CRPL-F 106

IONOSPHERIC DATA

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

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CONTENTS

SYMBOLS, TERMINOLOGY, CONVENTIONS

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

Beginning with data for January 1945, median values are published wherever possible. Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data 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 foF1, leading to erroneously high values of monthly averages or median values.

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

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

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

The dashed-line prediction curves of the graphs of ionospheric data are obtained from the predicted zero-muf contour charts of the CRPL-D series publications. The following points are worthy of note:

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

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

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

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

Month	Predicted Sunspot Number								
	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	22	52	68	102	108	130	109	67	
April	24	52	74	101	109	133	107	62	
March	27	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 72 and figures 1 to 144 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL prediction of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data in this issue:

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

Meteorological Service of the Belgian Congo and Ruanda-Urundi:
- Leopoldville, Belgian Congo

British Department of Scientific and Industrial Research, Radio Research Board:

- Falkland Is.
- Ibadan, Nigeria (University College of Ibadan)
- Inverness, Scotland
- Khartoum, Sudan (University College of Khartoum)
- Port Lockroy
- Singapore, British Malaya
- Slough, England

Defence Research Board, Canada:

- Baker Lake, Canada
- Fort Chimo, Canada
- Ottawa, Canada
- Resolute Bay, Canada
- St. John's, Newfoundland
- Winnipeg, Canada

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):

- Tananarive, Madagascar

National Laboratory of Radio-Electricity (French Ionospheric Bureau):

- Casablanca, Morocco
- Poitiers, France

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

- Lindau/Harz, Germany

Icelandic Post and Telegraph Administration:

- Reykjavik, Iceland

All India Radio (Government of India), New Delhi, India:

- Bombay, India
- Delhi, India
- Madras, India
- Tiruchy (Tiruchirapalli), India

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

- Calcutta, India

Ministry of Postal Services, Radio Research Laboratories, Tokyo, Japan:

- Akita, Japan
- Tokyo (Kokubunji), Japan
- Wakkanai, 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

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

National Bureau of Standards (Central Radio Propagation Laboratory):
- Anchorage, Alaska
- Fairbanks, Alaska (Geophysical Institute of University of Alaska)
- Guam I.
- Huancayo, Peru (Instituto Geofisico de Huancayo)
- Maui, Hawaii
- Point Barrow, Alaska
- Puerto Rico, W. I.
- San Francisco, California (Stanford University)
- Washington, D. C.

HOURLY IONOSPHERIC DATA AT WASHINGTON, D. C.

The data given in tables 73 through 84 follow the scaling practices given in the report IRPL-C61, "Report of International Radio Propagation Conference," pages 36 to 39, and the median values are determined by the conventions given above under "Symbols, Terminology, Conventions." Beginning with September 1949, the data are taken at Ft. Belvoir, Virginia.

IONOSPHERIC STORMINESS AT WASHINGTON, D.C.

Table 85 presents ionosphere character figures for Washington, D.C., during May 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.

RADIO PROPAGATION QUALITY FIGURES

Tables 86a and 86b give for April 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 87 through 89 give the observations of the solar corona during May 1953, obtained at Climax, Colorado, by the High Altitude Observatory of Harvard University and the University of Colorado. Tables 90 through 92 list the coronal observations obtained at Sacramento Peak, New Mexico, during May 1953, derived by Harvard College Observatory as a part of its performance of a research contract with the Upper Air Research Observatory, Geophysical Research Directorate, Air Force Cambridge Research Center. The data are listed separately for east and west limbs at 5-degree intervals of position angle north and south of the Solar Equator at the limb. The time of observation is given to the nearest tenth of a day, GCT.

Table 87 gives the intensities of the green (5303A) line of the emission spectrum of the solar corona; table 88 gives similarly the intensities of the first red (6374A) coronal line; and table 89, the intensities of the second red (6702A) coronal line; all observed at Climax in May 1953.

Table 90 gives the intensities of the green (5303A) coronal line; table 91, the intensities of the first red (6374A) coronal line; and table 92, the intensities of the second red (6702A) coronal line; all observed at Sacramento Peak in May 1953.

The following symbols are used in tables 87 through 92: a, observation of low weight; -, corona not visible; and X, position angle not included in plate estimates.

RELATIVE SUNSPOT NUMBERS

Table 93 lists the daily provisional Zürich relative sunspot number, R_Z, as communicated by the Swiss Federal Observatory. Table 94 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 95 gives the preliminary record of solar flares reported to the CRPL. These reports are communicated on a rapid schedule at the sacrifice of detailed accuracy. Definitive and complete records are published later in the Quarterly Bulletin of Solar Activity, I.A.U., in various observatory publications, and elsewhere. The present listing serves to identify and roughly describe the phenomena observed. Details should be sought from the reporting observatory.

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

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

INDICES OF GEOMAGNETIC ACTIVITY

Table 96 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.

SUDDEN IONOSPHERE DISTURBANCES

Table 97 shows the sudden ionosphere disturbances observed at Washington, D. C., May 1953.

TABLES OF IONOSPHERIC DATA

Table 1

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	2.9						3.0
01	260	2.8						3.0
02	270	2.5						3.0
03	260	2.3						3.0
04	260	2.2						3.1
05	250	2.8	---	---	110	---	1.6	3.2
06	260	3.8	220	3.2	110	2.0	2.8	3.3
07	340	4.1	210	3.5	100	2.4	3.7	3.1
08	370	4.4	200	3.8	100	2.7	4.4	3.0
09	370	4.6	200	4.0	100	2.9	4.3	3.0
10	400	(4.6)	200	4.2	100	3.1	4.2	(2.9)
11	400	(4.7)	200	4.2	100	3.2	4.7	(2.8)
12	410	4.8	200	4.2	100	3.2	3.8	2.9
13	380	4.9	200	4.2	100	3.2	3.1	2.9
14	400	4.8	200	4.2	100	3.1	3.4	2.9
15	370	5.1	200	4.0	100	3.0		2.9
16	350	5.2	210	3.9	100	2.8		3.0
17	310	5.2	210	3.6	110	2.5		3.1
18	280	5.1	230	3.2	110	2.0	2.8	3.1
19	240	5.2	---	---	---	---	2.0	3.2
20	230	5.0						3.2
21	230	4.2						3.1
22	250	3.3						3.0
23	270	3.0						3.0

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

Table 2

Tromso, Norway (69.7°N, 19.0°E) April 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	(3.4)					4.0	(2.9)
01	---	(3.3)					4.7	---
02	(320)	(3.0)					4.1	(2.7)
03	(345)	(3.3)	---	---			3.4	(2.9)
04	(330)	3.0	---	---	---	---	3.2	(2.9)
05	---	<3.4	265	---	110	1.6	1.4	(3.0)
06	385	3.5	255	3.4	115	2.0		2.9
07	460	3.8	240	3.4	110	2.2		2.9
08	410	4.1	230	3.6	115	2.4		2.9
09	370	4.4	230	3.6	115	2.5		2.9
10	390	4.4	225	3.8	110	2.6		2.9
11	365	4.6	220	3.8	115	2.7		3.0
12	365	4.6	220	3.8	115	2.[illegible]		2.9
13	360	4.6	215	3.8	120	2.6		3.0
14	350	4.6	225	3.8	115	2.6		3.0
15	350	4.5	230	3.6	115	2.5		3.0
16	320	4.4	240	3.5	115	2.2	2.2	3.1
17	280	4.2	250	---	115	1.9	2.4	3.2
18	290	4.0	240	---	115	2.0	3.2	3.2
19	290	3.8	265	---	---	1.8	3.6	3.1
20	(285)	3.6	---	---	---	---	3.8	(3.1)
21	(300)	(3.5)					3.8	(2.9)
22	(320)	(3.2)					3.9	(3.0)
23	(340)	---					3.6	---

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

Table 3

Fairbanks, Alaska (64.9°N, 147.8°W) April 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	---					5.6	---
01	---	---					5.4	---
02	---	---			---	---	5.4	---
03	---	---			---	---	5.8	---
04	---	---					5.2	---
05	<330	(3.0)	---	---				(2.8)
06	(360)	(3.6)	---	---				(3.0)
07	<390	(4.0)	---	---				(3.0)
08	(440)	(4.3)	---	3.8				---
09	G	(4.2)	220	3.7				G
10	(460)	(4.2)	210	3.7				(2.7)
11	---	---	---	---				---
12	---	---	---	---				---
13	---	---	---	---				---
14	(400)	(4.4)	210	3.8				(2.9)
15	(380)	(4.5)	---	---				(2.9)
16	(360)	(4.5)	220	3.7				(3.0)
17	(310)	(4.5)	240	3.5				(3.1)
18	(270)	(4.5)	---	---				(3.1)
19	(280)	4.0						(3.2)
20	260	3.8						3.1
21	(260)	(3.8)					4.4	(3.0)
22	(270)	(3.6)					5.0	(3.0)
23	---	---					4.8	---

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

Table 4

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	360	2.8						2.7
01	360	2.5					1.7	2.7
02	350	2.5					2.1	2.7
03	330	2.5					1.6	2.8
04	330	2.5	---	---	---	---		2.8
05	300	2.8	---	---	110	1.6	1.5	3.0
06	320	3.2	240	3.0	120	1.9		3.0
07	G	3.4	230	3.4	110	2.2		2.5
08	800	3.8	210	3.6	110	2.5		2.[illegible]
09	G	<3.7	220	3.7	110	2.7		G
10	570	4.1	220	3.8	110	2.8		2.3
11	G	<4.0	210	3.8	110	2.8		G
12	520	4.2	220	3.9	110	2.9		2.4
13	600	4.2	220	3.9	110	2.8		2.4
14	480	4.4	220	3.9	110	2.8		2.6
15	430	4.2	220	3.8	110	2.6		2.8
16	380	4.4	220	3.6	110	2.4		2.9
17	320	4.3	230	3.5	110	2.2		3.0
18	290	4.0	250	---	120	1.9		3.1
19	270	4.0	---	---	---	---		3.1
20	260	3.5						3.0
21	260	3.4						3.0
22	280	2.7						2.9
23	320	2.8						2.8

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

Table 5

Oslo, Norway (60.0°N, 11.1°E) April 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	2.0						2.9
01	300	1.9					2.3	2.8
02	300	1.8					1.8	2.8
03	300	1.6			---	---	1.0	2.8
04	300	1.9			130	1.2	1.1	2.9
05	275	2.5	245	---	120	1.[illegible]	2.1	3.1
06	G	3.2	240	3.0	120	1.[illegible]	2.0	3.2
07	G	3.7	230	3.4	110	2.0	2.9	(3.0)
08	430	3.9	215	3.5	110	2.[illegible]	2.9	2.9
09	395	4.2	210	3.8	110	2.5	3.0	2.9
10	380	4.6	205	3.9	105	2.7	3.1	3.0
11	380	4.6	210	4.0	105	2.8	3.0	3.0
12	380	4.7	200	4.0	105	2.8	3.0	3.0
13	375	4.8	210	4.0	105	2.8	3.0	3.0
14	345	4.6	210	4.0	110	2.8	3.0	3.1
15	335	4.8	220	3.8	110	2.7	3.2	3.1
16	340	4.7	220	3.7	110	2.4	3.1	3.1
17	310	4.8	230	3.5	110	2.2	2.0	3.1
18	265	4.8	245	---	120	1.8		3.1
19	250	4.6	250	---	140	1.7		3.1
20	250	4.4	---	---	---	---		3.1
21	250	3.8						3.1
22	255	2.9						3.0
23	290	2.3						2.9

Time: 15.0°E.
Sweep: 0.6 Mc to 14.0 Mc in 8 minutes, automatic operation.

Table 6

Upsala, Sweden (59.8°N, 17.6°E) April 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	330	2.2						2.9
01	340	2.0						2.8
02	330	2.0					2.2	2.8
03	350	1.9					2.3	2.9
04	310	2.0			---	E	2.3	2.9
05	260	2.8	225	---	---	1.4		3.2
06	250	3.[illegible]	225	3.2	120	1.8		3.2
07	410	3.8	225	3.3	120	2.1		3.1
08	425	4.2	220	3.6	115	2.3		3.0
09	385	4.4	215	3.8	115	2.5		3.0
10	360	4.9	210	4.0	115	2.6		3.0
11	360	5.0	210	4.0	110	2.7		3.0
12	340	5.0	205	4.0	110	2.8		3.1
13	355	5.0	215	4.0	110	2.8		3.0
14	330	5.0	220	4.0	115	2.7		3.1
15	330	4.9	220	3.8	115	2.5		3.1
16	315	4.8	225	3.6	115	2.3		3.1
17	300	4.8	230	3.3	120	2.0		3.1
18	265	4.8	245	2.8	130	1.6		3.2
19	250	4.6	250	2.5	---	E		3.2
20	245	4.4						3.1
21	255	3.8						3.0
22	265	3.0						3.0
23	300	2.3						2.9

Time: 15.0°E.
Sweep: 1.4 Mc to 17.0 Mc in 8 minutes, automatic operation.

Table 7

[illegible] ([illegible]°N, 176.6°[illegible]) April 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
[illegible]	[illegible]	[illegible]						2.9
01	[illegible]	[illegible]						2.8
[illegible]	[illegible]	[illegible]						2.8
[illegible]	300	[illegible]						2.8
04	300	2.8						2.8
[illegible]	[illegible]	3.0	260	---	140	1.6		2.9
[illegible]	[illegible]	3.8	250	3.1	120	1.9		3.0
07	430	4.0	240	3.6	110	2.3	2.8	2.8
[illegible]	[illegible]	4.2	230	3.8	110	2.6	3.2	2.8
[illegible]	[illegible]	4.4	230	3.9	110	2.8	3.4	2.7
[illegible]	[illegible]	4.4	220	4.0	110	2.9	4.0	2.8
[illegible]	[illegible]	4.8	220	4.0	110	2.9	3.8	2.9
12	[illegible]	4.8	220	4.2	110	2.9	3.8	2.8
13	[illegible]	[illegible]	220	4.2	110	2.8	3.3	2.9
14	370	5.0	220	4.1	110	2.6		3.0
15	350	4.9	230	4.0	110	2.7		3.0
16	[illegible]	5.0	240	3.8	110	2.5		3.1
17	[illegible]	5.0	250	---	120	2.2	2.4	3.2
18	270	5.0	260	---	130	1.7	2.3	3.2
19	250	4.7					2.7	3.1
20	250	5.0					2.2	3.0
21	260	4.3						3.0
22	260	3.8						3.0
23	280	3.4						2.9

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

Table 8

Graz, Austria (47.1°N, 15.5°E) April 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.5						
01	300	3.5						
02	300	3.2						
03	300	3.1						
04	290	2.9						
05	280	2.9						
06	245	3.7						
07	225	4.1	200	3.6				
08	300	5.0	200	3.8		2.8		
09	290	5.0	200	4.0	100	2.9		
10	290	5.5	200	4.2	100	3.1	3.1	
11	300	5.5	200	4.2	100	3.2	3.6	
12	290	5.6	200	4.2	100	3.2	3.6	
13	300	5.8	200	4.2	100	3.2		
14	280	5.6	200	4.2	100	3.1		
15	280	5.9	200	4.1	100	3.0		
16	265	5.8	200	3.8		2.8		
17	250	5.8	220	3.5				
18	240	5.5						
19	240	5.5						
20	250	5.0						
21	250	4.6						
22	260	3.9						
23	295	3.5						

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

Table 9

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(270)	(3.2)					2.2	(3.0)
01	(270)	(3.1)						(3.0)
02	(270)	(3.1)						(3.0)
03	(270)	(3.0)						(3.1)
04	(250)	(3.0)						(3.1)
05	(250)	(2.9)						(3.2)
06	240	3.6	230	---	(120)	1.8	1.8	3.3
07	280	4.5	220	3.3	110	2.1	3.0	3.3
08	350	4.6	220	3.7	100	(2.5)	3.6	3.1
09	330	4.7	200	3.9	100	(2.8)	4.0	3.0
10	[illegible]	4.8	190	4.1	100	(3.0)	4.2	3.0
11	370	5.2	190	4.1	100	(3.1)	4.1	3.0
12	360	5.4	200	4.1	(110)	(3.1)	4.0	2.9
13	360	5.5	200	4.1	(110)	(3.0)	4.0	2.9
14	330	5.7	200	4.2	(110)	(3.0)	3.8	3.1
15	330	5.3	210	(4.1)	110	(2.8)	3.8	3.1
16	300	5.2	220	(3.9)	110	(2.6)	2.6	3.2
17	230	4.9	230	(3.4)	110	2.4	3.4	3.3
18	240	4.8	230	---	120	1.9	2.9	3.2
19	230	4.6					2.6	3.4
20	(220)	4.5					2.4	(3.2)
21	(240)	(3.7)					2.6	(3.1)
22	(250)	(3.4)					2.3	(3.1)
23	(260)	(3.3)					2.4	(3.1)

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

Table 10

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.4						3.0
01	280	3.3						3.0
02	270	3.4						3.0
03	270	3.3						3.0
04	260	3.2						3.0
05	270	3.0						3.0
06	250	3.9	240	---	120	1.8		3.3
07	230	4.7	220	3.5	110	2.2		[illegible]
08	290	5.2	210	3.9	110	2.6		[illegible]
09	330	5.2	200	4.1	100	2.9		[illegible]
10	360	5.4	200	4.2	100	3.0	2.6	[illegible]
11	350	5.6	200	4.3	100	3.1	3.0	[illegible]
12	320	5.8	200	4.3	100	3.2	3.0	[illegible]
13	320	6.2	200	4.4	100	3.2	2.7	[illegible]
14	320	6.6	210	4.3	110	3.1	2.6	[illegible]
15	300	6.4	210	4.1	110	2.9		[illegible]
16	300	6.0	220	4.0	110	2.7		[illegible]
17	270	5.8	220	---	110	2.3		[illegible]
18	250	5.6					2.8	[illegible]
19	230	5.2						3.0
20	240	4.5						3.2
21	250	3.9						3.1
22	260	3.5						3.0
23	280	3.4						3.0

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

Table 11

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	(4.3)					3.1	(2.8)
01	280	4.6					2.4	3.0
02	240	4.6					2.4	3.2
03	230	3.7					2.9	(3.3)
04	270	(2.8)					2.3	(3.0)
05	280	2.8					2.4	(3.1)
06	240	4.7					2.4	3.4
07	240	5.8	240	---	110	2.3	3.6	3.5
08	270	6.6	230	---	110	2.7	4.8	3.4
09	280	6.9	220	---	110	3.0	4.7	3.2
10	320	7.5	220	4.4	110	3.1	4.8	2.9
11	330	9.0	220	4.5	110	3.2	5.0	3.0
12	320	10.3	220	(4.6)	110	(3.3)	5.2	3.0
13	300	11.2	230	4.5	110	3.2	4.8	3.1
14	280	11.4	230	4.4	110	3.2	4.8	3.2
15	280	10.8	220	(4.3)	120	3.1	3.4	3.2
16	260	10.4	230	---	120	2.8	4.1	3.3
17	250	9.4	230	---	120	(2.4)	3.6	3.4
18	240	8.7	---	---			3.2	3.4
19	220	7.0					3.1	3.4
20	240	4.9					3.0	3.2
21	290	4.3					3.0	2.9
22	310	4.2					4.3	2.8
23	320	(4.2)					3.5	(2.9)

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

Table 12

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	230	4.2					3.2	3.0
01	250	4.1					2.4	3.1
02	250	3.9					3.0	[illegible]
03	260	2.9					2.6	3.0
04	280	2.6					2.6	2.9
05	280	2.6						3.0
06	260	3.3			---	---	2.2	3.1
07	250	5.6	240	---	120	2.0	3.4	3.2
08	280	6.5	230	(4.0)	110	2.6	4.8	3.3
09	320	6.8	220	4.3	110	2.9	4.8	3.0
10	350	7.8	210	4.5	110	3.1	5.4	2.7
11	370	8.4	210	4.6	110	(3.3)	4.8	2.7
12	360	9.9	210	4.7	110	3.4	4.7	2.8
13	330	10.7	220	4.6	110	3.4	4.2	3.0
14	310	10.8	220	4.6	110	3.4	4.4	3.0
15	300	10.8	230	4.5	110	3.2	4.4	3.1
16	280	10.2	230	4.3	110	3.0	3.9	3.2
17	270	10.7	230	3.9	120	2.5	4.0	3.2
18	250	9.5	240	---	120	1.9	4.0	3.3
19	230	8.4					3.2	3.3
20	[illegible]	6.6					2.9	3.2
21	[illegible]	5.2					2.4	3.0
22	[illegible]	[illegible]					2.4	2.9
23	300	4.4					2.6	2.9

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

Table 13

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	4.7						3.1
01	250	4.7						3.2
02	230	4.6						3.4
03	220	3.7						3.4
04	250	3.2						3.2
05	240	3.0						3.2
06	240	3.2			100	—		3.2
07	220	4.9	220	—	110	2.0		3.6
08	250	5.6	220	—	100	2.8		3.6
09	280	6.1	210	4.4	90	2.9		3.4
10	280	6.6	210	4.5	90	3.2		3.2
11	300	7.4	220	4.6	90	3.4		3.0
12	300	8.6	210	4.6	90	3.4		3.1
13	290	9.3	210	4.5	100	3.4		3.2
14	270	9.4	210	4.5	100	3.4		3.3
15	270	9.0	210	4.4	100	3.2	4.6	3.3
16	260	7.8	210	4.2	100	3.0	4.7	3.4
17	250	7.7	210	3.9	100	2.6	4.4	3.4
18	230	7.8	220	—	100	—	3.6	3.4
19	220	6.9					2.7	3.5
20	220	5.8					2.6	3.1
21	240	5.3					2.6	3.1
22	270	4.8						3.0
23	280	4.6					2.4	3.0

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

Table 14

Guam I. (13.6°N, 144.9°E) April 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	6.5						2.9
01	280	5.4						3.0
02	260	4.8						3.1
03	260	3.8						3.2
04	260	3.6					1.8	3.3
05	240	3.2						3.4
06	250	3.2					2.5	3.3
07	230	6.0			120	—	2.8	3.6
08	260	7.0	230	—	110	2.6	4.6	3.4
09	290	7.8	220	—	110	2.9	6.7	3.1
10	330	8.2	200	4.5	110	3.2	7.2	2.7
11	350	8.6	200	4.5	110	(3.2)	6.8	2.4
12	350	8.8	200	4.5	110	(3.4)	5.6	2.4
13	340	8.8	200	4.5	110	3.4	4.6	2.5
14	330	9.4	200	4.5	110	3.3	4.5	2.6
15	320	10.0	210	4.3	110	3.1	4.5	2.8
16	300	10.8	220	—	110	2.9	3.8	3.0
17	280	11.2	230	—	120	2.5	4.4	3.1
18	250	11.4					4.1	3.2
19	250	10.6					3.2	3.2
20	250	9.0					2.7	3.1
21	250	7.5						3.1
22	270	6.8						3.0
23	300	6.0						2.9

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

Table 15

Resolute Bay, Canada (74.7°N, 94.9°W) March 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	2.8						3.0
01	250	2.7						3.0
02	240	2.7						3.0
03	260	2.7						3.0
04	260	2.4			—	—		2.9
05	260	2.5	—	—	120	1.5		3.0
06	270	2.8	—	—	120	1.6		3.1
07	250	2.9	250	—	120	1.7		3.1
08	250	3.1	240	2.8	110	1.9		3.1
09	300	3.2	230	3.0	110	2.0		3.1
10	(400)	3.2	220	3.2	110	2.2		3.0
11	410	<3.4	240	3.2	110	2.2		2.8
12	350	3.4	240	3.2	110	2.3		3.0
13	390	3.7	230	3.2	110	2.3		3.0
14	430	3.6	230	3.0	110	2.2		2.8
15	380	3.8	230	3.0	110	2.2		3.1
16	330	<3.6	240	3.0	110	2.0		3.0
17	270	3.4	250	2.8	110	1.8		3.0
18	260	3.3	260	—	120	1.7		3.0
19	260	3.4	—	—	120	1.4		3.0
20	260	3.2			130	1.3		3.0
21	260	3.0			—	—		3.0
22	250	3.2						3.0
23	260	3.0						3.0

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

Table 16

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	—	—					4.0	—
01	—	—					4.0	—
02	—	(2.5)					3.2	(2.8)
03	—	—					(3.2)	—
04	—	2.0						(2.8)
05	(300)	(2.5)						(3.0)
06	(250)	(3.0)			—	—		(3.2)
07	(230)	3.4	—	—	—	—		3.3
08	260	3.9	225	—	110	2.1		3.4
09	290	4.2	225	3.3	110	2.2		3.3
10	260	4.2	210	3.4	110	2.2		3.4
11	270	4.6	210	3.5	110	2.3		3.4
12	275	4.5	210	3.4	110	2.3		3.3
13	280	4.7	215	3.5	110	2.3		3.3
14	265	4.9	210	3.4	110	2.2		3.3
15	245	4.6	225	3.2	115	2.1		3.4
16	250	4.2	230	2.7	115	2.0		3.4
17	250	4.0	—	—	—	—		3.2
18	245	3.7					2.1	3.2
19	255	3.2					3.6	3.2
20	(280)	(3.2)					3.4	(3.2)
21	(285)	(2.8)					4.2	(3.0)
22	—	(2.8)					4.0	—
23	—	—					4.1	—

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

Table 17

Winnipeg, Canada (49.9°N, 97.4°W) March 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	380	2.3					3.0	—
01	(330)	(2.6)					3.1	—
02	(320)	(2.4)					3.8	—
03	—	—					3.9	—
04	—	—					4.0	—
05	—	—					3.9	—
06	(300)	(2.0)			—	—	2.5	—
07	250	2.9	—	—	130	1.9		3.2
08	340	3.6	220	3.5	120	2.2		3.1 •
09	G	(3.7)	220	3.6	110	2.5		G
10	400	(4.0)	200	3.7	110	2.7		3.0
11	420	4.3	200	3.8	110	2.9		(2.8)
12	400	4.5	200	3.9	110	3.0		2.8
13	400	4.6	200	3.9	110	2.9		2.9
14	400	4.6	220	3.9	110	2.9		2.9
15	360	4.6	220	3.8	110	2.8		3.1
16	340	4.5	230	3.7	120	2.5		3.1
17	280	4.3	240	—	120	2.2		3.2
18	250	4.1	240	—	—	—		3.2
19	250	3.7						3.1
20	270	3.0						3.0
21	290	2.5						(3.0)
22	310	2.0						—
23	320	2.1					2.8	—

Time: 90.0°W.
Sweep: 1.0 Mc to 10.0 Mc in 16 seconds.

Table 18

St. John's Newfoundland (47.6°N, 52.7°W) March 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	330	2.0						2.8
01	340	1.7						2.8
02	320	1.6					2.4	3.0
03	(320)	(1.6)					2.2	(3.0)
04	(300)	1.5					2.2	(3.0)
05	300	1.6			—	—		3.0
06	250	2.9	240	—	120	1.4		3.2
07	240	3.6	230	3.0	120	2.1		3.3
08	300	4.1	220	3.4	110	2.4		3.3
09	340	4.3	200	3.7	110	2.7		3.3
10	340	4.6	200	3.9	110	2.8		3.2
11	340	5.0	200	4.0	110	3.0		3.2
12	330	5.1	210	4.0	110	3.0		3.2
13	320	5.3	220	4.0	110	2.9		3.3
14	300	5.3	220	3.9	120	2.8		3.3
15	300	5.2	220	3.7	120	2.6		3.3
16	280	5.2	230	3.3	110	2.2		3.3
17	260	5.0	240	2.8	130	1.6		3.2
18	240	4.8			—	—		3.2
19	240	4.2						3.2
20	250	3.6						3.1
21	280	2.9						2.9
22	300	2.5						2.9
23	310	2.2						2.9

Time: 60.0°W.
Sweep: 1.0 Mc to 10.0 Mc in 15 seconds.

Table 19

Ottawa, Canada (45.4°N, 75.7°W) March 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	2.0						---
01	---	(2.0)						---
02	---	(2.2)					2.5	---
03	---	---					2.8	---
04	---	---					(3.2)	---
05	---	---					(3.4)	---
06	290	2.3			---	---		3.2
07	250	3.4	230	3.2	120	2.0		3.4
08	430	3.8	220	3.5	110	2.3		3.1
09	G	<4.0	220	3.8	110	2.7		(2.7)
10	390	4.4	210	3.6	110	2.8		3.0
11	370	4.7	200	3.9	110	2.9		3.0
12	350	4.9	200	3.9	110	3.0		3.1
13	350	5.0	210	4.0	110	3.0		3.1
14	340	5.1	210	3.9	110	2.9		3.2
15	300	5.0	230	3.9	110	2.8		3.3
16	300	4.9	230	3.6	110	2.5		3.2
17	280	4.9	240	3.2	120	2.2		3.2
18	250	4.6			---	---		3.3
19	250	4.0						3.2
20	250	3.5						3.2
21	260	3.0						3.1
22	(280)	2.5						3.0
23	(300)	2.0						3.0

Time: 75.0°W.
Sweep: 1.0 Mc to 10.0 Mc in 15 seconds.

Table 20

Formosa, China (25.0°N, 121.5°E) March 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.6						2.9
01	270	3.7						3.1
02	250	3.7						3.1
03	220	3.6						3.5
04	220	2.9						3.3
05	240	2.1						3.3
06	240	3.3			(155)	E		3.2
07	220	5.4			110	2.3		3.6
08	240	6.5	240	3.9	110	2.6		3.4
09	280	7.1	230	4.2	110	3.0		3.3
10	290	8.3	220	4.4	(110)	(3.2)	3.6	3.2
11	300	9.2	200	4.5	(110)	(3.3)	3.8	3.2
12	300	10.8	200	4.5	(110)	(3.4)	4.1	3.1
13	295	12.3	210	4.5	(110)	(3.3)	4.2	3.2
14	280	13.0	210	4.3	(110)	(3.2)	4.0	3.3
15	280	12.8	220	4.3	(120)	(3.1)	4.0	3.4
16	250	12.2	220	3.8	(110)	---	3.7	3.3
17	240	10.7	220	3.2	(110)	---	3.4	3.7
18	210	9.0			(100)	---	2.4	3.5
19	210	7.0					2.2	3.5
20	210	6.0						3.2
21	240	4.3					2.0	3.2
22	280	3.9					2.0	2.9
23	290	3.7						2.9

Time: 120.0°E.
Sweep: 1.1 Mc to 19.5 Mc in 15 minutes, manual operation.

Table 21

Leopoldville, Belgian Congo (4.3°S, 15.3°E) March 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	210	4.8						2.4
01	240	4.1						2.1
02	250	3.4						2.2
03	245	3.0					1.6	2.4
04	225	2.8					2.4	2.4
05	245	3.4			---	---	2.3	2.4
06	235	5.7	240	---	125	2.2	3.0	2.7
07	260	6.3	225	---	120	2.8	3.1	2.5
08	300	6.7	215	4.3	115	3.1		2.2
09	325	8.0	210	4.4	115	3.4		2.0
10	330	8.9	205	4.5	115	3.5		2.0
11	350	10.1	205	4.6	110	3.5		2.0
12	345	11.0	200	4.5	115	3.6		2.0
13	330	11.8	200	4.4	115	3.4		2.1
14	310	12.2	220	4.3	115	3.2	3.9	2.1
15	300	12.0	230	---	115	2.9	3.4	2.1
16	285	11.9	245	---	120	2.3	3.0	2.2
17	250	11.8	---	---	---	---	2.5	2.2
18	240	11.5					2.3	2.2
19	230	11.0						2.3
20	220	10.0						2.4
21	220	9.3						2.4
22	225	7.7						2.4
23	220	7.0						2.4

Time: 0.0°.
Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 22

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	230	7.2						3.2
01	230	7.3						3.3
02	220	5.7						3.4
03	240	4.4						3.4
04	240	2.5						3.4
05	250	2.6						3.[illegible]
06	270	3.1			---	E		3.1
07	(280)	6.4	230	---	110	2.2	5.7	3.[illegible]
08	(290)	7.9	220	---	110	2.6	10.1	3.[illegible]
09	310	8.3	210	4.2	110	---	11.7	2.8
10	340	8.1	200	4.4	110	---	11.7	2.6
11	360	7.9	200	4.4	110	---	11.9	2.5
12	350	7.3	200	4.4	110	---	11.8	2.6
13	350	7.6	200	4.4	110	---	11.9	2.6
14	330	8.1	200	4.3	110	---	11.9	2.6
15	310	8.7	200	4.2	110	---	11.2	2.7
16	(290)	9.1	200	---	110	---	10.4	2.8
17	(280)	9.1	220	---	110	---	7.3	2.7
18	260	8.9			120	---	5.6	2.[illegible]
19	280	8.4						2.7
20	290	8.1						2.7
21	270	8.0						2.9
22	230	7.8						3.1
23	230	7.5						3.[illegible]

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

Table 23

Watheroo, W. Australia (30.3°S, 115.9°E) March 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.2					2.0	3.1
01	250	3.3					2.6	3.2
02	250	3.2					2.7	3.2
03	250	3.2					3.1	3.3
04	250	2.9					3.0	3.2
05	240	2.9					2.5	3.2
06	240	3.1				---	2.2	3.3
07	(220)	4.3	220	2.7		1.9	2.8	3.6
08	240	4.8	210	3.6		2.4	3.2	3.5
09	290	5.2	200	4.0		2.7	3.6	3.4
10	330	5.3	200	4.2		3.0	3.7	3.3
11	330	5.6	200	4.2		3.1	3.6	3.1
12	300	6.1	190	4.3		3.2	3.7	3.2
13	300	6.8	200	4.3		3.2	3.8	3.3
14	290	6.8	200	4.3		3.2	3.5	3.2
15	290	6.6	210	4.2		3.0	3.6	3.3
16	270	6.4	220	4.0		2.8	3.8	3.4
17	250	6.0	220	3.6		2.4	3.4	3.5
18	230	5.5	230	2.9		1.8	2.9	3.6
19	220	4.3					2.3	3.4
20	220	3.8					2.1	3.4
21	230	3.4					1.8	3.2
22	250	3.3					2.1	3.1
23	250	3.2					2.1	3.1

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

Table 24

Resolute Bay, Canada (74.7°N, 94.9°W) February 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.7						2.9
01	(270)	2.5						2.9
02	300	2.5						2.9
03	(310)	2.4						2.7
04	(320)	(2.4)					3.2	(2.7)
05	(270)	2.6						(2.8)
06	(300)	3.0						2.9
07	280	2.9						2.9
08	300	3.0						2.9
09	250	3.6						3.0
10	270	4.0						2.9
11	270	3.9						2.9
12	260	3.8						3.0
13	260	3.7						2.[illegible]
14	270	3.8						2.9
15	260	3.6						3.0
16	260	3.2						3.0
17	290	3.3						[illegible]
18	270	3.2						2.9
19	270	3.0						[illegible]
20	270	3.2						[illegible]
21	300	2.8						2.[illegible]
22	300	2.7						2.9
23	290	2.8						2.9

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

Table 25

Point Barrow, Alaska (71.3°N, 156.8°W) February 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(300)	—					6.1	—
01	(280)	—					5.6	—
02	(290)	—					8.1	—
03	—	—					5.7	—
04	—	—					4.3	—
05	—	—					4.4	—
06	—	—					4.5	—
07	—	—					5.0	—
08	—	—					5.0	—
09	—	—					4.8	—
10	(260)	3.5			—	—	4.2	(3.3)
11	250	3.8	—	—	—	—	2.9	3.3
12	260	4.2	—	—	—	—	2.9	3.3
13	250	4.4	—	—	120	—	2.0	3.3
14	240	4.8	—	—	120	1.8		3.3
15	250	4.7	—	—	120	—		3.3
16	250	4.0			—	—		3.3
17	250	3.6					1.9	3.3
18	260	(2.8)					2.5	(3.2)
19	280	(2.3)					3.4	(3.2)
20	(300)	(1.5)					4.2	—
21	(350)	E					4.2	—
22	—	E					4.5	—
23	—	—					7.0	—

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

Table 26

Baker Lake, Canada (64.3°N, 96.0°W) February 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	1.9			—	E	6.9	3.0
01	250	1.9			—	E	4.0	3.0
02	260	2.0			—	E	4.0	3.0
03	250	2.3	—	—	—	E	4.0	3.0
04	300	2.3	—	—	—	E	4.1	2.9
05	260	2.4	—	—	140	1.4	4.0	3.0
06	290	2.6	—	—	130	1.6	3.9	2.9
07	270	2.8	—	—	110	1.9	4.8	3.0
08	280	3.0	—	—	100	2.2	5.5	3.0
09	260	3.5	—	—	100	2.4	4.3	3.0
10	250	3.7	—	—	110	2.8	4.3	3.0
11	260	4.2	—	—	110	2.8	3.3	3.0
12	260	4.5	—	—	110	2.9	3.0	3.0
13	290	4.8	240	3.3	110	2.5		3.0
14	280	5.0	240	3.1	120	2.4		3.0
15	250	4.4	240	2.9	120	2.4	3.0	3.0
16	250	4.2	—	—	110	2.2	3.4	3.0
17	270	3.8	—	—	110	2.2	4.0	3.0
18	250	3.2	—	—	110	2.0	4.1	2.9
19	250	3.0			120	1.8	3.9	3.0
20	250	2.9			—	E	4.1	3.0
21	240	2.5			—	E	6.0	2.9
22	240	2.4			—	E	5.2	2.9
23	250	2.1			—	E	5.0	3.0

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

Table 27

Reykjavik, Iceland (64.1°N, 21.8°W) February 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	—	—					4.8	—
01	—	—					4.7	—
02	(320)	1.9					5.2	—
03	(340)	—					5.2	—
04	(360)	(2.3)					4.4	(3.0)
05	320	2.3					1.9	3.0
06	320	2.0						3.0
07	(300)	(1.9)						(3.1)
08	270	2.5						3.3
09	240	3.4	—	—	—	—		3.4
10	240	3.9	220	—	—	—		3.4
11	240	4.2	220	—	—	(2.0)		3.4
12	250	4.4	230	—	120	(2.2)		3.5
13	250	4.6	230	—	120	2.1		3.3
14	350	4.6	220	—	130	(2.0)		3.3
15	250	4.5	230	—	130	(1.8)		3.4
16	240	4.2	220	—	140	—		3.4
17	250	3.8						(3.2)
18	250	(3.1)					3.7	(3.2)
19	270	(2.3)					3.5	—
20	—	—					4.0	—
21	—	—					4.2	—
22	—	—					4.4	—
23	—	—					4.4	—

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

Table 28

Fort Chimo, Canada (58.1°N, 68.3°W) February 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(280)	<2.8			110	2.6	3.5	(3.1)
01	(300)	<2.7			110	2.8	3.4	(3.0)
02	(280)	2.8			110	3.0		—
03	(300)	<3.0			110	3.0		—
04	(350)	(2.8)			100	3.0		—
05	(300)	(2.6)			100	3.0		—
06	(320)	(2.3)			110	2.8	4.2	—
07	300	2.9			110	2.8		3.0
08	280	3.7	—	—	100	2.6		3.0
09	280	4.3	220	—	100	2.3		3.2
10	280	4.8	210	3.4	110	2.5		3.1
11	290	4.9	220	3.5	100	2.5		3.1
12	290	5.0	220	3.5	110	2.6		3.0
13	290	5.2	230	3.5	110	2.5		3.0
14	280	5.2	240	3.3	110	2.5		3.0
15	280	5.0	250	3.0	110	2.5		3.0
16	270	4.0	—	—	110	2.5		3.0
17	290	3.4			110	2.4		3.0
18	300	3.0			110	2.5		2.9
19	300	3.1			110	2.8	4.4	3.0
20	300	3.0			110	2.5	5.0	2.9
21	300	2.8			120	2.1	5.5	(3.0)
22	(300)	3.0			110	2.5	8.0	(3.0)
23	(300)	<2.8			100	2.5	6.5	(2.9)

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

Table 29

Lindau/Harz, Germany (51.6°N, 10.1°E) February 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	2.8					1.9	3.7
01	250	2.8					2.0	3.7
02	260	2.8					2.0	3.7
03	260	3.0					2.0	3.7
04	260	2.8					2.0	3.7
05	250	2.2					2.0	3.7
06	250	2.2					2.0	3.3
07	240	2.5			—	E	2.1	3.4
08	220	4.2			—	E	2.2	3.8
09	220	5.0			120	2.0	2.7	3.7
10	225	5.4			110	2.4	3.1	3.8
11	240	5.5			110	2.5	3.2	3.5
12	240	5.8			110	2.6	3.3	3.6
13	235	5.7			110	2.6	3.2	3.8
14	240	5.5			110	2.5	3.2	3.5
15	230	5.5			115	2.3	3.2	3.5
16	220	5.3			115	2.0	3.0	3.5
17	220	5.0			—	E	2.4	3.5
18	220	4.4			—	—	2.0	3.4
19	230	4.2						3.3
20	230	3.6						3.4
21	250	3.0						3.2
22	265	2.8						3.7
23	260	2.8					2.0	3.7

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

Table 30

Baguio, P.I. (16.4°N, 120.6°E) February 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	5.1						3.3
01	230	4.6						3.2
02	230	4.0						3.3
03	210	3.2					1.7	3.5
04	220	2.3					1.5	3.3
05	250	2.0					1.8	3.2
06	280	2.0					1.7	3.0
07	230	5.1			110	1.7	1.8	3.4
08	260	6.6	220	—	100	2.4	3.1	3.4
09	300	7.5	210	—	100	2.7	2.7	3.1
10	320	8.4	200	4.3	100	3.0		2.9
11	340	8.8	200	4.3	100	3.1	3.1	2.6
12	340	8.9	200	4.3	100	3.2	3.2	2.8
13	330	8.9	200	4.3	100	3.1		2.8
14	320	9.2	200	(4.2)	100	3.0	3.2	2.8
15	300	9.4	200	4.2	100	2.8	3.5	2.6
16	270	9.6	210	—	100	2.6	3.4	2.6
17	230	9.4	220	—	110	2.1	2.8	2.7
18	220	8.8					2.1	2.4
19	210	8.0						2.4
20	210	7.2						2.5
21	220	6.4						2.4
22	230	5.8						2.5
23	230	5.6						2.3

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

Table 31

Johanneeburg, Union of S. Africa (26.2°S, 28.1°E) February 1953

Time	h'F2	foF2	h'Fl	foFl	h'E	foE	fEs	(M3000)F2
00	260	3.6					1.8	3.0
01	260	3.6						3.1
02	250	3.4					1.9	3.0
03	250	3.2					2.1	3.1
04	260	3.0					1.8	3.0
05	260	2.6					1.6	3.1
06	240	3.8	---	---	---	1.6		3.3
07	260	4.9	230	3.4	120	2.2		3.3
08	300	5.6	220	4.0	110	2.7		3.2
09	330	6.0	210	4.3	110	3.1	3.4	3.1
10	340	6.2	200	4.4	110	3.3	3.6	3.0
11	330	6.9	200	4.5	110	3.4	3.8	3.0
12	320	7.1	200	4.6	110	3.4	3.8	2.9
13	320	7.4	200	4.5	110	3.4	3.8	3.0
14	320	7.7	200	4.5	110	3.4	4.1	2.9
16	300	7.6	220	4.4	110	3.2	3.9	3.0
16	300	7.2	220	4.1	110	3.0	3.7	3.1
17	280	7.0	220	3.8	110	2.7	3.4	3.2
18	250	6.6	230	3.1	120	2.1	3.0	3.2
19	230	6.0			---	---	2.6	3.3
20	240	5.6					2.1	3.2
21	240	4.9						3.2
22	250	4.2					1.7	3.2
23	260	3.8					1.7	3.0

Time: 30.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 7 eeconde.

Table 32

Watheroo, W. Australia (30.3°S, 115.9°E) February 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(250)	3.6					3.6	3.3
01	255	3.7					3.2	3.3
02	(250)	3.6					3.6	3.3
03	245	3.5					3.6	3.3
04	235	3.3					3.3	3.3
05	250	3.2					2.9	3.2
06	240	3.6	---	---		1.6	2.6	3.6
07	240	4.3	250	3.5		2.2	2.9	3.6
08	290	4.7	220	3.7		2.6	3.2	3.5
09	340	5.2	210	4.2		3.0	3.6	3.3
10	340	5.8	210	4.3		3.2	3.8	3.2
11	340	6.2	200	4.3		3.3	3.8	3.3
12	320	6.2	195	4.4		3.3	3.9	3.2
13	300	6.5	200	4.4		3.3	3.9	3.4
14	310	6.3	200	4.4		3.3	3.8	3.3
15	300	6.2	200	4.3		3.2	3.7	3.3
16	310	5.8	220	4.2		3.0	3.8	3.3
17	300	5.6	220	3.9		2.7	3.0	3.4
18	260	5.3	230	3.5		2.2	2.5	3.5
19	250	5.6	---	---		---	3.0	3.6
20	240	4.9					2.6	3.5
21	245	4.1					2.6	3.6
22	250	3.6					2.3	3.3
23	260	3.5					2.6	3.2

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) February 1953

Time	h'F2	foF2	h'Fl	foFl	h'E	foE	fEs	(M3000)F2
00	270	3.2						3.0
01	280	3.2					1.9	3.0
02	270	3.2						3.0
03	260	3.2						3.0
04	250	3.3						3.0
05	250	3.1					1.8	3.1
06	260	3.2						3.1
07	240	4.4	240	---	130	2.0		3.3
08	360	5.0	230	3.8	120	2.6		3.2
09	320	5.4	230	4.0	110	2.9	3.2	3.0
10	330	5.7	220	4.2	110	3.1	3.6	3.0
11	340	6.1	210	4.3	110	3.3	3.8	2.9
12	350	6.8	(200)	4.6	110	---	4.0	2.9
13	330	7.0	200	4.4	110	---	3.9	2.9
14	340	7.0	210	4.4	110	3.3	3.8	2.9
15	320	7.0	210	4.2	110	3.1	3.8	2.9
16	320	6.8	220	4.2	110	3.0	3.8	3.0
17	300	6.3	220	4.0	110	2.8	3.4	3.1
18	270	6.2	220	3.6	110	2.6	3.0	3.2
19	250	6.8	240	2.9	110	1.8	2.3	3.3
20	230	6.3					2.1	3.3
21	230	4.8					2.0	3.2
22	240	4.0					1.6	3.2
23	250	3.3						3.1

Time: 30.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 7 eeconde.

Table 34

Wakkanai, Japan (45.4°N, 141.7°E) January 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.0						2.8
01	310	3.0						2.8
02	300	2.8						2.7
03	300	2.8						2.8
04	300	2.9						2.9
06	290	2.7						3.0
06	300	2.4						2.8
07	270	4.0					2.5	3.0
08	280	5.6	---	---	120	1.8	2.3	3.1
09	260	(6.6)	270	---	120	2.3		3.2
10	270	6.6	---	---	120	2.5		3.2
11	270	6.9	280	3.8	120	2.6		3.2
12	270	6.6	250	3.8	120	2.6		3.2
13	270	6.0	---	---	120	2.5		3.2
14	270	5.6	260	---	120	2.3		3.2
16	270	5.3	---	---	120	2.1		3.2
16	260	4.3			---	---	1.6	3.1
17	270	3.8					2.4	3.0
18	270	3.3					1.7	3.0
19	280	2.7					2.4	3.0
20	300	2.6					1.6	2.9
21	320	2.7						2.8
22	300	2.8						2.8
23	300	2.9						2.8

Time: 135.0°E.
Sweep: 1.0 Mc to 15.5 Mc in 2 minutes.

Table 35

Akita, Japan (39.7°N, 140.1°E) January 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.2					2.5	2.9
01	290	3.2					2.5	3.0
02	280	3.2					2.5	3.0
03	270	3.0					2.4	3.0
04	260	2.9					2.3	3.1
05	260	2.7					2.4	3.0
06	270	2.5					2.1	3.1
07	250	3.9			---	---	2.5	3.4
08	240	5.9	---	---	130	2.0	3.2	3.4
09	250	6.8	240	3.6	120	2.5	3.5	3.3
10	260	7.8	240	4.0	120	2.7	3.5	3.4
11	250	7.2	230	4.0	110	2.8		3.5
12	250	6.7	220	4.0	120	2.8	3.5	3.5
13	250	6.3	230	3.9	120	2.8	3.4	3.4
14	250	6.0	230	3.6	120	2.6		3.5
15	240	5.5	230	3.2	120	2.4		3.6
16	230	5.0	---	---	130	1.8	3.1	3.5
17	230	4.3					3.0	3.4
18	240	3.7					3.1	3.4
19	250	3.1					3.0	3.3
20	260	3.0					3.0	3.0
21	280	3.2					3.2	3.0
22	300	3.3					2.8	3.0
23	290	3.1					2.6	3.0

Time: 135.0°E.
Sweep: 0.85 Mc to 22.0 Mc in 6 minutes, automatic operation.

Table 36

Tokyo, Japan (35.7°N, 139.5°E) January 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.0					2.5	2.9
01	280	3.1					2.5	2.9
02	260	3.1					2.5	2.9
03	260	2.8					2.5	2.9
04	250	2.8					2.5	3.0
05	260	2.6					2.5	2.9
06	300	2.4					2.5	3.0
07	250	4.0	---	---			2.5	3.2
08	240	5.8	230	---	130	2.1	2.6	3.4
09	260	6.4	240	3.5	120	2.5	3.4	3.3
10	250	6.9	230	4.2	120	2.8	3.6	3.4
11	250	7.4	220	4.2	120	3.0	3.3	3.4
12	250	6.8	220	4.2	110	3.0	3.0	3.4
13	260	6.3	230	4.0	120	3.0		3.4
14	260	6.2	230	4.0	120	2.8	3.0	3.4
15	240	5.8	230	3.2	120	2.5	3.2	3.5
16	230	5.2	---	---	130	2.1	3.1	3.4
17	230	4.4					3.0	3.3
18	240	3.8					2.8	3.3
19	250	3.2					2.7	3.3
20	280	2.8					2.6	3.0
21	280	3.0					2.6	3.0
22	300	3.0					2.6	3.0
23	300	2.9					2.5	2.9

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

Table 37

Yamagawa, Japan (31.2°N, 130.6°E) January 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	2.8					2.2	3.1
01	270	2.9					2.2	3.1
02	270	2.8					2.5	3.1
03	280	2.7					2.3	3.1
04	250	2.7					2.2	3.3
05	300	2.3					2.2	3.1
06	300	2.2					2.1	3.0
07	250	3.0					2.2	3.3
08	240	5.0	—	—	130	1.9	2.5	3.4
09	250	5.7	230	3.7	100	2.4	3.4	3.4
10	250	7.9	220	4.0	100	2.7	3.8	3.5
11	250	8.3	210	4.2	100	2.9	3.5	3.4
12	250	8.0	200	4.3	100	3.0	3.7	3.5
13	250	7.3	210	4.2	100	3.0	3.7	3.4
14	250	6.4	210	4.0	100	2.9	3.6	3.4
15	250	8.3	220	3.9	100	2.7	3.5	3.4
16	240	5.6	220	3.5	100	2.4	3.5	3.5
17	220	5.0	—	—	120	1.8	3.3	3.5
18	220	3.9					3.0	3.4
19	240	3.5					3.0	3.3
20	250	3.2					3.0	3.2
21	250	2.9					3.0	3.3
22	270	2.7					2.5	3.2
23	290	2.8					2.9	3.1

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

Table 38

Delhi, India (28.6°N, 77.1°E) December 1952

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.8						
01	300	2.7						
02	300	2.8						
03	—	—						
04	290	2.9						
05	280	3.0						
06	280	3.2						
07	240	4.9						
08	240	6.3						
09	250	8.8						
10	240	7.0						
11	260	7.0						
12	260	7.3						
13	260	7.3						
14	260	7.0						
15	260	8.8						
16	250	8.5						
17	240	5.5						
18	270	4.9						
19	260	4.4						
20	260	3.2						
21	280	3.1						
22	280	2.8						
23	300	3.0						

Time: Local.
Sweep: 1.8 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.

Table 39

Calcutta, India (22.8°N, 88.4°E) December 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.2						2.8
01	270	3.3						
02	240	3.7						
03	(240)	(3.2)						(3.1)
04	(240)	(2.8)						
05	(240)	(2.4)						
06	(240)	2.8						(3.0)
07	240	5.8				—		
08	240	7.4				2.3		
09	240	9.3				2.8	3.0	3.1
10	230	10.3				2.9		
11	240	10.5				3.2		
12	210	11.2				3.2		3.0
13	210	11.5				3.2		
14	225	11.4				3.0		
15	240	11.3				2.8	3.1	3.1
16	240	10.8				2.4		
17	240	9.4				—		
18	220	7.6					3.0	3.3
19	240	7.2						
20	240	5.8						
21	(240)	(6.0)						(3.1)
22	240	4.1						
23	265	3.6						

Time: Local.
Sweep: 0.5 Mc to 18.0 Mc in 10 minutes, manual operation.

Table 40

Bombay, India (19.0°N, 73.0°E) December 1952

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06								
07	270	6.1						
08	315	7.8						
09	330	8.4						
10	330	9.0						
11	360	9.8						
12	360	10.4						
13	390	11.2						
14	390	11.6						
15	360	10.6						
16	360	9.8						
17	330	8.8						
18	330	8.0						
19	300	7.2						
20	300	6.5						
21	285	6.4						
22	285	5.4						
23	270	4.8						

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.

Table 41

Madras, India (13.0°N, 80.2°E) December 1952

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06								
07	330	5.7						
08	360	7.2						
09	390	8.5						
10	390	8.4						
11	420	8.1						
12	420	8.8						
13	420	8.8						
14	420	9.0						
15	420	8.9						
16	420	9.1						
17	420	9.5						
18	420	9.4						
19	390	8.6						
20	390	7.6						
21	375	7.1						
22	330	8.2						
23								

Time: Local.
Sweep: 1.8 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.

Table 42

Tiruchy, India (10.8°N, 78.8°E) December 1952

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	360	4.7						
07	390	8.3						
08	420	7.8						
09	450	8.0						
10	480	8.0						
11	480	8.0						
12	510	8.0						
13	480	7.9						
14	480	8.1						
15	510	8.2						
16	480	8.2						
17	480	7.7						
18	480	7.5						
19	450	7.4						
20	420	6.8						
21	390	6.8						
22	390	5.8						
23								

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.

Table 43

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	6.0					4.5	3.1
01	230	5.0					4.4	3.1
02	255	(4.7)					3.5	3.0
03	245	4.5					3.4	3.1
04	255	(3.9)					3.0	3.0
05	250	4.0			—	E	2.7	3.1
06	230	4.7			110	2.1	3.7	3.3
07	290	5.8	230	4.0	100	2.6	4.7	3.1
08	340	5.6	225	4.2	110	3.0	5.0	3.0
09	310	7.6	220	4.5	110	3.3	5.3	3.1
10	325	8.0	200	4.5	100	3.5	6.7	3.0
11	320	8.5	200	4.6	110	3.5	6.2	3.0
12	310	9.1	200	4.5	100	3.5	5.5	3.0
13	310	8.6	200	4.5	100	3.5	5.3	3.0
14	300	8.9	200	4.4	100	3.4	4.9	3.0
15	300	9.4	210	4.4	110	3.2	4.4	3.0
16	290	8.2	220	4.2	115	2.9	4.4	3.1
17	260	7.4	—	—	110	2.4	4.4	3.2
18	250	6.4			—	E	3.6	3.1
19	280	6.3					4.3	3.0
20	300	6.4					4.4	3.0
21	290	8.3					4.3	3.0
22	275	6.4					4.4	3.0
23	250	(6.0)					4.4	(3.1)

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

Table 44

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	6.1					4.5	3.1
01	240	5.6					4.1	3.1
02	250	4.6					4.0	3.1
03	260	4.2					3.8	3.0
04	270	4.0					3.4	3.0
05	250	4.4	—	—	—	1.8	2.8	3.2
06	245	4.8	230	3.5	115	2.5		3.3
07	315	5.2	230	4.2	110	—		3.2
08	315	5.8	215	4.3	100	3.0		3.0
09	335	6.4	—	4.6	100	3.4		3.0
10	320	7.1	—	4.5	100	3.4		3.0
11	320	7.8	—	4.6	100	3.6		3.0
12	320	7.7	—	4.5	100	3.6	2.9	3.0
13	320	8.0	215	4.6	100	3.6	4.4	3.0
14	300	7.8	210	4.5	100	3.4	3.5	3.0
15	300	7.2	220	4.5	100	3.3		2.9
16	290	7.4	230	4.2	110	3.0		3.1
17	270	7.0	230	3.8	115	2.6		3.1
18	250	6.7	—	—	—	—	4.0	3.1
19	250	6.3					4.0	2.9
20	280	8.4					4.0	2.9
21	280	6.3					4.0	2.8
22	290	6.2					4.4	2.9
23	260	6.4					4.4	3.0

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

Table 45

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	5.4					4.0	3.1
01	230	5.0					4.0	3.2
02	240	4.0					3.8	3.0
03	240	3.6					3.4	3.0
04	240	3.4					3.4	3.1
05	240	3.9			—	1.4	3.0	3.2
06	240	4.2	230	----	100	2.0	3.5	3.3
07	320	5.0	220	4.0	100	2.7	3.8	3.2
08	330	5.6	205	4.2	100	3.0	5.1	3.1
09	340	5.7	210	4.3	100	3.3	5.6	3.1
10	325	6.0	205	4.5	100	3.4	5.4	3.1
11	310	6.6	200	4.5	100	3.5	5.7	3.1
12	310	6.7	190	4.5	100	3.5	5.2	3.1
13	310	6.8	190	4.5	100	3.5	4.2	3.1
14	300	6.9	200	4.4	100	3.3	3.8	3.1
15	300	6.5	200	4.4	100	3.2	3.7	3.1
16	300	6.4	210	4.2	100	3.0	3.3	3.2
17	290	6.2	220	4.0	100	2.8	3.5	3.2
18	250	6.4	230	(3.5)	100	2.0	3.9	3.2
19	240	6.1			—	1.6	4.0	3.2
20	240	6.2					3.6	3.0
21	250	6.1					3.9	2.9
22	260	6.0					3.8	2.9
23	250	6.0					4.0	3.0

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

Table 46

Hobart, Tasmania (42.8°S, 147.4°E) December 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	4.6						2.9
01	250	4.0						3.0
02	250	3.6						3.0
03	250	3.3						2.9
04	250	3.4						3.0
05	240	3.7			120	1.8	2.5	3.1
06	215	4.4	—	—	100	2.4		3.0
07	210	4.8	—	4.2	100	2.9		3.1
08	350	5.1	200	4.4	100	3.1	4.3	2.9
09	320	5.7	200	4.5	100	3.4	4.5	2.9
10	350	5.7	200	4.5	—	—	5.7	2.8
11	340	8.3	200	4.6	—	—	5.6	2.9
12	335	6.2	200	4.6	—	—	6.0	3.0
13	340	6.0	200	4.6	—	—	4.4	2.9
14	310	6.5	200	4.5	—	—	4.3	3.0
15	300	6.0	200	4.5	100	3.4	4.5	3.0
16	300	6.0	200	4.4	100	3.0		3.0
17	210	6.0	200	4.1	100	2.8		3.0
18	220	6.0			100	2.4		3.0
19	240	8.0			100	2.0	2.7	3.1
20	240	8.0						3.0
21	250	6.0					3.5	3.0
22	250	5.5					3.5	2.9
23	250	5.0						2.9

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

Table 47

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	4.0						3.1
01	240	3.8						
02	240	3.9						
03	240	3.8						3.1
04	(240)	3.4						
05	240	3.4					2.4	
06	240	3.8						2.8
07	230	7.0				2.2		
08	240	8.2				2.5		
09	240	10.2				2.9		3.1
10	240	11.0				3.2		
11	240	11.8				3.5		
12	220	12.2				3.4		3.0
13	240	12.4				3.4		
14	210	12.4				3.3		
15	210	11.9				3.0		3.3
16	210	11.8				2.6		
17	210	10.0				2.0	2.8	
18	210	8.6				—		(3.3)
19	210	7.0						
20	240	8.8						
21	240	5.8						3.1
22	240	5.1						
23	240	4.6						

Time: Local.
Sweep: 0.5 Mc to 18.0 Mc in 10 minutes, manual operation.

Table 48

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(270)	(2.8)						(3.0)
01	280	(2.7)						(3.0)
02	(280)	(2.6)					3.3	(2.9)
03	(290)	(2.8)					4.0	(3.0)
04	(290)	(2.8)					3.8	(3.0)
05	(280)	(3.0)					3.8	(3.0)
06	(280)	(2.8)					4.5	(3.0)
07	(270)	(3.3)	—	—			4.6	(3.0)
08	(270)	(3.7)	(250)	—			2.8	(3.2)
09	260	(4.3)	240	—				(3.2)
10	260	(4.3)	250	(3.1)			2.7	(3.2)
11	260	(4.6)	(240)	(3.2)	—	—	3.0	(3.3)
12	(240)	(4.7)	230	(3.4)	—	—	4.4	(3.3)
13	250	(4.5)	240	3.4	—	—	3.4	(3.2)
14	(240)	(4.5)	240	—	—	—	4.3	(3.3)
15	240	(4.4)	240	—			2.9	(3.2)
16	240	4.2	240	—			4.0	3.2
17	250	(4.0)					4.0	(3.2)
18	250	(3.6)					5.6	(3.1)
19	240	(3.6)					5.2	(3.2)
20	250	(3.5)					3.9	(3.1)
21	(250)	(3.4)					4.4	(3.0)
22	250	(2.9)					4.2	(3.0)
23	250	(2.8)						(3.0)

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

Table 49*

Inverness, Scotland (57.4°N, 4.2°W) October 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	345	(2.2)						(2.7)
01	370	(2.0)						(2.7)
02	365	(2.0)						(2.7)
03	330	(2.0)						
04	(335)	(1.8)						
05	(340)	(2.0)					2.5	
06	305	(2.0)					2.4	(2.9)
07	250	3.6			(125)	(1.5)		3.2
08	240	4.2			125	1.9	2.0	3.3
09	260	[illegible]	230	3.4	120	2.2	2.4	3.2
10	285	[illegible]	225	3.6	115	2.4	2.6	3.3
11	275	5.9	215	3.7	115	2.5	2.1	3.3
12	285	6.2	215	3.8	115	2.8	2.6	3.3
13	265	6.0	220	3.7	115	2.6		3.2
14	270	6.0	230	3.5	115	2.4		3.2
15	255	5.8	250	3.5	120	2.3		3.3
16	265	5.7			130	1.9	2.3	3.2
17	245	5.6			(140)	(1.8)	1.8	3.2
18	250	[illegible]						3.1
19	250	4.3						3.1
20	260	3.7						3.1
21	285	(3.0)						(2.9)
22	315	(2.4)						(2.8)
23	335	(2.2)						(2.7)

Time: 0.0°.
Sweep: 0.67 Mc [illegible] in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 50*

Slough, England (51.5°N, 0.6°W) October 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	3.0					2.6	2.8
01	300	3.0					2.7	2.8
02	300	2.8					2.9	2.8
03	295	2.7					3.3	2.8
04	295	2.4					3.7	2.8
05	285	2.1					3.8	2.9
06	280	2.5	—	—	—	—	3.8	3.0
07	245	4.2	230	3.0#	145	1.8	3.0	3.4
08	285	5.1	230	3.4	125	2.2	3.4	3.4
09	285	5.8	225	3.6	120	2.4	4.2	3.2
10	300	6.6	220	3.8	120	2.6	4.3	3.2
11	285	6.7	225	4.0	125	2.7	4.2	3.2
12	275	6.7	220	4.0	120	2.8	4.5	3.2
13	275	6.8	225	3.9	125	2.8	4.1	3.2
14	275	6.6	230	3.8	125	2.7	4.5	3.2
15	260	6.5	245	3.6	130	2.3	3.9	3.2
16	255	6.1	245	3.3	130	2.0	3.4	3.2
17	235	6.0	—	—	—	—	3.1	3.2
18	245	5.9					2.9	3.1
19	245	5.2					2.6	3.2
20	260	4.1					2.5	3.0
21	280	3.4					2.5	2.9
22	295	3.2					2.5	2.8
23	305	3.0					2.6	2.8

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

Table 51

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	255	5.2						3.0
01	(240)	(4.4)						
02	(270)	(3.7)						
03	(240)	(3.8)						(3.0)
04	(270)	(3.0)						
05	(240)	(3.2)						
06	(210)	(4.9)				—		(3.0)
07	210	8.3				3.3		
08	(240)	(8.5)				3.0		
09	(225)	(8.6)				3.2		(2.9)
10	(240)	(9.4)				3.5		
11	230	(11.2)				3.6		
12	(195)	(12.3)				3.6		(3.2)
13	(210)	(10.8)				3.5		
14	(210)	(12.2)				3.4		
15	210	(12.3)				3.3		(3.1)
16	210	(10.3)				3.1		
17	215	11.4				2.2		
18	210	(9.9)				—		(3.1)
19	(210)	(9.8)						
20	(240)	(8.5)						
21	(270)	(8.0)						(2.8)
22	(240)	(6.1)						
23	(240)	(5.8)						

Time: Local.
Sweep: 0.5 Mc to 18.0 Mc in 10 minutes, manual operation.

Table 52*

Khartoum, Sudan (15.6°N, 32.6°E) October 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	275	8.0						3.1
01	250	8.4						3.2
02	230	8.6						3.4
03	225	5.2						3.6
04	240	3.5						3.2
05	255	2.7					2.4	3.1
06	250	5.2			130	1.9	3.0	3.3
07	250	8.0	230		125	2.5	4.6	3.3
08	—	9.0	240		120	2.9	4.6	3.1
09	290	10.0	230	4.7	120	3.2	4.1	2.9
10	300	10.7	215	4.7	115	3.4		2.8
11	310	11.0	210	4.6	120	3.5		2.7
12	310	11.0	215	4.8	120	3.5		2.7
13	310	12.2	215	4.7	120	3.5		2.9
14	295	12.8	215	4.4	115	3.3	5.0	3.0
15	290	13.1	220		115	3.1	5.5	3.0
16	280	13.0	220		120	2.6	5.7	3.2
17	250	12.4			105	2.1	5.2	3.1
18	260	11.6					3.1	2.8
19	270	11.2					2.8	2.9
20	280	10.8					3.2	2.8
21	260	9.7					3.9	2.8
22	280	9.0					3.3	3.0
23	280	7.9					2.6	2.9

Time: 30.0°E.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 53*

Singapore, British Malaya (1.3°N, 103.8°E) October 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	220	5.8					2.7	3.0
01	260	5.1					1.9	2.9
02	260	4.6					1.8	2.9
03	255	4.4					1.9	3.0
04	265	3.8					2.3	3.1
05	260	2.9					3.3	3.2
06	250	4.8			135	1.5	3.8	3.2
07	260	7.8	235		120	2.3	3.7	3.2
08	285	8.8	225		115	[illegible]	4.1	2.9
09	310	9.0	210	4.6	(110)	[illegible]	6.1	2.5
10	330	9.8	205	4.7	(110)	[illegible]	6.0	2.2
11	335	10.0	200	4.8	110	3.6	5.8	2.0
12	350	9.4	200	4.7	110	3.6	5.8	2.0
13	355	9.8	200	4.7	110	3.5	5.4	2.1
14	335	10.1	205		110	3.4	5.2	2.4
15	300	10.6	225		110	3.1	5.2	2.6
16	295	10.6	240		115	2.7	4.1	2.6
17	265	10.6	245		125	2.2	3.8	2.6
18	270	10.3					3.2	2.5
19	295	10.2					2.8	2.6
20	275	10.0					3.0	2.7
21	245	9.8					3.0	3.0
22	225	10.0					2.8	3.2
23	210	7.9					2.2	3.4

Time: 105.0°E.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 54*

Inverness, Scotland (57.4°N, 4.2°W) September 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	325	(2.2)						(2.7)
01	320	(2.2)						(2.8)
02	330	(2.2)						(2.5)
03	325	(2.1)						(2.7)
04	315	(1.9)						(2.7)
05	305	(2.0)						(2.9)
06	290	3.0	(260)	(2.9)	(150)	(1.7)	2.5	3.1
07	(290)	3.9	245	(3.2)	135	1.9	2.6	3.2
08	325	4.3	230	3.5	120	2.3	2.6	(3.2)
09	340	4.6	230	3.8	115	2.5	2.8	3.2
10	350	4.9	225	4.0	110	2.7	3.0	3.1
11	375	5.2	220	4.1	110	2.8	3.0	3.1
12	350	5.4	215	4.1	110	2.8	3.0	3.1
13	350	5.2	220	4.1	110	2.8	3.0	3.1
14	335	5.2	220	4.1	110	2.8	2.9	3.1
15	330	5.3	230	3.9	110	2.6		3.1
16	315	5.4	230	3.7	110	2.4	2.8	3.0
17	290	5.5	250	3.3	125	2.1	2.8	3.0
18	265	5.5	(255)		(150)	(1.9)	1.8	3.0
19	255	5.5						3.1
20	255	5.0						3.0
21	265	4.0						3.0
22	290	2.9						2.9
23	305	(2.5)						(2.8)

Time: 0.0°.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 55*

Slough, England (51.5°N, 0.5°W) September 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	[illegible]	3.1					2.6	2.7
01	300	[illegible]					2.6	2.7
02	300	[illegible]					2.0	2.7
03	[illegible]	2.0					2.6	2.8
04	[illegible]	2.5					3.0	2.8
05	285	2.4					3.8	2.8
06	265	3.6	235	3.0	135	1.7	4.0	3.2
07	295	4.4	230	3.5	125	2.1	3.7	3.2
08	325	4.7	230	3.8	120	2.5	4.1	3.2
09	355	5.0	220	4.0	115	2.7	4.2	3.1
10	345	5.4	225	4.2	115	2.9	4.5	3.1
11	345	5.5	225	4.3	115	3.0	4.8	3.2
12	335	5.7	220	4.3	115	3.0	4.6	3.0
13	325	5.8	225	4.3	120	3.0	4.5	3.2
14	320	5.7	230	4.3	120	3.0	4.4	3.1
15	310	5.7	230	4.1	120	2.8	4.2	3.0
16	295	5.8	235	3.8	120	2.5	4.0	2.1
17	275	5.8	240	3.5	125	2.2	3.6	2.1
18	255	6.2	265	3.1	130	1.9	3.1	3.0
19	250	6.0					2.6	3.0
20	245	5.6					2.9	2.2
21	255	4.8					2.8	3.0
22	270	3.8					2.6	2.8
23	290	3.4					2.6	2.8

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

Table 56*

Khartoum, Sudan (15.6°N, 32.6°E) September 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	295	<6.2					2.3	3.6
01	270	<6.3						3.1
02	275	<6.0						2.4
03	250	<4.7						2.6
04	280	<4.0					2.0	2.4
05	260	3.2						3.1
06	240	5.4			105	1.9	3.0	3.7
07	225	7.0	225		110	2.5	4.6	3.5
08	240	7.6	220		110	3.0	5.5	3.3
09	—	8.4	220		110	3.3	4.7	2.9
10	240	9.0	220	4.8	110	3.5	5.0	2.6
11	330	9.8	205	4.8	110	2.5	4.5	2.5
12	330	10.0	210	4.8	110	3.6		2.5
13	350	9.8	200	4.7	110	3.6	5.0	2.8
14	320	10.7	210	4.7	110	3.5	4.4	2.7
15	310	11.7	220	4.5	110	3.3	4.8	2.9
16	290	12.8	220		110	3.0	5.8	3.0
17	250	12.6	220		110	2.4	5.7	3.0
18	240	12.0					4.9	3.1
19	250	10.5					2.9	2.9
20	250	9.5					3.4	3.0
21	230	8.4					2.5	2.7
22	280	7.7						2.8
23	300	7.1					2.0	3.0

Time: 30.0°E.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 57*

Singapore, British Malaya (1.3°N, 103.8°E) September 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	215	5.3					1.6	3.1
01	250	4.4					2.5	3.0
02	250	3.7					2.6	3.0
03	255	3.4					3.0	3.0
04	250	2.6					3.0	2.1
05	260	2.1					3.1	3.1
06	265	4.3					3.4	2.1
07	250	7.8	235		125	2.3	4.0	3.1
08	290	9.5	230		120	2.8	5.3	3.0
09	305	10.1	215	(4.5)	115	3.2	5.7	2.7
10	320	10.2	205	4.6	110	2.4	5.8	2.4
11	345	10.2	205	4.7	110	3.6	6.0	(2.2)
12	365	10.1	200	4.8	110	2.6	5.2	(2.4)
13	365	10.0	200	4.7	110	3.5	5.7	2.4
14	335	10.1	210	4.5	110	3.4	4.9	2.5
15	325	10.0	215	(4.4)	(110)	2.2	4.5	2.5
16	305	10.5	235		115	2.8	3.8	2.6
17	290	10.7	250		125	2.3	3.2	2.6
18	260	10.8				(1.6)	3.0	2.7
19	270	10.6					3.0	2.7
20	250	10.3					3.4	2.9
21	235	10.2					3.0	3.1
22	215	9.2					2.0	2.3
23	210	7.2					1.8	3.3

Time: 105.0°E.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 58*

Falkland Is. (51.7°S, 57.8°W) September 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	3.6						2.7
01	305	2.4						2.7
02	290	2.4						2.8
03	285	2.3						2.8
04	265	2.4						2.9
05	250	3.3						3.1
06	225	4.0			(165)	(1.6)		2.4
07	220	5.2			135	2.1	2.3	3.6
08	230	5.9	215		115	2.4	2.4	3.6
09	230	6.4	210		110		4.7	2.4
10	245	6.7	210	4.1	110		4.8	3.4
11	260	7.3	210	4.3			4.0	2.3
12	250	7.5	210	4.2	110	3.1	3.8	3.3
13	250	7.3	215	4.2	105	3.0	2.4	2.4
14	250	6.9	210	(3.9)	110	2.9	3.4	2.4
15	235	6.4	215	(2.6)	110	3.7	3.0	3.5
16	235	6.0	215		120	(3.3)	2.9	2.5
17	230	5.8			130	(1.9)	2.2	3.4
18	225	5.2					2.2	3.2
19	235	4.6						2.1
20	260	4.2					1.8	3.9
21	270	3.9						2.9
22	300	3.6						2.7
23	310	3.6						2.7

Time: 60.0°W.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 59*

Port Lockroy (64.8°S, 63.5°W) September 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.2						2.8
01	300	2.9						2.8
02	295	2.8						2.8
03	295	2.7						2.8
04	280	2.7						3.0
05	260	2.8						3.1
06	230	3.2						3.2
07	215	4.2				1.9		3.5
08	210	5.0			125	2.1		3.7
09	205	5.7			125	2.4		3.6
10	215	5.9			120	2.6		3.6
11	225	6.3			115	2.6		2.5
12	220	6.3			110	2.7		2.5
13	220	6.4			115	2.7		2.5
14	220	6.0			115	3.6		3.5
15	215	6.1			125	2.5		2.5
16	215	5.8			125	2.2		3.5
17	215	5.4				2.2		2.5
18	220	5.4						2.4
19	230	5.1						3.2
20	245	4.7						3.1
21	265	4.1						2.9
22	280	3.6						3.9
23	290	3.4						2.8

Time: 60.0°W.
Sweep: 1.1 Mc to 16.0 Mc, manual operation.
*Average values except foF2 and fEs, which are median values.

Table 60

Tananarive, Madagascar (18.8°S, 47.8°E) August 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	3.3						3.2
01	230	2.9						2.4
02	230	2.8						2.4
03	235	2.3						2.4
04	295	2.2						3.0
05	300	2.3						3.0
06	270	2.6						3.0
07	235	5.5	—	—	140	2.0	2.0	3.5
08	255	6.4	230	—	115	2.6	2.6	3.5
09	280	7.1	220	4.4	110	2.9	3.2	3.4
10	280	7.6	220	4.5	110	3.3	3.4	3.4
11	275	7.8	215	4.6	110	3.3	2.5	3.4
12	285	7.7	210	4.6	110	3.4	3.3	2.3
13	280	7.0	210	4.6	110	3.3	2.3	3.4
14	275	6.8	215	4.5	110	2.3	3.1	3.3
15	270	6.7	220	4.2	115	3.0	3.1	3.4
16	250	6.4	225	—	120	2.8	2.5	2.3
17	230	6.4	230	—	125	2.2	3.0	3.4
18	220	5.5					2.3	2.4
19	220	4.7					3.3	3.4
20	230	3.5						3.3
21	260	3.3						3.0
22	250	3.3						3.2
23	250	3.3						3.3

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

Table 61*

Falkland Is. (51.7°S, 57.8°W) August 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	315	2.6					1.8	2.8
01	305	2.6					2.0	2.7
02	296	2.6					2.3	2.7
03	280	2.6					2.8	2.9
04	260	2.7					4.8	3.0
05	230	2.8					2.6	3.3
06	230	2.1			175	1.2		3.3
07	235	3.7			165	(1.6)	2.9	3.4
08	225	4.8			135	2.1	2.9	3.6
09	225	5.4	(220)		120	2.3	3.1	3.7
10	230	5.4	210	3.2	120	(2.6)	3.7	3.6
11	245	6.0	215	3.3	115	2.6	4.5	3.5
12	245	6.4	215	3.9	115	2.7	4.2	3.5
13	250	6.2	220	3.8	116	(2.7)	3.5	3.5
14	235	6.0	215	3.6	115	(2.5)	3.2	3.6
15	230	6.0	215	3.2	125	(2.3)	3.1	3.6
16	220	5.5	(210)		135	(2.0)	2.9	3.6
17	215	4.4				1.6	2.9	3.5
18	230	3.4					2.9	3.2
19	240	3.0					3.1	3.2
20	250	2.7					3.9	3.2
21	275	2.4					3.0	2.9
22	285	2.6					3.0	2.8
23	310	2.7					2.7	2.7

Time: 60.0°W.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 62*

Port Lockroy (64.8°S, 63.5°W) August 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.4						2.8
01	295	2.4						2.8
02	285	2.4						2.8
03	280	2.4						2.9
04	270	2.3						3.0
05	240	2.3						3.1
06	235	2.1						3.2
07	225	2.2						3.2
08	220	3.6				(1.6)		3.4
09	210	4.4				——		3.6
10	205	6.0				(2.3)	2.8	3.7
11	210	5.4				(2.5)		3.6
12	215	5.5				(2.5)	3.6	3.6
13	215	6.4				(2.4)		——
14	215	5.2				(2.4)		3.6
15	210	5.4				(2.4)		3.6
16	215	4.9						3.5
17	215	4.6					2.6	3.4
18	220	3.9						3.2
19	240	3.0						3.1
20	255	2.4						3.1
21	280	2.2						2.9
22	300	2.2						2.8
23	300	2.4						2.8

Time: 60.0°W.
Sweep: 1.1 Mc to 16.0 Mc, manual operation.
*Average values except foF2 and fEs, which are median values.

Table 63

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	4.6					2.7	2.9
01	275	4.4					2.5	2.9
02	270	4.2					2.8	2.9
03	265	3.7					2.8	3.0
04	275	3.6					3.2	3.0
05	260	4.1	245	3.1	——	1.8	2.8	3.1
06	300	4.6	245	3.7	110	2.2	3.4	3.2
07	340	5.0	225	4.0	110	2.6	4.8	3.0
08	310	5.4	220	4.2	110	3.0	4.5	3.3
09	345	5.5	215	4.4	110	3.1	3.8	3.2
10	310	5.7	205	4.6	110	3.2	4.5	3.2
11	340	5.6	200	4.6	105	3.2	4.8	(3.2)
12	350	5.7	210	4.6	110	3.2	4.1	(3.2)
13	345	6.9	200	4.6	110	3.2	4.2	3.0
14	340	5.9	210	4.5	110	3.2	3.7	3.0
15	350	5.6	220	4.6	110	3.1	3.6	3.0
16	335	5.7	220	4.2	110	3.0	3.6	3.0
17	320	6.1	235	4.0	110	2.7	4.5	3.0
18	300	6.0	240	3.6	115	2.2	3.8	3.0
19	270	6.0	250	2.9	——	1.8	3.7	3.1
20	<255	6.8					3.5	3.1
21	245	6.4					3.6	3.0
22	250	5.4					3.0	3.0
23	260	4.8					3.4	3.0

Time: 0.0°.
Sweep: 1.6 Mc to 16.8 Mc in 1 minute.

Table 64

Casablanca, Morocco (33.6°N, 7.6°W) July 1952*

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	305	(5.4)					4.1	(2.8)
01	305	(5.0)					3.8	(2.9)
02	300	(5.2)					4.1	(2.9)
03	280	4.2					3.9	(3.1)
04	300	3.9					3.8	3.0
05	300	4.0					4.0	(3.0)
06	270	4.1	250	——	——	——	3.6	3.2
07	280	5.4	240	——	115	2.3	4.5	3.4
08	(280)	6.5	230	4.2	110	(2.7)	5.3	(3.4)
09	300	5.9	——	4.4	105	3.0	5.0	3.1
10	310	(6.4)	200	4.5	105	3.2	4.9	(3.1)
11	330	(6.9)	200	4.5	105	3.4	4.8	(3.2)
12	350	6.6	——	——	105	3.4	4.8	3.0
13	350	7.4	210	4.6	105	3.4	4.1	2.9
14	320	8.2	220	4.6	105	3.4	3.8	3.0
16	330	8.2	220	4.5	105	3.2	4.1	2.9
16	310	7.8	——	4.4	105	3.1	5.2	3.0
17	300	8.2	230	4.2	110	2.9	5.4	3.0
18	280	8.6	250	3.8	110	2.5	4.5	3.2
19	260	8.6	240	3.2	——	——	4.4	3.2
20	250	8.0					4.1	3.2
21	250	6.9					4.4	3.2
22	280	5.4					3.1	3.0
23	300	(5.7)					2.8	(2.8)

Time: 0.0°.
Sweep: 1.6 Mc to 16.0 Mc in 1 minute 15 seconds.
*Data taken July 1 through 15 only.

Table 65*

Ibadan, Nigeria (7.4°N, 4.0°E) July 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	(4.3)					2.0	
01	301	(3.8)					2.2	
02	290	(3.0)					3.3	
03	265	(2.1)					3.2	
04	259	——					4.4	
05	258	(2.2)					4.4	
06	247	5.0			128	1.7	4.6	
07	281	7.2	330		119	2.6	4.9	
08	321	8.1	221	4.5	113	3.0	6.0	
09	337	8.4	213	4.5	111	3.2	5.1	
10	370	7.8	202	4.6	102	3.6	5.1	
11	381	7.4	199	4.6	106	3.6	5.4	
12	385	7.3	199	4.6	108	3.6	5.6	
13	386	7.4	197	4.6	107	3.8	5.7	
14	374	7.9	201	4.5	109	3.4	5.5	
15	363	7.9	205	4.4	111	3.3	4.9	
16	306	8.3	210	4.1#	113	3.3	4.5	
17	276	8.6	233		119	2.3	2.8	
18	255	9.0			145	1.6	3.1	
19	275	8.7					3.3	
20	297	7.6					1.8	
21	295	(6.6)					1.9	
22	296	>5.7					2.2	
23	311	——					1.9	

Time: 0.0°.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.
#One or two observations only.

Table 66

Tananarive, Madagascar (18.8°S, 47.8°E) July 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	242	2.8					2.0	3.2
01	245	2.5					2.0	3.3
02	260	2.5					1.6	3.2
03	250	2.3						3.1
04	270	2.2						3.0
05	280	2.2						3.1
06	270	2.2			——	——		3.2
07	230	4.9			150	2.0		3.4
08	250	6.0	225	——	117	2.4	2.6	3.4
09	260	6.6	220	4.3	111	2.8	3.3	3.4
10	265	7.1	220	4.4	111	3.0	3.5	3.4
11	260	7.0	210	4.5	111	3.2	3.7	3.6
12	270	6.3	215	4.5	110	3.2	3.8	3.5
13	255	6.4	215	4.4	110	3.2	3.9	3.5
14	255	6.2	220	4.3	111	3.1	3.6	3.6
16	255	6.0	220	4.0	111	2.9	4.0	3.4
16	250	8.0	235	——	113	2.6	3.6	3.4
17	230	6.1	——	——	129	2.0	3.3	3.5
18	220	5.3					3.0	3.5
19	220	3.9					2.5	3.4
20	235	2.8					2.4	3.2
21	260	3.0					2.3	3.1
22	250	3.2					2.0	3.2
23	250	3.0					2.1	3.3

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

Table 67

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	[illegible]	3.8	230	---	130	1.7		3.2
01	240	(4.0)	240	---	130	(1.6)		(3.1)
02	(250)	(3.8)	230	---	(120)	1.7		(3.1)
03	(300)	(4.2)	220	2.9	(120)	(1.8)		(3.2)
04	(280)	(4.0)	220	3.1	(110)	(2.1)	2.0	(3.2)
05	(370)	(4.1)	210	(3.3)	100	2.2	2.1	(3.3)
06	(S)	(4.2)	200	(3.5)	100	2.3	4.3	(2.8)
07	---	(4.4)	(200)	(3.6)	100	2.5	5.4	---
08	---	(4.6)	200	(3.8)	100	2.6	5.0	---
09	(330)	(4.8)	(210)	(4.0)	100	2.8	2.6	(3.0)
10	(370)	(4.8)	200	(4.0)	100	3.0	3.4	(3.0)
11	400	(5.0)	200	(4.0)	100	3.0		(2.9)
12	(370)	(4.8)	200	(4.1)	100	3.0	3.6	(3.1)
13	(380)	(5.0)	200	4.1	100	(3.0)	3.5	(3.0)
14	(410)	(4.7)	200	(4.0)	100	2.9	8.8	---
15	380	4.6	200	4.0	100	2.8	7.4	3.0
16	(390)	(4.4)	200	3.9	100	2.7	6.6	(3.0)
17	370	(4.5)	210	3.8	100	2.7	4.7	(3.0)
18	380	(4.2)	210	3.6	100	2.5	5.0	(3.0)
19	360	(4.4)	210	(3.5)	(100)	2.4	4.7	(3.0)
20	300	(4.4)	230	(3.4)	---	---	3.8	(3.1)
21	290	(4.2)	220	3.1	---	2.0	3.0	3.2
22	250	(4.1)	230	---	(120)	1.7	2.0	(3.1)
23	240	3.8	230	---	(130)	(1.7)	1.8	3.2

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

Table 68

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	4.6					3.0	2.9
01	280	4.6					2.7	2.8
02	< 280	4.2					2.8	2.9
03	275	4.0					2.6	2.9
04	275	3.9	300	---			2.8	2.9
05	320	4.5	245	3.1	---	1.8	2.7	2.9
06	330	4.9	230	3.7	110	2.3	3.1	3.0
07	325	5.1	220	4.0	110	2.7	3.9	3.2
08	300	5.6	210	4.2	110	2.9	4.8	3.3
09	350	5.5	215	4.4	105	3.0	4.8	(3.1)
10	360	5.6	205	4.5	105	3.2	4.3	(3.2)
11	365	5.7	200	4.6	105	3.3	4.9	3.0
12	350	5.8	200	4.6	105	3.3	5.0	(3.0)
13	345	5.9	215	4.6	105	3.2	4.8	3.0
14	350	5.6	200	4.5	110	3.2	5.1	3.0
15	340	5.8	220	4.4	110	2.9	4.0	3.0
16	335	5.9	220	4.2	110	2.9	4.8	3.0
17	320	6.1	225	4.0	110	2.7	4.5	3.0
18	290	6.3	240	3.6	115	2.3	5.2	3.1
19	255	5.8	250	3.0	---	1.8	5.4	(3.1)
20	250	6.2					5.2	3.1
21	250	5.7					4.8	3.1
22	250	5.4					4.1	3.0
23	255	4.9					3.2	2.9

Time: 0.0°.
Sweep: 1.6 Mc to 16.8 Mc in 1 minute.

Table 69

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	5.0					4.2	(2.8)
01	300	(5.0)					4.0	(2.8)
02	300	(4.9)					4.0	3.0
03	290	(4.6)					4.0	3.0
04	280	(4.7)					3.0	(2.9)
05	280	4.0					3.8	(3.0)
06	270	4.9	250	3.2	120	1.7	4.1	3.3
07	270	5.6	230	3.8	110	2.4	3.8	3.4
08	280	5.7	220	4.1	105	(2.8)	4.3	3.3
09	300	6.0	225	4.3	100	3.1	5.6	3.2
10	340	6.3	210	---	100	3.3	5.4	3.1
11	350	6.2	200	4.6	100	3.4	4.7	3.1
12	350	6.5	210	4.7	100	(3.4)	4.7	3.0
13	350	6.9	200	4.6	100	(3.5)	4.5	3.0
14	340	7.4	200	(4.6)	100	(3.4)	4.3	3.0
15	340	7.4	225	4.4	100	3.3	5.6	3.0
16	325	8.1	210	4.2	100	3.1	5.3	3.0
17	300	8.1	240	4.0	105	2.8	4.8	3.0
18	280	8.4	240	3.8	110	2.3	4.7	3.2
19	260	8.2	240	3.0	---	---	5.2	3.2
20	250	7.7					4.3	3.3
21	250	6.4					4.0	(3.0)
22	300	5.3					4.0	2.9
23	300	(4.8)					4.5	(2.8)

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

Table 70

Tananarive, Madagascar (18.8°S, 47.8°E) June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	230	2.7						3.4
01	235	2.4						3.2
02	260	2.4						3.0
03	260	2.4						3.2
04	260	2.1						3.0
05	255	2.1						3.0
06	260	2.3						3.1
07	230	5.1	---	---	140	1.9		3.5
08	240	6.1	230	---	110	2.4	2.5	3.6
09	250	6.7	225	4.2	110	2.8	3.3	3.4
10	260	6.9	222	4.4	110	3.0	3.8	3.4
11	270	6.4	220	4.5	110	3.2	3.5	3.3
12	270	6.4	235	4.5	110	3.2	3.8	3.4
13	270	6.8	220	4.5	110	3.2	4.0	3.3
14	265	6.4	220	4.3	110	3.1	3.9	3.4
15	255	6.5	225	---	110	2.9	3.6	3.4
16	240	6.2	230	---	113	2.5	3.8	3.4
17	225	5.8	---	---	130	1.9	2.9	3.5
18	220	5.1					2.6	3.5
19	210	3.6					2.4	3.5
20	240	2.7					2.2	3.2
21	245	3.0					2.1	3.2
22	250	3.2						3.2
23	240	3.2						3.4

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

Table 71

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	< 280	4.0					1.7	2.8
01	280	3.8						2.8
02	295	3.6					1.8	2.8
03	290	3.4					1.7	2.8
04	280	3.3					2.0	2.9
05	275	3.9	250	3.0	135	1.8	2.2	3.2
06	295	4.6	230	3.6	110	2.2	2.6	3.3
07	300	4.9	220	3.9	110	2.6	3.3	3.2
08	300	5.5	210	4.2	110	2.8	3.5	3.3
09	340	5.2	205	4.4	110	3.0	3.9	(3.3)
10	320	5.6	200	4.5	105	3.1	3.6	3.3
11	350	5.7	200	4.5	105	3.1	3.5	3.0
12	325	5.9	200	4.6	110	3.2	3.5	3.1
13	350	5.9	215	4.6	110	3.2	3.4	3.1
14	325	5.9	210	4.5	110	3.2	3.7	3.0
15	315	5.9	220	4.5	110	3.1	3.8	3.1
16	315	6.2	225	4.2	110	2.9	3.5	3.1
17	300	6.1	240	4.0	110	2.6	3.4	3.1
18	280	6.4	245	3.6	120	2.0	3.0	3.1
19	255	6.5	250	---	---	1.8	2.4	3.2
20	240	6.7					2.4	3.2
21	245	5.8					2.0	3.1
22	240	5.0						3.1
23	250	4.4					2.0	2.9

Time: 0.0°.
Sweep: 1.6 Mc to 16.8 Mc in 1 minute.

Table 72

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	4.4					2.2	2.8
01	310	4.6					2.1	(2.8)
02	300	4.5					2.1	2.8
03	295	4.1					2.0	2.9
04	280	4.0					2.2	2.9
05	275	3.4					2.5	3.0
06	250	4.4	250	3.1	125	1.8	3.1	3.4
07	250	5.2	230	3.7	110	2.3	3.6	3.4
08	265	5.2	220	4.0	105	2.7	3.7	3.5
09	310	5.5	220	4.3	105	(3.0)	3.6	3.4
10	350	5.6	200	(4.4)	105	(3.2)		3.1
11	350	6.2	200	4.6	100	(3.3)		3.0
12	350	6.7	---	4.6	105	(3.4)		3.1
13	350	7.2	---	4.6	105	(3.4)		3.0
14	350	7.4	230	4.6	105	3.4		2.9
15	330	8.2	250	4.5	105	3.2	3.3	3.0
16	300	8.0	240	4.4	110	3.0	4.8	3.2
17	300	8.0	250	4.1	110	2.7	4.2	3.2
18	280	8.1	245	3.8	120	2.2	3.9	3.2
19	250	8.3	250	2.7	120	1.7	3.2	3.2
20	240	7.5					2.4	3.3
21	250	5.8					2.0	(3.0)
22	300	5.0						2.8
23	320	4.4					2.3	2.8

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

Form adopted June 1946

TABLE 73

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

IONOSPHERIC DATA

h'F2 (Characteristic), Km (Unit), MAY (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: McC., E.J.W.

Calculated by: McC., L.A.L., N.B., 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	250	270	270	240	250	240	240^H	310	360	350	G	G	G	520	360	370	330	310	280	230	230	250	250	(270)^A
2	A	A	A	230	240	A	A	A	300^H	290	320	350	300	360	320	320	300	280	2[illegible]	220	210	230	(280)^A	(280)^A
3	270	260	250	240	(260)^A	250	240	230	280	310	330	330	300	350	300	290	300	280	240	220	210	220	250	270
4	280	260	250	250	[250]^S	250	250^H	280	280	G	360	380	320	380	340	320	310	270	250	230	230	230	240	270
5	280	(300)^S	270	250	270	270	210	340	[360]^S	(370)^H	(350)^H	340	400	330	330	290	290	280	260	250	240	230	260^H	(300)^S
6	250	280	(280)^S	270	[290]^S_K	310^K	250^H	G	G^K	G^K	G^K	G^K	G^K	G^K	G^K	G^K	G^K	(420)^S_K	290^K	230^K	250^K	250^K	(310)^S_K	270^K
7	(300)^A_K	[290]^S_K	280^K	270^K	[260]^S_A	[illegible]	[illegible]	G	G^K	G^K	G^K	G^K	G^K	(480)^F_K	G^K	G^K	G^K	440^K	310^K	230^K	240^K	270^K	280^K	280
8	250	270	280	270	250	250	[illegible]	G	400	370	[illegible]	[illegible]	470	410	400	400	360	330	310	250	240	230	280	260
9	250	280	290	290	[illegible]	[illegible]	[illegible]	G	G^K	G^K	G^K	[illegible]	510^K	390^K	430^K	440^K	400^K	360^K	310^K	240^K	230	230	250	270
10	270	(270)^S	270	290	270	A	G	G	S	420	370^H	G	530	420	(460)^S	390	340	280	250	220	220	230	240	270
11	260	260	240	230	250	250	290	300	G	450	400	400	[420]^A	A	370	400^K	350	[310]^A	270	(240)^A	210	220	250	250
12	250	250	270	250	240	220	250	330	340	[370]^A	400	A	A	400	430	400	360	320	290	220	220	230	(270)^A	[260]^A
13	250	250	260	240	(230)^S	210	230	[270]^L	300	340	340	360	330	380	350	340	300	290	260	240	220	220	230	250
14	260	250	250	240	230	220	260	320	260	350	340	330	410	320	320	320	A	A	270	250	(210)^A	(230)^A	230	270
15	250	250	260	A	A	A	280	(270)^S	(460)^H_K	290^S_K	G^K	310^K	370^H_K	350^K	480^K	300^K	280^K	310^K	280^F	230^K	220^K	260^K	(320)^S_K	A^K
16	S^K	(290)^S_K	E^K	E^K	S^K	270^K	260^K	G^K	G^K	G^K	G^K	G^K	G^K	G^K	G^K	390^K	G^K	500^K	350^K	330^K	300^K	(310)^S_K	[340]^S_K	360^K
17	(300)^S_K	E^K	E^K	E^K	E^K	E^K	220^K	G^K	G^K	G^K	G^K	G^K	G^K	G^K	G^K	G^K	S^K	340^K	310^K	230^K	210^K	260^K	(280)^S_K	A^K
18	A^K	E^K	A^K	A^K	A^K	210^K	G^K	G^F	G^F	G^K	A^K	A^K	A^K	G^F	G^K	G^K	420^K	340^K	(320)^L_K	260^K	240^K	230^K	220^K	250^K
19	(320)^S_K	260^K	[270]^A_K	(280)^S_K	260^K	230^K	230^K	G^K	G^K	G^F	G^K	G^K	G^K	G^K	G^K	G^K	440^K	350^K	320	250	240	250	260	(280)^A
20	(270)^S	(240)^S	S	S	S	260	G	400	380^H	410	G	G	G	430	410	370	350	300	280	250	240	240	280	280
21	[290]^A_K	(300)^S	(280)^S	(300)^S	[270]^S	240	G	G	410	G	G	510^H	550	480	450	430	400	320	280	250	220	240	250	(270)^S
22	(290)^S	280	270	250	[250]^S	250	(270)^L	400	G	G	G	G	410^H	390	430	390	350	320	260	[250]^A	240	230	220	(250)^S
23	(260)^S	A	A	A	A	A	360	350	330	370	420	450	420^H	650	410	390	360	330	280	240	220	230	(280)^A	290
24	260	260	240	(270)^S	240	250	220	[290]^L	360^H	350	330	300	330	370	350	340	350	270	270	230	240	220	220	250
25	260	260	(280)^S	260	(270)^S	240	(270)^L	320	300	340	320	370	380	350	350	300	330	300	280	240	220	220	230	230
26	250	250	250	250	250	250	300	300	300	320	300	340	330	310	350	300	320	310	290	(250)^S	210	230	240	270
27	290	290	280	S	S^K	250^H_K	G^F	G^K	G^K	G^K	G^K	G^K	G^K	G^K	G^K	G^K	520^K	460^K	330^K	230^K	260^K	250^H	280	[270]^A
28	260	(270)^S	260	270	260	220	240	450	360	420	390	[380]^A	360	350	370	350	320	(350)^A	300	250	220	(260)^A	230	240
29	250	250	[260]^S	(320)^S	(290)^S	250	270	270	310	330	330	310	300	300	310	320	310	310	270	260	250	240	230	240
30	270	250	260	260	260	240	230	270	410	350^H	380	[370]^A	360	370	330	290	300	290	280	250	230	230	250	250
31	240	230	240	(300)^S	250	230	(340)^L	300	310	260	[310]^A	360	410	350	380	320	290	250	280	240	210	[240]^A	(280)^S	A
Median	260	260	270	260	260	250	260	340	370	370	400	400	410	380	400	370	350	310	280	240	230	230	250	270
Count	28	29	27	26	25	27	30	30	30	31	30	29	29	30	31	31	29	30	31	31	31	31	31	28

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 74

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

IONOSPHERIC DATA

foF2 (Characteristic), Mc (Unit), MAY (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: McC., E.J.W.

Calculated by: McC, L.A.L., 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	3.6	3.2	3.2	3.0	2.8	3.0	4.0 H	4.5	4.3	4.5	<4.2 G	<4.2 G	<4.3 G	4.7	5.2	5.3	5.2	4.9	4.9	4.9	4.2	4.1 JS	3.8	3.2
2	(3.2) A	(3.2) A	[3.0] A	2.7	2.8	[2.7] A	[3.8] A	(4.5) AS	5.2 H	5.6	5.5	5.8	6.0	5.8	6.2	6.2	6.4	6.6	6.4	(6.2) S	5.2	4.2	3.3	3.1
3	3.1	3.1	2.7	2.6 F	2.3 F	2.9	5.0	5.6	5.5	5.4	5.5	6.2	6.3	6.2	6.9	6.8	6.8	7.3	7.2	6.6	6.0	4.3	3.6	3.2
4	3.1	2.9	2.8	2.6	(2.2) S	(2.9) JS	(4.1) JH	4.5	4.9	<4.4 G	5.0	(5.2) H	5.5	5.4	5.8	5.9	6.0	6.0	6.8	6.8	5.8	5.0	4.1	3.8
5	3.5	3.3	3.2	3.1 JS	2.6	2.8 JS	3.8	4.1	[4.4] S	(4.6) H	(5.2) H	(5.5) S	5.3	5.9	6.0	6.2	6.0	5.8	5.4	5.5	6.0 JS	(5.2) S	4.7 H	4.3
6	3.8	3.2	2.7	2.4	2.0 KJS	2.2 K	3.2 K	<3.3 GK	<3.5 GK	<3.7 GK	<3.9 GK	<4.0 GK	<4.0 GK	<4.0 GK	<4.0 GK	<3.8 GK	<3.6 GK	(4.2) KJS	4.7 K	4.3 K	(4.3) SK	(3.1) KJS	(2.7) KJF	2.7 K
7	2.3 K	2.1 FK	2.2 K	2.2 K	2.0 K	2.4 K	3.3 K	<3.5 GK	<3.6 GK	<3.8 GK	<3.9 GK	<4.0 GK	<4.0 GK	(4.3) FK	<3.9 GK	<3.8 GK	<3.7 GK	(4.0) KJS	4.1 KJS	(4.2) SK	(3.7) SK	3.2 KJS	2.8 FK	3.0 JS
8	2.8	(2.7) JS	[2.6] F	2.4 F	2.6	2.7 JS	3.4 H	<3.6 G	(4.4) JS	4.7	4.3	4.5	4.5	4.8	4.8	4.6 JS	4.6	4.6	4.7	4.8	(4.6) S	4.0	(3.2) S	3.0 F
9	2.4 SF	(2.2) S	(2.2) JS	2.2 JF	(2.1) SK	2.3 FK	<3.0 GK	<3.3 GK	<3.6 GK	<3.8 GK	<3.9 GK	<4.0 GK	4.3 K	4.6 K	4.3 K	4.2 K	4.2 K	4.2 K	4.5 K	4.6 K	(4.6) S	(3.6) S	(2.7) JS	2.6 F
10	(2.5) FS	(2.2) FJ	(2.2) SJ	[2.1] FS	(2.0) JS	(2.5) PS	<3.0 G	<3.5 G	(4.0) JS	(4.2) F	4.6 JH	<4.2 G	4.7	4.7	[4.6] S	4.6	4.9	5.2	5.1	5.0	4.5	(3.6) S	(3.2) S	(2.5) F
11	2.8 JF	2.5	2.4 JS	2.3	2.2	2.8	4.5	4.5	<3.7 G	4.3	4.6	(4.4) F	[4.6] A	A	4.6	4.6 JH	4.8	4.9	4.8	4.8	(4.5) S	[3.9] S	(3.3) JS	(3.0) JS
12	(2.7) FS	(3.0) FJ	(2.7) F	[2.6] FS	(2.6) JF	3.1 JS	4.0	4.1	4.6	[4.6] A	4.6	A	A	(4.6) S	4.5	4.4	(4.6) JS	4.5	4.7	4.6	4.6	(3.4) S	(2.8) S	[2.8] S
13	2.8	2.6	2.5	2.4	2.4	3.3	4.4	4.1	4.7	4.8	4.9	5.4	5.4	5.1	5.1	5.1	5.0	5.0	5.1	5.5	5.7	4.7	3.4	2.9
14	2.9	2.8	2.6	2.4	2.3 F	2.9	4.1	4.6	4.5	(4.7) S	4.9	6.0	5.0	5.3	5.0	4.8	A	A	5.0	5.7	5.9	4.4	3.8	3.3
15	3.0	2.8	2.5	2.2 F	2.4	2.7	3.8	4.2 J	(4.4) HK	5.8 KJH	<4.0 GK	6.0 K	5.7 HK	5.3 K	4.7 K	7.0 K	9.8 K	7.0 K	6.8 K	5.3 K	(4.5) SK	3.6 FK	2.9 K	2.2 K
16	(2.2) FK	2.2 FK	<1.0 EK	<1.0 EK	S FK	2.6 K	3.3 K	<3.4 GK	<3.5 GK	<3.6 GK	<3.6 GK	<3.8 GK	<3.7 GK	<3.9 GK	<3.9 GK	4.4 K	<3.6 GK	4.0 K	4.9 K	5.0 K	4.5 K	3.4 KJS	2.9 HK	(2.5) SK
17	2.4 K	<1.0 EK	<1.0 EK	<1.0 EK	<1.0 EK	1.2 KJS	3.1 K	<3.3 GK	<3.5 GK	<3.8 GK	<3.9 GK	<4.0 KAG	<4.0 GK	<4.0 KBG	<3.9 GK	<3.8 GK	S K	4.4 K	4.3 K	4.1 K	3.7 KJS	2.9 K	2.2 K	A K
18	A K	<1.0 EK	A K	A K	A K	2.6 K	<3.2 GK	<3.5 GK	<3.6 KAG	<3.8 GK	A K	A K	A K	<4.0 GK	<4.0 GK	<3.9 GK	4.4 K	4.8 K	4.9 K	4.4 K	5.2 K	4.9 K	2.9 FK	2.7 K
19	2.4 K	2.5 K	[2.2] AK	1.9 K	1.9 KJS	2.6 K	3.4 K	<3.5 GK	<3.7 GK	<3.9 GK	<4.0 GK	<4.0 GK	<4.0 GK	<4.0 GK	<[4.0] KGA	<3.9 GK	4.4 K	4.5 K	5.0	5.3	4.8	4.4	3.3	3.4
20	2.7 JS	2.5	1.8 JS	1.6 JS	1.5 JS	2.8	<3.3 G	3.9 JS	4.4 JH	4.4	<4.1 G	<4.2 G	<4.2 G	4.9	4.8	5.1	5.2	5.4	4.7	4.6 F	4.8 JS	(3.9) S	3.2 JS	3.0
21	[2.6] A	2.1 JS	(1.8) S	(1.9) S	(1.7) JS	2.5	<3.2 G	<3.4 G	4.2	<4.0 G	<4.2 G	(4.4) H	4.5	4.5	4.6	4.5	4.6	5.0	4.7	5.2	5.0	3.9	3.2	2.8 JS
22	2.4	2.4	2.3	2.2	2.1	(3.0) S	3.8	4.2	<4.0 G	<4.0 G	<4.2 G	<4.2 G	4.7 H	4.9	4.9	5.1	5.6	5.4	5.6	5.1	6.0	4.7	3.6	3.0
23	2.4	[2.3] A	A	A	A	A	3.8	4.4	4.6	4.7	(4.8) A	4.7	4.8 H	4.5	4.8	5.0	5.0	5.2	5.4	5.2	5.0	4.2	3.6	3.2 JS
24	3.1	2.9	2.4 F	2.3	2.0	2.9	3.8	4.3	4.7 H	5.0	5.6	5.8	5.4	5.1	5.5	5.4	5.4	5.6	5.6	5.8	5.4	4.9 F	(4.5) JS	3.2 F
25	2.9 JF	(2.8) JF	2.7 F	2.7 SF	2.6 F	3.3	4.1	4.9	5.6	5.2	5.9	(5.6) S	5.6	5.4	5.6	6.2	5.6	5.8	6.3	6.8	6.6	5.6	4.6	4.
26	3.4	3.1	2.6 F	2.5	2.3	3.1	4.5	5.2	5.6	5.6	5.8	5.4	5.6	6.0	6.0	6.0	5.6	5.4	5.8	6.8	6.6	5.0	4.3	3.8
27	3.2	3.1	2.8	[2.0] S	(1.4) KJS	(2.6) KSH	<3.1 GK	<3.3 GK	<3.7 GK	<3.9 GK	<[4.0] KAG	<4.2 GK	<4.1 GK	<4.2 GK	<4.2 GK	<4.2 GK	4.1 K	4.1 K	4.2 K	4.4 K	4.2 K	4.2 H	3.9	3.8
28	3.7 F	(3.2) F	2.3 JS	(2.3) F	(2.0) FJ	3.1	3.7	4.1	4.8	4.9	5.0	(5.2) A	5.6	5.6	5.7	5.5	5.7	5.2	5.6	6.0	5.8	5.2 F	4.3	(4.0) S
29	3.5	2.7 F	(2.3) FS	2.3 F	2.2	3.2	4.4	5.2	5.2	5.5	5.6	6.0	6.2	5.6	5.4	5.4	5.4	6.2	5.4	5.5	6.0	5.8	4.8	4.9
30	3.7	3.4	2.9 F	2.4 F	2.3 F	3.2	4.2	4.7	4.7	5.0 H	(5.2) PS	[5.2] A	5.5	5.4	5.8	5.8 JS	5.6	5.6	5.2	5.4	5.8	5.6	4.8	4.7
31	4.6	3.5	2.7 JS	2.4	2.1	2.9	3.6	4.3	5.0	5.6	[5.2] A	5.4	5.4	5.9	6.0	6.8	7.0	6.8	6.2	5.6	4.0	3.7 JS	2.9	[2.1
Median	2.9	2.8	2.5	2.3	2.2	2.8	3.8	4.1	4.4	4.6	(4.6)	(4.7)	4.8	4.9	4.8	5.1	5.2	5.2	5.1	5.2	5.0	4.2	3.3	3.0
Count	30	31	29	29	28	30	31	31	31	31	30	29	29	30	31	31	29	30	31	31	31	31	31	30

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 75

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

Form adopted June 1946

IONOSPHERIC DATA

foF2 (Characteristic), Mc (Unit), MAY (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: McC., E. J. W.

Calculated by: McC., L.A.L., 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	3.3	3.3	3.1	3.0	2.5	3.9	4.3 H	4.4	4.2	[4.2] A	<4.3 G	<4.3 G	4.6	5.0	5.1	5.2	5.0	4.9	5.0	4.8	4.5	4.0	3.5	3.1 JA
2	3.3	3.0	2.9	2.5	J2.2 AS	3.2	4.3	4.7 H	5.6	5.4 H	5.3	6.2 JS	5.6	6.0	6.2	6.4	6.4	6.8	6.2	5.9	4.9	3.7	3.2	3.0
3	3.0	2.9	2.7 F	2.5 F	2.3	4.0	5.6	5.5	5.4	(5.6) H	6.0	6.2	6.1	6.6	6.8	6.4	7.0	7.3	7.1	6.3	5.2	3.8	3.3	3.1
4	3.0	3.0	2.7	2.5 JS	(2.3) S	3.6 H	4.6	4.8	4.5	5.0	5.0	5.2 H	5.3	5.6 JA	5.8	5.9	6.2	5.8	5.8	5.9	5.6	4.6	3.8	3.8
5	3.5	3.3	3.1	2.8	2.5	3.5	4.1	4.3	4.8	5.2	5.4	5.4 H	5.8	5.9	6.4	6.0	5.8	5.8	5.5	5.9	5.8 JS	(4.6) S	4.1	4.3
6	3.4	2.9	2.7	2.1 JS	J1.9 SK	2.8 K	<3.3 GK	<3.4 GK	<3.6 GK	<3.8 GK	4.2 K	<4.0 GK	<4.0 GK	<4.0 GK	<3.8 GK	J<3.6 GK	(4.2) SK	(4.5) SK	4.8 HK	4.2 K	J(3.6) SK	S(2.8) FK	2.8 FK	2.5 K
7	J(2.2) AK	J(2.1) FK	2.2 K	J(2.1) SK	J2.0 SK	3.0 K	<3.2 GK	<3.7 GK	<3.7 GK	<3.8 GK	<4.0 GK	<4.0 GK	4.4 K	4.4 K	<3.9 GK	F<3.9 GK	S<3.6 GK	J4.2 SK	(4.1) SK	(4.0) SK	3.5 K	(2.9) SK	3.0 FK	3.0 JS
8	2.7	(2.5) S	2.4 JF	2.2 SJ	2.4	3.0 JS	3.5	<3.6 G	4.6	4.4 JS	4.5	4.5	4.1	4.9	4.8	(4.6) S	4.7	4.4	(4.7) S	(4.8) S	4.4 JS	(3.3) S	3.1 JS	2.7 F
9	2.5 JS	J2.2 FS	2.4 F	2.1 FS	[2.2] AK	2.8 K	<3.2 GK	<3.5 GK	<3.8 GK	<3.8 GK	<4.0 GK	<4.0 GK	4.6 K	4.4 K	[4.2] SK	4.4 K	4.2 K	4.4 K	4.7 K	4.7 K	(4.2) S	3.4 JS	(2.5) SF	2.3 F
10	(2.4) FJ	[2.2] FS	2.0 FJ	J(2.1) FS	[2.0] S	[2.8] A	<3.4 G	<3.6 GF	4.5	4.8	(4.6) H	4.6	(4.6) H	4.7	4.5	4.7	5.2	5.3	4.9	4.7	4.3	(3.3) S	2.8	2.9
11	2.5	2.4	2.4	2.2	2.3	3.4	4.3	4.2	(4.2) F	(4.5) H	5.0	4.4 JF	<4.1 G	<4.0 G	(4.7) H	4.7	4.9	4.8	4.7	(5.0) S	(4.2) JS	[3.7] S	J(3.2) SF	3.0 JS
12	(2.4) F	J(2.7) SF	F	F S	(2.7) F	3.3	4.0	4.2	4.5	[4.5] A	4.5	[4.8] A	5.0	<4.1 G	4.5	4.6	4.8	4.7	4.8	4.5	(4.1) S	(2.8) S	A	A
13	2.7	2.6	2.5	2.3 F	2.5 JS	3.7	4.1	4.4	[4.6] A	4.9	5.3	5.2	5.2	5.2	5.1	5.1	4.9	5.0	5.5	5.7	5.0	3.9 JS	3.0 F	2.9
14	2.9	2.7	2.5	2.5	2.4	3.6	4.2	4.6	4.8	4.8	4.9	5.0	5.4	5.1	4.9	4.9	[5.0] A	5.0	5.1	6.2	5.1	4.0	(3.5) JS	3.1
15	2.9	2.6	2.3	2.4	2.4	3.2	(4.2) JH	<(3.9) GH	(4.8) HK	J5.4 HK	4.9 K	5.4 K	5.6 K	5.0 K	6.0 K	7.8 K	9.0 K	6.6 K	6.7 K	5.3 K	4.3 K	J3.4 SK	2.5 K	2.1 K
16	J(1.9) FK	1.8 K	<1.0 FK	S K	(1.8) SK	3.1 K	<3.1 GK	<3.5 GK	<3.6 GK	<3.7 GK	<3.7 GK	<3.8 GK	H<3.9 GK	<3.8 GK	4.3 K	<3.8 GK	<3.3 GK	4.3 K	4.9 K	4.2 K	J3.9 SK	2.7 FK	2.7 K	2.2 K
17	S K	<1.0 FK	<1.0 FK	<1.0 FK	<1.0 FK	2.8 K	3.2 K	<3.4 GK	<3.7 GK	<3.8 GK	<4.0 GK	A<[4.0] GK	<4.0 GK	<3.9 GK	<3.9 GK	S<(3.7) GK	(4.6) SK	4.5 K	4.3 K	4.2 K	3.2 K	2.5 K	J2.0 SK	A K
18	A K	A K	A K	A K	J1.6 SK	<3.0 GK	<3.4 GK	<3.5 GK	<3.7 GK	A K	A K	A K	<4.0 GK	<4.0 GK	4.4 K	4.3 K	J4.7 SK	4.7 K	4.7 K	4.7 K	5.0 K	J4.0 HK	J2.9 FK	2.4 K
19	2.3 K	2.0 K	1.9 K	1.9 K	2.0 K	3.2 K	3.7 K	<3.6 GK	<3.7 GK	<3.9 GK	H<4.0 GK	<4.0 GK	<4.0 GK	A<[4.0] GK	<4.0 GK	4.2 K	4.6 K	4.8 K	5.0	5.2	4.7	3.8 JS	3.5	[3.1] A
20	2.6	2.2 JA	1.7	1.3 JS	1.9	3.2	3.7 JS	<3.1 G	4.5	(4.4) P	<4.2 G	4.5	<4.1 G	4.9	4.8	5.0	5.4	5.0	5.0	4.5 F	(4.2) S	3.2 F	3.2	(2.7) S
21	(2.5) S	2.0 F	[1.8] S	(1.9) JS	(1.9) S	3.0	<3.4 G	<3.5 G	4.1	<4.0 G	<4.2 G	4.5	<4.2 G	4.6	4.5	4.7	4.9	5.1	4.8	5.3	4.2	3.5	2.9 JS	2.6 JS
22	2.2	2.3	2.3	2.2	2.3	3.5	<3.6 G	(4.3) S	<4.0 G	<4.2 G	<[4.2] GC	<4.2 G	5.0	4.9	5.0	5.6	5.8	5.7	5.6	5.0	5.0	4.4	3.3	2.5 JS
23	2.3	(2.3) S	A	A	A	A	4.0 JS	4.5	(4.4) A	4.8	[4.8] A	4.6	4.7	4.8	4.9	4.9	5.1	5.3	5.2	5.2	4.6	4.0	3.5	3.2
24	3.0	2.7	2.3 F	2.2 JS	2.3	3.5	4.1	4.2 JS	4.7	5.2	5.8	5.5 JH	5.1	5.4	5.6	5.5	5.6	5.6	5.6	5.4	5.2 F	4.6 F	3.5 F	3.2
25	3.0 JF	(2.6) F	2.6 F	2.7 F	2.9	3.7	4.3	5.3	5.7	5.6	[5.6] C	(5.6) S	5.6	5.5	5.8	5.6	5.6	5.9	6.6	6.6	6.0	5.0	4.2	(3.7) S
26	3.4	2.9	2.6 F	2.4	2.5	3.8	4.8	5.4	5.6	5.9	5.5	5.3	6.0	5.9	5.8	5.6	5.4	5.6	6.4	6.8	5.6	4.4	3.8	3.4
27	3.1	3.0	2.5	1.6 JS	J(2.0) FK	3.3 K	<3.4 GK	<3.6 GK	<3.8 GK	<4.2 GK	<[4.1] GA	<4.1 GK	<4.2 GK	<4.0 GK	<4.1 GK	4.2 K	4.2 K	4.2 K	4.2 K	4.1 K	4.4 K	4.0	3.8	3.6 F
28	3.1 F	2.5 F	1.9 F	[2.2] F	(2.6) FS	3.4	3.8	4.4	4.9	5.0	5.5	5.6	5.8	6.0	5.5	5.4	5.7	5.4	5.9	6.2	5.6	4.8	4.0 JS	3.7
29	3.0 F	2.5 F	2.0	2.2	2.5	3.6	4.9	5.1	5.2	5.8	5.7	6.1	5.8	5.4	5.4	5.4	5.3	5.3	5.4	5.8	6.0	5.0	4.8 JS	3.8
30	3.8	2.9 F	2.5 F	2.4 F	2.8 F	3.8	4.6	4.7	4.9	5.1	5.4	5.1	5.2	5.8	6.0	5.6	5.5	5.6	5.2	5.8	5.7	5.2	4.7	4.6
31	3.8	3.2	2.5	2.3	2.4	3.3	3.8	4.5	4.7	5.1	5.3	5.2	5.7	6.0	6.5	7.2	7.4	6.3	5.9	4.9	4.0	3.2	1.8 JS	(2.4) AS
Median	2.9	2.6	2.4	2.2	2.3	3.3	4.0	4.2	4.5	4.8	4.8	4.7	5.0	4.9	4.9	5.0	5.1	5.1	5.1	5.2	4.6	3.8	3.2	3.0
Count	29	30	28	27	30	30	31	31	31	30	30	30	31	31	31	31	31	31	31	31	31	31	30	29

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 76

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

Form adopted June 1946

IONOSPHERIC DATA

h'F1 (Characteristic), Km (Unit), May (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: McC., E.J.W.

Calculated by: McC., N.B., L.A.L., 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							Q	220	200	200	200	190	210	200	230	(230)A	220	220	220					
2							A	A	210H	[220]A	230A	170	210	200	200H	230	200	210	230					
3							220	210	200	200	190H	180	200	200	200	200	(210)A	210	220					
4							220	220	(220)A	210	190	230	190H	190	200	200	210	230H	230					
5							Q	210	210	190	210	190H	220	210	220	210	220	210H	230					
6							QK	230K	220K	210K	180K	190K	220K	180K	[190]AK	200K	200K	[220]SK	240K					
7							QK	210K	170HK	190K	180K	200K	190K	190HK	200K	200K	200K	210K	220K					
8							Q	200	190H	190	190	210	200	200	210	210	220	220	A					
9							210K	200K	200K	210K	190K	230K	210K	200K	200K	210K	210K	200K	220K					
10							220	200	190	190	200	180	200	220	220	200	220	220	A					
11							(230)A	210	200	200	200	190	[200]A	A	A	A	A	A	210					
12							220	200	200	A	A	A	A	200	200	200	200H	200	230					
13							210	200	210	220	220	190	180H	220	220	200H	200	200	(230)A					
14							220	220	(220)A	200	190	200	210	200	(240)A	230	A	A	A					
15							(230)A	200	(200)HK	200K	180K	220K	210K	220K	200K	220K	220K	200K	250K					
16							QK	240K	(220)AK	190K	200K	190K	180K	200HK	210K	210K	210K	240K	270K	280K				
17							QK	250K	210K	200K	200HK	[200]AK	210K	[200]BK	200K	(250)SK	[250]SK	(250)SK	220K	QK				
18							230K	200K	[220]AK	230K	AK	AK	AK	210K	220K	200K	220K	220K	210K	QK				
19							210K	210K	200K	200K	190K	190K	240K	AK	AK	200K	[220]AK	230K	A					
20							210	220H	200	200	210	200	200	200	220	210	210H	220	230					
21							220	210	200	190	200	230	200	200	190H	200	220	210	220					
22							A	A	220	210	200	200	200H	230	200	220	230	210H	A					
23							A	(240)A	A	A	A	200	200	210	200	200	220	220	220					
24							Q	200	[200]A	190	210H	200H	170H	200	200	200H	210	[220]B	230					
25							220	210	[200]A	200H	200H	190H	(230)A	200	200	200H	[220]A	(250)A	270	230				
26							230	(240)A	230	200	190	200	190	190	200H	220	200	210H	A	A				
27							200K	200HK	200K	210K	[200]AK	(200)AK	220K	200K	210K	200K	200K	210HK	230K					
28							200	240	220	200	200	[210]A	220	220	200	200	230	A	A					
29							230	[220]A	200	200	200	200	200	210	200	190	190	200	240					
30						210	[220]A	230	200	180H	170H	[190]A	210	220	(220)S	200	200	200H	210	230				
31							240	230	230	240	[220]A	200	(230)A	220	210	200	230	210H	220	Q				
Median						—	220	210	200	200	200	200	200	200	200	200	210	210	230	—				
Count						1	20	29	30	29	28	29	29	29	29	30	29	28	24	3				

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 77

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

Form adopted June 1946

IONOSPHERIC DATA

fo F1 (Characteristic), Mc (Unit), May (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: Mc C., E.J.W.

Calculated by: Mc C., N.B., L.A.L., 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							Q	3.5	3.8	4.1	4.2	4.2	4.3	4.4	4.2	4.1	4.0	3.6	L					
2							A	A	3.9H	4.2	4.5	4.5	4.5	4.5	4.3H	4.3	4.1	3.7	L					
3							L	L	3.8	4.4	(4.4)H	4.5	4.4	4.5	4.4	4.2	4.1	3.6	L					
4							L	3.5	3.9	4.4	4.3	4.4	4.5H	4.4	4.2	4.2	3.9	3.7H	L					
5							Q	3.7	4.0	4.1	4.3	4.4H	4.4	4.3	4.3	4.0	3.9	3.6H	L					
6							QK	3.3K	3.5K	3.7K	(3.9)SK	4.0K	4.0K	4.0K	4.0K	3.8K	(3.6)SK	[3.3]SK	3.0K					
7							QK	(3.5)SK	3.6HK	3.8K	3.9K	4.0K	4.0K	3.9HK	3.9FK	3.8K	3.7SK	(3.4)SK	3.1K					
8							Q	3.6	3.8H	4.0	4.0	4.0	4.1	4.0	4.0	3.9	3.8	3.5	A					
9							3.0K	3.3K	3.6JK	3.8K	3.9JK	4.0K	4.0K	4.0K	4.0K	3.9K	3.8K	3.5K	3.1K					
10							3.0	(3.5)S	3.5J	4.0	4.0	4.2	4.1	4.2	4.0	4.0	3.8	3.4	L					
11							3.0	3.5	3.7	4.0	4.0	4.1	[4.1]A	A	A	4.0	3.8	A	L					
12							L	3.5	3.8	A	A	A	A	4.1	4.0	4.0	3.8H	3.5	3.2					
13							L	L	3.8	4.0	4.2	4.2	4.3H	4.2	4.1	4.0H	3.9	3.7	L					
14							L	3.9	3.9	4.0	4.2	4.2	4.2	4.2	4.1	4.1	A	A	L					
15							3.1	3.5	(3.9)HK	3.9K	4.0K	4.0K	4.0K	4.0K	4.0K	3.9K	3.7K	3.3K	3.0K					
16							QK	3.4K	3.5K	3.6K	3.6K	3.8K	3.7K	3.9HK	3.9F	3.8K	3.6K	3.3K	3.0K	2.4K				
17							QK	3.3K	3.5K	3.8K	3.9HK	[4.0]AK	4.0K	(4.0)BK	3.9K	3.8K	[3.6]SK	3.5K	3.3K	QK				
18							3.2K	3.5K	[3.6]AK	3.8K	AK	AK	AK	4.0K	4.0K	3.9K	3.7	3.7K	LK	QK				
19							LK	3.5K	3.7K	3.9K	4.0K	4.0K	4.0K	4.0K	[4.0]AK	3.9K	3.8	3.6K	3.3					
20							3.3	3.5H	3.8	4.0	4.1	4.2	4.2	4.1	4.1	4.0	3.8H	3.6	L					
21							3.2	3.4	3.7	4.0	4.2	4.2	4.2	4.1	4.1H	4.0	3.7	3.6	L					
22							L	(3.7)J	4.0	4.0	(4.2)P	4.2	4.3H	4.2	4.2	4.1	4.0	3.7H	A					
23							3.3	3.6	A	A	A	4.2	4.2	4.3	4.2	4.1	3.9	3.7	3.2					
24							Q	3.9	[4.0]A	4.2	4.3H	4.4H	4.5H	4.5	4.3	4.2H	4.1	3.9	3.3					
25							L	3.8	[4.0]A	4.3H	4.5H	4.5H	(4.5)S	4.3	4.2	4.3H	[4.0]A	3.8	L	L				
26							3.3	3.8	4.1	4.2	4.3	4.4	4.4	4.3	4.4H	4.2	4.1	3.7H	3.5	A				
27							3.1K	3.3HK	3.7K	3.9K	[4.0]AK	(4.2)AK	4.1K	4.2K	4.2K	4.2K	3.9K	3.7HK	3.3K					
28							L	3.7	3.9	4.1	4.2	[4.2]A	4.3	4.3	4.3	4.3	4.0	A	A					
29							L	3.7	4.1	4.2	4.3	4.4	4.4	4.3	4.4	4.3	4.0	3.7	L					
30						L	L	L	4.1	4.1H	4.1H	[4.2]A	4.4	4.3	4.3	(4.2)S	4.0	3.8H	L	L				
31							(3.3)L	3.7	3.8	4.1	[4.2]A	4.3	4.3	4.3	4.2	4.1	4.0	3.7H	L	Q				
Median						—	3.2	3.5	3.8	4.0	4.2	4.2	4.2	4.2	4.2	4.0	3.9	3.6	3.2	—				
Count							11	27	30	29	28	29	29	30	30	31	30	28	12	1				

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 78

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

IONOSPHERIC DATA

h'E (Characteristic), Km (Unit), May (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: Mc C., E.J.W.

Calculated by: Mc C., N.B., L.A.L., 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							110	100	100	100	A	A	(110)A	100	100	100	110	110	110					
2							A	A	100	100	100	100	100	100	100	100	100	110	110					
3							110	110	100	100	100	100	100	100	100	100	100	100	110					
4							(120)S	100	[100]A	100	(100)A	100	100	100	100	100	110	110	110					
5							A	110	110	100	100	100	[100]A	100	100	100	110	110	110					
6							A K	100K	100K	100K	100K	100K	100K	100K	(100)K S	100K	100K	(110)K S	110K					
7							110K	100K	100K	100K	100K	100K	100K	100K	100K	90K	100K	100K	100K					
8							110H	100	100	100	100	100	100	100	100	100	100	110	110					
9							A K	110K	100K	100K	100K	100K	100K	100K	100K	100K	100K	100K H	100K					
10							100	100	100	100	100	100	100	100	100	100	100	100	110					
11							100	100	100	100	100	100	100	100	100	100	100	100	100					
12							100	100	100	100	100	100	100	100	100	100	100	100	100					
13							110H	100	100	100	100	100	100	100	100	100	110	110	110					
14							100H	100	100	100	100	100	100	100	100	100	100	100	110					
15							110	100	100K	100K	100K	100K	100K	100K	100K	100K	100K	100K	100K					
16						100K	100K	100K	100K	(100)K A	100K	100K	100K	100K	100K H	100K	100K	100K	100K	S K				
17							100K	100K	100K	100K	100K	[100]K A	100K	[100]K B	100K	[100]K S	100K	100K	A K	A K				
18						100K	100K	100K	100K	100K	100K	100K	100K	100K	100K	100K	110K	100K	120K	S K				
19							120K	110K	100K	100K	100K	100K	100K	(100)K A	100K	100K	100K H	110K	120					
20						120	110	110	100	110	100	100	100	100	(100)A	100	100	100	110					
21						110	120	110	100	100	100	100	100	100	100	100	100	110	110					
22							110	100	100	100	100	100	100	100	100	100	100	110	110					
23							110	100	100	100	(100)A	[100]A	(100)A	100H	110	100	[100]B	110	110					
24						120	110	110	100	100	100	100	100	100	100	100	110	100	(110)A					
25						110	110	110	100	100	100	[100]B	(100)A	100	100	100	110	110	110	110				
26							110	110	100	100	100	100	100	100	100	100	110	110	110	A				
27						130K	110K	100K	100K	100K	100K	100K	100K	100K	110K	100K	110K	110K	110K					
28						S	110	110	100	100	100	100	100	100	100	110	110	110	110					
29							110	100	100	100	100	100	100	100	100	100	100	100	110					
30						S	100H	(120)A H	110	110	100	100	100	100	100	100	100	110	120	S				
31							110	110	100	100	100	100	100	100	100	100	100H	(110)A	110	S				
Median						110	110	100	100	100	100	100	100	100	100	100	100	110	110	—				
Count						7	27	30	[illegible]	[illegible]	30	30	31	31	31	31	31	31	30	1				

Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 79

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

Form adopted June 1946

IONOSPHERIC DATA

foE (Characteristic), Mc (Unit), MAY (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: McC., E.J.W.

Calculated by: McC., N.B., L.A.L., 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							A	2.5	(2.8)P	(3.1)A	A	A	3.3	3.4	3.3	3.1	2.9	2.5	A					
2							A	A	A	A	A	A	A	3.3	3.3	3.1	2.9	2.5	2.0					
3							2.1	2.6	3.0	3.1	3.2	A	A	A	3.3	3.1	[2.8]A	2.5	2.0					
4							2.0H	2.5	[2.8]A	3.1	[3.2]A	3.4	[3.4]A	3.3	3.3	3.1	2.9	2.5	A					
5							A	2.5	2.9	A	A	3.2	[3.2]A	3.2	(3.2)P	(3.0)P	2.8	[2.4]S	1.9					
6							AK	2.3K	2.5K	2.8K	3.0K	[3.0]AK	3.0K	3.1K	(3.0)SK	3.0K	2.8K	SK	AK					
7							AK	2.2K	(2.5)AK	2.7K	2.9K	3.0K	3.1K	[3.1]AK	(3.1)PK	(3.0)PK	2.7K	(2.3)SK	1.8K					
8							1.9H	2.4	2.8	A	A	A	A	A	3.1	[3.0]A	2.9	2.5	1.9					
9							AK	2.3K	2.6K	2.9K	[3.0]AK	3.0K	3.0K	3.1K	3.0K	2.9K	2.6K	2.4HK	AK					
10							1.8	2.4	2.7	2.9	3.1	[3.2]A	3.2	(3.2)P	(3.1)P	3.0	2.8	2.5	(1.9)A					
11							A	A	2.7	2.9	3.0	3.1	[3.0]A	3.0	3.0	3.0	2.7	2.4	1.8					
12							A	2.3	2.6	2.8	3.0	3.1	(3.1)P	A	A	3.0	(2.5)P	2.4	A					
13							(1.9)H	2.4	2.7	3.0	3.1	3.1	(3.1)P	[3.1]A	3.1	3.0	2.9	2.5	2.0					
14							2.0H	2.4	2.7	3.0	3.1	[3.2]A	3.2	3.3	3.2	3.1	3.0	2.5	1.9					
15							A	(2.4)A	2.5K	AK	AK	3.3K	3.2K	3.1K	2.9K	3.0K	2.7K	2.5K	2.0K					
16						SK	1.9K	2.1K	2.4K	[2.6]AK	(2.8)PK	2.9K	(3.1)PK	(3.1)PK	3.0HK	2.9K	2.8K	2.6K	SK	SK				
17							2.0K	[2.2]AK	2.5K	AK	AK	AK	AK	BK	BK	SK	2.8K	2.4K	AK	AK				
18						SK	2.0K	2.3K	2.5K	2.7K	AK	AK	AK	3.0K	3.0K	2.9K	2.8K	2.3K	2.0K	SK				
19							1.7K	2.3K	2.5K	2.6K	AK	AK	(3.2)PK	[3.2]BK	3.1K	3.0K	2.8HK	2.5K	2.0					
20						S	A	2.4	2.6	A	A	A	A	3.1	3.1	3.0	2.8	2.5	1.9					
21						S	(2.0)A	2.5	2.9	3.0	[3.1]A	3.2	3.2	(3.2)A	3.1	3.0	2.8	[2.4]B	2.0					
22							1.9	[2.2]A	2.6	A	A	A	3.2	(3.2)P	3.2	(3.0)P	3.0	2.8	2.1					
23							(1.9)A	2.4	(2.9)A	A	A	A	A	3.3H	3.2	(3.1)P	[2.8]B	2.5	A					
24						S	2.0	2.4	2.8	[3.1]A	3.4	A	A	A	3.1	[3.0]A	2.9	[2.5]B	2.1					
25						S	2.1	2.5	2.8	2.9	3.1	B	A	A	A	3.2	3.0	2.8	2.1	A				
26							A	2.5	[2.8]A	3.2	3.3	(3.3)P	(3.3)P	B	B	3.1	3.0	2.7	2.2	A				
27						SK	2.1K	2.4K	2.8K	3.1K	AK	AK	AK	AK	AK	3.1K	[2.6]BK	2.5K	2.1K					
28						S	1.9	2.4	2.7	2.8	3.1	3.2	3.2	3.3	(3.2)P	3.2	3.0	2.6	2.2					
29							A	2.4	2.8	2.9	3.0	3.3	3.3	3.2	3.1	3.0	2.8	2.6	2.3					
30						S	2.2H	2.7H	(2.9)A	[3.0]A	3.1	3.1	3.2	S	A	(3.2)P	3.0	2.7	2.2	S				
31							S	2.4	2.7	2.9	3.1	3.0	3.2	3.2	3.0	2.8	2.8H	[2.5]A	2.2	S				
Median						—	2.0	2.4	2.7	2.9	3.1	3.2	3.2	3.2	3.1	3.0	2.8	2.5	2.0	—				
Count							18	24	30	23	19	18	21	22	25	30	31	30	23					

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 80

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

Form adopted June 1946

IONOSPHERIC DATA

Es (Characteristic), Mc, Km (Unit), MAY (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: McC., E.J.W.

Calculated by: McC., N.B., L.A.L., 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	E	2.8Y/100	2.2Y/110	E	72Y/110	2.5/100	7.2Y/120	G	3.9Y/120	4.3/100	150/100	4.0/100	30/100	G	38/110	48/110	41Y/120	2.9/110	24/110	E	E	E	E	3.8/120
2	4.8/120	6.8/110	66/110	30Y/110	3.9/110	43/100	5.6/100	75/100 H	7.0Y/110	54/100	50/100	6.6/100 H	3.2/100	G	G	G	G	G	G	E	E	E	40/100	30Y/100
3	3.2/100	E	E	23/100	32/100	25Y/100	37/100	45/100 H	3.5/110	38/110	68/120	44/100	4.7/100	4.2/100	G	45/100 H	38/100	G	G	E	E	E	E	E
4	2.6/100	E	E	E	E	E	17.0Y/110	3.7/100	4.4Y/100	4.3F/100	70/100 H	6.8/100 H	38/120	37/120	38/120	G	G	2.8/130	34/110	E	E	E	E	E
5	E	E	E	E	E	E	31Y/110 H	4.1Y/110 H	44Y/110	18.0Y/110 H	190Y/110	G	4.3/100	G	G	G	3.2/130	29/120	34/120	30/110	E	E	E	E
6	E	E	E	E	72Y/110	2.5/120	20/110	49Y/110	26/100	120Y/100 H	G	42/110	3.2/110	4.6Y/110	74Y/110	G	35Y/120	G	2.0/130	E	E	E	E	E
7	28/140	28/130	E	E	E	E	2.1/110	33Y/110	44Y/120	70/100 H	42/100	53/90 H	G	31/100	G	G	7.5/110	G	G	34/120	3.1Y/120	E	E	E
8	E	E	E	E	E	12.0/110	21/130	G	6.6/130	8.2Y/110 H	4.2/100	100Y/120	43/100	40Y/110	42/110	38Y/110	G	G	52/110	27Y/130	E	2.6/110	25/110	E
9	3.3Y/120	E	E	74Y/120	28/130	3.0/120	28Y/120	G	35/100	G	6.4Y/110	3.3/110	4.2Y/110	G	G	G	G	G	23/120 H	18Y/110	E	E	E	E
10	E	E	3.3Y/110	76Y/110	E	31/110	G	3.3Y/110	66Y/120	70Y/110	35/100	70Y/100	G	G	G	35/110	G	G	35/110	E	E	E	E	E
11	E	E	E	E	E	2.4Y/130	32/110	76Y/90	8.0Y/110	58/100	47/100	5.0/100	7.0Y/100	68/100	70/90	4.9/110	115/110	5.9/120	45/110	70/110	36/110	E	E	E
12	E	12.0Y/100	E	E	4.1/100	E	2.0/130	3.8Y/120	40/110	7.0/100	82/100	62/100	68/100	4.2Y/100	37Y/100	G	4.2/110	G	35/120	32/110	3.7Y/110	66/100 H	4.3/110	3.8/100
13	3.8/100	3.7/100	4.3/100	2.3Y/130	E	E	2.3/130	4.4Y/110	4.8Y/120	5.2/110	115Y/120	84Y/110	35Y/110	45Y/100	G	G	G	2.9/120	35Y/120	37/110	3.3Y/110	29/100	4.2/100 H	2.5/100
14	2.7/110	E	E	E	E	E	G	36/110	4.1/100	4.2/100	3.5/100	92/100	4.9/120	50/120	48Y/130	G	54/120	6.0/110	45/110	48/100	38/100	45/100	2.5/100	4.2/100
15	2.8/100	2.9/100	3.2/100	2.8Y/100 H	3.9/110	50/100	3.6/110	38/100	3.9Y/100	40Y/100	38Y/100	G	G	G	G	G	G	G	G	E	E	E	24/120	3.2/120
16	E	E	E	E	E	G	G	106Y/110	4.9/100	3.6Y/100	G	G	G	G	G	G	G	G	G	G	E	E	E	E
17	E	E	E	E	E	1.6/110	G	24/100	28/100	3.0/100	3.0/100	88/100	38/100	2.9Y/100	34/110	G	37/120	G	23/100	2.1/100	E	E	E	2.8/100
18	2.9/100	E	4.5/100	3.1Y/100	3.9/100	G	G	G	54/100	31/100	8.0/100	84/100	4.7/100	44Y/110	G	G	G	G	G	G	E	E	E	3.9/140
19	3.4Y/120	3.1/120	68Y/110	6.2/110	3.2/120	3.8Y/110	20/110	37/110	4.9/100	40Y/110	4.7/100	34/110	G	30/100	5.0/120	33/130	4.3/120	3.9/120	38/120	E	E	E	E	3.2/120
20	E	E	48/110	2.6/130	E	G	20/120	3.8/110	39/110	4.5/110 H	4.1/100	4.5/100	76/100	G	38Y/100	22/100	G	36Y/120	3.5/120	45/120	37/110	3.7/100	3.5/110	4.3/110
21	4.0/100	2.6/110	E	E	24/110	G	2.8Y/130	G	G	G	3.9Y/100	G	G	3.9Y/100	G	G	G	G	24/120	2.0/110	28/110	3.7/110	2.9/100	E
22	E	E	E	E	E	2.7/110	37/110	4.5/110	5.2/110	33/110	3.9Y/100	4.3/100	54/130 H	4.5/110 H	3.9/120	G	G	G	4.2/110	5.4Y/110	29Y/110	E	E	E
23	E	4.7/100	4.3/100	4.6/100	5.0/100	41/110	4.1/110	4.4/110	45/100	4.7/100	6.6/100	5.0/100	3.2/100	G	G	G	G	3.9/120	33Y/110	3.6/110	E	E	3.3/110	3.0/100
24	E	E	E	E	E	1.4/120	3.3Y/120	3.5Y/120	5.6/110	3.9/110	G	42/110	43Y/110	5.0/110	4.7/110	3.2/100	G	25/110	20/120	3.4Y/110	32/110	3.0Y/110	2.8Y/110	E
25	E	3.9/130	48/100 H	E	E	1.8/120	3.2/120	3.7/120	58/110	4.4Y/110	4.3/110	4.7/100	4.7/100	58/100	4.8Y/100	3.2/110	6.0/110	43Y/120	38/120	2.1/110	3.3/100	E	E	E
26	E	E	E	E	E	E	3.5Y/120	44/110	40/110	G	G	G	G	G	G	G	G	37Y/120	3.9Y/120	4.2/120	4.3/110	38/110	27/110	E
27	E	E	2.7/100	E	2.6Y/110	G	G	G	G	G	62/100	4.9/110	3.7/110	3.4/110	3.6/110	G	G	G	2.5/120	E	E	E	4.3/110	4.7/110
28	E	E	E	E	E	G	31Y/130	3.7/120	3.9Y/120	5.3Y/110	G	60/120	49/130	G	G	G	G	5.1/120	43/110	1.6Y/120	3.5/110	52/110	4.1Y/110	2.7/110
29	E	2.7/100	33/100	2.5/100 H	E	25Y/130	3.3/120	5.7/110	4.7/110	G	3.4/110	35/110	G	G	G	G	G	G	G	38/120	31/120	30/110	E	3.3/110
30	4.0Y/100	3.2/110	24/110	35/120	2.9/100	G	G	3.3/100	3.3/120	4.7/110	34/110	70/110	5.2/110	G	(37)S/100	G	G	G	2.8/120	G	E	E	E	E
31	E	2.3/110	E	E	E	1.7/110	29Y/110	3.6/120	G	4.5Y/130	6.4/120	39/120	48Y/120	11.5/100	5.0/110	G	G	2.4/110	G	G	E	3.1/120	3.7Y/110 H	3.5/110
Median	**	**	**	**	**	1.6	2.8	37	44	4.3	42	4.7	38	31	34	**	**	**	2.8	2.0	**	**	**	**
Count	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31

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

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 81

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

IONOSPHERIC DATA

(M1500) F2 (Characteristic), ____ (Unit), MAY (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: McC., E.J.W.

Calculated by: McC., L.A.L., N.B., 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	1.9	1.9	2.0	2.1	2.3	2.3	2.3 H	2.3	2.1	2.2	G	G	G	1.7	2.0	2.1	2.1	2.2	2.2	2.1	2.1	(2.0) JS	2.0	2.1
2	(2.1) A	(2.0) A	A	2.1	2.2	A	A	(2.2) AS	2.2 H	2.3	2.1	2.0	2.2	1.9	2.0	2.0	2.1	2.2	2.2	(2.3) S	2.2	2.0	2.0	2.1
3	2.1	2.1	2.0	2.2 F	2.1 F	2.2	2.5	2.4	2.2	2.2	2.1	2.0	2.0	2.0	2.1	2.2	2.1	2.2	2.2	2.3	2.3	2.3	2.1	2.0
4	2.0	2.0	2.1	2.0	(1.9) S	(2.2) JS	(2.4) JH	2.4	2.4	G	2.1	(2.4) H	2.2	1.9	2.0	2.1	2.0	2.2	2.2	2.1	2.1	2.0	2.0	2.0
5	1.9	1.9	1.9	(2.1) JS	2.0	(2.0) JS	2.4	2.2	S	(2.0) H	(2.1) H	(2.0) S	1.9	2.1	2.0	2.2	2.2	2.2	2.1	2.0	(2.1) JS	(2.1) S	1.9 H	1.7
6	1.8	1.9	1.9	2.0	K (1.9) JS	1.9 K	2.2 K	G K	G K	G K	G K	G K	G K	G K	G K	G K	G K	K (1.9) JS	2.2 K	2.1 K	(1.9) SK	K (2.1) JS	K (1.9) JF	2.0 K
7	2.0 K	2.0 FK	2.0 K	2.0 K	2.0 K	2.1 K	2.2 K	G K	G K	G K	G K	G K	G K	(1.8) FK	G K	G K	G K	K (1.8) JS	K (2.0) JS	(2.0) SK	(2.0) S	K (1.9) JS	1.9 FK	(1.9) JS
8	2.0	(2.0) JS	F	2.0 F	2.0	(2.1) JS	2.3 H	G	(1.7) JS	2.0	1.7	1.7	1.8	1.9	1.8	(1.8) JS	2.0	2.0	2.0	2.2	(2.0) S	2.1	(1.9) S	2.0 F
9	2.0 SF	(2.0) S	(1.9) JS	(2.0) JF	(1.9) SK	2.1 FK	G K	G K	G K	G K	G K	G K	1.7 K	1.9 K	2.0 K	1.8 K	1.9 K	2.0 K	2.0 K	2.1 K	(2.2) S	(2.1) S	(2.0) JS	2.[illegible] F
10	(2.1) FS	(2.2) FS	(2.1) SF	F S	(2.1) JS	(2.2) DS	G	G	(2.0) JS	(1.9) F	(2.2) JH	G	1.6	1.9	S	1.9	2.1	2.3	2.3	2.3	2.3	(2.3) S	(2.1) S	(2.1) C
11	(2.1) JF	2.0	(2.2) JS	2.3	2.0	2.2	2.3	2.3	G	1.8	1.8	(1.8) F	A	A	2.1	(2.0) JH	2.0	2.1	2.3	2.3	(2.2) S	S	(2.1) JS	(2.1) JS
12	(2.0) JS	(1.9) FJ	(1.9) F	F S	(2.1) JF	(2.2) JS	2.4	2.3	2.2	A	2.0	A	A	(2.0) S	1.8	2.0	(2.0) JS	2.1	2.3	2.3	2.3	(2.3) S	(2.0) S	S
13	2.2	2.2	2.1	2.2	2.2	2.6	2.6	2.3	2.4	2.2	2.1	1.9	2.1	1.9	2.0	2.0	2.2	2.3	2.3	2.3	2.4	2.3	2.3	2.1
14	2.1	2.1	2.2	2.3	2.3 F	2.2	2.4	2.3	2.5	(2.1) S	2.2	2.2	1.9	2.1	2.2	2.2	A	A	2.2	2.2	2.4	2.3	2.2	2.1
15	2.1	2.1	2.1	2.0 F	2.2	2.3	2.4	(2.3) J	(1.9) HK	K (2.3) JH	G K	2.2 K	1.9 HK	2.1 K	1.6 K	1.9 K	2.1 K	1.9 K	2.0 K	2.2 K	(2.2) SK	2.0 FK	1.7 A	1.8 K
16	(1.6) FK	2.0 FK	E K	E K	S FK	2.2 K	2.0 K	G K	G K	G K	G K	G K	G K	G K	G K	1.9 K	G K	1.6 K	1.9 K	1.8 K	1.8 K	K (1.7) JS	1.7 HK	(1.8) SK
17	2.0 K	E K	E K	E K	E K	K (2.4) JS	2.4 K	G K	G K	G K	G K	G AK	G K	G BK	G K	G K	S K	2.1 K	2.2 K	2.4 K	K (2.4) JS	2.1 K	2.0 K	A K
18	A K	E K	A K	A K	A K	2.4 K	G K	G K	G AK	G K	A K	A K	A K	G K	G K	G K	1.8 K	2.0 K	2.0 K	2.0 K	2.0 K	2.3 K	2.0 FK	2.0 K
19	2.0 K	2.2 K	A K	2.0 K	K (2.1) JS	2.3 K	2.3 K	G K	G K	G K	G K	G K	G K	G K	G AK	G K	1.7 K	2.0 K	2.0	2.0	2.0	2.0	2.1	2.1
20	(2.0) JS	2.1	(2.1) JS	(1.7) JS	(1.8) JS	2.2	G	(1.9) JS	(1.9) JH	1.9	G	G	G	1.7	1.9	2.0	2.0	2.1	2.1	2.2 F	(2.2) JS	(2.0) S	(2.0) JS	2.0
21	A	(2.0) JS	(2.1) S	(2.0) S	(2.1) JS	2.3	G	G	1.9	G	G	(1.7)	[illegible]	1.8	1.7	1.9	1.9	2.1	2.1	2.2	2.2	2.1	2.0	(2.0) JS
22	1.9	2.0	2.0	2.1	2.1	(2.3) S	2.3	1.9	G	G	G	G	1.9 H	2.0	1.8	1.9	1.9	2.0	2.2	2.2	2.1	2.2	2.2	2.1
23	2.0	A	A	A	A	A	2.0	2.0	2.2	2.[illegible]	(1.9) A	1.8	1.9 H	1.5	1.9	1.9	1.9	2.1	2.2	2.2	2.2	2.0	2.0	(2.0) JS
24	2.1	2.1	2.1 F	2.1	2.1	2.3	2.2	L	2.0 H	2.[illegible]	2.1	2.2	2.3	1.9	2.0	2.0	2.0	2.3	2.2	2.2	2.1	2.[illegible] F	(2.4) JS	2.2 F
25	(2.0) JF	(2.0) JF	2.0 F	2.0 SF	2.0 F	2.3	2.4	2.2	2.3	2.1	2.1	(1.9) S	2.0	2.0	2.0	2.2	2.1	2.0	2.0	2.2	2.2	2.2	2.2	2.2
26	2.1	2.2	2.0 F	2.1	2.1	2.3	2.3	2.2	2.2	2.2	2.2	2.[illegible]	2.0	2.1	2.0	2.2	2.1	2.0	2.1	2.2	2.4	2.0	2.0	[illegible]
27	1.9	1.9	2.0	S	K (2.0) JS	K (1.9) HS	G K	G K	G K	G K	G AK	G A	G K	G K	G K	G K	1.7 K	1.8 K	2.0 K	1.9 K	1.9 K	2.0 H	2.0	[illegible]
28	1.9 F	(2.0) F	(2.1) JS	(2.0) F	(2.2) FJ	2.2	2.2	1.8	2.0	1.9	1.9	(1.9) A	2.0	2.0	[illegible]	2.0	2.0	1.9	2.0	2.[illegible]	2.2	[illegible] F	[illegible]	(2.0) S
29	2.0	2.0 F	(2.0) FS	2.0 F	2.1	2.2	2.3	2.3	2.1	2.0	2.1	2.2	2.2	2.3	2.2	2.1	2.1	2.1	2.3	2.0	2.1	2.1	2.2	2.2
30	2.0	2.1	2.0 F	2.0 F	2.1 F	2.3	2.3	2.4	1.9	2.2 H	(2.0) DS	A	2.0	1.9	2.1	(2.2) JS	2.3	2.2	2.[illegible]	2.0	2.1	2.[illegible]	2.1	2.[illegible]
31	2.2	2.2	(2.1) JS	2.0	2.0	2.2	2.3	2.4	2.3	2.4	A	2.0	1.9	2.0	1.8	2.0	2.0	2.1	2.1	2.3	2.2	(2.2) JS	2.0	A
Median	2.0	2.0	2.0	2.0	2.1	2.2	2.3	2.1	2.0	2.0	(1.9)	(1.8)	1.9	1.9	1.9	2.0	2.0	2.1	2.1	2.2	2.2	2.[illegible]	2.0	2.0
Count	29	28	24	24	27	29	30	30	30	30	29	28	28	30	30	31	29	30	31	31	31	30	31	28

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 82

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

IONOSPHERIC DATA

Form adopted June 1946

(M3000)F2 (Characteristic), ____ (Unit), May (Month), 1953

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

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

75°W Mean Time

Calculated by: Mc C., N.B., L.A.L., 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	29	29	30	31	33	33	33^{H}	33	31	32	G	G	G	26	30	31	31	32	32	31	31	$(30)^{J}_{S}$	30	31
2	$(31)^{A}$	$(30)^{A}$	A	31	32	A	A	$(33)^{A}_{S}$	32^{H}	33	31	30	32	29	30	30	31	32	32	$(33)^{S}$	32	30	30	31
3	31	31	30	32^{F}	31^{F}	32	35	35	32	32	31	30	32	30	31	32	31	32	32	34	33	33	31	30
4	30	30	31	30	$(29)^{S}$	$(32)^{J}_{S}$	$(34)^{J}_{H}$	35	35	G	31	(35)	32	28	30	31	30	32	32	31	31	30	30	29
5	28	28	29	$(31)^{J}_{S}$	30	$(30)^{J}_{S}$	34	32	S	$(30)^{H}$	$(31)^{H}$	(30)	29	31	30	32	32	32	31	30	$(31)^{J}_{S}$	$(31)^{S}$	29^{H}	26
6	29	28	28	30	$^{K}(29)^{J}_{S}$	29^{K}	32^{K}	G^{A}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{A}	G^{K}	G^{A}	G^{A}	$^{K}(28)^{J}_{S}$	32^{K}	31^{K}	$(28)^{S}_{K}$	$^{K}(31)^{J}_{S}$	$^{K}(28)^{J}_{F}$	30^{K}
7	30^{K}	29^{F}_{K}	30^{K}	30^{K}	30^{K}	31^{K}	32^{K}	G^{K}	G^{K}	G^{K}	G^{A}	G^{A}	G^{K}	$(27)^{F}_{K}$	G^{K}	G^{K}	G^{A}	$^{A}(27)^{J}_{S}$	$^{K}(30)^{J}_{S}$	$(30)^{S}_{K}$	$(30)^{S}_{K}$	$^{K}(29)^{J}_{S}$	28^{F}_{K}	$(29)^{J}_{S}$
8	30	$(30)^{J}_{S}$	F	30^{F}	30	$(31)^{J}_{S}$	33^{H}	G	$(27)^{J}_{S}$	30	27	26	27	28	27	$(27)^{J}_{S}$	30	30	30	32	$(30)^{S}$	31	$(29)^{S}$	30^{F}
9	29^{S}_{F}	$(30)^{S}$	$(29)^{J}_{S}$	$(30)^{J}_{F}$	$(28)^{S}_{K}$	31^{F}_{K}	G^{K}	G^{A}	G^{K}	G^{K}	G^{K}	G^{A}	25^{K}	29^{K}	30^{K}	28^{K}	29^{K}	30^{K}	30^{K}	31^{A}	$(32)^{S}$	$(31)^{S}$	$(30)^{J}_{S}$	30^{F}
10	$(31)^{F}_{S}$	$(32)^{F}_{J}$	$(31)^{S}_{J}$	F^{S}	$(31)^{J}_{S}$	$(32)^{F}_{S}$	G	G	$(30)^{J}_{S}$	$(28)^{F}$	$(32)^{J}_{H}$	G	25	29	S	29	31	33	34	34	33	$(33)^{S}$	$(31)^{S}$	$(31)^{F}$
11	$(31)^{J}_{F}$	30	$(32)^{J}_{S}$	33	30	32	33	33	G	28	28	$(28)^{F}$	A	A	31	$(29)^{J}_{H}$	30	31	33	33	$(32)^{S}$	S	$(31)^{J}_{S}$	$(31)^{J}_{S}$
12	$(30)^{F}_{S}$	$(28)^{F}_{J}$	$(28)^{F}$	F^{S}	$(31)^{J}_{F}$	$(32)^{J}_{S}$	34	33	32	A	30	A	A	$(30)^{S}$	28	29	$(30)^{J}_{S}$	31	33	34	33	$(34)^{S}$	$(30)^{S}$	S
13	32	32	31	32	32	37	37	34	35	32	31	28	31	29	30	30	32	33	33	33	34	33	33	31
14	31	31	32	33	34^{F}	32	35	33	36	$(32)^{S}$	32	32	29	31	32	32	A	A	32	32	34	33	32	31
15	31	31	31	30^{F}	32	33	35	$(34)^{J}$	$(29)^{H}_{K}$	$^{K}(33)^{J}_{H}$	G^{K}	32^{K}	27^{H}_{K}	31^{K}	25^{K}	29^{K}	31^{K}	29^{K}	30^{K}	32^{K}	$(32)^{S}_{K}$	30^{F}_{K}	26^{K}	28^{K}
16	$(25)^{K}$	30^{F}_{K}	E^{K}	E^{K}	S^{F}_{K}	32^{A}	29^{K}	G^{A}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	29^{K}	G^{K}	24^{K}	29^{K}	27^{K}	27^{A}	$^{K}(26)^{J}_{S}$	26^{H}_{A}	$(27)^{S}_{K}$
17	30^{K}	E^{K}	E^{K}	E^{K}	E^{K}	$^{K}(35)^{J}_{S}$	34^{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{A}_{K}	G^{K}	G^{B}_{K}	G^{K}	G^{K}	S^{K}	31^{K}	32^{K}	34^{K}	$^{K}(35)^{J}_{S}$	31^{K}	30^{K}	A^{K}
18	A^{K}	E^{K}	A^{K}	A^{K}	A^{K}	34^{A}	G^{K}	G^{K}	G^{A}_{K}	G^{K}	A^{K}	A^{K}	A^{K}	G^{K}	G^{K}	G^{K}	28^{K}	30^{K}	30^{K}	30^{K}	30^{K}	33^{K}	30^{F}_{K}	30^{K}
19	30^{K}	32^{K}	A^{K}	30^{K}	$^{K}(31)^{J}_{S}$	33^{K}	33^{K}	G^{A}	G^{K}	G^{K}	G^{A}	G^{K}	G^{K}	G^{K}	G^{A}_{K}	G^{A}	26^{K}	30^{K}	30	30	30	30	31	31
20	$(30)^{J}_{S}$	31	$(31)^{J}_{S}$	$(26)^{J}$	$(27)^{J}_{S}$	32	G	$(28)^{J}_{S}$	$(28)^{J}_{H}$	29	G	G	G	26	28	30	30	31	31	32^{F}	$(32)^{J}_{S}$	$(30)^{S}$	$(30)^{J}_{S}$	30
21	A	$(30)^{J}_{S}$	$(31)^{S}$	(30)	$(31)^{J}_{S}$	33	G	G	29	G	G	$(27)^{H}$	25	27	26	28	29	31	31	32	33	31	30	$(30)^{J}$
22	29	30	29	31	31	$(33)^{S}$	34	29	G	G	G	G	29^{H}	30	27	29	29	30	32	32	31	32	32	31
23	30	A	A	A	A	A	30	30	32	31	$(29)^{A}$	27	29^{H}	22	29	29	29	31	32	32	32	30	30	(30)
24	31	31	31^{F}	31	31	33	32	L	30^{H}	31	32	32	33	28	30	30	29	33	32	32	31	31^{F}	$(34)^{J}_{S}$	32
25	$(30)^{J}_{F}$	$(30)^{J}_{F}$	30^{F}	30^{F}	30^{F}	33	35	32	33	31	31	$(29)^{S}$	30	30	30	32	31	30	30	32	32	[illegible]	32	[illegible]
26	31	32	30^{F}	31	31	34	33	32	32	32	32	31	30	31	30	32	31	30	31	32	34	30	29	29
27	28	29	30	[illegible]	$^{K}(30)^{J}_{S}$	$^{K}(29)^{J}_{S}$	G^{K}	G^{K}	G^{K}	G^{K}	G^{A}_{K}	G^{K}	G^{K}	G^{K}	G^{K}	G^{K}	25^{K}	27^{K}	30^{K}	29^{K}	29^{K}	30^{H}	29	28
28	27^{F}	$(29)^{F}$	$(31)^{J}_{S}$	[illegible]	$(32)^{F}_{J}$	32	32	27	30	28	29	$(28)^{A}$	30	30	29	30	30	29	30	31	32	31^{F}	33	$(30)^{S}$
29	30	30^{F}	$(30)^{F}_{S}$	30^{F}	31	32	33	33	31	30	31	32	32	33	32	31	31	31	33	30	31	31	32	32
30	30	31	30^{F}	30^{F}	31^{F}	33	34	35	29	32^{H}	$(30)^{F}_{S}$	A	30	29	31	$(32)^{J}_{S}$	33	32	31	30	31	31	31	31
31	32	32	$(31)^{J}_{S}$	30	30	32	33	34	33	35	A	30	29	30	28	30	30	31	31	34	32	$(32)^{J}_{S}$	30	A
Median	30	30	30	30	31	32	33	31	30	30	(29)	(28)	29	29	29	29	30	31	31	32	32	31	30	30
Count	29	28	24	24	27	29	30	30	30	30	29	28	28	30	30	31	29	30	31	31	31	30	31	28

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 83

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

IONOSPHERIC DATA

(M3000)F1 (Characteristic), ____ (Unit), May (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: Mc C., E.J.W.

Calculated by: Mc C., N.B., L.A.L., 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							Q	3.7	3.8	3.7	40	4.0	3.8	3.7	3.7	3.5	3.7	3.6	L					
2							A	A	4.0H	A	3.7	3.9	3.8	3.7	38H	3.5	3.6	3.6	L					
3							L	L	38	3.7	(38)H	38	3.9	38	38	3.7	3.6	36	L					
4							L	37	38	38	40	38	39H	3.8	3.8	3.7	4.0	3.6H	L					
5							Q	3.6	38	39	38	38H	38	38	3.7	3.8	3.7	3.5H	L					
6							QK	3.6K	36K	40K	(39)SK	40K	3.8K	42K	38K	3.8K	(3.8)SK	SK	3.5K					
7							QK	(36)SK	40HK	39K	40H	40K	38K	40HK	4.0FK	38K	3.9SK	(3.7)SK	35K					
8							Q	35	3.8H	3.8	38	40	3.9	38	38	3.8	3.7	3.6	A					
9							36K	3.5K	(3.7)SK	4.0K	(36)SK	3.8K	3.8K	38K	3.7K	39K	3.7K	3.7K	3.5K					
10							3.7	(40)S	(4.0)T	38	3.9	43	43	3.8	38	3.8	3.8	39	L					
11							3.7	36	3.8	38	40	3.9	A	A	A	38	3.7	A	L					
12							L	38	38	A	A	A	A	41	39	40	3.8H	3.7	3.6					
13							L	L	38	3.7	38	41	40H	3.7	38	39H	3.8	3.6	L					
14							L	3.5	37	40	39	3.9	3.9	39	3.9	3.8	A	A	L					
15							3.7	3.8	(3.7)HK	3.9K	40K	3.7K	38K	38K	3.7K	38K	3.7K	38K	3.4K					
16							QK	36K	3.7K	39K	39K	39K	4.2K	39HK	3.7K	38K	38K	3.7K	38K	33K				
17							QK	37K	42K	3.9K	4.3HK	AK	42K	(3.4)BK	39K	3.7K	SK	35K	3.5K	QK				
18							35K	40K	AK	3.8K	AK	AK	AK	3.7K	38K	3.8K	3.7K	34K	LK	QK				
19							LK	3.7K	39K	39K	39K	4.1K	3.8K	38K	AK	3.7K	3.6K	3.6K	34					
20							3.4	3.8H	36	3.9	4.0	39	38	3.9	3.8	3.7	3.7H	3.6	L					
21							35	38	40	39	3.8	3.9	3.9	39	3.8H	3.7	3.7	3.6	L					
22							L	A	3.8	38	(42)P	40	40H	36	3.9	3.8	3.6	3.7H	A					
23							A	39	A	A	A	4.0	40	39	38	3.7	3.7	3.6	3.7					
24							Q	3.6	A	40	4.0H	41H	38H	3.9	39	3.8H	3.6	B	3.7					
25							L	35	A	3.8H	39H	40H	(38)S	4.0	40	3.7H	A	3.7	L	L				
26							3.6	3.6	36	3.7	3.9	40	4.0	39	40H	3.7	3.7	3.8H	3.6	A				
27							3.5K	4.0HK	38K	40K	AK	(41)AK	40K	38K	3.8K	3.8K	38K	35HK	3.5K					
28							L	34	3.8	3.9	3.8	A	39	3.7	3.7	3.7	3.5	A	A					
29							L	3.7	3.7	3.7	3.8	38	3.8	40	38	3.8	3.8	38	L					
30						L	L	L	3.7	40H	4.2H	A	4.0	4.0	4.0	(3.7)S	40	3.7H	L	L				
31							(36)L	3.7	3.7	3.7	A	41	38	38	4.0	3.7	42	3.7H	L	Q				
Median						–	3.6	3.7	38	3.9	39	4.0	39	3.8	3.8	38	3.7	36	3.5	–				
Count							10	26	27	28	26	26	28	30	29	31	28	26	12	1				

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 84

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

IONOSPHERIC DATA

Form adopted June 1946

(M1500)E, ______ (Unit), May (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: Mc C., E.J.W.

Calculated by: Mc C., L.A.L., N.B., 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							A	4.1	(44)^P	(44)^A	A	A	4.3	4.2	4.1	4.1	42	4.4	A					
2							A	A	A	A	A	A	A	43	43	4.2	4.4	43	44					
3							43	44	45	44	43	A	A	A	44	4.3	A	43	4.3					
4							4.3^H	43	A	4.2	A	43	A	4.2	42	43	43	4.2	A					
5							A	41	4.1	A	A	4.3	A	44	(44)^P	(42)^P	43	S	42					
6							A^K	44^A	4.3^K	43^K	44^K	A^K	45^K	44^K	(43)^S_K	43^K	45^K	S^K	A^K					
7							A^K	44^K	(44)^A_K	44^K	45^K	44^K	43^K	A^K	(45)^P_K	(45)^P_K	45^K	(45)^S_K	4.3^K					
8							44^H	43	4.3	A	A	A	A	A	44	A	4.2	4.1	42					
9							A^K	42^K	41^K	43^K	A^K	44^K	44^K	42^K	45^K	43^K	44^K	41^H_K	A^K					
10							4.5	45	43	43	43	A	43	(43)^P	(43)^P	42	4.3	43	(43)^A					
11							A	A	44	4.5	44	4.3	A	44	45	43	43	4.2	44					
12							A	43	43	44	44	45	(44)^P	A	A	44	(43)^P	45	A					
13							(42)^H	43	4.1	44	4.4	45	(43)^P	A	43	4.3	4.3	4.4	44					
14							43^H	45	45	45	44	A	4.3	45	43	44	44	4.3	45					
15							A	(44)^A	45^K	A^K	A^K	44^K	44^K	44^K	45^K	4.3^K	4.3^K	4.3^K	42^K					
16						S^K	44^K	45^K	4.5^K	A^K	(44)^P_K	4.3^K	(43)^P_K	(42)^P_K	4.3^H_K	4.3^K	4.3^K	4.3^K	S^K	S^K				
17							45^K	A^K	46^K	A^K	A^K	A^K	A^K	B^K	B^K	S^K	44^K	4.4^K	A^K	A^K				
18						S^K	42^K	41^K	44^K	45^K	A^K	A^K	A^K	4.3^K	4.4^K	44^K	43^K	4.5^K	43^K	S^K				
19							45^K	43^K	44^K	45^K	A^K	A^K	(44)^P_K	B^K	4.3^K	41^K	44^H_K	43^K	44					
20						S	A	45	45	A	A	A	A	44	43	44	43	44	44					
21						S	(4.3)^A	4.3	43	43	A	42	43	(43)^A	4.2	4.3	4.2	B	4.3					
22							43	A	45	A	A	A	43	(43)^P	42	(4.2)^P	4.3	4.3	44					
23							(44)^A	44	(44)^A	A	A	A	A	43^H	43	(43)^P	B	42	A					
24						S	44	44	43	A	4.3	A	A	A	44	A	4.3	B	4.3					
25						S	44	43	43	44	45	B	A	A	A	42	42	40	42	A				
26							A	44	A	43	43	(43)^P	(43)^P	B	B	42	42	44	43	A				
27						S^K	42^K	43^K	43^K	42^K	A^K	A^K	A^K	A^K	A^K	44^K	B^K	43^K	4.3^K					
28						S	42	43	45	45	43	44	45	42	(42)^P	4.2	42	4.3	43					
29							A	45	4.4	4.3	43	42	43	44	43	44	43	4.1	42					
30						S	4.2^H	42^H	(43)^A	A	44	43	45	S	A	(43)^P	42	4.3	4.2	S				
31							S	43	4.1	43	42	43	43	45	44	43	4.3^H	A	44	S				
Median						—	43	43	44	44	44	4.3	43	4.3	43	4.3	43	4.3	43	—				
Count							18	21	28	20	16	15	18	19	25	28	28	26	23					

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Table 85

Ionospheric Storminess at Washington, D. C.

May 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	1	3			2	2
2	1	3			2	1
3	1	3			1	2
4	1	2			3	2
5	1	3			3	2
6	1	5	0900	----	4	4
7	4	5	----	----	5	3
8	2	2	----	0400	5	4
9	2	4	0900	----	4	3
10	2	3	----	0100	3	3
11	1	3			3	2
12	1	3			2	2
13	1	2			2	1
14	1	3			2	2
15	1	4	1300	----	2	5
16	4	5	----	----	5	5
17	5	5	----	----	4	3
18	4	5	----	----	3	3
19	4	5	----	2300	4	3
20	1	3			3	3
21	2	3			2	2
22	1	2			3	3
23	1	2			3	2
24	1	1			1	3
25	1	3			1	2
26	0	3			2	2
27	2	5	0900	----	5	3
28	1	2	----	0200	3	2
29	1	3			2	2
30	1	2			2	2
31	0	3			3	2

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

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

----Dashes indicate continuing storm.

Table 86a

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

April 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} Half day	
	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	(1)	(2)
1	6	5	7	6	6	5	6	5	6	6	6		(4)	2
2	6	(4)	7	6	5	5	6	6	6	6	6		3	2
3	6	5	7	7	5	(4)	6	6	6	5	5		3	2
4	5	(4)	6	6	6	(4)	5	5	5	5	5		(4)	3
5	5	(4)	7	7	(4)	(4)	5	6	6	(4)	(4)		2	2
6	6	6	7	7	6	5	6	6	6	(4)	(4)		3	1
7	7	6	7	6	6	5	6	6	7	5	5		1	2
8	7	5	6	6	6	5	6	6	6	6	6		2	2
9	7	5	7	7	5	5	6	6	6	6	6		2	2
10	6	(4)	6	6	5	5	5	6	5	6	6		3	3
11	5	(3)	6	6	(4)	(3)	5	5	5	5	5		3	3
12	6	(4)	6	6	5	(4)	6	6	5	5	5		3	2
13	5	5	6	5	6	(4)	6	5	5	6	6		3	3
14	5	5	7	6	5	(4)	6	7	6	6	6		2	2
15	6	(4)	7	7	6	(4)	6	6	6	6	6		3	2
16	5	(3)	5	(4)	5	(3)	5	(4)	(4)	6	6		(4)	(4)
17	(3)	(4)	6	6	(3)	(3)	5	5	(4)	(4)	(4)		3	3
18	5	(4)	6	6	5	(4)	5	5	5	(4)	(3)	X	3	2
19	5	(4)	5	6	5	(3)	5	5	5	(3)	(3)	X	3	3
20	(4)	(3)	6	6	(4)	(3)	(4)	5	(4)	(3)	(3)	X	(5)	3
21	(4)	(3)	6	5	(4)	(3)	(4)	5	(4)	(3)	(3)	X	3	(4)
22	(4)	(4)	6	6	(4)	(3)	(4)	(4)	5	(3)	(4)	X	3	(4)
23	(4)	(3)	6	6	(4)	(3)	(4)	5	(4)	(4)	5		(4)	3
24	6	5	6	6	(4)	(4)	5	6	6	(4)	5		2	3
25	7	6	6	7	5	5	6	6	6	5	5		2	3
26	6	(4)	7	7	5	5	6	6	6	6	6		3	3
27	6	5	7	7	5	(4)	6	6	6	6	6		3	3
28	7	5	7	7	6	5	6	6	6	5	6		3	2
29	7	6	7	7	6	5	6	5	7	(4)	(4)		2	2
30	7	6	7	7	6	5	6	6	7	(4)	(4)		3	3
Score:														
Quiet periods				P	7	4	6	8		11	12			
				S	15	10	19	19		6	6			
				U	2	0	1	1		3	3			
				F	1	0	4	1		5	4			
Disturbed periods				P	5	10	0	1		2	1			
				S	0	6	0	0		2	3			
				U	0	0	0	0		0	0			
				F	0	0	0	0		1	1			

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

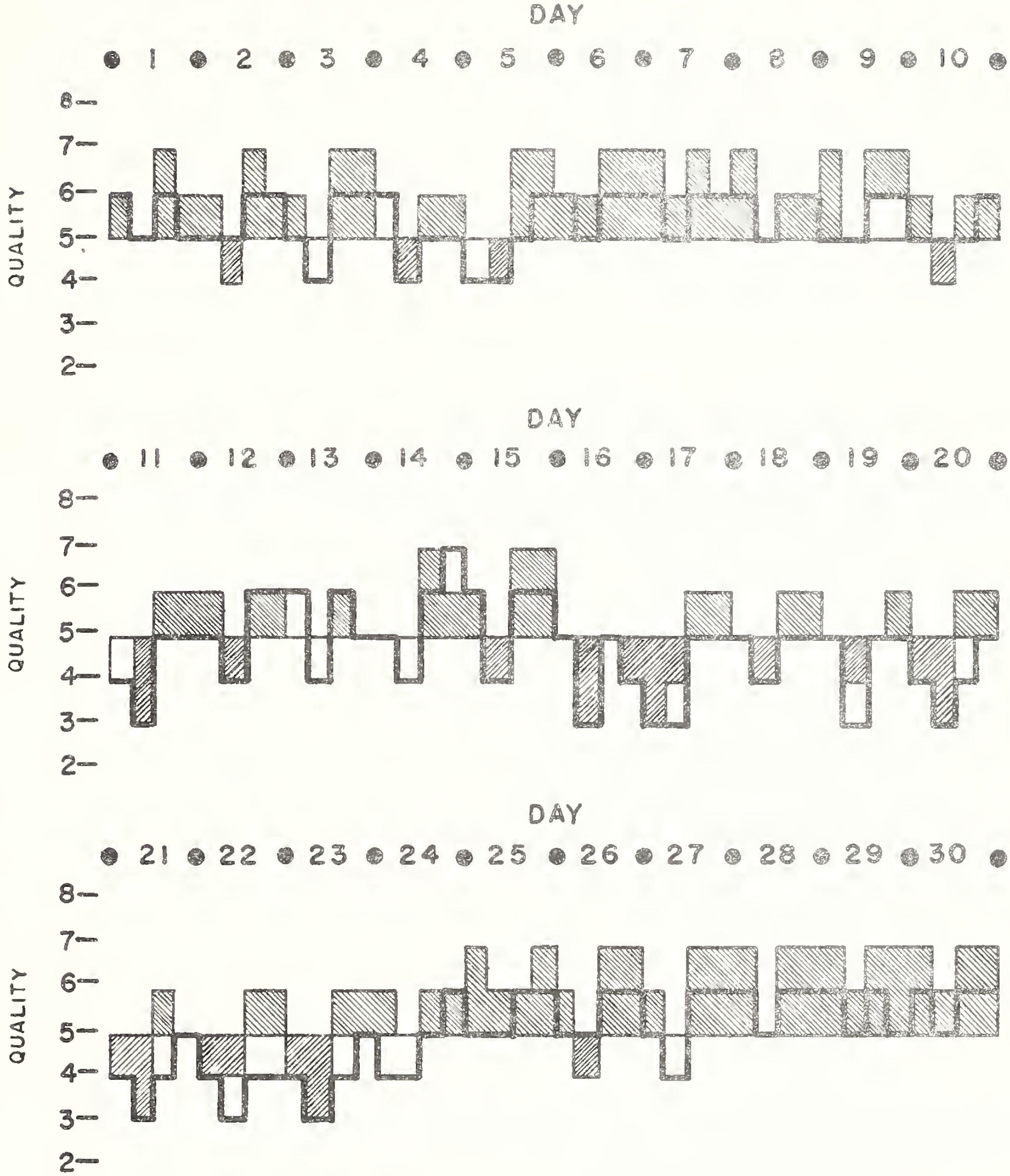
Symbols:
- X - probable disturbed date

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

Table 86b

Short-Term Forecasts--April 1953

observed disturbance | observed quiet | forecasts



Outcome of Advance Forecasts (1 to 4 days ahead)--April 1953

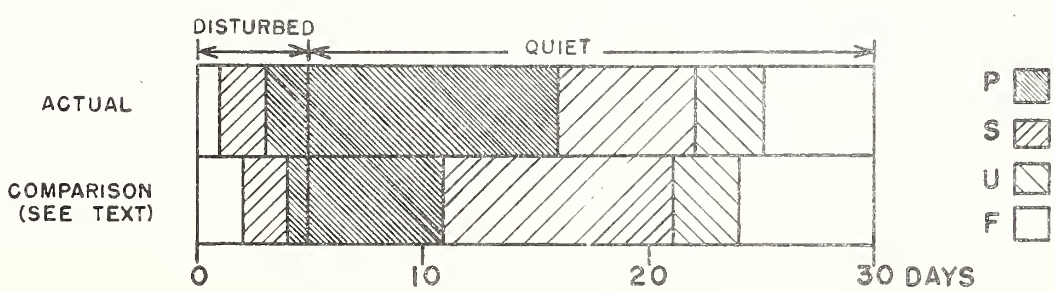


Table 87a

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

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1953																																					
May 5.6	-	-	-	-	-	-	-	1	4	4	4	3	2	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.7a	-	-	-	-	-	-	-	-	3	4	3	2	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.8a	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	4	4	4	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.8a	x	x	x	x	x	x	x	x	x	2	2	3	3	4	4	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	x
21.7	-	-	-	-	-	-	-	-	1	1	1	3	4	5	8	8	9	14	16	13	12	18	2	1	1	1	1	1	2	2	1	1	-	-	-	-	-
22.8	-	-	-	-	-	-	-	-	2	2	2	2	3	4	6	6	12	12	12	10	12	6	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-
23.8	-	-	-	-	-	-	-	1	2	3	3	4	4	3	2	4	5	5	4	3	3	3	2	2	2	3	3	3	1	1	-	-	-	-	-	-	-
24.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	4	3	3	2	2	2	2	3	3	3	2	2	4	4	3	3	3	2	2	2	-	-
25.8a	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	-	-	-	-	-	-	-	2	2	3	4	4	3	3	1	-	-	-	-	-	-	-
26.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	2	3	3	2	2	-	-	-	-	-	-	-
27.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	1	1	1	-	-	-	1	1	2	2	2	2	2	3	1	-	-	-	-	-	-
28.8a	-	-	-	-	-	-	-	-	-	-	-	-	1	2	3	3	2	3	-	-	-	-	-	-	2	2	3	3	2	1	1	-	-	-	-	-	-
29.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	2	2	2	2	-	-	-	-	-	-	-
31.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 88a

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

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1953																																					
May 5.6	3	3	3	3	2	2	2	1	1	1	1	1	2	2	2	2	3	4	4	3	3	3	3	4	5	4	5	2	1	1	1	2	1	2	2	2	3
6.7a	3	3	3	3	2	1	1	1	1	1	1	2	3	3	3	4	4	3	3	4	4	4	4	4	5	5	5	3	2	1	1	1	1	1	2	3	3
7.8a	3	3	3	3	3	3	2	2	2	1	2	2	2	2	2	2	2	2	3	3	3	4	4	3	3	3	3	2	1	1	1	1	2	2	2	2	2
8.7a	2	2	2	2	1	1	1	1	1	1	2	2	2	2	2	2	2	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
9.6a	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2
11.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	4	3	3	3	3	3	3	3	4	4	4	3	3	-	-	-	-	-	-	-	-
14.8a	x	x	x	x	x	x	x	x	x	1	1	1	1	1	1	2	2	2	3	3	3	3	3	3	4	1	1	1	1	1	1	1	1	1	1	1	x
21.7	3	3	3	3	3	2	2	1	1	1	1	1	1	1	1	2	2	3	3	3	3	12	3	3	4	4	3	2	1	1	1	1	2	2	3	3	3
22.8	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	7	1	2	5	5	2	2	2	1	1	1	1	1	1	2	2	2	2	3	3
23.8	3	3	3	3	3	2	1	1	1	2	3	3	3	4	3	3	5	4	3	4	3	5	4	3	5	4	2	2	2	2	2	2	3	3	3	3	2
24.8a	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	4	2	2	2	2	1	1	1	1	1	1	1	1	1	2	2
25.8a	2	2	3	3	3	2	2	2	2	3	3	3	2	2	2	2	2	4	3	3	3	3	4	3	1	1	1	1	1	1	1	1	1	1	2	3	3
26.6a	3	3	3	3	3	2	2	2	2	3	3	2	2	2	2	2	3	4	4	3	3	4	4	2	2	2	2	2	2	2	2	2	2	2	2	3	3
27.7a	3	3	2	2	2	2	2	2	2	2	3	3	3	3	3	2	1	3	4	3	3	4	6	4	3	3	3	2	2	2	2	2	3	3	4	4	4
28.8a	3	4	3	3	3	2	2	2	2	2	3	3	3	3	3	2	2	2	2	3	4	5	5	4	3	3	3	2	2	2	2	2	2	2	3	3	3
29.7a	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	2	2	2	2	4	3	2	2	2	2	2	2	2	2	2	3	3	3
30.8a	2	2	2	2	2	1	1	1	1	1	1	2	3	3	2	1	2	4	5	5	4	3	3	4	4	4	4	3	3	1	1	1	1	1	1	3	3
31.7a	2	2	2	2	2	2	1	1	1	1	1	3	3	3	4	4	5	5	5	5	5	5	5	5	3	3	3	2	2	2	2	3	3	3	3	3	3

Table 89a

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

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1953																																					
May 5.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.8a	x	x	x	x	x	x	x	x	x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	x
21.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	3	2	2	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 87b

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

Date	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1953																																					
May 5.6	-	-	-	-	-	-	-	-	-	-	-	-	-	2	5	9	12	18	14	20	21	21	18	14	8	6	6	3	3	2	2	1	-	-	-	-	-
6.7	-	-	-	-	-	-	-	-	1	3	2	-	-	1	3	9	14	18	18	21	20	20	18	14	9	5	4	3	3	3	3	2	1	-	-	-	-
7.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	9	10	9	18	15	12	7	6	5	5	3	2	1	1	-	-	-	-	-	-	-
8.7	-	-	-	-	-	-	-	-	-	-	-	-	-	3	5	5	7	8	12	13	14	8	4	5	5	3	3	3	3	3	3	3	2	-	-	-	-
9.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	5	7	6	6	6	3	3	3	2	-	-	-	-	-	-	-	-	-	-	-
11.6a	-	-	-	-	-	-	-	-	4	4	-	-	-	-	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.8	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
21.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	3	5	5	3	3	-	-	-	-	-	-
22.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	2	2	2	2	2	2	1	1	1	1	3	4	3	1	-	-	-	-
24.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2	-	-	-	2	2	3	2	-	-	-	-	-	-	-	-	-	-	-
26.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	2	2	3	-	-	-	-	-	-	-	-	-	-	-
27.7a	-	-	-	-	-	-	-	-	-	-	1	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	4	3	-	-	-	-	-	-
28.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	5	4	4	3	4	4	4	3	1	-	-	-	-	-	-
29.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	3	3	3	3	-	-	-	-	-	-	-	-	-
30.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	5	7	9	9	10	4	3	2	2	2	2	2	2	1	1	1	-	-	-
31.7	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	4	7	14	15	17	7	4	4	4	3	2	2	-	-	-	-	-	-	-

Table 88b

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

Date	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1953																																					
May 5.6	3	3	3	3	2	2	2	2	2	2	2	3	4	4	3	3	2	11	5	12	10	11	2	1	1	1	1	1	1	1	2	2	2	3	3	3	3
6.7	3	3	3	3	3	3	3	2	2	2	3	4	5	4	3	3	8	15	12	6	11	10	1	1	1	1	1	1	1	1	1	1	1	2	4	3	3
7.8	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4	3	2	3	8	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3
8.7	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	1	9	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
9.6a	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	1	4	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	4	4	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.8	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
21.7a	3	3	3	3	3	3	2	2	2	2	2	3	3	5	5	5	5	6	5	4	4	4	4	4	4	4	3	2	1	1	1	1	1	1	2	3	3
22.8a	3	3	3	3	2	2	2	2	2	2	2	3	4	5	4	4	4	6	6	6	5	4	4	3	3	3	3	3	2	2	2	2	2	2	2	2	1
23.8a	2	2	2	2	2	2	2	3	3	3	5	5	5	5	5	5	5	5	5	5	5	6	5	6	4	4	2	2	2	1	1	2	3	3	3	3	3
24.8a	2	2	3	3	3	2	2	2	2	2	2	3	3	3	3	3	3	3	4	3	3	3	3	3	3	3	3	2	1	1	1	1	1	1	1	2	2
25.8a	3	3	3	3	2	2	2	2	2	2	3	3	4	3	3	4	4	6	4	4	3	3	3	3	3	3	4	2	2	2	2	2	2	2	2	2	2
26.6a	3	4	3	3	2	2	2	2	2	2	3	3	3	3	3	4	5	4	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	3
27.7a	4	3	3	3	3	2	2	3	2	2	2	2	4	5	5	5	4	3	4	4	3	3	4	3	3	3	2	2	2	2	2	2	3	3	3	3	3
28.8a	3	3	3	3	3	3	2	2	2	2	2	2	2	4	4	5	7	5	5	6	6	5	4	4	3	3	2	2	2	2	2	2	2	2	3	3	3
29.7a	3	3	3	-	-	-	-	-	-	-	-	-	2	2	2	-	-	-	2	3	3	3	2	-	-	-	-	-	-	-	-	-	-	2	2	2	2
30.8	3	2	3	3	2	2	2	2	2	2	2	2	2	2	3	4	3	3	2	4	10	4	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2
31.7	3	3	3	3	3	2	2	2	2	2	2	3	3	3	4	4	2	2	2	8	9	9	1	-	-	-	-	-	-	-	-	-	2	2	2	2	2

Table 89b

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

Date	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1953																																					
May 5.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	2	4	3	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-
6.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	2	2	3	3	3	3	1	1	-	-	-	-	-	-	-	-	-	-	-	-
7.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.8	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
21.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
31.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	4	4	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 90a

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																																					
May 1.7a	3	2	2	3	3	3	4	4	3	3	3	4	3	4	4	3	3	2	2	3	3	3	3	3	3	2	2	2	3	3	3	2	2	-	-	-	-
2.7	3	2	2	2	2	3	3	3	3	3	3	3	2	3	4	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	3	3	3	2	2
4.7a	-	-	-	-	-	-	-	-	4	3	3	3	3	2	3	4	4	4	2	3	3	2	3	2	3	3	3	3	3	2	3	3	3	3	2	2	2
5.8a	-	-	-	-	-	-	-	-	2	3	3	2	3	3	2	3	2	2	2	2	2	2	-	-	-	-	-	-	-	-	x	x	x	x	x	x	x
6.7a	2	2	-	-	-	2	2	2	2	3	2	2	2	-	-	3	2	2	3	3	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.7a	-	-	-	-	-	2	2	3	3	3	3	2	3	3	2	2	3	3	3	3	3	2	3	2	2	2	3	3	3	2	2	3	2	2	-	-	-
8.7a	2	-	-	-	-	2	-	3	3	3	3	2	3	4	3	-	-	2	2	3	3	2	2	-	2	3	2	2	2	3	2	-	-	-	-	-	-
10.6	-	-	-	-	2	2	3	2	3	4	3	3	3	2	2	2	-	2	3	2	2	2	3	3	3	5	4	3	3	2	-	-	3	3	3	3	-
11.7	-	-	-	-	-	-	-	2	2	3	3	2	3	2	2	2	2	3	2	3	3	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-
17.7	-	-	-	-	-	2	3	3	3	3	4	4	4	5	13	14	16	20	18	11	5	3	4	3	2	2	2	2	2	2	-	-	-	-	-	-	-
18.7	-	-	-	-	-	-	2	2	3	3	4	5	6	8	13	20	30	26	21	16	11	12	[illegible]	5	4	3	2	2	2	-	-	-	-	-	-	-	-
19.6	-	-	-	-	-	2	3	3	3	3	3	3	5	6	11	18	23	22	20	18	16	17	12	8	4	3	3	2	2	2	-	-	-	-	-	-	-
21.7	-	-	-	-	-	-	2	3	3	5	6	7	8	12	14	16	20	28	32	28	29	43	14	8	6	5	3	3	3	4	3	2	-	-	-	-	-
22.7	3	2	3	3	3	3	3	3	3	4	3	4	4	4	5	6	8	8	14	11	3	14	14	5	3	2	3	3	3	3	2	2	3	2	-	-	-
24.6	-	-	-	-	2	2	3	5	7	8	5	4	5	5	4	7	8	5	4	5	6	5	5	3	3	4	4	4	4	4	4	3	2	2	-	-	-
25.7	2	2	-	-	-	-	2	3	3	3	3	4	4	3	3	3	2	3	3	3	3	3	3	3	4	4	5	5	3	4	5	4	3	2	-	-	2
27.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.8a	2	-	-	-	-	-	2	3	2	2	2	2	3	3	3	3	2	2	3	3	3	3	3	3	4	4	3	3	3	3	2	-	-	-	-	-	-
29.7a	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	2	2	3	3	2	3	3	3	2	2	-	-	2	3	3	2	3	-	-	-	-	-
31.6	-	-	-	-	-	-	2	2	3	3	3	3	3	2	2	2	2	2	3	3	3	4	3	3	4	4	3	3	2	2	3	2	2	2	-	-	-

Table 91a

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																																					
May 1.7a	3	2	3	3	2	3	2	2	3	3	4	5	4	5	5	5	4	4	5	5	5	5	5	4	4	5	5	5	4	3	2	2	2	3	3	3	3
2.7	3	2	2	3	3	3	2	2	3	2	4	4	3	5	5	4	4	4	8	8	8	7	7	5	8	7	7	5	4	3	2	3	-	2	3	4	3
4.7a	-	-	-	-	-	-	-	-	2	3	3	3	4	3	4	3	3	3	4	5	3	2	3	4	3	3	2	2	-	-	-	-	-	-	-	-	-
5.8a	2	2	3	2	2	2	-	2	-	-	-	2	2	2	3	-	2	3	3	2	2	3	3	3	2	3	3	2	-	-	x	x	x	x	x	x	x
6.7a	3	2	3	3	2	2	2	2	2	3	2	3	5	7	5	6	5	5	4	4	4	5	5	4	4	5	4	4	4	3	2	3	3	2	2	-	3
7.7a	2	2	3	2	2	3	2	2	3	3	3	3	3	3	4	3	3	3	3	4	5	4	5	3	2	3	3	2	2	2	2	2	-	3	2	3	3
8.7a	2	2	3	3	2	3	3	3	3	3	3	4	4	5	6	5	4	5	[illegible]	7	7	7	6	5	4	4	3	4	3	4	3	2	2	2	2	3	3
10.6	4	4	5	4	4	3	2	3	2	3	5	4	5	5	5	7	8	9	8	7	8	7	6	5	6	5	5	4	3	3	2	3	3	3	3	4	3
11.7	2	3	3	3	2	3	2	3	2	3	2	2	3	4	4	5	5	16	14	11	5	6	5	5	5	6	5	3	2	2	-	2	-	-	2	3	3
17.7	5	4	3	3	2	2	3	3	2	2	2	2	-	3	3	2	5	13	11	13	14	13	15	14	10	8	3	3	2	2	2	-	2	3	2	2	3
18.7	5	4	3	2	2	-	-	2	-	3	2	3	2	2	3	2	5	16	11	13	10	7	9	5	5	4	3	3	2	2	3	2	3	2	2	2	3
19.6	2	3	2	2	3	2	2	2	3	2	2	2	3	2	2	3	8	9	26	20	16	11	13	5	3	3	4	3	2	2	2	3	3	3	2	2	2
21.7	4	4	3	4	4	3	3	3	2	2	3	4	2	4	4	4	3	4	4	6	6	18	8	5	5	6	7	4	3	2	2	2	2	3	2	2	3
22.7	3	3	2	3	3	2	3	3	2	3	3	2	3	3	4	2	2	4	13	2	8	8	9	3	5	5	-	2	3	3	2	2	2	3	3	4	4
24.6	4	5	4	5	4	3	3	3	3	3	6	8	7	8	5	3	5	6	6	8	7	8	12	8	9	8	3	2	3	3	4	4	3	3	3	2	4
25.7	5	4	5	8	4	3	4	4	3	5	7	8	7	6	4	3	4	8	8	11	12	11	11	12	11	8	4	3	3	2	4	3	3	2	3	3	3
27.9a	-	-	-	-	-	-	-	-	-	2	3	2	3	3	3	3	3	2	3	3	3	3	4	4	4	3	2	2	2	2	2	-	2	2	-	2	3
28.8a	-	-	3	-	-	3	2	3	2	3	2	3	3	3	2	3	2	2	3	2	2	3	3	2	3	3	3	3	2	3	2	2	2	-	2	-	-
29.7a	3	2	4	4	3	2	3	3	4	4	5	5	4	5	6	6	8	5	5	6	5	6	7	5	5	5	4	4	3	2	2	3	3	3	2	3	3
31.6	5	4	4	4	5	5	4	3	2	3	2	4	6	5	5	6	6	6	10	9	8	10	8	9	7	5	4	5	4	3	2	3	3	-	2	3	3

Table 92a

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																																					
May 1.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	x	x	x	x	x	x	x
6.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.7	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18.7	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	4	5	4	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19.6	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	4	3	3	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	4	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22.7	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	2	3	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 90b

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

Date	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1953																																					
May 1.7	-	-	-	-	-	-	2	2	2	3	3	3	3	2	2	3	2	2	2	3	3	3	3	3	3	2	2	2	2	4	3	3	3	3	3	2	3
2.7	2	3	2	2	2	-	-	2	2	3	3	3	3	2	2	3	3	2	2	3	3	5	8	8	7	6	5	5	3	3	4	4	3	3	4	4	3
4.7	2	3	3	2	3	2	2	2	2	3	2	2	2	2	2	3	4	5	5	6	8	17	16	15	11	5	3	3	3	2	2	2	2	2	-	-	-
5.8a	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	3	3	2	-
6.7	-	-	-	-	-	-	-	-	-	3	2	2	3	2	3	3	8	11	14	15	23	22	18	16	13	11	5	5	5	6	6	5	3	3	3	2	2
7.7	-	-	-	-	2	3	2	2	2	3	3	2	3	3	3	3	5	11	12	16	15	14	11	8	5	4	3	3	2	2	2	3	2	2	3	2	-
8.7	-	-	-	-	-	2	3	3	3	3	3	4	3	4	4	8	11	14	17	23	26	18	14	12	11	8	4	4	4	4	5	3	2	2	3	3	2
10.6	-	-	-	-	-	-	2	3	7	5	6	4	4	4	3	4	5	11	10	8	11	12	11	9	5	5	4	3	4	5	4	4	3	2	3	2	-
11.7a	-	-	-	-	-	-	-	-	2	2	3	3	3	2	3	3	3	3	3	3	3	4	2	2	2	-	-	2	3	3	2	2	-	-	-	-	-
17.7	-	-	-	-	-	-	-	3	3	2	3	3	2	2	-	-	-	-	2	-	-	2	3	3	3	3	3	3	4	5	5	4	3	2	-	-	-
18.7	-	-	-	-	-	-	-	-	-	-	2	2	3	3	2	-	-	-	2	2	2	3	3	2	3	3	3	3	3	4	4	3	2	2	-	-	-
19.6	-	-	-	-	-	2	2	3	2	2	2	3	3	2	2	2	2	2	2	2	2	2	2	2	3	3	2	3	3	3	4	4	2	2	3	2	-
21.7	-	-	-	-	-	-	-	-	2	2	3	3	2	2	2	3	3	2	3	3	2	3	3	4	2	3	3	5	5	6	7	8	3	2	-	-	-
22.7	-	-	-	-	-	-	-	-	-	-	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	3	4	3	3
24.6	-	-	-	-	2	2	2	2	2	2	2	2	3	2	2	3	3	3	4	5	4	3	2	3	2	3	4	3	4	5	6	4	3	2	3	3	-
25.7	2	-	-	-	-	-	-	2	3	2	2	2	3	3	2	3	3	3	2	3	3	3	2	3	4	4	4	5	5	5	4	4	3	3	3	3	2
27.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.8a	-	3	2	3	3	2	3	4	4	4	4	2	2	3	3	2	3	2	2	3	3	3	2	3	3	3	3	4	3	2	3	3	4	4	3	3	2
29.7	-	-	-	-	-	2	2	2	3	3	3	2	2	3	2	2	5	8	5	3	2	3	5	8	7	5	5	5	5	5	4	4	3	3	2	2	-
31.6	-	-	-	-	-	-	2	2	3	3	3	3	3	3	3	3	4	4	5	10	18	20	22	18	10	8	6	5	5	4	3	4	3	-	3	2	-

Table 91b

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

Date	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1953																																					
May 1.7	3	3	2	3	2	2	3	3	3	3	3	2	2	4	3	5	5	5	6	8	7	7	8	5	3	2	2	3	2	3	3	2	3	3	3	3	3
2.7	3	3	4	4	3	3	2	2	2	2	2	3	2	5	5	6	5	4	6	8	7	7	6	5	6	3	2	2	2	3	2	2	3	2	3	3	3
4.7	-	2	3	3	3	2	2	3	3	2	3	3	4	4	4	5	5	4	3	3	8	11	8	3	2	2	2	2	2	3	3	2	-	-	-	-	-
5.8a	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	3	3	2	2
6.7	3	2	3	3	2	2	3	2	2	2	2	3	4	4	2	3	5	16	3	8	9	6	2	3	2	2	2	3	2	3	2	2	2	2	3	3	3
7.7	3	2	2	-	2	2	3	-	2	2	3	3	3	-	2	2	2	2	3	3	10	9	5	2	2	2	2	3	2	3	2	3	3	3	3	3	2
8.7	3	2	3	3	2	2	2	2	2	3	2	2	3	4	3	3	3	2	3	16	11	5	2	2	-	3	2	2	2	3	2	3	2	2	4	3	2
10.6	3	3	4	5	3	2	3	2	3	3	4	2	2	3	3	5	5	7	6	8	7	6	5	6	5	7	6	5	3	4	2	3	3	4	5	4	4
11.7a	3	2	2	2	2	2	2	3	2	3	3	3	2	2	3	4	4	5	4	3	3	3	2	3	3	2	3	2	3	3	2	2	2	3	3	3	2
17.7	3	3	4	3	3	3	4	3	3	3	3	5	7	6	6	7	7	8	8	9	8	7	6	6	4	5	7	4	3	2	2	2	3	3	3	3	5
18.7	3	2	3	3	2	2	3	3	3	2	2	3	3	4	5	4	5	6	5	7	7	8	5	3	2	3	3	3	2	2	3	3	2	3	2	3	5
19.6	2	3	2	3	2	3	2	2	2	2	3	3	4	4	5	4	4	5	8	9	9	8	6	6	5	4	4	2	3	2	2	2	2	2	3	2	2
21.7	3	3	4	4	2	3	2	2	2	2	2	3	4	5	6	7	7	13	11	10	8	8	6	6	6	5	6	5	3	3	2	-	2	3	4	3	4
22.7	4	3	3	3	2	2	2	2	2	2	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	4	3	3	3
24.6	4	3	4	2	4	3	2	3	3	3	5	8	6	6	6	7	8	7	11	10	10	10	11	8	7	5	8	5	4	5	3	3	2	3	4	5	4
25.7	3	4	4	4	3	3	2	2	2	3	5	5	5	5	7	8	11	10	14	11	9	6	6	9	8	5	7	5	4	2	2	2	2	2	3	4	5
27.9a	3	-	-	-	-	-	-	-	-	-	-	-	-	2	3	4	4	4	5	4	3	2	3	2	2	3	2	-	-	-	-	-	-	-	-	-	-
28.8a	-	-	-	-	2	3	2	-	-	2	2	2	-	-	3	4	4	5	4	3	4	3	3	2	-	2	2	-	-	-	2	-	3	2	3	2	-
29.7	3	2	2	2	3	2	3	2	3	3	4	3	2	3	5	4	5	4	8	11	10	9	6	5	4	3	5	4	4	3	2	2	2	3	4	3	3
31.6	3	2	3	3	3	-	2	2	2	2	3	2	3	3	3	4	3	4	3	4	10	10	9	-	-	2	2	3	-	2	-	2	2	3	4	4	5

Table 92b

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

Date	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1953																																					
May 1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
4.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	4	5	4	3	2	-	-	-	-	-	-	-	-	-	-	-	-
5.8a	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	-	-	-	-
6.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	2	3	4	4	4	3	2	2	-	-	-	-	-	-	-	-	-	-	-
7.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	2	3	3	3	2	3	2	2	-	-	-	-	-	-	-	-	-	-	-
8.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	4	3	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
10.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	2	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22.7	-	-	-	-	-	-	-	-	-	-	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	-	-	-	-
24.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	4	4	3	2	3	2	-	-	-	-	-	-	-	-	-	-

Table 93

Zürich Provisional Relative Sunspot Numbers

May 1953

Date	R_Z*	Date	R_Z*
1	46	17	8
2	40	18	14
3	35	19	10
4	26	20	10
5	9	21	11
6	8	22	11
7	8	23	11
8	0	24	13
9	0	25	18
10	0	26	11
11	0	27	10
12	0	28	18
13	0	29	23
14	0	30	18
15	0	31	17
16	7	Mean:	12.3

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

Table 94

American Relative Sunspot Numbers

April 1953

Date	R_A'*	Date	R_A'*
1	43	17	0
2	50	18	0
3	55	19	0
4	51	20	0
5	36	21	1
6	34	22	12
7	46	23	22
8	37	24	32
9	26	25	40
10	15	26	54
11	4	27	54
12	0	28	44
13	0	29	45
14	0	30	44
15	0		
16	0	Mean:	24.8

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

Table 95

Solar Flares, May 1953

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

Table 96

Indices of Geomagnetic Activity for April 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	0.7	4+	3o	2+	4o	3-	2o	1+	2-	21+	Five
2	0.8	4o	3+	3+	3o	1+	2o	3+	2+	23-	Quiet
3	0.8	4-	3+	2-	1o	1o	2o	3+	3+	19+	
4	1.2	6o	6-	3o	3o	4o	3+	4+	3+	33-	5
5	0.2	2+	0+	2o	2o	2-	2o	2o	2-	14o	6
											7
6	0.3	2o	3o	2+	2+	1+	1-	1+	2-	15-	14
7	0.1	0+	0+	1-	0+	1o	1o	1o	2-	6+	28
8	0.6	2+	2+	2o	2o	2-	1o	1+	3o	16-	
9	0.4	3o	3+	0+	2-	1+	2-	2-	1o	14o	
10	0.9	2-	3+	3-	4-	4-	3o	2+	3+	24-	
11	1.1	2-	5-	4+	4+	3+	5-	3o	3-	29-	Five
12	0.8	3+	3-	3+	4o	3+	1+	2+	2o	22+	Disturbed
13	0.9	4o	2o	4-	4o	4+	4-	3o	1o	26-	
14	0.1	2o	2+	2-	1+	2+	1+	2-	1+	14o	4
15	0.6	3+	3o	2+	3+	2+	1+	2o	2-	19+	16
											20
16	1.4	4o	5+	4+	4-	4-	5+	5-	5+	36+	21
17	0.7	4o	2-	3+	3+	4-	2o	1+	1+	21-	23
18	0.7	3-	3-	4-	3o	2o	2+	2+	2+	21o	
19	1.1	3-	5o	3o	3o	5-	4-	2o	4-	28-	
20	1.3	5-	5+	5o	4-	4o	4-	4-	5o	35o	
21	1.3	4-	4-	5-	4-	3o	4+	5o	4o	32o	Ten
22	1.1	3+	3+	3o	3+	4o	4+	4o	4-	29o	Quiet
23	1.0	4-	5o	4o	3-	4-	3o	4-	3+	29o	
24	0.5	2+	1o	1+	1+	2+	3o	3o	2+	17-	5
25	0.7	3-	2-	2-	3-	3-	3-	3o	4-	21-	6
											7
26	1.0	3o	3-	4-	2o	4-	3-	2-	3+	23-	8
27	0.5	3+	2o	2+	2o	2+	2o	2-	2+	18o	9
28	0.2	2+	2+	3-	3-	2o	1+	0+	0o	14-	14
29	0.5	1+	1+	2+	3-	4-	2+	1+	1-	16-	24
30	0.6	3-	2+	3o	3-	2+	4-	3+	2-	22-	27
											28
Mean	0.74										29

Table 97

Sudden Ionosphere Disturbances Observed at Washington, D. C.

May 1953

1953 Day	GCT		Location of transmitters	Relative intensity at minimum*	Other phenomena
	Beginning	End			
May					
4	1625	1705	Ohio, D.C., England, Mexico, North Dakota	0.1	

*Ratio of received field intensity during SID to average field intensity before and after, for station KQ2XAU (formerly W8XAL), 6080 kilocycles, 600 kilometers distant.

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

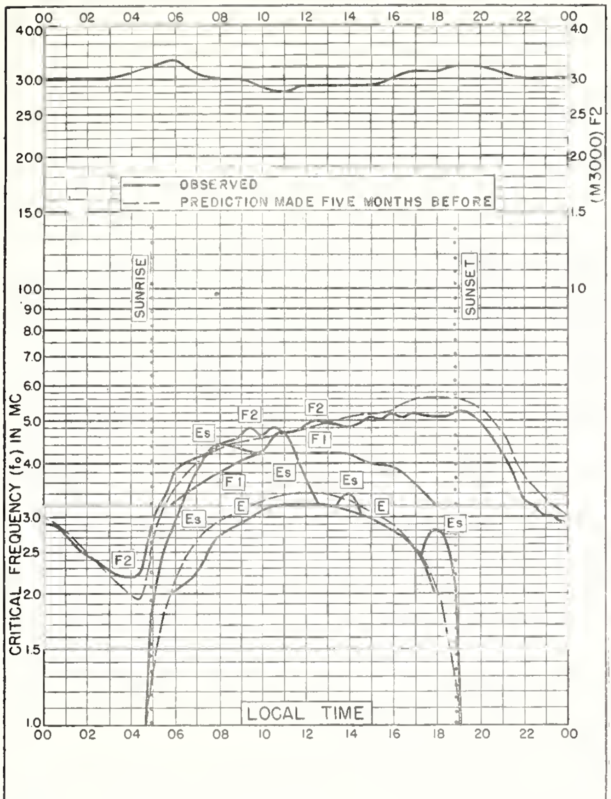


Fig. I. WASHINGTON, D.C. 38.7°N, 77.1°W MAY 1953

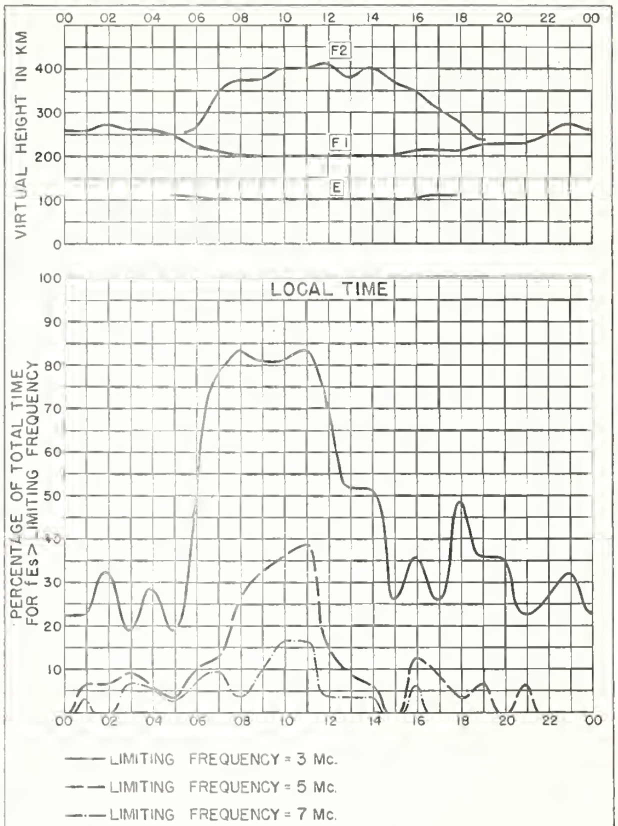


Fig. 2. WASHINGTON, D.C. MAY 1953

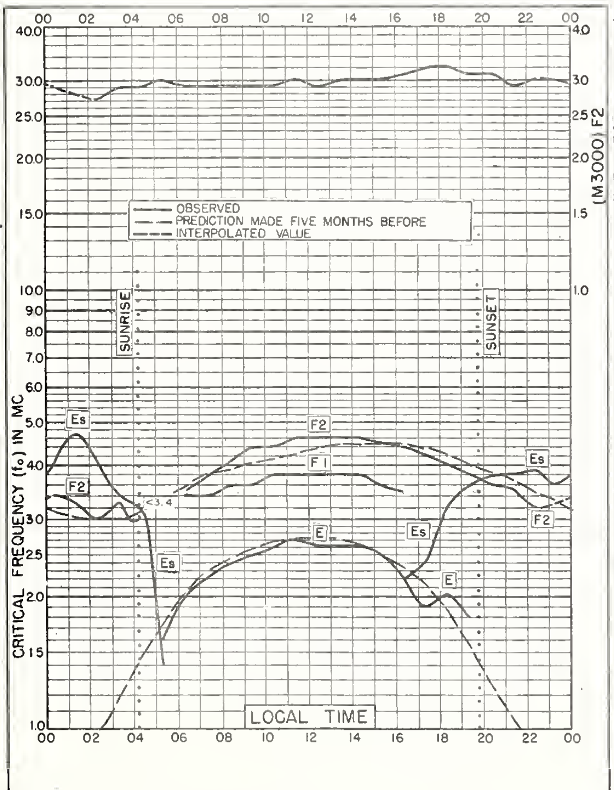


Fig. 3. TROMSO, NORWAY 69.7°N, 19.0°E APRIL 1953

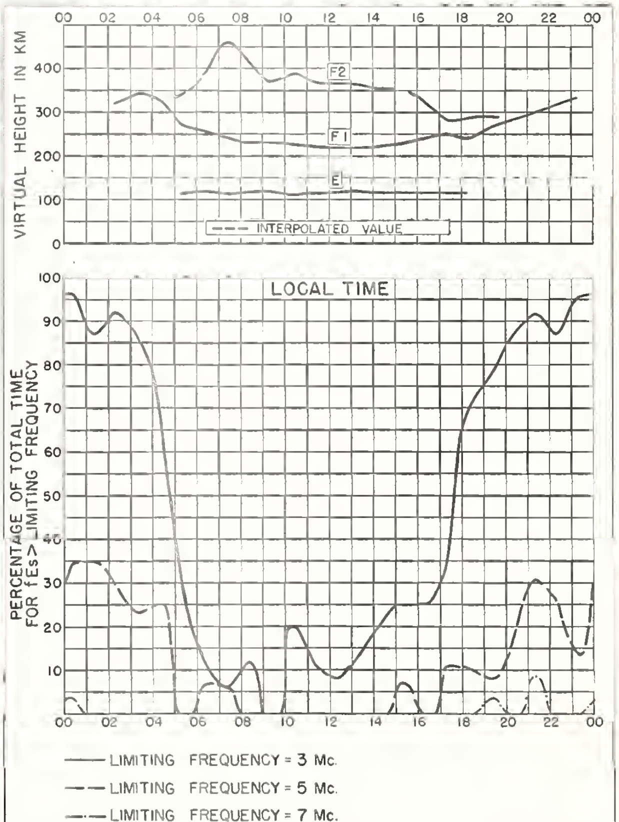


Fig. 4. TROMSO, NORWAY APRIL 1953

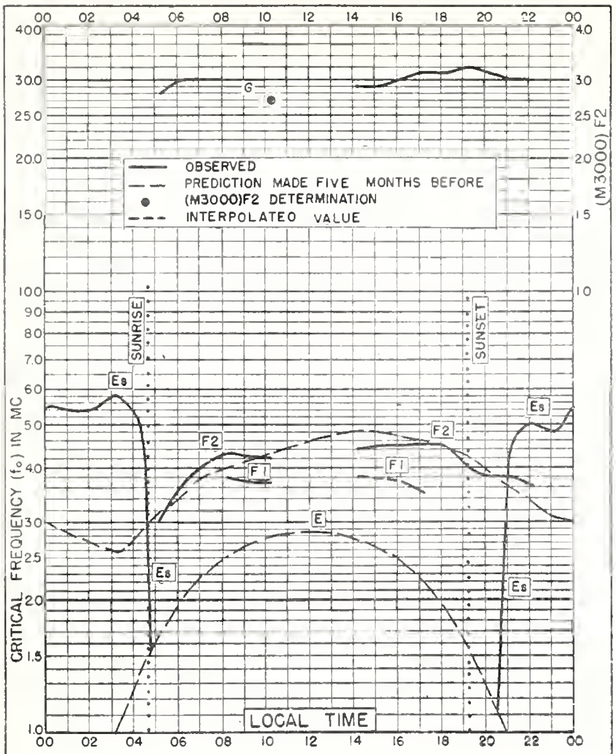


Fig. 5. FAIRBANKS, ALASKA
64.9°N, 147.8°W APRIL 1953

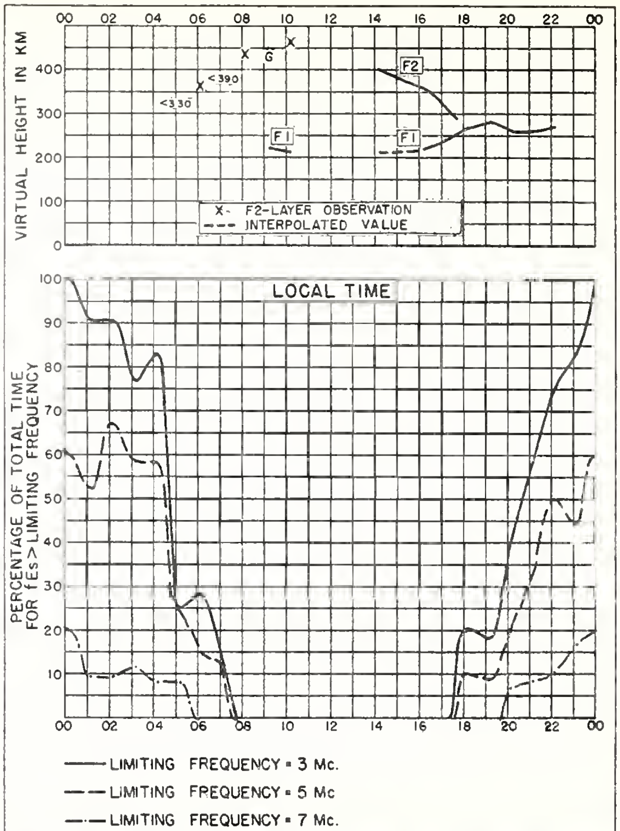


Fig. 6. FAIRBANKS, ALASKA APRIL 1953

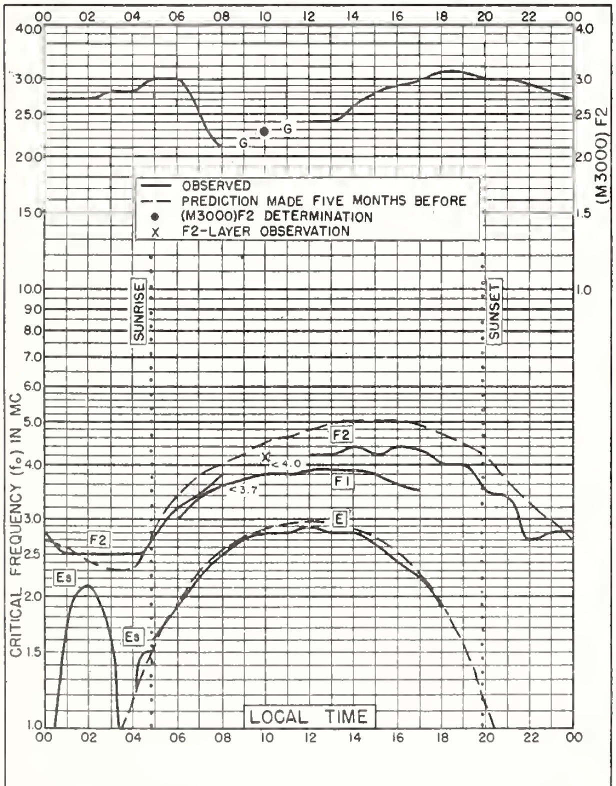


Fig. 7. ANCHORAGE, ALASKA
61.2°N, 149.9°W APRIL 1953

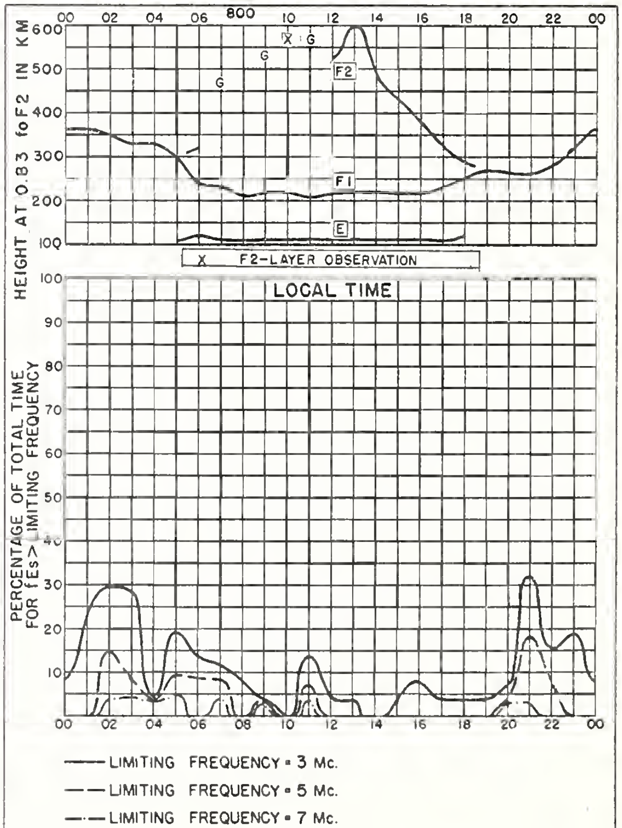


Fig. 8. ANCHORAGE, ALASKA APRIL 1953

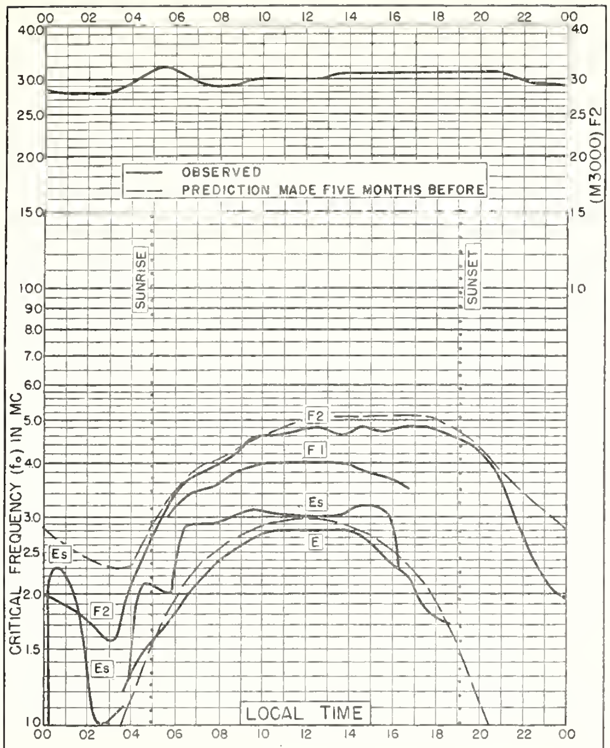


Fig. 9. OSLO, NORWAY
60.0°N, 11.1°E APRIL 1953

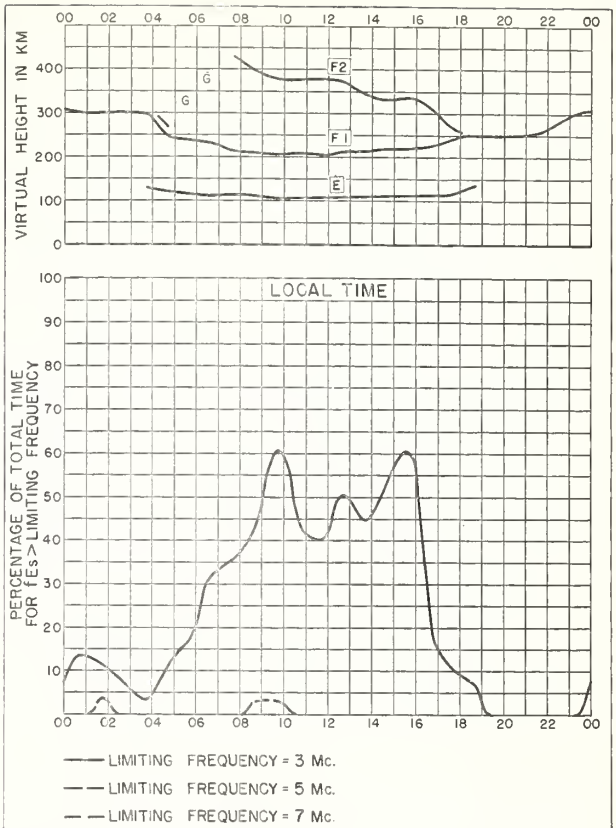


Fig. 10. OSLO, NORWAY APRIL 1953

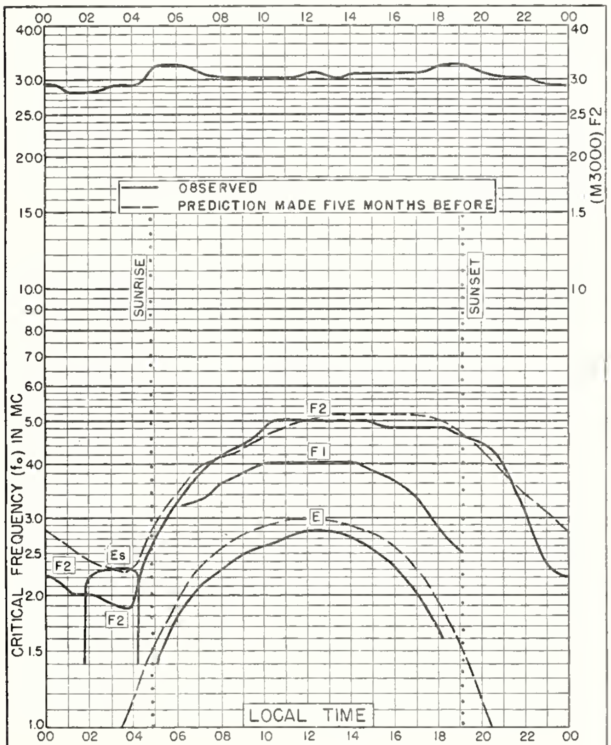


Fig. 11. UPSALA, SWEDEN
59.8°N, 17.6°E APRIL 1953

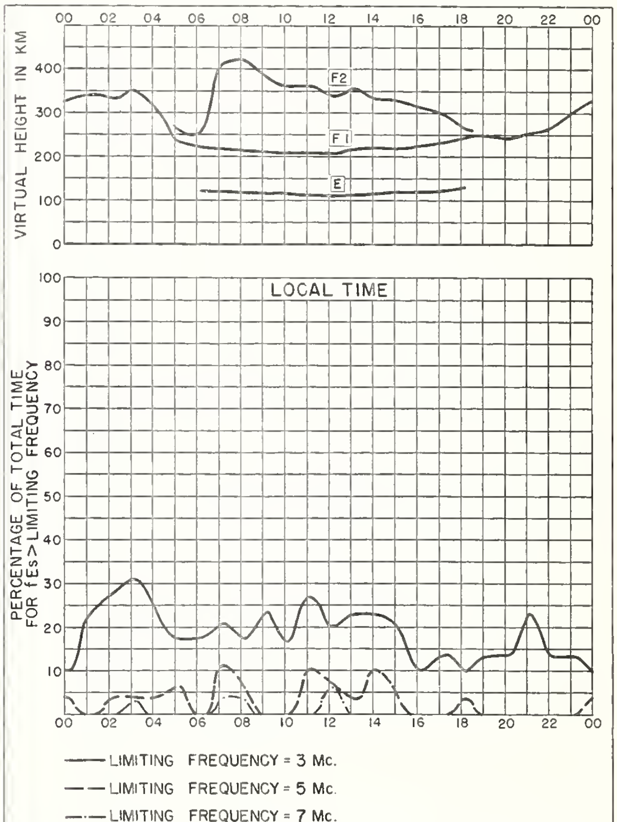


Fig. 12. UPSALA, SWEDEN APRIL 1953

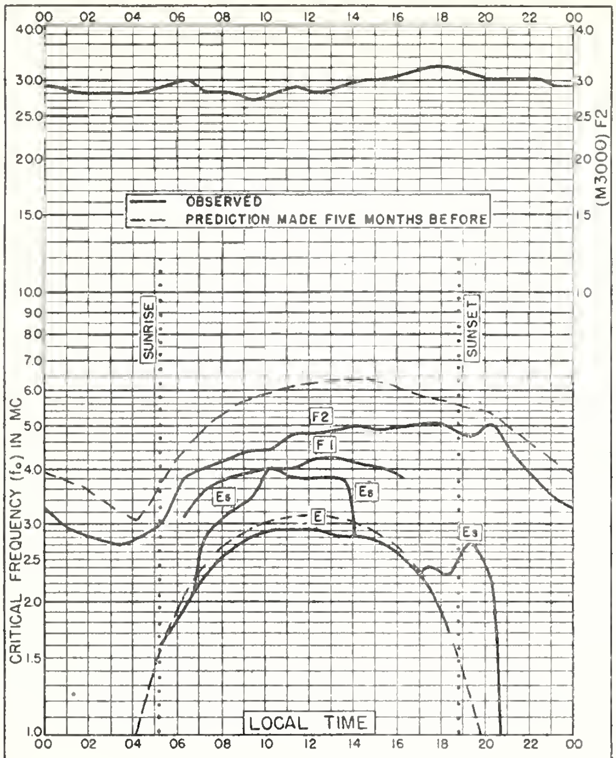


Fig. 13. ADAK, ALASKA
51.9°N, 176.6°W APRIL 1953

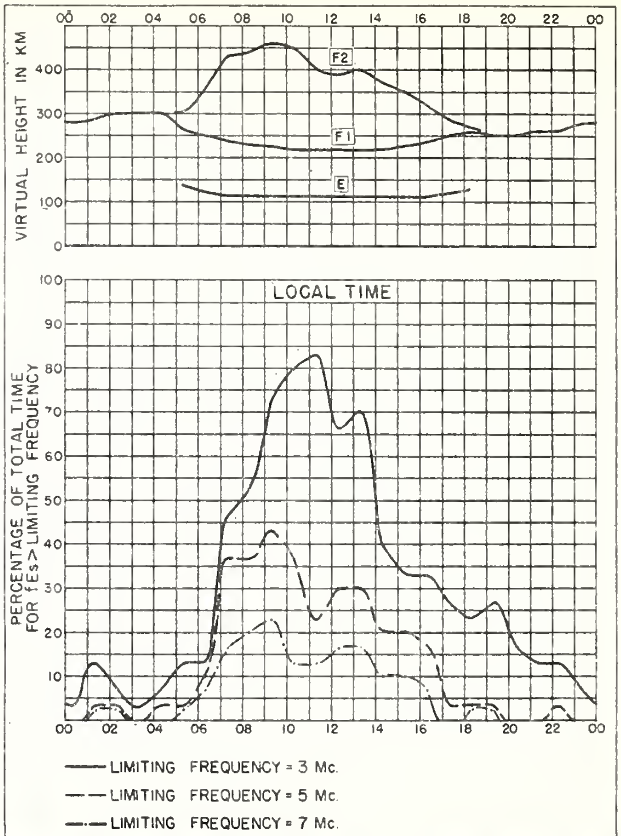


Fig. 14. ADAK, ALASKA APRIL 1953

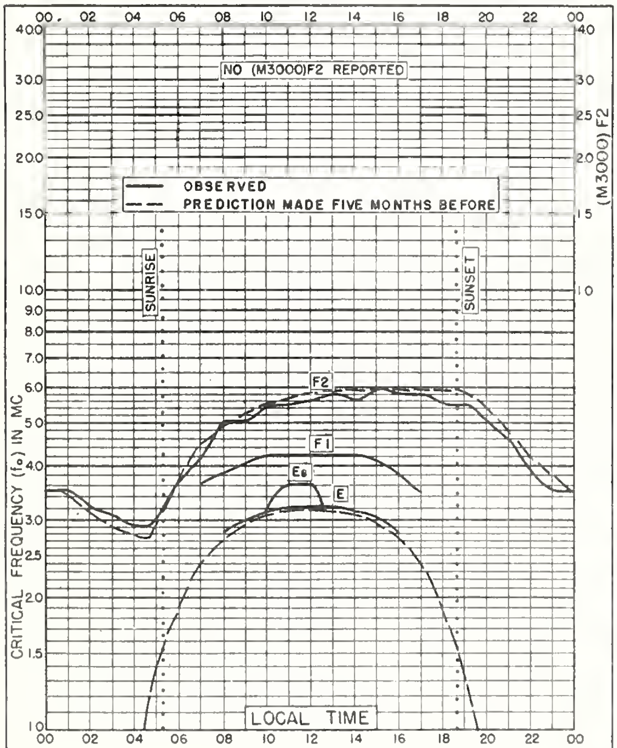


Fig. 15. GRAZ, AUSTRIA
47.1°N, 15.5°E APRIL 1953

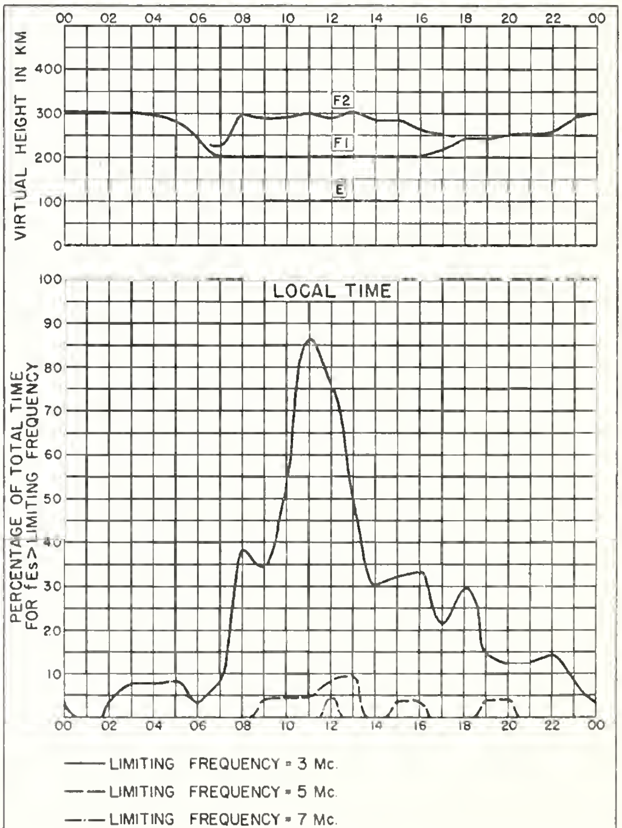


Fig. 16. GRAZ, AUSTRIA APRIL 1953

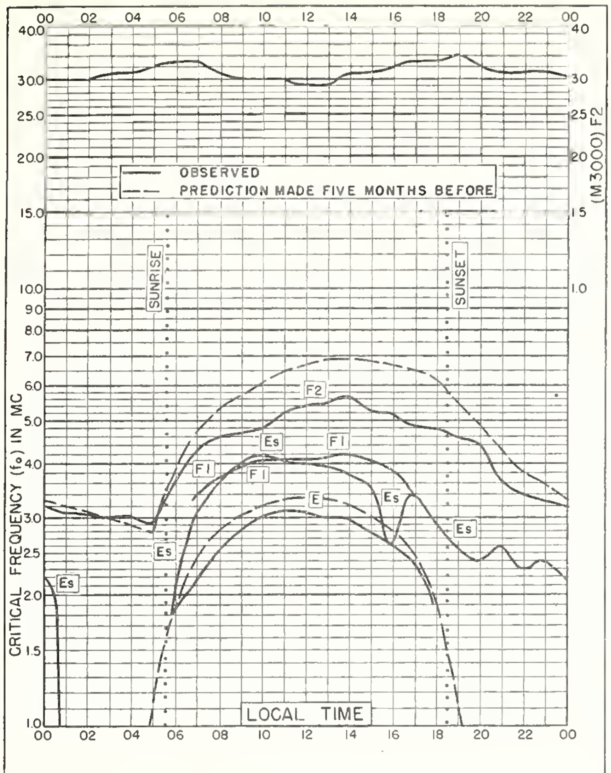
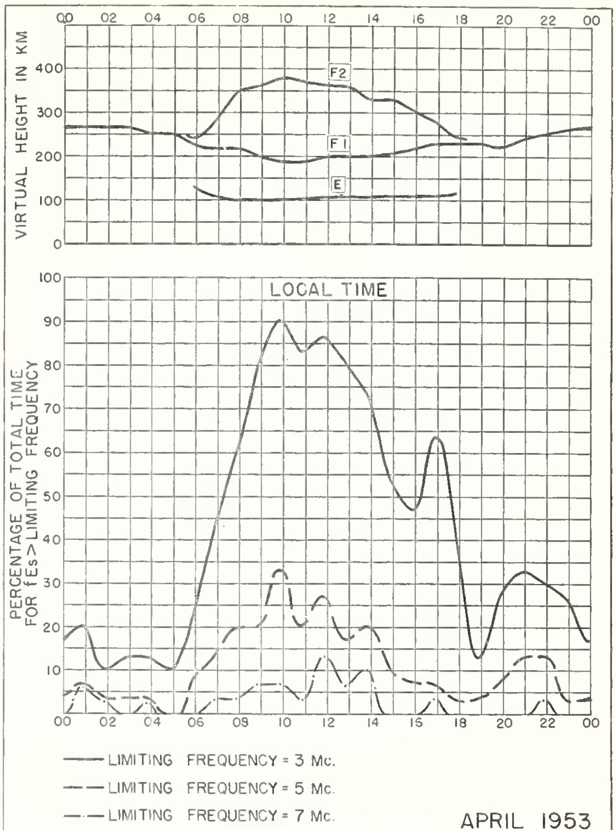


Fig.17. SAN FRANCISCO, CALIFORNIA
37.4°N, 122.2°W APRIL 1953



APRIL 1953
Fig.18. SAN FRANCISCO, CALIFORNIA

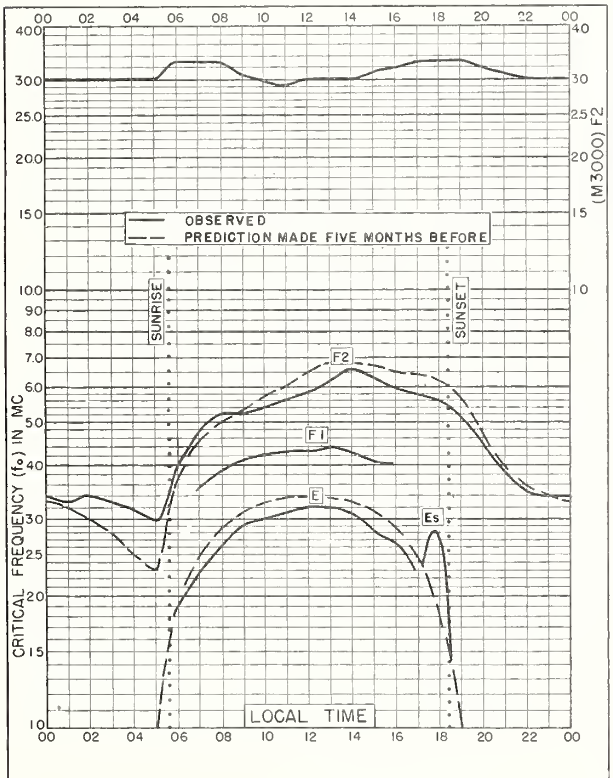


Fig.19. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W APRIL 1953

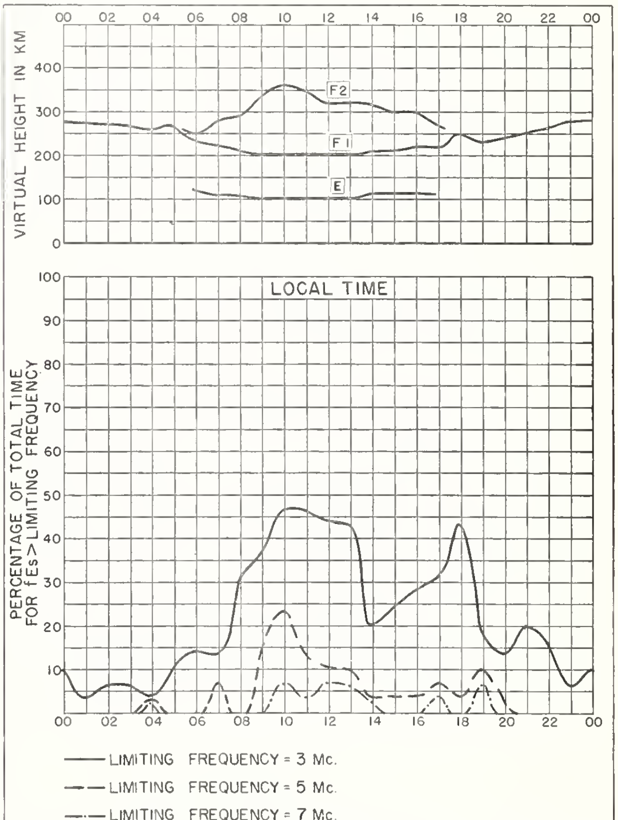


Fig. 20. WHITE SANDS, NEW MEXICO APRIL 1953

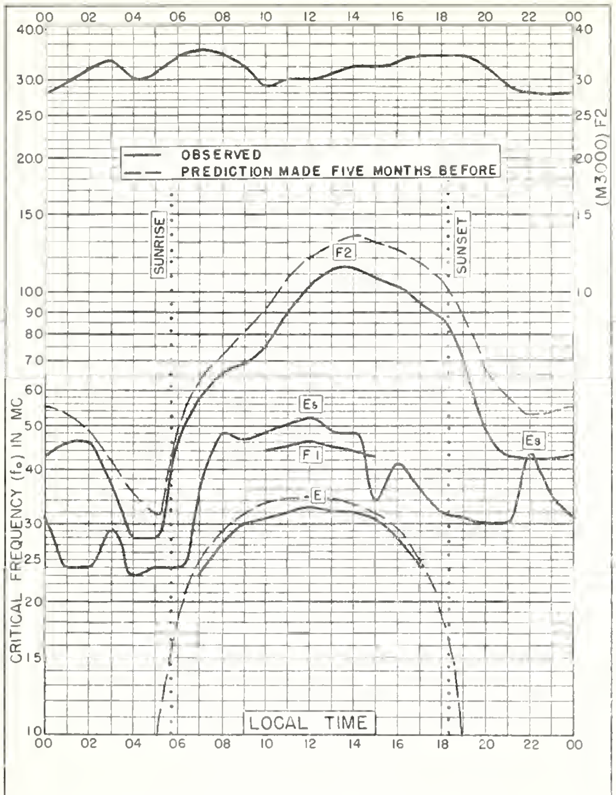


Fig. 21. OKINAWA I.
26.3°N, 127.8°E APRIL 1953

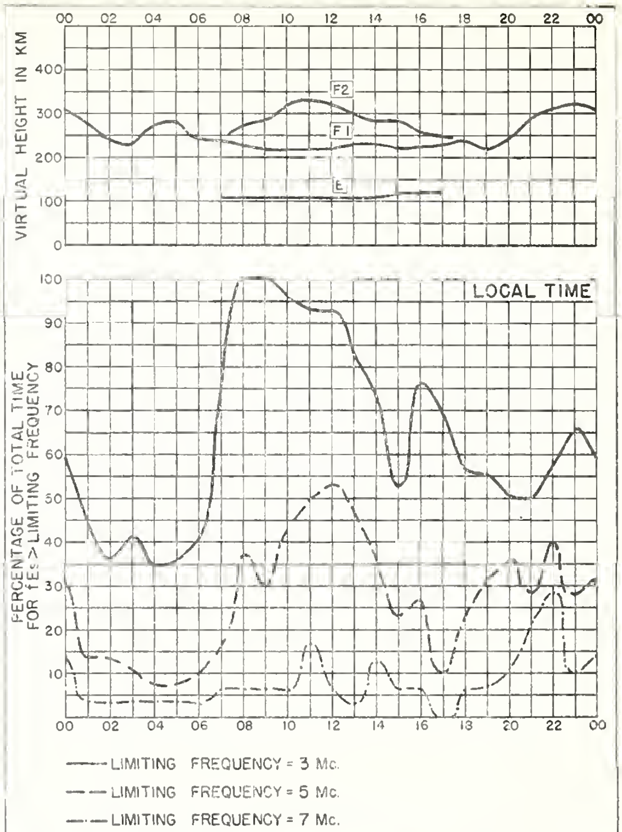


Fig. 22. OKINAWA I. APRIL 1953

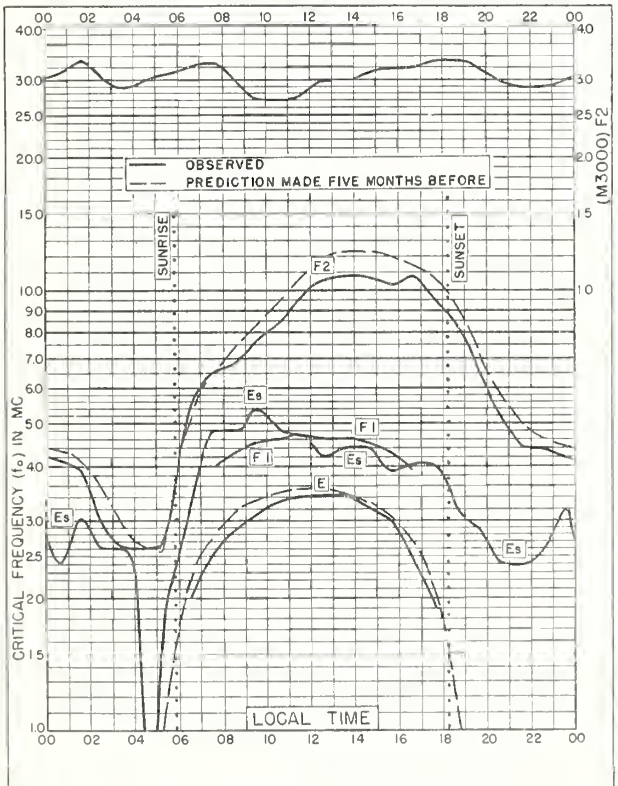


Fig. 23. MAUI, HAWAII
20.8°N, 156.5°W APRIL 1953

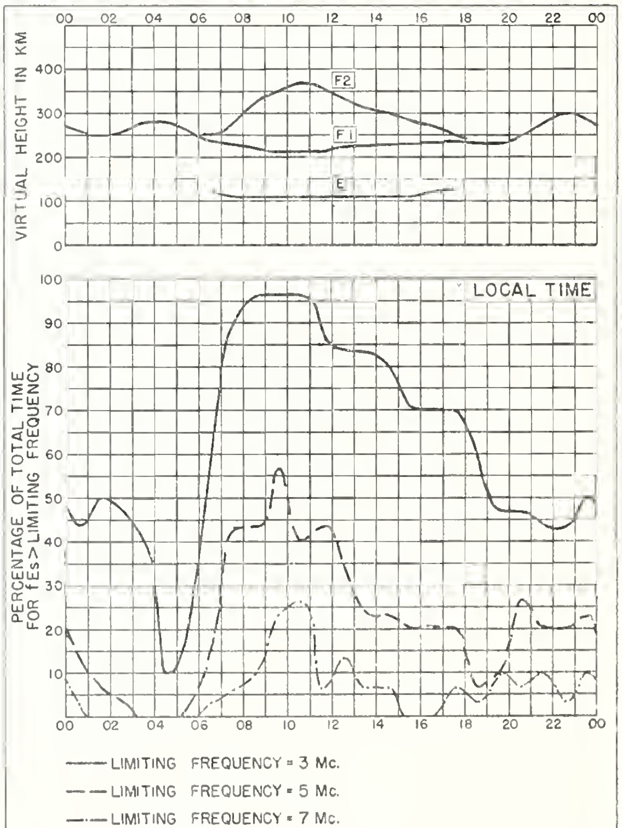


Fig. 24. MAUI, HAWAII APRIL 1953

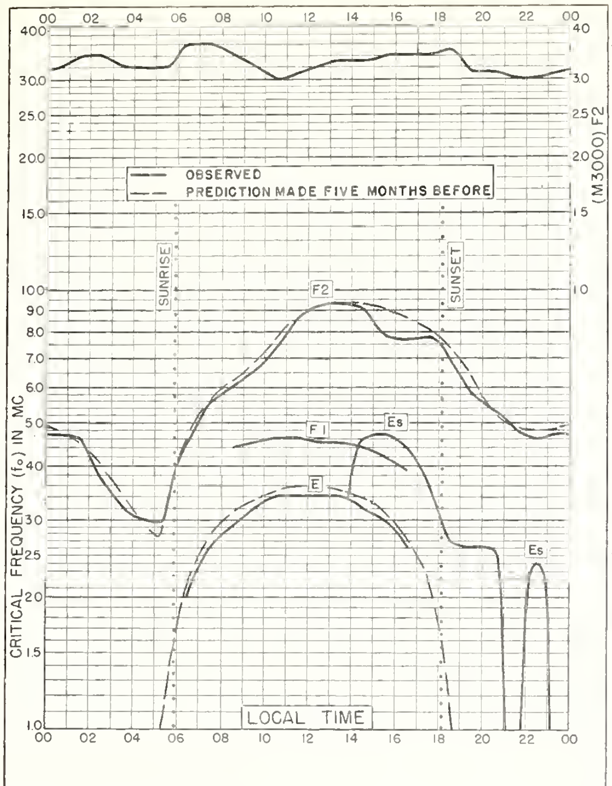


Fig. 25. PUERTO RICO, W. I.
18.5°N, 67.2°W APRIL 1953

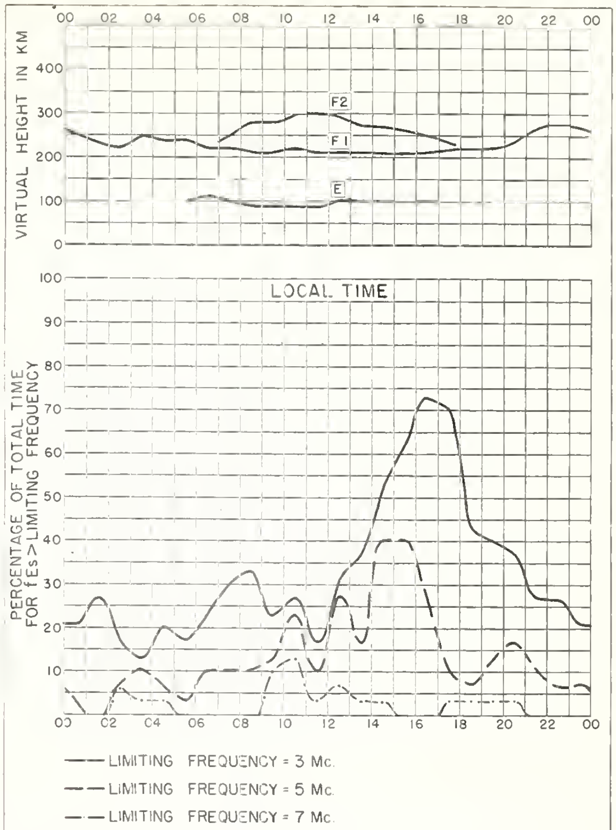


Fig. 26. PUERTO RICO, W. I. APRIL 1953

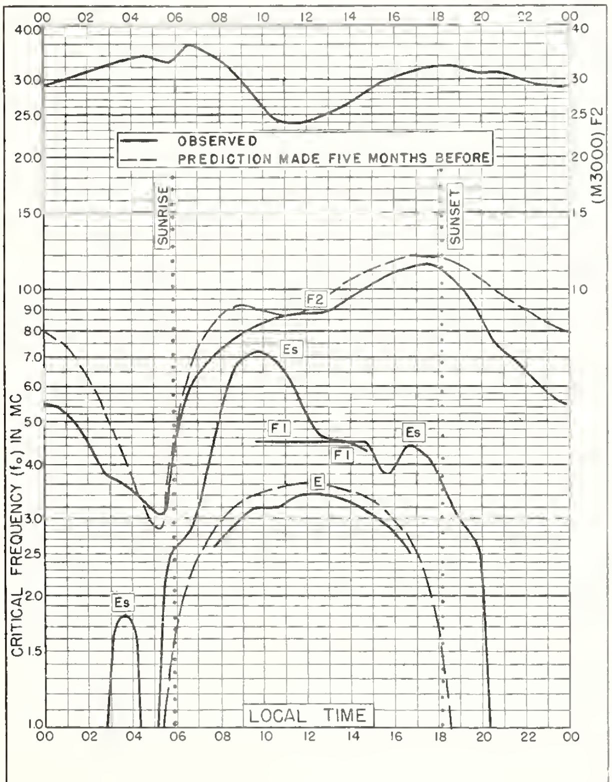


Fig. 27. GUAM I.
13.6°N, 144.9°E APRIL 1953

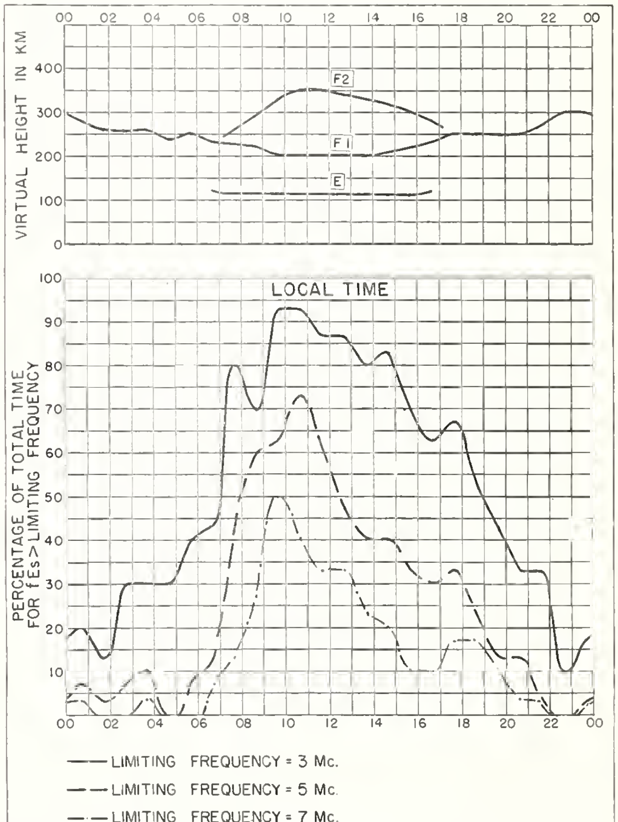


Fig. 28. GUAM I. APRIL 1953

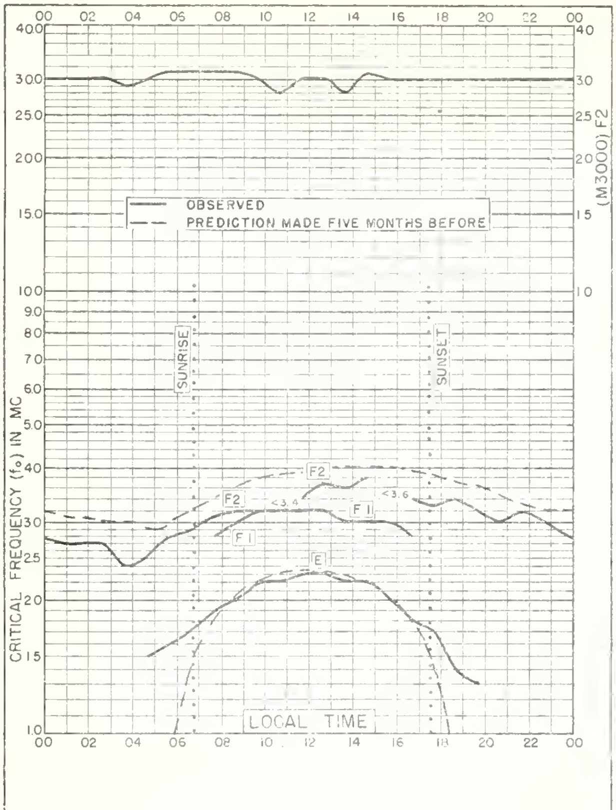


Fig. 29. RESOLUTE BAY, CANADA
74.7°N, 94.9°W MARCH 1953

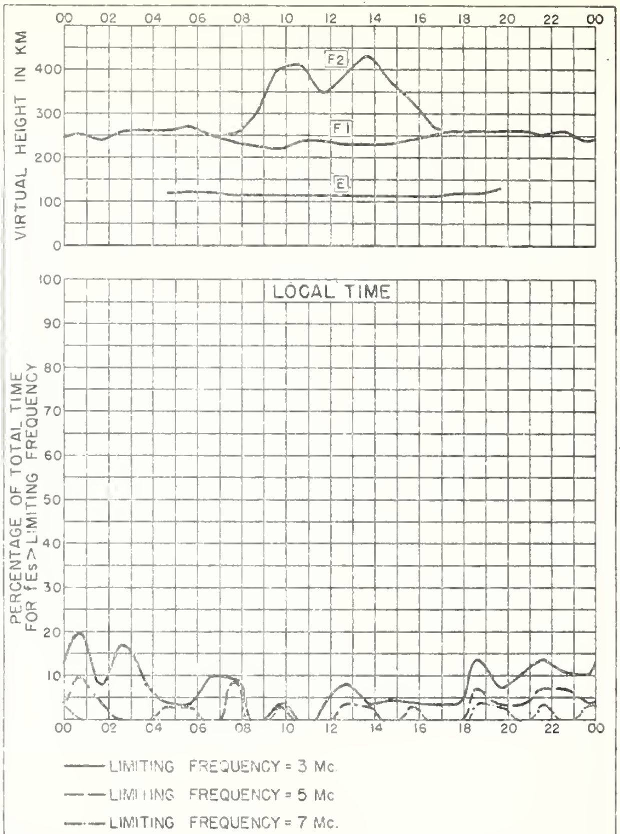


Fig. 30. RESOLUTE BAY, CANADA MARCH 1953

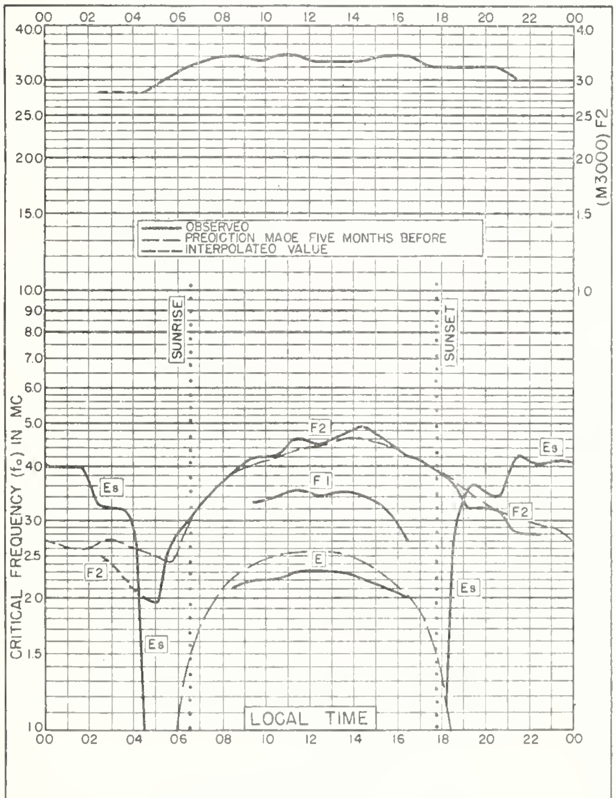


Fig. 31. KIRUNA, SWEDEN
67.8° N, 20.5°E MARCH 1953

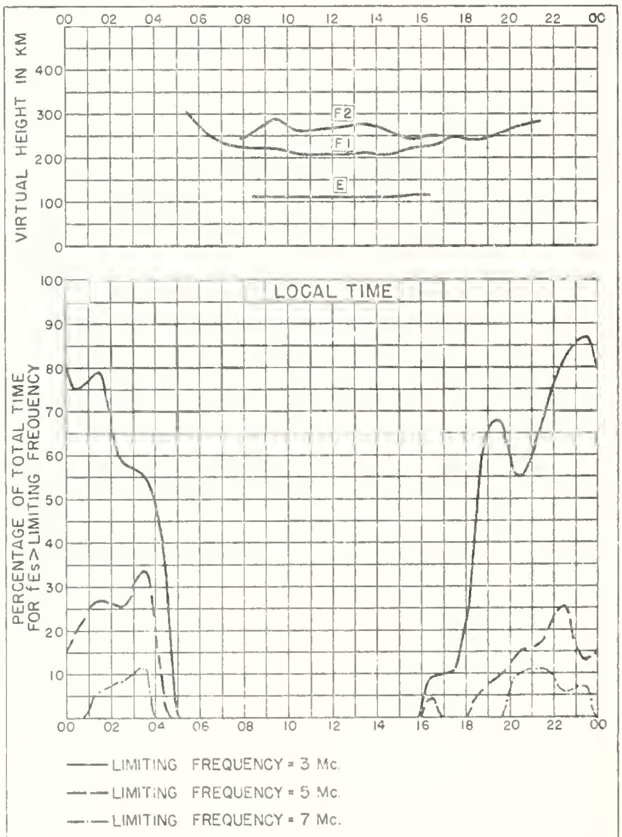


Fig. 32. KIRUNA, SWEDEN MARCH 1953

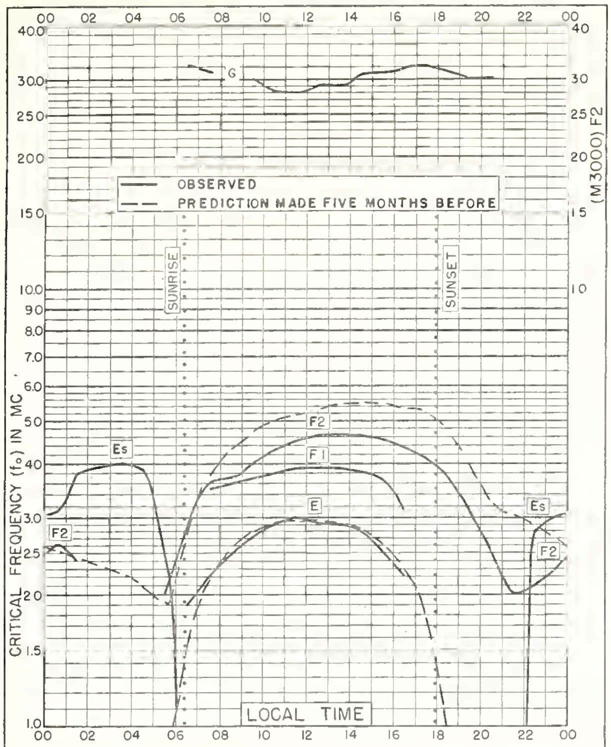


Fig. 33. WINNIPEG, CANADA
49.9°N, 97.4°W MARCH 1953

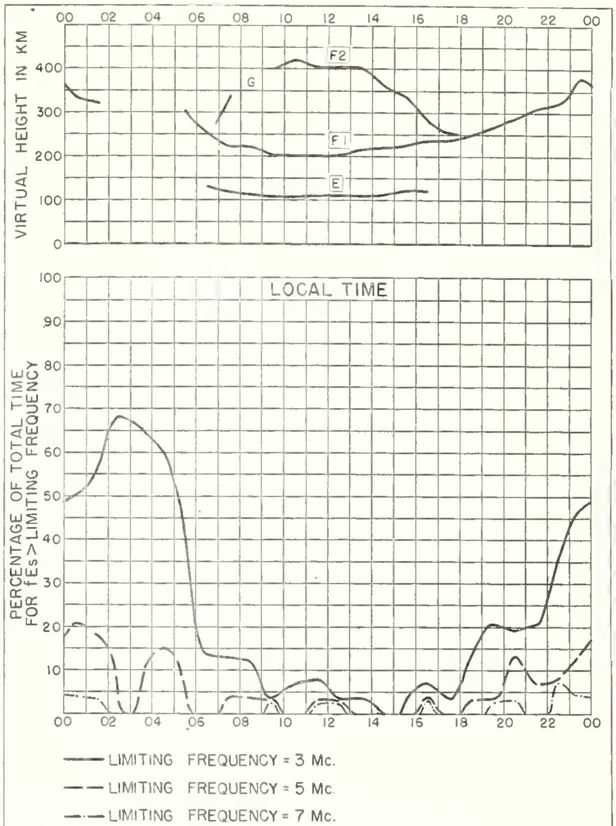


Fig. 34. WINNIPEG, CANADA MARCH 1953

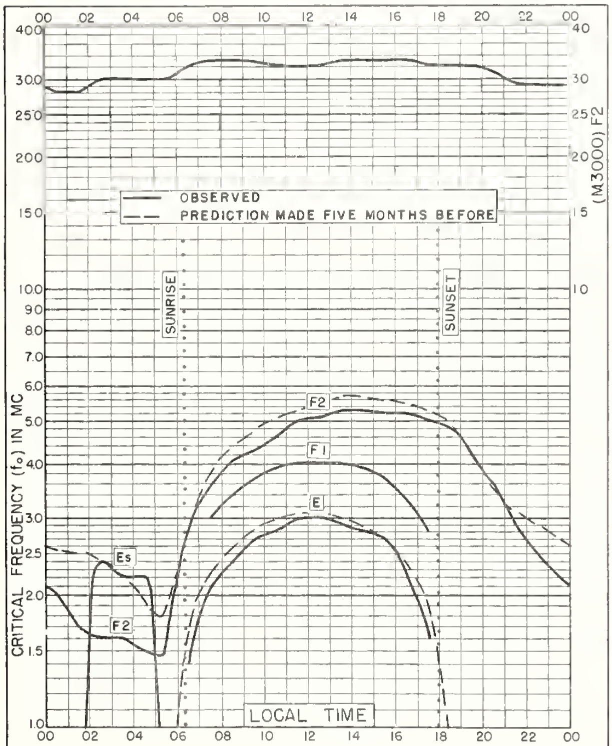


Fig. 35. ST. JOHN'S, NEWFOUNDLAND
47.6°N, 52.7°W MARCH 1953

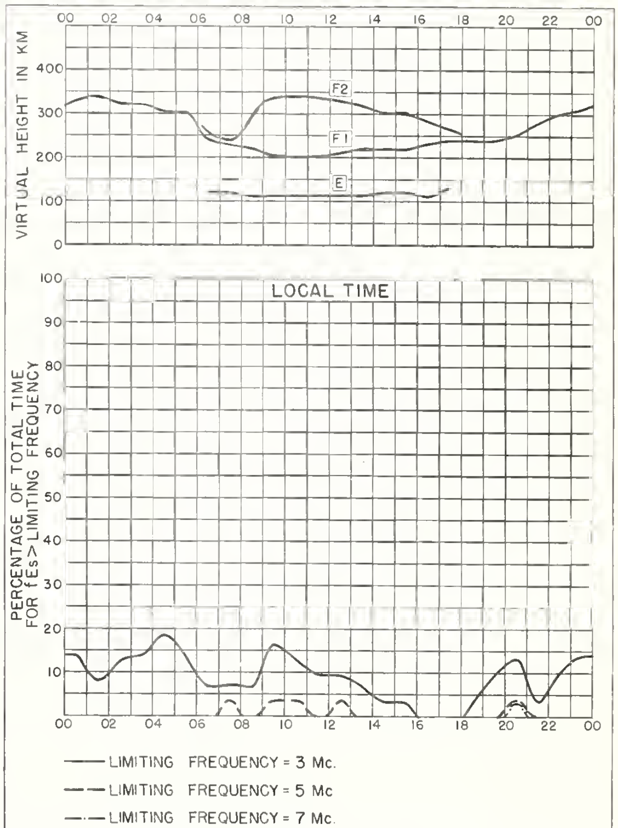


Fig. 36. ST. JOHN'S, NEWFOUNDLAND MARCH 1953

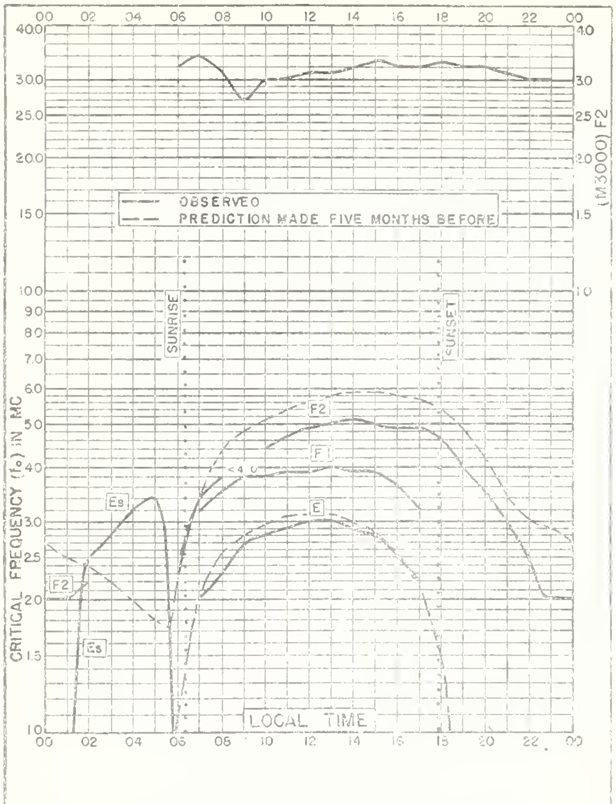


Fig. 37. OTTAWA, CANADA
45.4°N, 75.7°W MARCH 1953

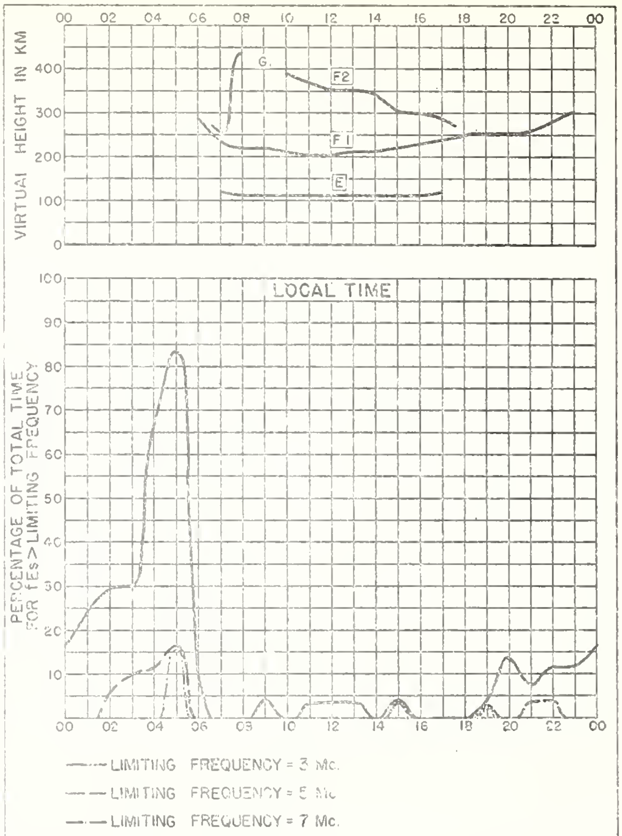


Fig. 38. OTTAWA, CANADA MARCH 1953

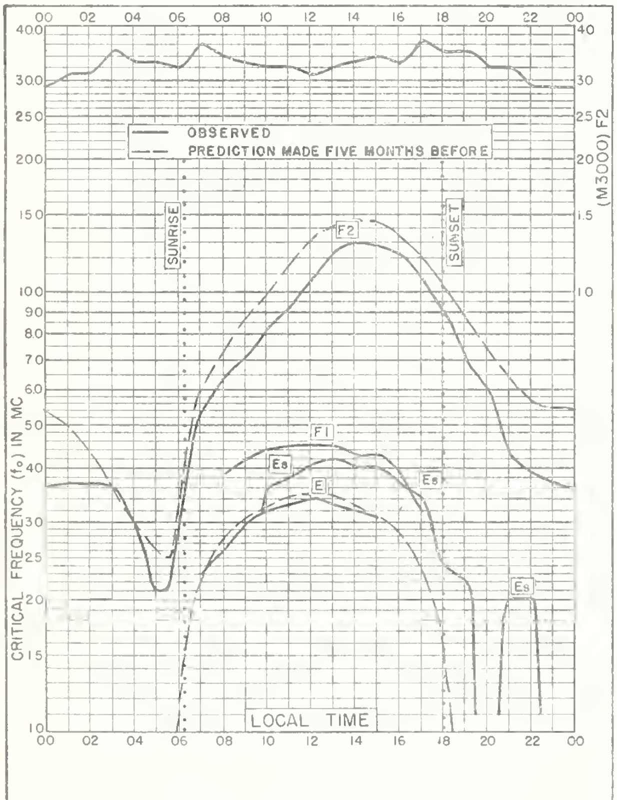


Fig. 39. FORMOSA, CHINA
25.0°N, 121.5°E MARCH 1953

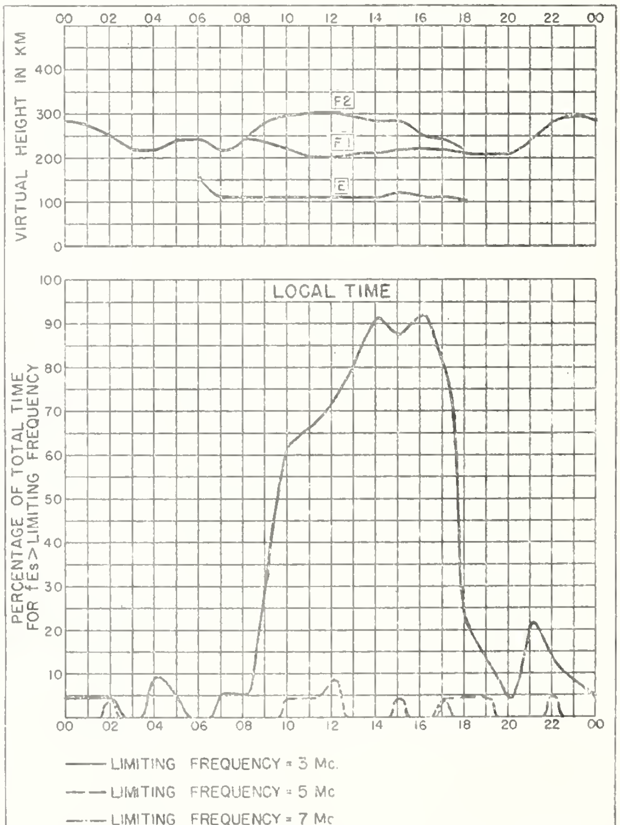


Fig. 40. FORMOSA, CHINA MARCH 1953

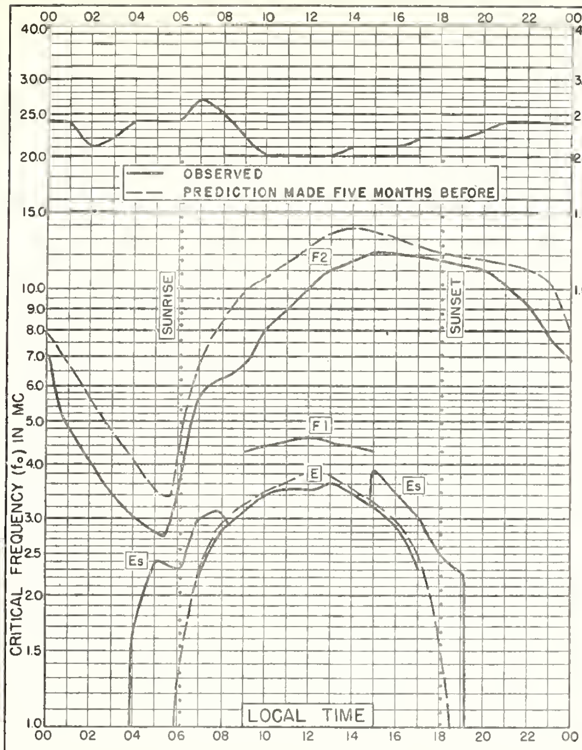


Fig. 41. LEOPOLDVILLE, BEL. CONGO
4.3° S, 15.3° E MARCH 1953

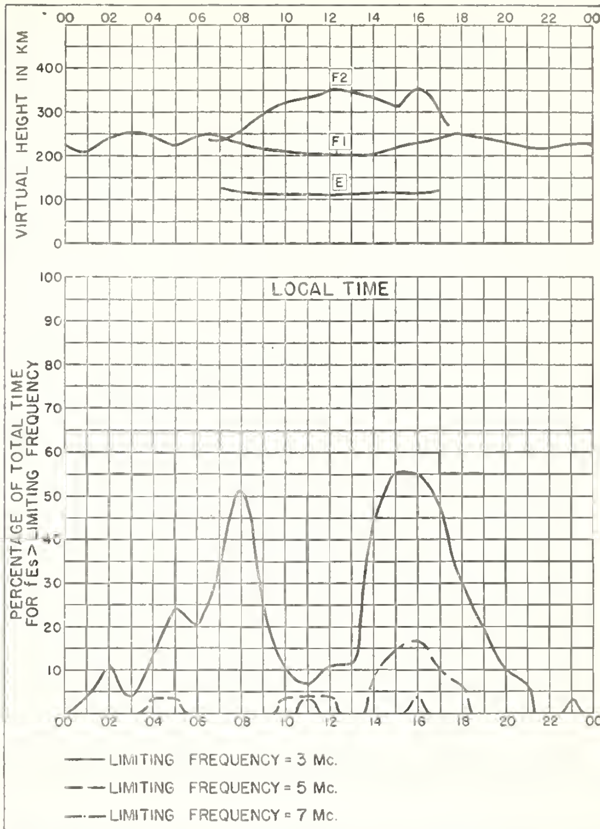


Fig. 42. LEOPOLDVILLE, BEL. CONGO MARCH 1953

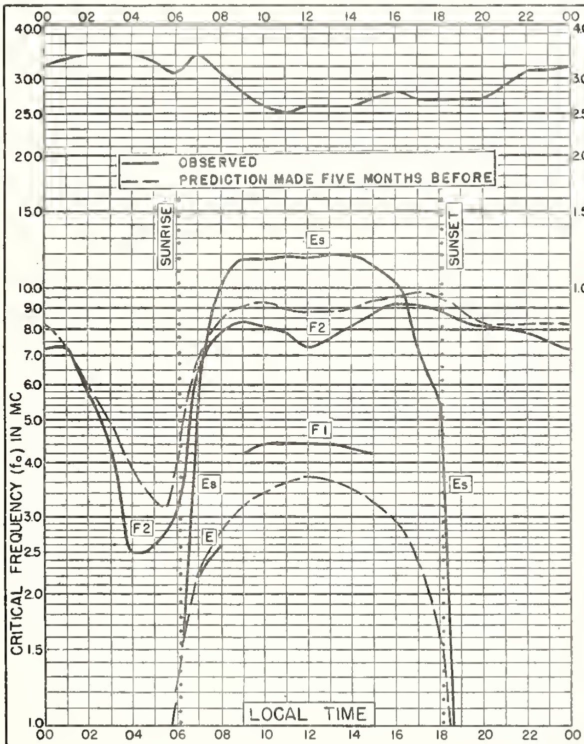


Fig. 43. HUANCAYO, PERU
12.0° S, 75.3° W MARCH 1953

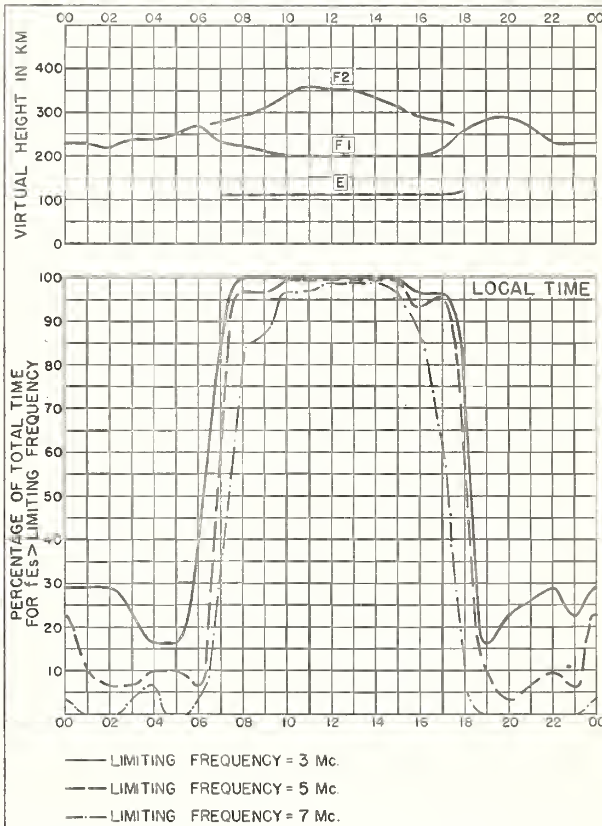


Fig. 44. HUANCAYO, PERU MARCH 1953

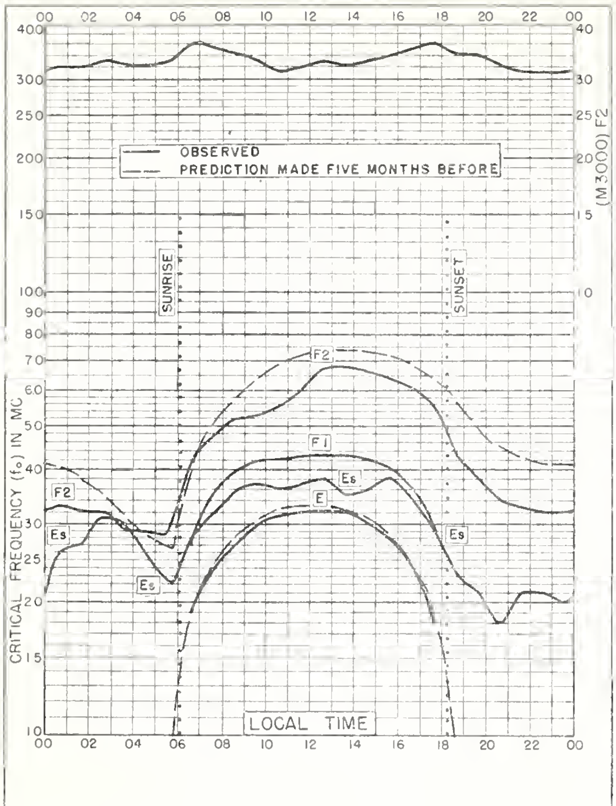


Fig. 45. WATHEROO, W. AUSTRALIA
30.3° S, 115.9°E MARCH 1953

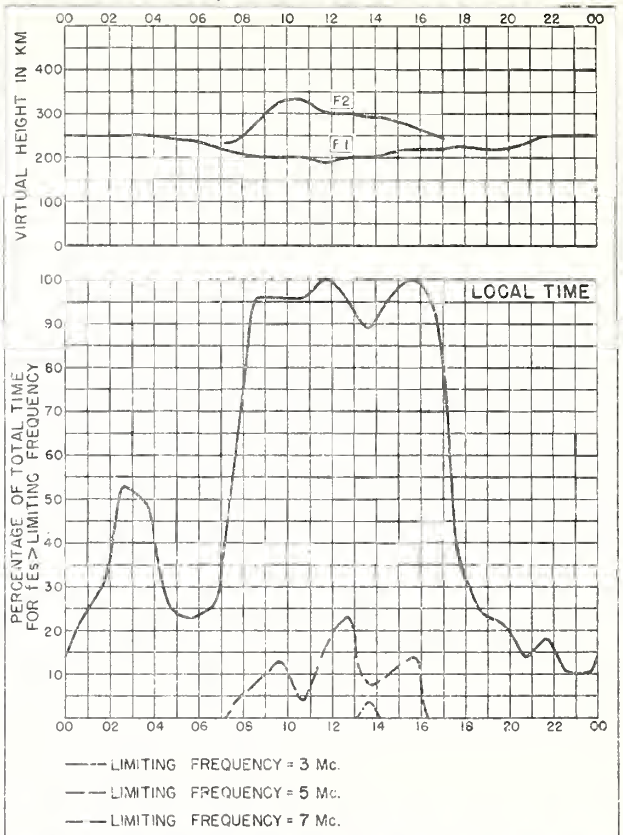


Fig. 46. WATHEROO, W. AUSTRALIA MARCH 1953

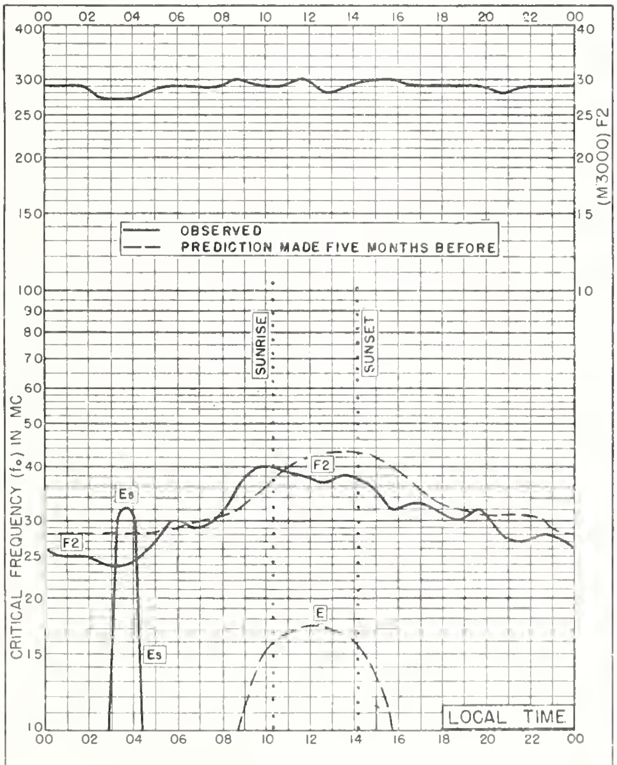


Fig. 47. RESOLUTE BAY, CANADA
74.7° N, 94.9° W FEBRUARY 1953

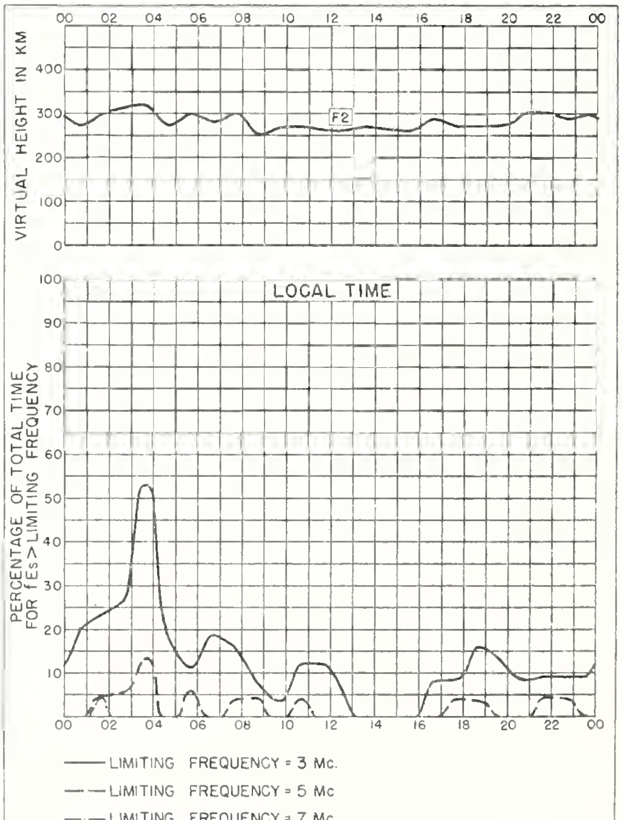


Fig. 48. RESOLUTE BAY, CANADA FEBRUARY 1953

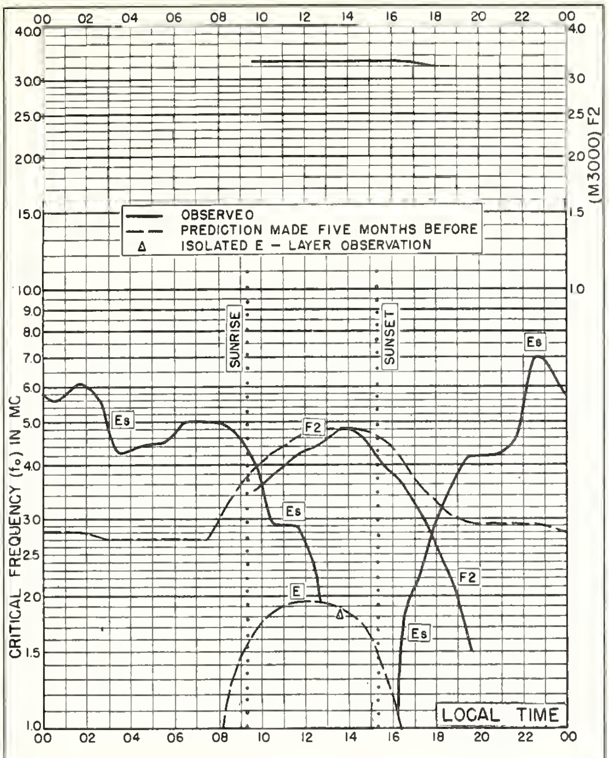


Fig. 49. POINT BARROW, ALASKA
71.3°N, 156.8°W FEBRUARY 1953

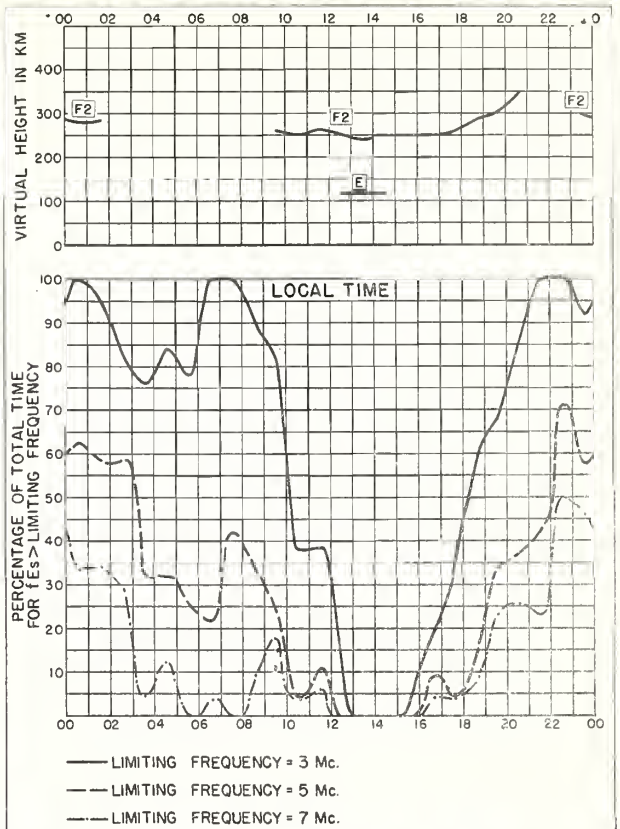


Fig. 50. POINT BARROW, ALASKA FEBRUARY 1953

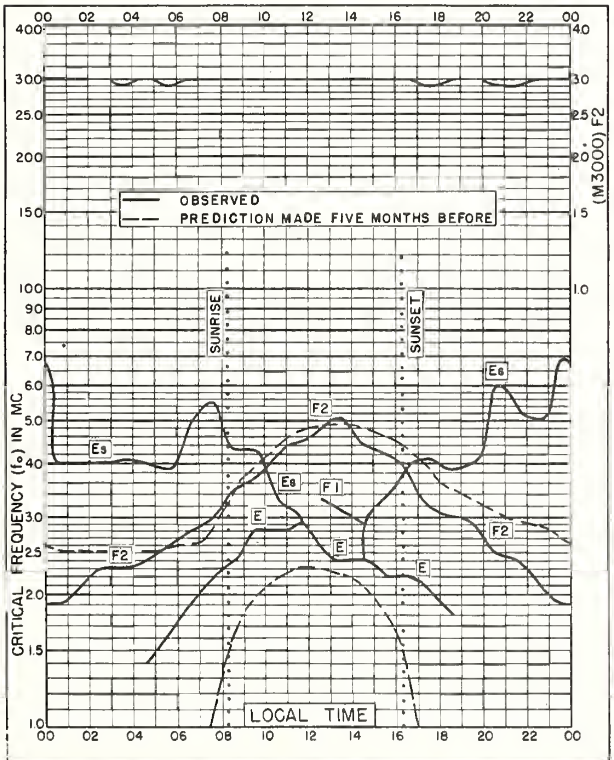


Fig. 51. BAKER LAKE, CANADA
64.3°N, 96.0°W FEBRUARY 1953

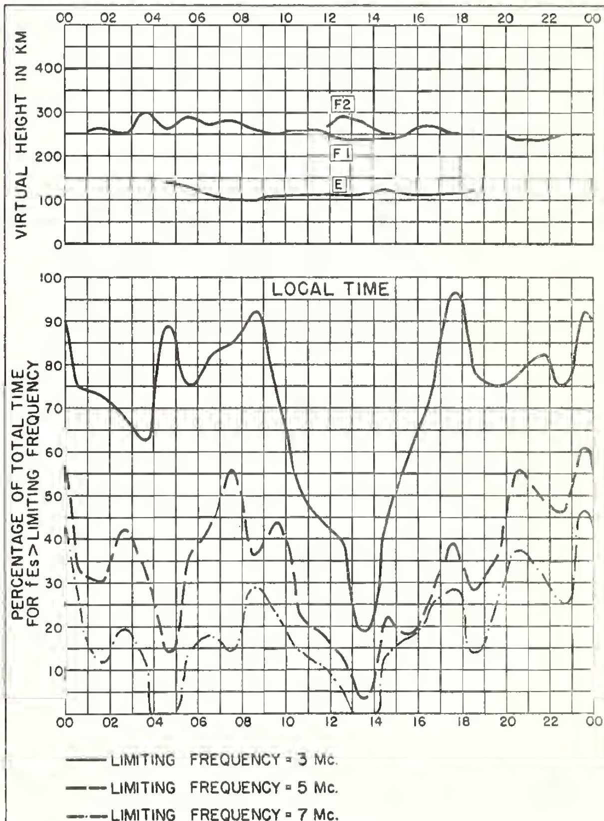


Fig. 52. BAKER LAKE, CANADA FEBRUARY 1953

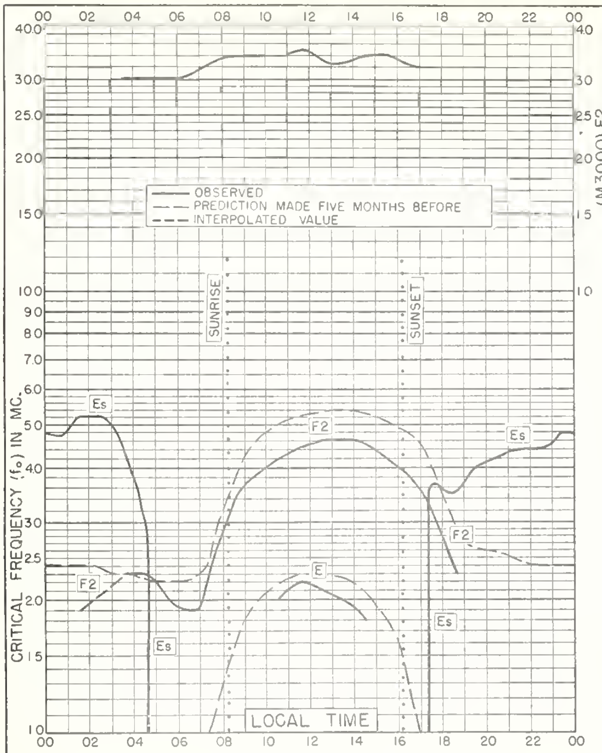


Fig. 53. REYKJAVIK, ICELAND
64.1°N, 21.8°W FEBRUARY 1953

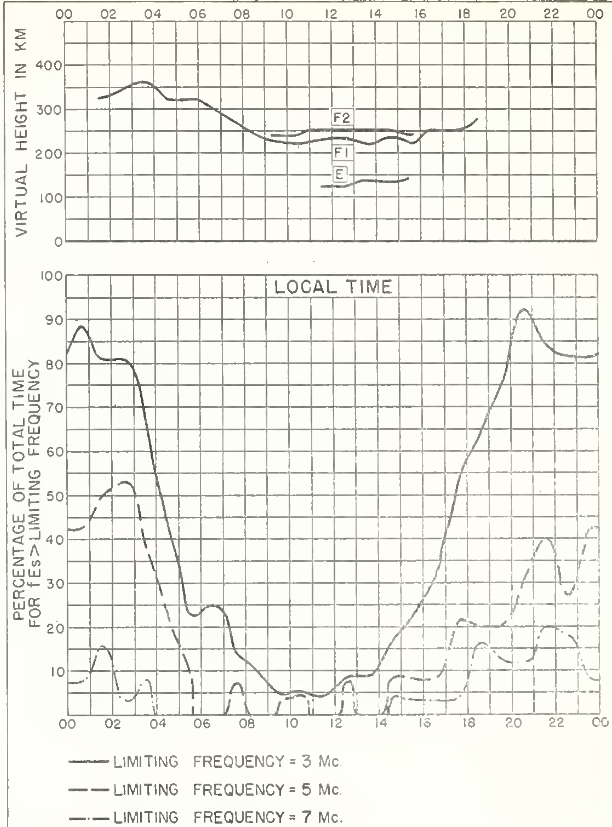


Fig. 54. REYKJAVIK, ICELAND FEBRUARY 1953

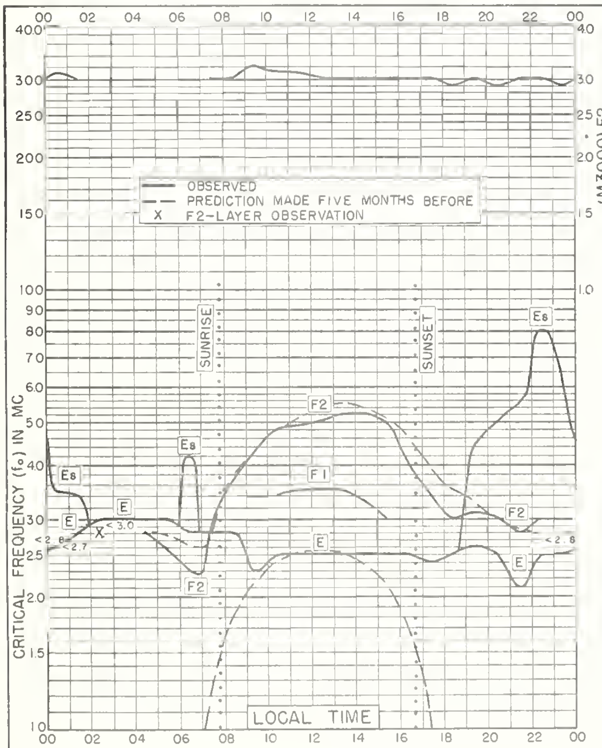


Fig. 55. FORT CHIMO, CANADA
58.1°N, 68.3°W FEBRUARY 1953

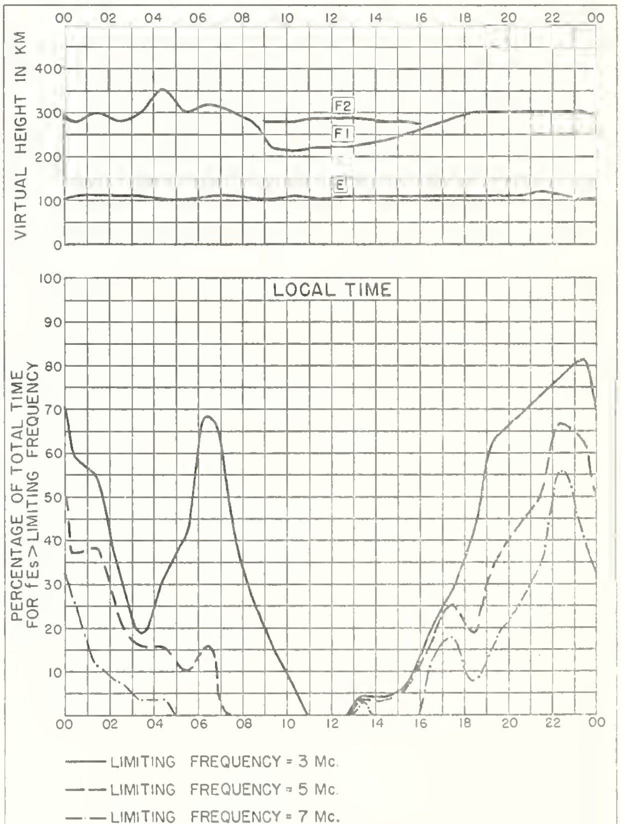


Fig. 56. FORT CHIMO, CANADA FEBRUARY 1953

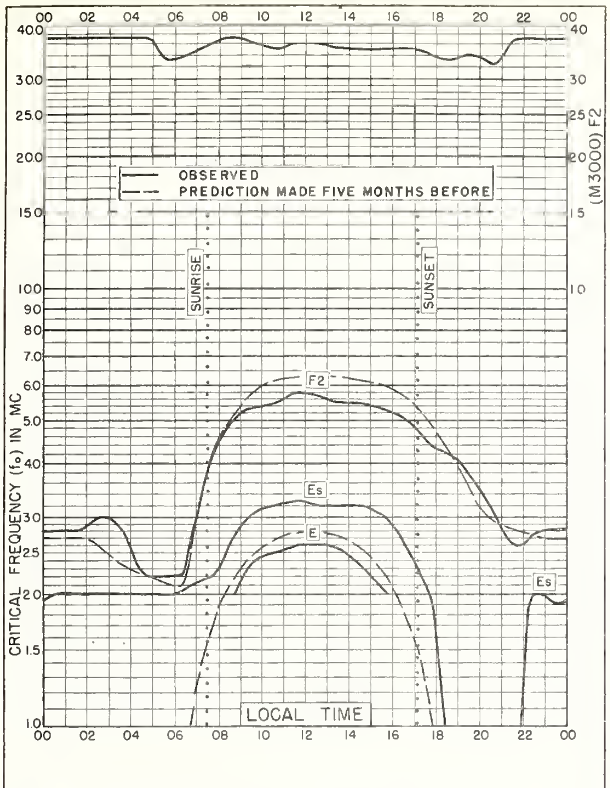
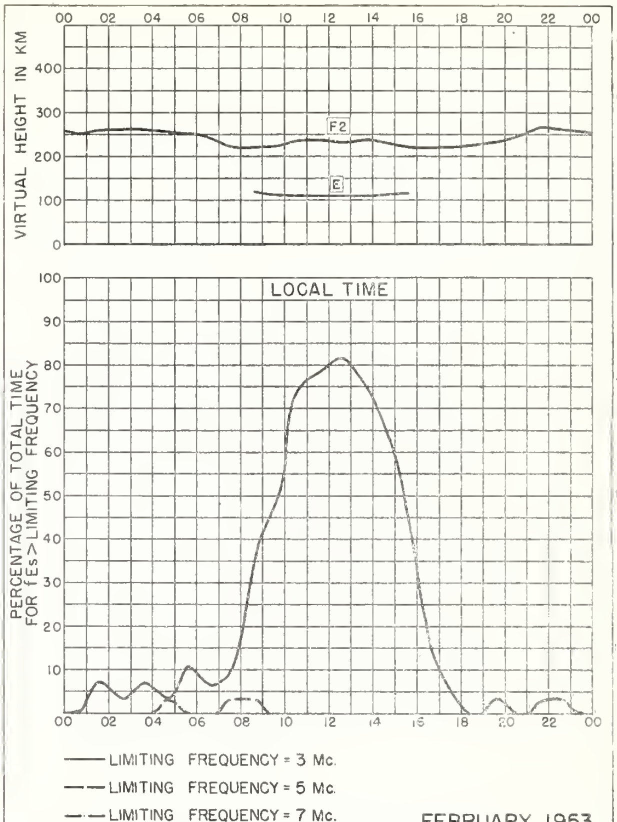


Fig. 57. LINDAU/HARZ, GERMANY
51.6°N, 10.1°E FEBRUARY 1953



FEBRUARY 1953
Fig. 58. LINDAU/HARZ, GERMANY

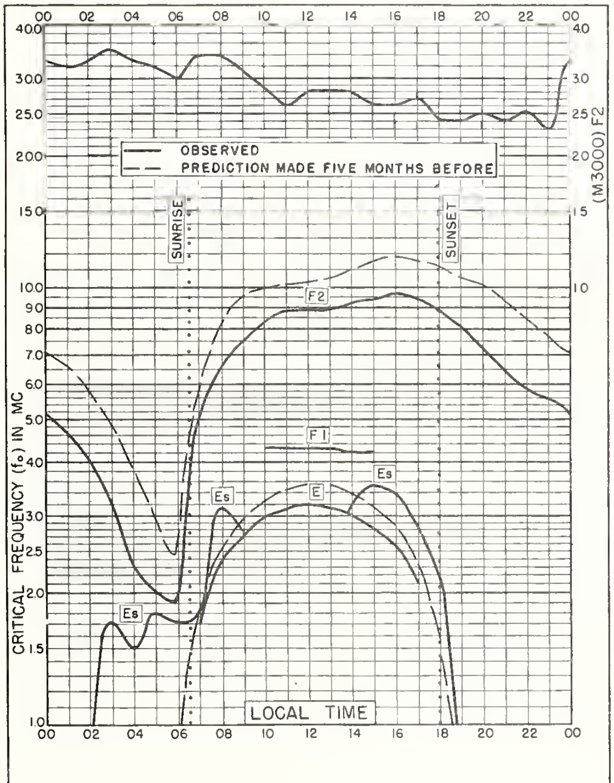


Fig. 59. BAGUIO, P.I.
16.4°N, 120.6°E FEBRUARY 1953

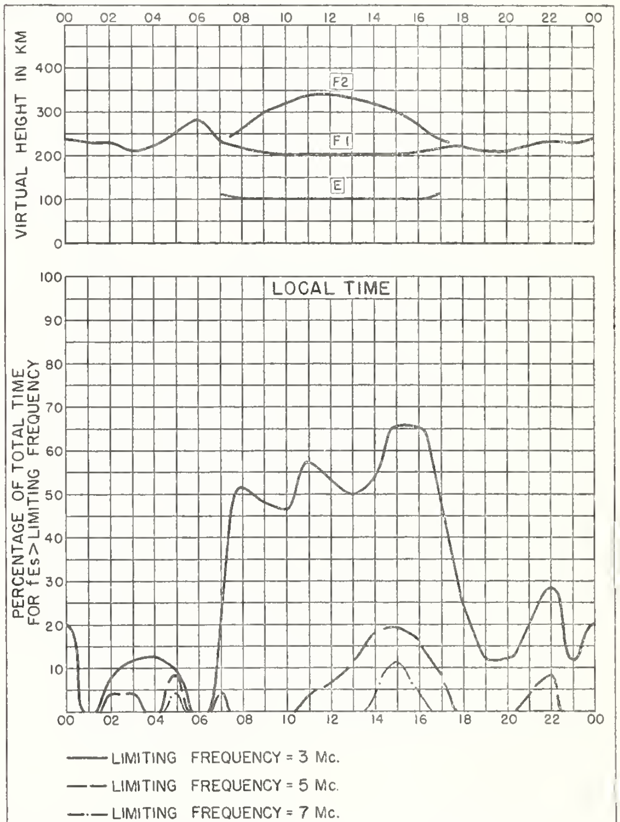


Fig. 60. BAGUIO, P. I. FEBRUARY 1953

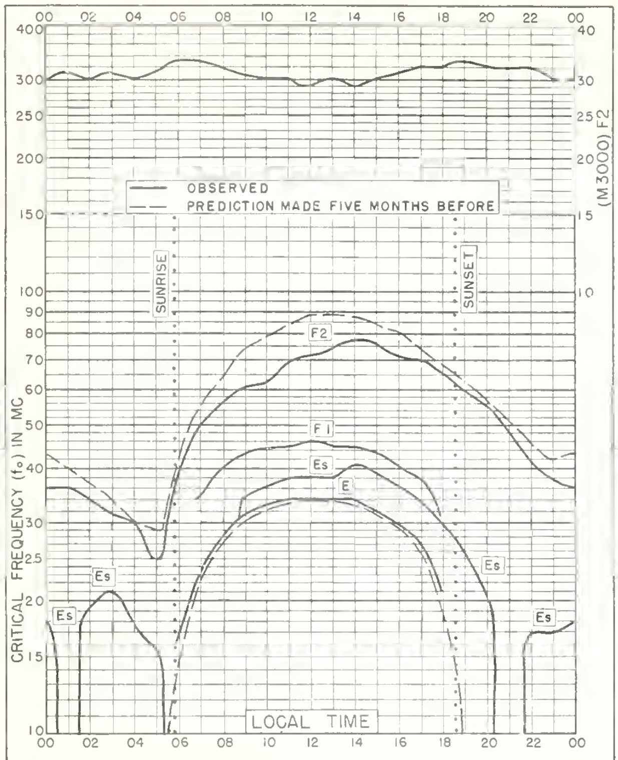
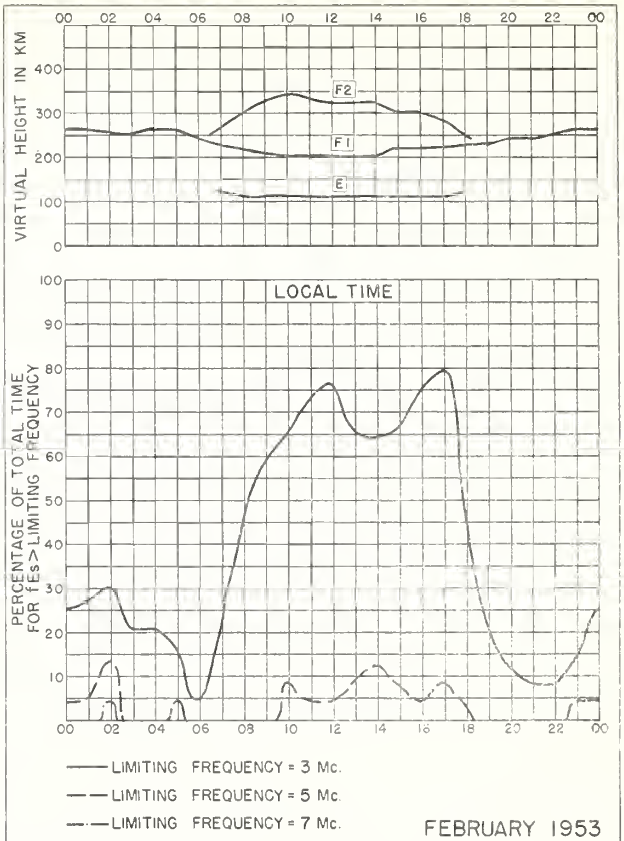


Fig. 61. JOHANNESBURG, U. OF S. AFRICA
26.2°S, 28.1°E FEBRUARY 1953



FEBRUARY 1953
Fig. 62. JOHANNESBURG, U. OF S. AFRICA

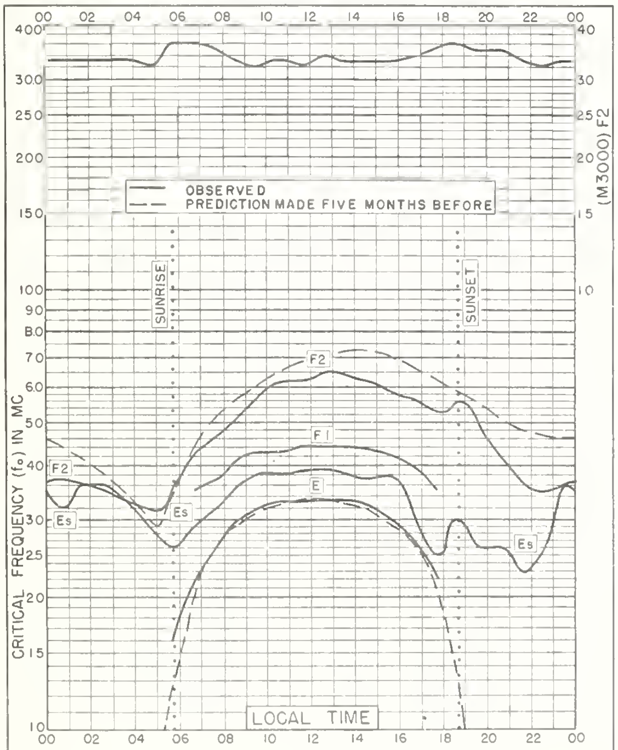
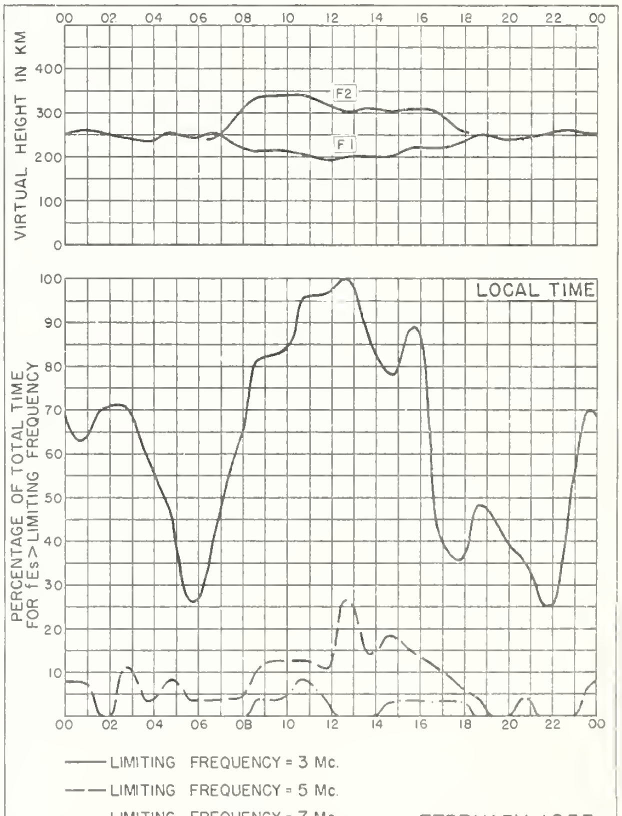


Fig. 63. WATHEROO, W. AUSTRALIA
30.3°S, 115.9°E FEBRUARY 1953



FEBRUARY 1953
Fig 64. WATHEROO, W. AUSTRALIA

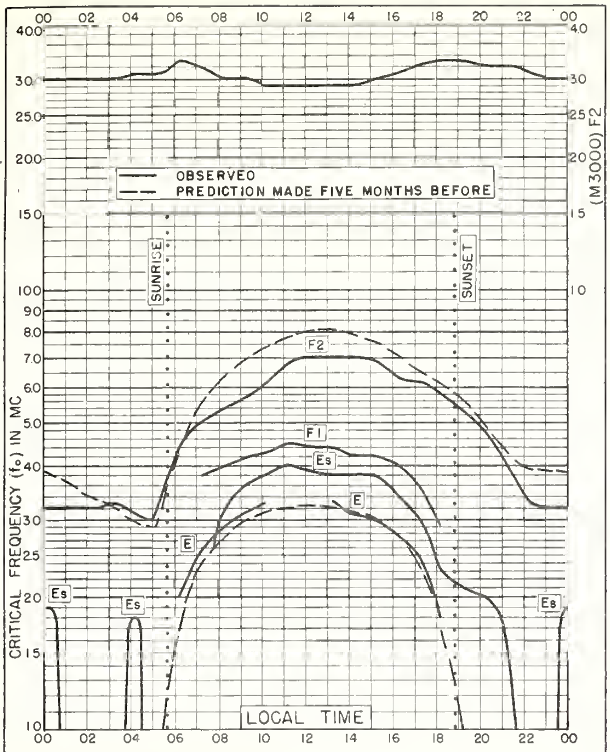
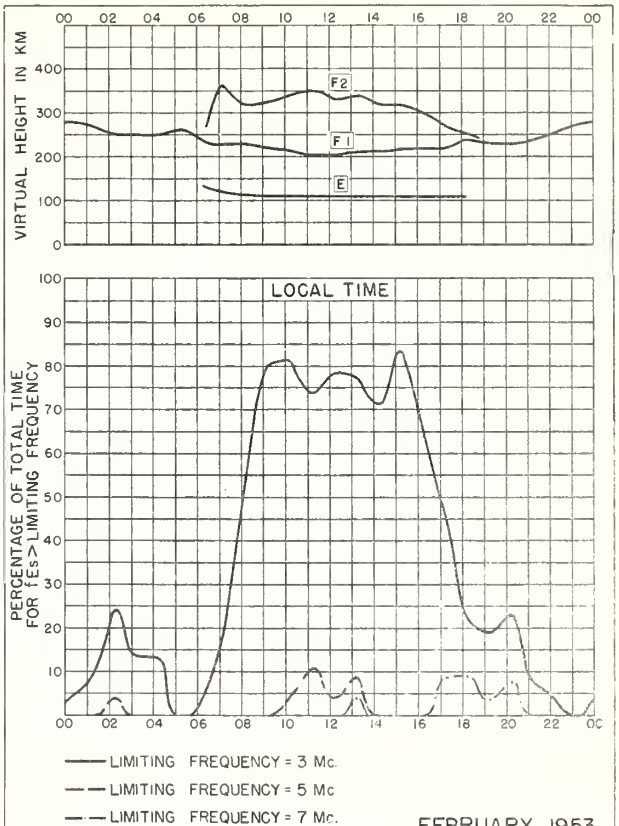


Fig. 65. CAPETOWN, UNION OF S. AFRICA
34.2°S, 18.3°E FEBRUARY 1953



FEBRUARY 1953
Fig. 66. CAPETOWN, UNION OF S. AFRICA

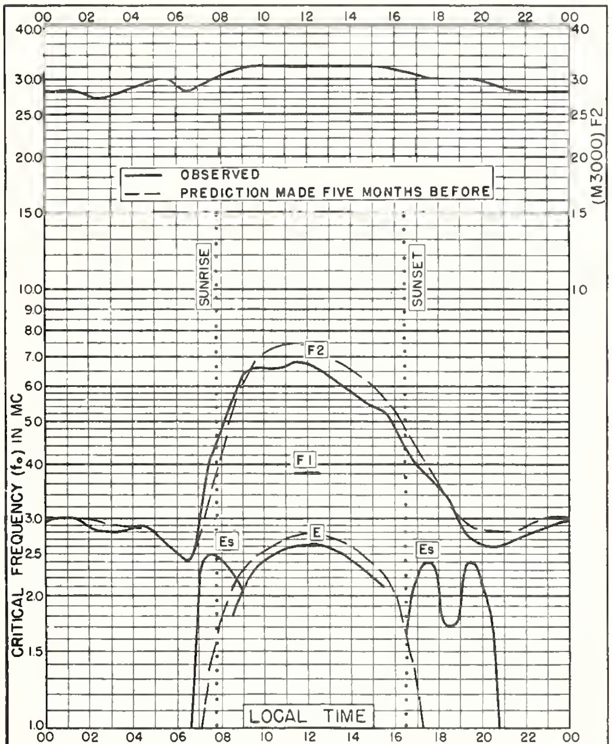


Fig. 67. WAKKANAI, JAPAN
45.4°N, 141.7°E JANUARY 1953

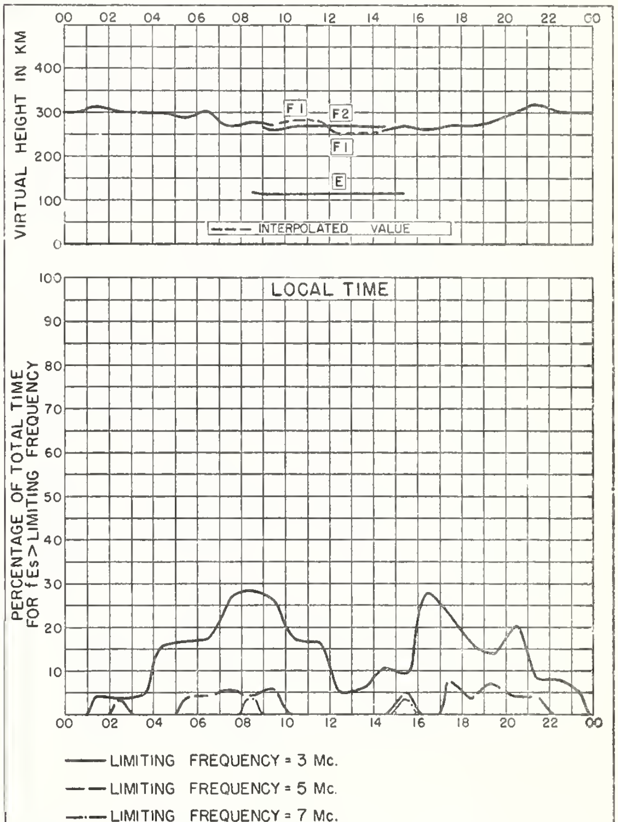


Fig. 68. WAKKANAI, JAPAN JANUARY 1953

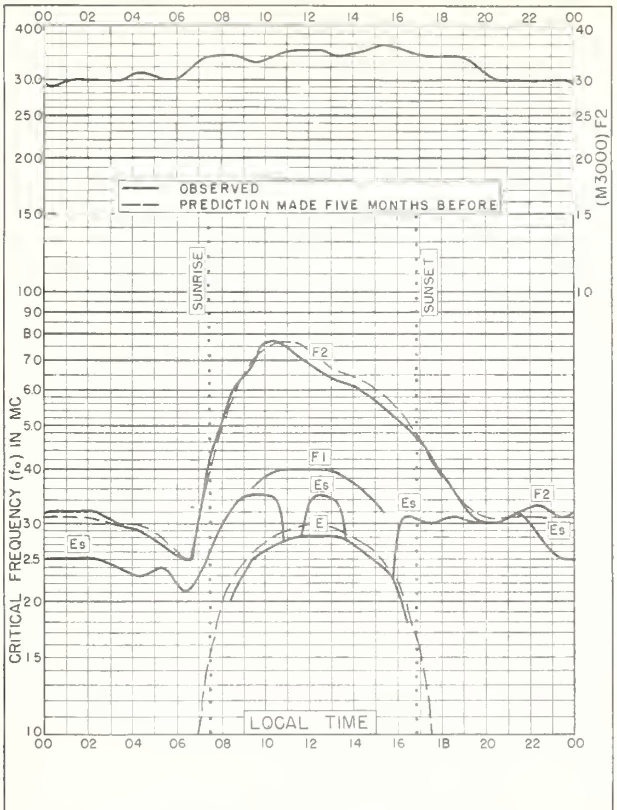


Fig. 69. AKITA, JAPAN
39.7°N, 140.1°E JANUARY 1953

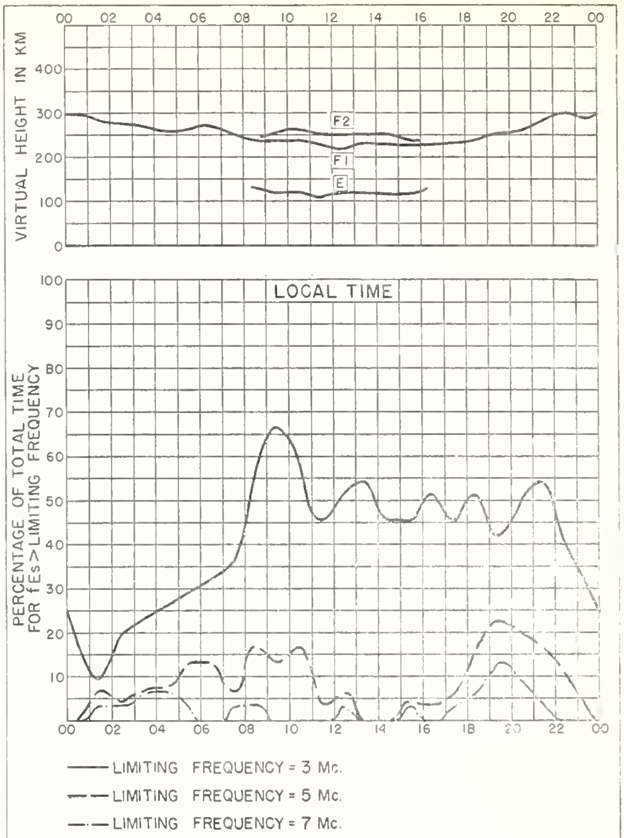


Fig. 70. AKITA, JAPAN JANUARY 1953

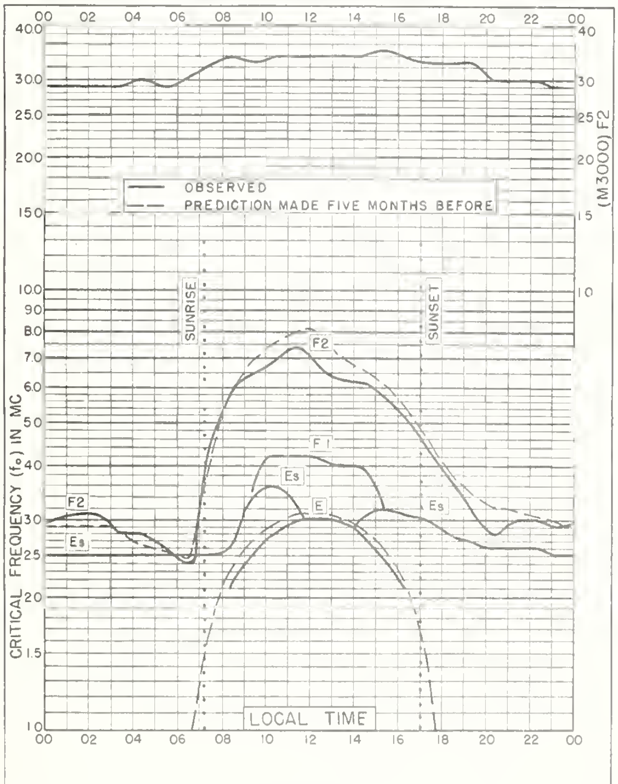


Fig. 71. TOKYO, JAPAN
35.7°N, 139.5°E JANUARY 1953

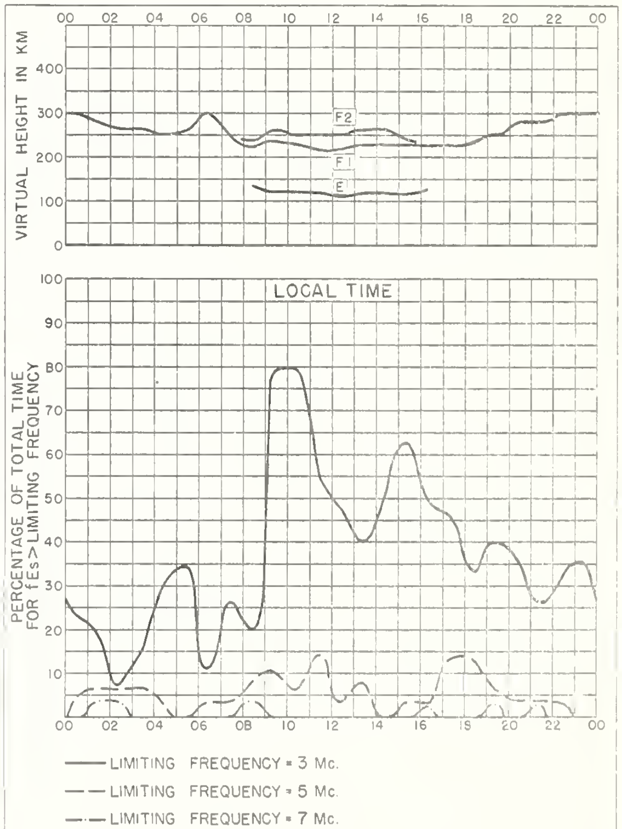


Fig. 72. TOKYO, JAPAN JANUARY 1953

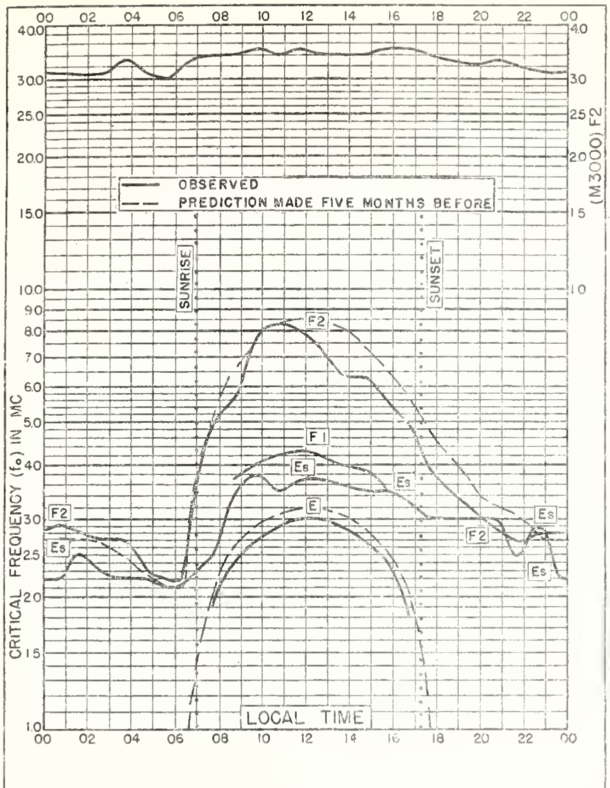


Fig. 73. YAMAGAWA, JAPAN
31.2°N, 130.6°E JANUARY 1953

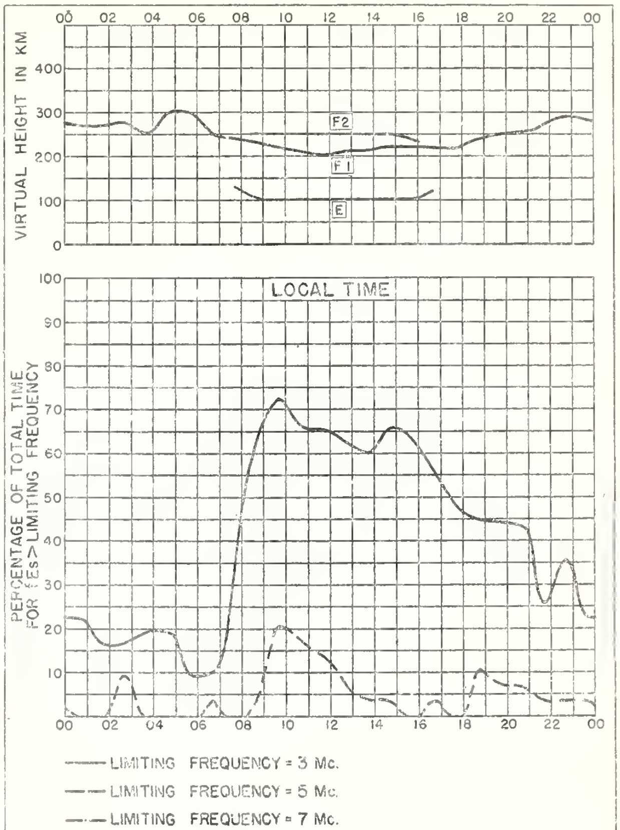


Fig. 74. YAMAGAWA, JAPAN JANUARY 1953

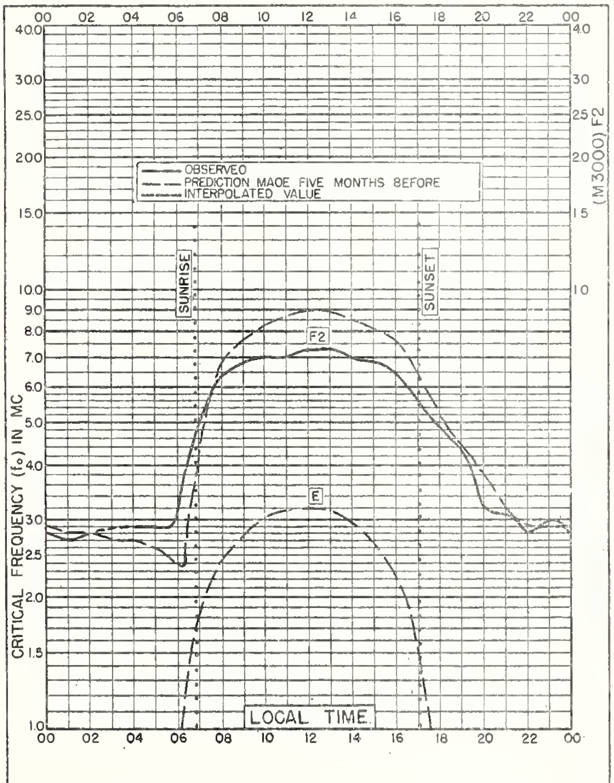


Fig. 75. DELHI, INDIA
28.6°N, 77.1°E DECEMBER 1952

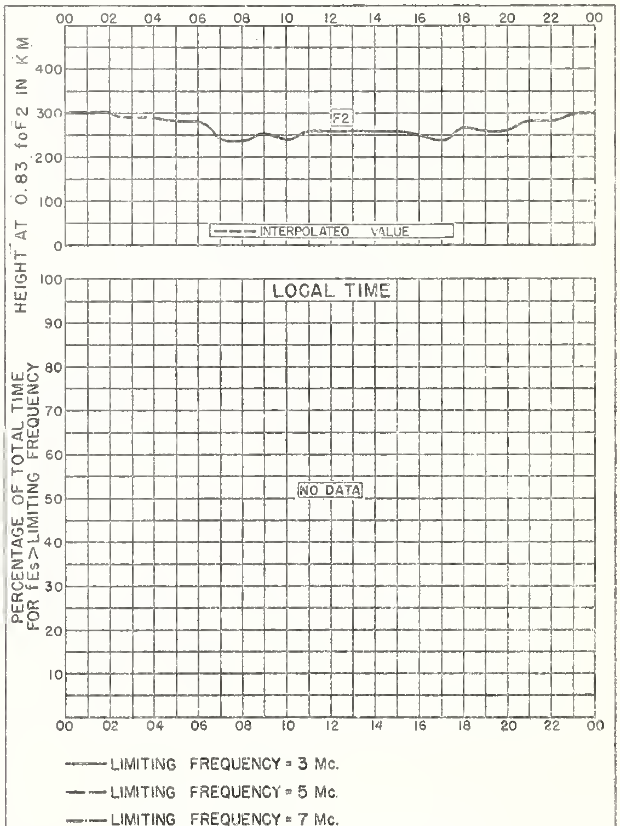


Fig. 76. DELHI, INDIA DECEMBER 1952

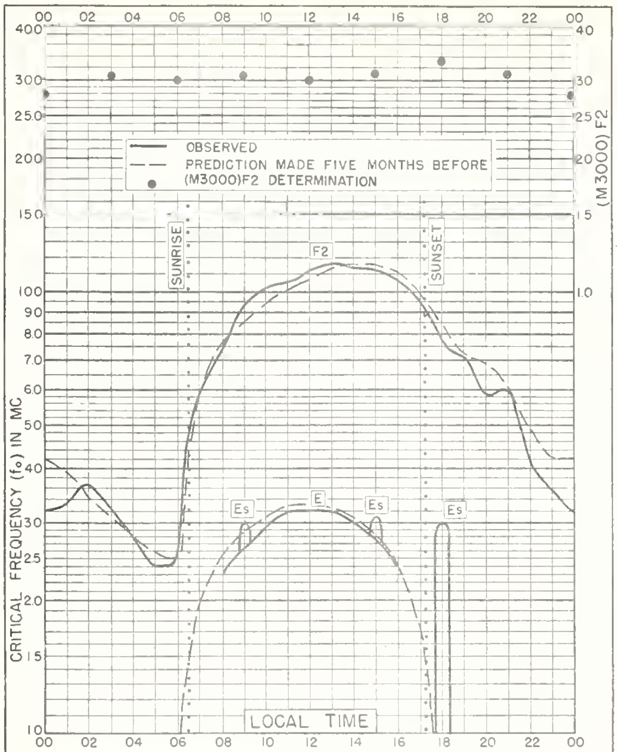


Fig. 77. CALCUTTA, INDIA
22.6°N, 88.4°E DECEMBER 1952

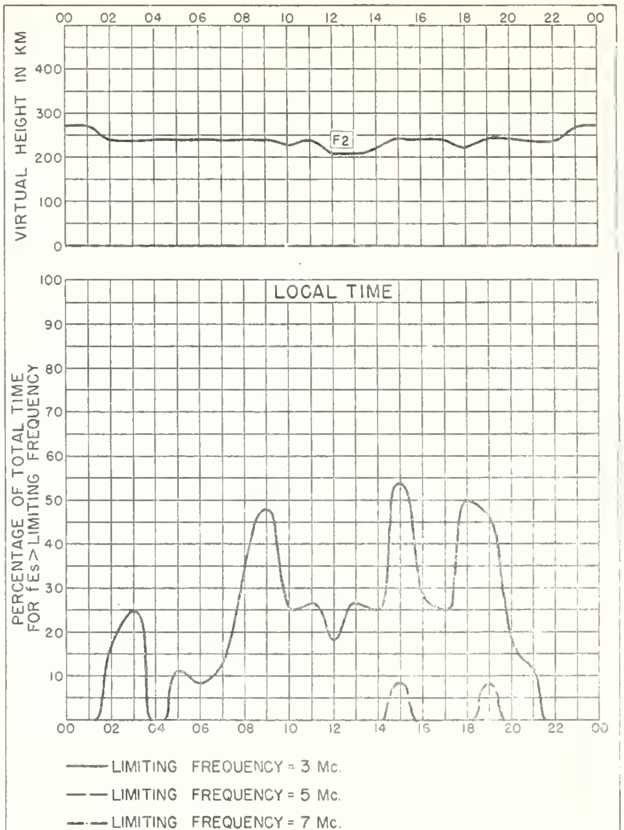


Fig. 78. CALCUTTA, INDIA DECEMBER 1952

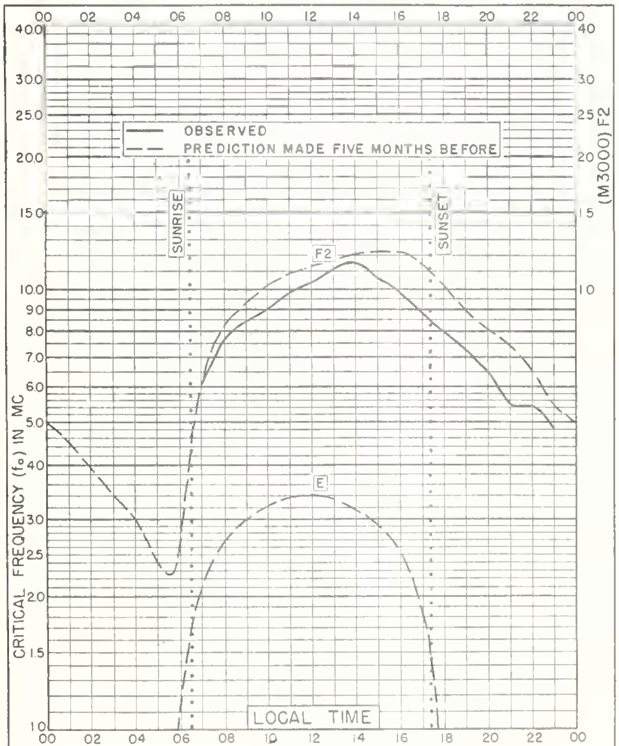


Fig. 79. BOMBAY, INDIA
19.0°N, 73.0°E DECEMBER 1952

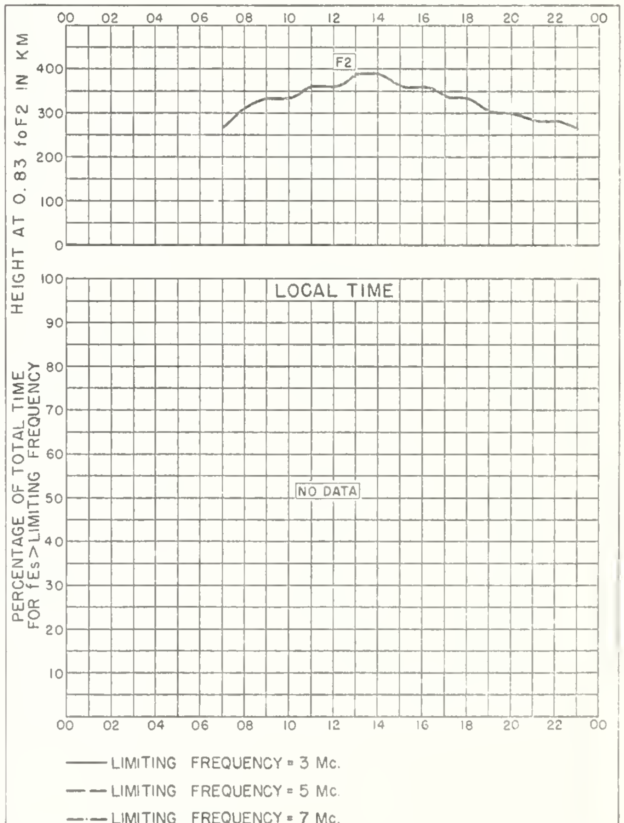


Fig. 80. BOMBAY, INDIA DECEMBER 1952

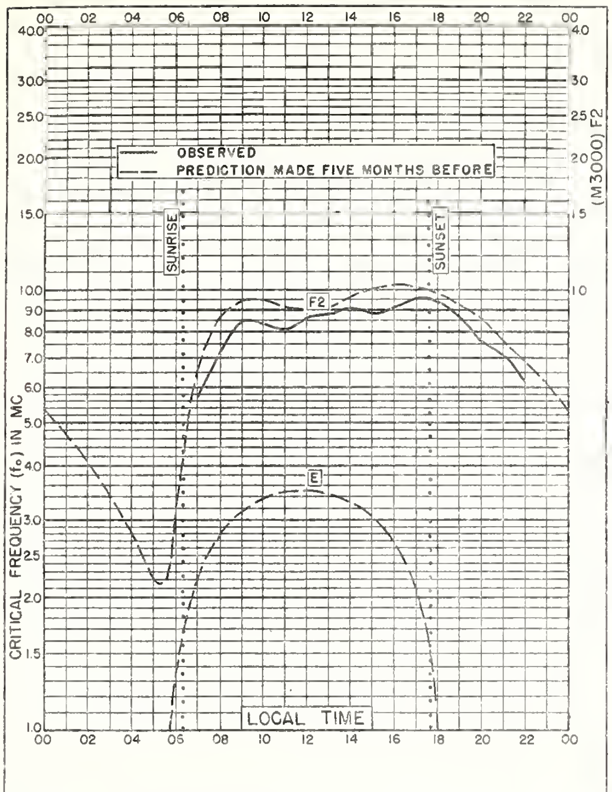


Fig. 81. MADRAS, INDIA
13.0°N, 80.2°E DECEMBER 1952

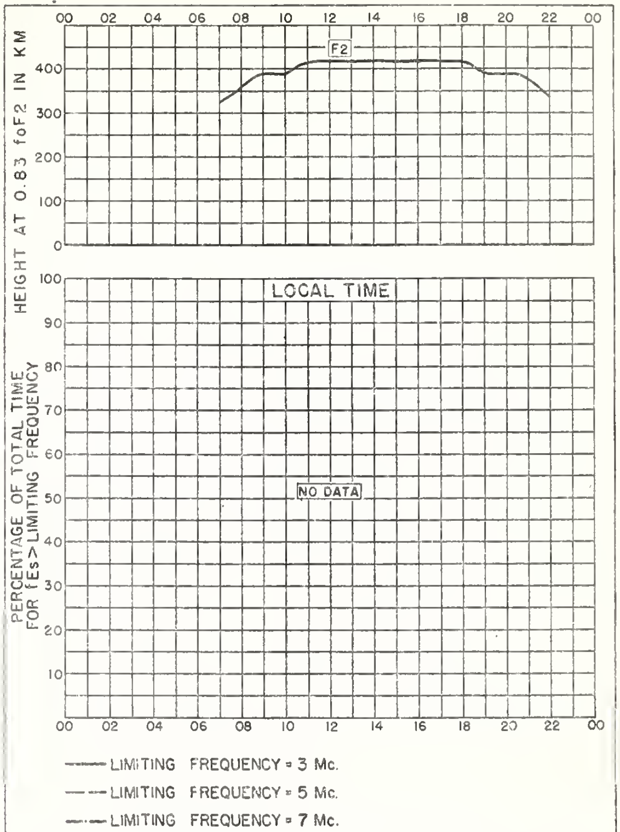


Fig. 82. MADRAS, INDIA DECEMBER 1952

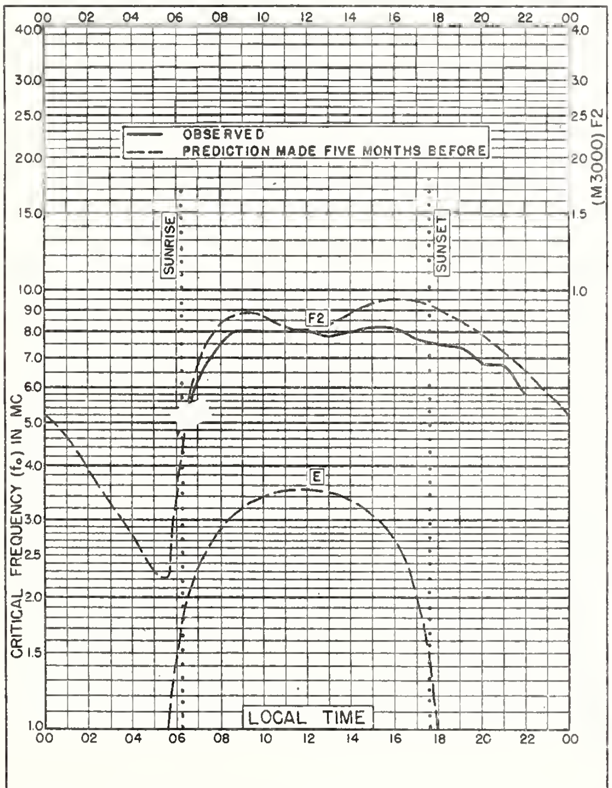


Fig. 83. TIRUCHY, INDIA
10.8°N, 78.8°E DECEMBER 1952

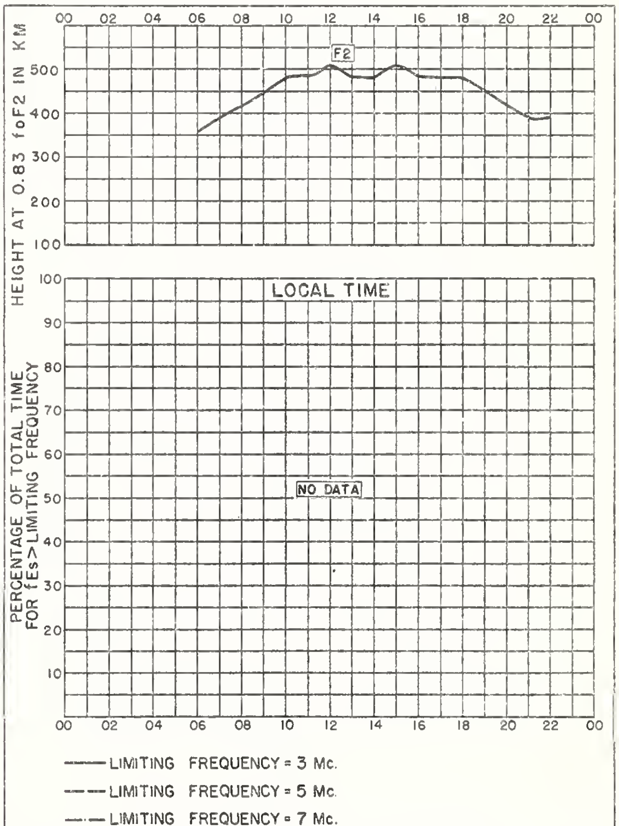


Fig. 84. TIRUCHY, INDIA DECEMBER 1952

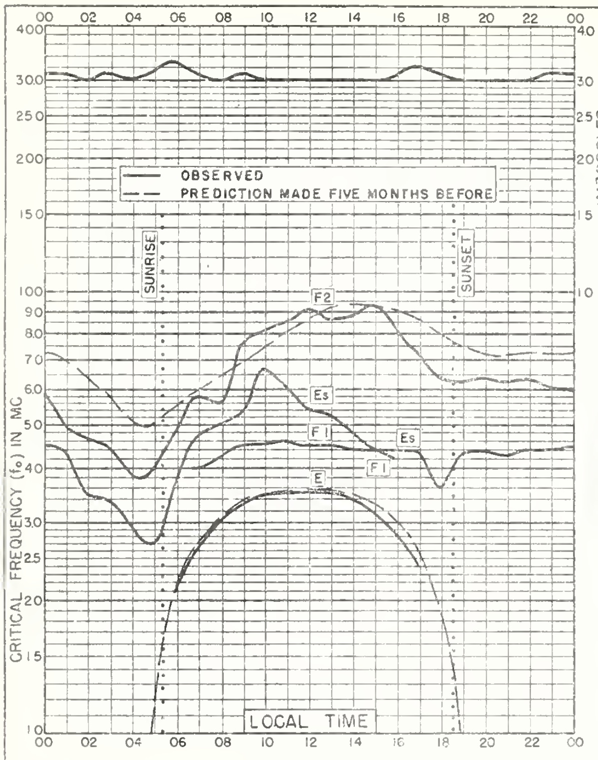


Fig. 85. TOWNSVILLE, AUSTRALIA
19.3°S, 146.8°E DECEMBER 1952

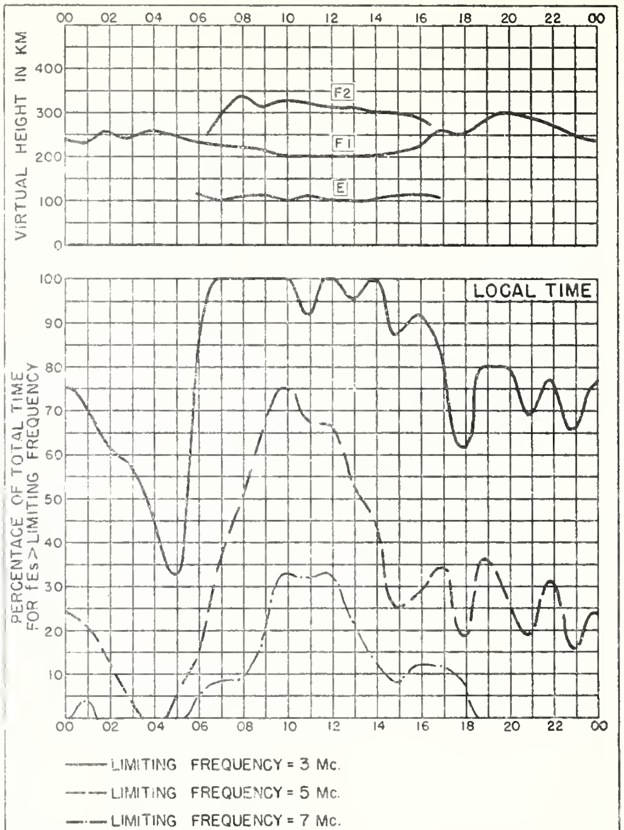


Fig. 86. TOWNSVILLE, AUSTRALIA DECEMBER 1952

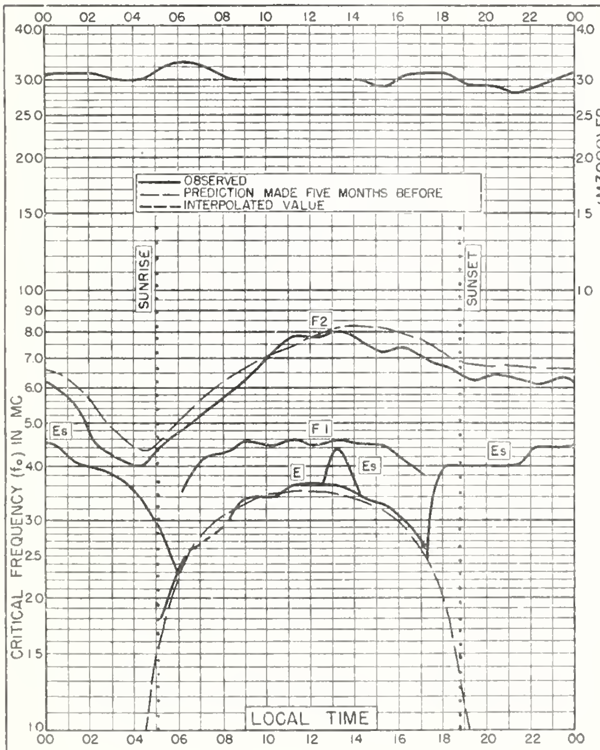


Fig 87. BRISBANE, AUSTRALIA
27.5°S, 153.0°E DECEMBER 1952

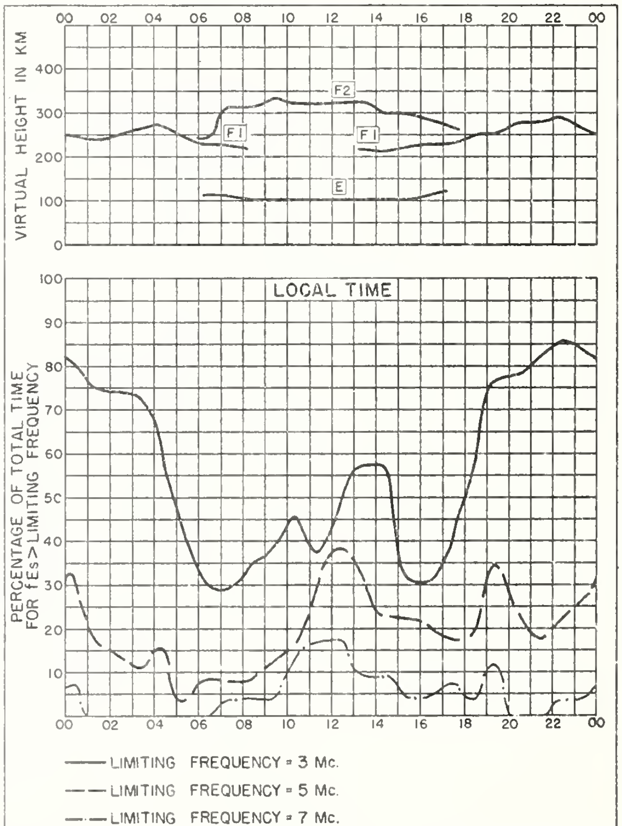


Fig. 88. BRISBANE, AUSTRALIA DECEMBER 1952

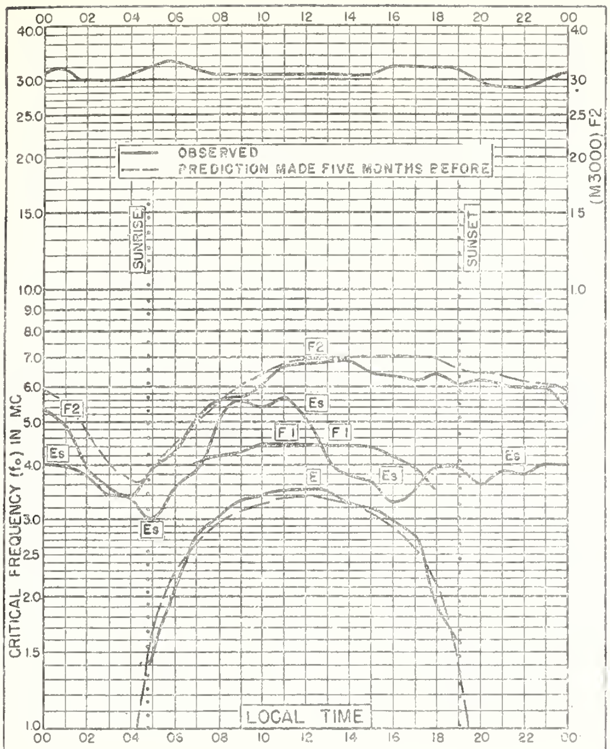


Fig. 89. CANBERRA, AUSTRALIA
35.3°S, 149.0°E DECEMBER 1952

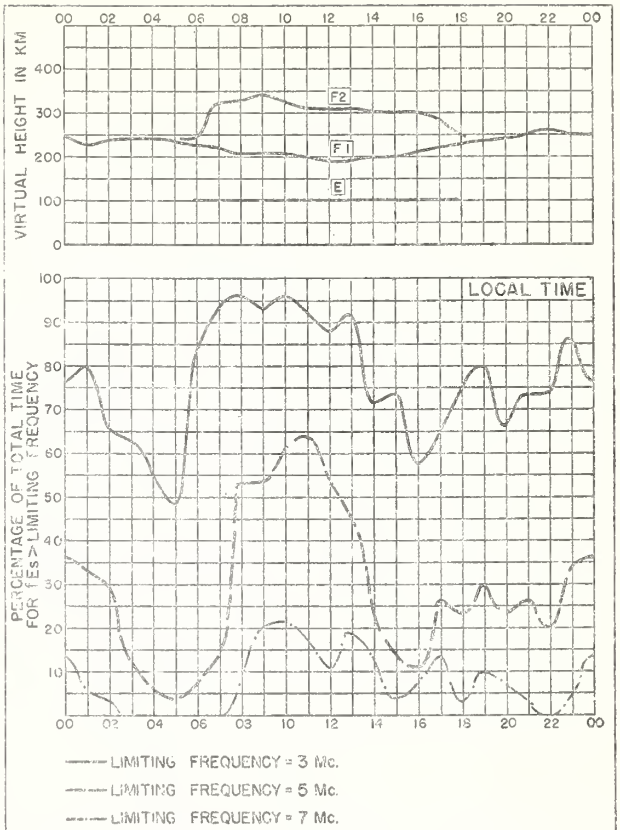


Fig. 90. CANBERRA, AUSTRALIA DECEMBER 1952

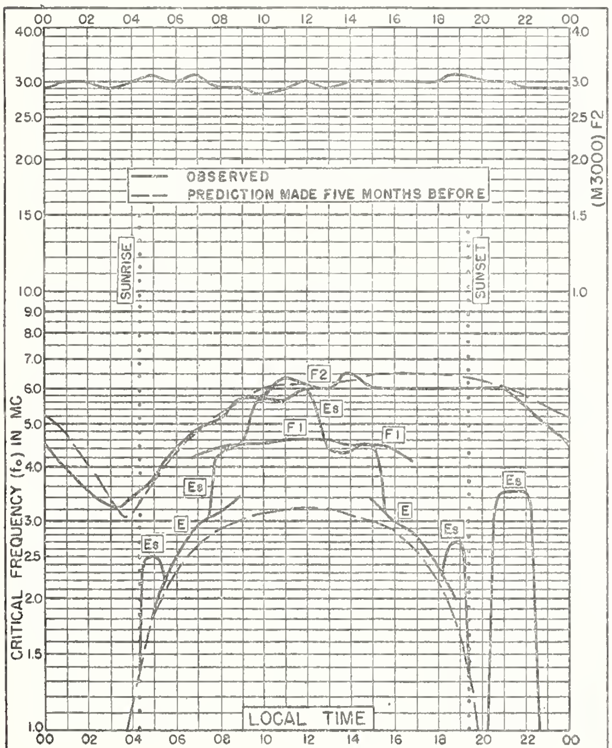


Fig. 91. HOBART, TASMANIA
42.8°S, 147.4°E DECEMBER 1952

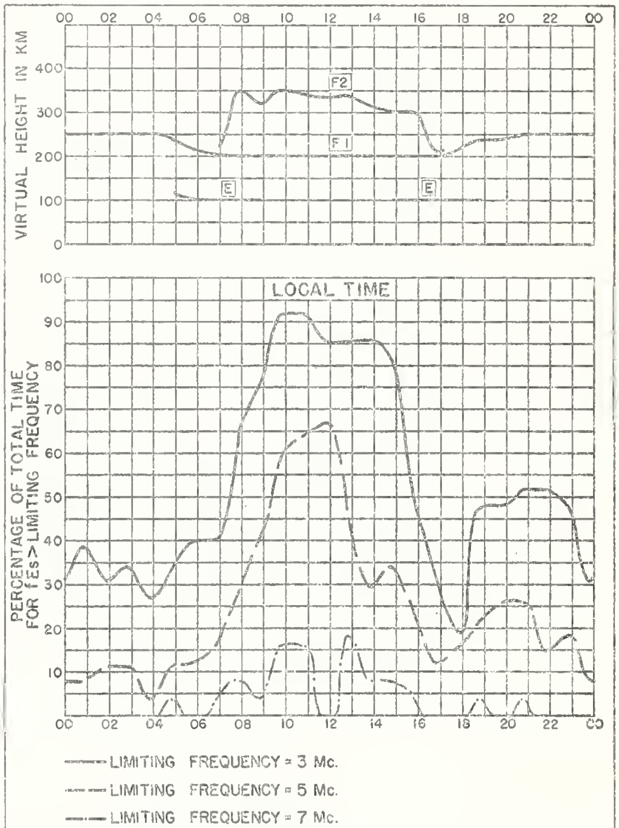


Fig. 92. HOBART, TASMANIA DECEMBER 1952

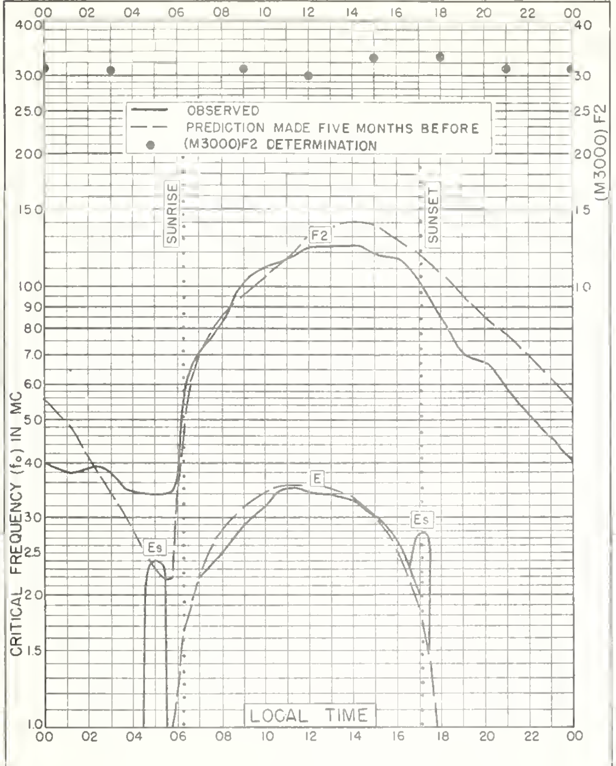


Fig. 93. CALCUTTA, INDIA
22.6° N, 88.4° E NOVEMBER 1952

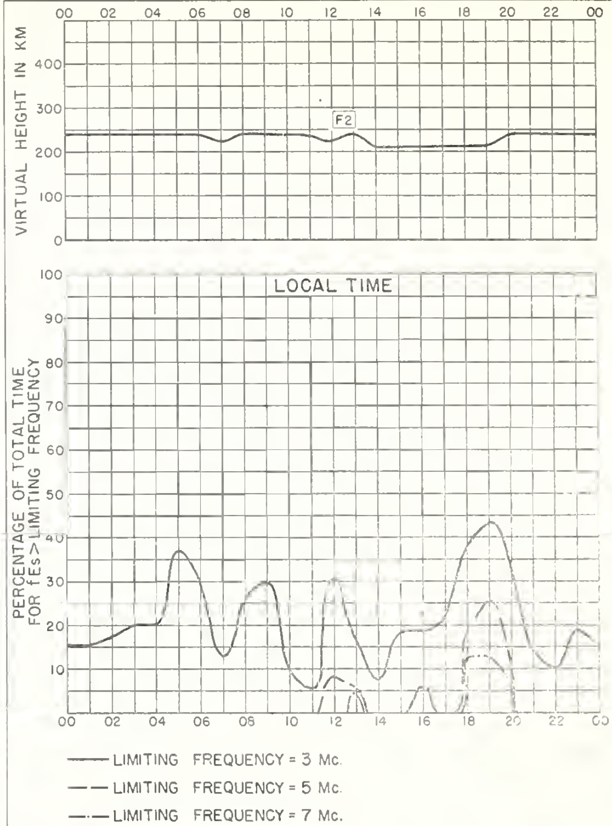


Fig. 94. CALCUTTA, INDIA NOVEMBER 1952

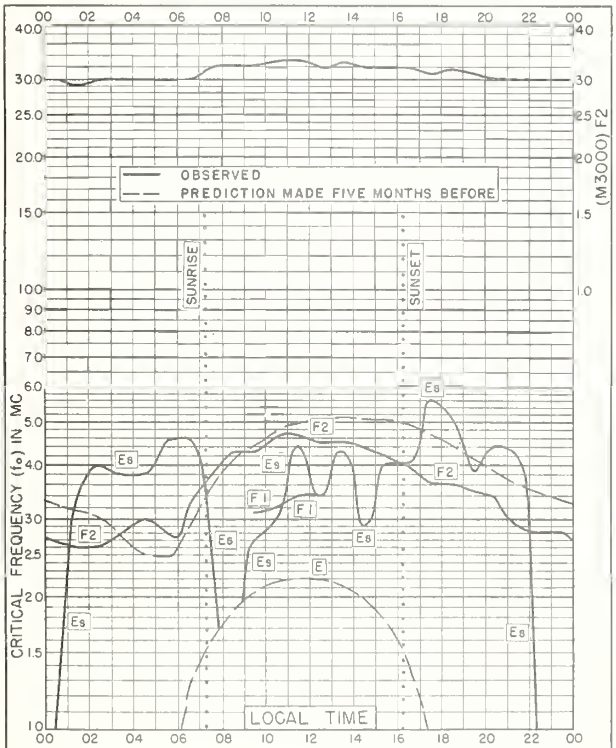


Fig. 95. GODHAVN, GREENLAND
69.2° N, 53.5° W OCTOBER 1952

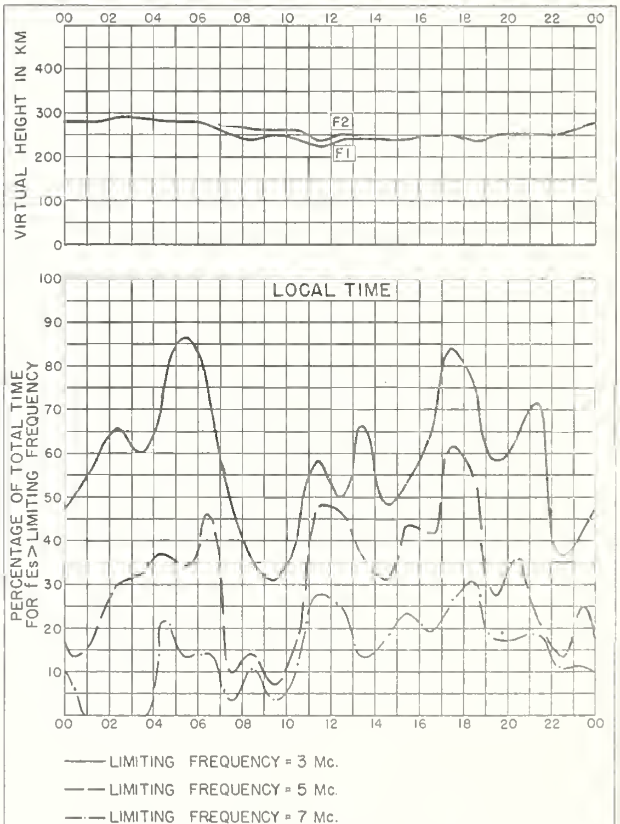


Fig. 96. GODHAVN, GREENLAND OCTOBER 1952

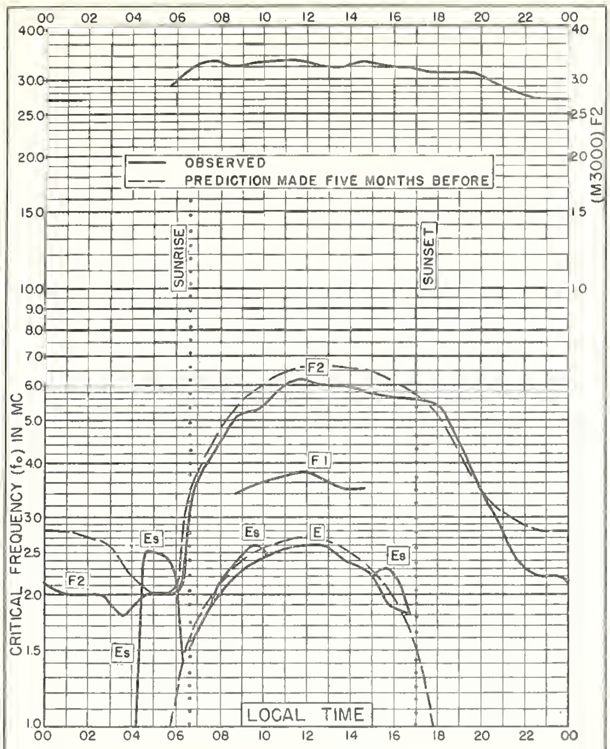


Fig. 97. INVERNESS, SCOTLAND
57.4°N, 4.2°W OCTOBER 1952

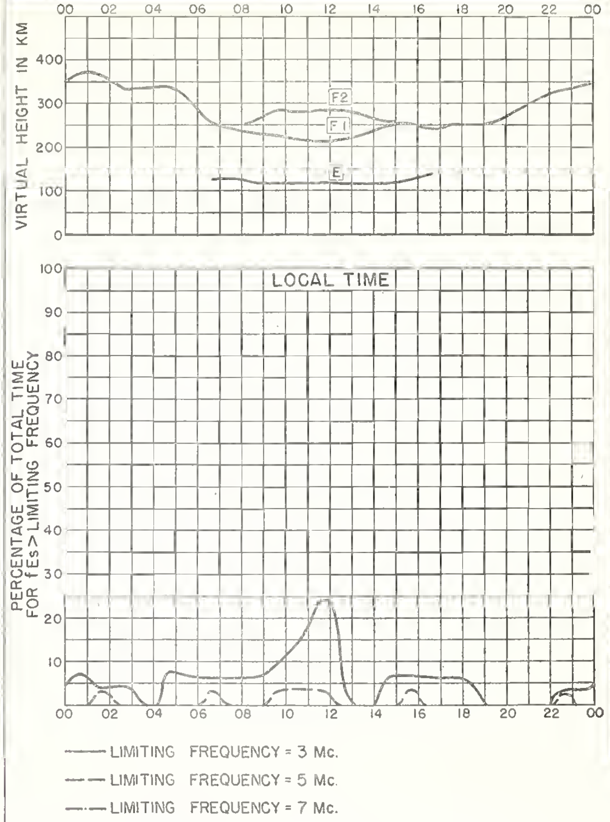


Fig. 98. INVERNESS, SCOTLAND OCTOBER 1952

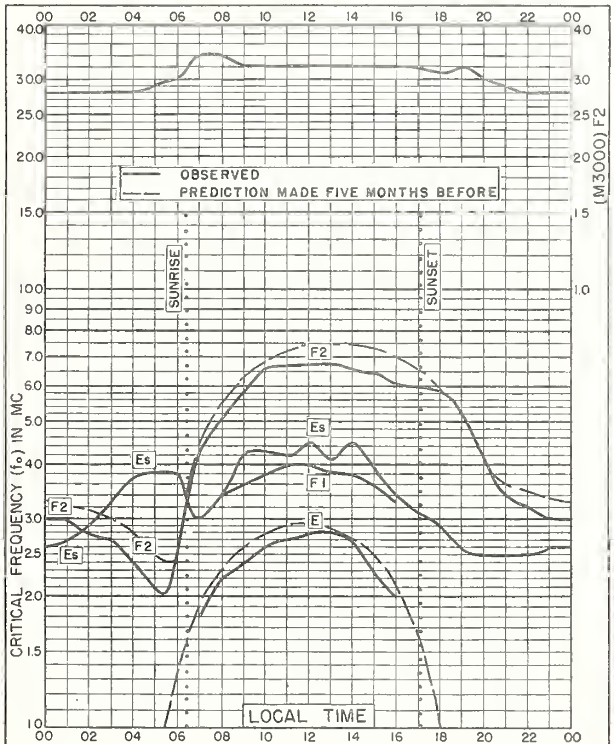


Fig. 99. SLOUGH, ENGLAND
51.5°N, 0.6°W OCTOBER 1952

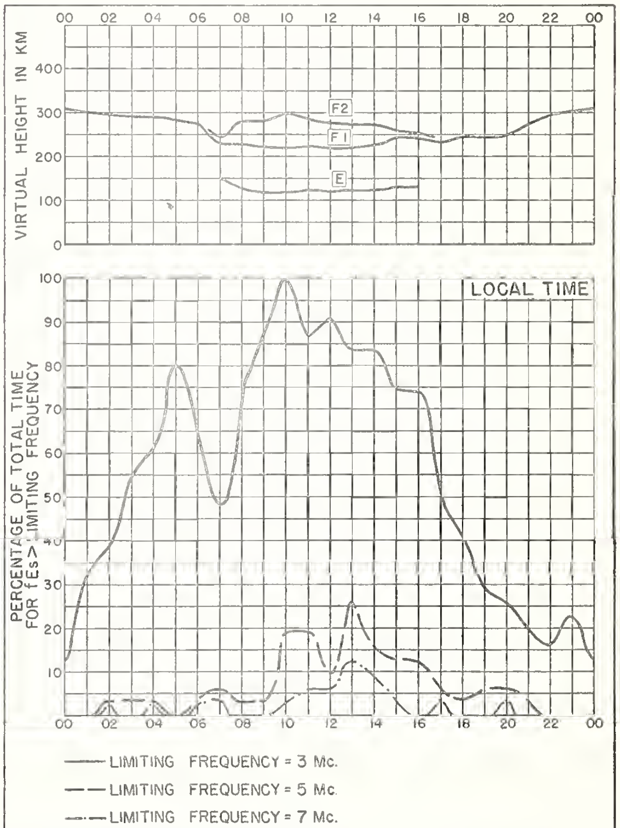


Fig. 100. SLOUGH, ENGLAND OCTOBER 1952

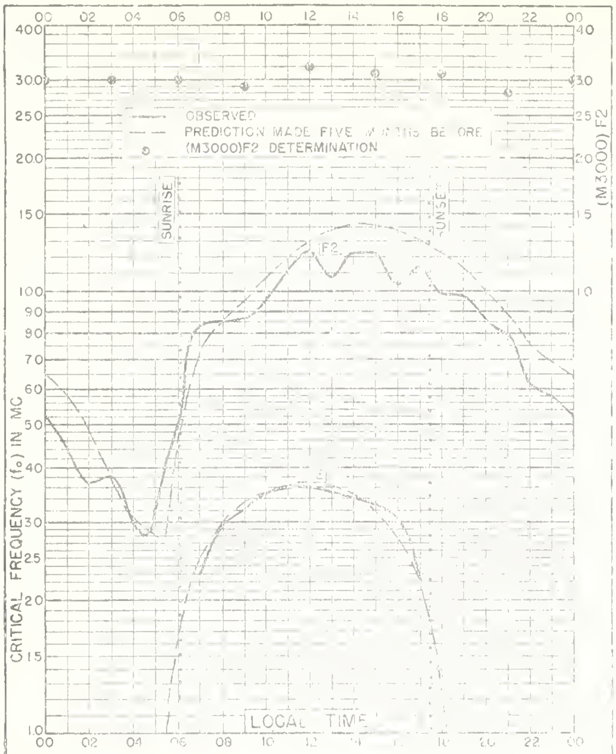


Fig. 101. CALCUTTA, INDIA
22.6°N, 88.4°E OCTOBER 1952

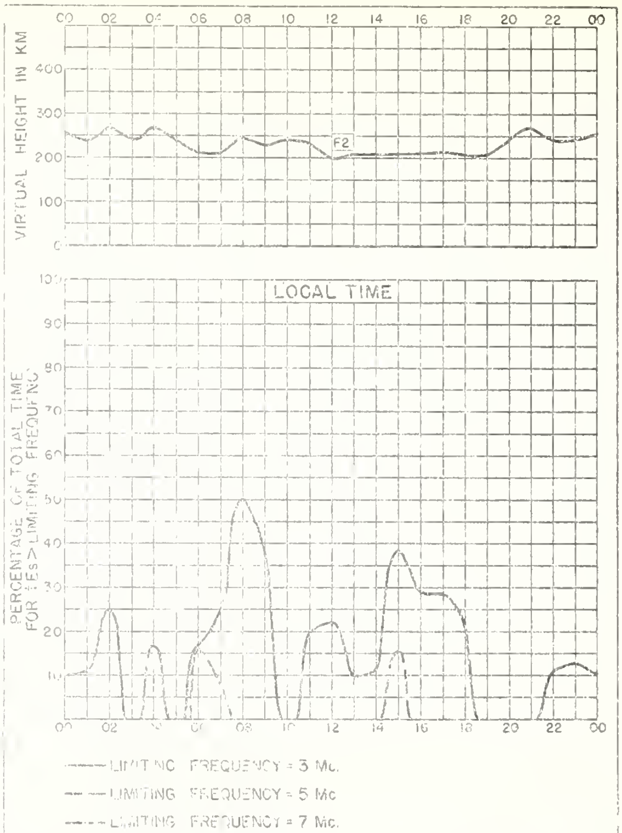


Fig. 102. CALCUTTA, INDIA OCTOBER 1952

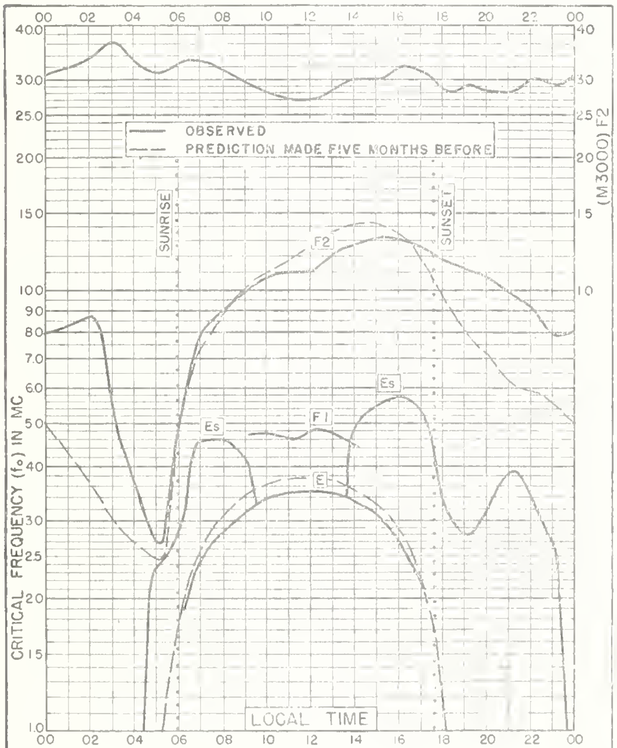


Fig 103. KHARTOUM, SUDAN
15.6°N, 32.6°E OCTOBER 1952

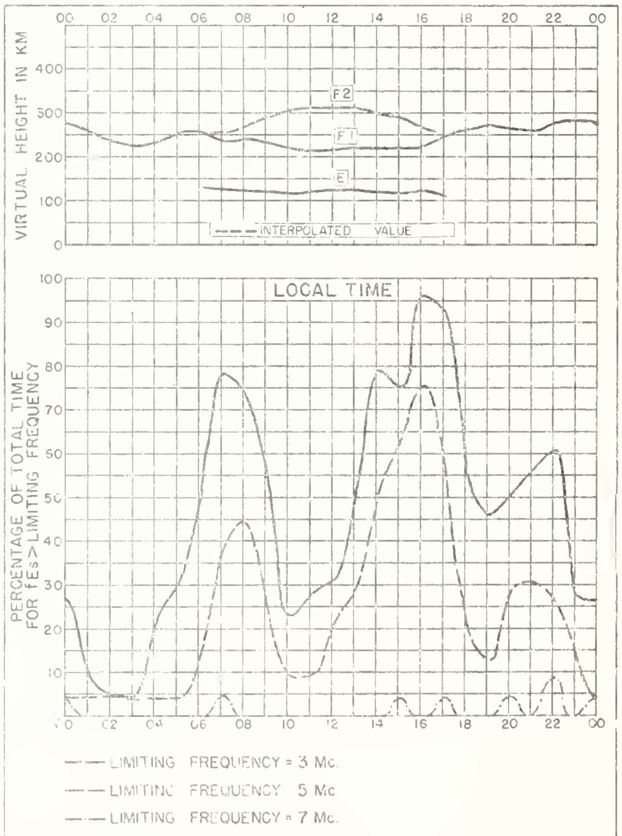


Fig. 104. KHARTOUM, SUDAN OCTOBER 1952

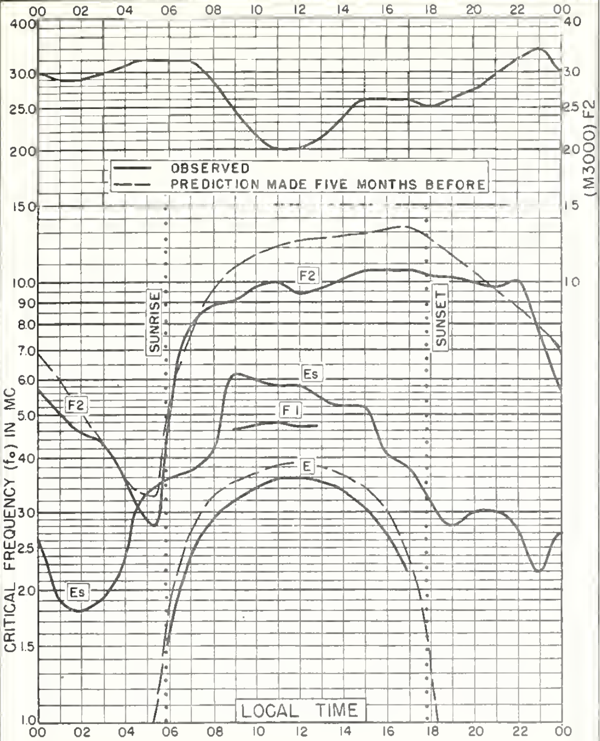


Fig. 105. SINGAPORE, BRIT. MALAYA
1.3°N, 103.8°E OCTOBER 1952

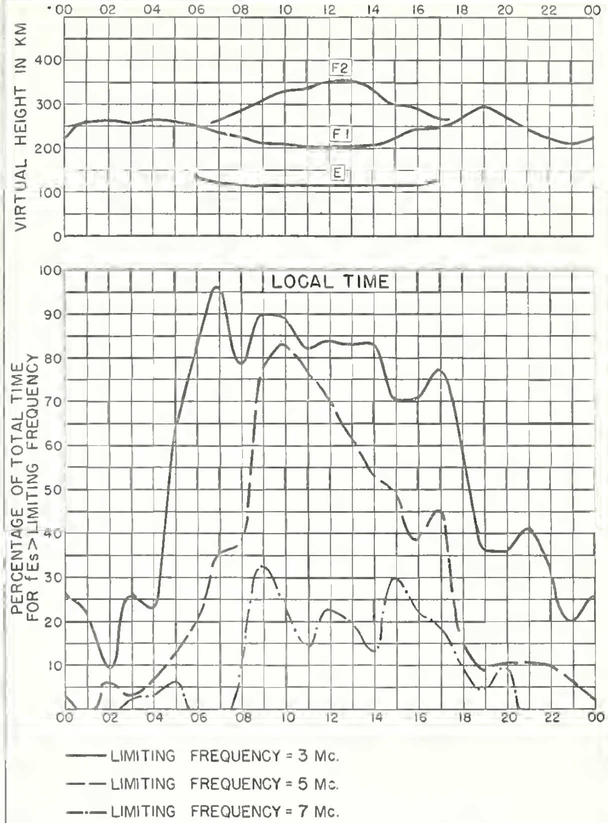


Fig. 106. SINGAPORE, BRIT. MALAYA OCTOBER 1952

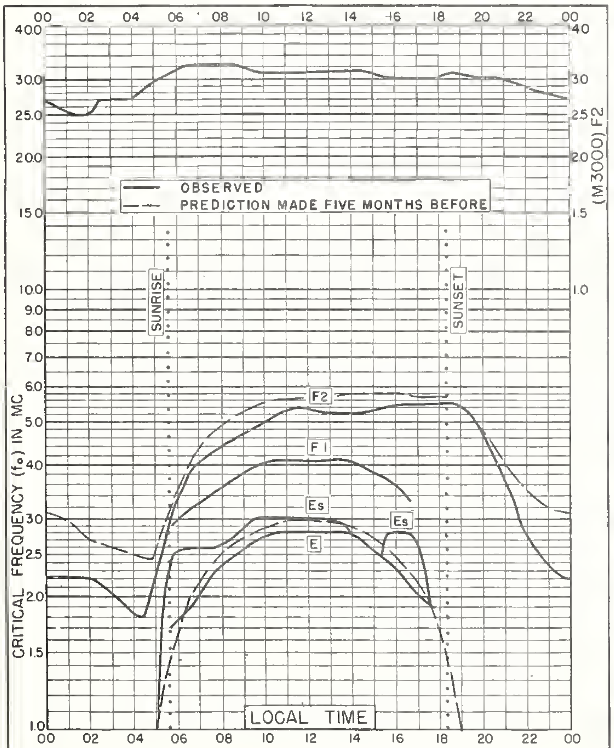


Fig. 107. INVERNESS, SCOTLAND
57.4°N, 4.2°W SEPTEMBER 1952

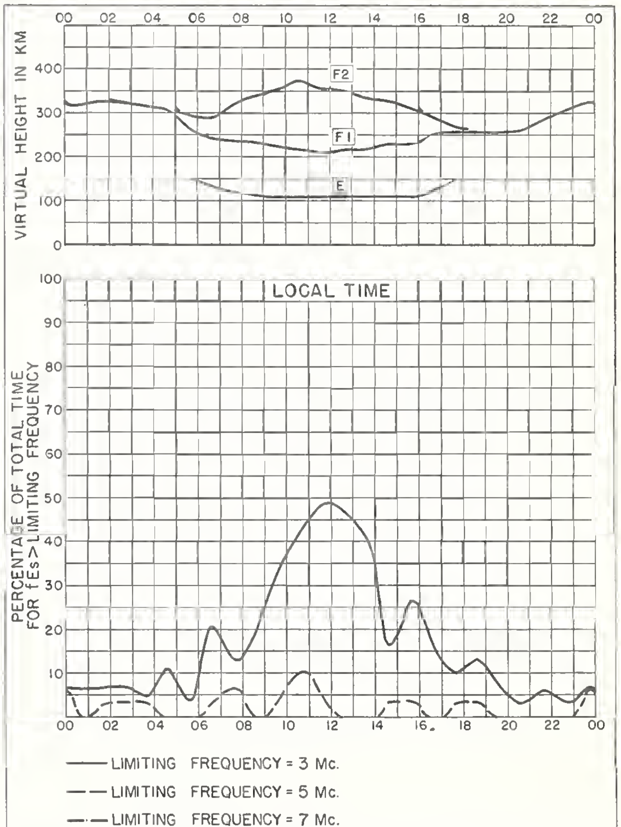


Fig. 108. INVERNESS, SCOTLAND SEPTEMBER 1952

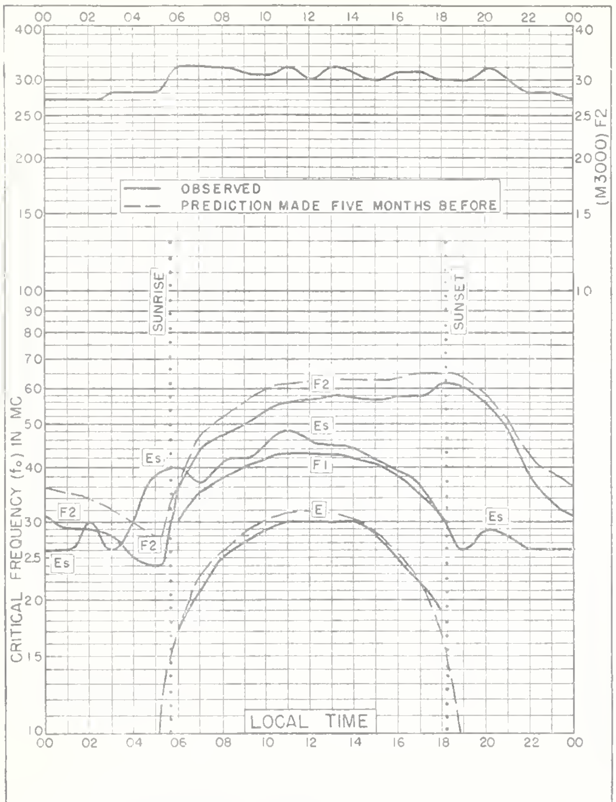


Fig. 109. SLOUGH, ENGLAND
51.5°N, 0.6°W SEPTEMBER 1952

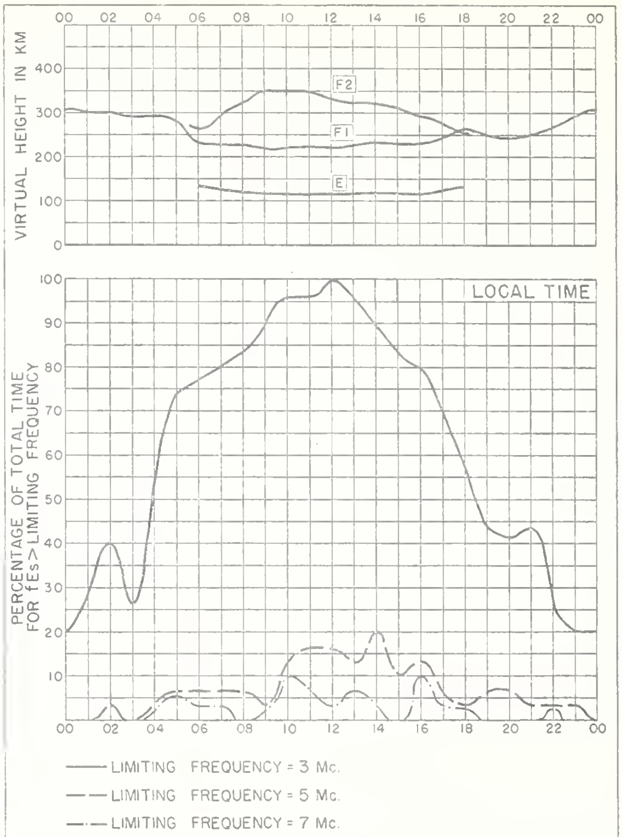


Fig. 110. SLOUGH, ENGLAND SEPTEMBER 1952

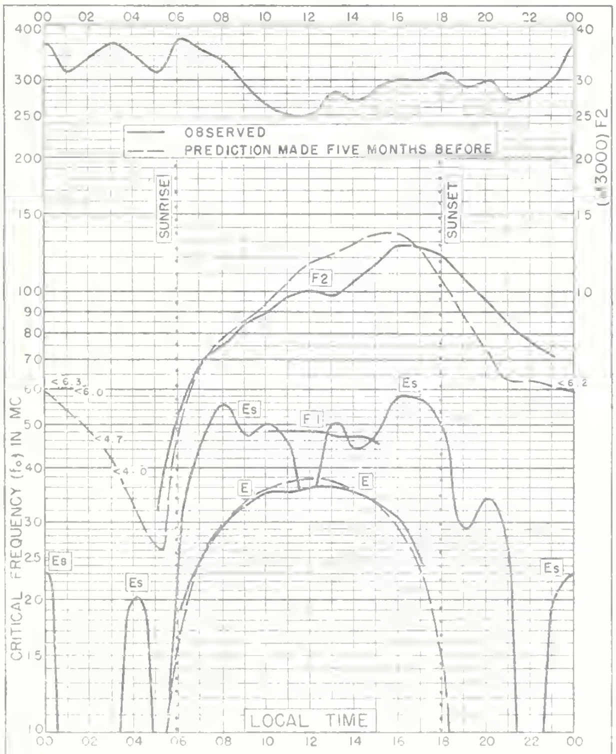


Fig. 111. KHARTOUM, SUDAN
15.6°N, 32.6°E SEPTEMBER 1952

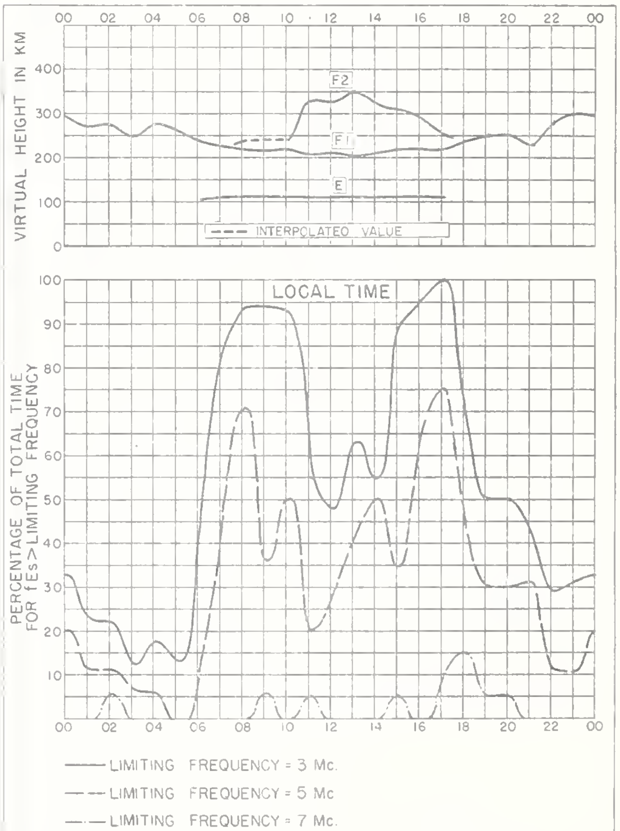


Fig. 112. KHARTOUM, SUDAN SEPTEMBER 1952

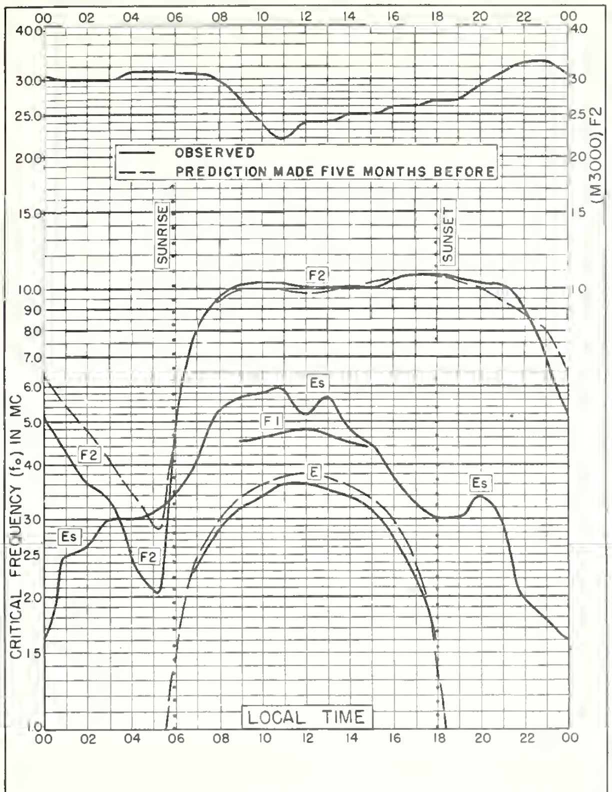
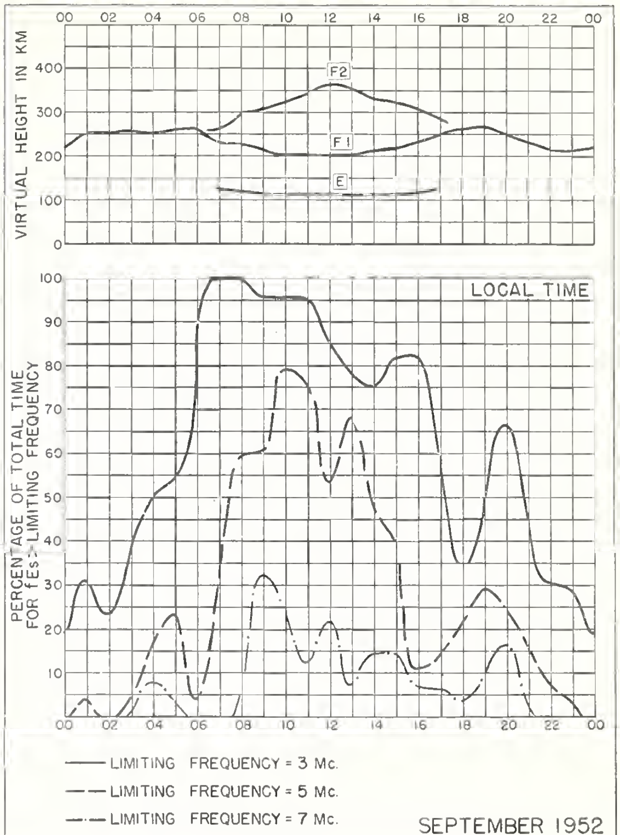


Fig. 113. SINGAPORE, BRIT. MALAYA
1.3°N, 103.8°E SEPTEMBER 1952



SEPTEMBER 1952
Fig. 114. SINGAPORE, BRIT MALAYA

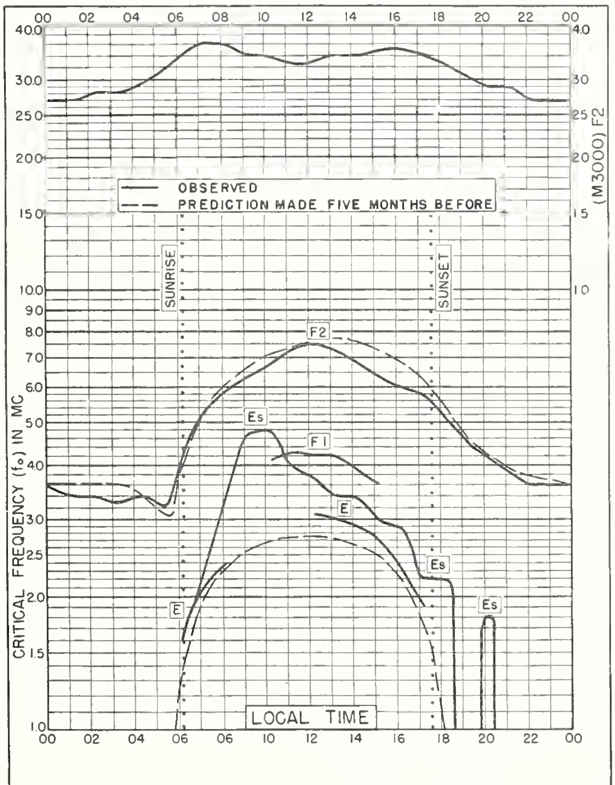


Fig. 115. FALKLAND IS.
51.7° S, 57.8° W SEPTEMBER 1952

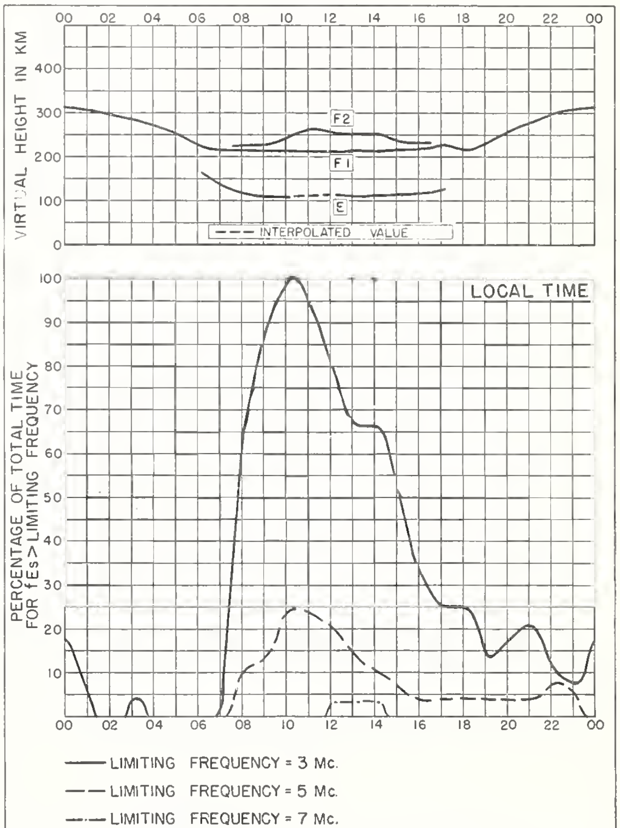


Fig. 116. FALKLAND IS. SEPTEMBER 1952

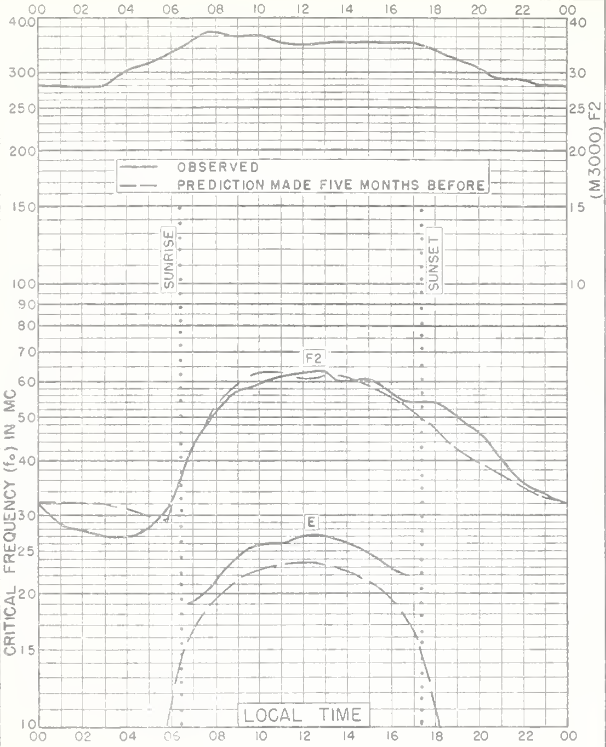


Fig 117. PORT LOCKROY
64.8°S, 63.5°W SEPTEMBER 1952

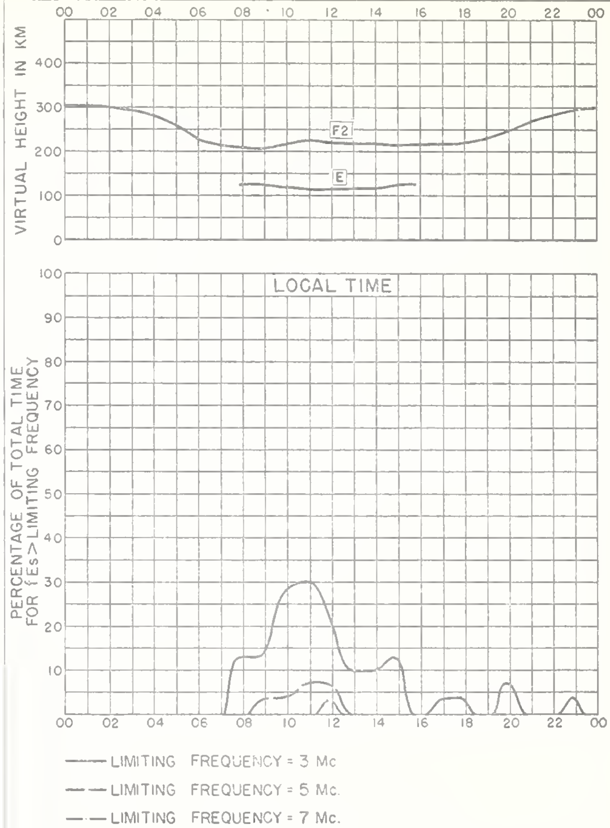


Fig. 118. PORT LOCKROY SEPTEMBER 1952

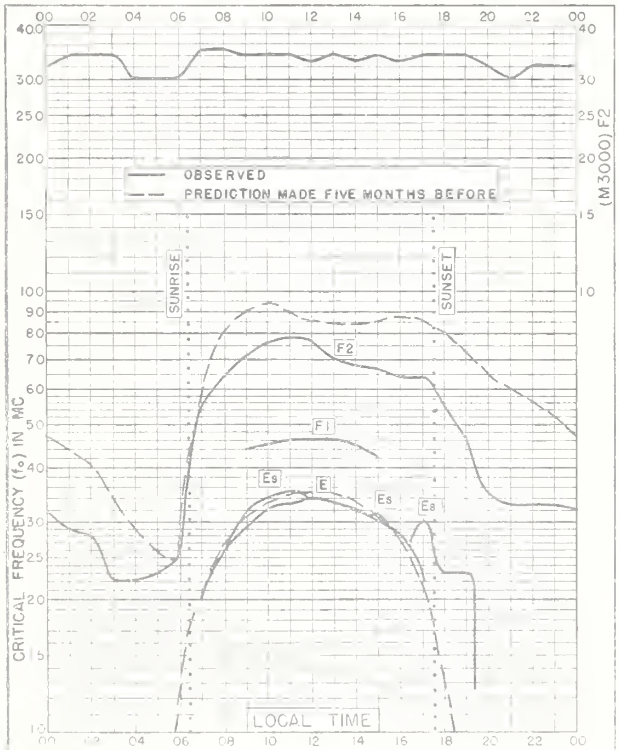


Fig 119. TANANARIVE, MADAGASCAR
18.8°S, 47.8°E AUGUST 1952

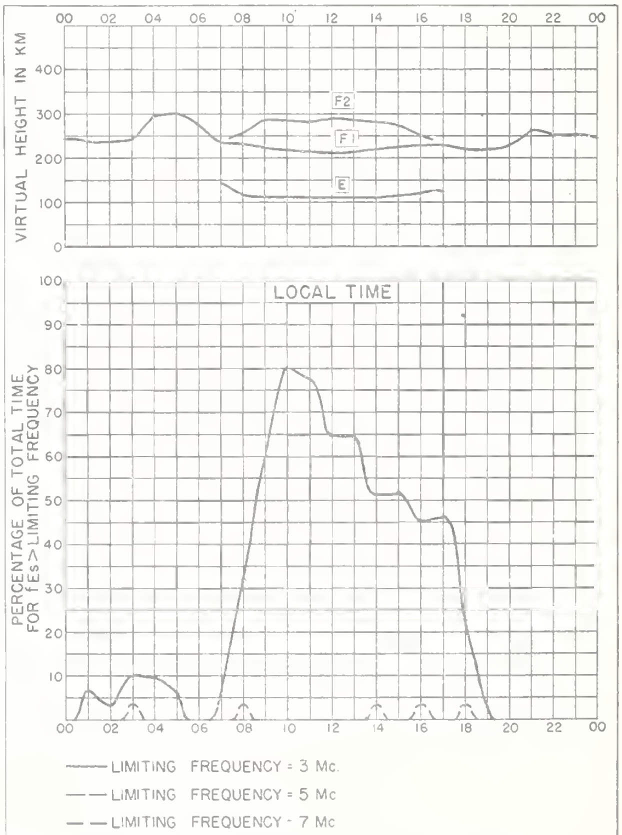


Fig. 120. TANANARIVE, MADAGASCAR AUGUST 1952

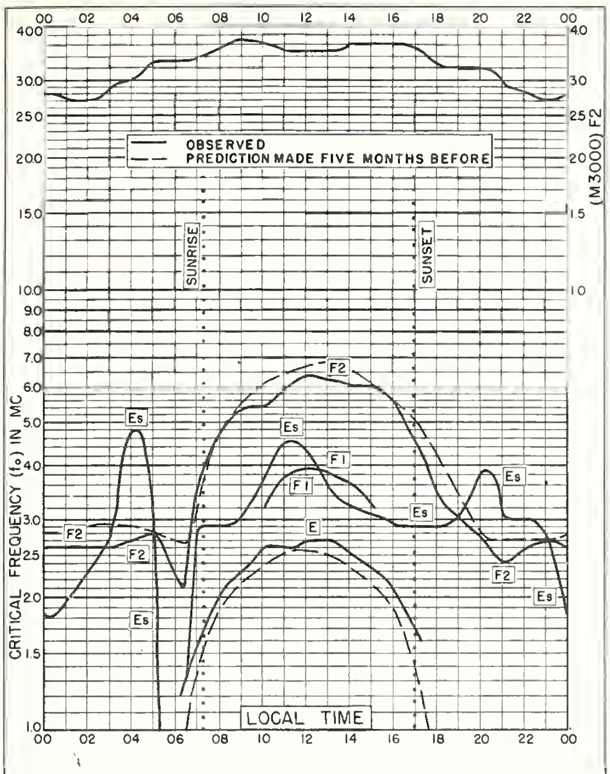


Fig. 121. FALKLAND IS.
51.7° S, 57.8° W AUGUST 1952

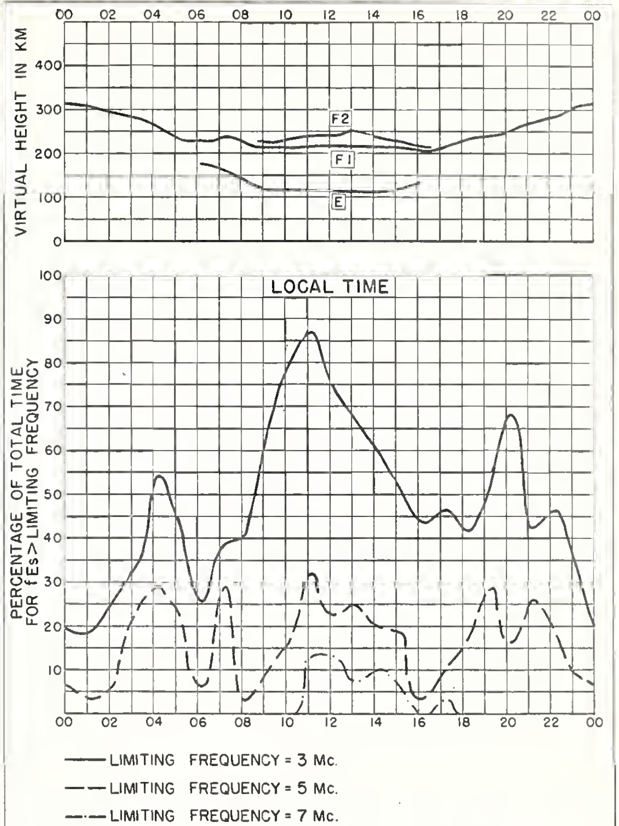


Fig. 122. FALKLAND IS AUGUST 1952

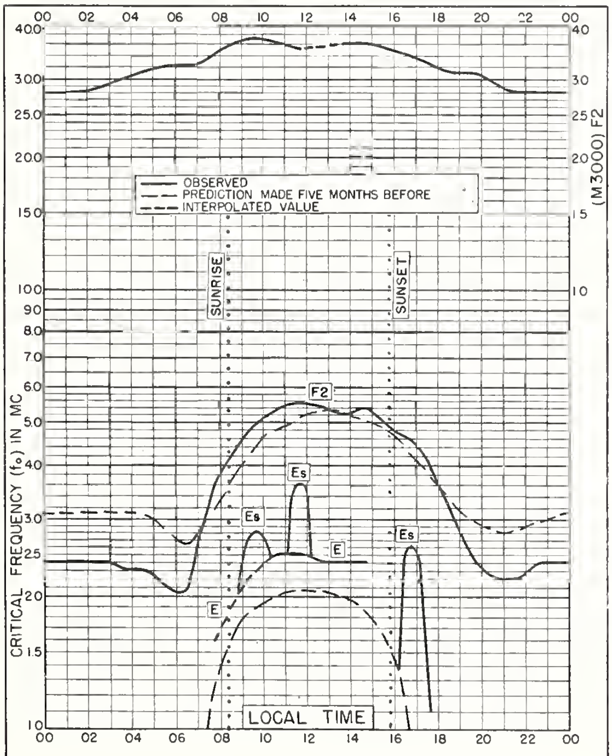


Fig. 123. PORT LOCKROY
64.8°S, 63.5°W AUGUST 1952

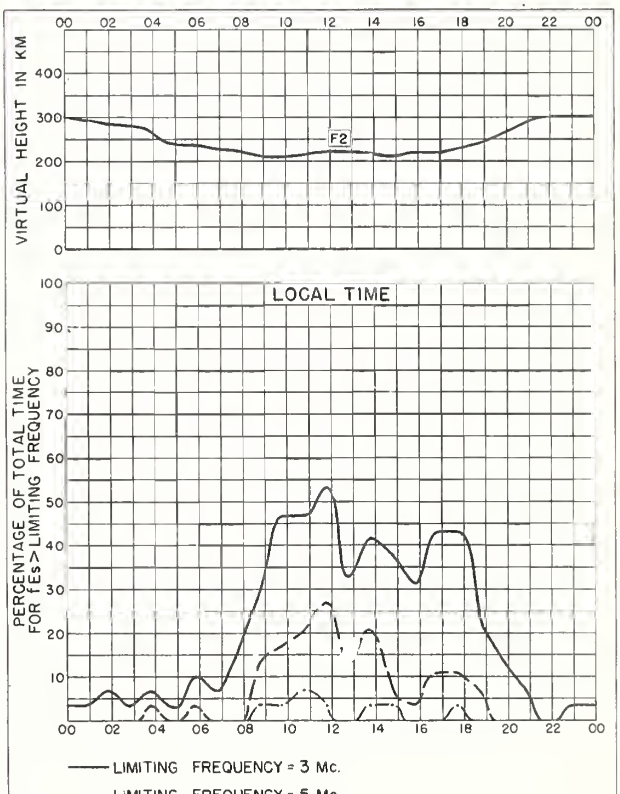


Fig. 124. PORT LOCKROY AUGUST 1952

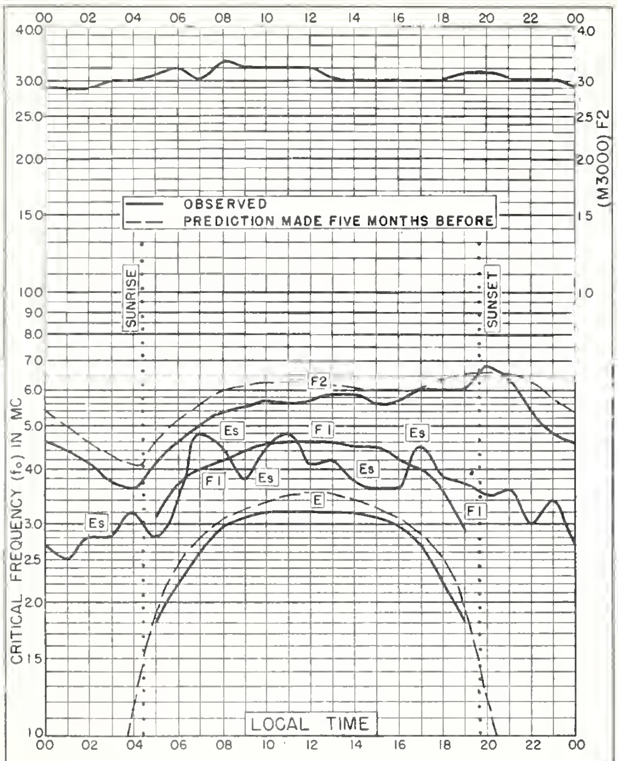


Fig. 125. POITIERS, FRANCE
46.6° N, 0.3° E JULY 1952

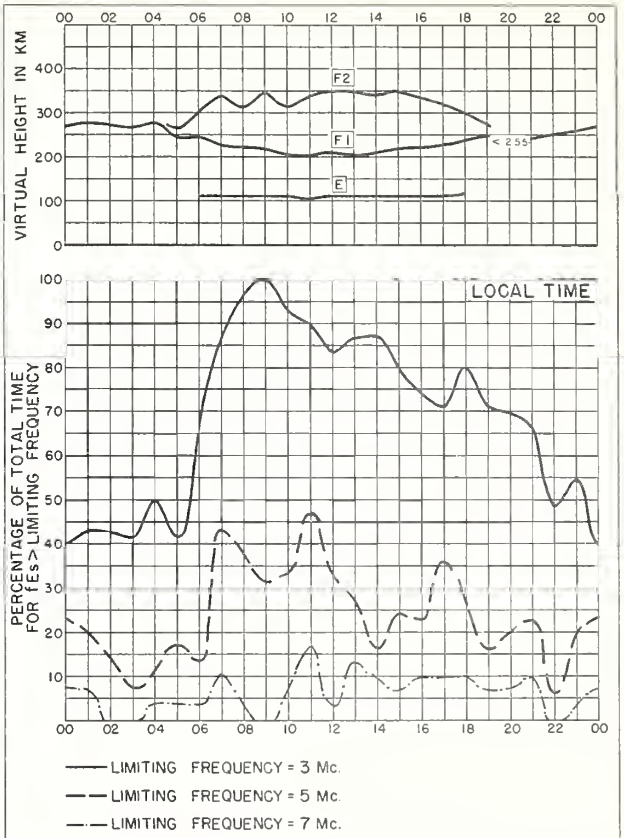


Fig. 126. POITIERS, FRANCE JULY 1952

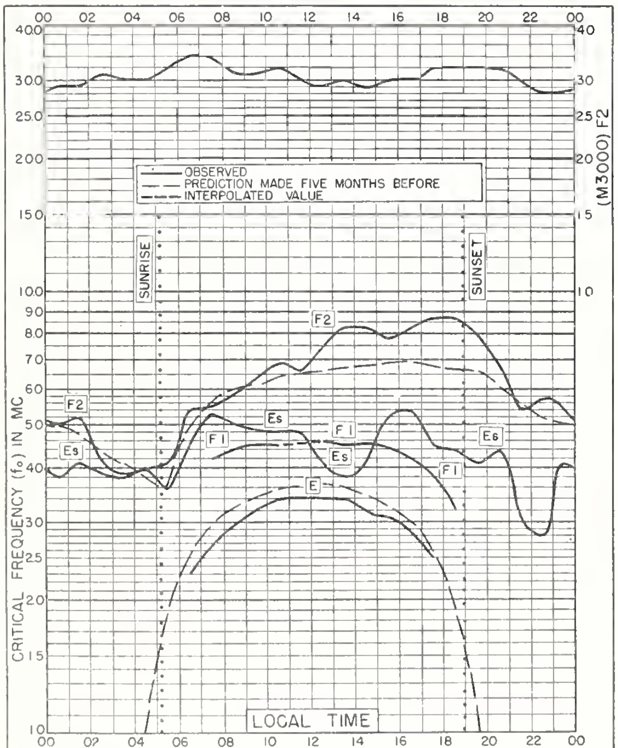


Fig 127. CASABLANCA, MOROCCO
33.6°N, 7.6°W JULY 1952

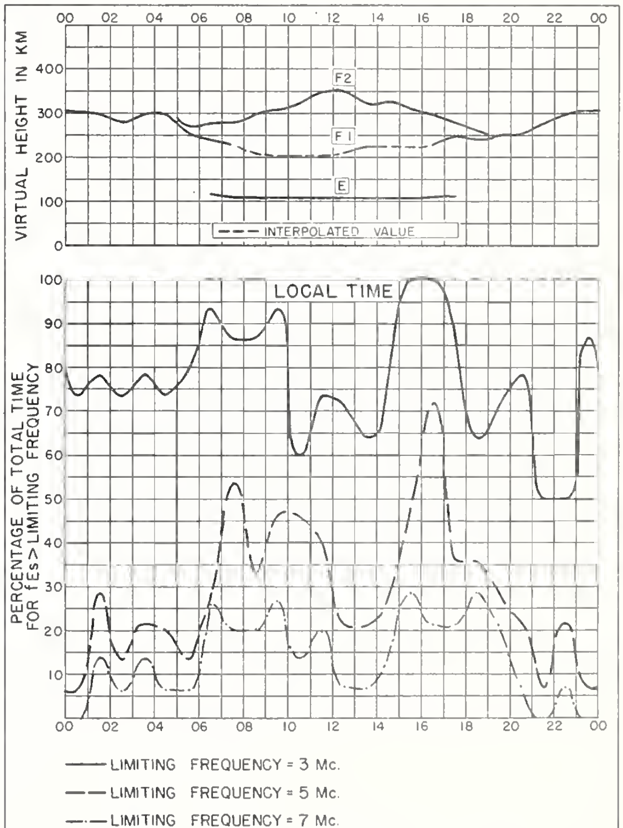


Fig. 128. CASABLANCA, MOROCCO JULY 1952

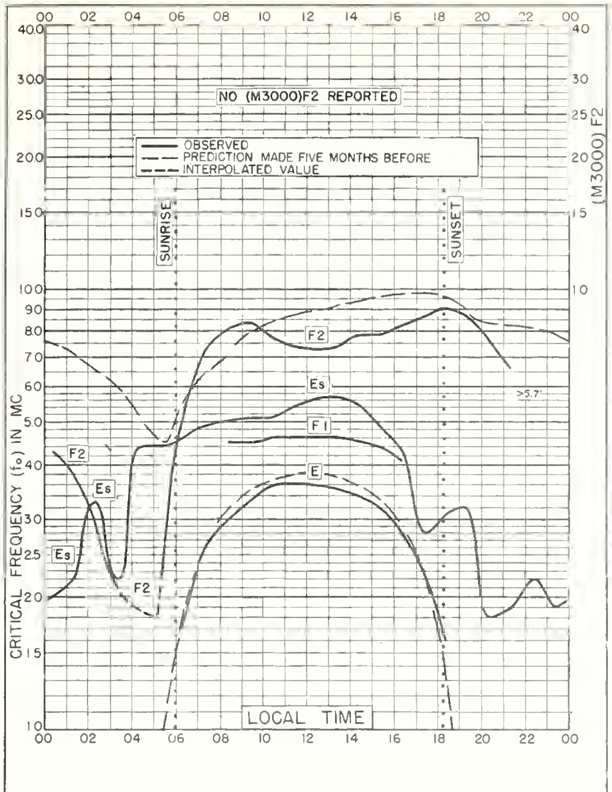


Fig. 129. IBADAN, NIGERIA
7.4°N, 4.0°E JULY 1952

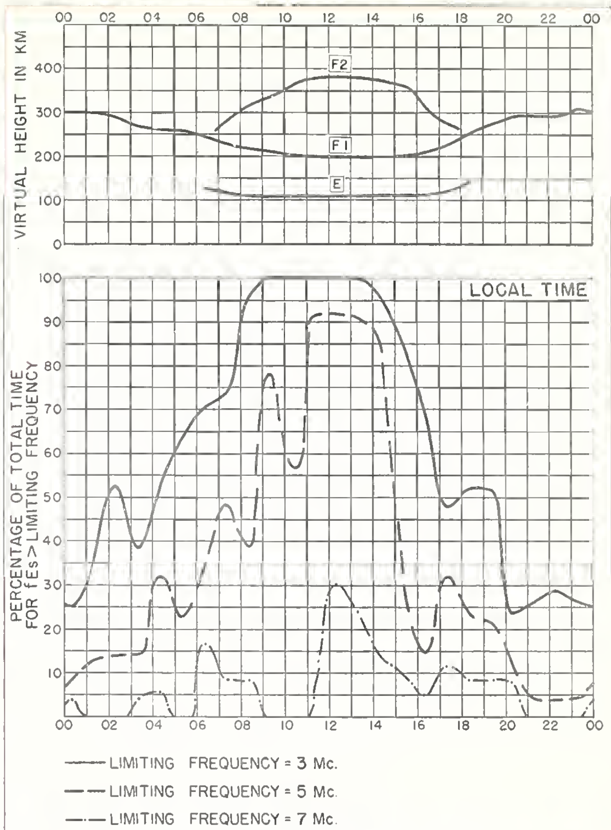


Fig. 130. IBADAN, NIGERIA JULY 1952

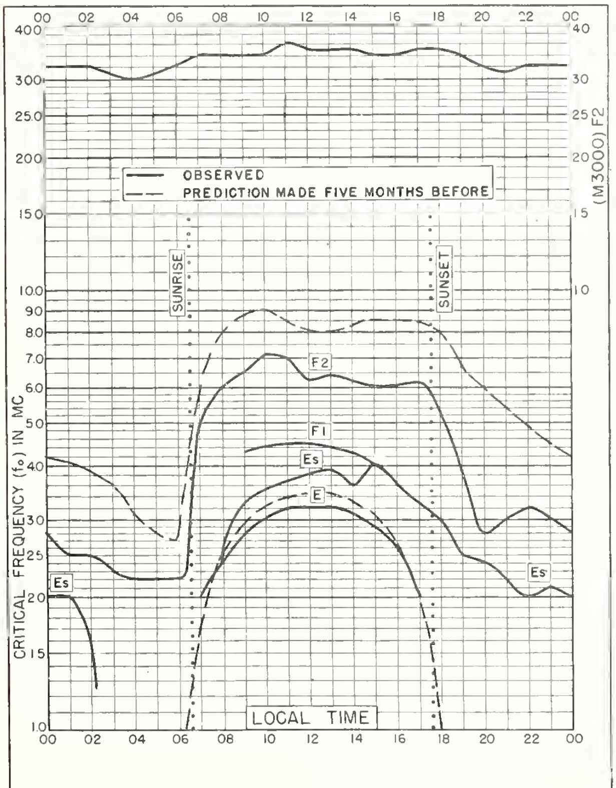


Fig. 131. TANANARIVE, MADAGASCAR
18.8°S, 47.8°E JULY 1952

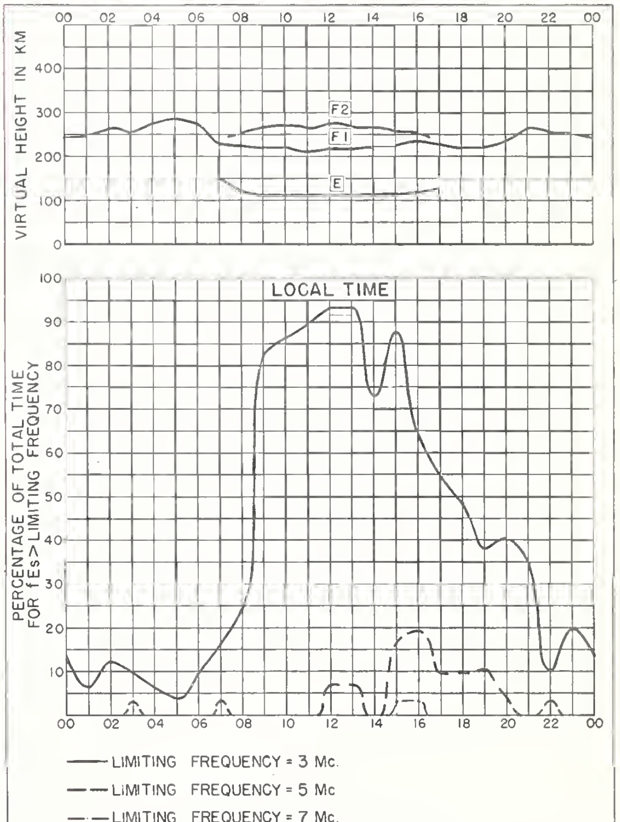


Fig. 132. TANANARIVE, MADAGASCAR JULY 1952

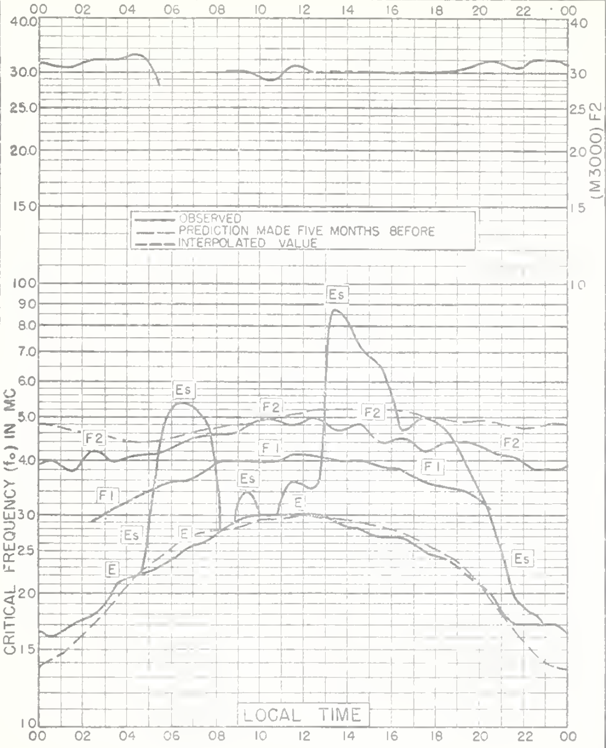


Fig. 133. GODHAVN, GREENLAND
69.2°N, 53.5°W JUNE 1952

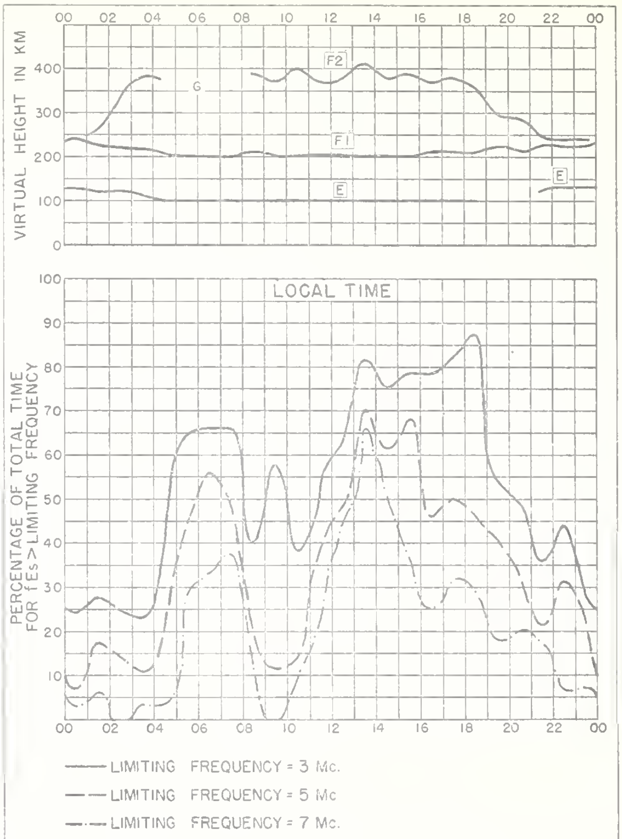


Fig. 134. GODHAVN, GREENLAND JUNE 1952

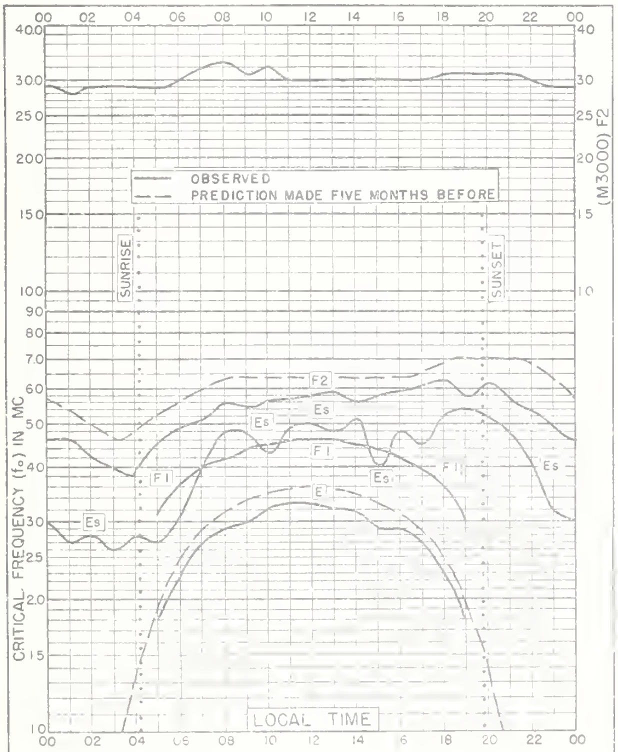


Fig. 135. POITIERS, FRANCE
46.6°N, 0.3°E JUNE 1952

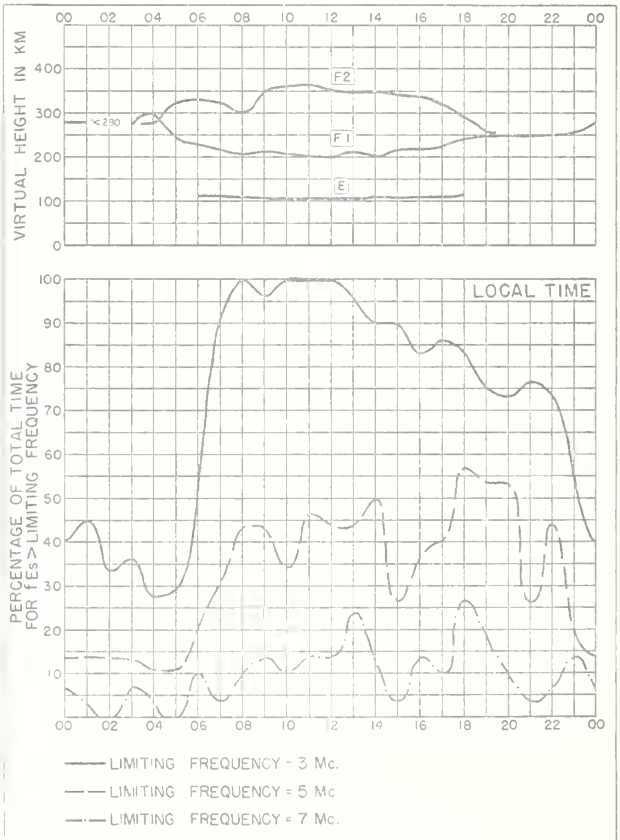


Fig. 136. POITIERS, FRANCE JUNE 1952

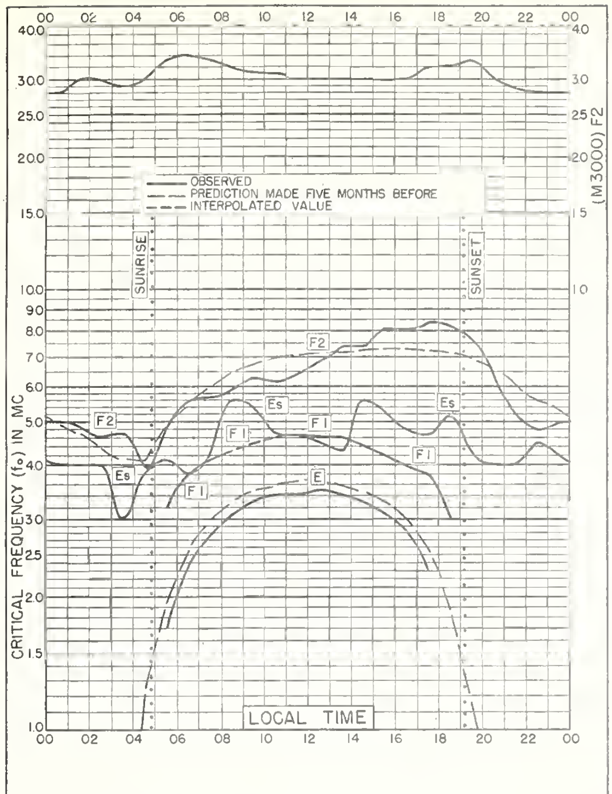


Fig. 137. CASABLANCA, MOROCCO
33.6°N, 7.6°W
JUNE 1952

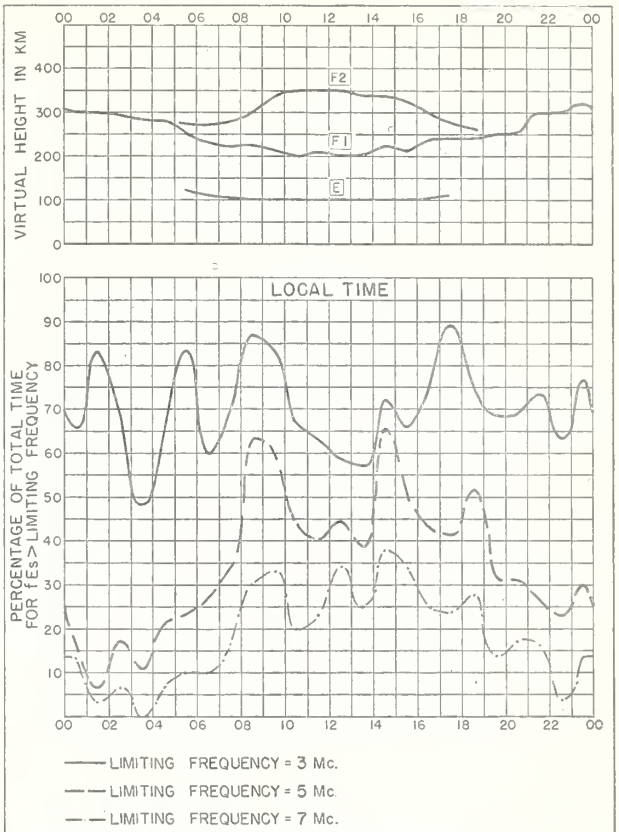


Fig. 138. CASABLANCA, MOROCCO
JUNE 1952

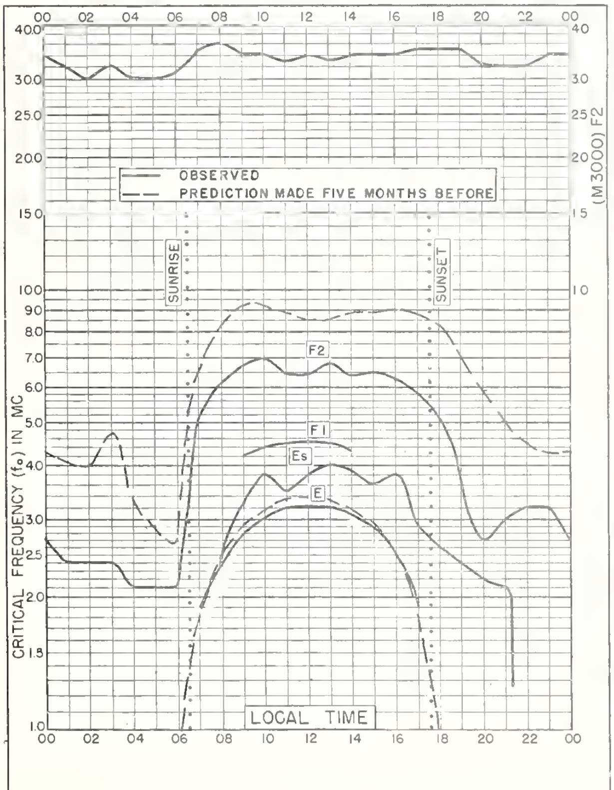


Fig. 139. TANANARIVE, MADAGASCAR
18.8°S, 47.8°E
JUNE 1952

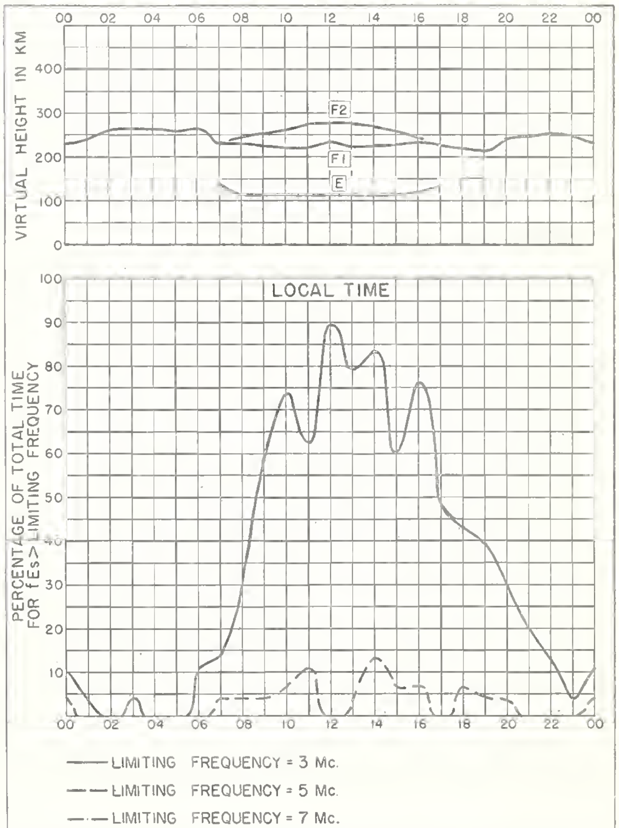


Fig. 140. TANANARIVE, MADAGASCAR
JUNE 1952

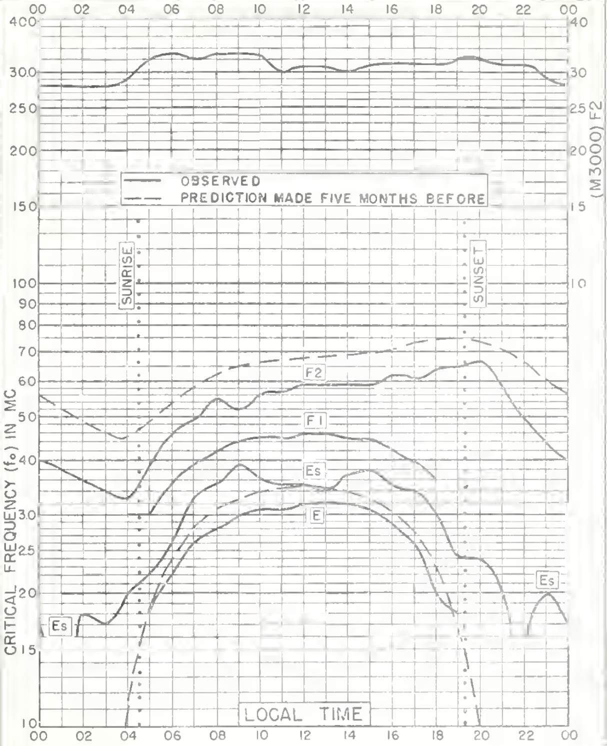


Fig. 141. POITIERS, FRANCE
46.6°N, 0.3°E MAY 1952

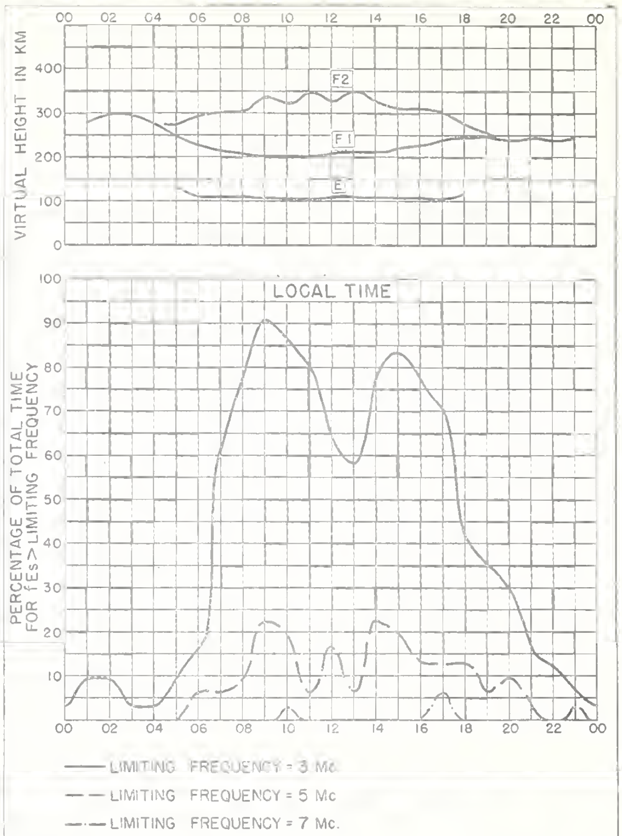


Fig. 142. POITIERS, FRANCE MAY 1952

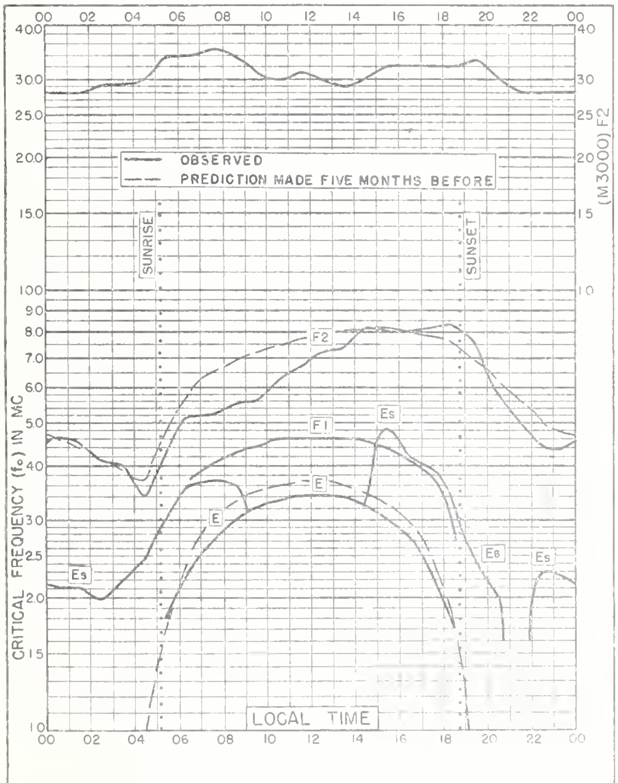


Fig. 143. CASABLANCA, MOROCCO
33.6°N, 7.6°W MAY 1952

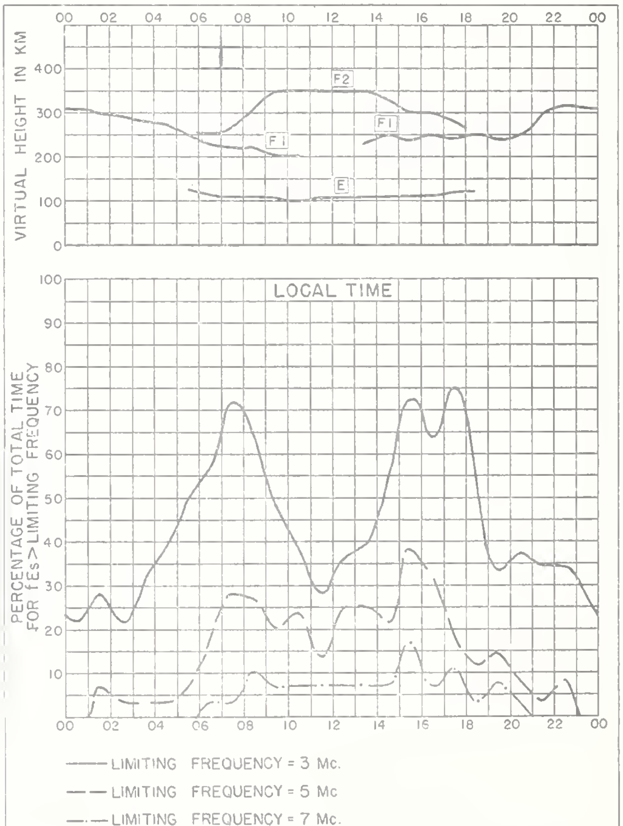


Fig. 144. CASABLANCA, MOROCCO MAY 1952

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Index (CRPL-F106, 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.