2.5
11	380	8.6	200	4.6	---	(3.4)	5.8	2.5
12	390	9.0	200	4.6	110	3.4	5.0	2.5
13	370	9.2	200	4.6	(110)	(3.4)	5.9	2.6
14	370	9.6	210	4.6	110	3.3	5.2	2.6
15	350	10.1	220	4.5	110	3.1	5.0	2.6
16	310	10.7	220	(4.2)	110	2.8	5.1	2.9
17	250	10.6	---	---	110	2.3	4.3	3.1
18	240	10.0					3.3	3.3
19	240	9.6					3.6	3.2
20	240	8.5					2.0	3.0
21	260	7.9					2.4	2.9
22	290	6.7						2.9
23	310	[illegible]						2.8

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

Table 44

Guam I. (13.6°N, 144.9°E) August 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	5.2						2.8
01	280	4.6						3.0
02	270	4.0						3.1
03	250	3.6						3.2
04	270	3.4						3.2
05	250	3.0						3.4
06	250	3.5					1.8	3.3
07	(250)	5.8	230	---	120	2.2	2.6	3.4
08	270	7.1	200	---	110	2.6	3.6	3.2
09	300	7.6	200	4.4	110	3.0	4.0	3.0
10	340	8.1	200	4.5	110	3.2	3.9	2.7
11	370	8.2	200	4.6	110	3.4	4.6	2.6
12	380	8.4	200	4.6	110	(3.4)	4.5	2.5
13	380	8.9	200	4.5	110	3.4	4.1	2.5
14	360	9.0	200	4.5	110	3.4		2.7
15	340	9.6	200	4.5	110	3.2		2.7
16	330	10.1	210	4.3	110	3.0	4.0	2.8
17	300	10.7	220	(4.1)	110	2.7	4.3	2.9
18	(280)	10.4	240	---	120	2.0	4.4	3.0
19	250	10.3					3.9	3.0
20	250	9.5					3.1	3.0
21	240	8.5					2.7	3.1
22	250	7.2					2.5	3.0
23	280	5.7						2.9

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

Table 45

Calcutta, India (22.6°N, 88.4°E) July 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	5.8						(3.0)
01	240	5.6						
02	240	5.4						
03	240	5.1						3.0
04	250	[illegible]					3.2	
05	260	4.5					2.6	
06	240	5.4				---	3.0	2.9
07	240	6.0				2.4	4.4	
08	(240)	(8.5)				2.6	(4.8)	
09	(240)	(3.2)				3.0	(4.7)	(2.8)
10	(240)	(9.7)				3.2	(5.0)	
11	(240)	(9.2)				3.3		
12	240	9.2				---		(2.8)
13	(210)	9.8				3.9	4.5	
14	240	9.4				---	4.9	
15	---	(9.5)				---	(4.6)	---
16	(240)	(10.0)				---	4.8	
17	240	9.8				2.7	4.8	
18	240	10.2				---	5.5	(3.0)
19	240	9.6					3.2	
20	240	8.6					4.6	
21	240	(7.8)						(3.1)
22	(240)	(5.5)					(2.5)	
23	(280)	(6.0)					(2.4)	

Time: Local.

Table 46

Baguio, P.I. (16.4°N, 120.6°E) July 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	4.5					3.8	2.8
01	300	4.3					3.4	2.9
02	270	4.2					3.2	3.0
03	250	3.6					2.9	3.0
04	240	3.4					3.1	3.3
05	230	3.0					3.1	3.3
06	230	4.6					3.0	3.3
07	210	5.8			100	(2.5)	5.6	3.2
08	(300)	6.4	210	(4.2)	100	3.0	6.7	3.1
09	350	6.8	200	4.3	100	(3.2)	7.2	2.8
10	380	7.5	190	4.3	100	(3.3)	7.4	2.6
11	400	7.9	190	4.5	100	3.4	8.0	2.6
12	400	8.3	190	4.4	100	(3.6)	7.6	2.6
13	410	8.6	200	4.4	100	3.4	7.2	2.5
14	420	8.6	200	4.4	100	(3.2)	8.2	2.5
15	380	9.1	210	4.3	100	3.1	7.0	2.6
16	340	9.4	210	4.1	100	2.9	7.0	2.7
17	250	9.5	---	---	110	2.4	6.2	2.8
18	240	9.4					5.3	3.1
19	230	8.8					5.4	3.1
20	270	7.3					4.0	2.9
21	300	6.0					2.9	2.8
22	310	5.4					3.1	2.8
23	320	4.7					3.6	2.7

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

Table 47

Baguio, P.I. (16.4°N, 120.6°E) June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	(4.5)					4.4	(2.7)
01	280	4.1					3.5	3.0
02	260	3.7					3.4	2.8
03	260	3.4					3.2	3.0
04	240	3.1					4.4	3.0
05	240	(3.0)					3.2	3.0
06	230	5.0					4.5	3.2
07	220	6.2			100	(2.5)	6.2	3.2
08	(300)	6.6	210	---	100	2.9	7.0	3.0
09	350	7.3	210	(4.5)	100	3.3	6.9	2.7
10	380	7.7	200	4.5	100	3.3	7.2	2.6
11	400	8.2	190	4.6	100	3.6	8.0	2.4
12	400	8.6	190	4.6	100	3.6	8.0	2.4
13	400	8.8	200	4.5	100	3.5	6.9	2.4
14	370	9.3	200	4.4	100	3.3	7.6	2.6
15	350	9.5	200	4.3	100	3.1	6.4	2.6
16	330	10.0	210	(4.2)	100	2.8	5.8	2.8
17	230	10.0	---	---	100	2.5	5.1	2.8
18	240	10.4					5.0	3.0
19	240	9.7					5.0	3.1
20	250	8.1					3.9	3.0
21	260	7.2					3.2	2.9
22	300	5.4					3.6	2.7
23	320	4.5					3.5	2.7

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

Table 48

Baguio, P.I. (16.4°N, 120.6°E) May 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	6.5					3.6	3.0
01	240	5.8					3.7	3.2
02	240	5.1					4.1	3.3
03	220	4.6					3.1	3.2
04	220	3.6					3.5	3.4
05	220	3.6					5.0	(3.2)
06	230	5.1			---	---	4.8	3.3
07	220	6.4			100	2.5	5.2	3.1
08	(290)	7.4	210	---	100	3.0	5.8	2.9
09	(380)	8.1	210	4.5	110	3.3	6.0	2.6
10	360	8.7	200	4.6	100	(3.5)	6.6	2.5
11	370	9.2	200	4.7	110	(3.5)	6.2	2.4
12	360	9.4	200	4.6	100	3.5	6.0	2.4
13	360	9.4	190	4.6	100	(3.4)	6.6	2.5
14	340	9.8	200	4.5	100	(3.3)	5.7	2.5
15	(340)	10.0	200	4.4	100	3.2	5.6	2.6
16	(300)	10.6	220	(4.2)	100	3.0	5.8	2.7
17	230	11.5	---	---	110	2.6	4.6	3.0
18	240	11.2					3.6	3.2
19	220	10.0					3.2	3.1
20	250	8.4					2.2	2.9
21	280	7.3						2.8
22	310	6.9						2.8
23	300	6.2					2.6	2.8

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

Table 49

Domont, France (49.0°N, 2.3°E) March 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	2.7						
01	290	2.6						
02	280	2.6						
03	290	2.5						
04	260	2.2						
05	280	2.2						
06	240	3.0	---	---	---	1.7		
07	240	4.0	200	---	100	1.9	2.5	
08	230	4.9	200	---	100	2.3		
09	260	5.0	190	3.8	100	2.5		
10	270	5.6	190	3.9	100	2.7		
11	280	5.5	190	3.9	100	2.9		
12	280	5.8	180	4.0	100	3.0		
13	280	5.7	190	3.8	100	2.9		
14	270	5.6	200	4.0	100	2.8		
15	260	5.8	200	---	100	2.7		
16	240	5.4	210	---	100	2.3		
17	240	5.6	220	---	100	1.8		
18	220	5.8	215	---	---	1.4		
19	210	5.2						
20	210	4.5						
21	240	3.2						
22	280	2.8						
23	290	2.8						

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

Table 50

Fribourg, Germany (48.1°N, 7.8°E) March 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.0					1.9	2.8
01	295	2.8					1.9	2.8
02	290	2.8					1.8	2.7
03	280	2.8						2.8
04	280	2.6					1.9	2.8
05	255	2.2						2.8
06	275	2.9	---	---	---	E		3.0
07	245	4.3	255	---	122	1.9	1.9	3.2
08	290	5.0	230	3.7	112	2.4	2.8	3.2
09	290	5.4	220	4.0	111	2.7	3.2	3.2
10	305	5.8	220	4.2	113	2.8	3.3	3.1
11	290	6.0	230	4.3	112	3.0	3.0	3.2
12	300	6.3	230	4.4	113	3.0	3.0	3.2
13	290	6.2	225	4.3	113	3.0	3.0	3.1
14	290	6.2	235	4.3	111	2.9	2.2	3.2
15	275	6.0	235	4.0	112	2.8	2.4	3.2
16	260	6.3	235	3.7	113	2.5	2.2	3.3
17	250	6.1	250	---	120	2.1	1.8	3.2
18	245	6.0	---	---	---	E	1.7	3.2
19	235	5.9						3.2
20	230	4.7						3.2
21	240	3.8						2.9
22	280	3.1					1.9	2.8
23	290	3.0						2.7

Time: Local.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutee, automatic operation.

Table 51

Poitiers, France (46.6°N, 0.3°E) March 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	285	3.2						2.9
01	<290	3.2					1.8	2.8
02	<275	3.2					1.7	2.8
03	<270	3.0						2.8
04	250	2.8						3.0
05	240	2.3						3.1
06	240	3.0			---	---		3.2
07	235	4.2	225	---	115	2.0	2.0	3.4
08	240	4.6	205	3.4	105	2.3	2.5	3.4
09	250	5.5	205	3.8	100	2.6	3.0	3.5
10	265	6.0	200	4.0	100	2.8	3.0	3.5
11	275	6.1	205	4.2	100	3.0	2.6	3.4
12	280	6.2	200	4.3	100	3.0	2.3	3.4
13	270	6.4	210	4.2	105	3.0	2.3	3.4
14	275	6.0	220	4.1	105	3.0	2.4	3.4
15	260	6.2	215	4.0	105	2.8	2.0	3.4
16	250	6.0	220	3.6	110	2.5	2.0	3.4
17	245	6.3	230	---	110	2.0	2.0	3.4
18	225	6.2	---	---	---	---		3.4
19	220	5.6						3.4
20	225	4.6						3.3
21	<240	4.0						3.1
22	260	3.3						2.9
23	270	3.2						2.9

Time: 0.0°.
Sweep: 1.5 Mc to 16.8 Mc in 1 minute.

Table 52

Casablanca, Morocco (33.6°N, 7.6°W) March 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	3.6						2.8
01	---	3.3						2.8
02	---	3.4						2.8
03	---	3.3						2.9
04	---	3.2						3.1
05	---	3.0						3.1
06	---	2.7	---	---				3.2
07	230	4.4	---	---	125	1.7		3.6
08	240	5.4	225	3.4	115	2.2		3.5
09	255	6.0	215	4.0	110	2.6	3.4	3.5
10	290	6.4	200	4.4	105	(2.9)	3.4	3.2
11	295	7.0	200	4.5	105	(3.0)	3.6	3.2
12	280	7.4	200	4.6	105	(3.1)		3.3
13	280	8.0	215	4.6	100	3.2		3.3
14	280	7.9	220	4.5	105	3.1		3.2
15	275	7.9	230	4.5	105	3.0		3.3
16	275	7.9	230	4.3	110	2.8		3.3
17	255	8.1	240	4.0	115	2.4		3.4
18	240	7.8	---	---	130	1.8	2.3	3.5
19	220	7.0			---	---	2.4	3.5
20	---	4.5					2.0	3.2
21	---	3.8						2.8
22	---	3.7					1.9	2.8
23	---	3.6						2.8

Time: 0.0°.
Sweep: 1.6 Mc to 16.0 Mc in 1 minute 15 seconds.

Table 53

Guam I. (13.6°N, 144.9°E) March 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	8.1						3.2
01	260	7.2						3.2
02	240	6.9						3.4
03	240	5.3						3.4
04	240	4.0						3.4
05	260	3.1						3.3
06	250	2.7						3.2
07	240	5.8			130	---		3.4
08	260	7.8	240	---	120	2.5		3.3
09	280	8.9	220	---	---	---		3.0
10	300	9.5	210	4.5	---	---		2.7
11	320	9.2	200	4.6	---	---		2.5
12	320	9.3	210	4.6	---	---		2.5
13	330	9.7	200	4.6	---	---		2.5
14	320	10.6	220	4.6	---	---		2.7
15	310	>11.5	240	4.5	---	---		2.9
16	290	12.4	240	---	---	---		3.1
17	280	12.5	210	---	120	---		3.2
18	260	12.4			120	---	2.9	3.1
19	260	11.8					2.5	3.0
20	260	11.0					2.0	3.0
21	240	9.6						3.2
22	240	8.8					2.3	3.1
23	250	8.7					2.9	3.1

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

Table 54

Domont, France (49.0°N, 2.3°E) February 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	2.7						
01	270	2.7						
02	280	2.7						
03	280	2.6						
04	280	2.3						
05	260	2.2						
06	255	2.2						
07	230	3.3	220	---	---	1.6		
08	220	5.0	200	---	100	2.0		
09	220	5.2	190	---	100	2.3	2.4	
10	230	5.6	190	---	100	2.6		
11	220	6.0	200	---	100	2.7		
12	230	6.0	180	---	100	2.7		
13	225	6.0	190	---	100	2.7		
14	230	5.8	190	---	100	2.6		
15	220	5.3	200	---	100	2.3		
16	220	5.2	200	---	100	2.0	2.2	
17	220	5.1	200	---	100	1.7		
18	220	4.9	200	---				
19	220	4.3						
20	230	3.2						
21	250	3.0						
22	270	2.8						
23	270	2.7						

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

Table 55

Fribourg, Germany (48.1°N, 7.8°E) February 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.0						2.8
01	280	[illegible]						2.8
02	280	[illegible]						2.8
03	290	3.0						2.7
04	280	2.8						2.8
05	270	2.3						3.0
06	255	2.3						3.1
07	240	3.5	---	---	---	(1.6)		3.1
08	235	5.3	240	---	125	2.0		3.4
09	240	6.4	220	3.5	120	2.4	2.3	3.4
10	240	6.6	220	3.6	120	2.7	2.6	3.4
11	250	6.9	230	3.9	120	2.8		3.4
12	255	6.9	225	4.1	120	3.0		3.4
13	250	7.0	220	4.0	120	2.9		3.4
14	250	6.8	230	3.8	120	2.8		3.4
15	250	6.8	240	---	120	2.6		3.3
16	230	6.1	235	---	130	2.2		3.4
17	225	6.0			---	(1.6)	2.0	3.4
18	225	5.3						3.2
19	230	4.6						3.1
20	245	3.8						3.0
21	260	3.4						[illegible]
22	275	3.3						[illegible]
23	(280)	3.3						2.8

Time: Local.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

Table 56

Poitiers, France (46.6°N, 0.3°E) February 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	<280	3.2						2.9
01	280	3.0						2.9
02	<275	3.1						2.9
03	280	3.1						2.9
04	<275	2.9					1.8	2.9
05	<250	2.5						(3.1)
06	245	2.3						(3.1)
07	240	3.7			---	---	2.2	3.2
08	230	5.2	230	2.3	125	2.0	2.1	3.6
09	230	6.1	215	3.5	110	2.4	2.4	3.6
10	240	6.4	210	3.8	105	2.7		3.6
11	245	7.0	220	4.0	105	2.8		3.5
12	245	6.8	210	4.0	105	2.9		3.4
13	245	6.6	215	4.0	105	2.8		3.6
14	240	6.6	215	3.8	110	2.8		3.4
15	240	6.4	225	---	110	2.5		3.5
16	225	6.4	230	---	115	2.2	2.4	3.5
17	220	5.8			---	---	2.3	3.5
18	220	5.2					2.4	3.3
19	230	4.6					2.1	3.2
20	240	3.9						3.2
21	255	3.4					1.8	3.1
22	260	3.4						3.0
23	<270	3.2						2.9

Time: 0.0°.
Sweep: 1.5 Mc to 16.8 Mc in 1 minute.

Table 57

Casablanca, Morocco (33.6°N, 7.6°W) February 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	4.0					2.2	2.9
01	---	4.0					2.2	2.8
02	---	4.0					2.0	2.9
03	---	3.8						3.0
04	---	3.6						3.0
05	---	3.3						3.1
06	---	2.6						3.1
07	<230	3.6			130	E	2.1	3.1
08	230	6.2	220	---	120	2.0		3.5
09	240	7.0	220	4.0	110	2.5	2.8	3.6
10	250	7.9	210	4.2	105	2.9		3.4
11	250	8.2	205	4.4	105	3.2		3.4
12	260	8.4	200	4.5	110	3.2		3.5
13	250	8.3	200	4.5	105	3.3		3.4
14	255	7.6	220	4.5	110	3.2		3.4
15	250	7.4	220	(4.3)	110	3.1		3.4
16	250	7.3	225	(4.0)	115	2.8		3.4
17	245	7.3	---	---	120	2.3	3.0	3.4
18	<230	6.9			---	---	3.4	3.4
19	<220	6.0					3.6	3.3
20	---	5.1					3.2	3.1
21	---	4.7					3.6	3.0
22	---	4.4					2.6	3.0
23	---	4.1					2.2	2.9

Time: 0.0°.
Sweep: 1.6 Mc to 16.0 Mc in 1 minute 15 seconds.

Table 58

Guam I. (13.6°N, 144.9°E) February 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	7.4						3.2
01	240	7.0						3.3
02	240	5.7						3.3
03	250	4.4						3.3
04	260	4.0						3.2
05	260	3.5						3.2
06	260	3.4						3.2
07	250	4.8						3.3
08	(260)	7.4	240	---	(130)	---		3.3
09	280	9.0	230	---	120	2.9		3.1
10	300	9.5	220	4.5	---	---		2.8
11	320	9.6	200	4.6	---	---		2.6
12	320	9.4	200	4.6	---	---		2.6
13	320	9.5	---	4.6	---	---		2.6
14	320	9.9	---	---	---	---		2.6
15	320	10.0	220	---	---	---		2.7
16	300	10.6	230	---	---	---		2.8
17	280	10.9	240	---	---	---	3.0	3.0
18	260	11.1						3.1
19	250	10.6						3.1
20	240	10.3						3.1
21	240	8.8						3.1
22	240	8.4						3.2
23	240	8.2						3.2

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

Table 59

Djibouti, French Somaliland (11.5°N, 43.1°E) February 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	<7.5					2.4	(3.1)
01	240	7.4						(3.3)
02	230	6.4						(3.5)
03	220	5.4						(3.5)
04	220	4.0						3.4
05	245	3.1						3.3
06	260	2.4			---	---	2.4	3.2
07	250	5.0	---	---	129	1.6	2.5	3.2
08	240	7.7	225	---	111	2.6	3.8	3.2
09	300	8.8	215	4.6	101	3.3	5.5	2.8
10	315	9.4	210	(4.8)	100	3.4	6.5	2.8
11	315	9.6	205	4.9	107	3.6	5.5	2.7
12	320	9.4	200	5.0	107	3.5	5.0	2.7
13	320	10.0	200	5.1	108	3.6	4.8	2.7
14	320	10.7	205	(5.0)	109	(3.5)	4.5	2.9
15	305	<10.6	205	(4.9)	111	3.4	4.4	3.0
16	290	11.2	220	4.6	111	3.1	4.4	3.0
17	285	11.3	225	---	111	2.6	4.5	2.9
18	250	11.2	---	---	---	1.9	3.3	(2.8)
19	275	9.2					3.0	(2.8)
20	280	9.1					2.4	---
21	270	(8.8)					2.5	---
22	240	< 9.0					2.1	---
23	240	8.0					2.7	3.2

Time: Local.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

Table 60

Domont, France (49.0°N, 2.3°E) January 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	2.8						
01	260	2.9						
02	260	2.8						
03	250	2.5						
04	240	2.0						
05	250	2.0						
06	280	1.9						
07	230	2.7	210	---	---	---		
08	210	5.0	200	---	130	1.8	2.4	
09	200	6.0	190	---	100	2.2		
10	210	7.0	190	---	100	2.4		
11	210	7.0	190	---	100	2.6		
12	210	6.8	190	---	100	2.6		
13	210	7.0	190	---	100	2.6		
14	210	7.0	200	---	100	2.3		
15	220	6.0	200	---	110	2.1		
16	210	5.6	190	---	100	1.8		
17	210	5.0	190	---	---	---	[illegible]	
18	200	3.6						
19	220	2.8						
20	240	2.7					2.2	
21	260	2.7						
22	280	2.8						
23	270	2.8						

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

Table 61

Poitiers, France (46.6°N, 0.3°E) January 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	275	3.7						2.9
01	<270	3.7						2.9
02	270	3.7						2.8
03	265	3.4						3.0
04	<250	2.8						(3.0)
05	250	2.6						(2.9)
06	(250)	2.4						3.1
07	<240	2.8	---	---				3.0
08	215	5.3	205	2.1	150	1.8	2.3	3.7
09	215	6.8	220	---	115	2.2	2.4	3.7
10	220	7.2	220	3.6	110	2.5		3.6
11	220	7.2	215	4.2	110	2.8		3.6
12	225	7.0	205	3.9	110	2.8		3.6
13	235	7.2	215	4.0	110	2.8		3.5
14	230	7.3	225	---	110	2.6		3.5
15	220	6.8	225	---	115	2.3		3.6
16	210	6.4	220	---	125	1.8	2.2	3.5
17	205	5.6					2.1	3.4
18	215	4.4					2.3	3.4
19	225	3.8					2.3	3.2
20	<240	3.3					2.3	3.1
21	260	3.3					2.3	2.9
22	<290	3.4					2.3	2.9
23	270	3.6					2.4	2.8

Time: 0.0°.
Sweep: 1.5 Mc to 16.8 Mc in 1 minute.

Table 62

Casablanca, Morocco (33.6°N, 7.6°W) January 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	3.9					2.5	2.9
01	---	3.8					2.4	2.8
02	---	3.8					2.6	2.9
03	---	4.0					2.4	3.0
04	---	3.8					2.5	3.2
05	---	3.2					2.2	3.2
06	---	2.6						2.9
07	---	3.2						3.0
08	225	6.3			125	1.8	2.4	3.5
09	225	7.1	210	---	120	2.6		3.6
10	230	7.1	215	(4.0)	110	3.0	3.7	3.4
11	250	8.6	210	(4.3)	110	3.2		3.4
12	250	8.4	210	(4.5)	110	3.3		3.5
13	250	7.5	210	4.4	110	3.3		3.5
14	250	7.1	210	(4.3)	110	3.2		3.3
15	250	7.5	220	(4.2)	115	3.1		3.3
16	250	8.0	230	(3.9)	115	2.7		3.3
17	225	7.0	---	---	120	2.1		3.5
18	220	5.4					2.4	(3.3)
19	---	4.8					2.4	3.0
20	---	4.8					2.1	3.1
21	---	3.9					2.4	3.0
22	---	3.8					2.4	2.9
23	---	3.9					2.4	2.8

Time: 0.0°.
Sweep: 1.6 Mc to 16.0 Mc in 1 minute 15 seconds.

TABLE 63

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

IONOSPHERIC DATA

h'F2 (Characteristic), Km (Unit), February (Month), 1953

Observed at Washington, D.C.

Lat. 38.7°N, Long. 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: F.J.Mc., E.J.W.

Calculated by: F.J.Mc., E.J.W.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	S	S	S	270	(260)S	230	220	230	220	210H	(230)L	270	250H	250	250	260	230	220	210H	220	(230)S	250	[260]S	(290)S
2	[280]S	(280)S	260	240	230	230	(260)S	240	220	220	240	250	250	270	250H	250	240	220	220	230	240	(250)S	(270)S	(280)S
3	[270]A	(260)S	(280)S	260	260	270	240	250	230	230	250	250	250	260	260	250	250H	220	210	(250)A	(240)S	240	(280)S	(290)S
4	(270)S	(290)S	(260)S	(250)S	260	(260)S	(250)S	(240)S	230	230	240	260	250	250	260	260	240	220	210	200	230	250	240	(260)S
5	270	(260)S	(270)S	250	260	250	(230)S	230	230	230	240H	260	250	260	250	240	240	210	220	230	220	220	(260)S	(270)S
6	(260)S	250	250	240	260	240	250	220	210	220	260H	250	250	260	280	270	230	230	210	220	230	230	240	240
7	240	240	250	240	250	240	(240)S	220	210	220	230	260	250	250	250	240	240	230	200	220	(230)S	230	(250)S	(260)S
8	250	(270)S	260	250	240	230	240	230	230	220	210	240	250	250	260	250	240	210	220	200	(220)S	240	(270)S	(250)S
9	(290)S	(300)S	250	240	230	(240)S	230	220	220	230	250	240	250	260	250	240	230	230	230	220	220	(220)S	(230)S	(270)S
10	(280)S	(270)S	(280)S	(250)S	270	(250)S	250	230	230	230	230	250	270	260	260	[260]C	250	240	220	210	210	220	220	240
11	250	250	230	240	(280)S	(270)S	250	(240)A	(250)L	270	280	300	300	270	260	260	250	220	270	230	250	230	(260)S	(270)S
12	(280)S	[270]S	(270)S	260	250	250	250	230	230	240	260	250	250	250	260	240	240	230	210	210	220	(230)S	(250)S	(270)S
13	(270)S	[260]S	260	260	250	240	240	220	220	230	250	240H	240	250	260	260	230	220	210	240	240	260	(250)S	250
14	260	260	240	240	(260)S	(260)S	(270)S	240	230	240	240H	250	220	310	270	220	250	210	210	210	250	(270)S	220	220H
15	270	260	240	220	240	210	(240)S	230	230H	230	240	260	270	250	260	250	240	220	230	230	260	240	220	250
16	250	250	220	220	280	S	M	M	260	250	280	300	280	310	280	220	240	220	220	(240)S	[260]A	(280)S	(290)S	(280)S
17	270	250	250	250	280	(260)S	[260]S	250	240	[250]L	260	250	290	270	260	240	250	220	210	C	C	C	C	C
18	(260)S	(270)S	250	230	250	(250)S	250	230	240	230	240	260	240	270	260	260	230	220	220	210	230	(250)S	(260)S	250
19	260	(270)S	250	240	250	250	(270)S	230	230	240	(260)L	270	280H	260	270	260	240	220	220	(210)S	(230)S	(240)S	<280S	(260)S
20	(260)S	(250)S	(250)S	250	250	(250)S	(250)S	230	220	240	270	270	290	310H	280	260	240	230	210	220	230	(270)S	(240)S	(250)S
21	(270)S	250	270	230	230	220	(250)S	220	240	240	270	280	300	270	280	260	250	220	220	220	(250)A	(260)S	(260)S	(250)S
22	(270)S	(270)S	(260)S	240	240	220	220	230	220	230	270K	260K H	300K	300K	260K	270K	270K	270K	230K	220K	(280)K S	230K	230K	280K
23	(300)K S	[300]K S	(290)K S	270K	B K	S K	(290)K S	250K	[270]K L	290K	500K	350K	320K	340K	340K	290K	290K	250K	240K	(270)K S	(270)K S	(300)K S	(300)K S	[300]K S
24	(300)K S	[280]K S	270K	320K	300K	S K	S K	280K	250K	360K	410K	370K H	350K	340K H	330K H	320K	310K	260K	250K	230K	250K	(240)K S	S K	S K
25	S K	S K	E K	E K	E K	E K	E K	250K	240K	(380)K L	540K	400K	320K	320K	330K	280K	260K	250K	240K	240K	250K	(260)K S	S K	S K
26	S K	S K	250K	<310K E	S K	S K	E K	260K	G K	G K	G K	G K	G K	530K	670K	400K	(580)K H	280K	240K	240K	(250)K S	S K	B K	B K
27	B K	(320)K S	[300]K A	(290)K A	S K	B K	B K	240K	240K	420K	330K	290K	400K	340K	330K	270K	260K	230K	240K	(210)K S	(260)K S	(220)K S	(280)K S	(310)K S
28	(300)K S	(270)K S	[280]K S	(280)K S	250K	230K	[230]K S	230	270	250	260	240	290	260	240	260	230	240	220	(270)A	240	(230)S	(260)S	240
29																								
30																								
31																								
Median	(270)	(270)	260	250	250	250	(250)	230	230	240	260	260	270	260	260	260	240	220	220	220	240	240	(260)	(260)
Count	24	25	27	27	25	23	25	27	28	28	28	28	28	28	28	28	28	28	28	27	27	26	23	24

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 64

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

Form adopted June 1946

IONOSPHERIC DATA

foF2 (Characteristic), Mc (Unit), February (Month), 1953

Observed at Washington, D. C.

Lat. 38.7°N, Long. 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: F. J. Mc, E. J. W.

Calculated by: F. J. Mc, E. J. W.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	[1.7]FS	1.7JF	1.9FS	2.9F	2.4	2.5	2.6	3.0	4.9	5.2H	5.7	6.7	6.8H	6.7	5.8	6.2	6.6	5.4	4.7H	3.5	3.6	2.5	2.2	2.3
2	2.2	2.2FS	2.5F	2.5F	2.5F	2.3F	2.2F	3.1	5.4	5.6	6.2	6.0	6.7	6.4	6.0H	6.2	5.9	5.6	4.6	3.9	3.4	2.8	2.6	2.7
3	2.8F	2.7F	2.7F	2.8	2.7F	2.2JS	2.6	3.0	4.7	5.4	6.2	6.8	6.8	6.2	6.4	6.2	6.4H	5.6	4.2	(3.4)PS	3.0	2.8	2.3	2.3
4	2.4	2.5	2.8JS	2.8	2.5FS	2.7	2.6	3.2S	5.4S	6.2	6.0	6.2	6.7	6.6	6.5	6.6	6.0	5.8	4.9	4.2	3.3	3.0	3.0	2.6
5	2.6F	2.7	2.5	2.6	2.7F	3.0	2.8	3.0	5.4	5.9	6.2H	6.7	7.0	6.5	6.4	6.4	6.7	5.8	4.5	4.2JS	3.9	2.8JS	2.5	(2.5)S
6	2.6	2.9	3.0FS	3.2JS	3.1F	3.0FS	3.0	3.7	6.0	6.1	6.8H	6.9	7.0	6.6	6.6	6.8	6.1	6.0	5.2	4.4	3.8	3.4	3.2	(3.4)FS
7	3.5	3.4F	3.5	3.6	3.5	3.3	3.3	4.1	6.2	6.2	5.8	6.1	6.2	6.9	6.4JS	6.5	6.6	(6.4)S	5.6	4.3	3.7	3.3	2.8	2.7JS
8	(2.6)JS	2.6JS	2.9JS	3.2	(3.0)FS	2.9F	2.9F	(4.0)S	6.6	6.8	6.2	6.6	7.2	6.6	6.6	6.4	6.4	6.0	5.5	4.4	3.3	2.7	2.4	2.1JS
9	2.5	2.8	3.3	3.3	3.3	3.2	3.0	3.7	5.8	6.2	6.6	6.4	7.0	6.8	6.9	6.5	6.6	5.8	6.4	5.2	4.7	3.2	2.6	2.3
10	2.2	2.2F	2.5F	3.1	3.0	3.1F	3.2	4.0	6.2	6.4	6.2	6.6	7.0	7.2	7.0	[7.1]C	7.2	7.0	7.6JS	(7.2)S	5.6	4.9JS	3.7	3.7
11	3.5	3.6	3.2F	3.3	3.0F	3.3F	3.7	3.5	4.3	4.7	4.9	5.1	5.6	6.1	6.1	5.8	6.0	5.4	5.0	3.9	3.3	3.1	2.5	2.4
12	2.3	2.3	2.5F	3.0F	3.2	3.3	3.2	4.0	5.8	6.0	6.8	6.6	6.6	6.4	6.4	6.1	6.0	5.7	5.4	3.9JS	3.5	2.8	2.4	2.5
13	2.5	2.5	2.5	2.8	3.0	3.2	3.1	3.9	5.2	(6.0)JS	5.8	6.8H	7.1	6.4	6.0	6.4	6.2	5.8	4.8	4.1	3.6	3.4JS	3.7	3.3
14	3.3	3.2	2.9	2.6F	2.0F	2.1JF	2.5	3.7	5.0	5.4	5.8H	5.8F	6.1	6.6	7.1	7.2	7.2JS	6.2	4.9	3.9JS	2.9	2.9F	3.3	3.3H
15	3.5	3.5	3.4	3.1	2.9F	2.6	2.4	3.6	5.6H	6.6	6.0	6.3	7.8	6.6	6.8	6.7	6.6	5.8	5.2	4.2	4.0JS	3.8	3.6	3.6
16	3.4	3.3	3.0	2.2	2.2JB	(1.7)S	M	M	4.5	5.1	5.4	5.6	6.2	6.5	7.6	6.8	6.6	5.6	4.4	2.9	(2.6)JA	2.4	2.6	2.7
17	2.7	2.6	2.5	2.4	2.2	2.1	1.9JS	3.0JS	4.0	4.5H	5.0	5.2	5.6	6.4	6.5	6.2	6.0	5.6	4.8	C	C	C	C	C
18	2.7JS	2.2	3.0	2.9	2.6F	2.5FS	2.5F	3.5	4.5	5.1	5.6	5.2	6.0	6.2	6.1	6.4	5.8	4.8	4.9	3.7	3.2	2.5	2.6JS	2.9
19	2.8	2.8	2.8	3.0	2.7	2.6	2.6	3.7	4.8	5.0	4.9JH	5.4	6.3H	6.0	5.5	5.5	5.4	4.9	4.6	4.1	3.1	2.7	(2.2)PS	(2.4)PS
20	2.6JS	2.6	2.7	2.7	2.6JS	2.7JS	2.7	3.9	4.7	5.0	5.0	5.4	5.7	(5.4)JH	5.8	5.6	5.8	5.0	5.0	3.7	2.9JS	2.5	2.5	2.6
21	2.6	2.8	3.0	3.1	3.0	2.9	2.3F	3.6	4.5	5.0	5.3	5.2	5.5	5.6	6.0	5.6	5.4	5.3	4.5	3.8	3.3	2.8	2.6	2.6
22	2.3F	2.3F	2.5F	2.7	2.7	2.7	2.3	3.8	4.6	5.4	5.8K	5.2HK	6.0K	6.5K	7.0K	7.2K	7.4K	6.6K	7.6K	K(6.8)JS	4.5K	(4.6)SK	3.8K	3.3FK
23	2.5FR	2.2FK	2.2FK	2.2FK	K[1.5]FB	K1.7JF	K2.2JF	2.9K	3.7HK	4.3K	4.3K	4.5K	4.9K	5.1K	5.0K	5.2K	4.8K	4.3K	3.7K	3.1K	2.8K	2.3K	2.2FK	1.8K
24	(1.9)FK	K(2.0)JF	(2.0)FK	K(2.2)FJ	K(2.2)FS	K2.0JF	K1.8JS	2.7K	3.4K	K3.9JS	K4.0JS	4.5HK	4.5K	4.7HK	4.7HK	4.7K	5.0K	4.3K	4.9K	(4.2)SK	K3.4JS	2.6FK	K1.8JF	1.8FK
25	K(1.7)FJ	(2.1)FK	<1.0EK	<1.0EK	<1.0EK	<1.0EK	<1.0EK	2.5K	3.4K	3.8K	3.9K	4.5K	5.0K	4.9K	5.0K	5.3K	5.4K	4.7K	4.1K	3.6K	2.8K	2.2K	2.0K	K1.8JS
26	K1.7JS	K(1.7)JS	K(2.0)JF	(2.7)SK	F BK	F BK	<1.0EK	2.7K	<3.2GK	<3.4GK	<3.5GK	<3.7GK	<3.7GK	K(4.0)PS	K(4.0)PS	4.0K	(3.9)HK	4.3K	3.7K	3.3K	2.5K	K(1.9)PF	K(1.6)JB	K(1.5)FB
27	K(1.7)JB	1.8FK	K[1.8]AF	K(1.7)PA	S FK	B FK	B SK	3.1K	3.6K	K(3.8)PS	4.3K	5.0K	4.6K	5.2K	5.1K	5.2K	4.8K	4.3K	4.2K	3.4K	2.8K	2.4K	2.2K	2.0K
28	1.9FK	1.8FK	K1.6JS	2.0FK	1.9FK	1.7FK	1.7FK	4.0	5.2	5.2	4.9	6.5	6.3	6.4	6.6	5.8	5.6	5.2	4.8	4.0	3.7	3.3	3.0	2.9
29																								
30																								
31																								
Median	2.6	2.6	2.6	2.8	2.7	2.6	2.6	3.6	4.8	5.3	5.8	5.9	6.2	6.4	6.4	6.2	6.0	5.6	4.8	3.9	3.3	2.8	2.6	2.6
Count	28	28	28	28	26	26	26	27	28	28	28	28	28	28	28	28	28	28	28	27	27	27	27	27

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE 1946 O - 705319

TABLE 65

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

IONOSPHERIC DATA

Form adopted June 1946

foF2 (Characteristic), Mc (Unit), February (Month), 1953

Observed at Washington, D. C.

Lat. 38.7°N, Long. 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: F.J.Mc., E.J.W.

Calculated by: F.J.Mc., E.J.W.

Day	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330
1	B S	1.8 JF	2.1 JS	2.2	2.6	2.7	2.4	4.3	5.4	5.8	6.1	6.8	6.8	5.8	6.1	6.5	5.8	5.0	3.9	3.3	2.8	2.3	2.2 F	2.3 F
2	2.2 F	2.3 F	2.5 F	(2.6) JF	2.4 F	2.2 F	2.3 F	4.5	5.4	6.0 V	6.1 JH	6.8	6.2	6.4	6.2	6.2	5.6	4.8	4.3	3.7	3.0	2.7	2.8	2.8 F
3	2.8 F	2.7 F	2.7 F	2.7	2.6 F	2.7 F	2.6	3.9	[5.0] C	5.6	6.5	6.8	6.2	6.4	6.2	6.4	5.7	5.2 S	3.9	3.3	3.0	2.5	2.2	2.3
4	2.4	2.5 F	(2.8) JF	2.6 FS	2.6 F	(2.8) PS	2.5 S	4.4	6.0	6.2	5.9	6.5	6.8	6.3	6.2	6.3	6.0	5.4	4.2	3.8	3.1	3.1	2.8	2.6 F
5	2.8	2.6	2.5	2.6	2.9	2.9	2.6	4.4	5.8	5.4	6.4	6.4 H	6.8	6.4	6.6	6.2	6.6	5.0	4.7	4.2	3.4	2.6	2.5 JS	2.5
6	2.7	3.2 JS	3.1 JS	3.2	3.0 F	3.0	3.0	(5.0) S	6.4	6.6	6.6	7.0 H	6.8	6.4	7.2	6.6	6.1	5.8	5.2	4.4	3.5	3.1	3.3	3.5
7	3.4	3.5	3.6	3.5	3.5	3.2	3.3	5.6	6.2	6.2	6.2	6.9	6.6	6.8	6.2	6.4	(6.2) S	6.2	4.8	4.0	3.5	2.9 JS	(2.7) S	2.7
8	2.6	2.8	3.0	3.0 F	3.2	2.8 F	3.0	5.6	6.6	7.0	5.5 F	7.2	6.9	6.8	6.6	6.4	6.8	5.8	5.4	3.7	3.1	2.5	2.4	2.5
9	2.7	3.2	3.4	3.3	3.3	3.1	2.8	5.0	6.2	6.6	6.8	7.0	7.1	7.0	6.8	6.8 H	6.2	6.2 JS	5.6	(5.3) S	3.9	3.1	2.3	2.2
10	2.2 F	2.3 F	2.9 JH	3.0 F	3.0 F	3.2 JS	3.2 F	5.0	6.1	6.2	6.2	6.4	7.6	7.2	[7.3] C	7.4	7.4	7.2	7.4	6.8	5.0	4.1	3.8	3.5
11	3.4	3.5	3.3	3.0 F	3.1 F	3.7	3.5 F	3.9 H	4.7	5.0	5.0	5.6	5.9	6.0	6.0	5.9	6.1	5.2	4.4	3.3 JS	3.2	2.8	2.4	2.5
12	2.3 F	2.4 F	2.8 F	3.3	3.3	3.3	3.3	5.1	6.0	6.0	6.6	6.8	7.0	6.4	6.2	6.0	5.8	5.8 JS	4.5	3.9	3.1	2.5	2.4	2.5
13	2.5	2.5	2.8	3.0 JS	3.1	3.2	3.0	4.9	6.0	6.0	6.6	7.0	6.2	6.4 H	6.2	6.4	5.7	5.4	4.2	3.9	3.4	3.7	3.5	3.3
14	3.3	3.1	2.3	2.3 F	1.9	2.5 F	2.8	4.7	5.6	5.6	5.8 JH	6.4	6.0	7.2	7.0	7.2	7.1	5.4	4.5	3.1	2.9 F	3.0	3.3	3.4
15	3.5	3.3	3.2	2.8	2.8	2.3	2.4	4.6	6.4	5.9	6.4	6.6	7.5	6.8	7.0	6.8	6.9	5.5	4.7	4.1 JS	3.9	3.4	3.5	3.7
16	3.3	3.2	2.5	2.2	1.9	M	M	M	4.7	5.3	5.6	6.0	6.2	6.8	7.0	6.9	6.1	4.7	(3.3) H	2.8	2.4	2.5	2.6 JS	2.8
17	2.5	2.6	2.5 JS	2.3	2.2	1.9 JS	2.3	3.7	4.4	5.0	(5.2) JH	5.1 H	6.1	6.2	6.8	6.8	5.9	5.2	3.9	C	C	C	C	C
18	2.7	2.9	3.0	2.7 F	2.6 F	2.5 F	2.7	4.4	5.1	5.1	5.2	5.8	5.9	6.1	6.1	6.2	5.2	4.7	4.9	3.3	2.8	2.6	2.8	2.9
19	2.7	3.0	2.9 JS	2.8	2.6	2.5	2.9	4.5	4.9	5.3	(5.4) H	(5.8) H	6.1 H	5.8	5.6	5.5	5.0	4.5	4.4	3.4	2.8	2.5	2.3	2.5
20	2.6	2.7	2.6	2.7	2.7	2.6	2.9	4.7	4.9	5.0	5.4	5.6	5.4	6.0	6.0	5.9	5.4	5.0	4.2	3.1	2.6	2.8	2.5	2.4
21	2.9	3.0	3.2	3.0	3.0	2.5 F	2.5	4.3	5.0	5.0	5.2	5.2	5.5	6.0	5.8	5.6	5.4	4.8	4.5	3.3	3.1	2.9	2.7	2.5
22	2.3 F	2.6	2.7	2.7	2.8	2.7	2.8	4.5	(5.0) JH	5.2	6.0 K	5.8 K	6.2 K	7.2 K	7.0 K	7.5 K	7.2 K	K (7.8) JS	K 7.6 JS	5.9 K	5.2 K	(3.7) KS	3.8 K	3.0 K
23	2.5 FK	2.2 K	2.3 K	1.9 FK	1.8 FK	2.2 K	2.4 K	3.4 K	4.2 K	4.4 K	4.6 HK	4.6 K	5.2 K	4.9 K	5.4 K	4.8 K	4.9 K	4.3 K	3.5 K	3.0 K	2.5 K	2.1 FK	1.9 K	1.9 FK
24	[2.0] FK	2.2 FK	K (1.9) FP	K (2.2) FS	K 2.1 JF	K 1.9 JF	2.1 K	3.2 K	3.5 K	4.0 K	4.2 K	4.8 K	4.6 K	4.9 K	4.5 K	4.7 K	5.1 K	4.5 K	4.5 K	3.6 K	2.8 K	2.4 FK	K 1.7 JS	1.7 K
25	(1.9) FK	F K	<1.0 EK	<1.0 EK	<1.0 EK	<1.0 EK	K 1.8 JS	3.1 K	3.5 K	<3.7 GK	4.3 K	K 4.6 JS	4.8 K	4.9 K	5.1 K	5.3 K	5.0 K	4.2 FK	K (3.9) S	3.4 K	2.9 K	2.1 K	K 1.9 JS	1.8 K
26	1.7 K	K (1.6) JS	1.7 FK	F K	K F B	K F B	K (1.9) JS	3.0 K	<3.3 GK	<3.5 GK	<3.6 GK	K <3.7 GH	K <3.7 GH	K (4.0) PS	K (4.0) JS	4.0 K	4.2 K	K 4.0 JS	3.5 K	2.7 K	2.2 K	1.8 K	K (1.5) JB	F [1.7] BK
27	K (1.9) JB	K (1.9) PS	[1.8] AK	K (1.6) FB	A K	B K	2.1 FK	3.2 FK	3.9 K	4.2 K	4.3 K	4.5 K	5.0	5.3 K	5.4 K	5.1 K	4.7 K	4.2 K	4.1 K	3.2 K	2.6 K	2.3 K	2.0 K	2.2 FK
28	1.9 FK	K 1.7 JS	1.8 FK	2.0 FK	2.0 FK	1.7 FK	2.5 F	4.5	5.6	5.3	5.8	5.5 H	6.6	6.2	5.6	5.5	5.0	5.1	3.9	3.9	3.6	3.0	3.0	2.5 JS
29																								
30																								
31																								
Median	2.6	2.6	2.7	2.7	2.6	2.7	2.6	4.5	5.2	5.4	5.8	6.2	6.2	6.4	6.2	6.2	5.8	5.2	4.4	3.6	3.1	2.7	2.5	2.5
Count	27	27	28	27	26	25	27	27	28	28	28	28	28	28	28	28	28	28	28	27	27	27	27	27

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 66

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

IONOSPHERIC DATA

h'F1 (Characteristic), Km (Unit), February (Month), 1953

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: F.J.Mc., E.J.W.

Calculated by: F.J.Mc., E.J.W.

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	200	220	10	210	200	230	220	Q							
2									Q	210	200	200	230	200	210	220[H]	200							
3									220	220	200	280	200[H]	210[H]	210[H]	220	230							
4									Q	210	200[H]	220	210	210	240	230	220							
5									Q	220	220	200	210	200	210	200[H]	230							
6									Q	Q	200	220	230	240	230	230	Q							
7									Q	200	190	190[H]	210	220	220	[220][A]	230							
8									220	200	200	170	200	210[H]	210	210	210							
9									Q	210	200	210	200	200[H]	220[H]	210	Q							
10									Q	220	210	200	230	220[H]	210	[220][C]	240							
11									220	210	210	210	210	220	220	210	230							
12									Q	220	220	200[H]	210	230	210[H]	220	A							
13									Q	210	190	280[H]	240	200[H]	220	210	220							
14									230	220	210	210	210[H]	220[H]	200[H]	250	210							
15									Q	Q	210	200	200	200[H]	200	200	Q							
16									240	230	220	210	200	210	210	230	220							
17									Q	210	210	210[H]	190[H]	190[H]	200[H]	230	220							
18									220	210	190[H]	200	200	200	200	210	Q							
19									Q	210[H]	220	180[H]	230	190[H]	200[H]	240	220							
20									210	210	190	200[H]	200[H]	200	200	220	230	210						
21									230	220	210	190	200	190[H]	220[H]	200	210	Q						
22									Q	220	200K[H]	220[K]	200K[H]	240[K]	220[K]	240K[H]	220[K]	240[K]						
23									230[K]	240[K]	220K[H]	210[K]	200K[H]	230[K]	250[K]	230[K]	220[K]	220[K]						
24									Q[K]	240[K]	220[K]	200K[H]	230[K]	230K[H]	220[K]	200K[H]	240[K]	230[K]						
25									230K[H]	220[K]	200K[H]	230[K]	230[K]	230[K]	200K[H]	220[K]	(230)K[A]	230[K]						
26									240[K]	210[K]	190[K]	210[K]	220K[H]	220K[H]	230[K]	220K[H]	240K[H]	250K[H]						
27									Q[K]	220K[H]	200K[H]	210K[H]	200K[H]	220K[H]	200[K]	200K[H]	210[K]	220[K]						
28									210	220	200	200[H]	180	200	200[H]	200[H]	230	220						
29																								
30																								
31																								
Median									220	220	200	210	210	210	210	220	220	220						
Count									13	26	28	28	28	28	28	28	22	8						

Sweep 1.0 Mc to 25.0 Mc in 0 25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 67

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

IONOSPHERIC DATA

foFl (Characteristic), Mc (Unit), February (Month), 1953

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: F.J.Mc., E.J.W.

Calculated by: F.J.Mc., E.J.W.

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	4.0	L	L	L	L	Q							
2									Q	L	L	L	L	4.0	L	L	L							
3									2.4	[2.8] L	3.3	3.6	(3.6) H	(3.9) H	(4.0) H	(3.6) P	L							
4									Q	L	L	L	4.0	L	L	L	L							
5									Q	L	L	4.1	4.1	4.1	[3.6] L	(3.2) L	L							
6									Q	Q	4.0	L	L	L	4.0	L	Q							
7									Q	L	L	L	L	L	L	L	L							
8									L	L	L	L	L	4.1 H	L	L	L							
9									Q	L	L	L	L	L	L	L	Q							
10									Q	L	L	4.0	[4.1] L	4.2 H	4.0	C	L							
11									L	L	L	4.0	4.1	4.0	L	L	L							
12									Q	L	L	(4.0) H	4.2	4.1	4.1 H	[3.5] L	2.9							
13									Q	L	L	L	L	4.2 J	L	L	L							
14									L	L	L	4.0	[4.4] L	(4.8) H	L	L	L							
15									Q	Q	L	4.1	4.1	L	L	L	Q							
16									L	L	3.7	4.1	4.1	4.1	4.0	3.8	3.3							
17									Q	L	3.8	3.9 H	4.0 H	3.8 H	(3.7) L	L	L							
18									L	L	L	3.9	4.0	4.2	4.0	3.8	Q							
19									Q	L	3.6	3.9	4.0	4.0 H	3.9 H	L	L							
20									L	L	(3.9) L	(4.0) H	4.0 H	4.0	4.0	L	L	L						
21									L	L	3.8	3.9 H	4.0	4.0 H	4.0 H	3.8	L	Q						
22									Q	L	3.8 HK	4.0 K	(4.0) PK	4.1 K	4.0 K	3.6 HK	L K	L K						
23									L K	L K	(3.9) SK	3.9 K	3.9 HK	4.0 K	3.8 K	3.5 K	3.2° K	L K						
24									Q K	3.5 FK	3.7 FK	3.8 HK	3.9 K	3.9 HK	3.7 K	3.7 HK	3.5 K	L K						
25									L K	(3.5) LK	3.7 HK	4.0 K	4.0 K	4.0 K	4.0 HK	3.7 K	L K	L K						
26									3.2 K	3.4 K	3.5 K	3.7 K	3.7 HK	3.7 HK	3.6 K	3.6 HK	(3.5) HK	L K						
27									Q K	3.5 HK	3.8 HK	3.9 HK	4.0 HK	4.0 HK	3.9 K	3.7 HK	L K	L K						
28									L	L	3.9	4.1 H	4.2	4.1	L	L	L	L						
29																								
30																								
31																								
Median									–	3.5	3.8	4.0	4.0	4.0	4.0	3.6	3.3	–						
Count									2	5	14	21	21	22	17	12	5							

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 68

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

IONOSPHERIC DATA

Form adopted June 1946

h'E (Characteristic), Km (Unit), February (Month), 1953

National Bureau of Standards (Institution)

Observed at Washington, D. C.

Scaled by: F.J.Mc., E.J.W.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

Calculated by: F.J.Mc., E.J.W.

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

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 69

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

IONOSPHERIC DATA

foE (Characteristic), Mc (Unit), February (Month), 1953

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: F.J.Mc., E.J.W.

Calculated by: F.J.Mc., E.J.W.

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

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 70

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

IONOSPHERIC DATA

Form adopted June 1946

Es (Characteristic), Mc, Km (Unit), February (Month), 1953

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Scaled by: F.J.Mc., E.J.W.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

Calculated by: F.J.Mc., E.J.W.

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	2.4/100	E	E	E	E	E	E	E	G	G	G	G	G	G	G	G	G	1.7/120	E	E	E	E	E	E
2	E	E	E	E	E	E	E	E	1.9Y/110	G	G	G	2.5/110	G	G	G	G	G	E	E	E	E	E	3.7Y/110
3	3.0Y/100	30/100	3.0H/100	28/100	2.4/110	E	E	E	G	G	2.4/100	G	G	G	4.1/120	G	G	3.0/130	2.4/110	3.1H/100	2.7/100	2.2Y/100	3.6H/100	1.9Y/(110)S
4	E	E	E	24Y/110	30Y/120	E	E	E	G	G	G	G	G	G	G	G	35Y/130	3.2Y/110	E	E	25/120	E	E	E
5	E	E	E	E	E	4.3Y/110	E	E	G	G	G	G	G	43Y/110	G	G	G	30/130	E	2.8Y/120	E	E	E	E
6	E	E	E	E	E	E	E	E	G	G	G	2.4/100	G	G	G	G	G	G	E	E	E	E	E	E
7	E	E	E	E	E	E	E	E	G	22/100	33/100	G	26/100	G	4.4/120	4.3/120	G	3.0Y/120	E	E	E	E	E	E
8	E	E	E	E	E	E	E	E	G	39/130	4.2H/120	4.5/110	35/110	G	G	G	G	G	E	E	E	E	E	E
9	E	E	31/120	E	E	E	E	E	G	G	38Y/120	G	G	G	G	34/120	G	G	20/100	E	E	E	E	E
10	E	E	E	E	E	2.3Y/110	4.5/110	38Y/110	2.7Y/110	G	G	G	G	G	G	C	G	G	E	E	E	E	E	E
11	E	E	E	E	E	2.3/110	E	31/100	G	G	G	G	6.4Y/120	48Y/110	40Y/130	G	3.8/120	35H/120	E	E	E	E	E	E
12	E	E	E	E	E	E	E	E	2.4/130	3.4Y/110	G	2.0/100	G	G	G	G	36Y/120	20/130	2.4/130	E	E	E	2.3/120	E
13	98Y/110	E	25H/110	E	22H/110	E	E	E	G	25/110	2.7/110	G	30/120	G	G	G	G	18/120	E	3.9/110	2.5H/110	2.2Y/120	E	E
14	E	E	E	E	E	E	2.5Y/120	3.2/110	G	23/110	G	G	G	G	G	G	G	21/130	E	E	E	E	E	E
15	E	E	E	E	E	E	E	E	G	33/130	39H/120	G	G	G	7.6Y/120	G	G	G	E	E	E	E	E	E
16	E	E	E	E	E	E	M	M	G	G	G	2.9/120	33/120	4.0Y/110	G	G	G	2.2/130	E	E	3.3/110	E	E	E
17	E	E	E	20/110	E	E	E	E	G	72Y/120	G	3.8Y/110	4.7Y/110	38Y/110	G	G	G	18/120	E	C	C	C	C	C
18	23/110	E	34/100	24/100	E	E	E	E	2.0/110	31Y/120	G	G	G	G	G	G	G	G	E	E	E	E	E	E
19	E	E	E	1.9/110	E	E	24/110	E	G	G	G	G	2.7/100	G	G	28/130	G	G	E	E	E	E	E	E
20	E	E	E	E	E	E	E	E	2.5Y/130	37Y/110	27/100	G	G	G	G	G	G	G	E	E	E	E	E	E
21	E	E	E	E	1.9Y/110	E	E	E	21/120	38Y/110	4.2/110	36Y/110	G	G	G	G	G	G	E	2.1/130	29Y/110	24/110	E	E
22	E	E	E	E	E	E	E	E	G	45Y/110	G	G	G	G	G	G	G	G	E	E	E	E	E	2.3/130
23	E	E	E	E	B	E	E	25/140	G	22/110	24/110	2.7/100	G	G	G	G	G	G	E	E	E	E	E	E
24	E	E	E	E	E	E	E	26Y/110	26/130	2.8/110	G	G	G	G	G	G	G	G	E	E	E	E	E	E
25	E	E	E	E	E	E	E	2.4/110	G	3.3Y/120	G	45Y/100	G	G	G	3.7/130	3.6/120	3.2Y/120	E	E	E	E	E	E
26	E	E	E	E	E	E	E	E	G	25/110	2.5/110	G	29/110	G	G	27/120	G	G	E	E	E	E	E	B
27	B	33/130	30/120	3.2/120	41Y/160	B	(22)B/(130)	1.7/110	G	2.3/110	3.4Y/110	2.9Y/110	G	G	G	G	G	G	E	E	E	E	E	E
28	E	E	E	E	E	E	2.3/110	22Y/110	66Y/120	G	G	G	32/120	G	G	G	G	G	18/110	2.2/110	30Y/110	E	E	E
29																								
30																								
31																								
Median	**	**	**	**	**	**	**	**	**	22	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Count	28	28	28	28	27	27	27	27	28	28	28	28	28	28	28	27	28	28	28	27	27	27	27	27

** 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 ☒

TABLE 71

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

Form adopted June 1946

IONOSPHERIC DATA

(M1500)F2 (Characteristic), ______ (Unit), February (Month), 1953

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Scaled by: F.J.Mc, E.J.W.

Lat. 38.7°N, Long. 77.1°W

75°W Mean Time

Calculated by: F.J.Mc, E.J.W.

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	FS	(2.0)JF	(2.0)FJ	2.0F	2.1	2.3	2.2	2.3	2.6	2.4H	2.3	2.3	2.2H	2.4	2.4	2.3	2.2	2.3	2.2H	2.2	2.3	2.2	1.9	2.0
2	2.1	2.0FS	2.2F	2.2F	2.4F	2.4F	2.2F	2.3	2.7	2.6	2.5	2.4	2.4	2.3	2.3H	2.4	2.4	2.4	2.2	2.1	2.3	2.0	2.0	2.0
3	2.0F	2.1F	2.1F	2.2	2.1F	(2.0)JS	2.2	2.2	2.4	2.4	2.4	2.4	2.5	2.3	2.3	2.3	2.3H	2.5	2.3	(2.2)PS	2.2	2.3	2.1	2.1
4	2.1	2.0	(2.1)JS	2.1	2.1FS	2.1	2.2	2.3S	2.6S	2.5	2.4	2.3	2.4	2.4	2.4	2.3	2.4	2.4	2.3	2.2	2.2	2.1	2.2	2.1
5	2.1F	2.0	2.0	2.0	2.0F	2.0	2.2	2.2	2.6	2.5	2.2H	2.4	2.4	2.4	2.3	2.4	2.4	2.4	2.1	(2.3)JS	2.4	(2.3)JS	2.0	(2.0)S
6	2.1	2.0	2.1FS	(2.0)JS	2.0F	2.2SF	2.1	2.4	2.5	2.5	2.3H	2.4	2.3	2.3	2.1	2.3	2.4	2.4	2.4	2.2	2.2	2.3	2.2	(2.2)FS
7	2.3	2.2F	2.1	2.1	2.1	2.2	2.1	2.4	2.7	2.5	2.5	2.4	2.3	2.4	(2.4)JS	2.4	2.3	(2.3)S	2.3	2.3	2.2	2.3	2.2	(2.2)JS
8	(2.1)JS	(2.1)JS	(2.1)JS	2.1	(2.0)FS	2.2F	2.2F	(2.2)S	2.4	2.5	2.6	2.5	2.4	2.2	2.4	2.4	2.3	2.5	2.3	2.4	2.3	2.3	2.0	(2.1)JS
9	2.0	2.0	2.1	2.1	2.1	2.1	2.2	2.3	2.6	2.4	2.4	2.3	2.4	2.2	2.3	2.4	2.4	2.2	2.3	2.2	2.3	2.3	2.2	2.1
10	2.0	2.0F	2.0F	2.1	2.0	2.1F	2.2	2.3	2.1	2.6	2.5	2.2	2.3	2.3	2.3	C	2.2	2.3	(2.3)JS	(2.3)S	2.4	(2.3)JS	2.2	2.1
11	2.0	2.0	2.3F	2.1	2.0F	2.0F	2.0	2.3	2.3	2.4	2.3	2.3	2.2	2.4	2.4	2.4	2.4	2.3	2.4	2.0	2.2	2.3	2.1	2.1
12	2.0	2.0	2.0F	2.0F	2.0	2.1	2.1	2.3	2.5	2.5	2.3	2.4	2.4	2.4	2.4	2.5	2.4	2.3	2.5	(2.3)JS	2.3	2.3	2.2	2.0
13	2.0	2.0	2.1	2.1	2.1	2.1	2.2	2.3	2.5	(2.4)JS	2.3	2.2H	2.5	2.4	2.3	2.4	2.5	2.4	2.3	2.2	2.1	(2.0)JS	2.0	2.0
14	2.0	2.1	2.1	2.2F	2.0F	(1.9)JF	2.0	2.3	2.3	2.5	2.4H	2.3F	2.3	2.0	2.2	2.3	(2.4)JS	2.5	2.4	(2.5)JS	2.1	2.0F	2.0	2.0H
15	2.0	2.1	2.3	2.3	2.2F	2.3	2.2	2.3	2.4H	2.5	2.4	2.3	2.3	2.3	2.3	2.4	1.9	2.4	2.3	2.1	(2.1)JS	2.1	2.0	2.0
16	2.1	2.1	2.4	2.1	(2.0)JB	(1.9)S	M	M	2.4	2.4	2.2	2.1	2.3	2.0	2.3	2.2	2.4	2.4	2.4	2.1	(2.1)JA	2.0	2.0	1.9
17	2.0	2.1	2.1	2.0	1.9	2.0	(1.8)JS	(2.1)JS	2.3	2.1H	2.4	2.4	2.2	2.3	2.3	2.4	2.4	2.4	2.4	C	C	C	C	C
18	(2.1)JS	2.0	2.1	2.1	2.1F	2.2FS	2.2F	2.4	2.4	2.5	2.5	2.3	2.5	2.3	2.4	2.4	2.5	2.4	2.2	2.2	2.3	2.1	(2.0)JS	2.1
19	2.1	2.0	2.1	2.2	2.1	2.3	2.1	2.4	2.1	2.4	(2.2)JH	2.4	2.1H	2.3	2.5	2.4	2.5	2.5	2.3	2.4	2.3	2.3	(2.0)PS	(2.1)PS
20	(2.2)JS	2.2	2.2	2.2	(2.2)JS	(2.2)JS	2.2	2.5	2.6	2.6	2.4	2.4	2.2	(2.1)JH	2.3	2.3	2.4	2.5	2.5	2.3	(2.3)JS	2.1	2.1	2.2
21	2.0	2.1	2.0	2.3	2.3	2.4	2.1F	2.4	2.5	2.6	2.4	2.4	2.3	2.4	2.3	2.4	2.4	2.5	2.3	2.1	2.3	2.1	2.0	2.1
22	2.1F	2.1F	2.1F	2.1	2.1	2.3	2.3	2.1	2.6	2.6	2.4K	2.4HK	2.1K	2.0K	2.2K	2.2K	2.1K	2.0K	2.1K	J(2.2)SK	1.8K	(2.3)SK	2.0K	2.0FK
23	1.9FK	1.9FK	1.9FK	2.0FK	FBK	J(2.0)FK	J(2.0)FK	2.3K	2.2HK	2.3K	1.9K	2.1K	2.0K	2.0K	2.0K	2.3K	2.3K	2.3K	2.2K	1.9K	2.0K	2.0K	1.9FK	1.7K
24	(2.0)FK	J(2.0)FK	(2.1)FK	F(1.9)JK	F(1.9)SK	J(2.0)FK	J(1.9)SK	2.6K	2.3K	J(2.0)SK	J(2.0)SK	2.0HK	2.1K	2.0HK	2.0HK	2.2K	2.1K	2.2K	2.1K	(2.3)SK	J(2.1)SK	2.0FK	J(1.7)FK	2.0FK
25	F(1.9)JK	(1.8)FK	EK	EK	EK	EK	EK	2.3K	2.4K	1.9K	1.7K	2.0K	2.2K	2.3K	2.1K	2.3K	2.4K	2.4K	2.2K	2.1K	2.1K	2.0K	2.0K	J(1.9)SK
26	J(1.9)SK	J(1.9)SK	J(2.1)FK	(1.8)SK	FBK	FBK	EK	2.3K	GK	GK	GK	GK	GK	P(1.6)SK	P(1.4)SK	2.0K	(1.4)HK	2.2K	2.3K	2.2K	2.1K	FK	J(1.8)BK	F(1.9)BK
27	J(1.9)BK	2.1FK	AFK	P(1.9)AK	SFK	BFK	BSK	2.5K	2.3K	P(1.9)SK	2.2K	2.4K	1.9K	2.0K	2.0K	2.3K	2.4K	2.4K	2.2K	2.2K	2.0K	2.1K	2.2K	2.1K
28	2.1FK	2.1FK	J(1.7)SK	2.0FK	2.3FK	2.4FK	2.1FK	2.4	2.3	2.4	2.3	[illegible]	2.3	2.4	2.6	2.4	2.6	2.3	2.4	2.0	2.2	2.2	2.0	2.3
29																								
30																								
31																								
Median	2.0	2.0	2.1	2.1	2.1	2.1	2.2	2.3	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.4	2.4	2.4	2.3	2.2	2.2	2.2	2.0	2.1
Count	27	28	26	27	24	25	24	27	28	28	28	28	28	28	28	27	28	28	28	27	27	26	27	27

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 72

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

IONOSPHERIC DATA

(M3000)F2 (Characteristic), ______ (Unit), February (Month), 1953

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: F.J.Mc, E. J. W.

Calculated by: F.J.Mc, E. J. W.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	F S	(30)JF	(30)FS	29F	31	34	32	33	36	35H	34	33	32H	35	35	33	32	34	32H	32	33	32	28	30
2	31	30FS	32F	32F	35F	34F	32F	34	37	37	36	35	35	34	34H	35	34	34	32	31	33	33	30	30
3	30F	31F	31F	32	31F	(30)JS	32	32	35	35	35	34	35	34	34	33	33H	36	34	(32)PS	32	33	30	30
4	31	30	(31)JS	31	31FS	31	32	34S	37S	36	35	34	35	35	34	34	35	35	33	32	32	31	32	31
5	31F	30	30	30	30F	30	32	32	36	35	32H	34	35	34	33	35	34	35	31	(33)JS	34	(34)JS	30	(30)S
6	31	29	31FS	(29)JS	30F	32SF	31	35	35	36	33H	35	33	34	31	33	34	35	34	32	32	33	32	(32)FS
7	33	32F	30	31	31	32	31	34	38	36	36	34	34	35	(34)JS	34	33	(33)S	34	33	32	33	32	(32)JS
8	(31)JS	(31)JS	(31)JS	31	(29)FS	32F	32F	(32)S	35	36	37	36	34	32	35	34	33	35	33	34	33	33	30	(31)JS
9	29	30	31	31	31	31	32	33	36	35	35	33	35	32	34	35	34	32	33	32	33	33	32	31
10	3.0	30F	30F	31	30	31F	32	34	32	37	36	32	33	33	33	C	32	33	(33)JS	(34)S	34	(33)JS	32	31
11	30	30	33F	31	29F	30F	30	33	34	35	34	33	32	34	34	34	34	33	35	30	32	33	31	31
12	30	30	30F	30F	30	31	31	33	36	35	34	35	34	34	34	35	35	33	36	(33)JS	34	33	32	30
13	30	30	31	31	31	31	32	33	36	(35)JS	34	32H	36	35	33	34	36	35	33	32	31	(30)JS	30	30
14	30	31	31	32F	30F	(29)JF	30	33	34	36	34H	34F	33	30	32	33	(34)JS	36	34	(36)JS	31	30F	30	30H
15	30	31	33	33	32F	34	32	33	34H	35	34	34	33	33	33	35	2.8	34	33	31	(31)JS	31	2.9	30
16	31	31	34	31	(30)JB	(28)S	M	M	35	35	32	31	33	30	33	32	35	35	35	31	(31)JA	30	30	29
17	30	31	31	30	29	29	(27)JS	(31)JS	34	31H	35	35	32	34	34	35	35	35	35	C	C	C	C	C
18	(31)JS	30	31	31	31F	32FS	32F	34	35	35	36	34	36	34	35	34	36	35	32	32	33	31	(30)JS	31
19	31	30	31	32	31	33	31	34	31	35	(32)JH	34	31H	34	35	35	36	35	33	35	33	33	(30)PS	(26)PS
20	(3.2)JS	32	32	32	(32)JS	(32)JS	32	36	37	37	35	35	33	(31)JH	33	34	35	35	35	33	(33)JS	31	31	32
21	3.0	31	30	33	33	35	31F	35	36	37	35	3.4	33	34	33	34	34	35	33	31	33	31	30	31
22	31F	31F	31F	31	31	33	33	31	36	37	34K	34HK	31K	30K	32K	32K	31K	29K	31K	K(32)JS	27K	(33)SK	30K	32FK
23	2.9FK	28FK	29FK	30FK	F BK	K(30)JF	K(30)JF	33K	32HK	33K	26K	31K	30K	30K	30K	33K	33K	33K	32K	29K	30K	30K	28FK	[illegible]K
24	(30)FK	K(30)JF	(31)FK	K(28)FJ	K(29)FS	K(30)JF	(29)JS	32K	33K	K(30)JS	K(29)JS	30HK	31K	30HK	30HK	32K	31K	3[illegible]K	31K	(33)SK	K(31)JS	3[illegible]FK	K(26)JF	30FK
25	K(29)FJ	(27)FK	E K	E K	E K	E K	E K	34K	34K	2.7K	26K	30K	32K	33K	31K	33K	34K	34K	32K	31K	31K	30K	30K	K(28)JS
26	K(28)JS	K(29)JS	K(31)JF	(27)SK	F BK	F BK	E K	34K	G K	G K	G K	G K	G K	K(25)FS	K(2[illegible])PS	30K	(22)HK	33K	33K	3[illegible]K	31K	F K	K(28)JB	K([illegible])FB
27	K(2.8)JB	31FK	A FK	K(28)PA	S FK	B FK	B SK	36K	34K	K(28)FS	33K	35K	29K	30K	30K	34K	34K	35K	32K	32K	30K	31K	32K	31K
28	3.1FK	31FK	K(26)JS	30FK	34FK	34FK	31FK	35	34	34	33	34	33	34	36	35	37	34	35	30	32	32	30	3.4
29																								
30																								
31																								
Median	3.0	30	31	31	31	31	32	33	35	35	34	34	3.3	34	33	34	34	34	3.3	32	32	32	3.0	30
Count	27	28	26	27	24	25	24	27	28	28	28	28	28	28	28	27	28	28	28	28	27	26	27	27

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 73

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

IONOSPHERIC DATA

(M 3000)F1, ______ (Unit), February (Month), 1953
(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: F.J.Mc., E.J.W.

Calculated by: F.J.Mc., E.J.W.

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	3.8	L	L	L	L	G							
2									Q	L	L	L	L	3.8	L	L	L							
3									4.0	L	4.2	4.3	(4.2)H	(4.0)H	(3.8)H	(3.9)P	L							
4									Q	L	L	L	3.9	L	L	L	L							
5									Q	L	L	3.7	3.8	3.9	L	(4.2)L	L							
6									Q	Q	3.9	L	L	L	3.7	L	Q							
7									Q	L	L	L	L	L	L	L	L							
8									L	L	L	4.2	L	3.9H	L	L	L							
9									Q	L	L	L	L	L	L	L	Q							
10									Q	L	L	3.9	L	3.8H	3.9	C	L							
11									L	L	L	3.7	3.7	3.7	L	L	L							
12									Q	L	L	(3.9)H	3.7	3.9	3.8H	L	4.0							
13									Q	L	L	L	L	(3.6)J	L	L	L							
14									L	L	L	3.9	L	(3.5)H	L	L	L							
15									Q	Q	L	3.8	3.7	L	L	L	Q							
16									L	L	3.7	3.7	3.7	3.6	3.5	3.6	3.9							
17									Q	L	3.8	3.8H	3.8H	3.9H	(3.9)L	L	L							
18									L	L	L	3.8	3.8	3.8	3.6	3.8	Q							
19									Q	L	3.9	3.9H	3.8	3.8H	3.8H	L	L							
20									L	L	(3.9)L	(3.9)H	3.9H	3.8	3.5	L	L	L						
21									L	L	3.7	3.9H	3.8	3.7H	3.7H	3.7	L	Q						
22									Q	L	3.8HK	3.8K	(3.6)PK	3.6K	3.7K	3.7HK	LK	LK						
23									LK	LK	(3.6)SK	3.6K	3.7HK	3.7K	3.5K	3.7K	3.8K	LK						
24									QK	3.5FK	3.5FK	3.7HK	3.6K	3.7HK	3.9K	3.5HK	3.6K	LK						
25									LK	(3.4)LK	3.6HK	3.5K	3.5K	3.5K	3.6HK	3.7K	LK	LK						
26									3.4K	3.6K	3.5K	3.7K	3.9HK	3.7HK	3.7K	3.7HK	3.6HK	LK						
27									QK	3.7HK	3.8HK	3.6HK	3.9HK	3.6HK	3.6K	3.6HK	LK	LK						
28									L	L	3.9	3.7H	3.7	3.6	L	L	L	L						
29																								
30																								
31																								
Median									—	—	3.8	3.8	3.8	3.7	3.7	3.7	3.8	—						
Count									2	4	14	22	19	22	16	11	5	—						

Sweep 1.0 Mc to 25.0 Mc in 0.25 min.

Manual ☐ Automatic ☒

TABLE 74

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

Form adopted June 1946

IONOSPHERIC DATA

(M1500)E, ____ (Unit), February (Month), 1953

(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: F.J.Mc., E.J.W.

Calculated by: F.J.Mc., E.J.W.

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									4.4	4.3	4.2	4.2	4.2	4.2	B	4.3	4.3H	A						
2									4.2	4.2	4.1	4.1	4.2	4.3	4.3	4.3	4.2	S						
3									3.9	3.9	4.0	4.1	4.1	4.2	4.3H	4.4	(4.3)H	S						
4									(4.3)H	4.3H	4.3H	4.2	4.2	4.4	4.3	4.3	4.1	A						
5									(4.3)S	4.2	4.1	4.1	4.3	4.3	4.3	4.3	4.1	S						
6									4.0	4.2	4.0	4.1	4.2	4.2	4.1	4.2	(4.1)P	4.3						
7									3.8	4.0H	3.9	4.1	4.0	4.1	4.1	4.3	4.0	A						
8									(4.0)H	4.1	(4.3)P	A	4.2	4.3	4.2	4.0	4.1	S						
9									(3.9)H	4.1	4.2	4.3	4.2	4.2	(4.3)P	4.3	4.0	(4.2)H						
10									4.2	4.3	4.2	4.2	4.3	4.2	4.3	C	4.2H	S						
11									4.2	4.3H	4.3	4.1	4.0	4.1	4.0	4.0	4.1	A						
12									4.3	4.0	3.9	3.9	3.9	4.2	4.2	4.2	4.1H	4.1						
13									4.2	4.1	4.0H	4.3	A	4.0	4.1	4.2	4.1	A						
14									3.8	4.0	4.2	4.1	4.2	4.1	4.2	4.1	4.2	4.2						
15									4.1H	4.0H	4.1	4.0	4.0	4.1	4.2	4.2	4.2	4.0						
16									4.0	4.2H	4.1	A	(4.3)A	A	4.1	4.1	4.1	3.9H						
17									4.0	(4.3)A	4.1	A	A	A	4.2	(4.2)P	4.3	A						
18									A	4.4	4.0	4.3	4.1	4.2	4.3	4.2	4.4H	4.2						
19									4.3	4.1	4.2	4.0	3.9	(4.2)A	4.3	4.3	4.3	(4.3)P						
20									(4.2)H	(4.6)A	A	4.3H	4.2	4.3	4.3	4.2	4.2	4.0						
21									A	(4.2)P	A	A	4.4	(4.3)PH	4.2	4.3	4.3	4.3						
22									4.3	4.1	4.2K	4.2K	4.1K	4.2K	(4.2)PK	4.1K	4.3K	(4.2)PK						
23									4.2HK	(4.1)PK	A K	A K	B K	B K	B K	(4.2)PK	4.3K	4.1K						
24									(4.3)PK	4.0K	4.2K	4.2K	4.0K	4.0K	(4.0)PK	4.2HK	4.1K	4.0HK						
25									4.1K	4.1K	4.2K	4.1K	4.2K	4.0K	4.3K	4.5K	4.3K	4.4K						
26									4.1HK	A K	(4.4)PK	(4.3)BK	A K	4.2K	4.2K	(4.4)HK	4.3K	4.1HK						
27									4.3H	A K	A K	(4.4)AK	4.3HK	(4.1)PK	(4.1)PK	4.2K	4.1K	4.2K						
28									A	4.2	4.1	4.2	(4.1)P	4.0	4.3	4.0	4.1	4.2						
29																								
30																								
31																								
Median									4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2						
Count									25	26	24	23	24	25	25	27	28	17						

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Table 75

Ionospheric Storminess at Washington, D. C.

February 1953

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	3	2			1	2
2	2	2			2	1
3	2	1			2	1
4	2	1			2	2
5	1	1			0	2
6	1	0			1	1
7	0	1			1	0
8	1	1			2	2
9	2	1			2	2
10	2	1			1	3
11	0	3			2	2
12	2	1			1	1
13	1	1			0	1
14	1	0			3	2
15	1	1			3	3
16	0	1			3	3
17	1	2			3	2
18	1	2			2	2
19	1	1			2	2
20	1	3			1	2
21	1	2			3	1
22	1	4	1500	----	2	4
23	4	4	----	----	5	4
24	4	5	----	----	5	5
25	4	4	----	----	5	4
26	4	6	----	----	4	4
27	4	4	----	----	4	3
28	4	3	----	1200	3	3

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

**Average for 12 hours of Cheltenham, Maryland, geomagnetic K-figures on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

----Dashes indicate continuing storm.

Table 76

Sudden Ionosphere Disturbances Observed at Washington, D. C.

February 1953

No sudden ionosphere disturbances were observed during the month of February.

Table 77a

Radio Propagation Quality Figures
(Including Comparisons with Short-Term and Advance Forecasts)

January 1953

Day	North Atlantic 6-hourly quality figures				Short-term forecasts issued about one hour in advance of:				Whole day quality index	Advance forecasts (J-reports) for whole day; issued in advance by:			Geomagnetic K_{Ch}	
	00 to 06	06 to 12	12 to 18	18 to 24	00	06	12	18		1-4 days	4-7 days	8-25 days	Half day (1)	Half day (2)
1	(3)	(4)	6	5	(3)	(3)	5	5	(4)	(3)	[(3)]	X	3	3
2	(4)	(4)	5	5	(4)	5	5	(4)	(4)	(4)	[(4)]		3	(4)
3	(3)	(4)	5	5	(4)	(3)	5	5	(4)	(4)	5		2	2
4	(4)	(4)	6	7	(4)	(4)	6	5	5	5	6		1	2
5	5	(3)	5	5	6	5	(4)	(3)	(4)	6	6		(4)	(4)
6	(4)	(4)	5	5	(3)	(3)	(4)	(4)	(4)	6	6		2	3
7	(4)	(4)	6	5	(4)	(3)	5	5	(4)	(4)	6		2	2
8	(3)	(4)	6	6	5	(4)	6	5	(4)	(4)	5		3	1
9	(4)	(4)	6	6	5	5	6	5	5	5	5		2	2
10	5	6	6	6	5	5	6	6	6	5	6		2	1
11	6	5	7	6	5	5	6	6	6	5	6		2	1
12	6	6	7	7	5	6	6	6	7	5	6		2	1
13	6	6	6	6	6	6	6	6	6	6	6		2	3
14	6	7	7	6	6	6	6	6	6	6	6		3	2
15	6	6	7	7	6	6	6	6	6	6	7		1	1
16	7	6	7	7	7	6	6	7	7	6	7		1	1
17	7	6	7	7	7	7	6	6	7	7	7		1	1
18	6	6	7	6	6	5	6	6	6	7	7		2	3
19	5	6	7	7	6	(3)	5	5	6	6	6		(5)	3
20	(4)	5	7	7	6	(4)	6	6	6	5	5		(4)	2
21	5	(4)	7	7	7	5	6	6	6	5	5		3	2
22	5	5	7	6	6	5	6	6	6	5	5		2	1
23	5	(4)	6	5	5	5	7	5	5	5	5		2	0
24	5	(4)	6	6	6	5	6	6	5	(4)	(4)	X	3	2
25	(4)	(4)	6	6	5	5	(4)	5	5	(3)	(4)	X	2	(4)
26	(4)	(4)	5	5	5	(3)	(4)	(4)	(4)	(3)	(4)	X	(5)	(4)
27	(4)	(3)	5	(3)	(3)	(3)	(4)	(4)	(4)	(4)	(4)	X	(4)	(4)
28	(4)	(3)	6	5	(3)	(3)	5	5	(4)	(3)	(4)	X	3	(4)
29	(4)	(3)	(4)	(4)	(4)	(3)	5	5	(4)	(4)	5		(4)	3
30	(4)	(3)	6	(4)	(4)	(4)	5	6	(4)	6	5		3	2
31	(4)	(4)	6	6	5	(4)	5	5	(4)	6	6		3	2
Score:														
Quiet periods				P	8	6	8	13		8	9			
				S	6	5	20	12		8	9			
				U	1	0	1	3		2	0			
				F	0	1	1	0		0	0			
Disturbed periods				P	6	6	0	0		6	4			
				S	8	12	1	2		3	5			
				U	1	1	0	0		0	0			
				F	1	0	0	1		4	4			

Scales:

Q-scale of Radio Propagation Quality
- (1) - useless
- (2) - very poor
- (3) - poor
- (4) - poor to fair
- 5 - fair
- 6 - fair to good
- 7 - good
- 8 - very good
- 9 - excellent

K-scale of Geomagnetic Activity
0 to 9, 9 representing the greatest disturbance; $K_{Ch} \geqslant 4$ indicates significant disturbance, enclosed in ( ) for emphasis

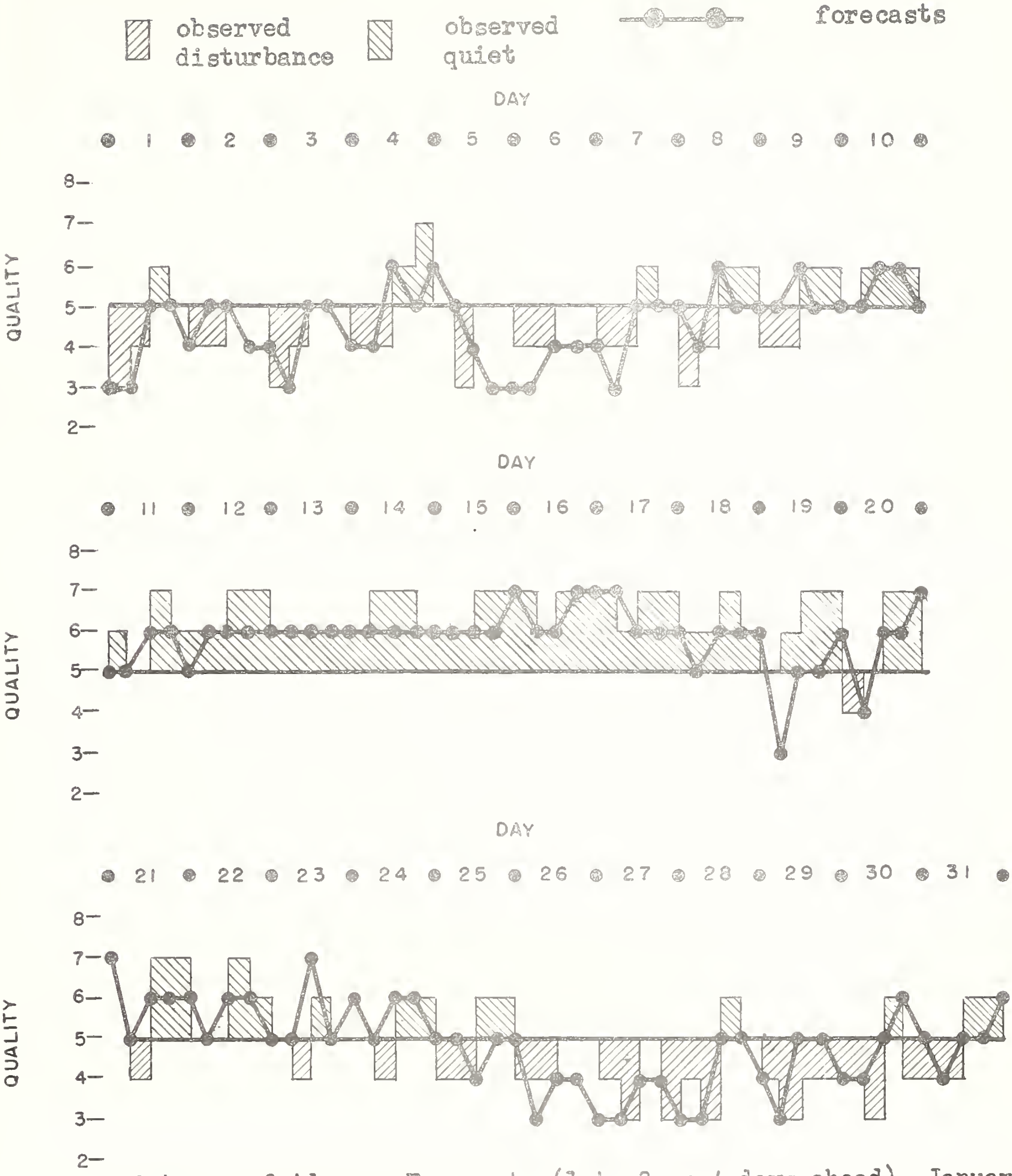
Scoring: (beginning October 1952)
- P - Perfect: forecast quality equal to observed
- S - Satisfactory: (beginning October 1952) forecast quality one grade different from observed
- U - Unsatisfactory: forecast quality two or more grades different from observed when both forecast and observed were $\geqslant 5$, or both $\leqslant 5$
- F - Failure: other times when forecast quality two or more grades different from observed

Symbols:
- X - probable disturbed date

Note: All times are UT (Universal Time or GCT).

Table 77b

Short-Term Forecasts--January 1953



Outcome of Advance Forecasts (1 to 3 or 4 days ahead)--January 1953

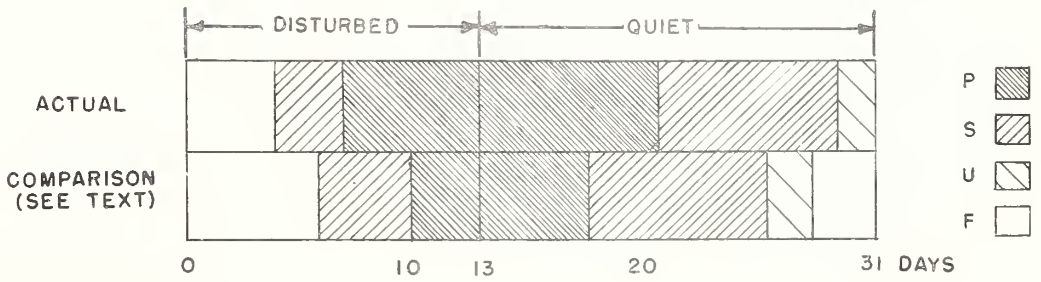


Table 78a

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
1953																																					
Feb 1.7	-	-	-	-	-	3	3	3	3	4	4	5	9	9	8	8	13	15	16	10	8	8	6	4	3	2	1	-	-	-	-	-	-	-	-	-	-
2.7	1	1	2	3	3	3	3	4	3	3	3	6	6	7	7	9	14	18	18	17	19	17	8	3	1	2	2	2	2	2	2	1	-	-	-	-	-
4.0a	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	4	9	15	16	20	24	20	5	4	3	3	3	2	2	2	1	-	-	-	-	-	-
4.7a	-	-	-	-	1	2	3	1	1	-	-	-	-	2	3	6	10	14	17	22	21	20	7	4	3	3	2	2	1	1	-	-	-	-	-	-	-
10.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	3	4	4	3	-	-	-	-	-	-	-	-	-	2	2	-	-	-	-	-	-	-	-	-
11.7	-	-	-	-	-	-	-	2	2	2	-	-	-	3	4	3	3	1	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-
12.9	-	-	-	-	-	-	3	4	2	2	1	2	3	4	4	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.7	-	-	-	-	-	3	4	4	3	3	3	3	3	3	4	4	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.9a	-	-	-	-	-	-	3	3	3	2	1	2	2	2	2	2	3	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.8a	-	-	-	-	-	-	-	1	2	1	1	1	1	2	3	3	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.9a	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	4	4	3	3	2	1	1	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-
22.8a	-	-	-	-	-	-	-	-	-	-	1	1	2	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-
23.6	-	-	-	-	-	2	2	3	2	1	1	3	4	4	4	4	4	3	2	2	3	3	3	2	2	1	1	1	1	1	-	-	-	-	-	-	-
25.7	-	-	-	-	-	-	2	3	3	2	2	3	4	6	7	6	3	2	2	2	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26.7	-	-	-	-	-	3	5	6	3	2	3	5	6	14	9	4	5	5	4	4	3	2	2	3	3	3	3	3	3	2	2	1	-	-	-	-	-
27.8	-	-	-	-	-	5	6	4	3	3	4	7	15	18	16	12	15	10	5	3	3	3	4	3	3	3	3	2	2	2	3	2	2	2	1	1	-
28.7	-	-	1	2	2	6	6	6	5	5	6	8	13	15	14	14	16	16	12	7	5	13	6	2	3	4	3	-	-	-	-	-	-	-	-	-	-

Table 79a

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
1953																																					
Feb 1.7	3	2	2	1	1	1	1	1	1	1	3	2	3	5	1	1	1	17	11	3	1	12	3	2	2	1	1	2	2	1	1	1	1	1	2	2	3
2.7	4	4	3	3	2	1	1	1	1	2	3	4	5	5	2	2	5	10	10	2	5	12	9	3	4	5	2	3	5	3	2	3	3	4	3	4	4
4.0a	3	3	3	3	2	1	1	1	1	2	4	5	3	1	2	2	2	4	5	4	18	5	6	4	4	3	3	4	3	2	2	2	2	2	3	3	3
4.7a	3	3	2	2	1	1	1	1	1	2	5	4	3	2	1	1	1	3	1	17	14	3	2	3	1	1	2	4	5	2	2	3	3	3	3	4	3
10.7a	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	1	2	2	4	4	4	4	4	3	3	1	1	1	1	1	1	1	2	2	2
11.7	1	3	3	3	2	2	1	1	1	1	2	1	1	1	2	2	2	3	4	4	5	4	3	4	4	3	3	3	2	2	1	1	1	1	1	1	1
12.9	2	2	2	2	2	1	1	1	1	1	1	3	3	3	4	3	4	4	5	5	4	5	3	4	4	5	3	3	3	3	2	2	3	3	3	3	1
13.7	3	3	3	3	2	2	1	1	1	1	2	3	3	3	3	4	4	5	5	6	6	6	5	5	4	6	6	3	3	3	3	3	3	4	4	4	4
14.9a	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	5	5	4	2	1	1	1	2	1	1	1	1	1	2	2	2	2	2
17.8a	1	1	1	1	1	1	1	1	1	2	3	2	1	1	2	2	4	6	5	4	4	3	3	3	2	1	1	1	1	1	1	1	1	1	1	1	1
18.7a	2	3	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	4	3	3	2	2	2	2	2	2	3	2	2	1	1	1	1	1	1	1	1
21.9a	2	2	2	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	1	2	3	2	2	2	3	3	4	2	2	1	2	2	2	1	1	1	1
22.8a	2	2	2	2	2	2	1	1	1	1	1	1	1	1	2	2	3	1	3	3	3	3	3	1	1	4	2	2	3	3	3	3	3	2	2	2	2
23.6	2	2	2	2	1	1	1	1	1	1	1	2	2	2	2	4	3	3	3	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2
25.7	2	3	3	1	1	1	1	1	1	1	1	1	1	1	4	3	3	3	3	5	4	5	3	3	3	4	5	4	3	2	2	2	1	1	1	1	2
26.7	3	4	3	2	1	1	1	1	1	1	1	1	1	1	6	1	1	1	2	3	5	5	4	4	5	5	5	3	2	3	2	2	2	2	2	2	3
27.8	4	4	4	4	3	1	1	1	1	1	1	1	1	1	6	1	2	8	3	5	5	4	5	5	3	3	3	2	2	2	2	2	2	2	3	3	3
28.7	4	5	5	5	3	1	1	1	1	1	1	2	3	5	2	2	4	4	5	4	5	6	4	6	5	5	2	3	3	3	2	2	2	2	2	3	3

Table 80a

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
1953																																					
Feb 1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.7	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	2	3	3	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.0a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	2	4	4	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3	1	1	2	3	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25.7	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26.7	-	-	-	-	-	-	-	1	1	1	2	2	2	2	2	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27.8	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	2	2	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
28.7	-	-	-	-	-	-	-	-	-	1	1	1	1	2	2	3	4	2	2	2	2	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-

Table 78b

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
1953																																					
Feb 1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	6	4	2	2	1	3	4	3	-	-	-	-	-	-	-
2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	5	5	3	3	2	2	4	4	2	-	-	-	-	-	1
4.0a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	5	4	3	1	1	1	3	3	2	1	-	-	-	-	-	-
4.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	4	7	7	5	3	1	-	-	-	-	-	-	-	-	-	-	-	-
10.7	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	2	2	3	4	5	5	5	5	5	5	5	3	3	3	1	-	-	-	-	-	-
11.7	-	-	-	-	-	-	-	-	-	1	1	1	1	2	2	2	3	3	1	4	5	7	7	3	4	8	7	4	3	2	1	-	-	-	-	-	-
12.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	3	3	4	5	7	8	9	9	6	3	2	1	-	-	-	-	-	-	-	-
13.7	-	-	-	-	-	-	-	2	2	2	-	-	-	-	2	3	4	5	8	10	11	16	16	15	13	9	5	3	1	2	4	2	-	-	-	-	-
14.9a	-	-	-	-	-	-	-	-	-	-	-	1	1	2	3	4	6	8	8	9	9	9	8	6	4	3	1	-	-	-	-	-	-	-	-	-	-
17.8a	-	-	-	-	-	X	X	-	-	-	-	-	-	-	3	6	13	15	15	8	5	4	3	3	1	1	-	-	-	-	-	-	-	-	-	-	-
18.7	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3	4	14	15	6	5	3	3	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
21.9a	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	4	4	-	-	-	-	-	-	-	-	-	-	-	-	-
23.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	2	1	1	1	1	1	1	1	1	-	-	-	-	-
25.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	2	2	1	1	1	3	3	2	1	-	-	-	-	-	-
26.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	3	2	2	2	4	4	4	2	-	-	-	-	-	-
27.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	2	4	4	3	3	3	3	2	2	2	-	-	-	-	-
28.7	-	-	-	-	-	-	-	-	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	-

Table 79b

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
1953																																					
Feb 1.7	3	3	3	3	2	2	2	2	2	3	4	4	3	2	2	3	4	6	4	3	6	4	2	2	3	3	5	1	1	1	1	1	2	2	2	3	3
2.7	4	3	4	4	4	4	4	4	3	4	4	3	3	3	5	5	4	6	5	3	5	4	4	2	1	5	3	2	1	1	2	2	2	3	3	3	4
4.0a	3	3	3	3	2	2	2	3	1	1	3	2	2	4	3	3	3	3	3	5	4	3	4	4	3	2	1	1	1	1	1	2	2	3	3	3	3
4.7a	3	3	2	2	3	2	2	2	2	2	2	3	2	5	6	4	4	6	6	9	9	12	6	5	4	3	2	2	1	1	2	2	2	2	5	3	3
10.7	2	2	2	2	2	2	2	2	1	1	2	3	2	1	1	2	3	3	3	4	2	1	5	5	5	1	1	1	1	1	1	1	2	2	2	2	2
11.7	1	2	1	2	2	2	2	2	2	2	4	3	2	2	3	2	3	3	4	3	3	3	3	8	2	2	1	1	1	1	1	1	1	2	3	2	1
12.9	1	1	1	1	1	1	1	1	1	2	2	2	3	2	2	3	4	4	3	3	2	3	2	4	3	1	1	1	1	1	1	1	1	2	2	2	2
13.7	4	3	3	3	3	3	3	2	2	2	3	3	3	3	4	4	4	5	4	5	4	4	4	6	3	3	2	1	1	1	1	1	2	2	3	3	3
14.9a	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	4	2	6	2	3	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3
17.8a	1	1	1	1	1	1	X	X	1	1	1	1	1	3	4	1	1	1	1	1	1	1	1	1	2	2	2	2	2	1	1	1	1	1	1	1	1
18.7	1	1	1	1	1	1	1	1	1	2	1	1	1	1	3	2	2	4	2	1	1	2	1	1	1	3	4	3	3	1	2	1	1	1	1	3	2
21.9a	1	1	1	1	1	1	1	1	1	1	1	1	4	4	1	2	2	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	1	1	1	2
22.8a	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	-	-	-	-	-	-	4	4	4	-	-	4	4	-	-	2
23.6	2	2	2	2	2	2	2	1	1	1	2	3	3	3	3	4	4	3	3	4	6	3	3	2	2	2	2	2	1	1	1	1	1	2	2	2	2
25.7a	2	2	2	2	2	2	2	2	2	2	2	4	5	4	4	5	5	4	5	5	4	4	3	3	3	3	1	1	1	1	1	1	1	1	1	2	2
26.7	3	4	4	4	3	2	2	2	2	2	2	4	5	5	5	5	4	6	5	9	6	4	4	3	2	2	1	1	1	1	1	1	1	2	3	3	3
27.8a	3	3	3	3	3	3	3	3	2	2	3	4	5	5	4	4	4	4	6	5	3	4	4	2	2	2	2	1	1	1	1	2	2	2	3	4	4
28.7	3	3	3	3	3	3	3	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	4

Table 80b

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
1953																																					
Feb 1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.0a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	2	2	2	2	1	1	-	-	-	-	-	-	-	-	-
14.9a	-	X	X	X	X	X	X	X	X	X	X	X	1	1	1	1	1	1	2	1	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-
17.8a	-	X	X	X	X	X	X	X	X	X	X	X	X	X	2	2	2	2	2	1	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-
18.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.7	-	-	-	-	-	-	-	-	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	-

Table 81a

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
1953																																					
Feb 1.7	-	-	-	2	3	6	8	8	7	8	8	10	16	24	28	18	16	20	28	20	18	16	16	11	8	3	3	3	4	4	3	2	2	2	-	-	2
2.7	2	3	2	3	3	5	6	4	4	5	5	7	9	9	11	12	14	18	28	29	28	20	10	3	3	3	3	4	5	5	4	3	2	-	2	2	-
3.7	2	-	-	2	3	3	4	4	4	4	5	5	5	6	7	9	13	30	32	40	44	45	39	11	5	4	3	4	3	4	3	2	2	2	-	-	-
6.9a	-	-	-	3	3	4	4	4	4	4	4	5	4	4	4	3	3	3	5	5	8	8	5	5	4	3	3	3	3	3	2	2	2	2	2	2	3
7.8	-	-	-	2	2	3	3	2	2	3	3	3	3	3	3	3	3	4	4	5	5	8	8	5	4	3	3	3	3	3	3	3	3	3	3	3	3
11.9a	-	-	-	-	-	-	3	3	3	3	3	3	3	4	4	3	3	4	4	4	4	3	3	3	3	3	3	3	3	3	3	2	2	-	-	-	-
12.7	-	-	-	-	3	4	5	4	4	4	3	5	4	4	4	4	3	3	3	-	-	-	-	-	-	-	3	2	2	2	2	-	-	-	-	-	-
14.7	-	-	-	2	3	4	5	4	5	5	4	4	4	4	3	4	4	3	3	2	-	-	-	-	2	3	3	2	2	2	3	2	-	-	-	-	-
15.7	2	-	-	-	3	4	5	5	4	5	4	4	4	4	5	8	9	5	5	4	2	2	2	2	2	3	3	3	2	-	-	-	-	-	2	2	-
16.7	-	-	-	2	2	3	3	3	3	3	3	4	2	3	3	5	4	4	3	-	-	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-
17.7	-	-	-	-	2	3	3	3	4	5	4	3	3	4	3	3	4	4	3	2	3	2	2	2	2	2	-	-	2	2	-	-	-	-	-	-	-
18.7	-	-	-	2	3	2	3	3	3	3	3	3	3	3	3	4	3	4	5	5	3	3	3	3	2	2	2	2	2	2	2	2	3	3	2	2	2
21.7a	3	3	3	3	3	4	4	4	3	4	4	3	3	3	4	4	4	5	4	4	4	4	3	4	4	3	3	4	4	4	5	4	4	3	3	3	3
22.7a	-	-	-	-	-	-	2	2	2	2	2	3	3	3	4	5	5	5	4	3	3	3	3	3	3	2	2	2	2	2	3	3	3	2	-	-	-
25.7	2	2	2	2	2	3	2	2	2	3	4	4	6	8	12	13	12	7	4	2	2	2	3	3	3	3	2	2	2	3	4	2	2	2	3	3	3
26.7	2	-	-	-	2	3	5	8	7	4	7	10	14	18	22	20	12	11	9	8	6	5	3	4	5	3	3	3	4	4	4	3	3	2	2	2	3
27.7	-	-	-	2	2	3	12	14	11	8	10	12	18	27	36	32	20	23	18	14	10	5	12	13	5	5	4	3	3	3	2	3	2	3	4	3	2

Table 82a

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
1953																																					
Feb 1.7	4	3	3	3	3	4	3	2	2	2	3	4	3	6	11	5	4	4	16	9	5	13	5	3	3	4	2	2	3	3	2	2	2	3	3	3	2
2.7	3	3	4	3	4	3	3	2	2	3	5	5	5	6	4	3	2	3	13	5	3	14	11	5	4	3	2	3	5	3	2	2	2	3	3	2	3
3.7	4	4	3	3	3	3	2	2	2	4	6	9	8	5	4	4	2	3	11	7	8	18	11	3	4	3	3	5	4	3	2	2	2	3	3	3	3
6.9a	3	3	4	3	2	3	3	3	2	5	7	5	6	5	5	5	4	4	5	4	6	6	5	3	4	4	3	4	5	3	3	2	2	3	2	3	3
7.8	5	6	5	3	4	4	3	4	5	5	4	5	8	7	8	7	6	6	7	7	6	5	5	4	7	6	5	4	3	2	3	2	2	3	2	3	3
11.9a	4	3	3	3	3	4	2	2	2	2	3	3	3	2	3	4	3	3	4	5	4	4	4	3	4	3	4	3	2	2	3	2	2	-	-	2	2
12.7	3	3	3	3	4	3	3	2	3	4	4	5	4	5	5	6	8	7	8	6	6	4	5	4	5	5	3	2	3	2	2	3	2	2	3	2	3
14.7	3	3	3	2	2	2	3	2	3	4	3	3	3	3	3	4	6	8	8	7	5	4	3	4	4	4	4	4	3	3	3	3	2	2	3	4	3
15.7	3	4	4	5	3	3	2	3	3	2	3	5	4	4	3	4	5	5	5	11	12	11	10	8	5	5	6	5	5	4	3	3	4	2	3	3	3
16.7	4	4	4	3	3	2	2	3	2	2	4	4	4	3	3	2	3	4	7	6	6	6	5	5	5	3	3	6	4	3	3	3	2	3	2	2	3
17.7	3	3	4	5	3	2	2	2	2	3	5	4	5	4	5	5	5	5	8	14	8	5	4	4	4	4	3	4	3	2	2	2	2	2	-	2	3
18.7	5	4	4	3	2	3	3	3	2	3	2	4	5	4	5	4	5	5	8	7	8	4	5	5	4	4	5	5	4	3	2	2	3	2	2	3	3
21.7a	3	2	3	3	2	2	3	3	3	3	3	4	4	3	2	3	3	3	2	2	3	3	4	3	3	3	4	4	2	3	3	3	3	3	2	3	2
22.7a	3	3	2	4	2	3	2	3	2	3	3	4	4	2	2	2	3	4	4	3	4	2	3	3	2	3	3	2	2	2	2	3	3	3	3	3	2
25.7	4	4	4	4	5	3	3	3	2	2	2	3	3	3	4	5	5	5	5	7	5	6	7	3	4	5	6	6	3	3	2	2	2	2	2	3	3
26.7	4	3	3	5	5	4	3	3	2	3	2	2	2	2	13	3	3	3	3	5	8	9	7	3	4	5	7	6	3	3	3	2	2	3	2	3	4
27.7	5	5	5	4	5	4	3	2	2	2	2	2	2	2	5	8	2	6	5	5	4	4	3	4	4	3	3	4	3	3	3	2	3	3	3	3	3

Table 83a

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
1953																																					
Feb 1.7	-	-	-	-	-	-	-	-	-	-	-	2	3	4	3	2	2	3	3	3	3	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	3	3	3	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-
3.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	4	4	4	3	2	2	2	-	-	-	-	-	-	-	-	-	-	-
6.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-
7.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25.7	-	-	-	-	-	-	-	-	-	2	2	3	3	3	3	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26.7	-	-	-	-	-	-	-	-	-	-	2	2	2	3	3	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27.7	-	-	-	-	-	-	-	-	-	2	2	2	3	3	4	4	2	4	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 81b

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	50	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
1953																																					
Feb 1.7	2	-	-	-	-	-	2	2	3	3	3	3	3	3	3	2	2	3	3	3	3	6	7	8	7	5	4	4	4	5	5	5	3	3	2	2	-
2.7	-	-	-	-	-	2	2	2	2	3	3	3	3	3	3	3	3	2	3	3	4	5	5	6	5	4	3	3	2	2	3	2	2	2	2	2	2
3.7	-	-	-	2	2	2	3	3	2	2	3	3	3	3	3	2	3	3	3	4	5	8	11	10	10	7	5	4	4	4	4	3	-	-	-	2	2
6.9a	3	-	-	-	-	-	3	4	4	4	3	4	3	3	2	2	2	4	4	3	5	5	5	5	4	5	5	3	3	3	3	3	4	4	3	3	-
7.8	3	-	-	-	-	3	3	3	3	3	3	4	3	4	4	4	4	4	5	6	8	9	12	11	8	5	3	3	3	4	4	3	3	2	2	-	-
11.9a	-	3	3	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	4	5	5	5	8	7	6	5	4	3	2	2	-	-	-	-
12.7	-	-	-	-	-	2	3	3	3	3	2	3	2	3	3	4	3	5	8	10	14	16	15	16	14	11	10	8	5	5	3	3	2	2	-	-	-
14.7	-	-	-	-	-	-	2	2	3	3	4	4	4	5	8	12	13	14	16	20	23	19	16	15	11	8	5	4	5	8	5	3	2	2	-	-	-
15.7	-	-	2	2	3	3	3	3	3	3	3	3	4	3	4	7	9	16	22	23	28	27	26	22	20	16	13	8	5	4	3	5	4	2	2	2	2
16.7	-	-	-	-	-	-	-	2	3	4	3	4	4	3	4	4	18	22	23	24	23	16	14	11	8	7	5	3	4	4	5	5	3	2	3	2	-
17.7	-	-	-	-	-	-	-	2	3	4	4	4	5	4	4	5	14	26	32	31	20	16	15	11	10	5	3	2	3	3	2	3	3	3	2	-	-
18.7	2	2	-	-	-	2	2	2	2	3	3	2	3	3	3	5	10	18	19	13	11	11	8	6	3	2	2	3	2	3	3	2	2	3	3	2	-
21.7a	3	3	2	2	2	3	3	3	3	3	3	4	3	3	3	2	3	3	3	3	3	3	2	3	4	3	3	3	2	2	2	2	2	2	3	3	3
22.7a	-	-	-	-	-	-	-	-	-	-	2	3	3	2	3	3	2	3	3	2	2	2	3	3	2	2	2	2	3	3	3	3	2	2	3	3	-
25.7	3	3	3	2	2	2	2	2	2	3	3	3	3	3	2	2	2	3	3	3	3	3	2	3	3	3	3	2	3	2	2	2	2	2	3	3	2
26.7	3	2	-	-	-	-	-	2	2	3	3	3	3	2	2	2	2	2	2	2	2	2	3	3	3	3	3	4	5	5	5	4	4	3	3	2	2
27.7	2	2	2	2	2	2	2	3	3	3	3	3	2	2	3	2	2	3	3	2	2	3	3	5	6	7	7	5	6	6	7	5	3	2	2	2	-

Table 82b

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
1953																																					
Feb 1.7	2	2	2	2	3	3	3	3	2	3	3	4	4	5	3	3	5	9	8	6	5	8	5	3	3	3	5	4	2	2	2	3	3	4	4	5	4
2.7	3	2	2	2	2	3	3	2	2	3	4	4	4	3	4	3	4	5	8	6	5	5	4	5	3	2	3	3	2	3	2	2	2	2	3	3	3
3.7	3	3	3	3	2	2	3	3	2	4	4	4	5	4	5	5	8	7	7	6	8	7	5	5	4	4	3	3	3	2	2	2	3	3	4	4	4
6.9a	3	3	3	3	3	3	2	3	3	3	4	5	4	5	5	4	3	3	5	4	5	8	5	4	3	4	4	3	3	3	3	3	3	3	4	2	3
7.8	3	3	3	2	3	3	3	3	3	3	3	4	5	4	4	3	4	4	5	8	8	11	8	4	3	3-	4	6	5	4	3	3	5	5	6	5	5
11.9a	2	2	3	3	2	2	2	2	3	2	3	3	3	3	3	3	4	4	4	5	5	3	4	5	10	4	3	3	2	2	2	3	4	4	4	4	4
12.7	3	2	3	2	-	2	3	2	3	3	3	3	2	3	3	4	5	5	4	4	4	6	12	2	3	-	-	-	-	2	4	4	5	4	4	4	3
14.7	3	3	2	2	3	3	3	4	5	3	2	2	3	3	3	11	10	8	5	3	8	4	5	3	2	-	3	-	2	2	3	3	4	3	2	2	3
15.7	3	3	2	3	3	4	3	3	3	5	6	5	2	3	5	4	4	8	3	8	11	5	6	5	4	4	5	4	4	4	3	3	4	4	4	4	3
16.7	3	2	3	3	3	2	3	2	2	2	3	2	3	3	2	6	5	4	3	3	-	-	2	2	2	3	4	4	5	3	3	3	4	2	4	3	4
17.7	3	2	3	2	3	3	2	2	3	2	-	-	2	3	4	11	10	3	5	4	3	2	3	2	2	3	3	4	5	3	2	2	3	3	3	3	3
18.7	3	2	3	3	3	3	4	3	4	3	3	2	3	3	3	3	3	7	8	6	2	3	3	2	3	3	4	5	6	4	3	3	3	3	2	3	5
21.7a	2	2	3	2	3	3	3	2	2	2	3	2	3	3	3	3	3	3	3	3	3	3	4	4	3	2	4	3	2	3	2	3	2	3	3	2	3
22.7a	2	3	2	3	2	2	3	3	3	3	2	3	5	4	5	4	4	4	5	5	5	3	3	3	4	4	5	4	3	3	2	2	2	2	2	2	3
25.7	3	3	3	2	2	2	3	3	2	3	2	2	3	5	4	5	5	6	5	7	8	7	8	5	4	4	4	5	3	3	2	2	3	3	4	3	4
26.7	4	4	3	3	2	3	2	2	2	3	3	4	6	5	5	4	5	4	4	14	13	12	8	7	4	4	4	4	3	2	2	3	3	3	4	4	4
27.7	3	2	3	4	4	3	3	3	2	5	4	5	6	6	4	4	4	4	8	9	8	5	6	5	4	3	4	4	3	2	2	3	3	4	5	4	5

Table 83b

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
1953																																					
Feb 1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-
11.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	4	3	3	2	2	2	-	-	-	-	-	-	-	-	-	-
14.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
15.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	2	3	4	4	4	3	2	2	-	-	-	-	-	-	-	-	-	-	-
16.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
17.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	4	4	3	3	3	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-
18.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	2	3	2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
21.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 84

Zürich Provisional Relative Sunspot Numbers

February 1953

Date	R_Z*	Date	R_Z*
1	0	16	0
2	7	17	0
3	8	18	0
4	8	19	0
5	8	20	0
6	8	21	0
7	14	22	0
8	8	23	0
9	7	24	0
10	7	25	0
11	7	26	0
12	0	27	0
13	0	28	0
14	0		
15	0	Mean:	2.9

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

Table 85

American Relative Sunspot Numbers

January 1953

Date	R_A,*	Date	R_A,*
1	17	17	35
2	17	18	26
3	21	19	23
4	27	20	22
5	31	21	14
6	45	22	19
7	31	23	11
8	36	24	9
9	48	25	3
10	57	26	1
11	65	27	0
12	60	28	0
13	56	29	3
14	50	30	0
15	49	31	0
16	49	Mean:	26.6

*Combination of reports from 28 observers; see page 10.

Table 86

Solar Flares, February 1953

No solar flares were reported for the month of February 1953.

Table 87

Indices of Geomagnetic Activity for January 1953

Preliminary values of international character-figures, C;
Geomagnetic planetary three-hour-range indices, Kp;
Magnetically selected quiet and disturbed days

Gr. Day 1953	C	Values Kp three-hour interval 1 2 3 4	5 6 7 8	Sum	Final Selected Days
1	0.9	3+ 4o 3o 3+	3o 3o 4- 3o	26+	Five
2	1.0	2o 2+ 4- 3+	4o 4+ 4+ 3o	27o	Quiet
3	0.5	3- 3o 1+ 1o	2+ 3- 2o 2-	17-	
4	0.3	3- 1- 1- 1-	1- 2+ 2+ 2-	12-	4
5	1.7	2- 3+ 7- 6o	6- 5o 5- 5-	38-	10
					15
6	0.9	3- 2- 2+ 3o	3- 5- 3- 2+	22o	16
7	0.6	2o 1+ 2+ 2o	3o 2+ 2o 1+	16+	17
8	0.3	3+ 3+ 2+ 2-	1+ 1- 2o 2o	17-	
9	0.6	4o 0+ 1+ 2-	2o 3- 3- 3o	18-	
10	0.4	2+ 1o 1- 1-	2- 1+ 1+ 3-	12-	
11	0.4	4- 3o 2- 2-	2- 1o 1+ 2-	16-	Five
12	0.1	2+ 2o 1+ 1o	3- 2o 1o 1-	13o	Disturbed
13	0.8	0+ 1+ 1o 3+	3+ 2- 4- 3+	17+	
14	0.3	3- 3o 3- 1+	1+ 2- 2- 2+	17-	5
15	0.1	2- 0+ 0+ 1+	1+ 1o 0+ 2o	8+	19
					26
16	0.1	1+ 0+ 0+ 1o	1+ 2o 1- 1+	8+	27
17	0.4	1- 0+ 1- 2-	1o 0+ 1+ 3-	9-	28
18	0.8	1o 2o 2- 3	4- 3+ 3o 2o	19+	
19	1.2	3- 5+ 5o 5-	4- 3- 3o 3o	30o	
20	0.9	5- 4o 4- 3+	2o 1+ 2+ 2-	23o	
21	0.4	2+ 2+ 2+ 3-	3o 2- 2- 2+	18+	Ten
22	0.2	2o 3o 2+ 2o	2- 1- 1o 2o	15-	Quiet
23	0.4	4o 3- 1+ 1-	1- 0+ 1+ 0+	11+	
24	0.8	1o 1o 3- 4-	3- 3+ 3o 1+	19-	4
25	1.2	0o 1o 2+ 6-	5o 3+ 3o 4o	24+	7
					10
26	1.6	5o 5+ 4o 5-	5- 4+ 6- 5o	39-	12
27	1.5	5o 3+ 3+ 5+	5- 5- 5o 2+	34-	14
28	1.3	3o 4- 4o 3+	3+ 5- 4+ 5o	31+	15
29	1.3	5o 4o 4- 3+	4o 4- 4+ 2+	30+	16
30	1.0	4- 4- 4o 3+	3o 4- 3+ 2-	26+	17
31	0.7	4- 4o 2+ 3+	3o 1o 2- 1+	20+	22
					23
Mean	0.73				

GRAPHS OF IONOSPHERIC DATA

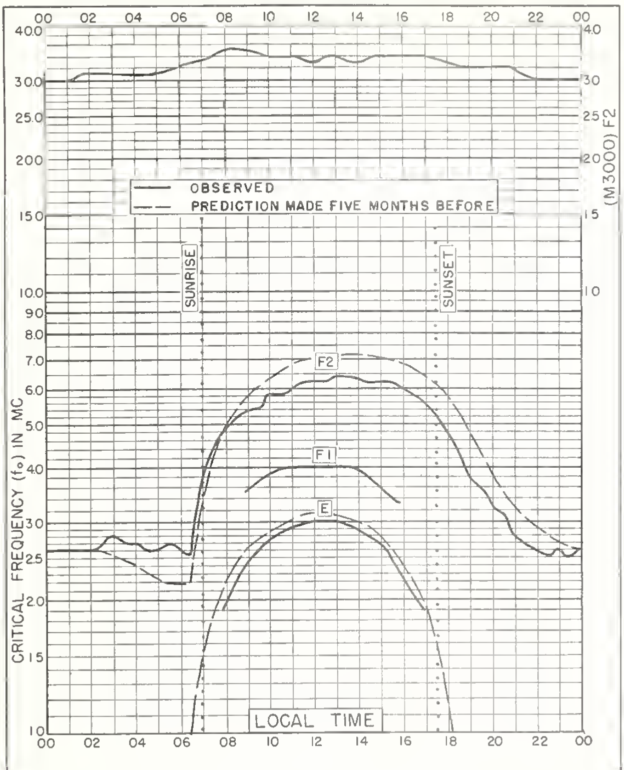


Fig. 1. WASHINGTON, D.C.
38.7°N, 77.1°W FEBRUARY 1953

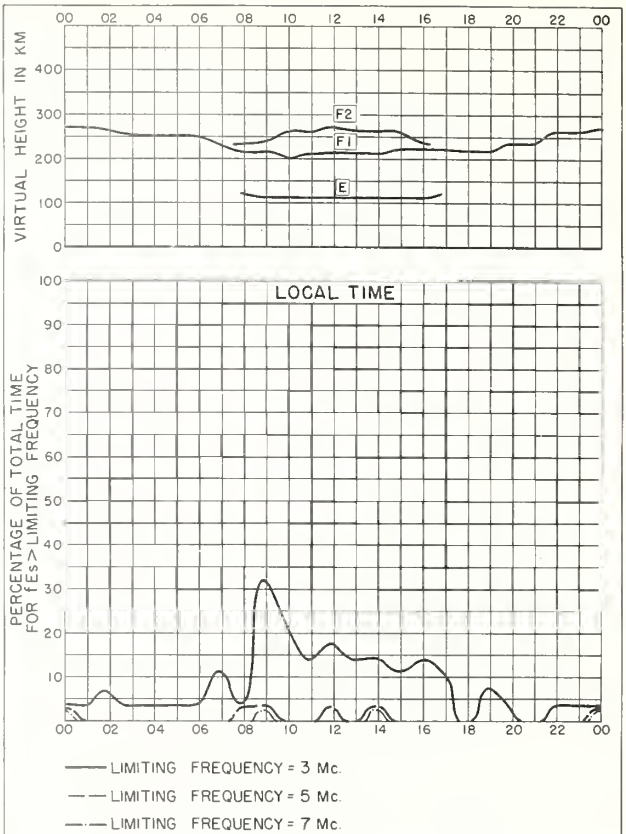


Fig. 2. WASHINGTON, D.C. FEBRUARY 1953

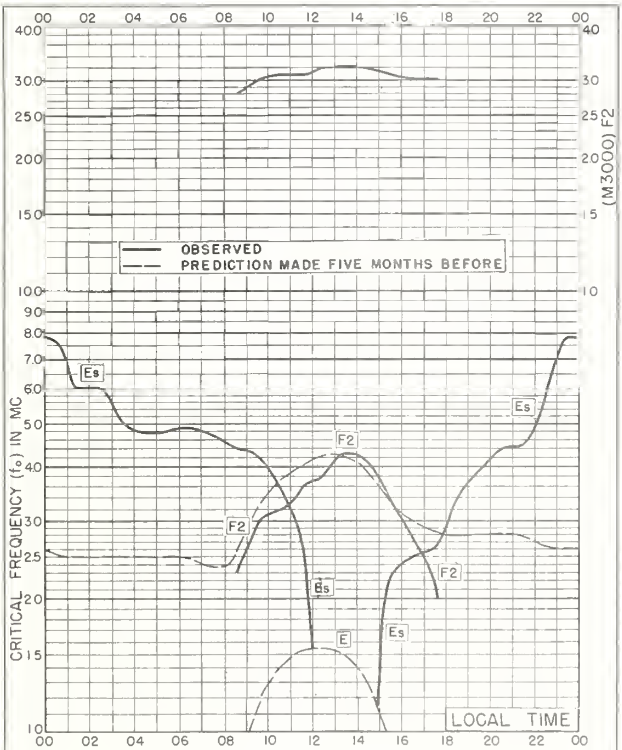


Fig. 3. POINT BARROW, ALASKA
71.3°N, 156.8°W JANUARY 1953

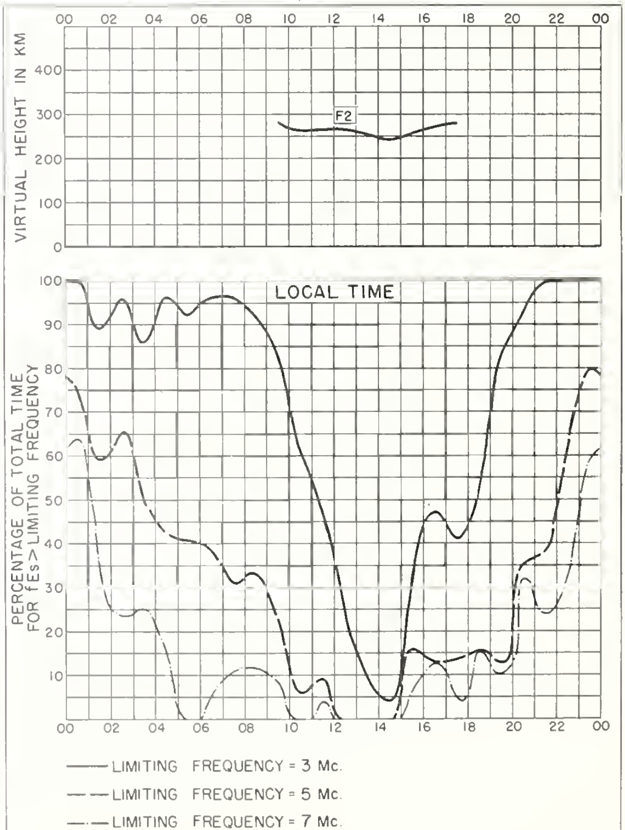


Fig. 4. POINT BARROW, ALASKA JANUARY 1953

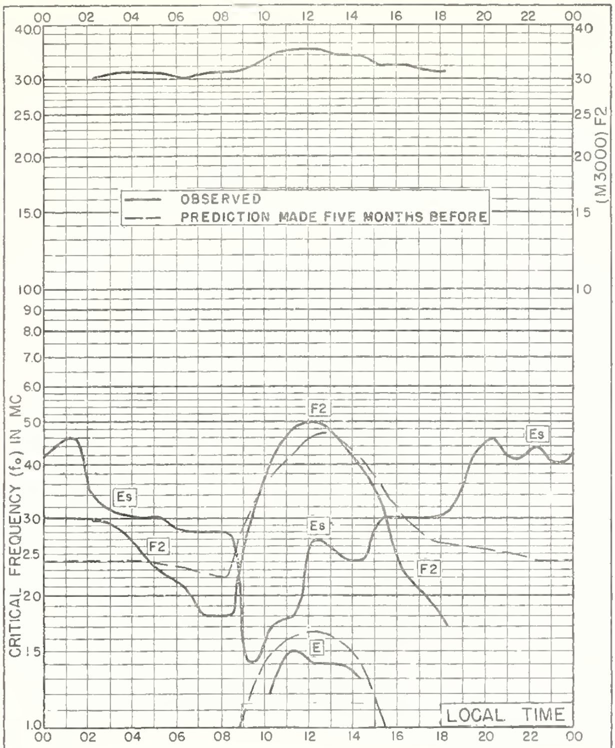


Fig. 5. TROMSO, NORWAY
69.7°N, 19.0°E JANUARY 1953

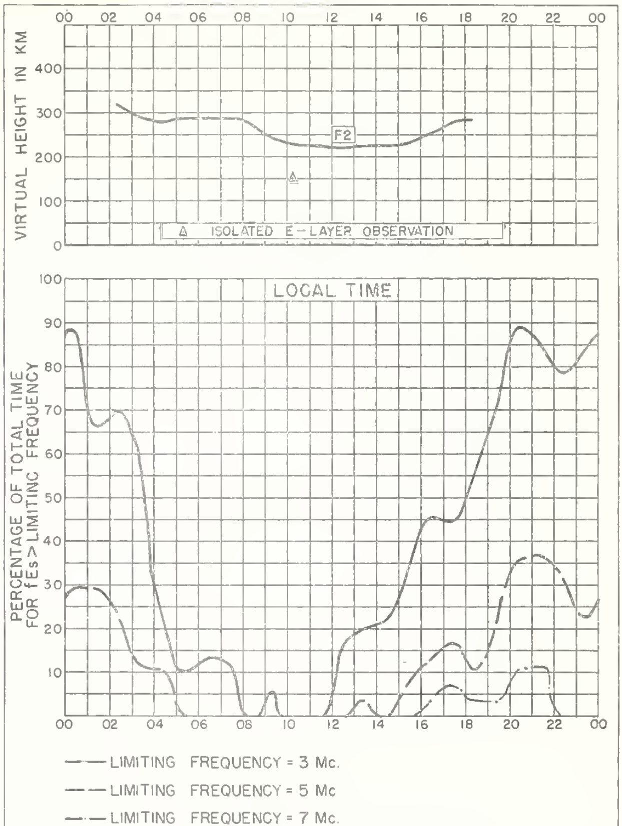


Fig. 6. TROMSO, NORWAY JANUARY 1953

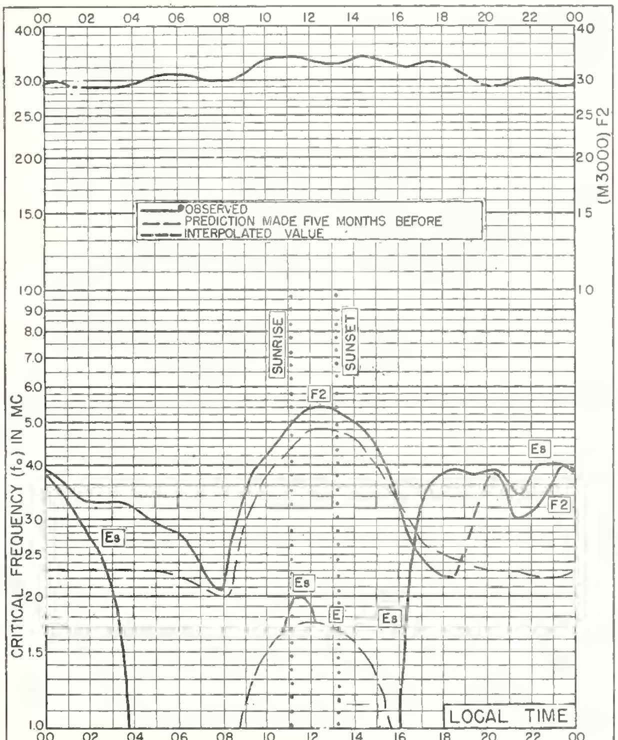


Fig. 7. KIRUNA, SWEDEN
67 8°N, 20.5°E JANUARY 1953

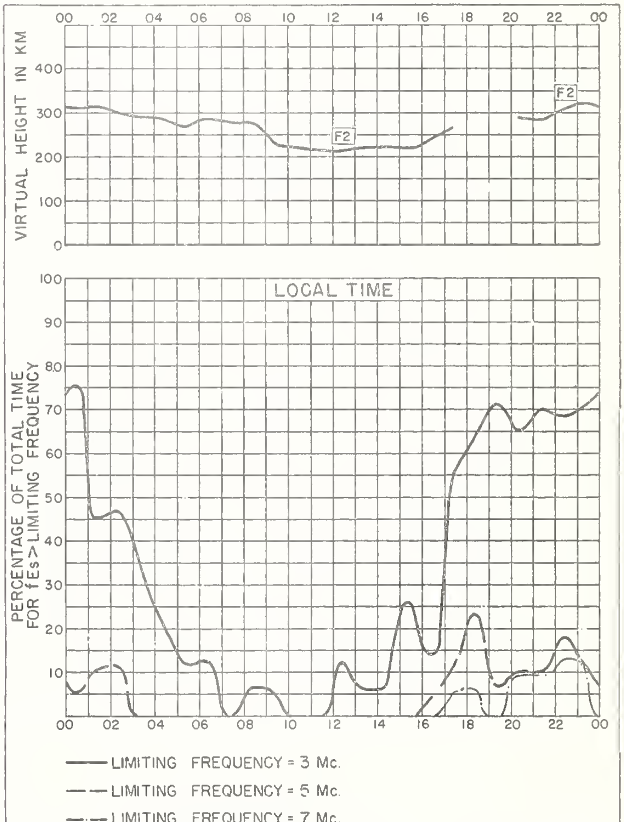


Fig. 8 KIRUNA, SWEDEN JANUARY 1953

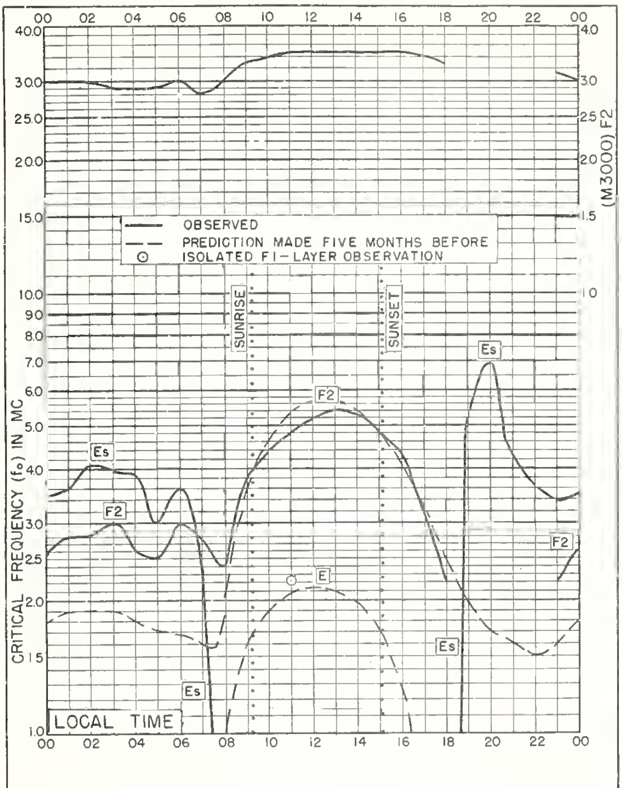


Fig. 9. ANCHORAGE, ALASKA
61.2°N, 149.9°W JANUARY 1953

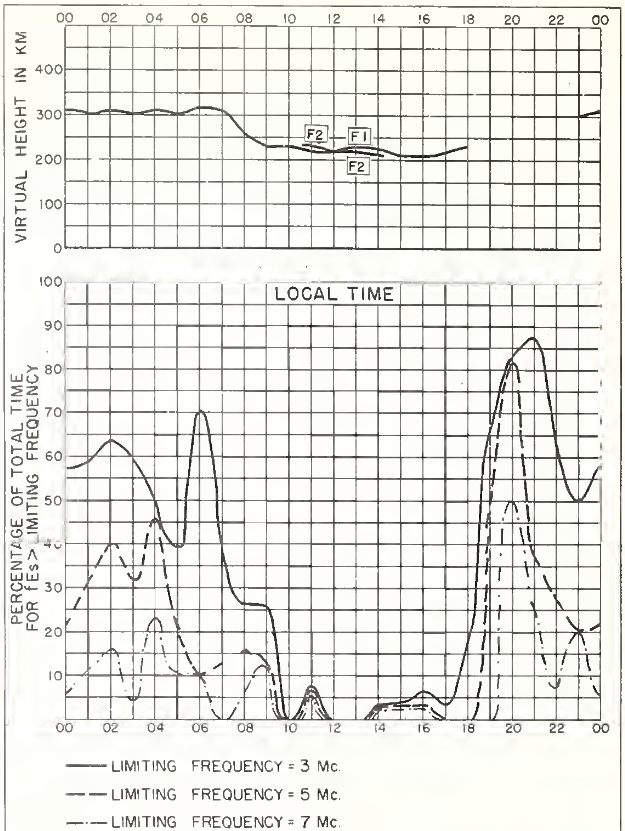


Fig. 10. ANCHORAGE, ALASKA JANUARY 1953

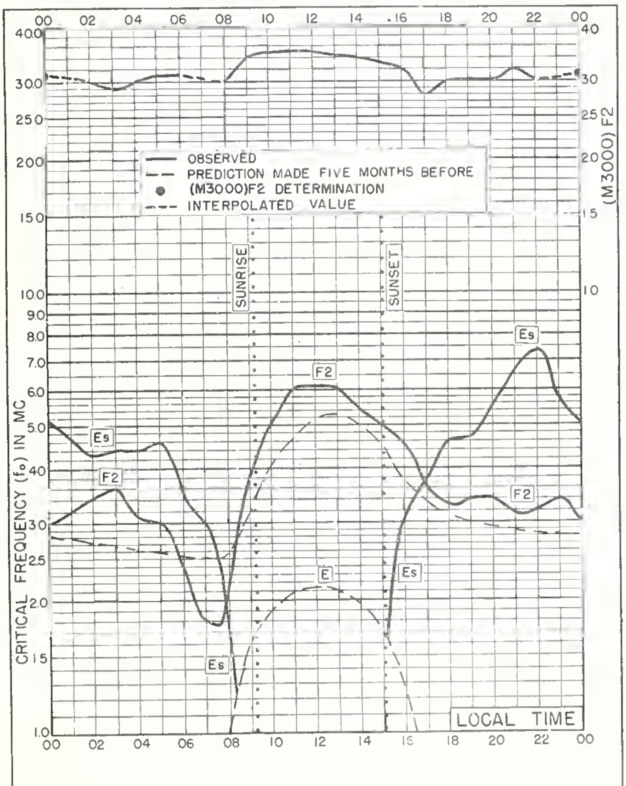
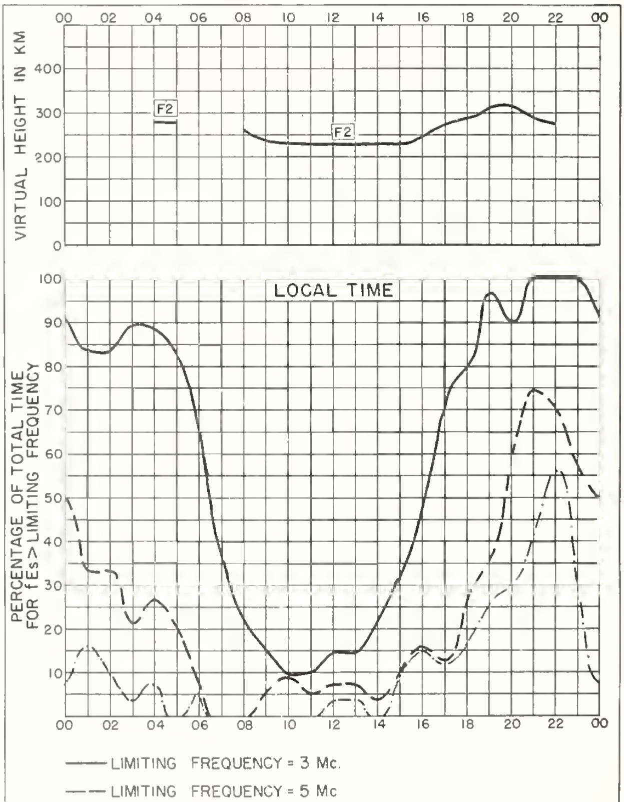


Fig. 11. NARSARSSUAK, GREENLAND
61.2°N, 45.4°W JANUARY 1953



JANUARY 1953
Fig. 12. NARSARSSUAK, GREENLAND

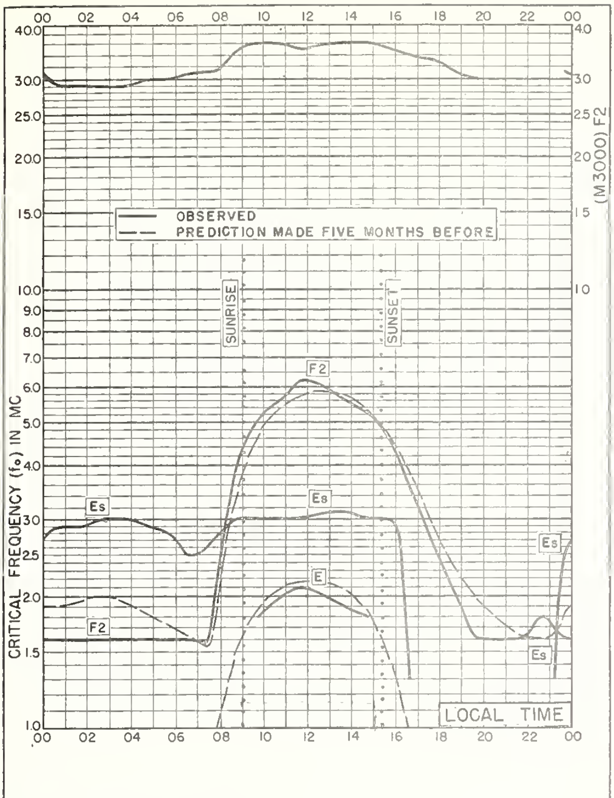


Fig. 13. OSLO, NORWAY
60.0°N, 11.1°E JANUARY 1953

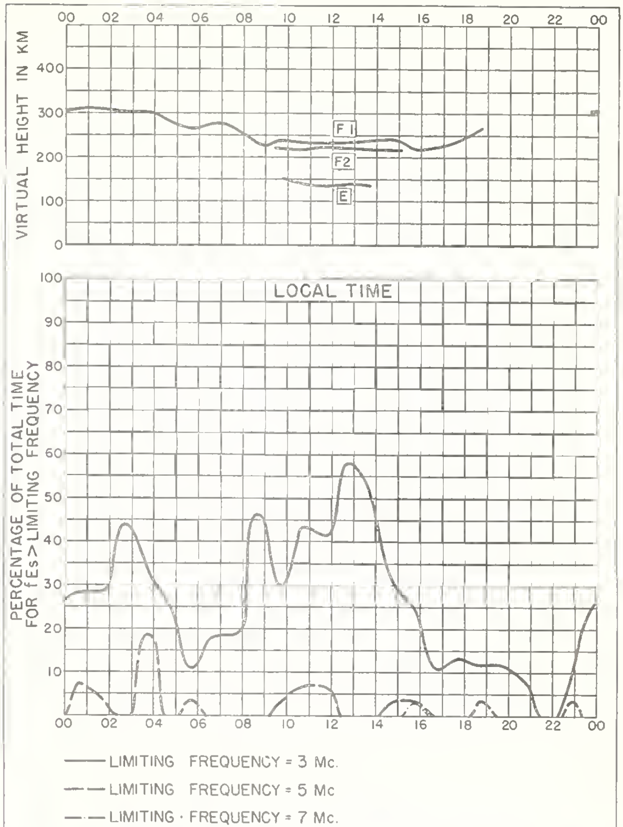


Fig. 14. OSLO, NORWAY JANUARY 1953

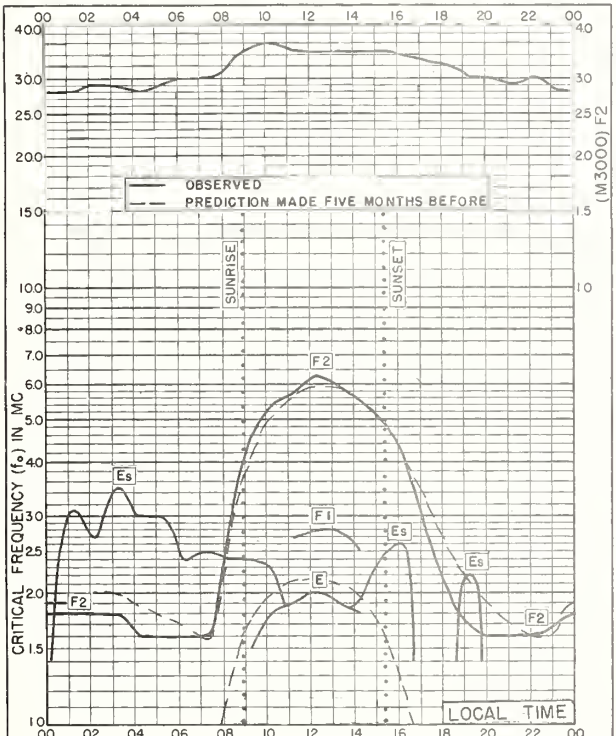


Fig. 15. UPSALA, SWEDEN
59.8°N, 17.6°E JANUARY 1953

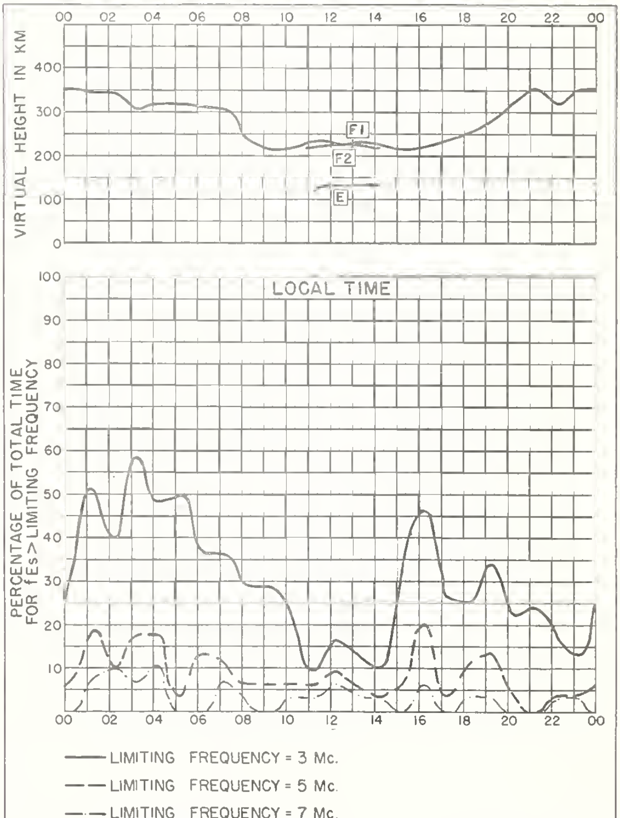


Fig. 16. UPSALA, SWEDEN JANUARY 1953

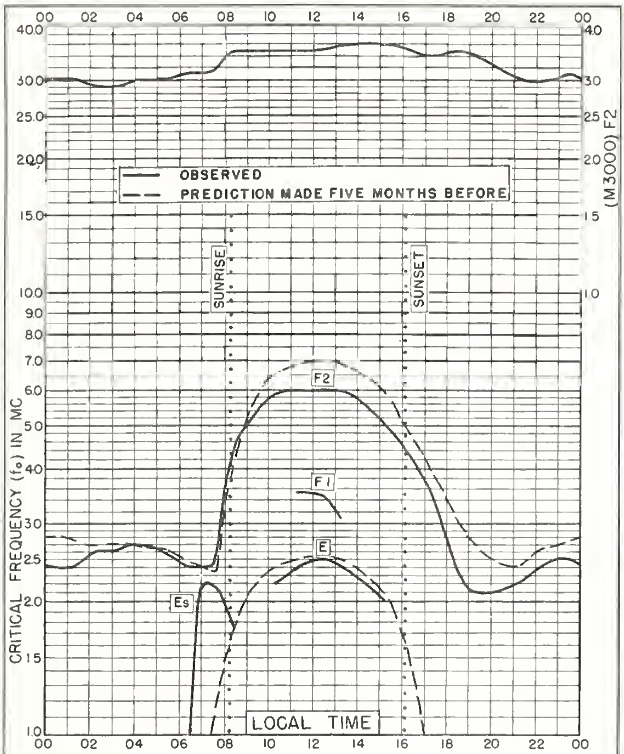


Fig. 17. ADAK, ALASKA
51.9°N, 176.6°W JANUARY 1953

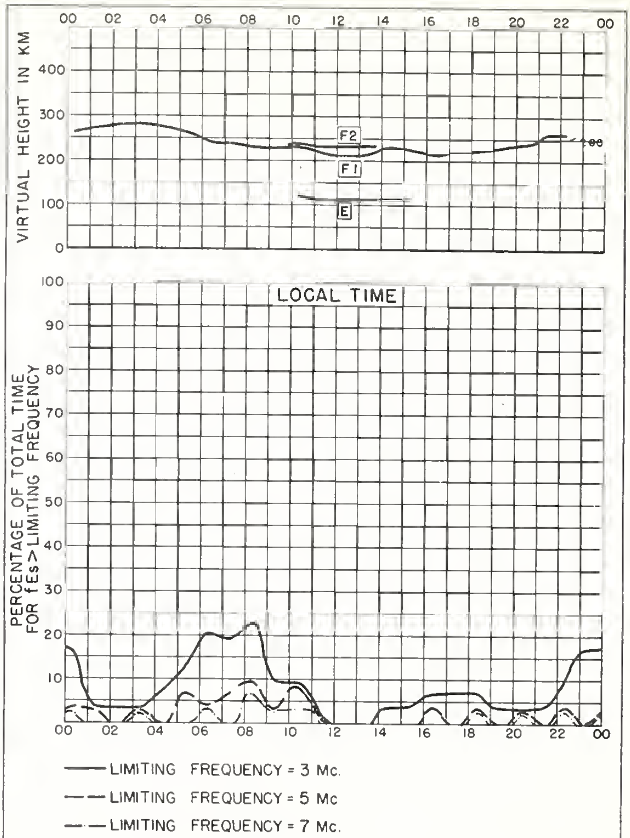


Fig. 18. ADAK, ALASKA JANUARY 1953

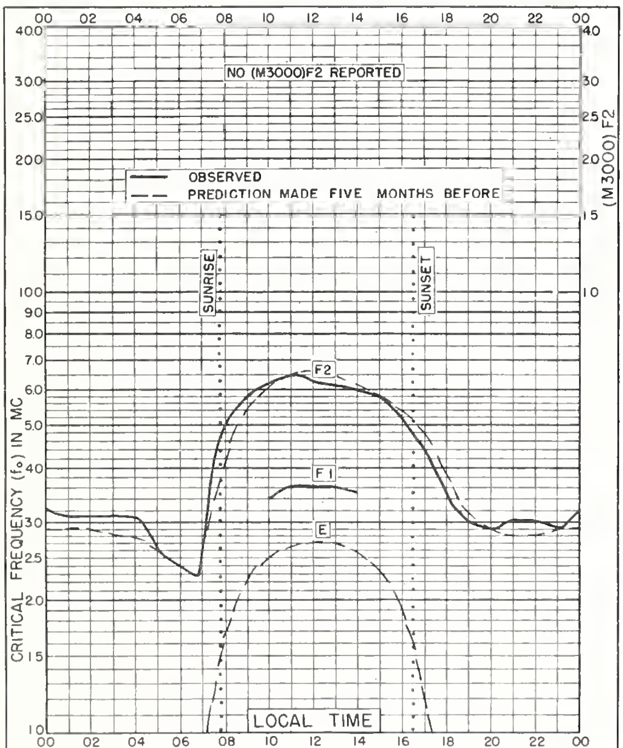


Fig. 19. GRAZ, AUSTRIA
47.1°N, 15.5°E JANUARY 1953

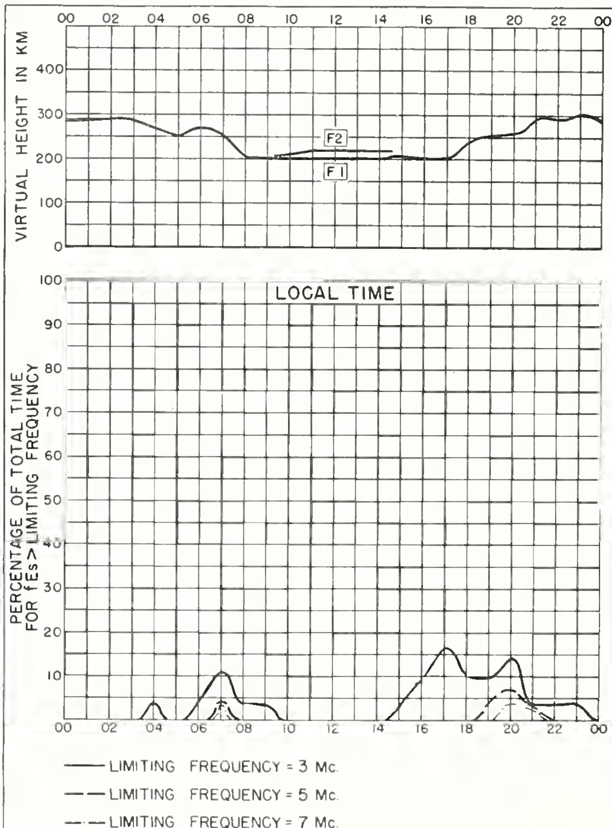


Fig. 20. GRAZ, AUSTRIA JANUARY 1953

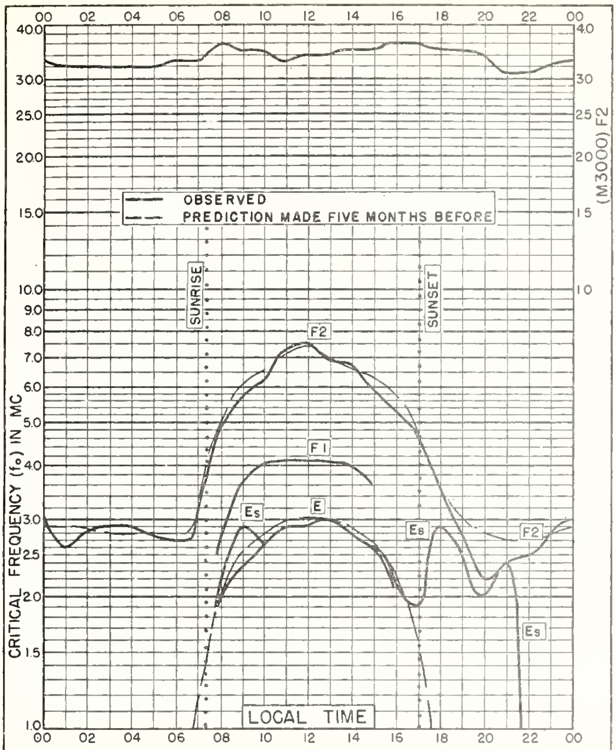


Fig. 21. SAN FRANCISCO, CALIFORNIA
37.4°N, 122.2°W JANUARY 1953

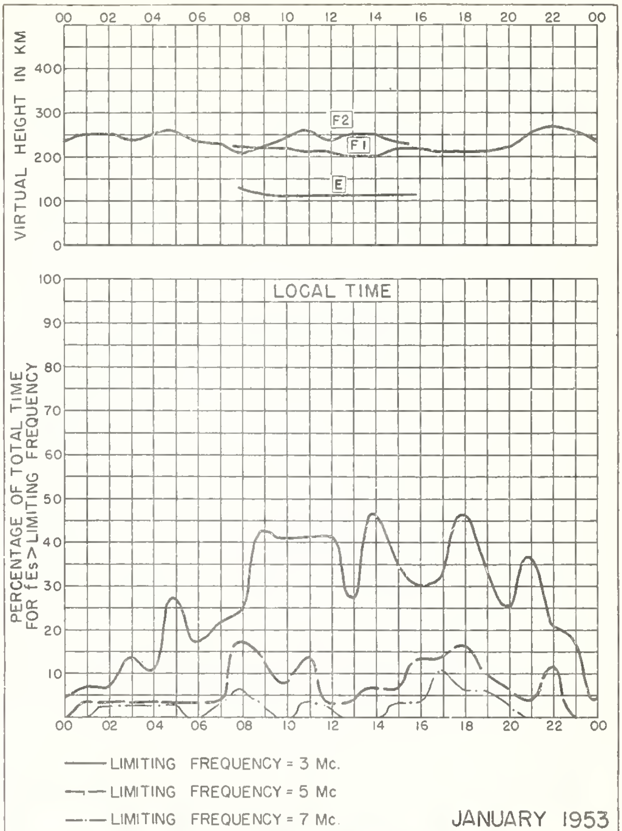


Fig. 22 SAN FRANCISCO, CALIFORNIA

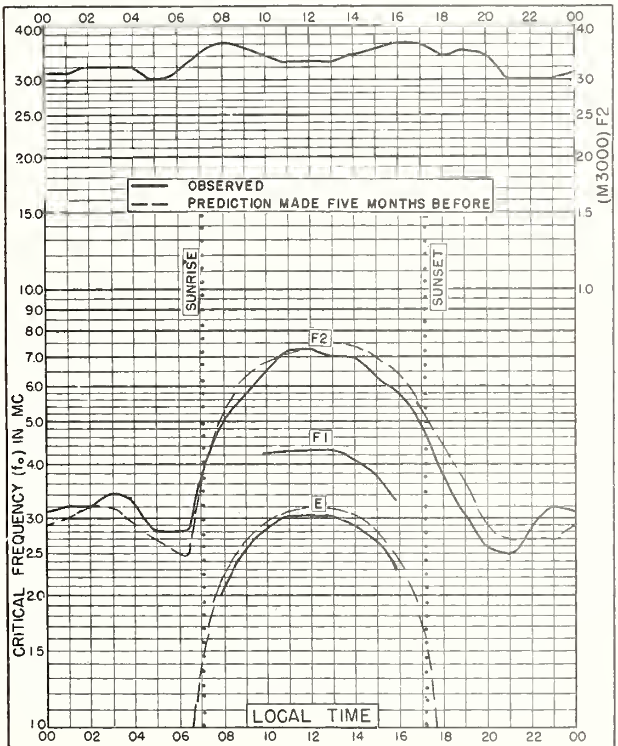


Fig. 23. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W JANUARY 1953

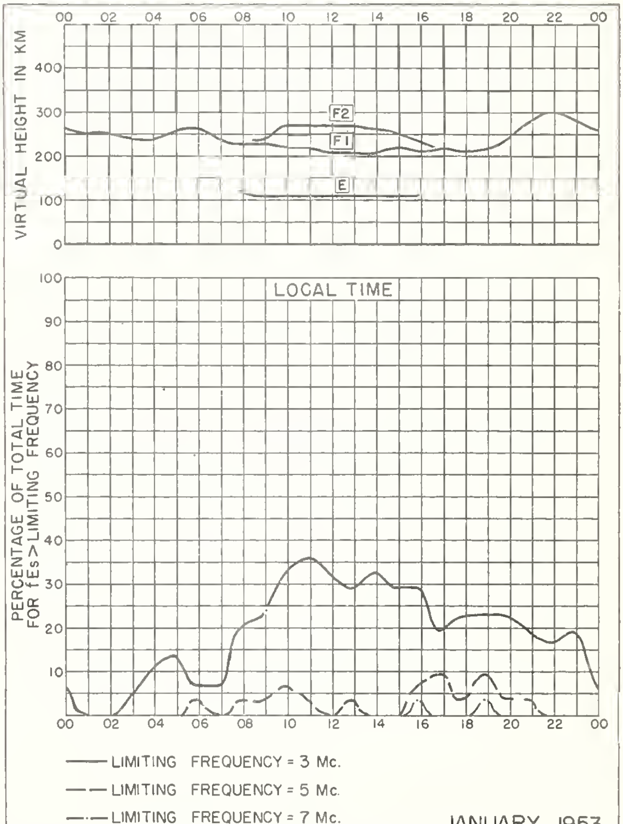


Fig. 24. WHITE SANDS, NEW MEXICO

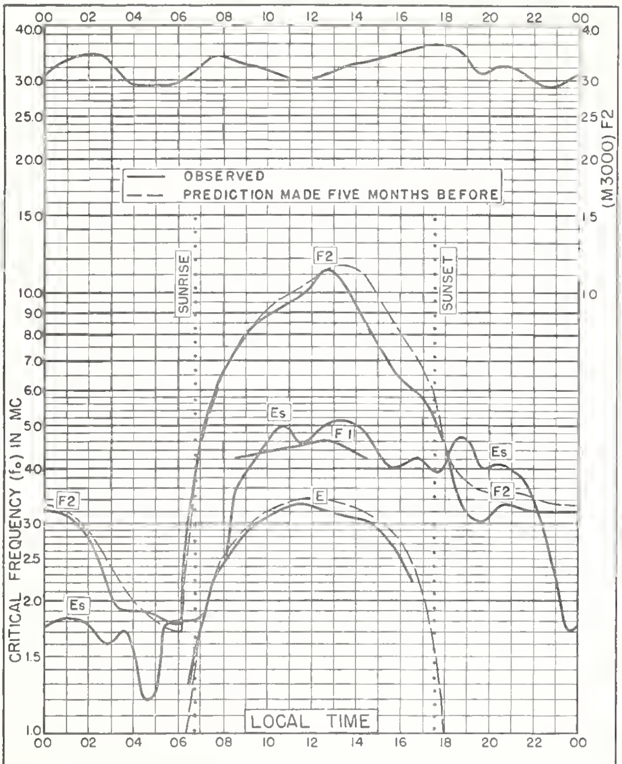


Fig. 25 MAUI, HAWAII
20.8°N, 156.5°W JANUARY 1953

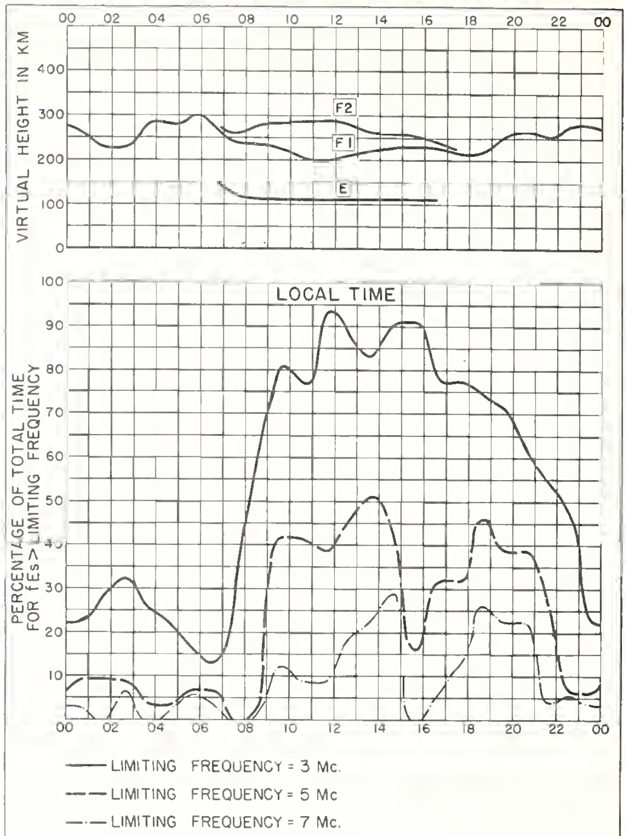


Fig. 26. MAUI, HAWAII JANUARY 1953

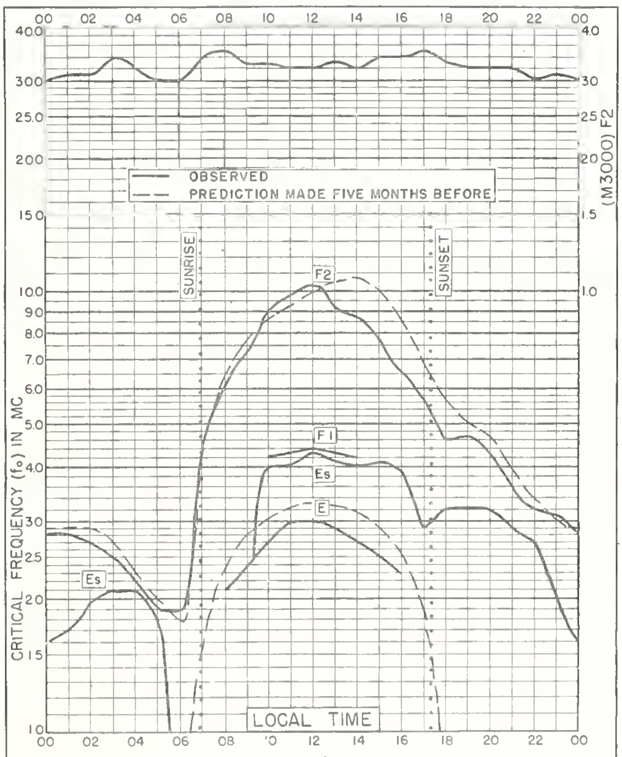


Fig. 27. OKINAWA I
26.3°N, 127.8°E JANUARY 1953

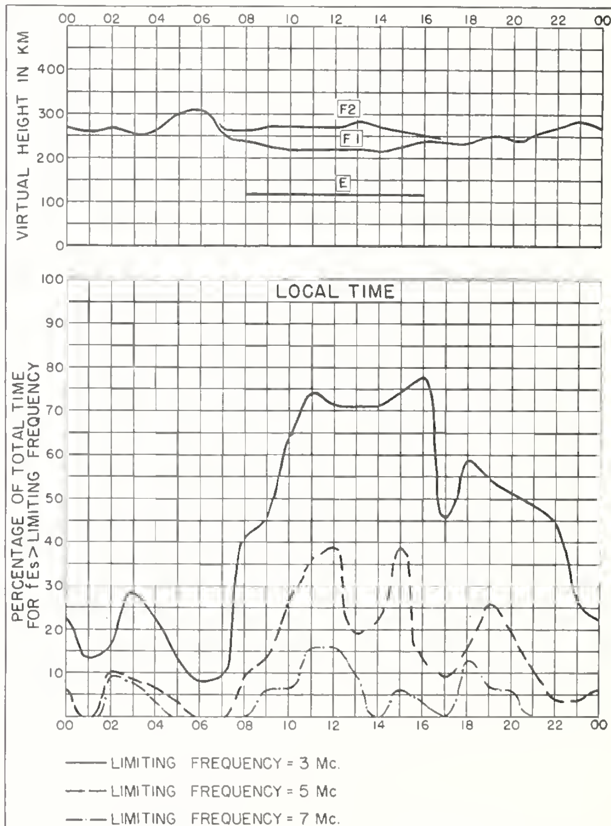


Fig. 28. OKINAWA I. JANUARY 1953

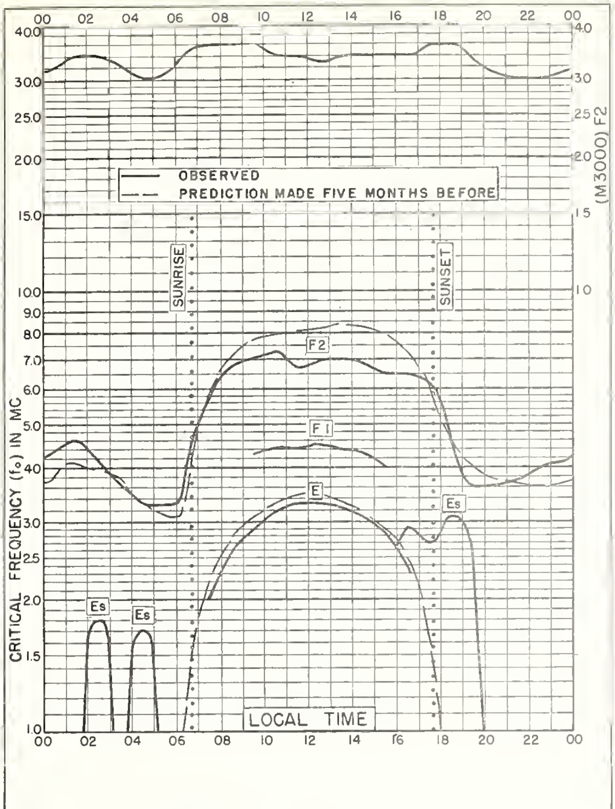


Fig. 29. PUERTO RICO, W.I. 18.5°N, 67.2°W JANUARY 1953

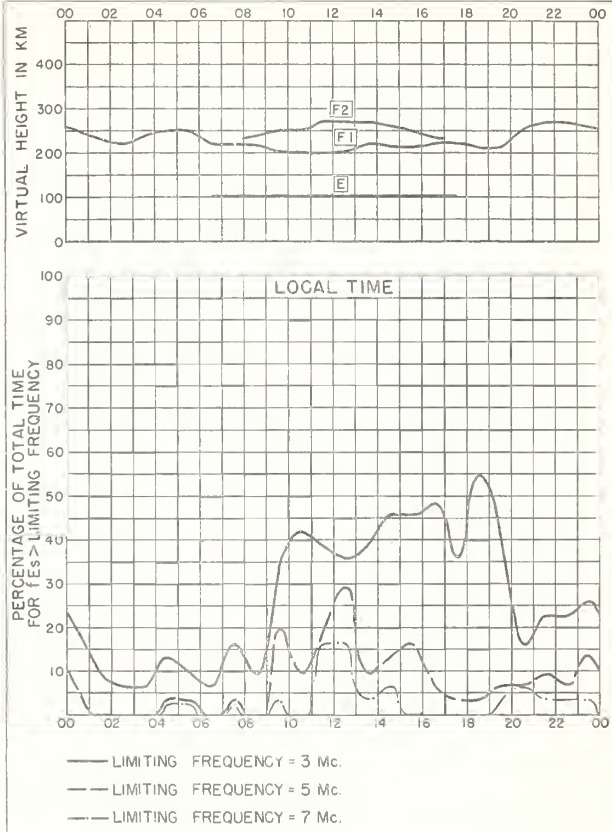


Fig. 30. PUERTO RICO, W.I. JANUARY 1953

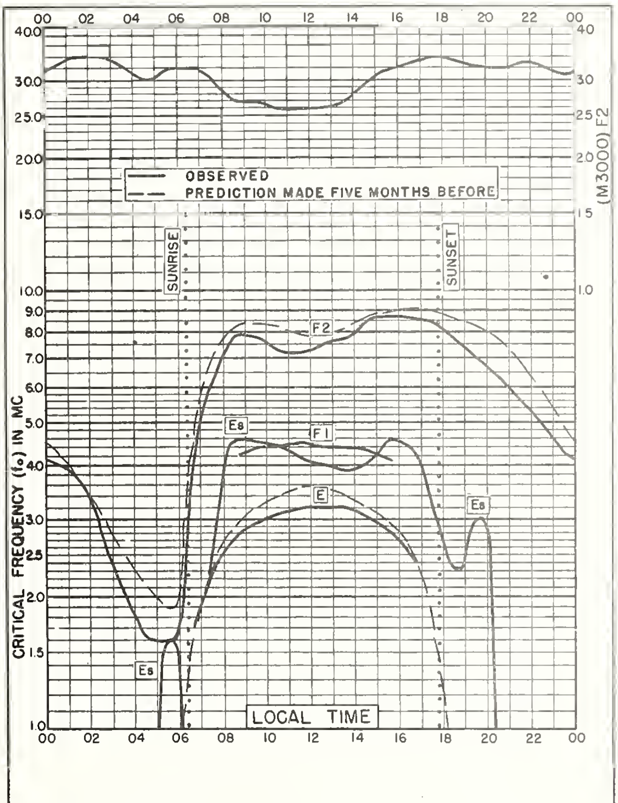


Fig. 31. GUAM I. 13.6°N, 144.9°E JANUARY 1953

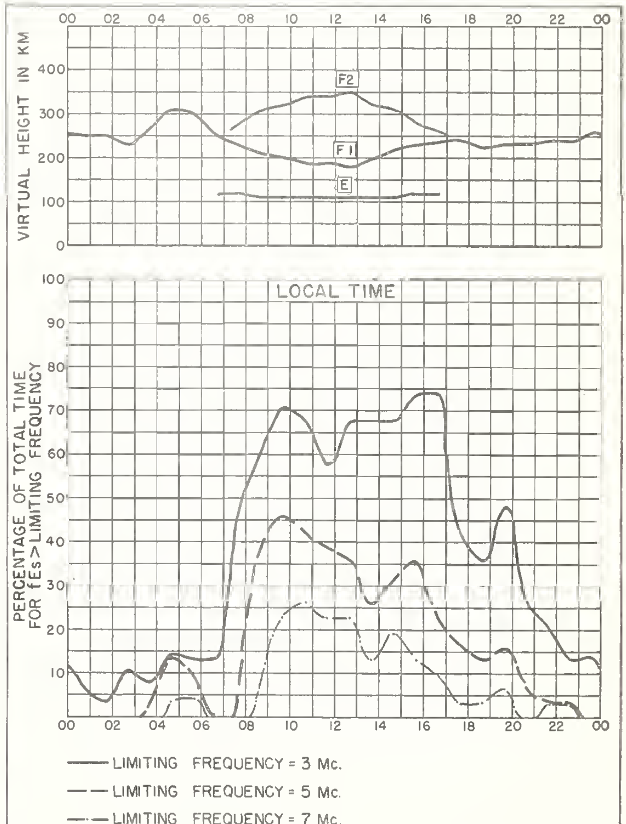


Fig. 32. GUAM I. JANUARY 1953

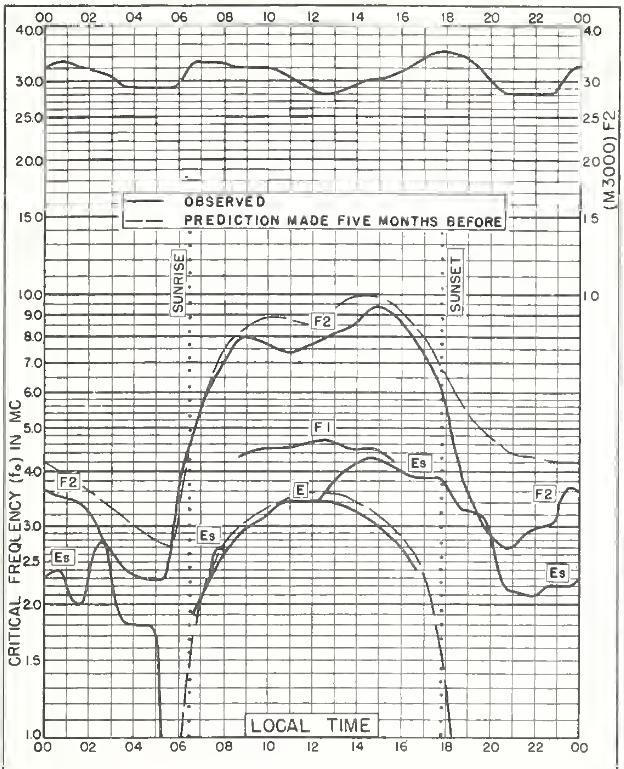


Fig. 33. PANAMA CANAL ZONE
9.4°N, 79.9°W JANUARY 1953

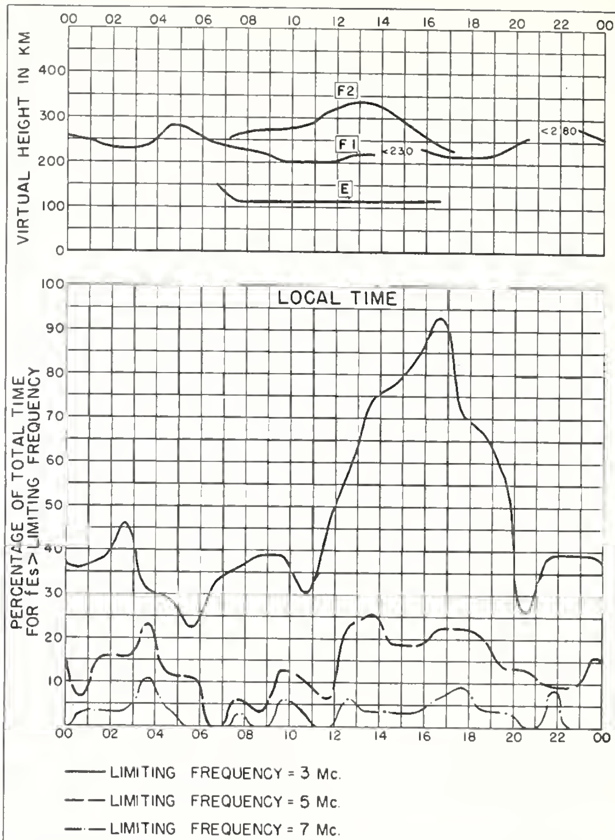


Fig. 34. PANAMA CANAL ZONE JANUARY 1953

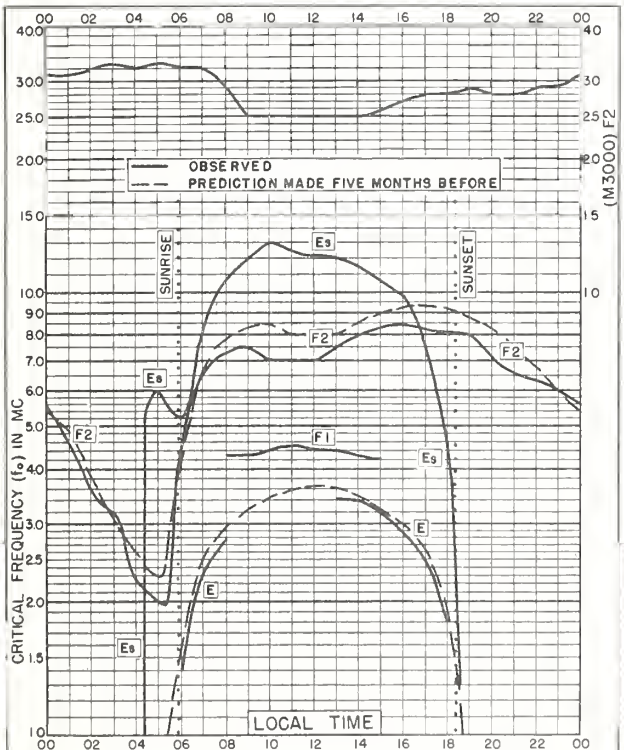


Fig. 35. HUANCAYO, PERU
12.0°S, 75, 3°W JANUARY 1953

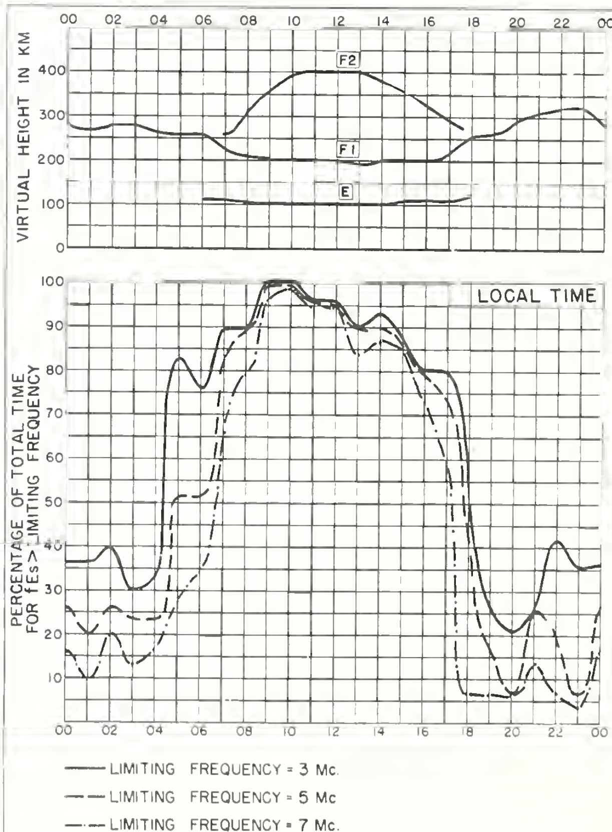


Fig. 36. HUANCAYO, PERU JANUARY 1953

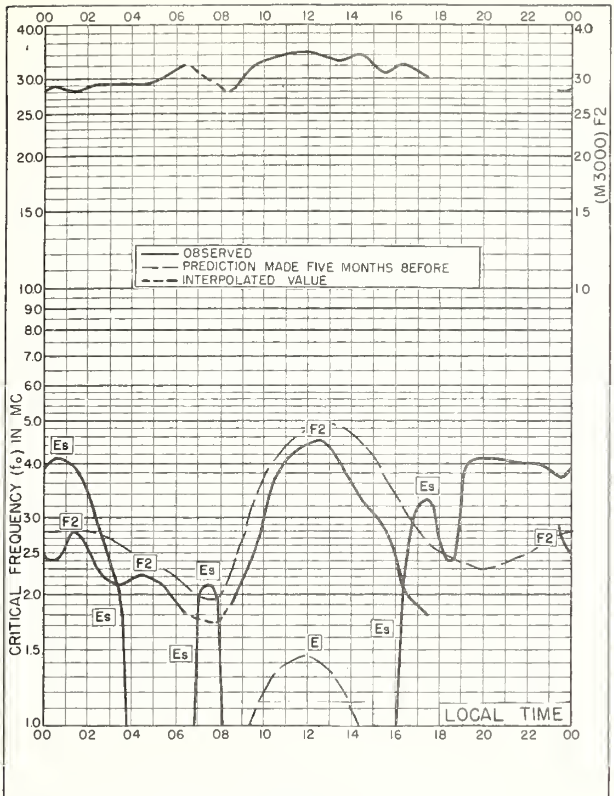


Fig. 37. KIRUNA, SWEDEN
67.8°N, 20.5°E DECEMBER 1952

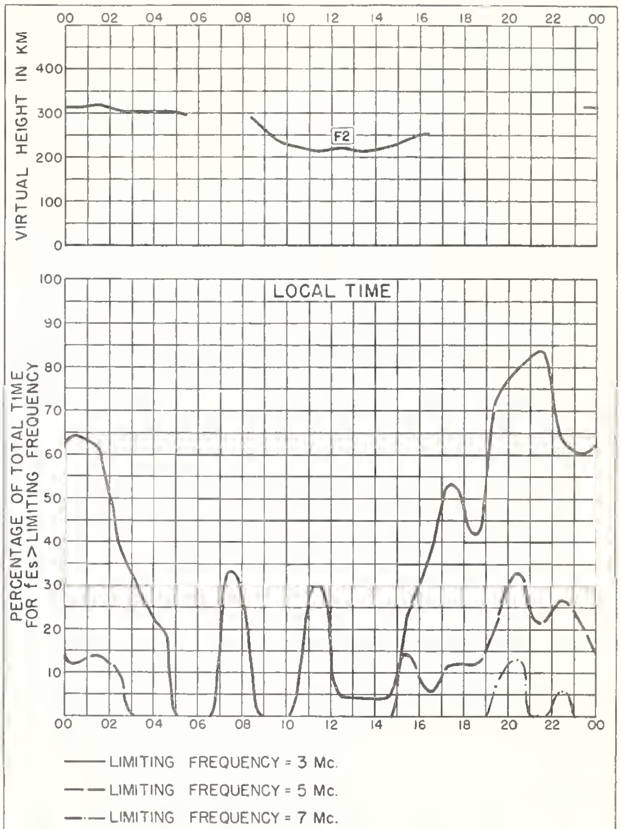


Fig. 38. KIRUNA, SWEDEN DECEMBER 1952

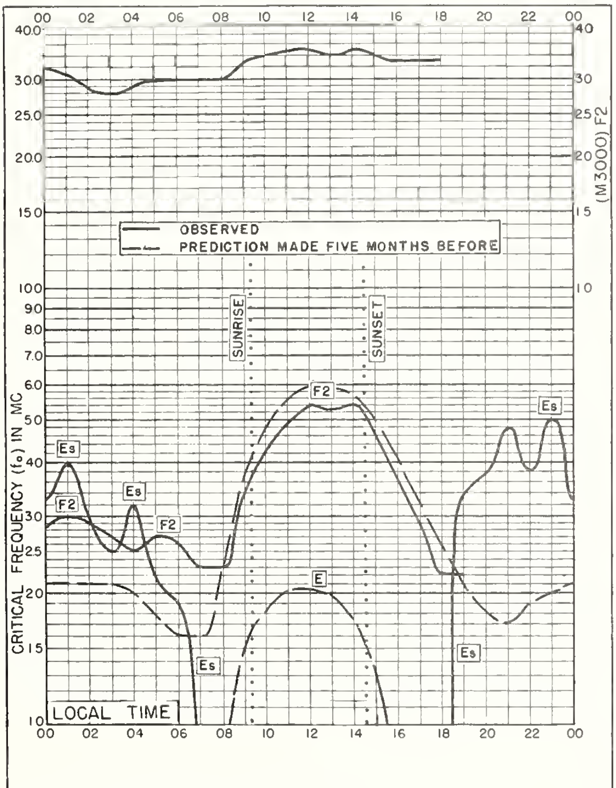


Fig. 39. ANCHORAGE, ALASKA
61.2°N, 149.9°W DECEMBER 1952

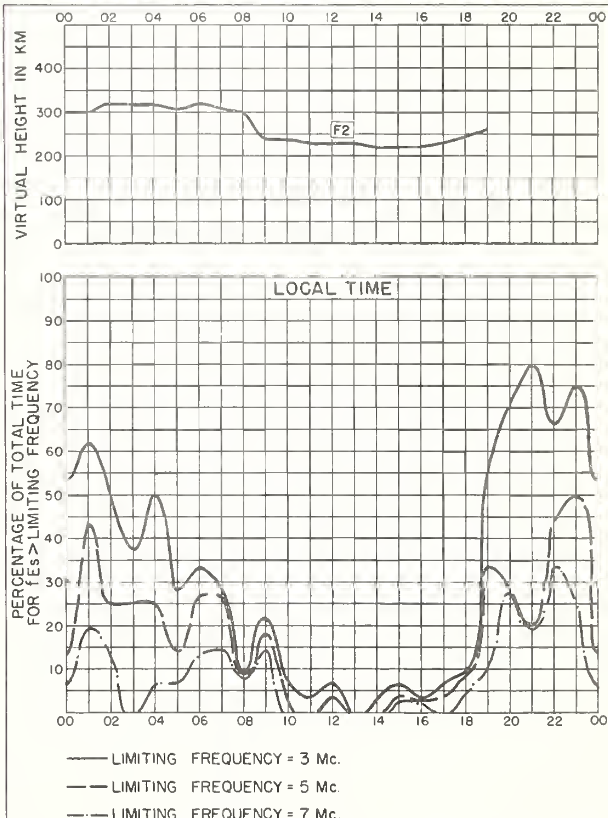


Fig. 40. ANCHORAGE, ALASKA DECEMBER 1952

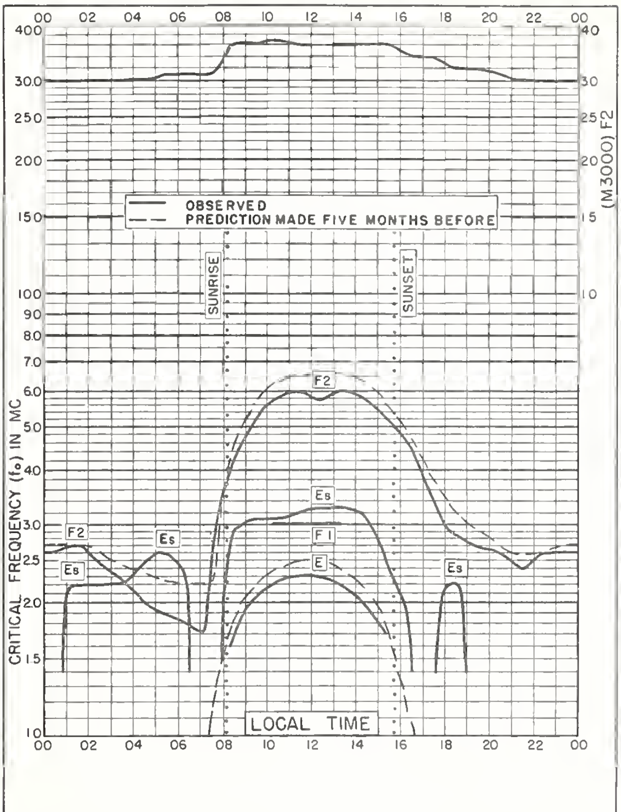


Fig. 41. De BILT, HOLLAND
52.1°N, 5.2°E DECEMBER 1952

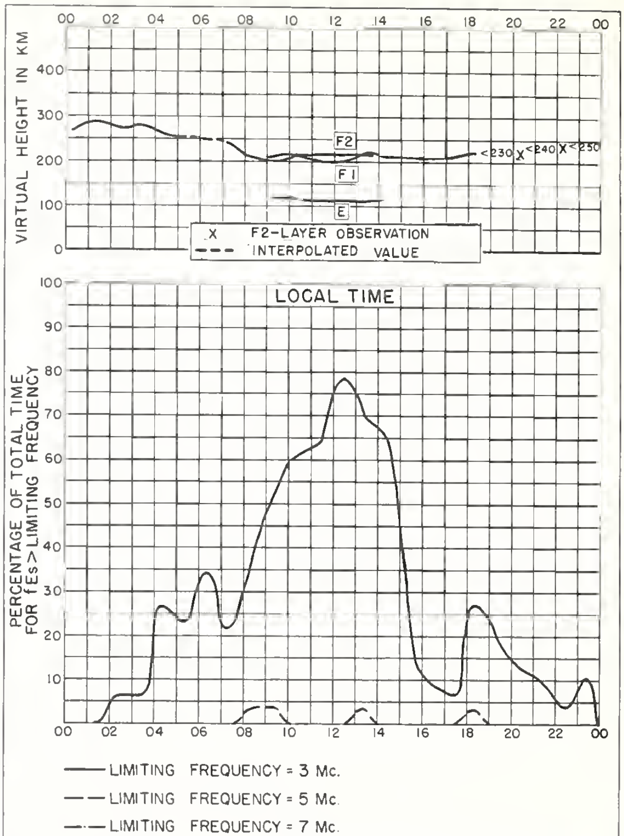


Fig. 42. De BILT, HOLLAND DECEMBER 1952

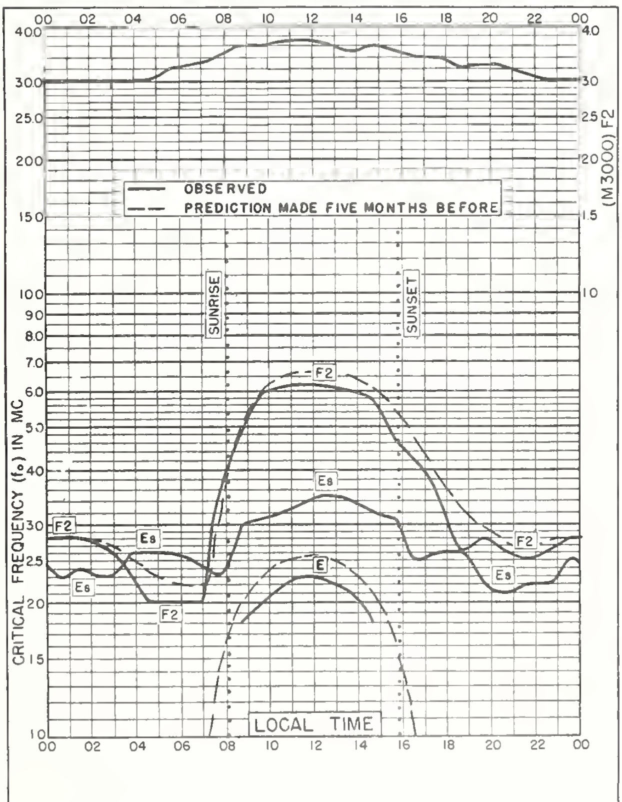
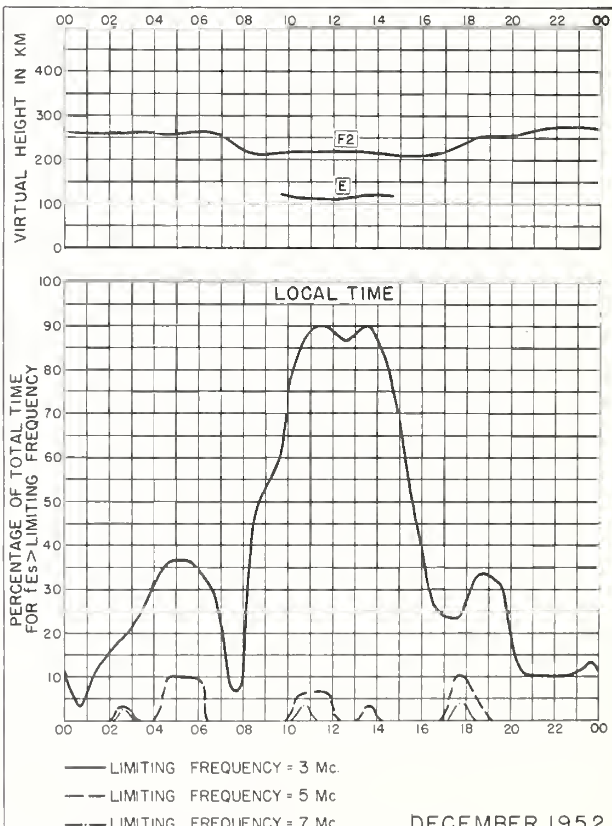


Fig. 43. LINDAU/HARZ, GERMANY
51.6°N, 10.1°E DECEMBER 1952



DECEMBER 1952
Fig. 44. LINDAU/HARZ, GERMANY

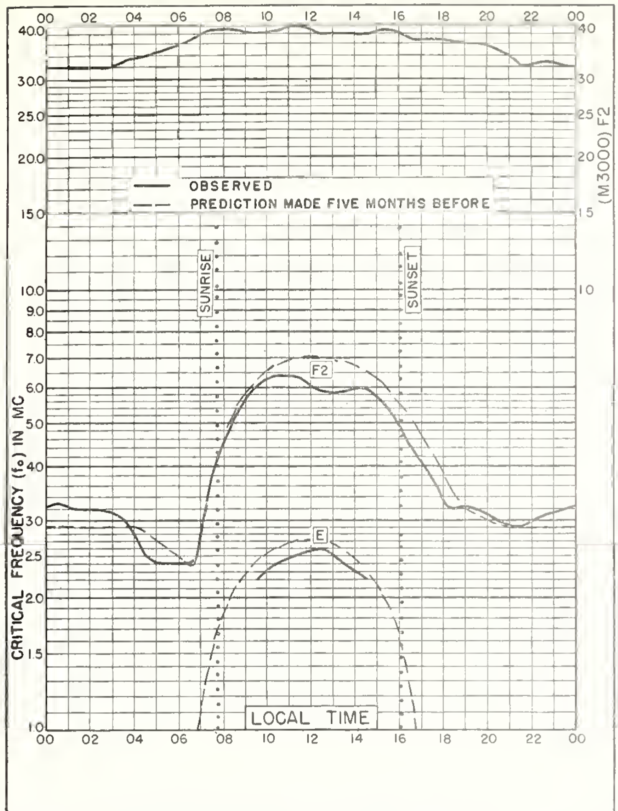
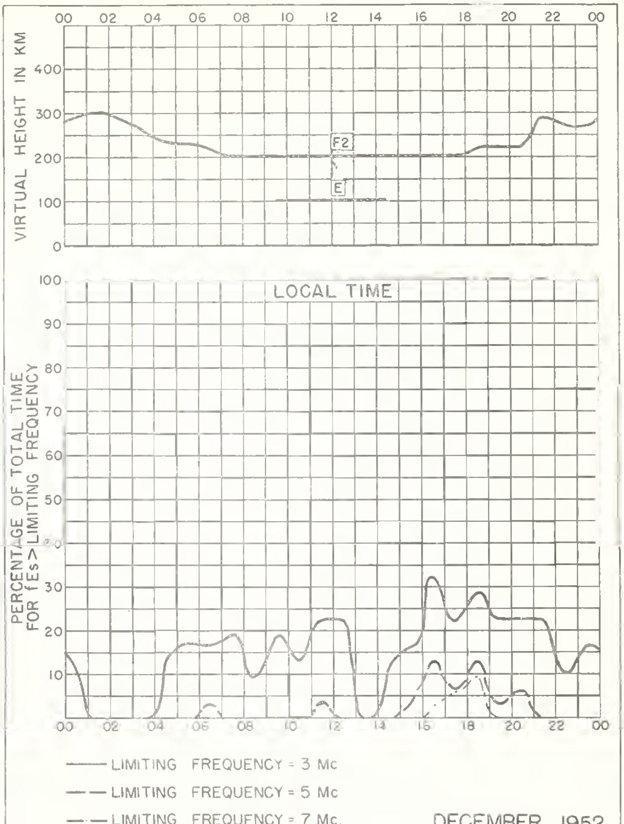


Fig. 45. SCHWARZENBURG, SWITZERLAND
46.8°N, 7.3°E DECEMBER 1952



DECEMBER 1952
Fig. 46. SCHWARZENBURG, SWITZERLAND

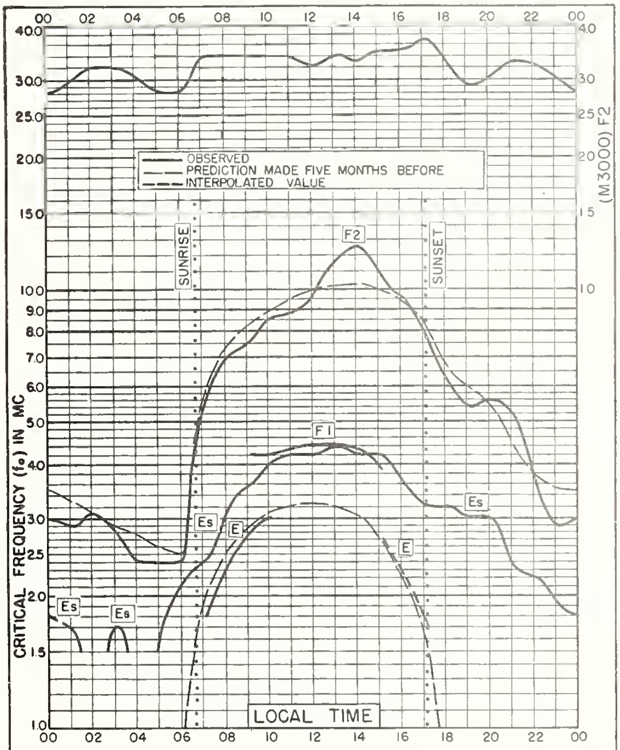


Fig. 47. FORMOSA, CHINA
25.0°N, 121.5°E DECEMBER 1952

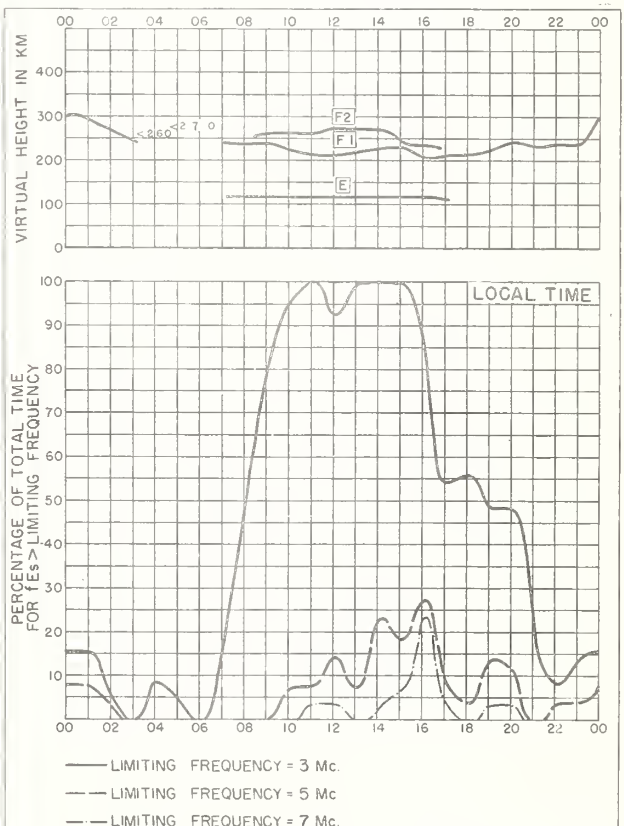


Fig. 48. FORMOSA, CHINA DECEMBER 1952

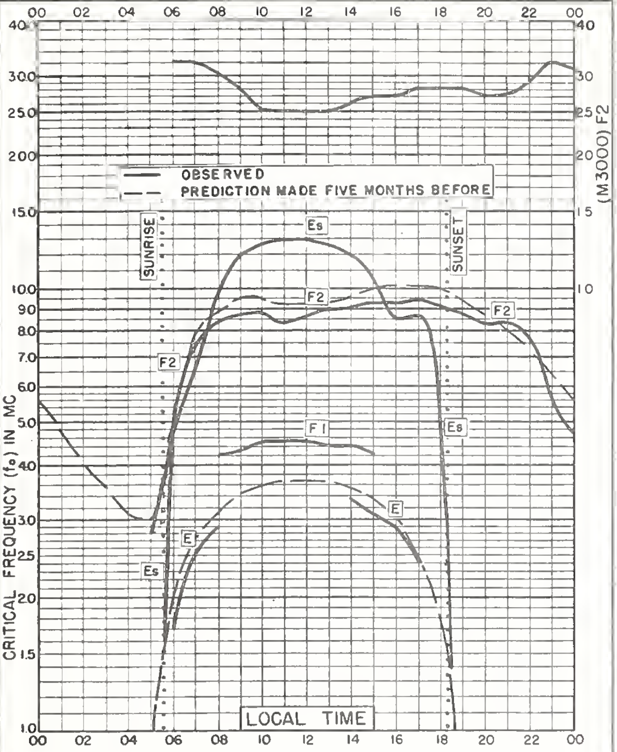


Fig. 49. HUANCAYO, PERU
12.0° S, 75.3° W DECEMBER 1952

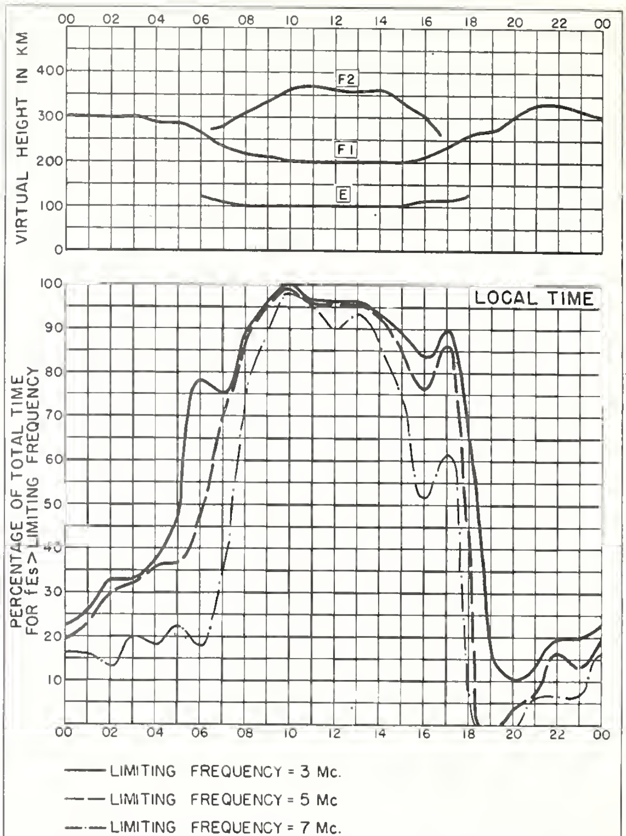


Fig. 50. HUANCAYO, PERU DECEMBER 1952

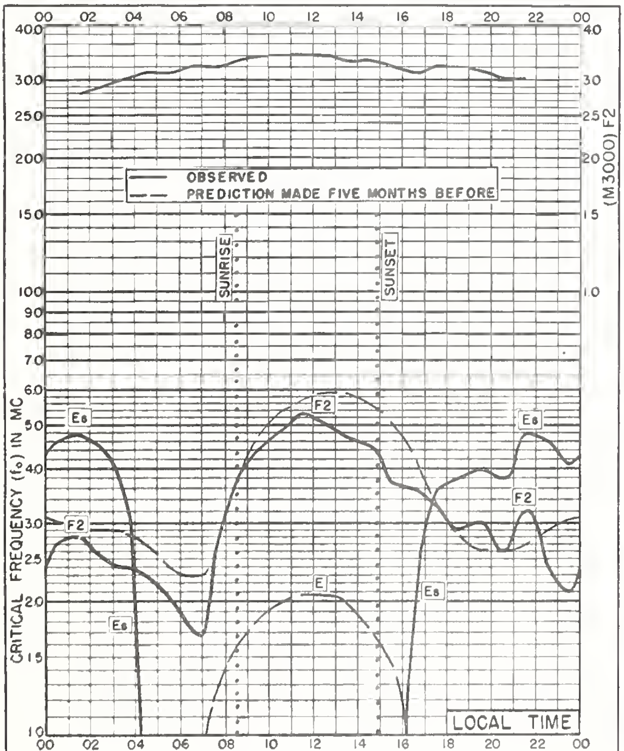


Fig 51 REYKJAVIK, ICELAND
64.1°N, 21.8°W NOVEMBER 1952

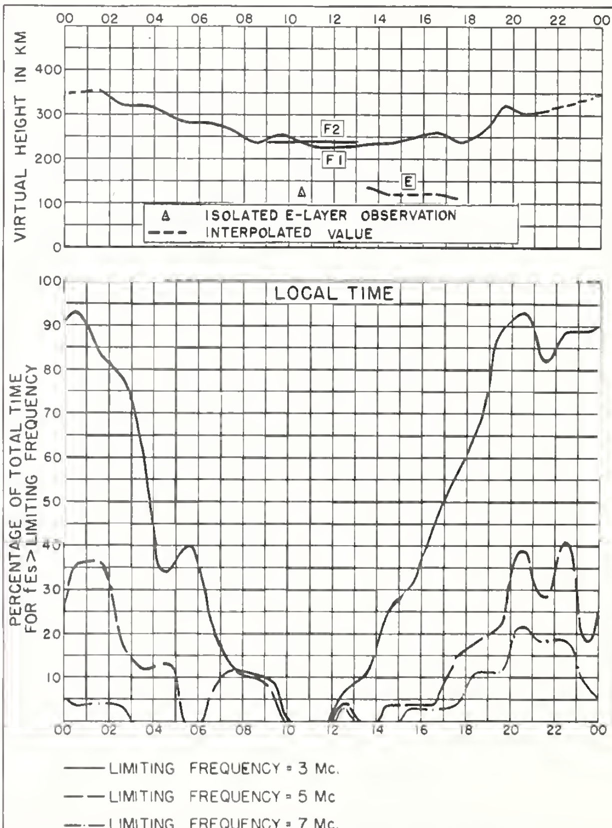


Fig. 52. REYKJAVIK, ICELAND NOVEMBER 1952

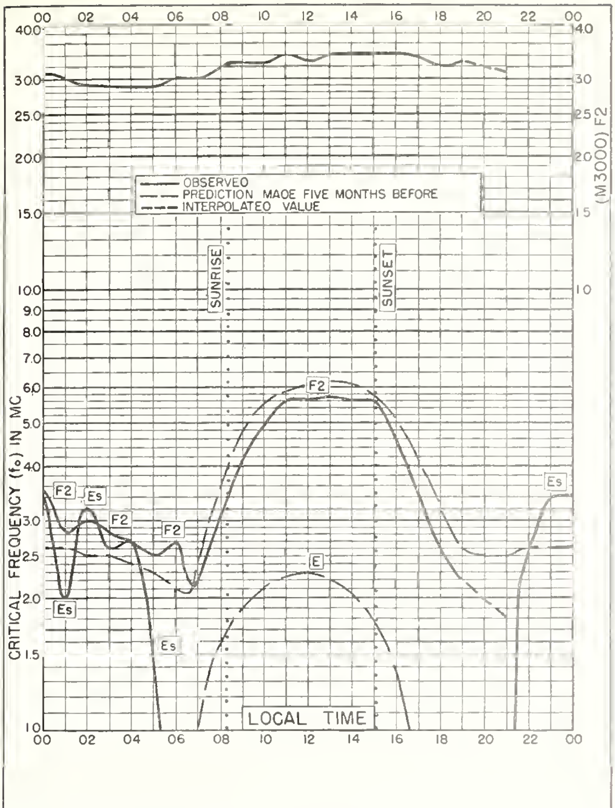


Fig. 53. ANCHORAGE, ALASKA
61.2°N, 149.9°W NOVEMBER 1952

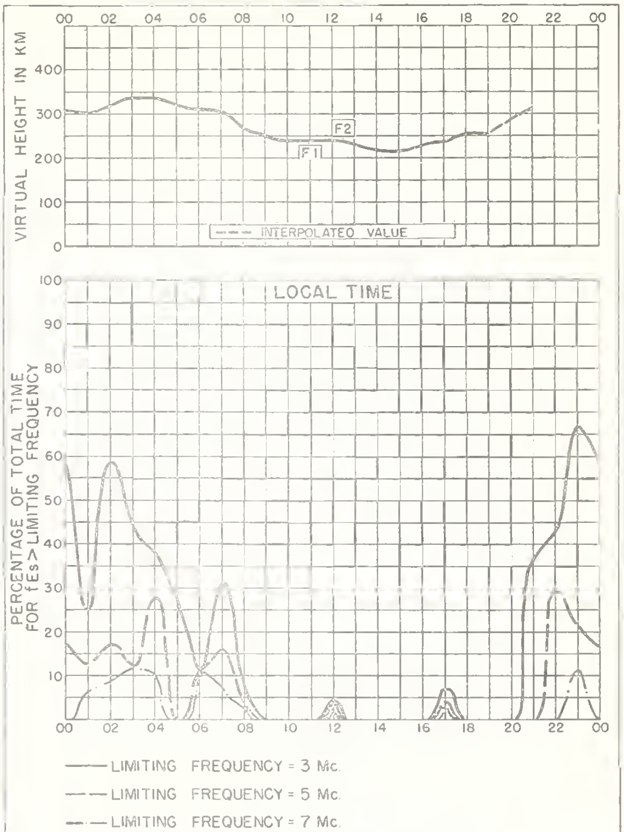


Fig. 54. ANCHORAGE, ALASKA NOVEMBER 1952

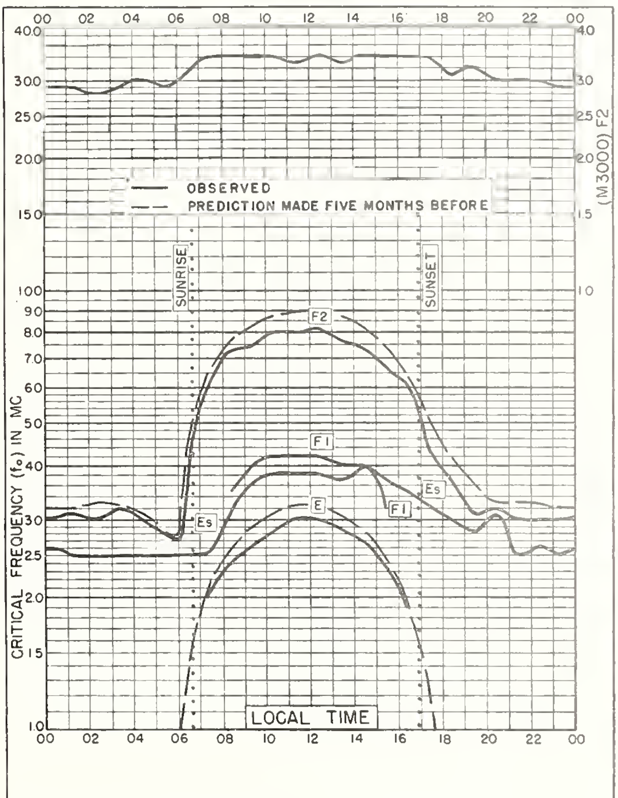


Fig. 55. TOKYO, JAPAN
35.7°N, 139.5°E NOVEMBER 1952

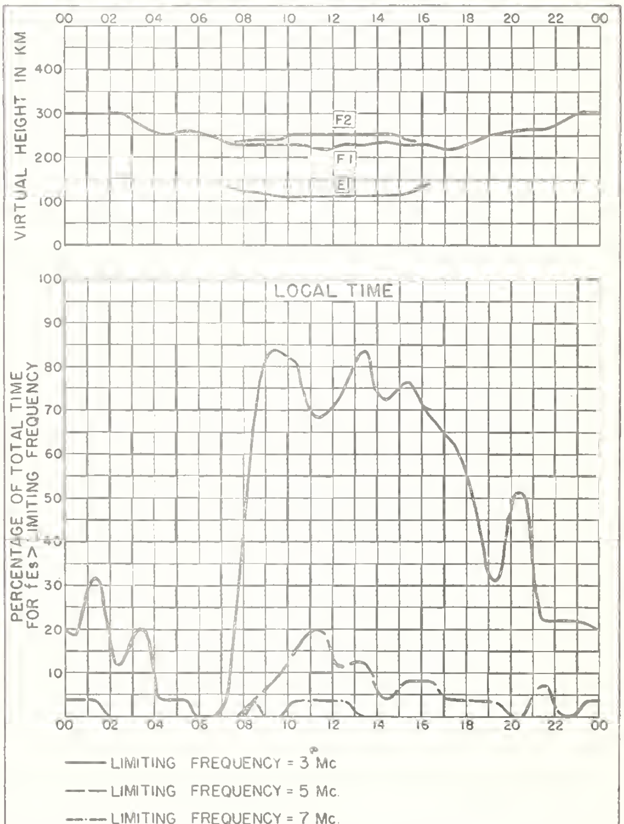


Fig. 56. TOKYO, JAPAN NOVEMBER 1952

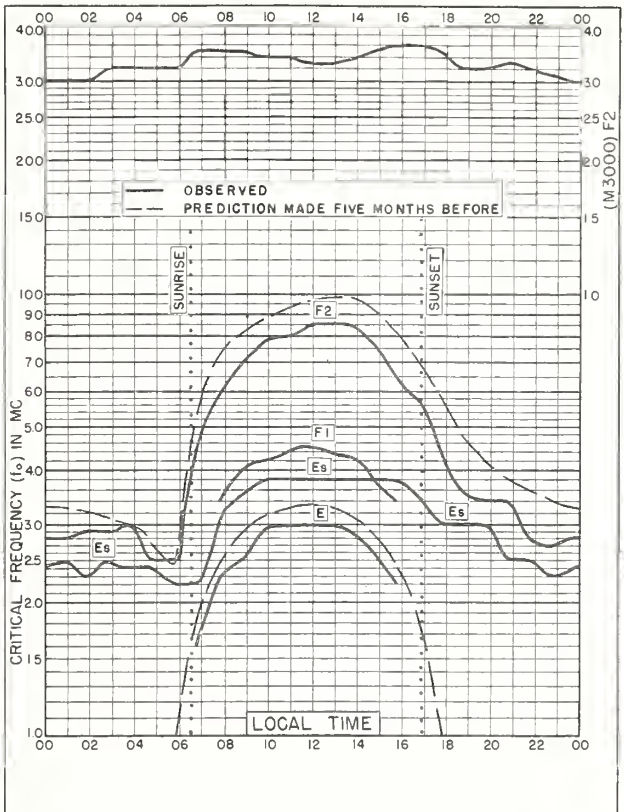


Fig. 57. YAMAGAWA, JAPAN
31.2°N, 130.6°E NOVEMBER 1952

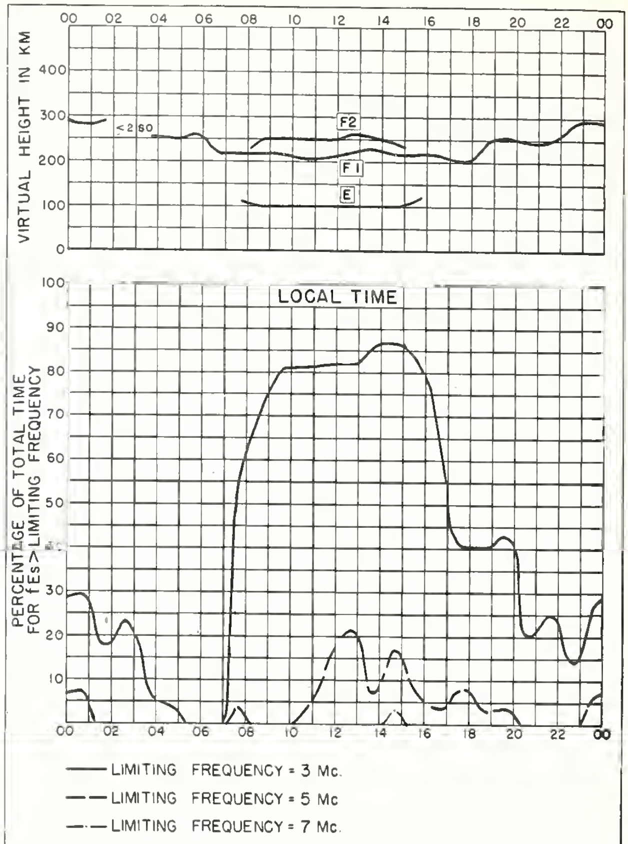


Fig. 58. YAMAGAWA, JAPAN NOVEMBER 1952

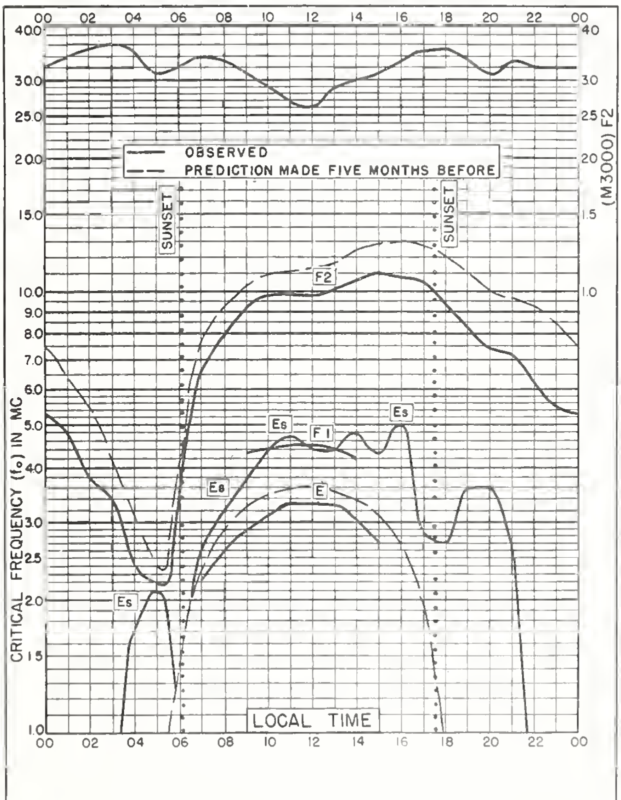


Fig. 59. BAGUIO, P.I.
16.4°N, 120.6°E NOVEMBER 1952

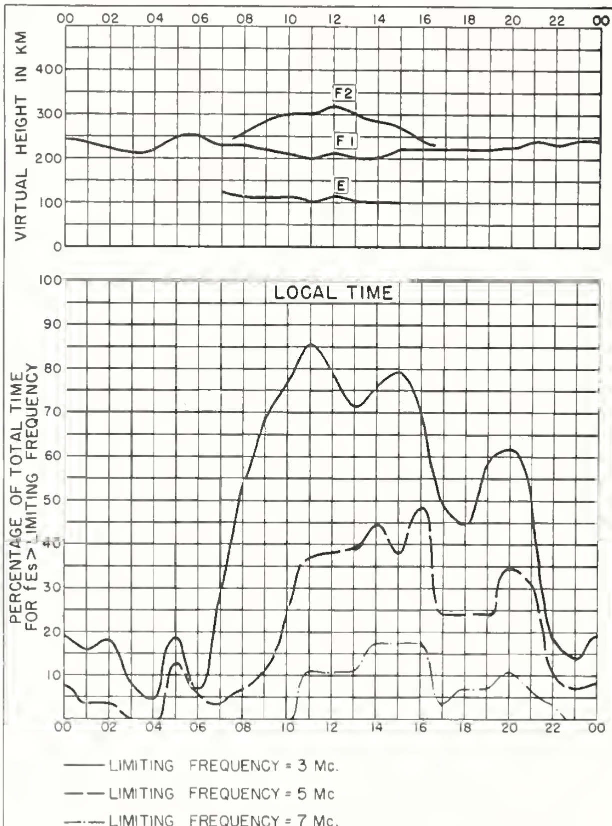


Fig 60. BAGUIO, P.I. NOVEMBER 1952

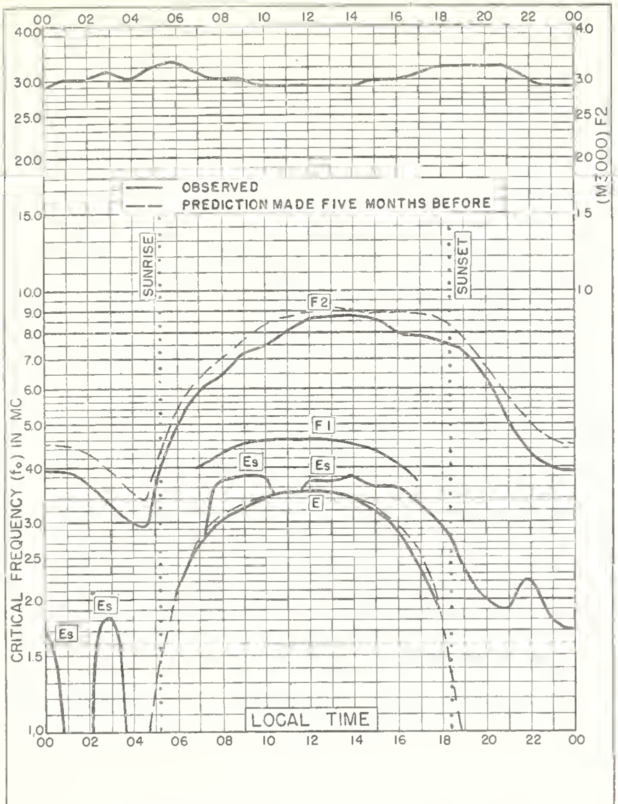


Fig. 61. JOHANNESBURG, UNION OF S. AFRICA
26.2°S, 28.1°E NOVEMBER 1952

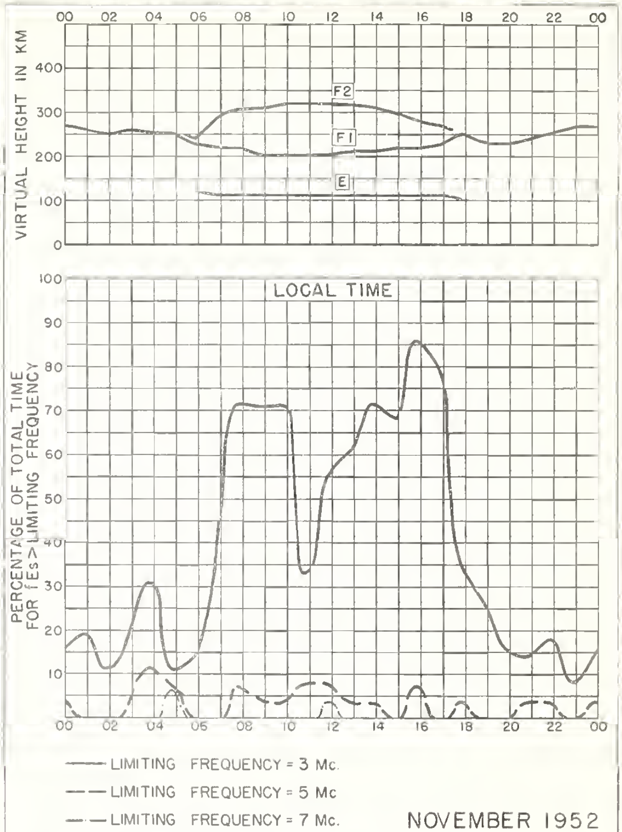


Fig. 62. JOHANNESBURG, UNION OF S. AFRICA

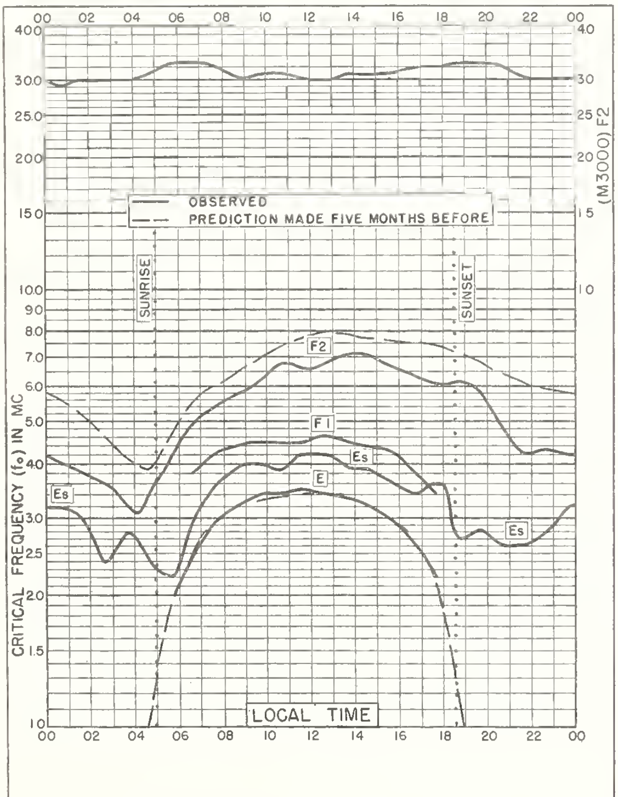


Fig. 63. WATHEROO, W. AUSTRALIA
30.3°S, 115.9°E NOVEMBER 1952

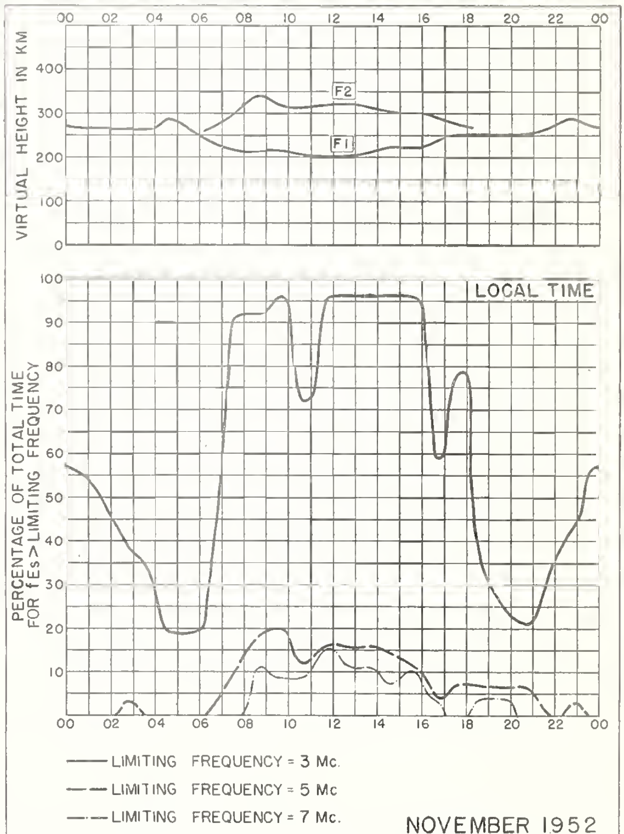


Fig. 64. WATHEROO, W. AUSTRALIA

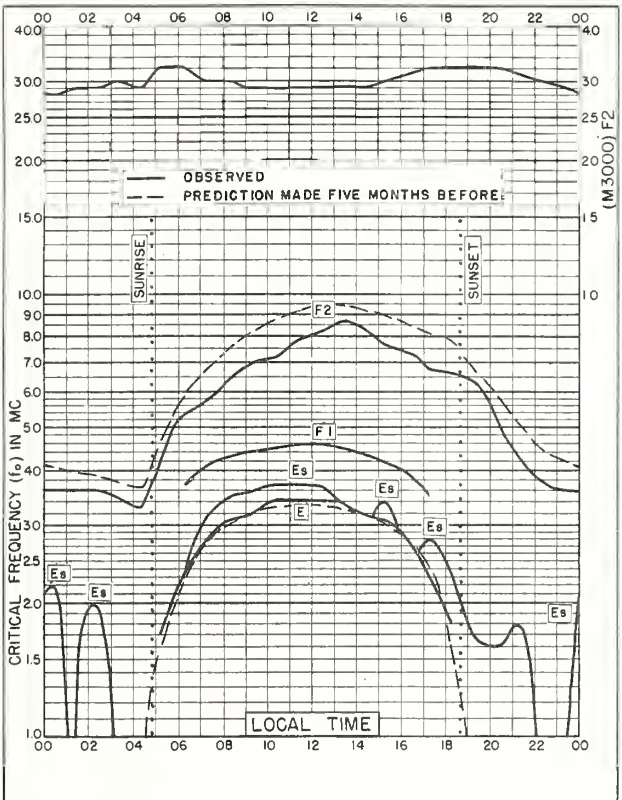
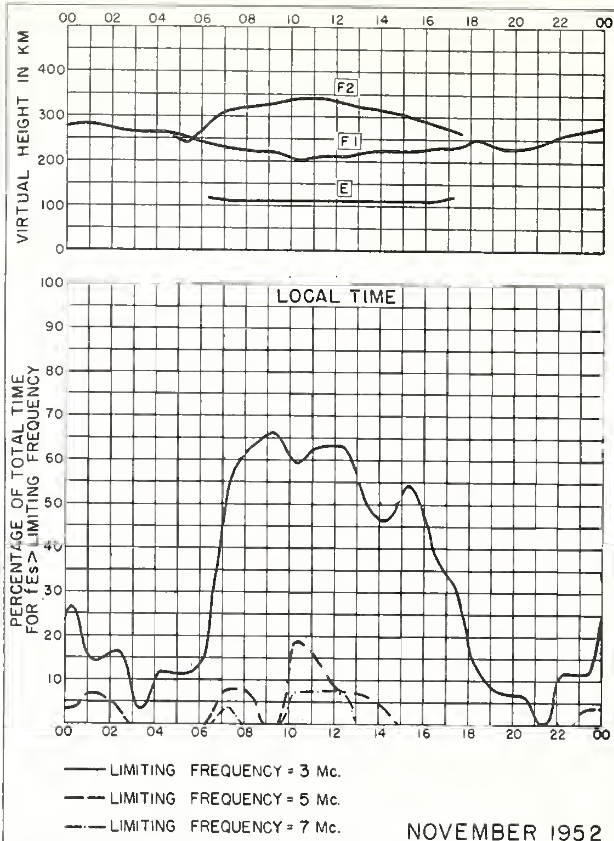


Fig. 65. CAPETOWN, UNION OF S. AFRICA
34.2°S, 18.3°E NOVEMBER 1952



NOVEMBER 1952
Fig. 66. CAPETOWN, UNION OF S. AFRICA

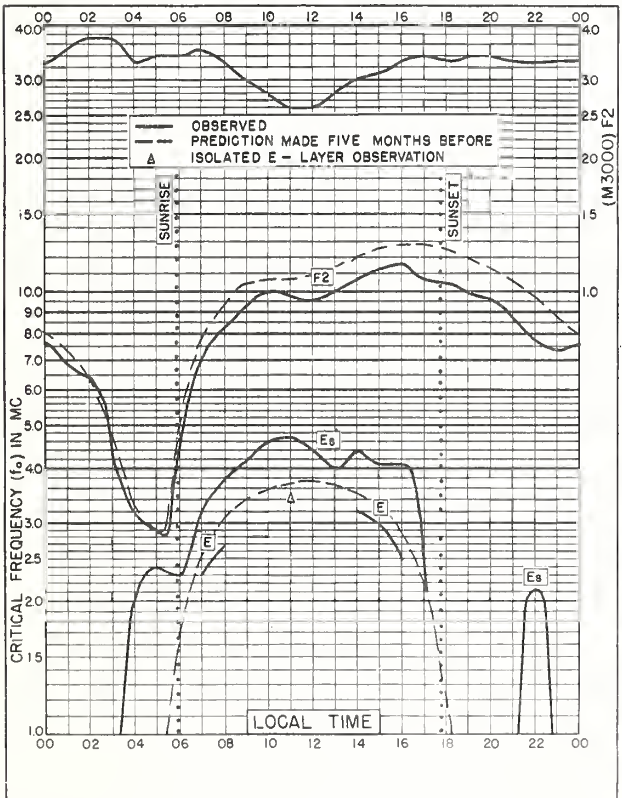


Fig. 67. BAGUIO, P.I.
16.4°N, 120.6°E OCTOBER 1952

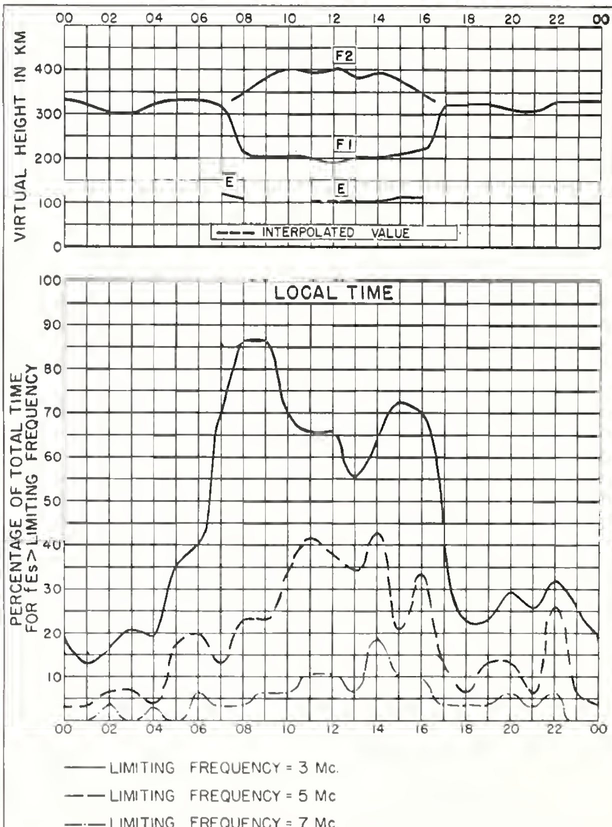


Fig. 68. BAGUIO, P.I. OCTOBER 1952

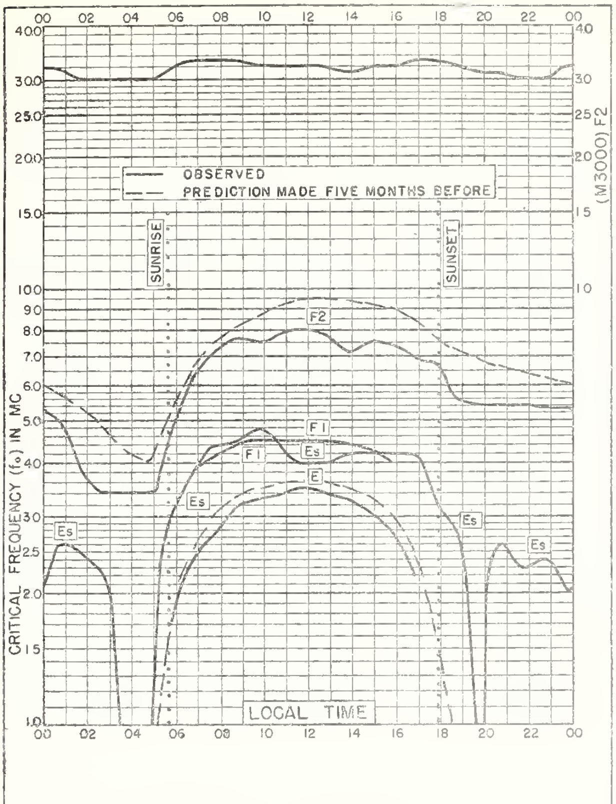


Fig. 69. TOWNSVILLE, AUSTRALIA
19.3°S, 146.8°E OCTOBER 1952

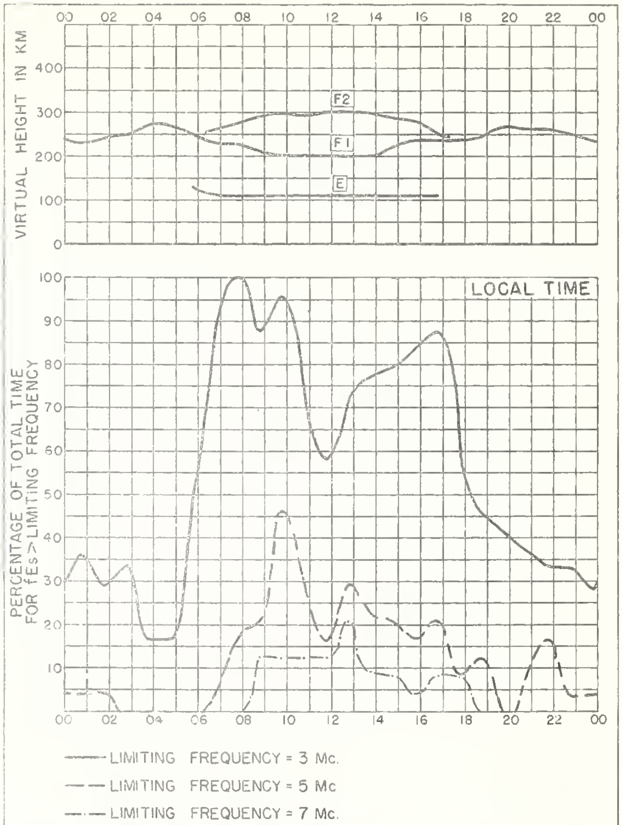


Fig. 70. TOWNSVILLE, AUSTRALIA OCTOBER 1952

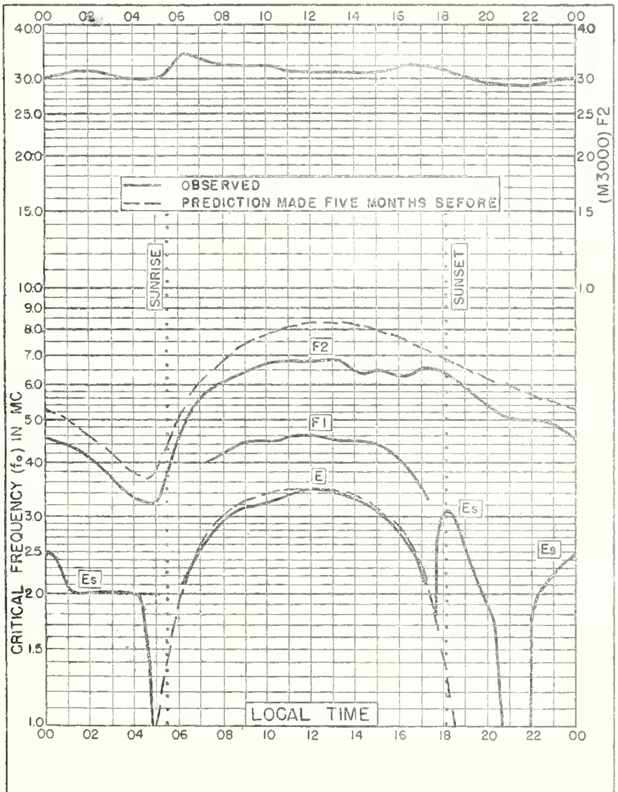


Fig. 71. BRISBANE, AUSTRALIA
27.5°S, 153.0°E OCTOBER 1952

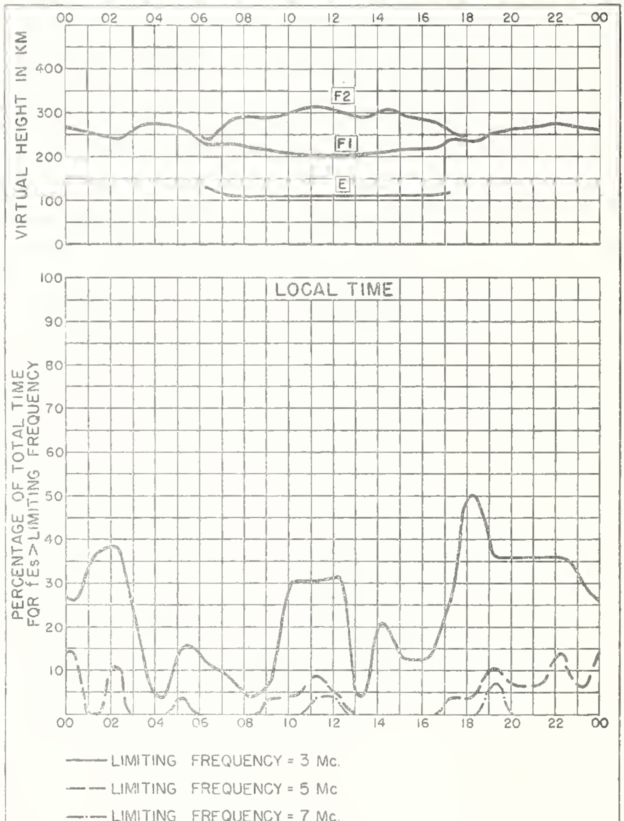


Fig. 72. BRISBANE, AUSTRALIA OCTOBER 1952

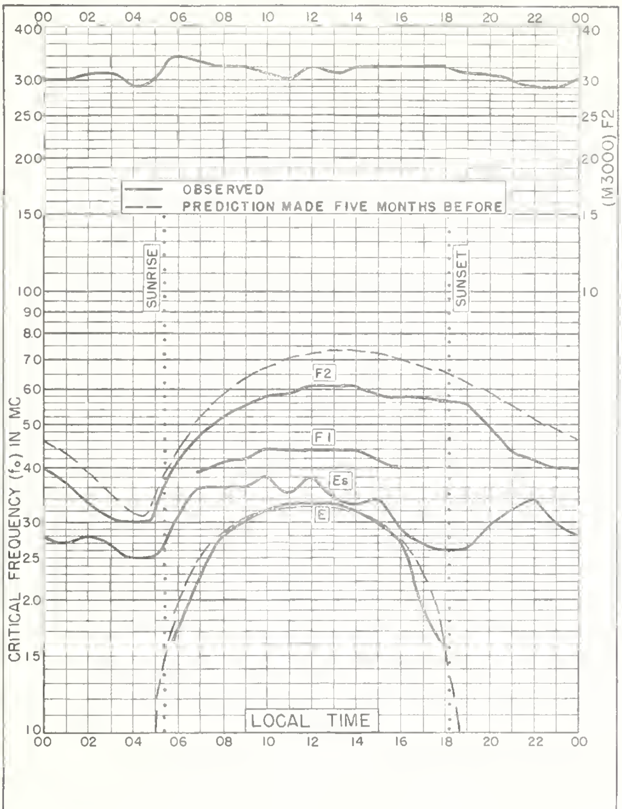


Fig. 73. CANBERRA, AUSTRALIA
35.3°S, 149.0°E OCTOBER 1952

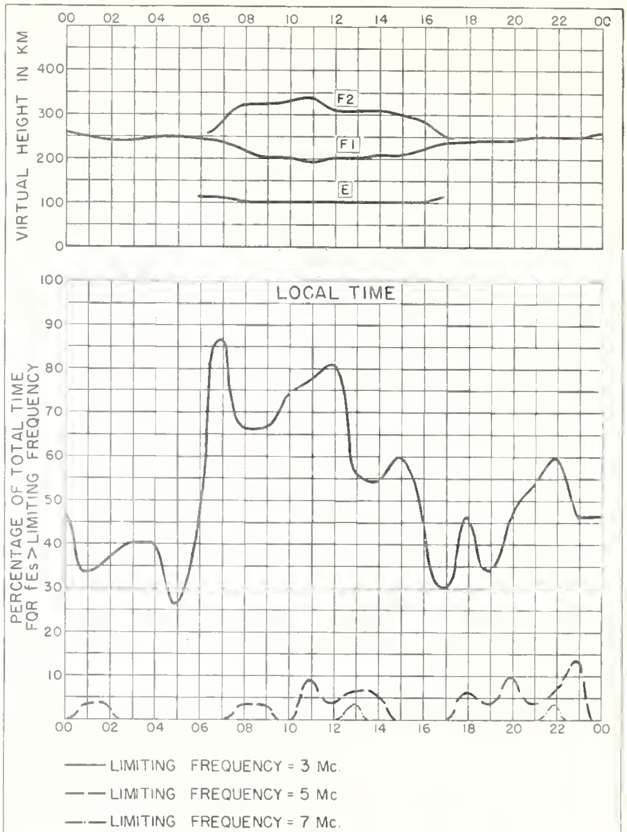


Fig. 74. CANBERRA, AUSTRALIA OCTOBER 1952

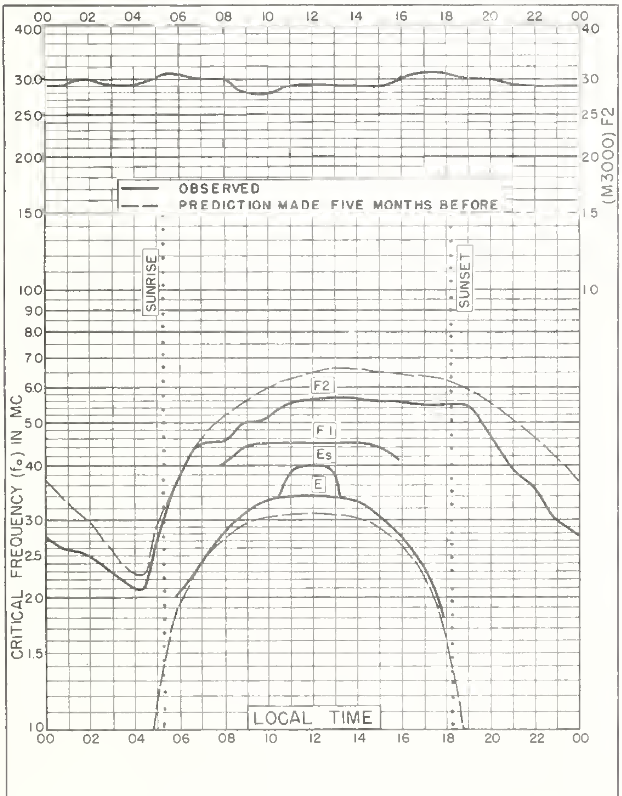


Fig. 75. HOBART, TASMANIA
42.9°S, 147.3°E OCTOBER 1952

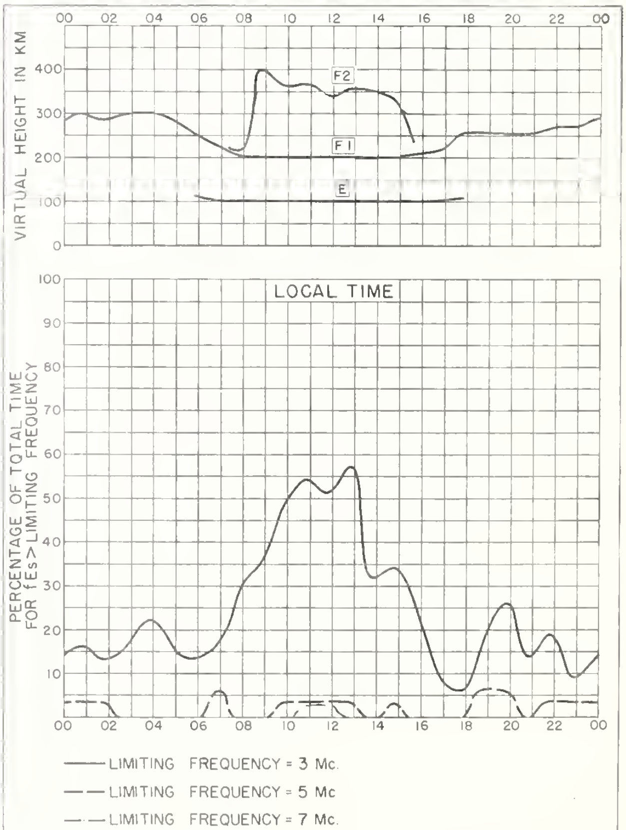


Fig. 76. HOBART, TASMANIA OCTOBER 1952

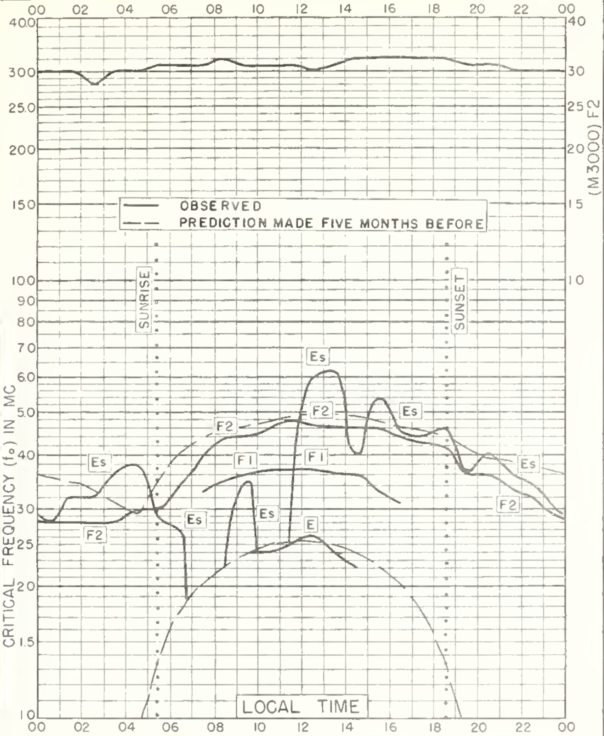


Fig. 77. GODHAVN, GREENLAND
69.2°N, 53.5°W SEPTEMBER 1952

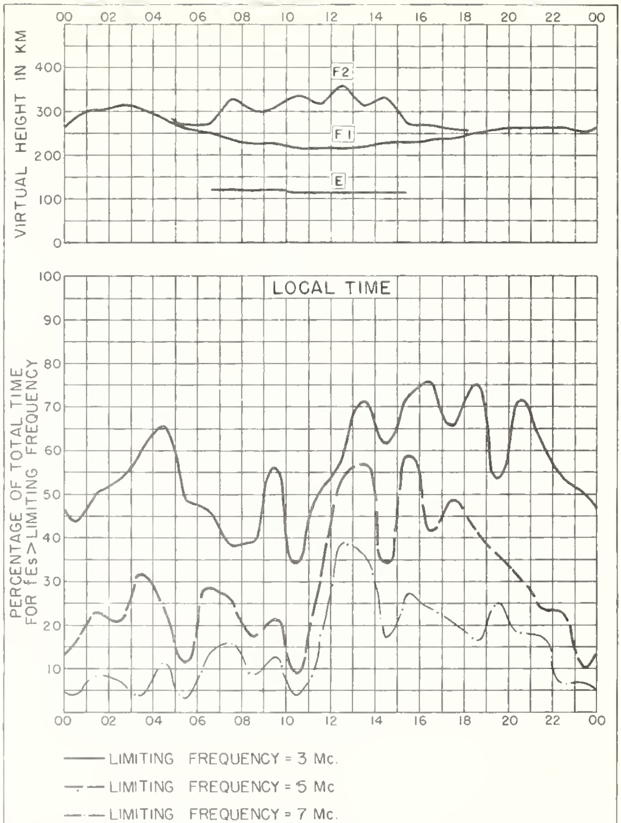


Fig. 78 GODHAVN, GREENLAND SEPTEMBER 1952

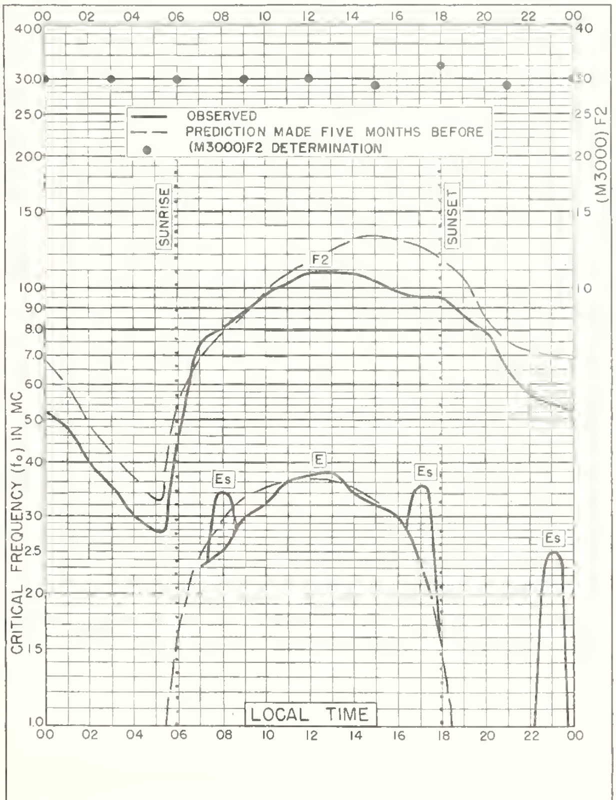


Fig. 79. CALCUTTA, INDIA
22.6°N, 88.4°E SEPTEMBER 1952

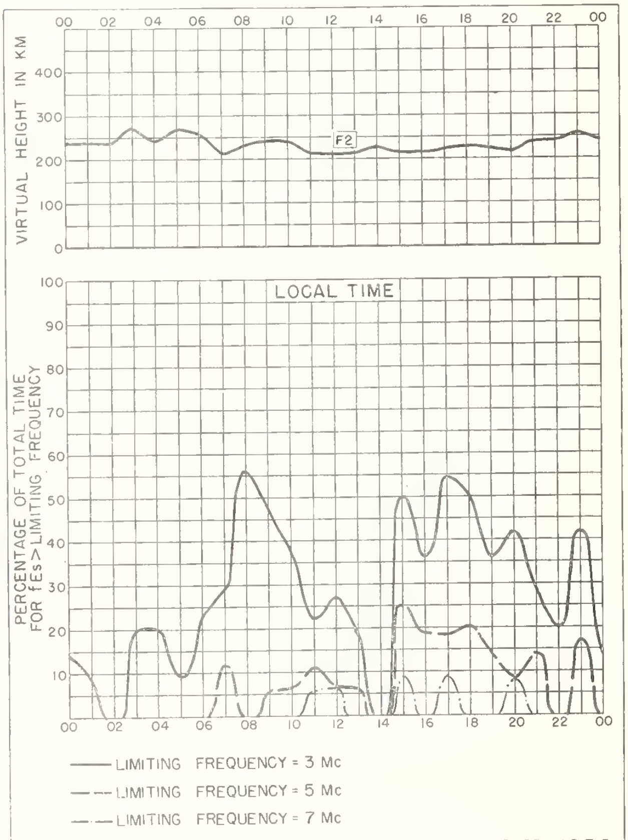


Fig. 80. CALCUTTA, INDIA SEPTEMBER 1952

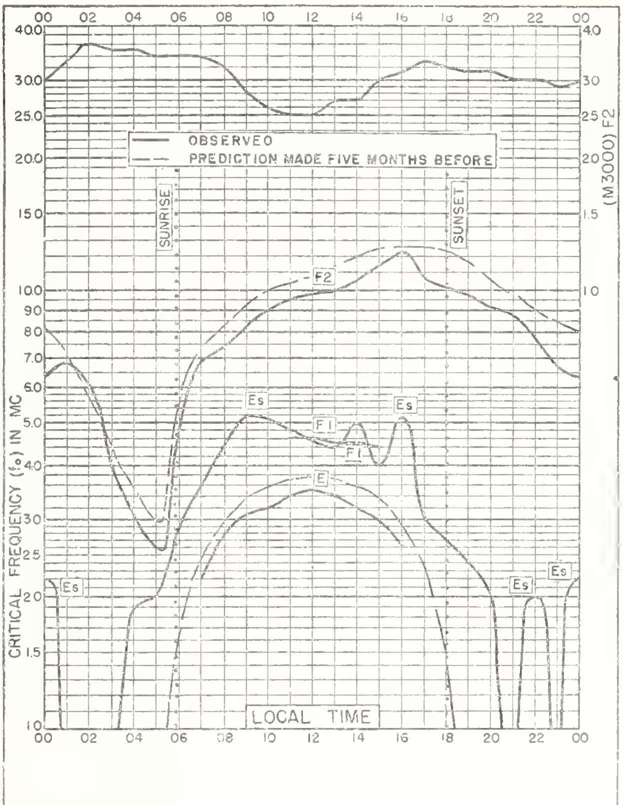


Fig. 81. BAGUIO, P.I.
16.4° N, 120.6°E SEPTEMBER 1952

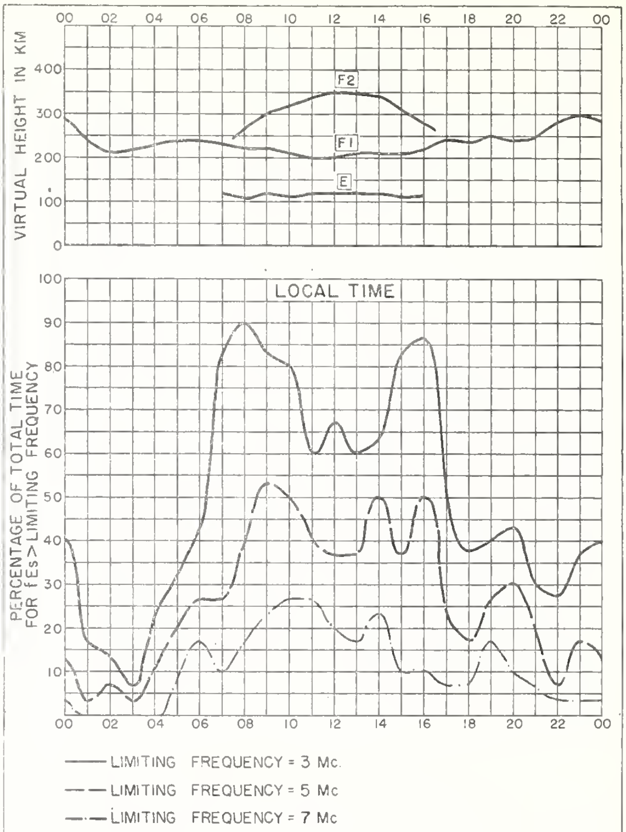


Fig. 82. BAGUIO, P.I. SEPTEMBER 1952

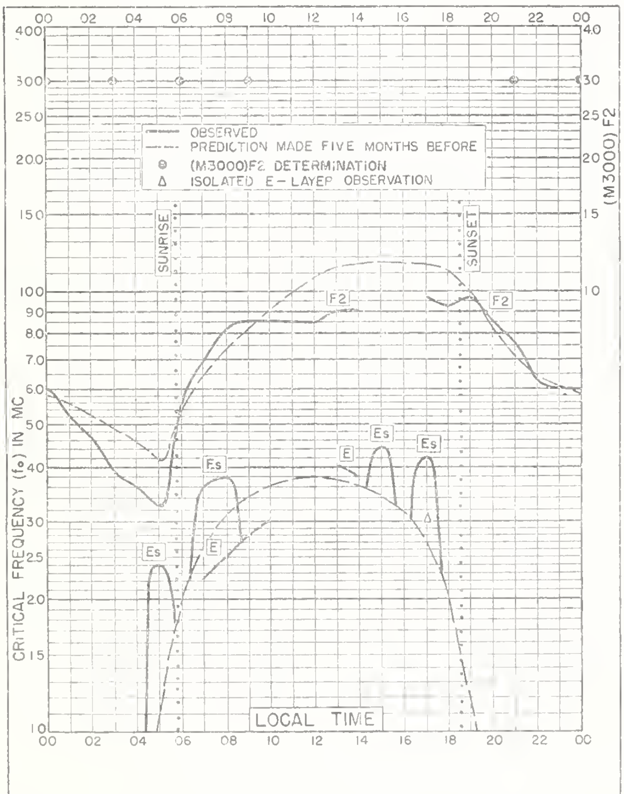


Fig. 83. CALCUTTA, INDIA
22.6°N, 88.4°E AUGUST 1952

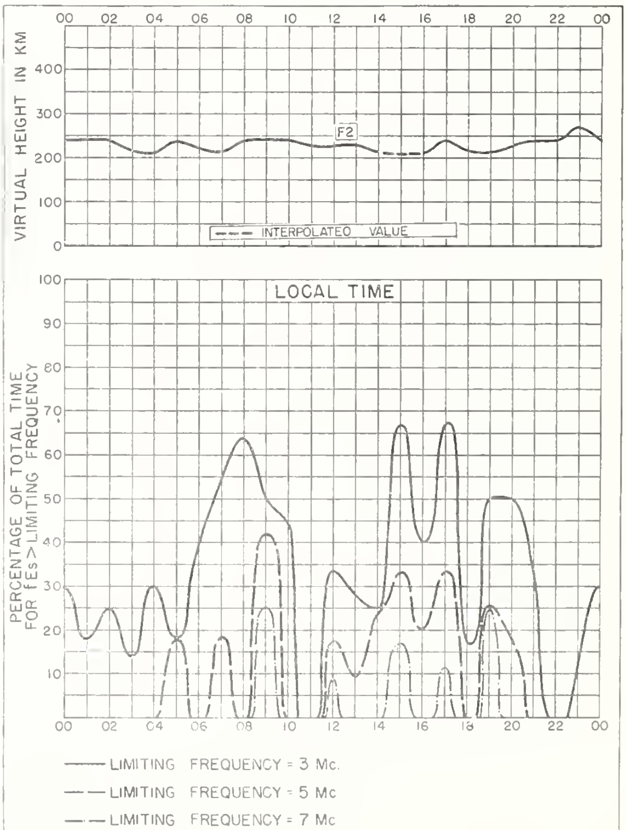


Fig. 84. CALCUTTA, INDIA AUGUST 1952

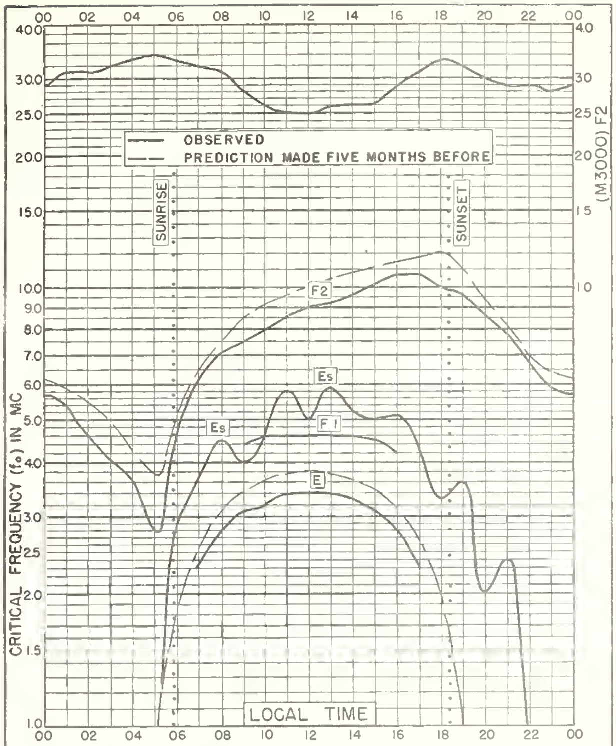


Fig. 85. BAGUIO, P.I.
16.4°N, 120.6°E AUGUST 1952

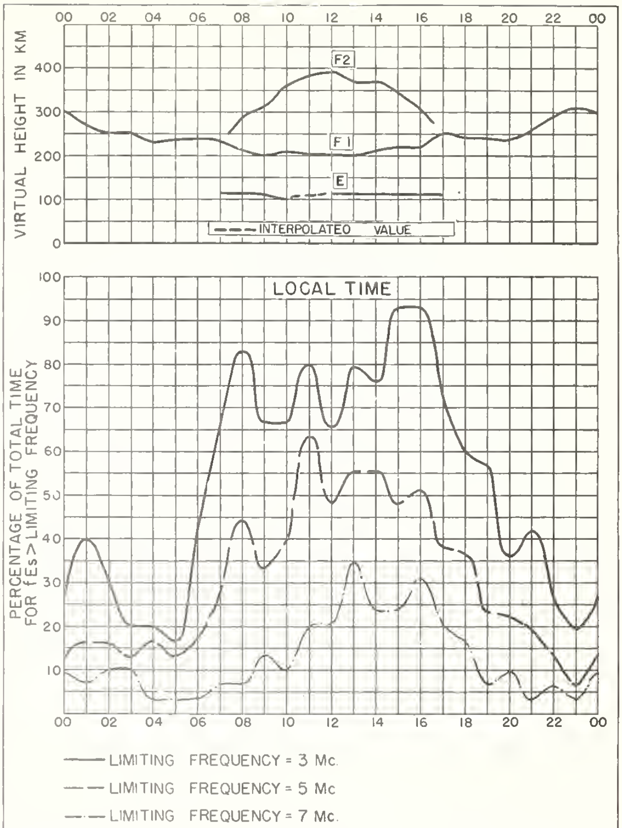


Fig. 86. BAGUIO, P.I. AUGUST 1952

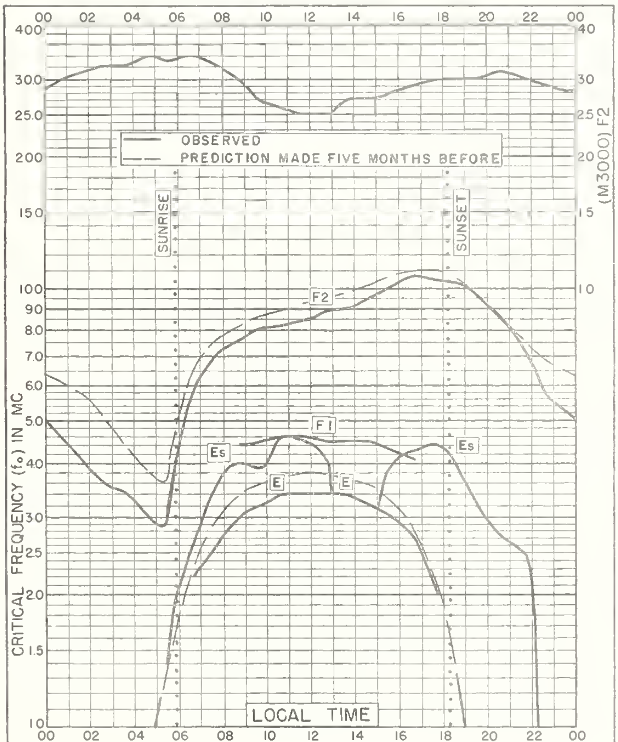


Fig. 87. GUAM I.
13.6°N, 144.9°E AUGUST 1952

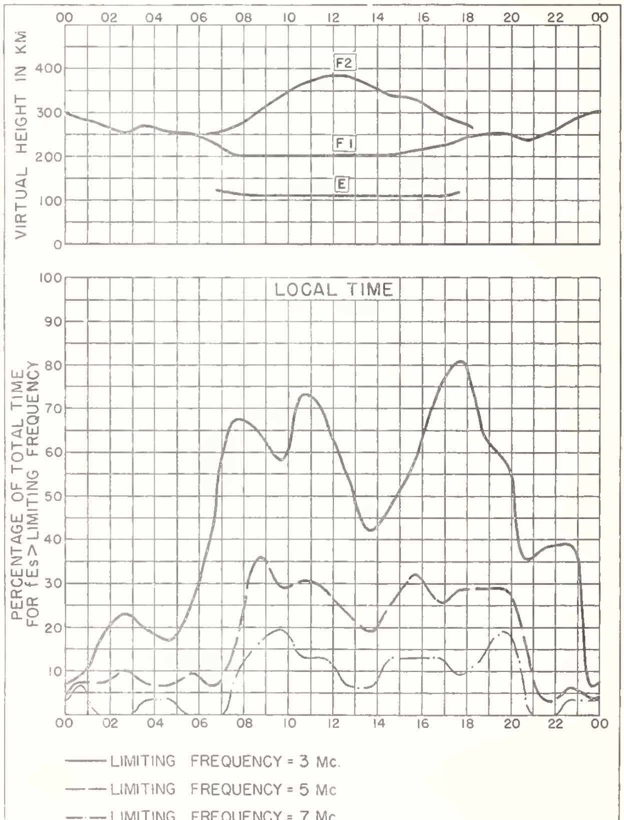


Fig. 88. GUAM I AUGUST 1952

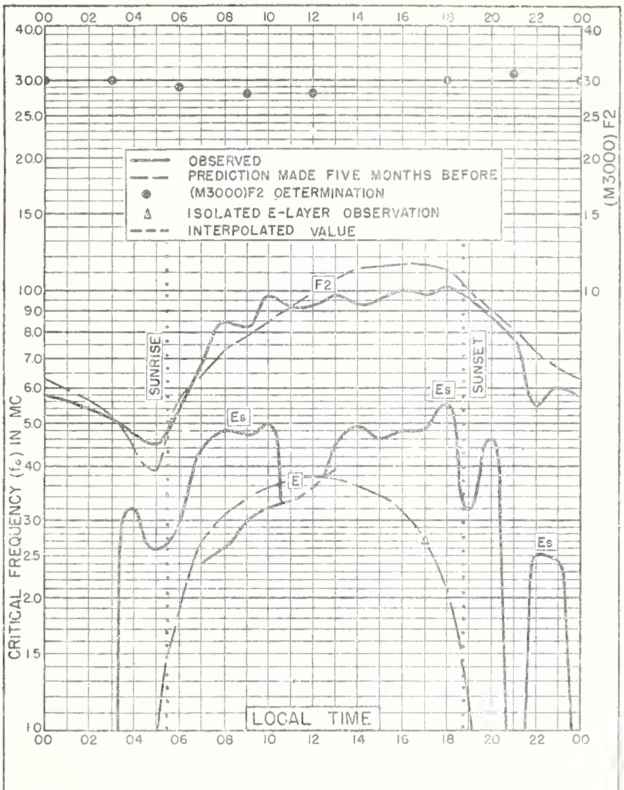


Fig. 89. CALCUTTA, INDIA
22.6°N, 88.4°E JULY 1952

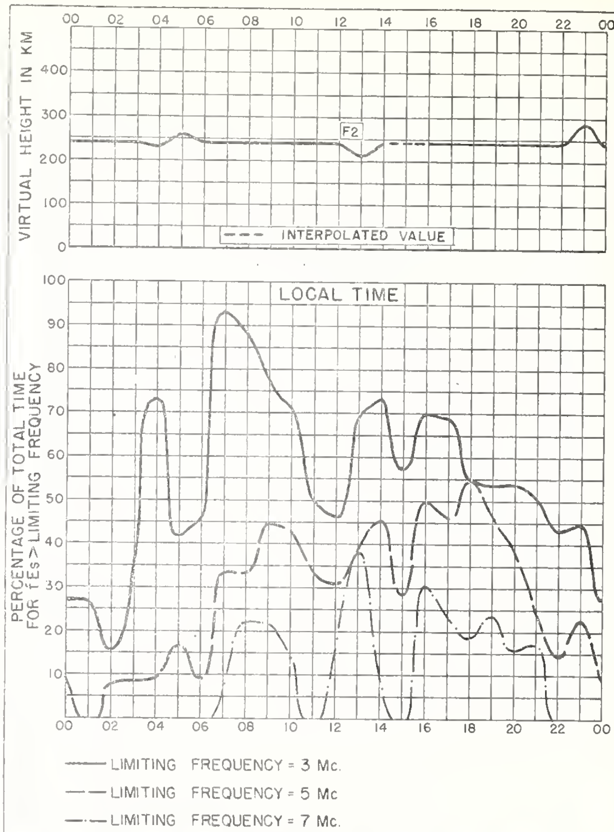


Fig. 90. CALCUTTA, INDIA JULY 1952

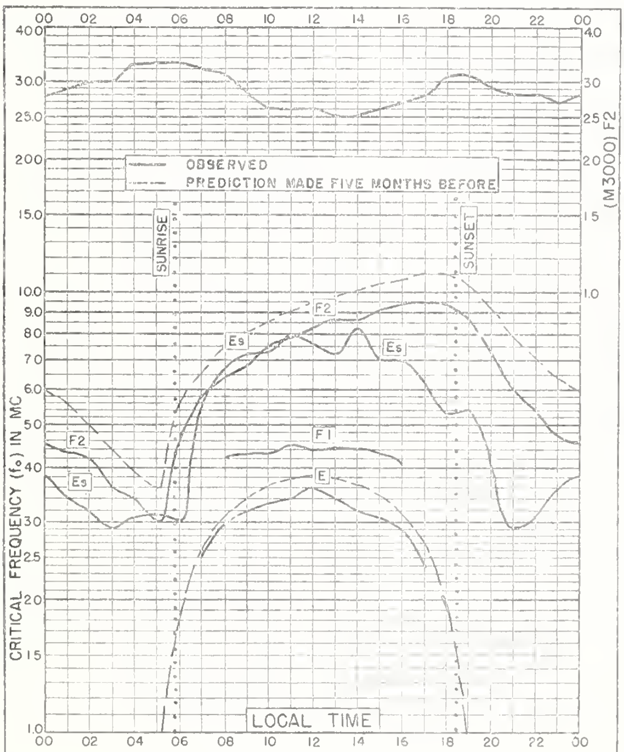


Fig. 91. BAGUIO, P. I.
16.4°N, 120.6°E JULY 1952

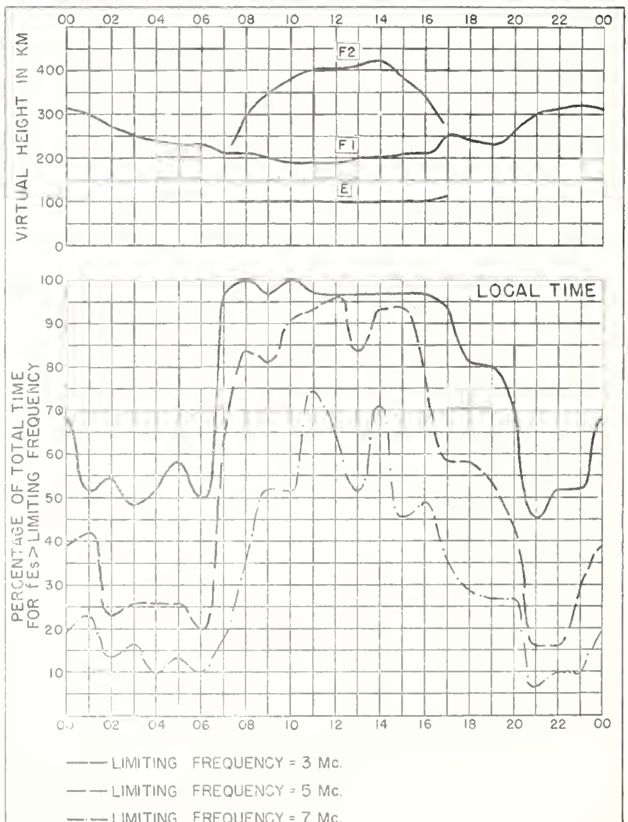


Fig. 92. BAGUIO, P. I. JULY 1952

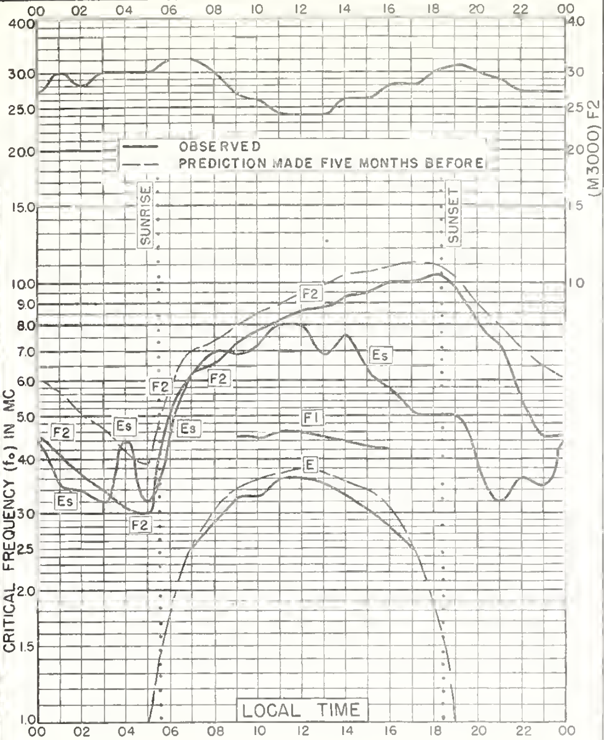


Fig. 93. BAGUIO, P. I.
16.4°N, 120.6°E
JUNE 1952

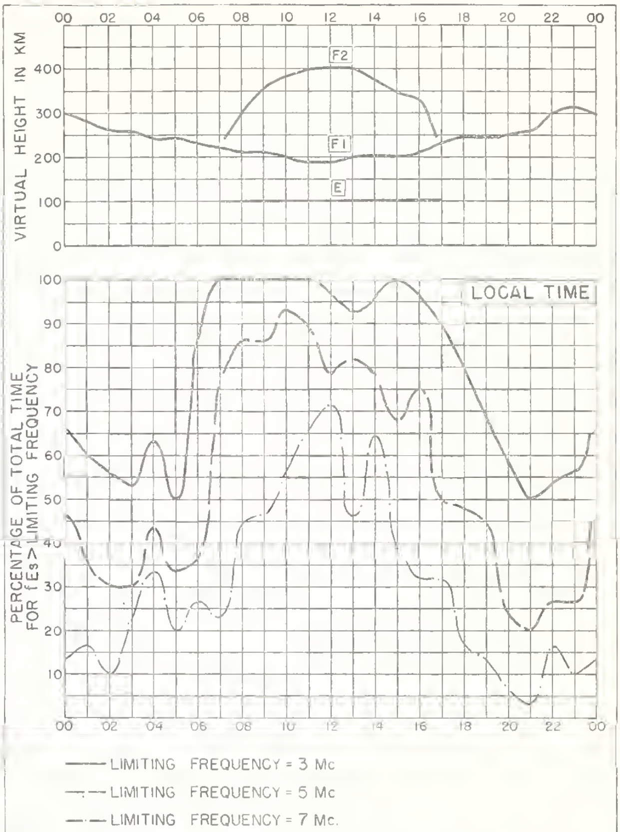


Fig. 94. BAGUIO, P. I.
JUNE 1952

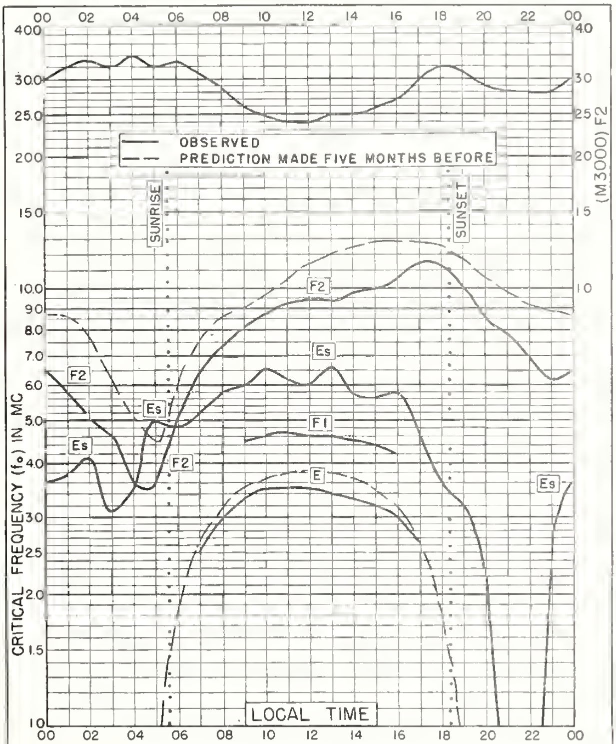


Fig. 95. BAGUIO, P.I.
16.4°N, 120.6°E
MAY 1952

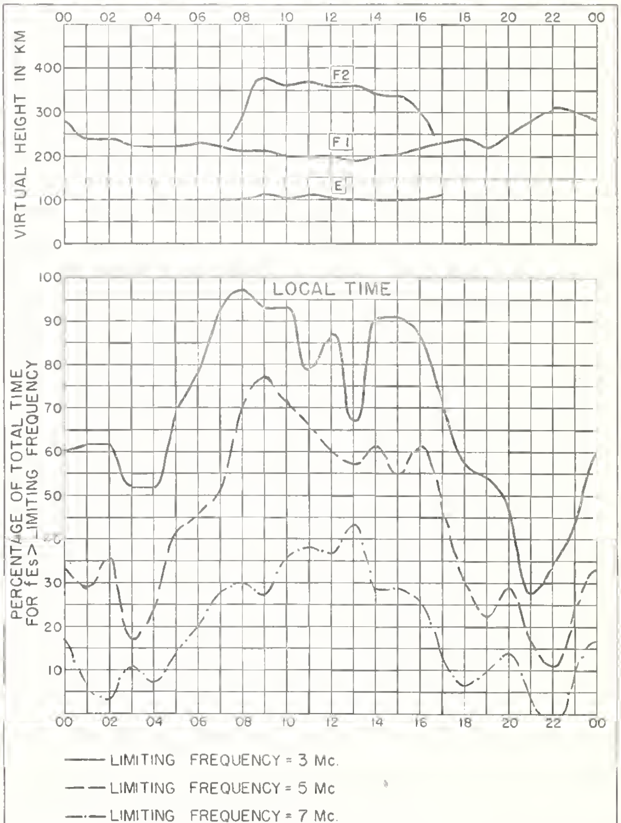


Fig 96. BAGUIO, P.I.
MAY 1952

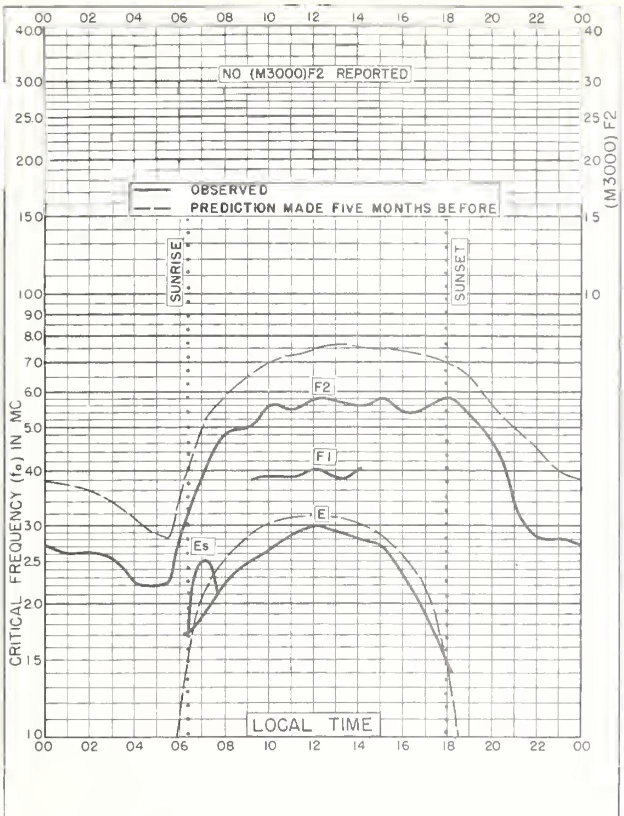


Fig. 97. DOMONT, FRANCE
49.0°N, 2.3°E MARCH 1952

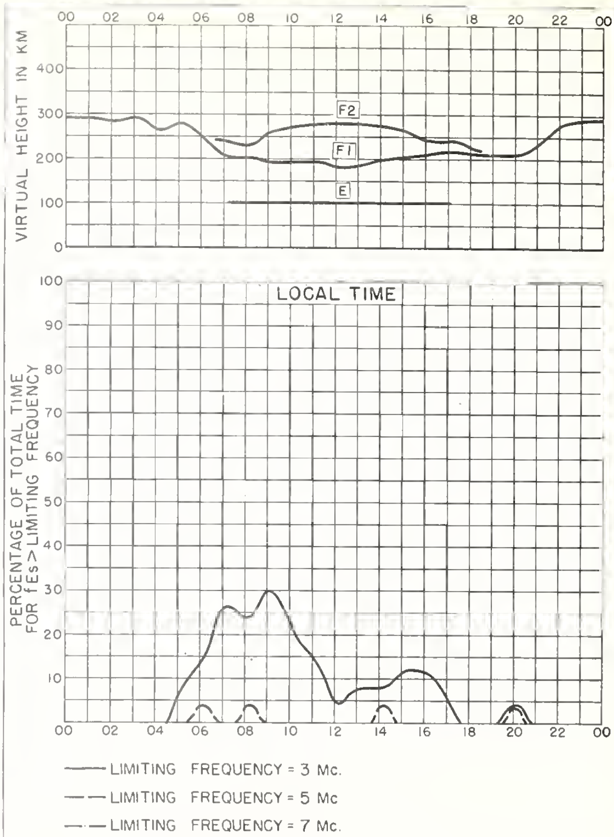


Fig. 98. DOMONT, FRANCE MARCH 1952

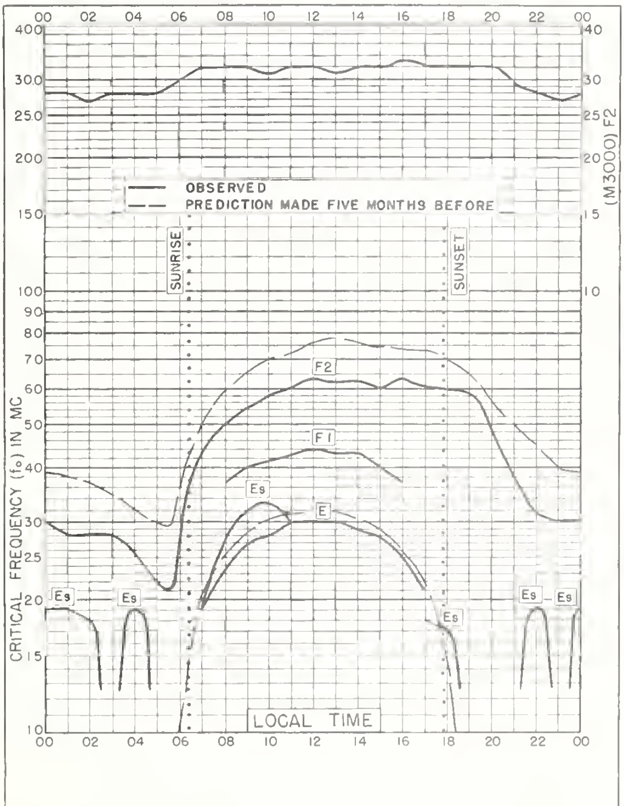


Fig. 99. FRIBOURG, GERMANY
48.1°N, 7.8°E MARCH 1952

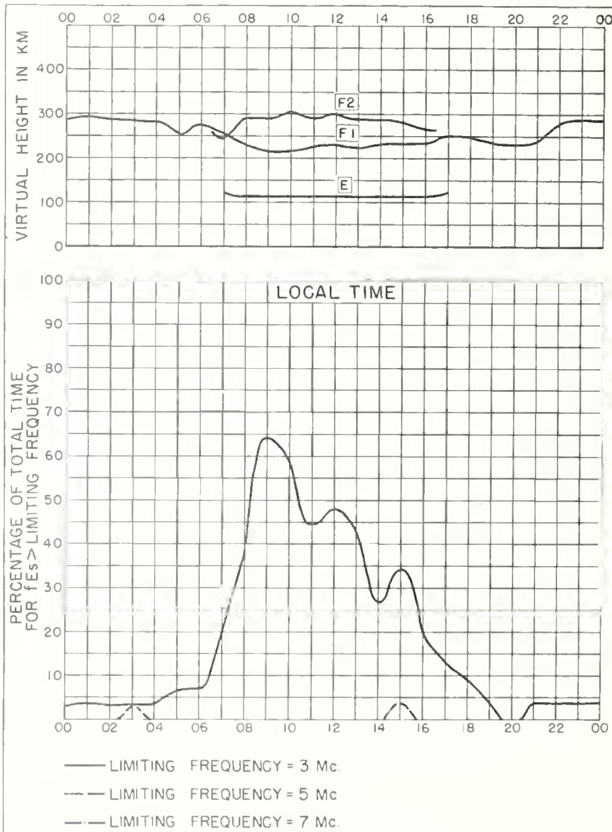


Fig 100. FRIBOURG, GERMANY MARCH 1952

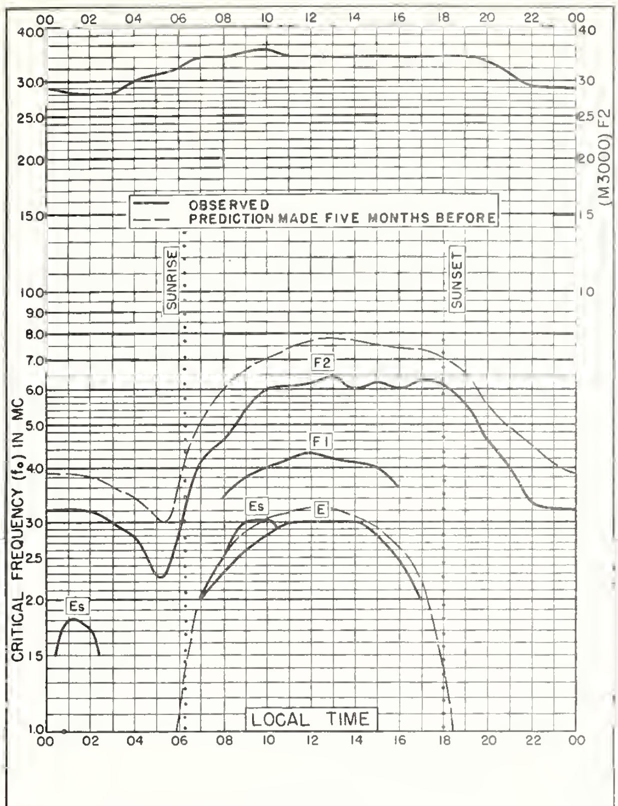


Fig. 101. POITIERS, FRANCE
46.6°N, 0.3°E MARCH 1952

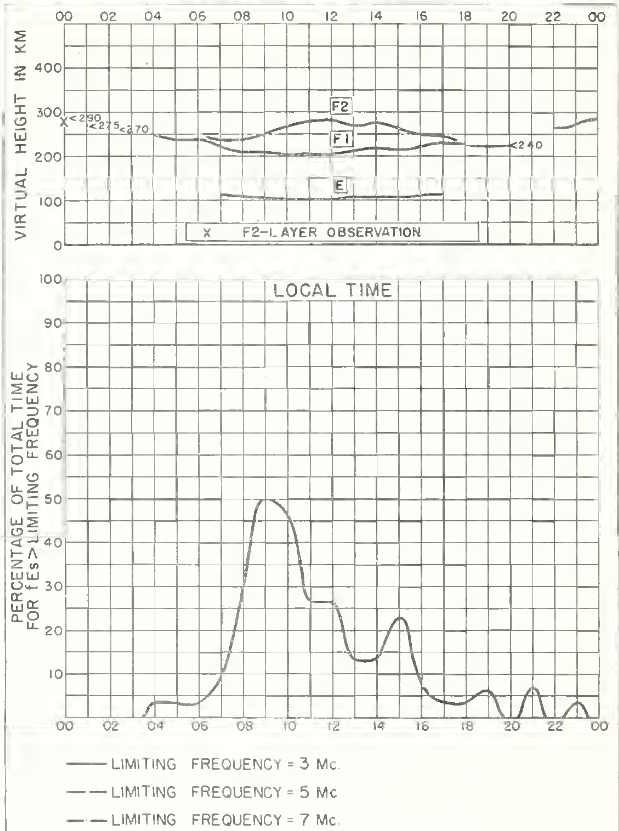


Fig. 102. POITIERS, FRANCE MARCH 1952

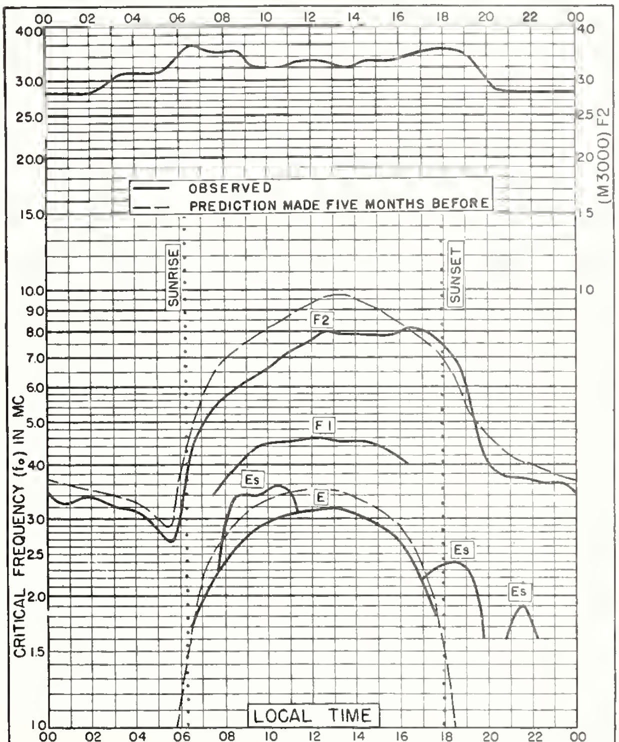


Fig. 103. CASABLANCA, MOROCCO
33.6°N, 7.6°W MARCH 1952

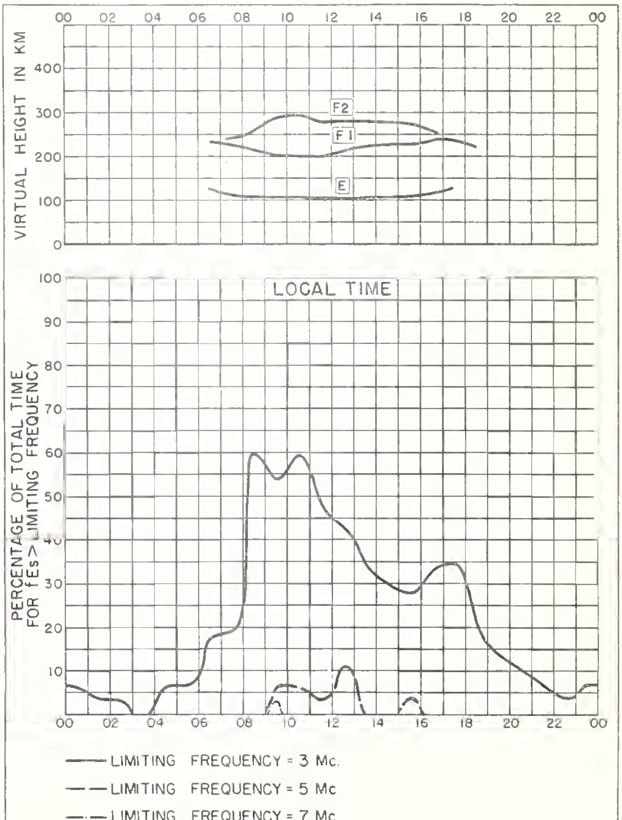


Fig. 104. CASABLANCA, MOROCCO MARCH 1952

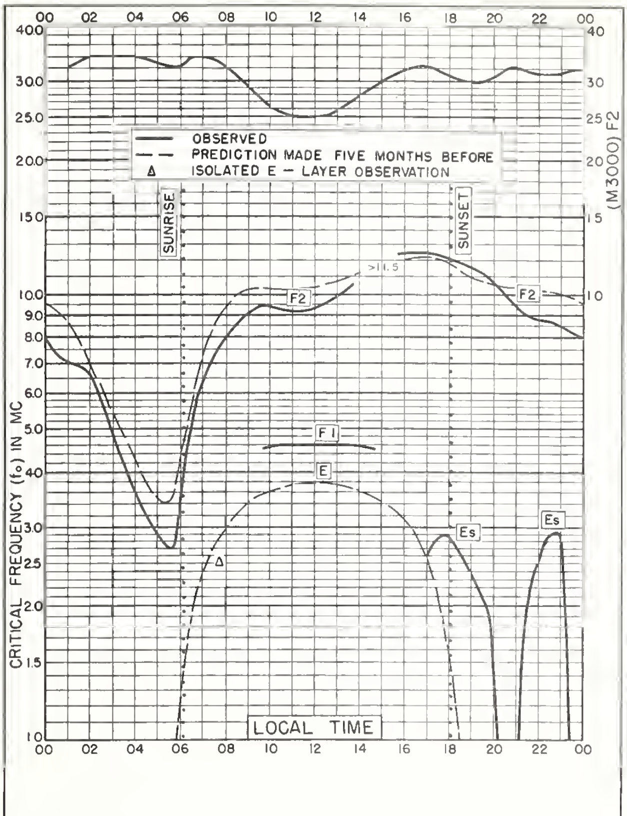


Fig. 105. GUAM I.
13.6°N, 144.9°E MARCH 1952

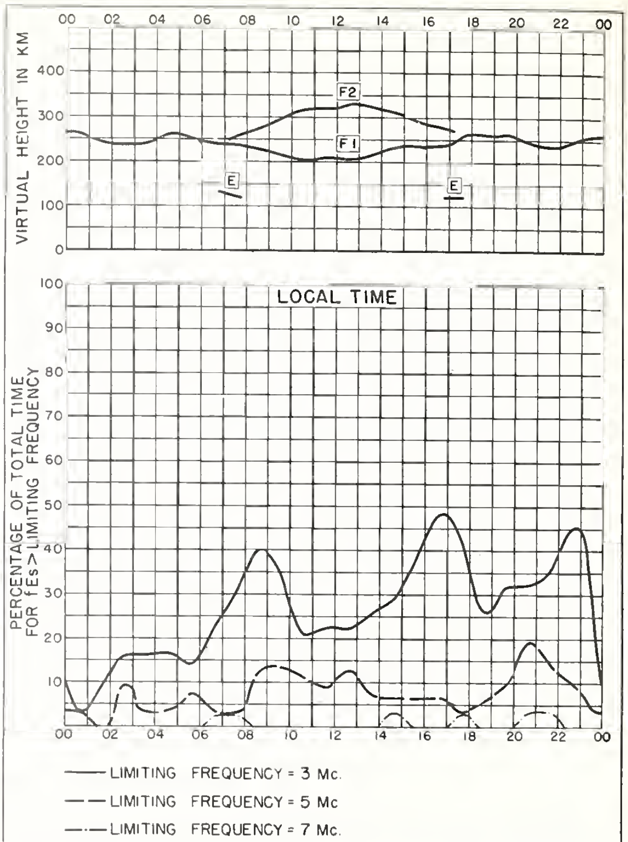


Fig. 106. GUAM I MARCH 1952

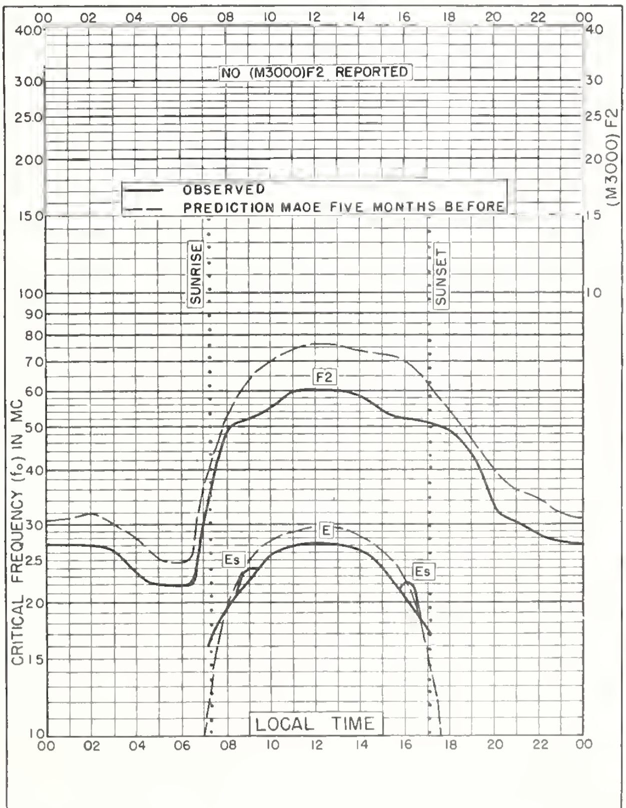


Fig. 107. DOMONT, FRANCE
49.0°N, 2.3°E FEBRUARY 1952

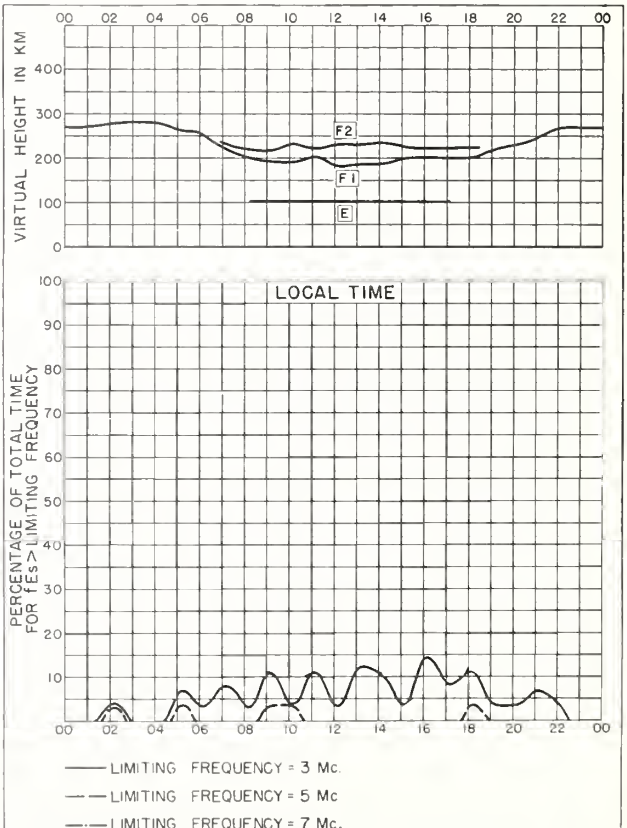


Fig. 108. DOMONT, FRANCE FEBRUARY 1952

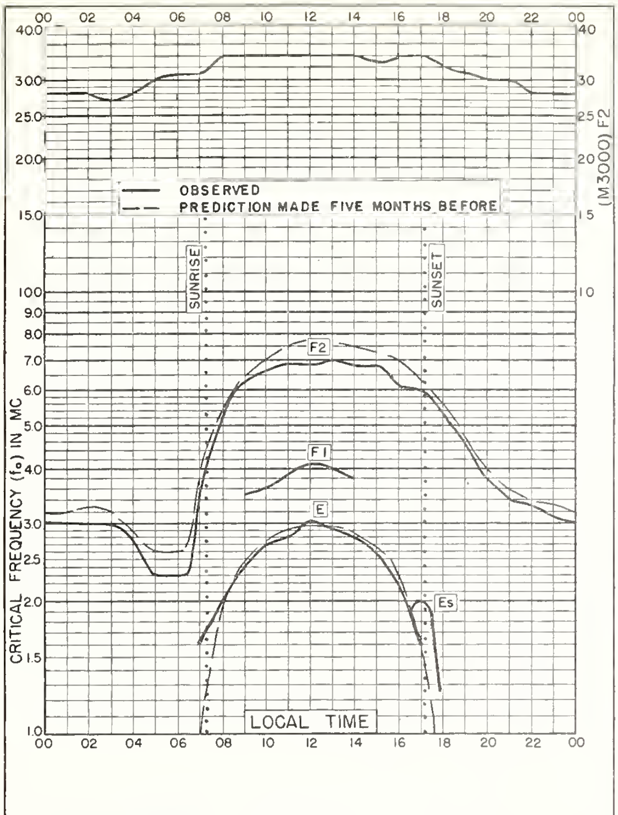


Fig. 109. FRIBOURG, GERMANY
48.1°N, 7.8°E FEBRUARY 1952

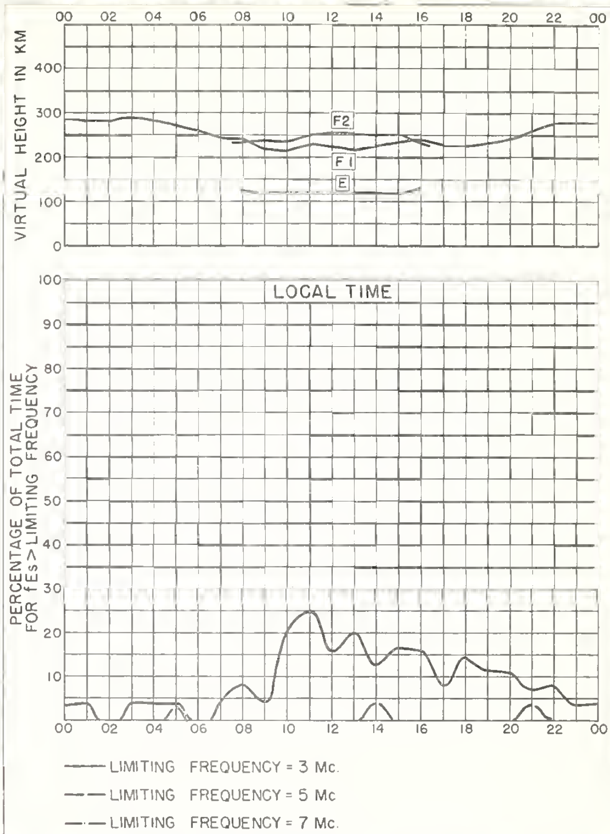


Fig. 110. FRIBOURG, GERMANY FEBRUARY 1952

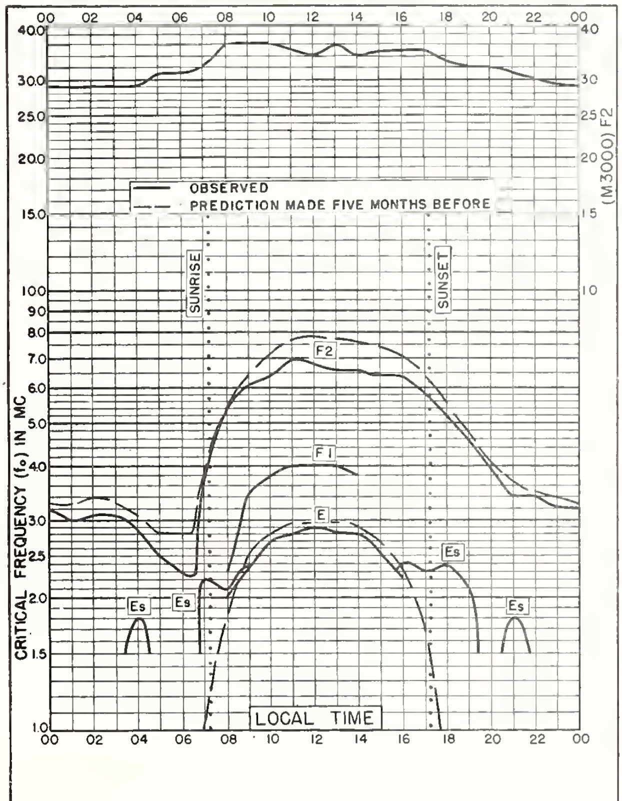


Fig. 111. POITIERS, FRANCE
46.6°N, 0.3°E FEBRUARY 1952

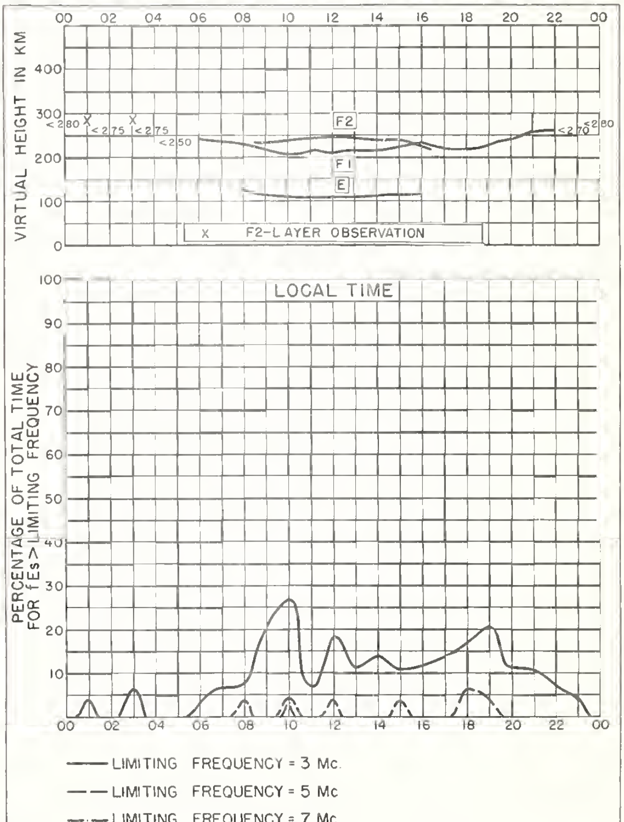


Fig. 112. POITIERS, FRANCE FEBRUARY 1952

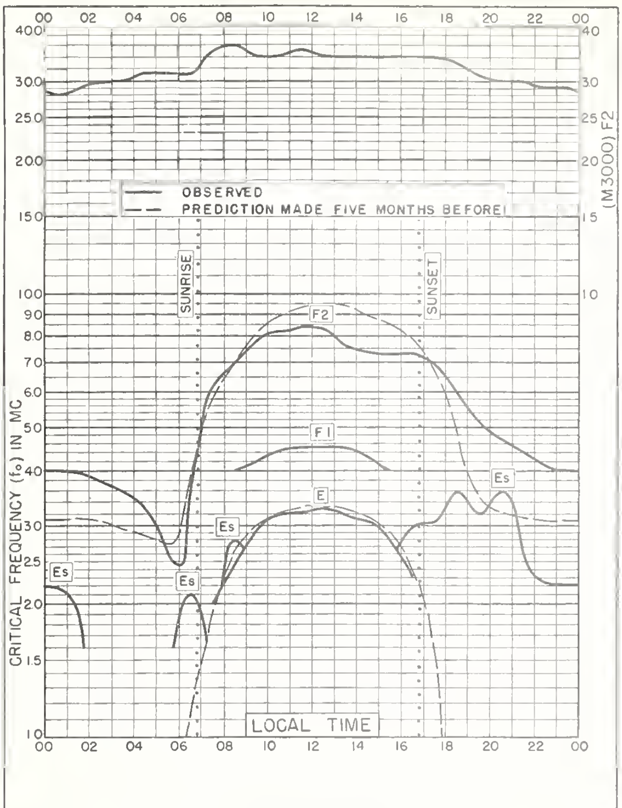


Fig. 113. CASABLANCA, MOROCCO
33.6°N, 7.6°W FEBRUARY 1952

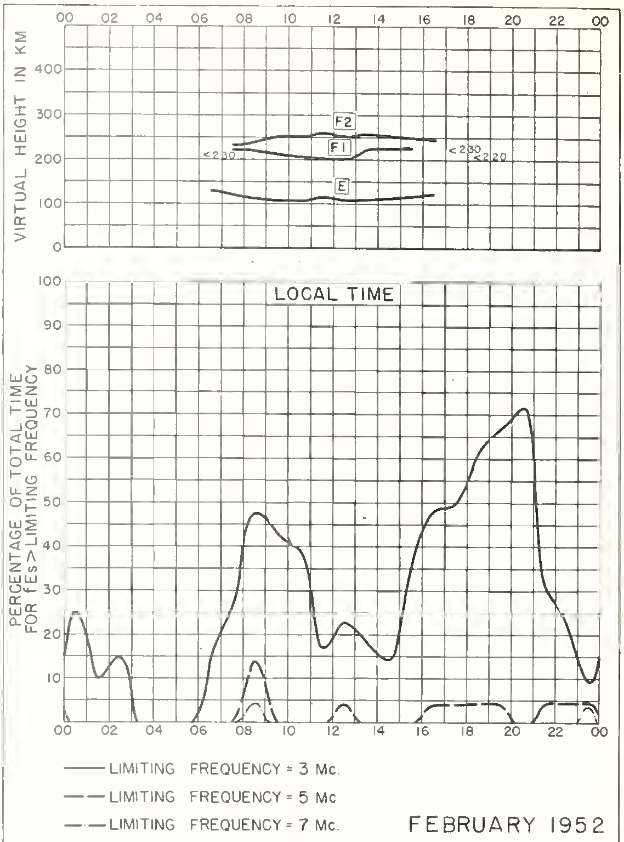


Fig. 114. CASABLANCA, MOROCCO

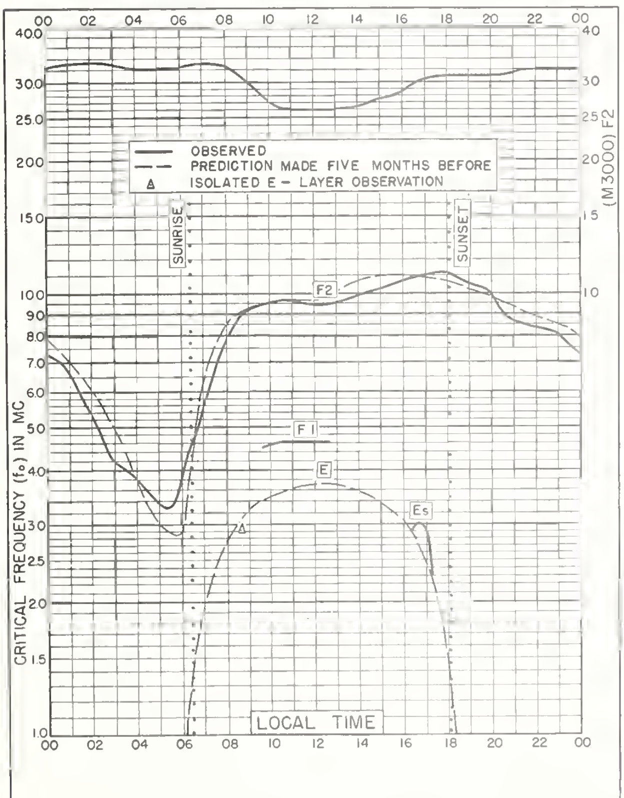


Fig. 115. GUAM, I.
13.6°N, 144.9°E FEBRUARY 1952

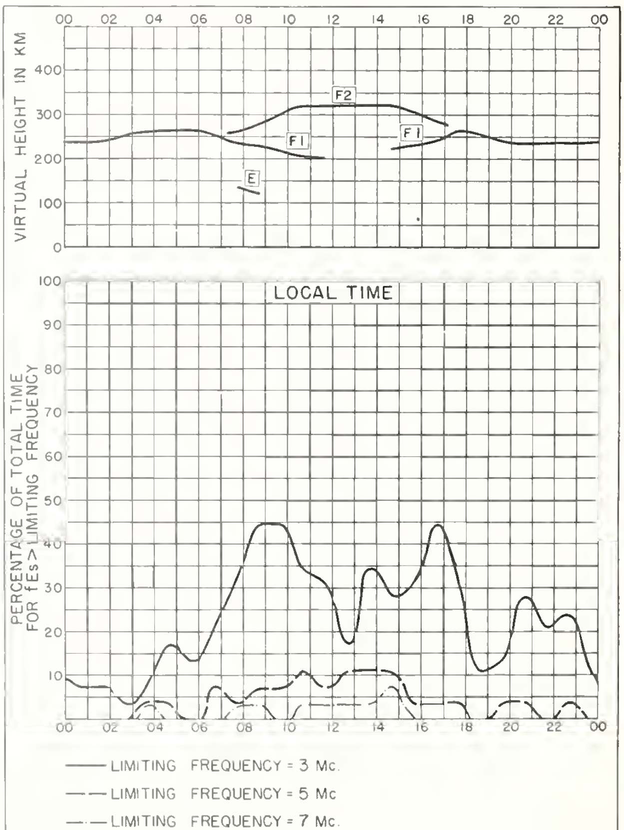


Fig. 116. GUAM, I. FEBRUARY 1952

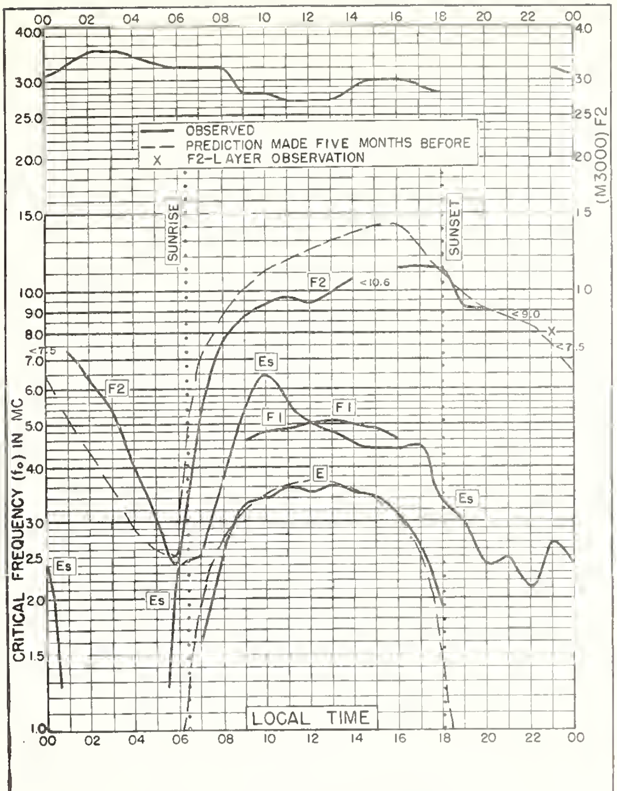
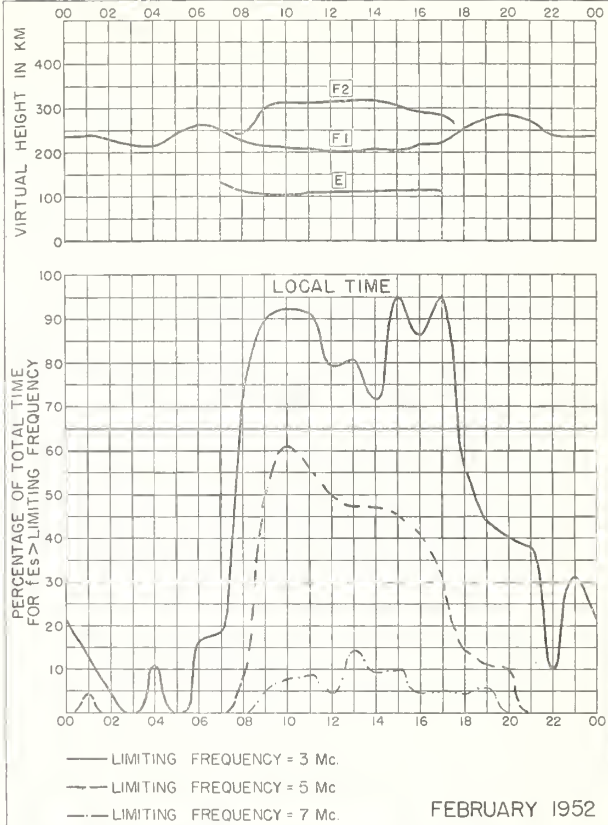


Fig. 117. DJIBOUTI, FRENCH SOMALILAND
11.5°N, 43.1°E FEBRUARY 1952



FEBRUARY 1952
Fig. 118. DJIBOUTI, FRENCH SOMALILAND

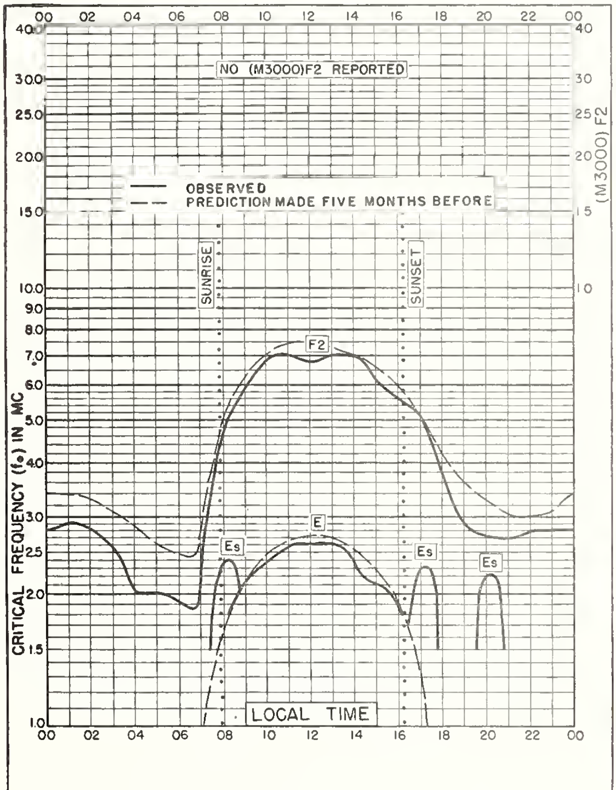


Fig. 119. DOMONT, FRANCE
49.0°N, 2.3°E JANUARY 1952

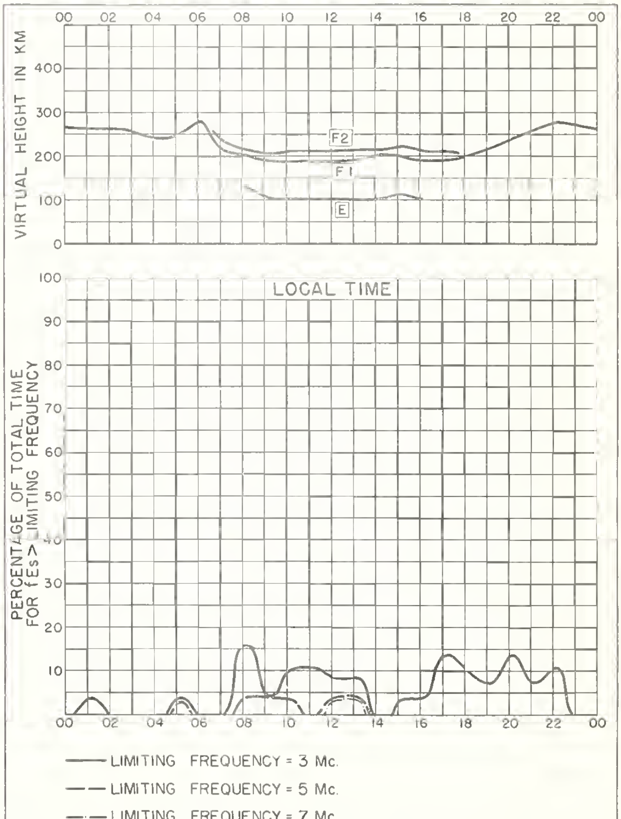


Fig. 120. DOMONT, FRANCE JANUARY 1952

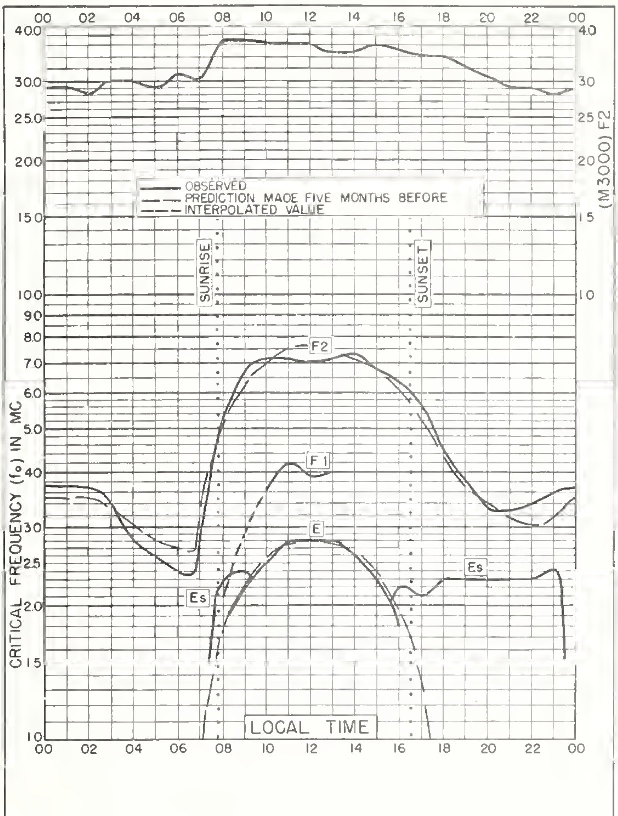


Fig. 121. POITIERS, FRANCE
46.6°N, 0.3°E JANUARY 1952

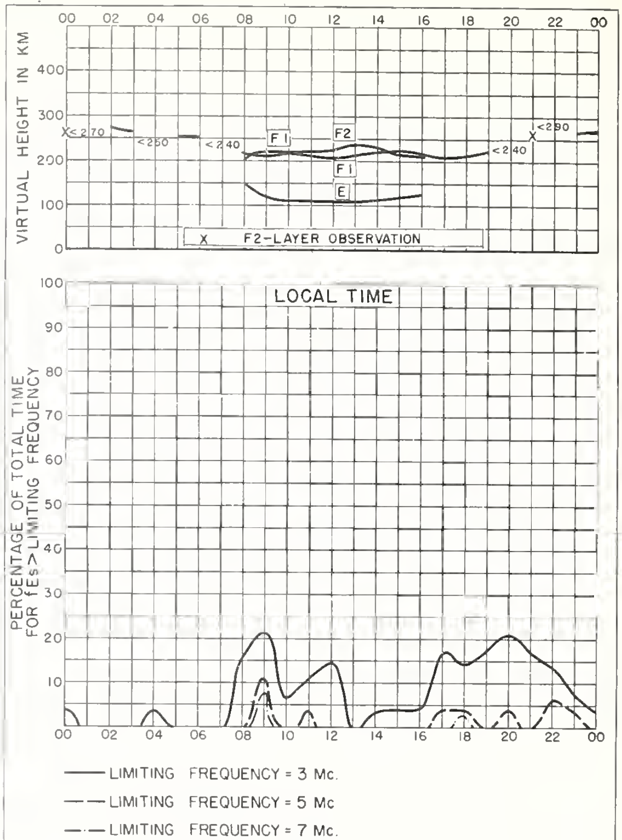


Fig. 122. POITIERS, FRANCE JANUARY 1952

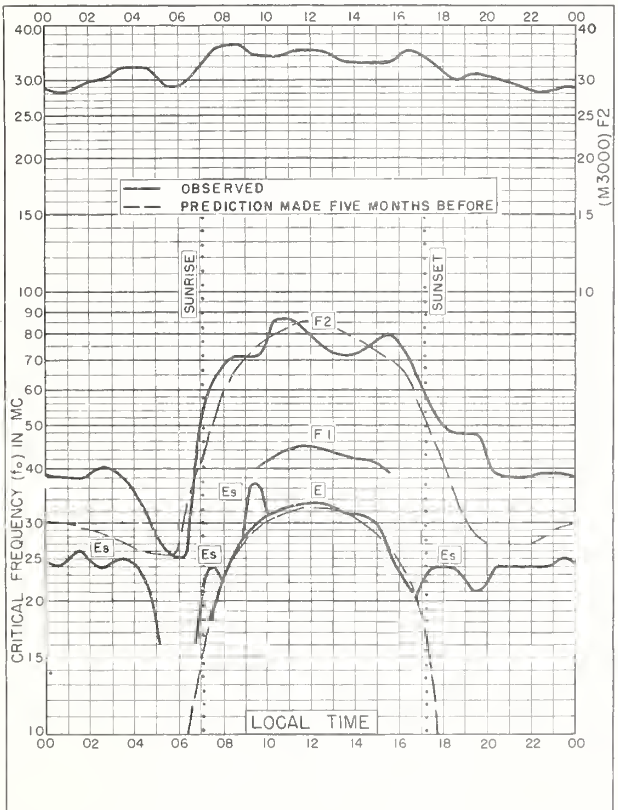
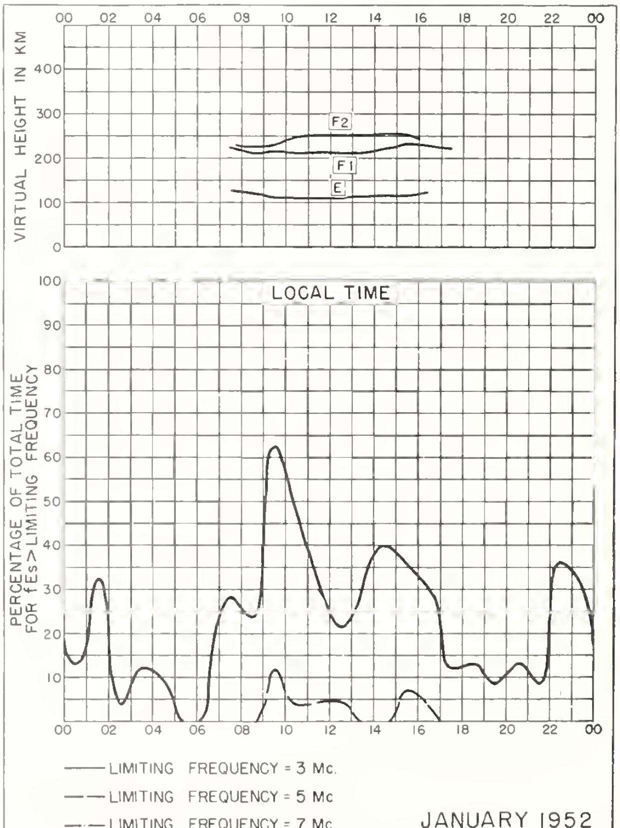


Fig. 123. CASABLANCA, MOROCCO
33.6°N, 7.6°W JANUARY 1952



JANUARY 1952
Fig. 124. CASABLANCA, MOROCCO

Index of Tables and Graphs of Ionospheric Data

in CRPL-F103

Index (CRPL-F103, continued)

Index (CRPL-F103, concluded)

CRPL and IRPL Reports

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

Daily:

Radio disturbance forecasts, 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.

Semiweekly:

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

CRPL—Jp. North Pacific 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. (G1, G3, available. Others out of print; see second footnote.)
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 Ionosphere 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.)

*Items bearing this symbol are distributed only by U. S. Navy. They are issued under one cover as the DNC 14 ( ) Series.
**Out of print; information concerning cost of photostat or microfilm copies is available from CRPL upon request.