CRPL-F 101

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 foFl, leading to erroneously high values of monthly averages or median values.

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

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

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

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

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

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

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

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

Month	Predicted Sunspot Number							
	1952	1951	1950	1949	1948	1947	1946	1945
December	33	53	86	108	114	126	85	38
November	38	52	87	112	115	124	83	36
October	43	52	90	114	116	119	81	23
September	46	54	91	115	117	121	79	22
August	49	57	96	111	123	122	77	20
July	51	60	101	108	125	116	73	
June	52	63	103	108	129	112	67	
May	52	68	102	108	130	109	67	
April	52	74	101	109	133	107	62	
March	52	78	103	111	133	105	51	
February	51	82	103	113	133	90	46	
January	53	85	105	112	130	88	42	

WORLD-WIDE SOURCES OF IONOSPHERIC DATA

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

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

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

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

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

The Royal Netherlands Meteorological Institute:
- De Bilt, Holland

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

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

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

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

South African Council for Scientific and Industrial Research:
- Nairobi, Kenya (East African Meteorological Department)

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

Research Institute of National Defence, Stockholm, Sweden:
- Upsala, Sweden

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

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

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

HOURLY IONOSPHERIC DATA AT WASHINGTON, D. C.

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

IONOSPHERIC STORMINESS AT WASHINGTON, D.C.

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

RADIO PROPAGATION QUALITY FIGURES

Tables 86a and 86b give for **November 1952** 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 00-12 and 12-24 hours UT (Universal Time or GCT). The basis of calculation is summarized below.
(b) whole-day radio quality indices (beginning October 1952). Each index is a weighted average of the two half-daily 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. The forecasts issued just prior to 00^h and 12^h UT are scored against the half-daily quality figures; the results for the intervening forecasts should be similar. 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, Air Force (AACS), 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 Greenwich half day are averaged on the quality scale of the original reports. These half-day 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 converted linearly to the Q-figure scale. Each report is given a statistical weight which is the reciprocal of the departure from linearity. Each half-daily radio propagation quality figure, beginning January 1948, is the weighted mean of the reports received for that period.

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 December 1952, 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 December 1952, derived by the High Altitude Observatory from spectrograms taken by Harvard University as a part of its performance of an Air Materiel Command Research and Development Contract administered by the Air Force Cambridge Research Laboratories. The data are listed separately for east and west limbs at 5-degree intervals of position angle north and south of the Solar Equator at the limb. The time of observation is given to the nearest tenth of a day, GCT.

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

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 December 1952.

Tables 93 and 94 give details of the Climax, Colorado, and Sacramento Peak, New Mexico, observations, respectively, from July 1952 through December 1952. The first column lists the Greenwich date of observation; the following columns give the threshold or lowest observable intensity of 5303A for each spectrum plate centered at the astronomical position angle indicated; the last two columns indicate the observer and the person responsible for the intensity estimates of the observation. These tables continue the presentation of coronal data in the manner of table 1 of CRPL-1-4 and appear in the F series regularly at intervals of six months.

RELATIVE SUNSPOT NUMBERS

Table 95 lists the daily provisional Zurich relative sunspot number, R_Z, as communicated by the Swiss Federal Observatory. Table 96 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 97 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 98 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 99 shows that no sudden ionosphere disturbances were observed during the month of December 1952 at Washington, D. C. Table 100 lists the sudden ionosphere disturbances observed at Platanos, Argentina, November 1952.

ERRATUM

Virtual heights and factors for Narsarssuak, Greenland, for the period June 18, 1951 through November 27, 1952, as published in CRPL-F85 through F101, are in error and should be disregarded. The virtual heights are approximately 15% too high.

TABLES OF IONOSPHERIC DATA

Table 1

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(280)	2.4					2.5	3.0
01	(280)	2.6					2.1	3.0
02	270	2.9						3.0
03	260	2.9					1.9	3.1
04	250	3.2					2.5	3.1
05	240	2.9					2.4	3.1
06	(240)	2.7					2.5	3.2
07	250	3.0					3.2	3.2
08	220	5.0	---	---	120	1.9	2.7	3.5
09	230	5.8	220	---	120	2.3		3.5
10	240	6.2	200	3.6	120	2.5	2.6	3.5
11	250	6.8	210	3.8	110	2.7	2.5	3.4
12	250	7.3	210	3.8	110	2.8	2.7	3.4
13	250	7.0	220	---	110	2.8	1.9	3.4
14	250	6.6	220	---	110	2.6	1.9	3.4
15	240	6.6	220	---	120	2.3	2.6	3.4
16	230	6.6			(120)	1.8	2.3	3.4
17	210	5.4					3.1	3.4
18	230	4.2					2.0	3.2
19	240	3.5					1.2	3.2
20	250	2.7						3.2
21	(260)	2.4						3.0
22	(280)	2.4						3.0
23	(280)	2.4						3.0

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

Table 2

Point Barrow, Alaska (71.3°N, 156.8°W) — November 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(270)	(3.0)					4.4	(3.2)
01	(260)	(2.8)					6.6	(3.1)
02	---	(2.6)					6.6	---
03	(280)	(2.3)					4.8	---
04	---	(2.4)					4.2	---
05	---	---					3.7	---
06	---	---					4.0	---
07	---	---					4.6	---
08	(320)	(3.0)			---	---	4.5	---
09	(290)	(3.2)	---	---	---	---	4.4	(3.1)
10	280	3.4	---	---	---	---	3.0	3.1
11	260	3.8	---	---	100	---	2.7	3.2
12	240	4.2	---	---	---	---	1.8	3.2
13	250	4.5	---	---	---	---	2.2	3.2
14	250	4.7	---	---	100	---		3.2
15	250	4.5	---	---	---	---	1.9	3.2
16	250	3.6	---	---	---	---		3.1
17	260	2.9			---	---		3.0
18	280	2.2					2.8	(3.1)
19	(310)	(2.1)					3.5	(3.0)
20	---	(3.0)					3.8	(3.0)
21	(280)	(2.6)					4.2	(3.0)
22	(280)	(3.1)					5.4	(3.1)
23	---	---					6.4	---

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

Table 3

Tromso, Norway (69.7°N, 19.0°E) — November 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(320)	(2.8)					4.0	---
01	(300)	(2.6)					4.3	(2.9)
02	(325)	(2.9)					3.6	(2.9)
03	(295)	(2.8)					3.4	(2.9)
04	300	2.7					3.0	3.0
05	280	2.6					3.0	3.0
06	270	1.9					2.6	3.1
07	265	2.0			---	---	2.5	3.1
08	255	2.8			---	---	2.7	3.2
09	245	3.8			---	---	2.3	3.4
10	230	4.5			---	1.5	1.8	3.4
11	225	5.0	---	---	---	1.6	1.5	3.4
12	225	5.2	---	---	(150)	1.6	1.4	3.4
13	225	4.8			155	1.5	1.3	3.4
14	225	4.4			---	1.3	1.4	3.4
15	230	3.8			---	1.0	2.6	3.2
16	250	3.3			---	---	2.8	3.2
17	250	2.7					2.7	3.1
18	(275)	(2.5)					3.2	(3.0)
19	(300)	(2.4)					3.7	(3.1)
20	(300)	(2.4)					3.6	(3.0)
21	(320)	(2.3)					3.6	(2.9)
22	---	---					3.0	---
23	---	---					3.0	---

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

Table 4

Fairbanks, Alaska (64.9°N, 147.8°W) — November 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	---					5.6	---
01	---	---					7.0	---
02	(340)	(2.8)					7.0	---
03	---	---					6.2	---
04	---	(2.5)					6.8	---
05	(370)	2.4					6.2	(2.7)
06	(320)	(2.2)					6.6	(2.9)
07	(310)	(2.3)					6.0	---
08	270	(3.0)			---	---	3.0	(3.1)
09	240	4.1			---	---		3.2
10	240	4.6			---	---		3.2
11	240	5.2			---	---		3.2
12	230	5.2			---	---		3.2
13	230	5.6			---	---		3.2
14	230	5.6			---	---		3.2
15	230	4.8						3.2
16	230	(4.2)						3.2
17	240	(3.4)						(3.1)
18	250	(2.8)						(3.1)
19	270	(2.1)						(3.0)
20	(300)	(1.8)					5.6	---
21	(300)	(2.6)					5.5	---
22	(290)	(2.3)					6.6	---
23	---	---					6.2	---

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

Table 5

Narsarssuak, Greenland (61.2°N, 45.4°W) — November 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(370)	(3.4)					6.4	(2.6)
01	(440)	[illegible]					4.6	(2.5)
02	(470)	(3.2)					5.3	(2.4)
03	(430)	(3.4)					4.5	(2.5)
04	(390)	(2.8)					4.0	(2.6)
05	(370)	(2.4)					4.0	(2.6)
06	(370)	(2.2)					4.0	(2.7)
07	360	2.2					3.5	2.7
08	320	3.6			---	---	2.6	2.9
09	300	4.5	---	---	---	---		3.0
10	310	5.1	(280)	---	---	---		3.0
11	300	5.4	280	---	---	---		3.0
12	320	(5.4)	300	---	---	---		2.9
13	310	5.4	300	---	---	---		3.0
14	300	5.2	---	---	---	---		2.9
15	310	(4.8)	---	---	---	---	2.2	(2.8)
16	320	(4.4)					3.4	(2.7)
17	(370)	(4.0)					4.0	(2.6)
18	(390)	(3.4)					4.0	(2.6)
19	(410)	(3.4)					4.1	(2.5)
20	(360)	(3.3)					4.8	(2.6)
21	(360)	(3.4)					4.6	(2.6)
22	(400)	(3.5)					6.8	(2.6)
23	(380)	(3.6)					5.1	---

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

Table 6

Oslo, Norway (60.0°N, 11.1°E) — November 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(310)	1.8					2.9	(2.9)
01	---	---						---
02	---	(1.9)					2.8	(2.9)
03	---	(2.0)					2.1	(3.0)
04	(290)	(1.3)					2.2	(3.0)
05	320	1.6					2.9	3.0
06	300	1.5					2.6	3.0
07	280	1.8			---	---	2.5	3.1
08	230	3.4			---	---	1.9	3.4
09	220	4.6	230	---	---	1.8	3.0	3.5
10	220	5.4	220	---	120	1.9	3.0	3.5
11	220	5.6	220	---	120	2.1	3.0	3.5
12	220	6.0	220	---	120	2.2	3.0	3.6
13	220	6.1	220	---	140	2.1	3.1	3.6
14	220	5.8	230	---	130	2.0	3.0	3.5
15	220	5.4	---	---	---	1.8	3.0	3.5
16	220	4.7			---	---	2.1	3.4
17	220	4.0					1.6	3.3
18	240	3.4						3.2
19	250	2.7						3.2
20	260	2.1						3.2
21	---	1.9						(3.0)
22	---	(1.8)						(3.0)
23	---	(1.7)						(2.8)

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

Table 7

Upsala, Sweden (59.8°N, 17.6°E) November 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	340	1.8						(2.7)
01	350	1.9					2.6	2.7
02	350	1.7					2.4	2.7
03	330	1.8					2.2	2.8
04	310	1.8					2.3	(2.7)
05	350	1.6					2.9	---
06	350	1.5					2.1	---
07	255	2.2						2.9
08	255	3.8	---	---	---	---	2.2	3.3
09	255	5.1	215	---	---	---	2.5	3.4
10	230	5.6	220	(3.0)	115	1.9	2.2	3.4
11	230	5.8	225	(3.2)	110	2.1	2.3	3.3
12	230	6.1	225	(3.2)	120	2.1		3.3
13	230	6.4	225	2.8	125	2.0		3.3
14	225	5.8	---	---	---	1.7	2.2	3.3
15	215	5.0	---	---	---	---	1.8	3.3
16	220	4.4			---	---	1.8	3.3
17	230	3.6						3.1
18	240	3.1						3.0
19	250	2.5						2.9
20	285	1.9						2.9
21	290	1.9						(2.9)
22	320	1.8						---
23	350	1.8						(2.7)

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

Table 8

Adak, Alaska (51.9°N, 176.6°W) November 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.2					2.2	3.0
01	260	3.1					2.1	3.0
02	260	3.0					1.8	3.0
03	270	3.1					2.0	3.0
04	260	3.1					2.1	3.0
05	260	3.1					1.9	3.0
06	240	3.1					2.1	3.2
07	220	3.7	---	---	---	E		3.5
08	220	5.0	220	---	140	2.1	1.9	3.6
09	230	6.2	210	---	110	2.4	2.3	3.5
10	230	6.6	220	---	110	2.5	2.0	3.5
11	230	6.9	210	(3.4)	110	2.5	1.8	3.5
12	220	7.0	210	---	110	2.6		3.6
13	220	6.6	210	---	110	2.5		3.6
14	210	6.6	---	---	110	2.3		3.6
15	210	6.0	---	---	120	2.0	1.9	3.6
16	200	5.0			---	---	2.0	3.6
17	210	3.4					1.3	3.5
18	220	2.8					1.8	3.5
19	230	2.5						3.3
20	230	2.4						3.3
21	240	2.7						3.1
22	250	3.0						3.1
23	260	3.0					2.3	3.0

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

Table 9

Graz, Austria (47.1°N, 15.5°E) November 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.2						
01	290	3.4						
02	290	3.4						
03	290	3.3						
04	260	3.2						
05	250	2.8						
06	230	2.7						
07	210	4.2						
08	200	5.3						
09	200	6.0						
10	205	6.8	200	3.5				
11	225	7.2	200	3.7				
12	220	7.1	200	3.6				
13	220	6.6	200	3.8				
14	220	6.3						
15	200	6.3						
16	200	5.8						
17	220	4.3						
18	250	3.7						
19	250	3.5						
20	240	3.2						
21	275	3.2						
22	290	3.1						
23	300	3.3						

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

Table 10

San Francisco, California (37.4°N, 122.2°W) November 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	(3.0)					2.9	3.1
01	(250)	(3.0)					3.5	(3.1)
02	(260)	(2.9)					2.6	(3.1)
03	(260)	(3.0)					2.7	(3.1)
04	250	(3.2)					2.3	(3.2)
05	(250)	(3.0)					2.5	(3.1)
06	(250)	(3.0)					2.4	(3.2)
07	220	(4.7)			---	---	2.9	(3.4)
08	220	(6.1)	210	---	120	2.3	3.7	(3.5)
09	230	6.8	200	(3.7)	120	2.6	3.8	3.5
10	240	7.0	200	(4.0)	120	2.9	2.7	3.4
11	240	7.4	200	(4.0)	120	3.0	2.6	3.4
12	240	7.8	210	(4.1)	110	3.0	3.2	3.4
13	240	7.3	210	(4.0)	110	3.0	2.6	3.4
14	250	7.3	220	(3.8)	110	2.8	3.0	3.4
15	230	6.8	220	---	120	2.5	3.0	3.4
16	220	6.4	---	---	120	2.0	2.4	3.5
17	210	5.2					3.1	3.5
18	210	3.7					3.0	3.4
19	220	3.0					3.5	3.4
20	(230)	(2.6)					3.6	3.4
21	240	2.6					3.6	3.3
22	(250)	(2.9)					3.8	3.2
23	240	(3.0)					3.4	3.2

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

Table 11

White Sands, New Mexico (32.3°N, 106.5°W) November 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.2					2.8	3.2
01	260	3.2					2.0	3.2
02	250	3.2						3.2
03	250	3.3						3.1
04	250	3.3						3.2
05	250	3.1						3.1
06	250	3.2					2.2	3.2
07	220	5.2	---	---	---	---	2.4	3.5
08	230	6.6	220	---	100	2.3	3.2	3.6
09	240	7.4	210	3.9	100	2.7	3.2	3.5
10	250	7.4	200	4.1	110	2.8	3.2	3.5
11	240	7.9	200	4.1	110	3.0	3.8	3.4
12	250	8.0	200	4.2	110	3.0	3.9	3.4
13	250	7.8	210	4.1	110	3.0	3.2	3.4
14	240	7.5	220	4.0	110	2.9	3.4	3.5
15	230	7.2	220	---	110	2.6	3.4	3.5
16	220	6.4	220	---	110	2.2	3.2	3.6
17	210	5.6					3.0	3.6
18	200	3.7					2.9	3.6
19	220	2.8					3.0	3.4
20	240	2.6					2.8	3.2
21	250	2.8					2.8	3.2
22	<260	3.0					3.2	3.1
23	260	3.1					2.2	3.1

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

Table 12

Baton Rouge, Louisiana (30.5°N, 91.2°W) November 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.3						3.1
01	260	3.2						3.1
02	260	3.2						3.1
03	260	3.3						3.2
04	250	3.3						3.2
05	260	3.1						3.1
06	260	3.1					2.2	3.1
07	230	5.2	---	---	130	1.9	2.2	3.5
08	240	6.8	230	---	120	2.4	5.2	3.5
09	250	7.2	230	---	110	2.7	5.2	3.5
10	250	7.4	220	---	110	3.0	6.0	3.4
11	260	8.0	220	4.3	110	3.0	6.1	3.3
12	260	8.3	220	4.3	110	3.1	5.8	3.3
13	260	8.6	220	4.2	110	3.0	5.5	3.4
14	250	8.1	230	(4.0)	120	2.9	5.2	3.4
15	240	7.6	220	---	120	2.6	4.0	3.4
16	230	7.0	---	---	120	2.1	3.8	3.5
17	220	6.2					3.0	3.5
18	220	4.2					3.8	3.5
19	250	3.0					3.0	3.2
20	260	2.9					3.6	3.3
21	280	2.9					2.1	3.1
22	280	3.2					3.1	3.1
23	280	3.2					2.4	3.1

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

Table 13

Okinawa I. (26.3°N, 127.8°E) — November 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.0					2.1	3.0
01	280	3.2					2.3	3.0
02	270	3.3					2.2	3.1
03	260	[illegible]					2.0	3.2
04	230	2.8					2.3	3.6
05	260	2.3					2.3	3.2
06	270	2.9					1.9	3.1
07	230	5.8	230	---	130	1.9	3.3	3.0
08	250	6.3	230	---	120	2.4	3.5	3.5
09	260	8.0	230	---	120	2.8	4.2	3.4
10	270	8.5	230	---	120	3.0	4.6	3.3
11	280	9.2	220	(4.4)	120	3.1	5.3	3.2
12	270	[illegible]	220	(4.6)	120	3.2	4.9	3.2
13	270	11.0	230	(4.4)	120	3.1	5.0	3.2
14	260	11.4	240	(4.2)	120	3.0	5.0	3.3
15	240	10.2	240	---	120	2.6	4.6	3.5
16	230	8.6	240	---	120	---	4.4	3.6
17	220	6.9					4.0	3.6
18	220	5.6					4.2	3.6
19	240	4.8					3.0	3.1
20	250	4.8					3.0	3.1
21	240	4.5					3.0	3.2
22	250	3.6					2.3	3.0
23	300	3.2					2.3	3.0

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

Table 14

Maui, Hawaii (20.8°N, 156.5°W) — November 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.2						3.1
01	250	3.0					1.5	3.2
02	230	3.0						3.4
03	220	2.7						3.5
04	230	2.0						3.2
05	300	1.8						2.8
06	[illegible]	2.1						2.9
07	[illegible]	4.9			120	1.7	2.1	3.3
08	260	6.8	230	---	110	2.5	3.4	3.2
09	[illegible]	8.4	230	(4.3)	110	2.9	3.8	3.0
10	[illegible]	9.8	220	(4.5)	110	3.1	4.2	3.1
11	[illegible]	10.8	210	4.6	110	3.2	4.0	3.1
12	300	11.6	210	4.6	110	3.2	4.1	3.0
13	280	13.0	220	4.6	110	3.2	4.4	3.1
14	260	12.7	230	4.5	110	(3.1)	4.6	3.2
15	250	12.5	230	(4.3)	110	2.8	4.5	3.3
16	230	10.5	230	(3.7)	110	2.6	4.3	3.5
17	[illegible]	7.4			120	2.0	4.0	3.6
18	[illegible]	5.0					3.7	3.6
19	[illegible]	3.4					3.2	3.5
20	[illegible]	3.2					2.4	2.8
21	[illegible]	3.6					2.0	3.1
22	[illegible]	3.5					1.8	3.1
23	260	3.4						3.1

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

Table 15

Puerto Rico, W.I. (18.5°N, 67.2°W) — November 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	4.1						3.0
01	250	4.4						3.2
02	240	4.5						3.4
03	220	4.2					2.0	3.6
04	220	3.4					2.4	3.4
05	240	2.8					2.2	3.1
06	270	2.7			(100)	---	2.4	3.0
07	230	4.9			100	---		3.5
08	240	6.1	230	---	110	2.4		3.5
09	250	6.8	230	---	110	2.8		3.4
10	270	7.8	230	4.4	100	3.1		3.4
11	260	7.9	230	4.5	110	3.3		3.4
12	280	8.0	230	4.5	110	3.3		3.3
13	270	8.5	220	4.5	110	3.3		3.3
14	260	8.8	220	4.4	110	3.2	4.6	3.4
15	260	8.6	220	4.2	110	3.0		3.4
16	240	7.8	220	---	110	2.6	3.8	3.5
17	220	7.0	230	---	110	2.0	4.2	3.5
18	210	5.6			(100)	---	3.6	3.5
19	220	4.0					2.9	3.4
20	230	3.4					2.8	3.2
21	270	3.4					2.2	3.0
22	280	3.7						3.0
23	270	3.8						3.0

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

Table 16

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	4.9						3.3
01	260	4.5						3.2
02	[illegible]	4.7						3.4
03	230	3.3						3.5
04	240	3.0						3.3
05	260	2.7						3.2
06	270	2.7					1.3	3.1
07	240	6.1			120	2.0	2.7	3.5
08	260	7.9	230	---	110	2.6	3.5	3.5
09	270	9.6	220	(4.4)	110	2.9	4.2	3.2
10	280	9.9	210	4.4	110	3.2	4.6	3.0
11	300	9.7	200	4.5	110	3.3	4.8	2.6
12	310	9.6	200	4.5	110	3.3	4.6	2.6
13	300	9.7	200	4.5	110	3.3	4.7	2.8
14	300	10.2	200	4.5	110	3.2	5.0	2.8
15	280	10.6	220	---	110	3.0	5.8	3.0
16	270	11.0	230	---	110	(2.6)	5.4	3.2
17	240	11.0	240	---	---	---	5.4	3.3
18	230	10.4					4.5	3.3
19	230	9.6					2.8	3.3
20	220	8.6					3.8	3.2
21	220	7.8					3.8	3.2
22	230	6.8					2.6	3.3
23	230	5.6					2.1	3.3

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

Table 17

Panama Canal Zone (9.4°N, 79.9°W) — November 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.4					2.4	3.0
01	240	3.3					2.9	3.3
02	220	2.9					3.0	3.4
03	230	2.1					3.0	3.3
04	270	2.0					4.2	2.7
05	300	2.2					3.9	2.7
06	280	3.0					3.4	2.9
07	240	5.8	---	---	120	2.1	4.2	3.2
08	270	7.1	240	---	120	2.6	4.6	3.1
09	300	8.4	240	4.5	110	3.0	4.8	3.0
10	300	8.8	230	4.6	110	3.3	5.0	3.0
11	310	9.6	230	4.7	110	3.4	5.3	2.9
12	290	10.3	220	4.7	110	3.5	5.0	3.0
13	290	9.9	230	4.6	110	3.4	5.3	3.0
14	290	9.9	<220	4.5	110	3.3	5.2	3.0
15	280	9.6	230	4.4	110	3.0	5.3	3.0
16	270	9.2	220	---	110	2.6	5.6	3.1
17	240	8.3	---	---	---	---	5.0	3.3
18	230	6.4					4.8	3.2
19	240	4.6					4.5	3.2
20	240	3.5					4.0	3.2
21	260	2.9					3.0	2.9
22	280	3.0					2.3	2.9
23	270	3.2					3.2	3.0

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

Table 18

Huancayo, Peru (12.0°S, 75.3°W) — November 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	(6.6)						(3.2)
01	270	(5.8)					3.6	(3.2)
02	260	(4.4)						(3.2)
03	260	4.0						3.2
04	260	3.6						3.3
05	260	3.0						3.3
06	240	5.7			120	1.8	4.6	3.4
07	(270)	7.7	220	---	110	2.5	6.1	3.3
08	290	8.7	210	4.2	110	---	11.1	3.1
09	310	9.3	200	4.4	110	---	11.6	2.8
10	330	9.4	190	4.5	100	---	12.4	2.6
11	330	9.2	190	4.5	100	---	12.4	2.6
12	330	9.2	190	4.5	100	---	12.4	2.6
13	330	9.2	190	4.4	100	---	11.6	2.6
14	320	9.4	190	4.4	100	3.3	11.4	2.6
15	(300)	10.1	200	4.2	110	---	10.8	2.6
16	(270)	9.8	200	---	110	---	9.4	2.6
17	230	9.0			110	---	6.6	2.6
18	260	9.0			---	---		2.7
19	270	8.4						2.7
20	260	8.8						2.6
21	280	8.1						2.8
22	300	7.0						2.9
23	300	(6.7)						(3.0)

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

Table 19

Point Barrow, Alaska (71.3°N, 156.8°W) — October 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(260)	(3.0)					5.6	(3.0)
01	300	(3.1)					6.8	(2.9)
02	300	(2.5)					5.6	(3.0)
03	(300)	(2.8)					4.5	---
04	(310)	(2.8)					3.8	---
05	(300)	(3.1)					4.9	---
06	---	(3.1)					4.1	---
07	---	(3.2)					4.8	---
08	(320)	(3.6)					4.4	(3.0)
09	(300)	3.7	---	---	---	---	4.7	3.1
10	270	4.2	---	---	100	---	3.7	3.2
11	280	4.3	---	---	(110)	---	3.6	3.2
12	270	4.3	---	---	100	(2.0)	2.5	3.2
13	290	4.4	250	(3.2)	100	2.1		3.1
14	290	4.5	270	---	110	2.3		3.1
15	280	4.6	---	---	110	2.0		3.1
16	260	4.4	---	---	---	---		3.1
17	270	4.0					2.9	3.1
18	270	3.3					2.9	3.1
19	280	(2.6)					4.0	(3.1)
20	(290)	(2.4)					4.2	(3.0)
21	(300)	(3.2)					4.6	---
22	(330)	---					5.0	---
23	(290)	---					4.9	---

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

Table 20

Kiruna, Sweden (67.8°N, 20.5°E) — October 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(335)	(2.1)					3.7	(2.9)
01	(310)	(2.6)					3.7	(2.9)
02	(310)	(3.0)					3.5	(2.8)
03	(305)	(2.6)					2.7	(2.7)
04	(305)	2.2					2.7	(2.9)
05	275	2.2					2.0	2.9
06	260	2.7						3.0
07	250	3.5			---	---		3.2
08	245	4.0	---	---	---	---		3.3
09	250	4.3	235	3.1	110	1.8		3.4
10	250	5.1	230	3.2	110	2.0		3.3
11	240	5.3	230	3.1	110	2.0		3.3
12	245	5.2	220	3.1	110	2.0		3.3
13	240	5.1	220	3.0	120	1.9		3.3
14	240	4.9	220	2.8	---	1.8		3.3
15	240	4.3	---	---	---	---		3.4
16	230	4.2	---	---	---	---		3.3
17	235	4.1					2.1	3.3
18	250	3.8					2.9	3.2
19	255	(3.0)					3.8	(3.1)
20	(275)	(3.0)					3.6	(2.9)
21	(295)	(2.8)					3.9	(3.0)
22	---	(2.6)					3.9	(2.8)
23	---	(2.3)					3.8	(2.8)

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

Table 21

Narsarssuak, Greenland (61.2°N, 45.4°W) — October 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(460)	(3.0)					5.6	(2.4)
01	(430)	(3.3)					5.0	---
02	---	---					4.6	---
03	(440)	(3.3)					5.0	(2.5)
04	(370)	(3.0)					4.9	(2.6)
05	(440)	(2.8)					4.2	(2.6)
06	(390)	(2.3)			---	---	3.7	(2.6)
07	320	3.6	---	---	---	---	3.0	2.8
08	300	4.4	---	---	(150)	1.9		2.9
09	360	4.8	290	3.4	(140)	(2.1)		2.8
10	340	5.2	300	3.6	(140)	---		2.8
11	360	5.2	300	3.6	(140)	---		2.8
12	380	5.4	290	3.7	(140)	(2.6)		2.8
13	360	5.4	300	3.7	(140)	---		2.7
14	370	5.4	300	3.6	150	(2.3)		2.7
15	350	(5.4)	320	(3.4)	---	---	2.3	(2.7)
16	340	(4.4)	---	---	---	---	2.2	(2.7)
17	380	(3.9)					4.0	(2.7)
18	(420)	(3.5)					4.7	(2.5)
19	420	(3.5)					5.0	(2.5)
20	(380)	(3.5)					7.1	(2.6)
21	(410)	(3.2)					6.6	(2.6)
22	(420)	(3.3)					6.1	(2.6)
23	(460)	(3.2)					6.7	---

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

Table 22

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	2.8						3.0
01	290	2.8						2.9
02	285	2.6						3.0
03	285	2.5						3.0
04	260	2.2						3.1
05	< 270	2.0						3.1
06	230	3.2			---	E		3.3
07	215	4.7	220	---	120	1.9		3.6
08	220	5.4	210	3.5	105	2.2	1.7	3.6
09	240	6.0	200	3.8	105	2.5	3.6	3.5
10	250	6.5	200	4.0	105	2.6	3.6	3.5
11	250	6.6	200	4.0	105	2.7	3.5	3.6
12	250	6.3	200	4.0	105	2.9	3.8	3.5
13	250	6.8	200	4.0	105	2.7	2.8	3.5
14	245	6.4	210	3.7	110	2.5	2.8	3.5
15	230	6.1	230	---	110	2.1		3.5
16	210	5.9	225	---	---	1.7		3.5
17	220	5.5			---	E	1.9	3.4
18	220	5.4						3.3
19	215	4.9						3.4
20	225	3.7						3.2
21	270	3.2						3.0
22	280	2.9						3.0
23	285	3.0						3.0

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

Table 23

Schwarzenburg, Switzerland (46.8°N, 7.3°E) — October 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.0						3.1
01	300	3.2						3.1
02	300	3.2						3.1
03	300	3.2						3.1
04	300	3.1						3.1
05	260	3.0						3.4
06	275	2.6						3.4
07	230	4.0						3.6
08	225	5.2	---	---	100	2.1		3.8
09	230	5.8	200	3.5	100	2.4		3.8
10	240	6.2	200	4.0	100	2.6	4.1	3.6
11	260	6.6	200	4.0	100	2.8	4.2	3.5
12	250	7.0	200	4.0	100	2.8	4.2	3.6
13	245	6.8	200	4.0	100	2.8		3.5
14	250	6.8	210	4.0	100	2.7		3.5
15	250	6.8	---	---	100	2.6		3.6
16	240	6.4	---	---	100	2.4		3.6
17	230	6.2			---	2.1		3.6
18	220	6.2						3.6
19	230	5.5						3.5
20	230	4.5						3.5
21	270	3.6						3.3
22	300	3.3						3.2
23	300	3.2						3.1

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

Table 24

Baton Rouge, Louisiana (30.5°N, 91.2°W) — October 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.3						2.9
01	290	3.3					2.3	3.0
02	280	3.6						3.0
03	270	3.6					2.4	3.0
04	270	3.2					2.0	3.0
05	290	3.0					2.4	3.0
06	270	3.8					2.5	3.1
07	260	5.6	250	---	130	2.0	3.0	3.4
08	270	6.3	240	---	120	2.5	5.2	3.3
09	280	6.6	230	4.1	120	2.8	6.0	3.3
10	300	6.9	220	4.3	120	3.0	6.3	3.1
11	300	7.6	210	4.4	110	3.1	6.0	3.1
12	300	7.6	220	4.4	110	3.1		3.0
13	300	8.2	240	4.4	120	3.1	3.8	3.1
14	300	8.4	240	4.3	120	3.0	4.0	3.1
15	280	8.2	240	4.1	120	2.8	4.2	3.2
16	260	8.0	250	---	120	2.4	3.8	3.3
17	240	7.0			130	(2.0)	3.7	3.4
18	230	5.8					3.4	3.4
19	240	3.9					2.4	3.3
20	290	3.2						3.0
21	300	3.2						2.9
22	300	3.3						2.9
23	290	3.4						3.0

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

Table 25

Okinawa I. (26.3°N, 127.8°E) October 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	4.0					2.1	3.0
01	260	4.0					2.4	3.2
02	250	3.6					1.9	3.1
03	250	3.5					2.0	3.3
04	230	3.0					1.6	3.4
05	270	2.4					2.1	3.1
06	250	4.2			140	---	2.0	3.3
07	230	6.6	240	---	120	2.2	3.0	3.6
08	250	7.5	230	---	120	2.6	4.0	3.5
09	280	8.1	220	---	120	3.0	4.7	3.2
10	290	9.6	210	---	120	3.1	4.3	3.2
11	290	10.5	210	4.8	120	3.2	4.9	3.1
12	300	11.7	210	---	120	3.3	5.0	3.0
13	290	13.0	210	---	120	3.2	5.0	3.2
14	280	13.6	230	---	120	3.1	4.4	3.2
15	260	13.1	240	---	120	2.8	4.5	3.3
16	240	11.8	240	---	120	2.4	3.6	3.3
17	230	10.3	---	---	130	(1.8)	3.9	3.5
18	220	8.2					3.8	3.5
19	230	6.1					3.1	3.2
20	260	>5.4					3.1	3.1
21	260	4.8					3.1	3.1
22	280	4.2					2.4	3.0
23	300	3.9					3.0	2.9

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

Table 26

Panama Canal Zone (9.4°N, 79.9°W) October 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.6					3.0	2.9
01	240	3.6					3.2	3.2
02	230	2.9					3.2	3.2
03	250	2.4					4.0	2.8
04	290	2.3					4.1	2.7
05	290	2.6					4.1	2.7
06	290	3.2					3.8	2.8
07	270	5.8	260	---	120	2.1	4.2	3.1
08	300	7.0	250	(4.4)	120	2.7	4.4	2.9
09	320	8.4	240	4.6	120	3.1	4.6	2.8
10	320	9.6	230	4.7	120	3.3	5.1	2.9
11	330	10.4	230	4.8	120	3.5	4.6	2.8
12	320	11.2	230	4.7	120	3.5	5.0	2.8
13	330	11.6	240	4.8	120	3.5	5.7	2.8
14	310	11.8	240	4.6	120	3.3	5.2	2.9
15	300	11.8	240	(4.5)	120	3.1	5.1	3.0
16	280	11.5	240	---	120	2.8	4.8	3.0
17	250	11.0	240	---	(120)	2.2	4.3	3.1
18	230	8.6					4.3	3.1
19	240	6.5					4.3	2.9
20	260	5.6					3.0	2.9
21	250	4.2					2.4	2.9
22	280	3.6					2.9	2.7
23	290	3.7					2.2	2.8

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

Table 27

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.6					2.1	3.0
01	260	3.8					2.4	3.0
02	240	3.5					2.4	3.2
03	240	3.4					2.1	3.1
04	250	3.1					2.1	3.0
05	260	3.0					2.0	3.0
06	250	4.2	---	---		1.7	1.9	3.4
07	260	4.9	230	3.6		2.3	2.4	3.4
08	300	5.6	220	4.2		2.8	3.4	3.4
09	305	5.7	210	4.3		3.0	3.6	3.2
10	325	6.2	200	4.4		3.2	3.7	3.1
11	320	6.5	200	4.4		3.2	3.7	3.0
12	310	7.2	200	4.4		3.3	3.7	3.0
13	300	7.4	200	4.4		3.3	3.8	3.1
14	300	7.0	210	4.4		3.2	3.6	3.2
15	290	6.6	220	4.2		3.1	3.5	3.2
16	280	6.2	220	4.1		2.8	3.7	3.2
17	260	5.9	230	3.5		2.4	3.3	3.3
18	245	5.8	---	---		1.8	1.9	3.4
19	240	4.6						3.2
20	240	4.3						3.1
21	250	4.0					1.6	3.0
22	260	3.8					2.1	3.0
23	260	3.9					2.1	2.9

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

Table 28

Resolute Bay, Canada (74.7°N, 94.9°W) September 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	3.4						3.0
01	270	3.4						3.0
02	270	3.4						3.0
03	280	3.5						3.0
04	280	3.5					3.5	3.0
05	270	3.4						3.0
06	260	3.5	---	---	---	---		3.0
07	270	3.8	240	3.4	110	2.3		3.0
08	300	4.0	240	3.2	100	2.4		3.0
09	350	4.1	240	3.4	110	2.4		3.0
10	360	4.3	230	3.4	100	2.4		2.9
11	400	4.4	230	3.5	100	2.6		2.8
12	360	4.5	220	3.5	100	2.5		3.0
13	400	4.5	230	3.5	110	2.4		2.8
14	360	4.4	230	3.4	110	2.4		2.8
15	320	4.5	230	3.4	110	2.3		3.0
16	310	4.3	240	3.3	110	2.3		3.0
17	270	4.2	240	3.0	120	2.1		3.0
18	260	4.0	250	---	---	---		3.0
19	260	4.0	---	---				3.0
20	260	4.1	---	---				3.0
21	260	3.9						3.0
22	250	4.0						3.0
23	270	3.5						3.0

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

Table 29

Point Barrow, Alaska (71.3°N, 156.8°W) September 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	(3.2)					4.8	(3.0)
01	(270)	(3.0)					6.7	---
02	(280)	---					4.8	---
03	300	(3.2)					>5.4	(2.9)
04	320	(3.3)					3.7	(2.9)
05	300	(3.3)			---	---	3.8	(2.9)
06	(330)	(3.4)	---	---	---	---	>4.0	(3.0)
07	---	(3.6)	---	---	---	---	4.4	---
08	(380)	3.8	---	---	---	---	4.3	(2.9)
09	(340)	(4.0)	230	3.4	---	---	4.2	(3.0)
10	380	4.0	240	3.5	100	2.3	3.7	2.9
11	(400)	4.0	240	3.6	110	2.4	2.8	3.0
12	380	4.1	230	3.6	110	2.4		2.9
13	380	4.1	230	3.6	100	2.4		2.8
14	(350)	4.2	240	(3.5)	110	2.3		3.0
15	320	4.4	250	3.4	110	2.3		3.0
16	320	4.4	250	(3.3)	120	2.1		3.1
17	280	4.2	240	(3.3)	120	(2.0)		3.1
18	270	4.0	---	---	---	---		3.1
19	280	3.3	---	---	110	---	3.8	3.1
20	300	(3.4)			---	---	5.6	(3.1)
21	(350)	(2.4)					4.8	---
22	---	---					7.0	---
23	---	---					6.0	---

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

Table 30

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	---					5.2	---
01	---	---					5.0	---
02	---	---					5.1	---
03	---	(2.6)					5.4	(2.9)
04	---	(2.3)					5.8	(2.9)
05	(280)	(2.4)					4.1	(3.0)
06	(250)	(2.8)			---	---	2.6	(3.3)
07	(240)	3.6	210	---	100	---		3.3
08	(240)	4.2	210	---	100	2.0		3.4
09	280	4.4	200	3.6	100	(2.2)		3.3
10	300	4.5	200	3.7	100	2.4		3.3
11	310	4.8	200	3.7	100	(2.6)		3.2
12	320	4.7	200	3.8	100	2.6		3.2
13	320	4.6	210	3.8	100	2.7		3.0
14	300	4.8	210	3.7	100	2.6		3.0
15	300	4.7	200	3.6	100	2.4		3.2
16	280	4.7	220	3.4	100	2.2		3.2
17	280	4.3	230	---	100	1.9	2.5	3.2
18	270	4.1	---	---	110	---	4.0	3.2
19	270	(3.9)			---	---	4.0	(3.2)
20	(240)	(4.4)			---	---	4.3	(3.2)
21	(270)	---					5.5	---
22	---	---					4.7	---
23	---	---					5.1	---

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

Table 31

Churchill, Canada (58.8°N, 94.2°W) September 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	2[illegible]0	3.0					6.0	3.0
01	300	2.7					6.4	---
02	3[illegible]0	2.8			---	---	6.0	(3.0)
03	300	3.0			---	---	5.5	(2.9)
04	300	3.0			---	(2.2)	4.9	---
05	310	2.8	---	---	1[illegible]	3.0	3.7	---
06	320	<3.2	---	---	110	2.9	4.2	3.0
07	3[illegible]0	3.8	---	---	110	3.0	4.7	(3.2)
08	300	4.0	250	3.5	100	3.0	4.2	2.9
09	400	4.2	220	3.8	100	2.9		2.3
10	400	4.5	220	4.0	100	2.9		2.3
11	390	4.8	220	4.0	100	2.9		3.0
12	420	4.9	210	4.0	100	3.0		2.9
13	400	4.8	220	4.0	100	3.0		2.8
14	380	5.0	220	4.0	100	2.9		2.9
15	340	5.0	230	3.9	100	2.9		2.9
16	320	5.2	230	3.6	100	2.9		2.9
17	300	5.0	250	3.4	110	2.7		3.0
18	300	4.6	---	---	110	2.6	3.6	2.9
19	300	4.0	---	---	110	2.8	4.2	3.0
20	300	3.7			110	2.6	5.1	(2.9)
21	300	3.0			---	---	7.0	(3.0)
22	300	3.0			---	---	7.0	(2.9)
23	290	3.0			---	---	7.0	(2.9)

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

Table 32

Fort Chimo, Canada (58.1°N, 68.3°W) September 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	30[illegible]	2.9			100	2.4	4.5	(2.7)
01	32[illegible]	2.[illegible]			110	2.3	4.3	(2.8)
02	3[illegible]	2.6			110	2.2	4.0	---
03	(3[illegible])	2.[illegible]			110	2.8	4.1	(2.7)
04	([illegible])	<3.[illegible]			110	2.7	5.0	---
05	3[illegible]	<3.[illegible]			110	3.0	4.0	(3.0)
06	[illegible]	[illegible]	---	---	110	3.0	3.4	2.9
07	[illegible]	[illegible]	260	3.6	110	3.0		2.8
08	[illegible]	[illegible]	270	3.8	110	2.9		2.9
09	[illegible]	4.1	240	3.8	110	2.9		2.4
10	[illegible]	4.0	230	3.9	100	3.0		2.8
11	[illegible]	[illegible]	230	4.0	110	3.0		2.6
12	[illegible]	[illegible]	230	4.0	110	3.0		2.6
13	[illegible]	5.0	240	3.9	110	3.0		2.7
14	[illegible]	[illegible]	260	3.9	110	2.9		2.6
15	3[illegible]	4.8	280	3.7	110	2.8		2.6
16	3[illegible]	4.5	300	3.4	110	2.7		2.8
17	3[illegible]	4.2			120	2.8		2.8
18	3[illegible]	4.0			120	2.9	5.6	2.8
19	3[illegible]	3.5			110	2.4	5.2	2.7
20	3[illegible]	3.8			120	2.7	5.8	2.7
21	3[illegible]	3.3			---	---	5.0	2.8
22	3[illegible]	3.2			---	---	5.5	2.8
23	30[illegible]	3.0			100	2.8	5.0	2.7

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

Table 33

Prince Rupert, Canada (54.3°N, 130.3°W) September 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	2.0						2.8
01	310	1.7			---	---		2.7
02	350	1.6			---	---		2.7
03	340	1.9			---	---		2.7
04	320	2.0			---	---		2.7
05	360	2.0			---	---		2.6
06	300	2.3			---	---	1.8	2.8
07	260	3.2	---	---	110	1.9		2.9
08	340	3.7	220	3.4	110	2.2		2.8
09	420	4.1	210	3.7	100	2.5		2.8
10	420	4.4	200	3.9	100	2.8		2.7
11	400	4.7	200	4.0	100	2.9		2.7
12	400	4.8	200	4.0	100	3.0		2.7
13	400	4.8	200	4.0	100	2.9		2.7
14	400	4.9	210	4.0	100	2.9		2.8
15	360	4.7	210	4.0	100	2.8		2.8
16	320	4.6	210	3.8	100	2.6		2.9
17	300	4.8	240	3.6	110	2.4		2.9
18	250	4.5	250	---	120	2.0		3.0
19	250	4.3			---	1.6		3.0
20	240	3.6			---	---		3.0
21	260	2.8			---	---		2.9
22	280	2.3						2.9
23	300	2.1						2.8

Time: 120.0°W.
Sweep: 0.6 Mc to 20.0 Mc in 15 seconds.

Table 34

Winnipeg, Canada (49.9°N, 97.4°W) September 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	330	2.5					3.8	2.8
01	3[illegible]	2.7					3.8	2.6
02	3[illegible]	2.[illegible]					4.0	2.7
03	37[illegible]	2.7					4.0	2.7
04	3[illegible]	2.6			---	---	3.4	2.8
05	320	2.8			---	---	3.2	2.7
06	29[illegible]	2.8	---	---	---	---	2.4	3.0
07	240	3.6	240	---	120	2.0	2.6	3.1
08	320	4.1	220	3.6	110	2.3		3.0
09	4[illegible]	4.6	220	3.9	110	2.6		2.8
10	390	4.8	210	4.0	110	2.9		2.9
11	3[illegible]	5.0	200	4.1	110	3.0		2.8
12	380	5.1	200	4.2	110	3.0		2.8
13	360	5.0	210	4.2	110	3.1		3.0
14	360	5.0	210	4.1	110	3.0		2.9
15	350	5.2	210	4.0	110	2.9		3.0
16	33[illegible]	5.0	220	3.8	110	2.6		3.0
17	3[illegible]0	5.0	230	3.5	110	2.3		3.0
18	280	5.0	240	---	120	2.0		3.1
19	240	4.7	---	---				3.0
20	250	4.2						3.0
21	2[illegible]	3.3						3.0
22	3[illegible]	3.0						2.9
23	300	2.7						2.8

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

Table 35

St. John's, Newfoundland (47.6°N, 52.7°W) September 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	2.6						2.8
01	300	2.5					2.4	2.8
02	310	2.3						2.9
03	300	2.2					2.5	2.8
04	(300)	2.0			---	E		2.8
05	280	2.5			---	E		3.1
06	270	3.7	230	---	120	1.9		3.2
07	310	4.3	230	3.5	110	2.4		3.2
08	350	4.6	220	3.9	110	2.7		3.0
09	330	4.8	200	4.0	110	2.9		3.1
10	340	5.0	200	4.1	110	3.1		3.2
11	360	5.2	200	4.2	110	3.2		3.0
12	340	5.6	210	4.2	110	3.2		3.0
13	330	5.6	200	4.2	110	3.1		3.2
14	320	5.6	210	4.1	110	2.9		3.1
15	320	5.7	230	4.0	110	2.6		3.1
16	300	5.7	240	3.6	120	2.3		3.1
17	270	5.8	240	3.0	130	E		3.1
18	250	6.0			---	E		3.1
19	240	5.7			---	E		3.1
20	240	4.2						3.0
21	280	3.2						2.9
22	300	2.9						2.9
23	300	2.7						2.8

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

Table 36

Ottawa, Canada (45.4°N, 75.7°W) September 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.6						2.9
01	320	2.4						2.9
02	(320)	2.2						(2.9)
03	(310)	(2.3)						(3.0)
04	(310)	(2.3)						(3.0)
05	(300)	(2.2)						(3.0)
06	260	3.2			120	1.8		3.3
07	260	4.1	240	3.5	120	2.2		3.2
08	320	4.4	230	3.8	120	2.7		3.0
09	360	4.8	220	4.0	120	2.9		3.0
10	350	5.1	220	4.1	120	3.0		3.0
11	3[illegible]0	5.3	210	4.2	120	3.2		3.1
12	3[illegible]	5.[illegible]	220	4.3	120	3.2		3.0
13	3[illegible]0	5.8	220	4.2	120	3.2		3.1
14	340	5.8	230	4.2	120	3.1		3.1
15	330	5.6	230	4.0	120	2.8		3.1
16	3[illegible]	5.7	240	3.9	120	2.6		3.1
17	2[illegible]0	5.8	240	3.4	120	2.1		3.1
18	2[illegible]	6.0	---	---	---	---		3.1
19	2[illegible]0	5.7						3.1
20	2[illegible]0	4.6						3.1
21	250	3.9						3.1
22	280	3.0						3.0
23	310	2.8						2.9

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

Table 37

Wakkanai, Japan (45.4°N, 141.7°E) September 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	4.0					1.6	2.6
01	300	3.9					1.6	2.6
02	320	3.8					2.1	2.6
03	310	3.6					2.4	2.7
04	300	3.6					2.3	2.7
05	300	3.8					3.0	2.8
06	290	5.0	---	---	120	1.8		3.0
07	300	5.4	280	3.7	120	2.3	2.8	3.0
08	300	5.8	270	3.9	120	2.6	3.2	3.0
09	300	6.2	260	4.0	120	2.9	3.8	3.0
10	300	6.1	260	4.1	120	3.0	3.8	3.0
11	330	6.0	260	4.2	120	3.0		3.0
12	320	6.1	260	4.2	120	3.0		2.9
13	340	6.0	260	4.2	120	3.0		2.9
14	330	6.0	270	4.0	120	2.9		2.8
15	320	5.9	270	3.9	120	2.8		2.9
16	300	5.9	290	3.7	120	2.3	3.0	3.0
17	300	6.2	290	---	120	1.8	3.0	3.0
18	290	6.2					3.0	2.9
19	290	6.0					3.0	2.8
20	300	5.5					3.0	2.8
21	300	5.2					2.7	2.7
22	300	4.7					2.5	2.7
23	300	4.2					2.6	2.7

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

Table 38

Akita, Japan (39.7°N, 140.1°E) September 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	4.2					2.6	2.9
01	280	4.1					2.5	2.9
02	290	3.8					2.4	2.9
03	280	3.8					2.2	3.0
04	270	3.8					2.4	3.0
05	260	3.8					2.4	3.0
06	250	5.4	240	3.0	120	1.9	2.8	3.3
07	250	6.6	230	3.8	110	2.5	3.4	3.4
08	260	6.9	220	4.1	110	2.8	4.1	3.3
09	280	6.8	220	4.4	110	3.0	4.3	3.3
10	290	6.8	220	4.5	110	3.2	3.8	3.2
11	290	6.6	220	4.5	110	3.2	4.2	3.2
12	300	6.6	220	4.6	110	3.2	4.4	3.1
13	300	6.8	220	4.6	110	3.0	4.0	3.2
14	300	6.6	220	4.4	110	3.0	4.0	3.2
15	290	6.6	230	4.1	110	2.9	3.8	3.2
16	270	6.7	240	4.0	110	2.6	3.6	3.2
17	260	6.9	240	3.6	110	2.1	3.6	3.2
18	240	6.7	---	---			3.6	3.2
19	230	6.2					3.5	3.2
20	240	5.4					3.4	3.2
21	270	4.8					3.0	3.0
22	280	4.6					3.2	2.9
23	280	4.4					3.0	3.0

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

Table 39

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	4.2					3.0	2.8
01	280	4.0					2.9	2.9
02	280	3.8					2.6	2.8
03	260	4.0					2.5	2.9
04	250	3.7					2.5	2.9
05	260	3.6			---	---	2.5	2.9
06	240	5.5	---	---	130	1.8	2.9	3.3
07	250	6.7	240	3.8	120	2.3	3.8	3.4
08	250	6.8	230	4.1	110	2.7	3.9	3.4
09	260	6.7	220	4.4	110	3.0	4.2	3.3
10	290	6.6	210	4.5	110	3.1	4.3	3.2
11	300	7.0	210	4.6	110	3.2	4.5	3.1
12	300	6.9	210	4.7	110	3.2	4.1	3.1
13	300	7.2	220	4.6	110	3.2	4.2	3.1
14	300	7.0	230	4.4	110	3.1	4.1	3.1
15	290	7.1	240	4.3	110	2.9	4.2	3.1
16	280	7.0	240	3.8	110	2.6	4.2	3.2
17	260	7.6	250	---	120	2.0	4.2	3.2
18	250	7.2			---	---	3.9	3.2
19	240	6.6					3.4	3.1
20	250	4.8					3.5	3.0
21	300	4.4					3.7	2.8
22	290	4.5					3.0	2.8
23	280	4.5					2.8	2.9

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

Table 40

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	4.1					2.7	2.9
01	260	3.9					2.4	3.0
02	260	3.8					2.4	3.0
03	250	3.7					2.3	3.2
04	250	3.4					2.1	3.2
05	250	3.2					2.0	3.1
06	250	4.0	250	---	---	---	2.5	3.3
07	230	6.0	230	---	110	2.0	3.4	3.6
08	230	6.4	220	4.0	100	2.6	3.8	3.7
09	250	6.7	210	4.3	100	2.9	4.5	3.4
10	270	6.4	200	4.5	100	3.1	3.8	3.3
11	290	7.1	200	4.6	100	3.2	3.8	3.1
12	300	8.0	210	4.7	100	3.3	3.8	3.1
13	300	8.4	220	4.6	100	3.3	3.7	3.2
14	290	8.4	220	4.6	100	3.2	3.8	3.2
15	280	8.2	220	4.5	100	3.0	3.6	3.2
16	270	8.0	230	4.1	100	2.7	3.8	3.3
17	250	8.6	240	3.7	100	2.3	3.8	3.3
18	220	8.8	220	---	---	---	3.6	3.4
19	210	7.3					3.5	(3.0)
20	220	4.8					3.0	3.4
21	250	4.0					3.0	2.9
22	290	4.0					2.7	2.9
23	290	4.2					2.5	3.0

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

Table 41

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	5.1					3.0	2.7
01	290	4.8					3.0	3.0
02	270	4.6					2.6	3.1
03	240	4.2					2.5	3.2
04	240	3.3					2.2	2.9
05	<260	3.2					2.3	3.0
06	250	5.0			(120)	(1.6)	2.5	3.2
07	240	7.0	---	---	120	2.2	3.8	3.5
08	255	7.1	235	4.3	(120)	2.7	4.5	3.3
09	280	7.6	240	4.6	(120)	(3.1)	4.7	3.2
10	315	8.1	240	4.7	(120)	---	4.9	3.0
11	330	10.4	220	4.8	(120)	---	4.6	2.9
12	320	11.0	225	4.8	(120)	---	4.2	3.0
13	335	12.5	235	4.7	(120)	---	4.4	3.0
14	330	12.9	240	4.6	(120)	3.3	4.3	3.0
15	320	13.5	240	4.4	(120)	3.1	4.1	3.1
16	300	14.5	240	4.2	(120)	2.9	3.9	3.2
17	260	13.2	240	---	(120)	2.4	4.3	3.4
18	240	10.9			(120)	---	3.7	3.3
19	220	9.2					3.6	3.4
20	240	6.9					3.6	3.0
21	290	6.0					3.7	2.8
22	300	5.8					3.2	2.7
23	320	5.4					3.0	2.7

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

Table 42

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	3.4						3.1
01	250	3.4						3.1
02	240	3.5					1.8	3.2
03	230	3.3					2.1	3.2
04	245	3.2						3.0
05	250	3.2						3.0
06	250	3.2				---		3.1
07	250	4.5	240	3.0		2.0		3.4
08	280	5.6	230	4.0		2.5		3.4
09	280	6.2	220	4.4		2.9	2.1	3.3
10	280	6.5	200	4.5		3.2	3.2	3.2
11	290	6.8	200	4.5		3.2	3.4	3.2
12	290	7.0	200	4.5		3.3	3.4	3.2
13	290	7.2	200	4.5		3.3	3.6	3.2
14	290	7.2	210	4.5		3.2	3.4	3.2
15	280	6.7	210	4.4		3.0	3.2	3.3
16	270	6.5	220	4.0		2.8	3.5	3.3
17	250	6.1	230	3.4		2.3	1.8	3.4
18	230	5.4	---	---		---		3.4
19	230	4.7						3.3
20	240	4.2						3.3
21	250	3.5						3.2
22	250	3.5						3.1
23	260	3.4						3.1

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

Table 43

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

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2**
00	310	5.4						(3.3)
01	---	---						
02	---	---						
03	---	---						
04	300	4.8						(3.3)
05	300	4.8						
06	280	5.2						
07	280	6.2						
08	280	6.8						3.5
09	300	7.3						
10	310	7.8						
11	300	8.2						
12	310	8.6						3.3
13	310	9.2						
14	310	9.5						
15	300	9.2						
16	280	9.0						3.4
17	280	8.3						
18	290	7.6						
19	280	7.8						
20	280	6.6						(3.5)
21	300	6.0						
22	300	5.6						
23	310	5.6						

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

Table 44

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	5.8					3.3	3.0
01	280	5.6					3.6	3.1
02	<250	6.0					3.6	3.2
03	260	5.4					3.5	3.2
04	(240)	4.6					3.7	3.0
05	260	4.6					3.2	3.3
06	250	5.5	---	---	---	E	3.9	3.4
07	250	6.3	220	4.1	(120)	E	4.3	3.5
08	280	6.2	210	4.3	(120)	---	5.8	3.3
09	300	6.4	210	4.5	(120)	---	6.0	3.2
10	320	6.7	200	4.8	(110)	---	4.8	3.0
11	345	8.2	200	4.7	(110)	---	5.0	3.0
12	320	9.6	210	4.8	(110)	---	4.7	3.0
13	340	11.0	220	4.6	(110)	---	4.6	3.0
14	310	>11.2	220	4.6	(110)	---	4.7	3.1
15	320	11.5	<220	4.6	(110)	---	4.6	3.1
16	295	>12.6	220	4.3	(120)	---	4.5	3.2
17	270	12.5	230	---	(120)	---	4.7	3.4
18	230	11.1			---	E	4.6	3.4
19	210	9.6					4.2	3.5
20	210	8.0					3.9	3.3
21	210	6.2					3.4	3.3
22	280	5.7					3.9	3.1
23	280	5.5					2.9	3.0

Time: 120.0°E.
Sweep: 2.3 Mc to 14.2 Mc in 15 minutes, manual operation.

Table 45

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

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2**
00								
01								
02								
03								
04								
05								
06								
07	300	6.0						
08	330	7.2						3.0
09	360	7.6						
10	390	8.4						
11	420	9.3						
12	420	10.2						2.7
13	450	10.8						
14	450	11.4						
15	480	11.7						
16	450	11.8						2.6
17	420	11.7						
18	390	10.6						
19	390	10.0						
20	360	8.8						2.9
21	330	8.2						
22	330	7.5						(3.2)
23	330	6.7						

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

Table 46

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

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2**
00								
01								
02								
03								
04								
05								
06								
07	360	6.3						
08	390	7.5						2.8
09	420	8.2						
10	420	8.2						
11	450	8.0						
12	450	8.0						2.7
13	450	8.4						
14	450	8.6						
15	450	8.8						
16	450	9.2						(2.6)
17	420	9.6						
18	420	9.5						
19	420	9.6						
20	390	8.5						2.7
21	390	7.6						
22	360	6.6						
23								

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

Table 47

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

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2**
00								
01								
02								
03								
04								
05								
06	360	5.5						
07	420	6.8						
08	480	7.6						(2.5)
09	510	7.9						
10	540	7.5						
11	540	7.6						
12	540	7.6						(2.3)
13	540	7.8						
14	540	8.1						
15	540	8.5						
16	540	8.8						(2.3)
17	510	9.2						
18	480	9.2						
19	480	8.7						
20	450	8.2						(2.5)
21	420	7.3						
22	420	6.5						
23								

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

Table 48

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	3.6						3.1
01	240	3.5						3.2
02	220	3.3					2.8	3.2
03	210	3.0					2.8	3.2
04	240	(2.7)					2.8	(3.0)
05	250	(2.6)					2.5	3.0
06	260	2.8					2.4	3.0
07	240	5.0	---	---	130	1.9	3.3	3.4
08	240	6.8	230	3.8	110	2.6	3.8	3.4
09	250	7.6	220	4.3	110	2.9	3.8	3.4
10	260	8.2	210	4.4	110	3.2	3.9	3.3
11	260	7.9	210	4.5	110	3.3	3.8	3.4
12	280	8.0	200	4.4	110	3.3	4.5	3.3
13	270	7.4	200	4.4	110	3.3	4.7	3.3
14	270	7.0	200	4.4	110	3.2	4.6	3.3
15	270	6.8	200	4.3	110	3.0	4.3	3.3
16	250	6.7	205	3.8	120	2.8	3.8	3.3
17	240	6.4	---	---	120	2.2	3.4	3.4
18	220	5.8			---	1.5	2.8	3.3
19	230	4.6					2.2	3.2
20	230	4.0						3.2
21	250	3.5						3.0
22	260	3.5						3.0
23	255	3.4						3.0

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

Table 49

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	4.0						3.1
01	250	4.1					2.0	3.1
02	240	4.2					2.0	3.2
03	220	4.2					2.0	3.2
04	240	3.7					2.0	3.1
05	250	3.6						3.1
06	250	3.7			---	---		3.1
07	240	5.5			140	2.5		3.4
08	250	6.2	230	4.0	110	2.7		3.3
09	270	6.7	230	4.4	110	3.0		3.3
10	280	6.8	220	4.4	110	3.2		3.3
11	280	6.9	220	4.5	110	3.2		3.3
12	290	6.8	210	4.5	110	3.2		3.3
13	280	6.6	200	4.5	110	3.3		3.2
14	280	6.7	210	4.4	110	3.2		3.3
15	270	6.5	200	4.2	110	3.0		3.3
16	250	6.4	220	3.7	110	2.6		3.3
17	230	6.0			---	2.0		3.3
18	220	5.1						3.2
19	230	4.5						3.1
20	250	4.4						3.0
21	250	4.2						3.0
22	260	4.2						3.0
23	260	4.0						3.0

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

Table 50

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(260)	3.5					2.4	(3.0)
01	(255)	3.5					3.0	(3.0)
02	(250)	3.5					2.8	(3.1)
03	250	3.6					2.4	(3.2)
04	240	3.4					2.8	(3.3)
05	(240)	3.0					3.1	---
06	---	2.6						---
07	230	4.0			---	---		3.5
08	230	5.3	---	---	---	2.3	2.6	3.6
09	240	5.6	220	(3.9)	110	2.6	3.0	3.5
10	250	5.9	210	4.2	110	3.0	3.5	3.5
11	270	6.5	210	4.3	100	3.1	3.3	3.5
12	265	6.3	200	4.4	100	3.1	3.5	3.4
13	280	6.7	200	4.3	100	3.1	3.5	3.3
14	260	6.7	205	4.2	100	3.0	3.4	3.4
15	250	6.6	210	(4.0)	100	2.8	3.3	3.5
16	240	6.3	200	(3.4)	---	2.5	3.4	3.5
17	220	5.6			---	---	3.0	3.5
18	220	5.0					2.8	3.3
19	240	4.2						3.4
20	(240)	3.8						3.2
21	(250)	3.5						3.1
22	(260)	3.5						(3.0)
23	(260)	3.4					2.5	3.0

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

Table 51

Hobart, Tasmania (42.9°S, 147.3°E) August 1952*

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	2.6						3.0
01	275	2.4						2.9
02	290	2.3						2.9
03	285	2.4						2.8
04	285	2.4						3.0
05	270	2.3						3.0
06	270	2.4						2.9
07	250	2.5			---	E		3.0
08	220	4.4			100	2.1		3.1
09	210	5.0			100	2.5		3.1
10	200	5.5	---	---	100	2.8		3.1
11	260	6.0	200	4.4	100	3.0		3.1
12	280	6.2	200	4.5	100	3.1		3.1
13	265	6.3	200	4.5	100	3.2		3.2
14	260	6.2	200	4.4	100	3.0		3.1
15	210	6.0	---	---	100	2.9		3.1
16	220	5.8			100	2.4		3.1
17	230	5.5			---	E		3.0
18	230	5.0						3.0
19	240	4.0						3.0
20	250	3.4						3.0
21	(250)	3.2						3.0
22	(265)	(3.0)						(3.0)
23	(270)	(2.6)						(2.8)

Time: 150.0°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.
*No record 7th through 24th, inclusive,

Table 52

Delhi, India (28.6°N, 77.1°E) July 1952**

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	5.2						(3.2)
01	---	---						
02	---	---						
03	---	---						
04	300	5.0						(3.1)
05	300	5.0						
06	300	5.3						
07	300	6.1						
08	300	6.5						(3.2)
09	300	6.7						
10	320	7.2						
11	320	7.6						
12	310	8.0						3.2
13	340	8.4						
14	320	8.4						
15	320	8.9						
16	300	8.4						
17	300	8.0						3.4
18	300	8.0						
19	300	7.3						
20	(290)	(7.4)						(3.4)
21	300	6.8						
22	300	5.9						
23	300	5.8						

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

Table 53

Bombay, India (19.0°N, 73.0°E) July 1952**

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06								
07	300	6.5						
08	330	7.4						3.1
09	360	7.8						
10	390	8.4						
11	420	9.3						
12	450	10.2						2.6
13	480	10.8						
14	480	11.2						
15	480	11.4						
16	450	10.9						2.6
17	420	10.0						
18	390	9.4						
19	390	8.4						
20	360	8.0						(3.1)
21	330	7.1						
22	(300)	(6.4)						(3.3)
23	(300)	(5.8)						

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

Table 54

Madras, India (13.0°N, 80.2°E) July 1952**

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06								
07	360	6.0						
08	390	7.2						2.8
09	420	7.4						
10	420	7.5						
11	450	7.5						
12	460	7.4						(2.6)
13	480	7.8						
14	480	8.2						
15	480	8.3						
16	450	8.7						(2.6)
17	450	9.1						
18	450	9.2						
19	420	9.3						
20	390	8.0						(2.7)
21	390	7.1						
22	360	6.4						
23								

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

Table 55

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

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2**
00								
01								
02								
03								
04								
05								
06	390	5.5						
07	420	6.7						
08	480	7.4						(2.4)
09	500	7.3						
10	540	7.3						
11	540	7.4						
12	540	7.2						(2.3)
13	570	7.4						
14	570	7.8						
15	540	8.0						
16	540	8.2						(2.4)
17	540	8.5						
18	510	8.5						
19	480	8.0						
20	460	7.3						(2.5)
21	420	6.8						
22	420	6.6						
23								

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

Table 56

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	3.3						3.0
01	250	3.3					2.0	3.0
02	240	3.2						3.1
03	230	3.0					2.1	(3.0)
04	240	2.8					2.6	3.0
05	240	2.6			---	E	2.4	3.1
06	240	2.8			---	E	2.3	3.0
07	220	4.6			140	1.9	3.3	3.5
08	240	5.7	---	---	110	2.3	4.0	3.4
09	260	6.0	220	4.0	110	2.8	3.8	3.3
10	260	7.2	220	4.3	110	3.1	4.5	3.4
11	260	7.1	220	4.3	110	3.2	5.0	3.3
12	280	7.0	200	4.3	110	3.2	5.0	3.3
13	260	7.1	200	4.4	110	3.2	4.8	3.3
14	260	6.9	200	4.3	120	3.1	4.8	3.2
15	260	6.9	210	4.0	120	2.9	5.0	3.3
16	250	6.5	220	3.5	120	2.5	4.7	3.3
17	240	5.7			120	2.0	4.0	3.4
18	220	5.5			---	E	3.6	3.4
19	210	3.7					3.3	3.4
20	240	3.1					3.0	3.0
21	250	3.2					2.9	3.1
22	260	3.1						3.0
23	250	3.2						3.1

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

Table 57

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.6						3.1
01	260	3.7						3.1
02	250	3.9					2.0	3.2
03	250	3.8					1.8	3.3
04	230	3.6						3.3
05	230	3.2						3.3
06	220	3.1						3.2
07	220	4.6			150	2.1		3.6
08	230	5.5	220	3.6	110	2.5		3.4
09	260	6.1	220	4.1	110	2.8		3.4
10	250	6.5	220	4.3	110	3.0		3.4
11	260	6.2	210	4.4	110	3.1		3.4
12	260	6.5	210	4.4	110	3.2	3.0	3.4
13	270	6.4	200	4.4	110	3.1	3.8	3.3
14	260	6.6	200	4.3	100	3.0	4.2	3.3
15	250	6.3	220	3.9	110	2.8	3.5	3.3
16	240	5.8	220	3.3	120	2.4	3.2	3.4
17	220	5.6			---	---	3.5	3.4
18	220	4.4					3.3	3.3
19	230	3.7						3.2
20	240	3.6						3.1
21	250	3.6						3.1
22	250	3.6						3.2
23	250	3.7						3.1

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

Table 58

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.0					3.0	(3.0)
01	(280)	3.4					2.9	---
02	(270)	(3.0)					3.2	---
03	270	(3.0)					2.7	---
04	240	(3.3)					3.0	---
05	(240)	(2.7)					[illegible]	---
06	(240)	(2.2)					[illegible]	---
07	220	3.5			---	---	2.8	3.5
08	220	5.0			---	2.2	3.4	3.6
09	240	5.5	210	---	110	2.5	3.3	3.6
10	240	6.2	220	4.0	110	2.9	3.5	3.5
11	240	6.2	210	4.0	110	3.0	3.4	3.5
12	280	6.2	200	4.0	100	3.0	3.5	3.4
13	240	6.4	210	4.0	100	3.0	3.5	3.4
14	(250)	(6.1)	200	4.0	100	2.9	3.6	(3.3)
15	250	6.3	220	(3.7)	100	2.7	3.5	3.4
16	230	6.2	---	---	---	(2.4)	3.5	3.4
17	220	5.2			---	---	3.4	3.5
18	220	4.5					3.0	3.4
19	240	3.6					2.9	(3.3)
20	240	3.3					2.8	(3.3)
21	(240)	(3.0)					3.0	---
22	---	(3.0)					2.8	---
23	(260)	2.8					3.0	(3.0)

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

Table 59

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	2.0						2.9
01	290	2.2					<2.0	2.8
02	300	2.0						2.9
03	290	2.4						2.9
04	280	2.2						2.9
05	250	2.2						3.0
06	260	2.0					<2.0	3.1
07	270	2.5			---	E		3.0
08	220	4.3			110	2.0		3.2
09	220	5.1			100	2.4		3.2
10	210	5.5			100	2.7		3.2
11	200	5.6			100	2.8		3.1
12	200	6.0			100	2.9	3.5	3.1
13	200	6.5			100	3.0		3.1
14	200	6.2			100	2.8		3.1
15	200	6.0			100	2.5		3.2
16	220	6.0			100	2.1		3.2
17	210	5.5			---	E		3.1
18	220	4.4						3.0
19	250	3.7						3.0
20	250	3.0						3.0
21	250	2.5						3.0
22	270	2.3						3.0
23	280	2.2						2.9

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

Table 60

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

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2**
00	(305)	5.0						(3.2)
01	(300)	(4.9)						
02	---	---						
03	---	---						
04	300	4.4						3.4
05	290	4.8						
06	280	5.3						
07	270	6.0						
08	280	6.5						3.5
09	285	6.9						
10	280	7.5						
11	310	7.6						
12	335	8.0						3.3
13	320	8.3						
14	320	8.2						
15	310	8.9						
16	300	9.1						3.3
17	290	8.2						
18	290	7.8						
19	280	7.6						
20	(300)	(6.3)						(3.5)
21	300	6.2						
22	295	5.6						
23	300	5.4						

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

Table 61

Bombay, India (19.0°N, 73.0°E) June 1952 **

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06								
07	285	6.0						
08	330	7.2						3.1
09	360	7.2						
10	390	8.3						
11	420	9.4						
12	450	10.2						2.6
13	465	10.7						
14	480	11.2						
15	480	11.7						
16	480	11.8						2.6
17	420	10.7						
18	390	10.0						
19	360	8.8						
20	360	7.8						(3.0)
21	330	7.0						
22	300	6.2						3.6
23	300	5.5						

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

Table 62

Madras, India (13.0°N, 80.2°E) June 1952 **

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06								
07	360	6.4						
08	390	7.3						(2.9)
09	420	7.5						
10	420	7.9						
11	465	7.8						
12	480	7.8						(2.5)
13	480	8.0						
14	480	8.5						
15	480	8.6						
16	480	9.0						(2.6)
17	450	9.2						
18	435	9.4						
19	420	9.2						
20	390	8.0						(2.7)
21	360	7.2						
22	(390)	6.8						
23								

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

Table 63

Tiruchy, India (10.8°N, 78.8°E) June 1952 **

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	360	5.6						
07	390	6.8						
08	450	8.0						2.6
09	480	8.2						
10	540	8.1						
11	540	7.8						
12	570	7.9						2.2
13	570	7.8						
14	540	8.1						
15	540	8.6						
16	540	8.8						(2.3)
17	540	9.0						
18	480	8.8						
19	450	8.3						
20	420	7.5						2.6
21	420	7.0						
22	420	6.5						
23								

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

Table 64

Rarotonga I. (21.3°S, 159.8°W) June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	< 300	3.2						2.8
01	< 300	3.4						2.8
02	290	3.2						2.8
03	270	3.6						2.9
04	260	3.2						3.0
05	250	3.1						3.0
06	250	3.3						3.0
07	250	4.8	---	(1.9)	---	E	2.5	3.2
08	250	6.4	210	2.8	115	2.3	3.0	3.4
09	260	7.2	210	4.0	110	2.8	3.5	3.3
10	260	7.8	220	4.3	110	3.0	4.0	3.4
11	270	7.0	210	4.4	110	3.1	4.0	3.3
12	270	7.4	220	4.5	110	3.2	4.0	3.3
13	280	7.4	220	4.5	110	3.2	4.0	3.2
14	280	7.3	210	4.3	110	3.0	4.0	3.2
15	270	7.6	220	4.1	110	3.0	4.0	3.2
16	250	6.8	240	3.5	110	2.6	4.0	3.2
17	250	7.0	---	2.4	110	2.8	3.7	3.2
18	230	6.6					3.6	3.3
19	230	5.0					3.0	3.3
20	< 250	4.0						3.0
21	250	3.6						3.0
22	250	3.6						2.9
23	270	3.2						2.9

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

Table 65

Delhi, India (28.6°N, 77.1°E) May 1952 **

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(340)	(4.7)						(3.1)
01	(360)	(5.3)						
02	---	---						
03	---	---						
04	310	4.2						3.3
05	280	4.6						
06	260	5.2						
07	260	6.3						
08	280	6.6						(3.3)
09	310	7.0						
10	320	8.0						
11	320	8.2						
12	335	8.8						3.2
13	325	10.2						
14	310	11.0						
15	300	10.9						
16	300	10.8						3.3
17	300	10.1						
18	280	9.2						
19	295	8.0						
20	300	7.0						3.3
21	300	5.7						
22	320	5.1						
23	325	4.8						

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

Table 66

Bombay, India (19.0°N, 73.0°E) May 1952 **

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	---	---						
07	300	6.4						
08	360	8.0						3.1
09	390	8.1						
10	420	9.0						
11	450	10.2						
12	450	11.2						2.6
13	480	12.0						
14	480	12.5						
15	480	13.0						
16	420	13.1						(2.6)
17	390	12.6						
18	390	11.9						
19	360	11.2						
20	345	9.5						3.1
21	330	8.1						
22	300	7.3						(3.3)
23	300	6.8						

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

Table 67

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

**

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06								
07	360	6.7						
08	390	7.8						(2.9)
09	390	8.2						
10	420	8.2						
11	420	8.2						
12	450	8.2						(2.5)
13	450	8.5						
14	450	8.6						
15	450	9.0						
16	450	9.4						(2.6)
17	450	9.6						
18	420	9.5						
19	420	9.2						
20	390	8.5						(2.7)
21	(390)	7.8						
22	(360)	7.0						
23								

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

Table 68

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

**

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	390	5.8						
07	420	7.0						
08	450	8.2						(2.5)
09	480	8.6						
10	540	7.9						
11	540	7.8						
12	570	8.1						(2.2)
13	540	8.1						
14	540	8.5						
15	540	8.4						
16	510	9.2						(2.3)
17	480	9.5						
18	450	9.2						
19	450	9.0						
20	450	8.7						(2.5)
21	420	8.0						
22	420	7.1						
23								

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

Table 69

Rarotonga I. (21.3°S, 159.8°W) May 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.3						2.8
01	300	3.4						2.9
02	290	3.4						3.0
03	270	3.5						3.0
04	300	3.2						2.9
05	300	3.2						2.9
06	300	3.1						2.9
07	250	6.0	---	2.0	---	E		3.3
08	240	7.1	220	2.8	110	2.3	3.0	3.4
09	260	7.4	220	4.1	110	2.7	3.6	3.4
10	260	7.8	210	4.4	110	3.0	3.7	3.4
11	260	7.5	210	4.4	110	3.2	3.9	3.4
12	280	7.8	220	4.5	110	3.2	4.0	3.2
13	280	7.7	220	4.4	110	3.2	4.0	3.2
14	270	7.6	220	4.3	110	3.0	4.0	3.3
15	270	7.8	220	4.4	110	2.9	4.0	3.2
16	260	7.4	240	3.8	120	2.6	3.7	3.2
17	250	7.9	---	---	---	2.1	3.9	3.2
18	240	7.5					3.9	3.2
19	230	5.7					3.5	3.2
20	250	4.2					3.0	3.1
21	260	3.7					2.5	3.0
22	260	3.8					2.4	3.0
23	270	3.3						2.9

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

Table 70

Christchurch, New Zealand (43.6°S, 172.7°E) May 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	2.5					2.8	3.0
01	280	2.4					3.0	2.9
02	290	2.2					3.0	3.0
03	---	1.9					3.5	3.1
04	---	1.7					3.5	3.0
05	---	1.5					3.7	3.2
06	---	1.5					3.5	3.2
07	260	2.9				1.4	3.2	3.2
08	240	4.3	250	2.9		1.8	3.4	3.5
09	250	5.0	240	3.4		2.3	4.4	3.4
10	270	5.4	230	3.7		2.6	4.3	3.4
11	270	5.6	220	3.9		2.7	4.5	3.3
12	270	5.9	220	4.0		2.7	4.4	3.4
13	280	6.0	240	3.9		2.7	4.4	3.3
14	270	6.0	240	3.8		2.5	4.4	3.3
15	250	6.0	240	3.3		2.3	3.2	3.4
16	240	5.7	240	2.6		1.8	3.5	3.4
17	240	4.8				1.3	2.7	3.3
18	250	4.2					2.6	3.1
19	250	3.6						3.1
20	280	3.2					3.2	3.0
21	280	2.8						2.9
22	280	2.6					2.3	2.9
23	290	2.5					2.8	3.0

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

Table 71

Nairobi, Kenya (1.0°S, 37.0°E) April 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	220	8.7						3.1
01	220	8.5						3.3
02	210	6.2						3.3
03	250	4.9						3.0
04	250	4.3					2.0	3.1
05	240	3.5					2.8	3.4
06	240	3.0			---	---	3.0	3.5
07	240	6.3			100	---	3.3	3.6
08	250	7.7	230	---	120	2.6	3.8	3.4
09	280	9.2	220	4.5	100	3.0	3.9	3.3
10	280	9.8	---	4.6	110	---		3.2
11	300	9.9	---	4.8	110	---		3.0
12	320	10.9	---	5.0	110	---		2.8
13	320	12.1	---	(4.9)	110	---		3.0
14	300	12.2	---	4.7	110	---		3.0
15	300	12.0	---	---	110	---		2.9
16	300	12.0	---	---	110	---		2.9
17	270	12.0	240	---	110	2.6	3.6	3.0
18	270	>12.3	250	---	100	---	3.0	3.1
19	(250)	>10.0					(3.6)	---
20	(230)	---						---
21	220	>11.8					(2.6)	---
22	210	10.9						3.4
23	210	>9.0						3.3

Time: 45.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 72

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

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	350	5.8	250	4.1	120	2.8		
01	335	6.6	250	4.3	120	2.8		
02	350	6.3	230	4.3	120	2.8		
03	355	6.5	240	4.2	120	2.8		
04	370	6.3	235	4.2	120	2.8		
05	350	6.0	240	4.1	130	2.8		
06	350	6.1	240	4.2	130	2.7		
07	320	6.2	250	(3.8)	135	2.4		
08	300	6.0	250		150	2.3		
09	280	6.0	260		150	E		
10	270	5.6				E		
11	250	5.3						
12	260	5.0						
13	285	4.4						
14	290	4.0						
15	290	3.8						
16	300	3.5					2.4	
17	300	3.0						
18	300	3.4						
19	280	4.0				E	2.6	
20	285	4.2	250		150	2.0		
21	300	4.5	250	(3.9)	135	2.4		
22	360	5.4	250	4.0	130	2.6		
23	400	5.6	250	4.2	120	2.7		

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

TABLE 73

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

IONOSPHERIC DATA

Form adopted June 1946

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

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

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

Calculated by: Mc C., 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	(280)S	260	(270)A	260	(240)A	(230)A	(230)A	(220)A	(210)A	230	250	250	250H	250	250	260	230	210	(220)S	220	(290)S	(250)S	(300)S	(270)S
2	240	(270)S	250	270	260	270	250	250	230	230	270	280	260	250	250	240	230	210	250	250	250	(240)S	(250)S	(220)S
3	(300)S	(310)S	(290)S	270	270	250	230	250	220	(230)H	240	270	280	250	250	240	240	230	220	250	(230)A	(290)S	(340)S	330
4	270	290	(310)A	(270)A	(300)S	(320)A	(300)A	250	230	250	260H	260	290	270	280	250	240	230	220	240	250	(320)S	[330]S	(340)S
5	(290)S	300	250	250	240	230	[240]S	260	240	250	250	250	240	270	250	240	230	210	210	(240)S	(220)S	S	S	A
6	A	A	270	280	240	240	(240)S	220	210	210	220H	240	250	250	250	230	220	200H	250	250	250	(300)S	(300)S	(300)S
7	(300)A	270	250	250	270H	250	(250)A	240	210H	220	240H	250H	250	250	260	230	220	210	(230)A	250	(260)S	(270)S	(310)S	(290)S
8	(290)S	(280)S	280	250	250	250	240	230	220	210	250	250	250	250	250	230	220	200	270	(240)S	(260)S	(260)S	(280)S	(300)S
9	(280)S	(260)S	270	(270)S	250	240	230	220	220	220H	230	230H	250	240	240	230	220	200	(230)S	220	250	250	[280]S	(300)S
10	(310)S	(280)S	270	260	240	220	(240)S	230	220H	220H	240	250	240	250	250	230	210	220	230	220	220	[260]S	(300)S	A
11	B	(280)S	270	250	230	220	220	250	220	220	220H	[240]C	260H	250	230	210	220	200	230	220	270	280	250	(280)S
12	[280]A	(280)S	270	270	240	(260)S	240	250	230	230	280	240	260	250	220H	240	220	230	230	240	270	250	(240)S	280
13	240	270K	(270)KS	[300]KA	(320)K	[270]KA	230K	330K	290K	260KH	440K	420K	350K	320K	270K	250KH	250K	240K	230K	280K	250K	BK	SK	AK
14	BK	BK	BK	(280)KS	(280)KS	(300)KS	[290]KB	270H	240	240	250	250	250	270	260	240	230	220	230	(250)S	(270)S	(270)S	(310)S	S
15	S	S	280	280	270	(250)S	[260]S	280	250	220	230	230	250	250	250	250	220	(210)A	(240)S	230	(240)S	(290)S	(300)S	(280)S
16	(270)S	(270)S	260	260	250	240	230	240	230	230	240	240	250	260	250	240	220	(220)A	240	(230)A	250	210	(290)A	(280)A
17	(270)S	290	280	250	270	270	(240)S	250	220	230	210	(260)H	240	220	210	270	210	(210)A	200	250	220	(250)S	(270)S	[270]A
18	(270)S	(280)S	260	250	230	(240)S	240	230	(220)A	210	230	250	240	240	250	240	210	(210)A	(220)A	(250)A	A	A	A	A
19	(280)S	(270)S	230	230	(250)S	(240)A	(240)S	220	220	210	240	240	230	240	220	230	(230)A	(220)A	A	A	A	A	A	A
20	A	(250)S	(250)A	(250)A	(240)A	(220)A	[260]A	(240)A	(210)A	210	220	250	240	240	250	240	210	220	220	(220)A	(220)S	A	A	A
21	(280)S	260	250	240	230	230	220	220	210	210	230	230	250	240	240	230	210	200	210	(240)A	220	(220)S	[260]A	(290)S
22	[270]A	(250)S	(250)S	230	(230)A	(230)A	[220]A	(220)A	(230)A	220	230	230	250	270	250	240	230	220	230	240	[260]A	(290)S	A	A
23	A	A	A	A	(240)S	(240)S	[220]S	(210)S	[220]A	230	210H	250	250H	250	240	230	220	210	230	230	A	A	A	A
24	(330)S	(280)S	250	(240)S	(230)S	210	[300]S	(300)A	230	280	290	300	250	250	250	240	240	210	230	240	230	(220)S	(270)S	250
25	(270)S	260	(260)S	250	230	(270)S	[270]B	(270)S	240	240	230	240	240	240	260	240	230	220	210	240	230	250	(280)S	(270)S
26	(290)S	(310)S	290	250	250	210	250	240	230	230	240	220	240	240	240	240	220	210	220	240	230	(250)S	(270)S	(260)S
27	260	[260]A	(270)A	240	240	230	(260)S	(220)S	220	220	240	260	260	230	230	250	250	240	(300)S	(280)S	250	300	(260)S	(270)S
28	(310)S	(300)S	(310)S	280	270	250	250	(250)KS	250K	[280]KL	320K	280K	310K	300K	260K	250K	230K	220K	(250)S	240	(260)S	(250)S	(250)S	(270)S
29	250	250	240	240	240	(280)S	[280]S	(270)S	240	220	280	260	250	270	260	230	230	220	230	230	S	S	S	(310)S
30	(280)S	(280)S	250	260	250	(240)S	[270]S	(300)S	220	240	250	260	250	(270)L	240	240	240	230	(230)A	230	(270)S	(270)S	250	240
31	(270)S	(280)S	(240)S	(270)S	250	290	(270)S	(250)S	220	230	260	260	240	(280)L	260	250	230	200	230	220	240	(240)S	(280)S	(270)S
Median	(280)	(280)	270	260	250	240	(240)	250	220	230	240	250	250	250	250	240	230	210	230	240	250	(260)	(280)	(280)
Count	25	27	29	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	30	27	24	23	22

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), December (Month), 1952

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

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

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

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.3 F	2.8 F	3.0 F	3.2 JS	3.2	2.9	2.7	3.8	5.2 S	6.0	6.9	7.6	7.2 H	7.4	6.6	6.6	6.5	5.7	3.6 H	3.5	2.5	2.2 F	2.0 F	2.6 F
2	(3.3) F	3.2 F	3.2 F	2.9 F	3.3	3.1 F	(3.0) F	3.5	5.0	6.2	6.4	7.1	7.6	7.2	6.0	6.6	7.3	5.4	5.0	4.2	3.8	2.9	2.7	2.6 F
3	(2.0) F	2.1 F	2.3 F	2.7 F	2.9	3.0	2.6	3.2	5.0	(5.8) H	6.3	6.6	7.3	6.8	6.2	6.2	6.4	5.6	4.5	4.2	3.5 JS	2.4 F	2.4	2.4 K
4	(3.2) F	3.4 JF	2.2 F	(2.5) PF	2.3 F	(2.3) F	2.7 F	2.7 F	4.3	5.6 SF	6.2 JH	6.4	5.6	5.9	6.1	6.4	5.8	5.5	4.6	2.9 F	2.6 F	(2.1) FS	(1.4) FP	(1.8) FP
5	(3.0) FJ	(2.7) FP	4.0 V	3.7	3.3	2.7	(1.9) PS	2.8	4.3	5.6	6.2	6.2	6.7	6.0	6.8	6.3	6.5	5.3	3.4	3.2	2.3	1.8	1.9	2.2
6	A	A	(2.8) JF	3.0 F	(3.2) F	3.2	2.9	3.6	5.6	6.2	(6.6) JH	7.4	7.5	7.0 JS	6.8	6.8	6.2	(4.2) JH	3.3	3.3	2.9	2.3	2.2	2.3
7	(2.4) S	2.4 F	2.7 F	2.7 F	2.8 JH	(2.9) F	(2.9) JF	3.3 F	(5.1) H	6.2	(6.4) JH	6.2 H	7.2	7.5	6.4	6.8	6.5	5.6	(3.0) SF	2.5	2.3	2.3 F	2.1 F	2.2 F
8	2.2 F	2.2 F	2.2 F	2.5 F	(2.8) F	2.7 F	(3.1) SF	3.4 F	5.6 S	6.0	6.6	7.4	7.8 JS	7.2 H	7.5	7.6	6.8	4.7	3.5	2.7	2.6	2.4	2.1	2.1 F
9	2.2 F	2.4 F	2.5 F	2.9 F	3.2 F	3.5	3.3	3.7	4.4	(6.2) JH	5.8	(6.2) H	8.6	7.6	7.4	6.6	6.6	5.2	3.6	3.2 S	2.5 JS	2.3	2.0	2.1
10	2.2 F	2.6 F	3.1	3.5	3.5	3.2	2.6	3.2	5.2 H	6.3 H	6.3	7.0	8.0	7.7	7.4	6.9	6.8	6.4	4.2	3.4 JS	2.3	2.3	2.1	[2.1] A
11	(2.1) SB	2.3 F	3.0	3.7	4.0	3.5	3.0	3.1	5.8	6.4	(6.0) JH	[8.3] C	7.6 H	7.3	6.7	7.2 JS	6.0	6.0	5.8	3.5	2.5	2.4	2.6	2.2
12	2.2	2.4	2.9	3.2 F	3.2 F	2.7 F	3.0 F	3.0 F	5.4	6.6	7.2	7.5	7.2	8.0	7.2 H	6.6	6.8	5.4	4.0	3.3	3.1 F	3.2 FS	3.1	2.5 F
13	2.7 F	3.0 FK	(2.4) FK	[2.8] AK	(1.6) FK	[2.2] AK	2.5 FK	2.2 FK	3.2 K	3.5 HK	4.0 K	4.2 K	4.7 K	5.2 K	6.0 K	(5.5) HK	4.8 EK	5.0 K	4.4 K	(2.5) SK	2.2 K	S [1.8] BK	(1.7) JS	A K
14	S B K	S B K	S B K	1.7 K	1.7 K	1.6 K	[1.8] BK	2.8 H	4.4	5.8	6.0	5.8	6.4	6.7	6.6	6.4	6.8	5.8	3.8	3.0	2.5	2.4	2.1	1.9
15	2.0	2.0 JS	2.2	2.4	2.4	2.4	[2.6] BS	2.7	5.0	6.0	6.2	6.9	7.9	7.2	7.3	8.3	6.9	5.0	3.8 F	3.5	2.5	2.4 F	2.4 FS	2.5 F
16	2.5 F	2.5 F	3.0 FJ	3.7	4.2	3.8 F	3.6	3.6 S	5.9	6.5	6.7	8.0	8.0	7.8	7.8	8.0	6.8	5.3	5.0 F	4.5 F	3.0 F	2.5 F	(2.5) A	2.6 F
17	2.6 F	(2.7) F	(3.2) F	3.2	3.0	3.1 F	3.0 F	3.3 F	6.0 JS	6.6	7.2	(7.6) H	8.7	7.4	6.4 H	7.8	7.6 JS	4.8	3.8 FS	3.3	3.0	2.8	2.6	[2.7] A
18	2.8	2.9	3.1 F	3.5 FS	3.6 F	3.1 FS	3.1 FS	3.2	5.0	7.2	7.5	8.8	7.7	6.6	6.8	8.4	7.8 JS	5.8	(3.2) JA	3.2	A	A	A	A
19	(2.1) A	2.3 F	2.8 S	2.7	3.2 F	3.2	3.0 F	3.3	5.7	6.0 JS	6.6	6.6	7.6	7.0 S	6.6 S	6.7	6.7	5.1	A	A	A	A	A	2.4
20	(2.6) JA	2.7	3.5 F	3.5	3.2	3.2	[3.3] A	(3.4) PA	5.6	5.8	6.2	7.6	7.5	7.1 S	(6.4) J	5.0	6.7	4.7	4.2	3.3	2.5 S	A	A	A
21	2.4 F	(3.5) FP	(3.7) PJ	3.8	(3.5) JF	(3.3) F	(3.1) JF	3.4 S	5.3	5.3	6.0	6.6 F	7.4	7.8	6.9	6.7	6.4	5.4 F	4.0 F	3.8	3.5	(2.6) FJ	[2.4] A	2.5 F
22	2.8 F	3.0 F	(3.3) F	3.3 F	3.5 F	3.8 F	[3.4] A	3.0 F	5.0	5.8	6.8	8.0	6.8	8.2	8.0	7.4	7.4	6.3	4.5 SF	3.5 F	(2.6) A	2.3	A	A
23	A	2.2 F	[2.3] A	(2.5) A	2.7 F	2.6 F	(1.4) A	(2.5) S	(4.4) A	6.4	(4.8) SH	7.5	6.8 A	6.6	6.0	5.4	6.8	5.6	3.9	3.6	(2.7) A	A	A	A
24	3.3	4.0	4.5	4.1	3.9	2.9	2.3	2.4 JS	4.3	5.8	6.0	6.6	7.5	6.6	5.9	5.9	6.4	6.1	3.9	4.7	3.5	3.3	3.2 JF	[illegible] F
25	3.1 JF	3.5 F	(3.5) JS	2.8 F	2.5 JS	(2.0) PF	(1.8) BS	2.4	4.3 F	5.2 F	5.2 F	7.0	7.2	6.7	6.4	6.4 S	6.2	5.3	4.5 FS	3.7 F	2.8	2.3	2.3	2.3 F
26	(2.3) JF	(2.0) FS	(2.5) FP	(3.0) FS	(3.2) FJ	3.1 JS	2.6	2.7	4.7	5.4	5.6	6.6	6.6	6.9	6.0 JS	5.5	5.5 JS	5.4	4.8	3.6	3.5 S	2.4	2.4	2.6
27	2.6	[2.8] A	2.9	2.8 F	2.8 F	2.6 F	2.3 F	(2.7) PS	4.5 FS	5.5	5.6	6.7	7.2	6.5	(5.6) S	6.5 S	5.8	4.9	4.4 F	4.7	(4.2) FS	(2.6) JF	2.6	2.4 F
28	2.3 F	(2.0) JF	2.1 F	2.3 F	2.6 F	2.9	2.7	2.6 K	3.6 K	4.3 HK	4.7 K	5.3 K	5.4 K	5.5 K	5.5 K	5.6 K	5.4 K	4.7 K	4.1	3.8	3.3	3.6	2.8	(2.6) F
29	3.6 F	3.8	3.6 F	3.3	3.0	2.2 JA	1.9 JS	2.3	4.3	4.7	5.6	6.8	7.0	6.0	7.2	(7.4) S	6.8	7.2	(4.8) S	3.5	(2.2) BS	(1.8) BS	2.0 FS	(2.2) F
30	2.4 F	2.3	2.5 F	2.7	2.5	2.2 F	1.7 JS	2.3	4.3	5.2	6.2	6.6	7.6	7.0	7.6	6.8	6.6	6.4	5.0	3.6	3.3	3.3	3.3	(2.4) SF
31	(2.7) F	2.2	2.2	2.0 F	2.2 F	2.2 F	(2.1) F	(2.5) F	4.5 F	5.0	6.7	6.6	6.6	5.9	6.1	6.1	5.8	4.4	5.6	4.6 F	(3.4) S	2.8 F	2.4 FJ	(2.7) FJ
Median	2.4	2.6	2.9	2.9	3.2	2.9	2.7	3.0	5.0	5.8	6.2	6.8	7.3	7.0	6.6	6.6	6.6	5.4	4.2	3.5	2.7	2.4	2.4	2.4
Count	28	29	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	30	27	27	26	26

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.

IONOSPHERIC DATA

Form adopted June 1946

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

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

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

Calculated by: Mc C., 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	2.5 F	2.9 F	3.2	3.2	3.1	2.8	2.8	4.8	(5.5) A	6.1 S	6.7	7.5	6.8	7.0	6.4	7.0	6.2	5.2	3.8	2.5	(2.5) JS	2.1 F	2.2 F	(3.0) FJ
2	3.2 F	3.1 F	3.0 F	3.0 F	3.3 F	3.1 F	2.5 F	4.4	5.6	6.0	7.4	7.3	7.5	7.9	5.8	[7.0] C	6.9	5.0	4.5	3.8	3.5	2.7	2.6 F	2.4 F
3	2.1 F	2.3 F	2.4 F	2.7	3.0	3.0	2.0	4.2 H	5.5 H	6.2	6.3	7.0	7.2	6.4	6.6	6.3	6.0	5.0	4.2	4.0	(2.9) FS	2.3 F	3.0 F	(3.0) F
4	(3.7) PF	(3.1) F	(2.4) JF	(2.2) F	(2.1) F	(2.1) F	(2.0) F	4.0	(4.6) F	5.4 F	6.2	5.8	5.8	5.8	6.2	6.3 S	5.8	4.7 F	3.2 F	2.5 F	2.2 F	(1.9) PF	[1.8] F	2.5 F
5	3.1 JF	(3.6) PS	3.8	3.7	3.0	2.3	(1.8) JS	3.8	5.4	5.2	6.8	6.8	6.2	7.2	[6.6] C	7.6 H	6.1	4.3	3.4	2.6	1.9	1.8 F	2.0	(2.0) S
6	A	2.6 F	3.1 JF	3.2 F	3.1 F	3.0	2.9	4.8	5.8 JS	6.8 JH	7.4	7.8	7.2	7.0	7.0	6.6	5.8	3.3	3.2	3.2	2.4	2.2	2.2 F	2.3
7	2.4 F	2.5 F	(2.8) F	2.7 F	(2.4) F	(3.0) SF	(2.5) F	4.7 F	6.1	(6.2) H	6.6	6.4	7.4	6.8	7.0	6.2	(6.1) H	4.1	2.8	2.4	2.3 F	2.2 F	2.1 F	(2.5) F
8	2.2 F	2.2 F	2.2 F	2.5 F	2.8 F	2.9 F	2.3 F	4.9	5.4 JH	7.0	(6.8) H	8.4	7.8	7.2	7.6 H	6.8	6.4	3.4 H	3.3	2.7	2.6	2.2 F	2.1 FJ	2.1 F
9	2.3 F	2.7 F	2.7 F	3.1 F	3.5	3.5	3.2	4.9	6.0	5.6	6.4	8.0	7.8	7.2	6.8	7.0	6.4	3.9 JS	3.6	2.8	2.4	2.1	2.0	2.2
10	2.4 F	2.9	3.3	3.3	3.4	2.9	2.5	4.5	6.1	(7.8) S	(6.2) JH	8.7	7.2	6.8	7.6	7.8	6.6	5.2	4.6	3.2	2.4	2.3	A	A
11	2.2	2.5 F	3.7	4.0	3.8 F	3.3	2.2	4.9	6.4	5.8 H	8.4	7.8	7.6	7.8	8.0	6.4	7.0	5.9	4.4	2.9	2.5	2.4	2.3	[2.2] A
12	2.3	2.7	3.0	3.5 F	2.7 F	2.8 F	3.2 F	4.5	5.8	6.1	7.4	7.2	7.6	7.8	6.7	6.8	6.5	4.5 FS	3.9	3.1 F	3.5	3.0 FS	2.8 F	(3.1) F
13	2.3 F	3.0 FK	(2.4) FK	(1.7) FK	(2.5) FK	K (1.9) FS	(1.8) FK	2.8 FK	3.2 K	K (3.9) JS	4.3 K	4.5 K	5.0 K	5.8 K	5.6 K	5.6 K	5.6 K	4.7 K	3.7 K	2.5 K	K 2.1 JS	K 1.8 JS	B K	B K
14	B K	B K	B K	1.8 K	1.7 K	1.9 K	K (1.7) PS	4.1	5.6	5.6 H	6.2	5.6	6.6	6.6	6.4	6.8	6.0	4.4	3.3	2.6	2.5	[2.2] A	2.0	1.9 JS
15	2.0	2.2	2.2	2.5	2.5	1.9	(1.6) JS	3.9 JS	5.8	6.6	6.8	7.6	8.0	7.1	8.0	8.4	6.3	4.4	3.9 S	2.9 F	2.4 FS	2.4 S	2.4 F	(2.6) FJ
16	(2.5) FP	2.9 FS	3.5 JF	3.9	4.0 JS	3.8	(3.3) S	4.7	6.2	6.4 S	7.6	8.2	7.6	8.0	7.6	7.4	6.4	5.4	5.4	3.5 F	2.8 F	2.7	2.7 F	2.9 F
17	2.7 F	2.7 F	3.0 F	3.0 F	3.1 F	3.0 F	2.7 F	4.4 F	6.8	(7.0) S	7.4	7.6 H	8.4	7.4	6.0 H	7.8	6.2	4.9	3.5	3.1	2.7	2.8 F	[2.8] A	(2.7) A
18	2.8	2.8 F	3.3 F	3.6 FS	3.3 F	3.1	2.9 F	4.5	6.8	6.0	7.3	8.4	7.0	7.0	7.8	8.8	6.5	(4.4) A	3.2 S	A	A	(2.1) A	[2.1] A	(2.1) A
19	(2.1) A	2.5 F	2.9	3.0 S	3.3	[3.1] A	(3.2) PS	4.7	6.2	6.0	7.2	7.8	7.8	6.9	7.0	6.8	(5.8) FA	4.7	A	A	A	A	2.3 A	[2.4] A
20	(2.6) JA	3.0 F	(3.5) PS	3.3	3.1	3.2	[3.4] A	4.5	5.6	5.5	5.5	7.3	6.7	6.9	7.8 JH	6.9	5.6	4.3	4.2	2.8	2.3	A	A	(2.3) PF
21	(2.7) F	(3.2) FJ	3.6	(3.9) JS	(3.5) PF	(3.3) F	2.9 F	4.5 S	6.4	5.8	5.8 F	7.0	7.2	6.7	6.6	6.8 S	6.0	4.2 JF	3.7 JS	3.7	3.3	(2.3) FJ	2.4	2.9 JF
22	2.9 F	3.2 FJ	3.3 F	3.4 F	4.0	3.2 F	(2.7) JF	3.9	5.8	6.0 JF	7.4	6.8	7.2	8.4	7.5	7.0	6.8	5.0 F	3.5 F	2.8 F	(2.4) A	2.3	A	A
23	2.3 F	[2.4] A	2.4	2.7 F	2.7 F	2.2 F	(1.9) SA	3.9	(5.4) H	5.6	5.8 H	7.2	6.6	6.4	5.8	6.6	5.8	4.6	3.7	3.0 F	A	A	A	2.6
24	3.7	4.3	4.2	3.9	3.5 F	2.4	2.4	3.8	4.8	5.4	6.3	7.8	6.9	6.0	6.0	5.6	[6.2] C	5.1 JS	4.3	3.6	3.5	3.0 F	(3.2) JF	3.5 S
25	3.1 J	3.5 FS	2.9 F	(2.8) FP	(2.3) FP	(1.9) PS	(1.7) JP	3.6	4.8	5.0	(6.5) JH	7.4	6.6	5.9 F	6.9	6.5	5.2	5.6	3.8 F	3.5	2.5 JS	2.3	2.3	2.2 F
26	(2.2) JF	(2.2) PF	2.5 F	(2.9) FS	(3.5) FP	2.9	2.3	3.8	5.2	6.0	5.6	7.7	7.3	6.8	5.6 JS	6.6	5.9	3.9	3.5 S	3.6 VS	3.1 S	2.4	2.5 S	2.6 JS
27	2.6	[2.8] A	2.9 F	3.0 S	2.8 F	2.4 F	2.5 F	(3.9) JS	4.5	5.9 JS	5.7	7.2	7.5	6.5	5.5 F	5.5	5.8	4.7 F	4.3 F	4.1 F	3.1 F	(3.0) PF	2.5 F	2.2 F
28	2.2 F	(1.8) F	(2.3) FS	2.6 FS	2.8	2.8	2.5	3.0 K	3.7 K	4.4 HK	5.0 K	5.3 K	5.6 K	5.5 K	5.6 K	5.6 S	5.1 K	4.6 K	4.2	3.5	(3.4) S	2.8 F	2.5 F	2.7 F
29	3.8 FS	3.8 F	3.4 F	3.0 F	2.7	1.9 JS	1.8 JF	3.3	4.5	5.0	6.0	7.0 JS	6.0	6.8	7.6	(7.1) S	6.4	(5.5) S	4.5	2.2	1.9	2.0	2.0 F	2.4 FS
30	2.2 F	2.5 FS	2.7	2.6	2.5	2.0 JS	1.5 JS	3.8	4.7	5.7	6.1	7.4	6.8	7.7	6.7	[6.7] C	(6.0) S	5.1	3.9	3.3	3.2	3.5 JS	3.0 F	3.0 F
31	2.4 F	2.2	2.1	(2.1) FS	2.2 F	(2.2) F	(1.9) F	3.5 F	4.6 F	6.0	6.6	6.8	5.9	6.2	6.4	6.4	5.8	5.4	5.6	(4.0) FS	3.1 S	2.9	2.4 F	2.6 F
Median	2.4	2.8	3.0	3.0	3.0	2.9	2.5	4.2	5.6	6.0	6.5	7.3	7.2	6.9	6.7	6.8	6.1	4.7	3.8	3.1	2.5	2.3	2.4	2.5
Count	29	30	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	29	28	28	26	28

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

IONOSPHERIC DATA

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

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

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

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

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.

IONOSPHERIC DATA

Form adopted June 1946

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

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC., E.J.W.

Calculated by: McC., E.J.W.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									L	L	L	3.7 F	3.9	L	L	L								
2									Q	L	3.5	L	L	L	L	L								
3									L	L	L	L	L	L	L	L								
4									Q	L	3.4 H	3.7 H	3.8	L	L	L								
5									Q	L	L	L	3.4	L	L	L								
6										Q	L	L	L	L	L	L								
7										Q	3.4	L	L	L	L	Q								
8										Q	L	L	L	L	L	Q								
9										L	L	L	L	L	L	L								
10										Q	L	L	4.1	L	3.4	L								
11										Q	L	L	L	L	L	Q								
12										Q	4.1 H	L	L	L	L	L								
13										Q K	3.5 K	3.7 K	3.7 K	[3.6] LK	3.4 K	L K								
14										Q	L	L	L	L	L	L								
15										Q	L	L	L	L	L	Q								
16										Q	L	L	L	L	A	A								
17										Q	Q	L	L	L	L	L								
18										Q	Q	L	L	L	L	L								
19										Q	L	L	L	L	L	Q								
20										Q	Q	3.9	L	L	(3.7) P	L								
21										L	L	L	L	L	L	L								
22										Q	L	L	L	L	L	L								
23										Q	Q	L	L	L	L	L								
24										L	4.0	[3.8] L	3.7 H	L	L	L								
25										L	L	(3.8) P	3.8	L	L	L								
26										L	L	(3.9) H	L	L	L	Q								
27										Q	(3.6) P	L	L	L	L	L								
28									L K	L K	3.8 HK	(3.8) HK	(3.8) HK	(3.6) PK	L K	L K								
29										Q	L	3.8 H	3.9	[3.6] L	(3.4) L	L								
30										L	L	L	L	L	L	(3.2) L								
31										L	L	(3.8) L	L	L	L	L								
Median									–	–	3.6	3.8	3.8	–	–	–								
Count											8	10	7	3	4	1								

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 78

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

IONOSPHERIC DATA

Form adopted June 1946

h'E (Characteristic), Km (Unit), December (Month), 1952

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC., E.J.W.

Calculated by: McC., 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	(110) A	(130) A	(120) A	(120) A	A	A	(130) A	A									
2									A	A	(120) A	(110) A	110	(120) A	(120) A	A	A									
3									(110) A	110	110	120 H	120 H	120	110	120	(130) A									
4									(120) A	[120] A	(110) A	120	(120) A	A	A	A	A									
5									110 H	120	120	(110) A	100	110	100	120	A									
6									A	110	110 H	(120) A	A	A	110 H	110 H	(100) A									
7									130	110	120 H	100	110	110 H	110 H	120	S									
8									S	110	120	120 H	110	120	120	(120) A	(140) A									
9									130 H	120 H	120 H	120 H	120	120	110	120 H	100 H									
10									(130) S	120	120	120 H	(120) A	110	110	110	110									
11									(140) S	110	110	[110] C	110	100	110	110	(120) A									
12									120	120	110	B	B	120	120	(120) S	A									
13									K	H K	K	K	K	K	K	K										
14									130	120 H	(130) S	110	110 H	120 H	120	(120) A	(140) A									
15									S	110 H	110	100	A	A	A	A	A									
16									A	110	(110) A	110	[110] A	120	(120) A	A										
17									S	(120) A	110 H	(110) A	110	100	100	(120) A	A									
18									A	(110) A	(110) A	(110) A	A	A	A	(110) A	A									
19									A	(120) A	(120) A	A	A	A	(100) A	100 H	A									
20									A	(120) A	(100) A	A	A	A	(110) A	A	A									
21									A	A	(120) A	100 H	100 A	100	[100] A	(110) A	(120) S									
22									A	A	A	A	(110) A	A	A	A	A									
23									A	A	A	A	(120) A	[120] A	(120) A	100	A									
24									A	(130) A	[120] A	(120) A	[110] A	100	90	(110) B	(130) S									
25									120	120 H	110	110 H	110 H	120	120	120	(140) S									
26									S	120 H	110 H	[110] A	110	110	(110) A	120	S									
27									S	120 H	110 H	A	A	110 A	110 A	110 H	S									
28									A K	120 K	120 K	[120] A K	120 H K	110 H K	110 K	A K	A K									
29									110	A	A	(120) A	110	110	110	(120) A	(120) A									
30									S	120 H	120 H	110	110	110	110	100	A									
31									S	A	(120) B	(120) B	[120] B	(120) B	120	120	(120) S									
Median									120	120	120	110	110	110	110	120	(120)									
Count									11	24	27	24	23	22	25	23	12									

Sweep 1.0 Mc to 25.0 Mc In 0.25 min

Manual ☐ Automatic ☒

TABLE 79

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

IONOSPHERIC DATA

Form adopted June 1946

foE (Characteristic), Mc (Unit), December (Month), 1952

Observed at Washington, D. C.

Lat. 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

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

Calculated by: Mc C., 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	2.2	(2.6)A	(2.8)A	A	A	A	2.3	A							
2									A	A	(2.7)H	2.8H	[2.9]A	2.7	(2.6)S	A	A							
3									(1.7)H	2.3	(2.4)H	2.5H	2.7H	2.7	2.5	2.3	1.8H							
4									(2.0)A	[2.2]A	2.4H	2.5	2.8	A	A	A	A							
5									2.0H	2.1	2.5S	2.6	2.6	2.6	2.4	2.3	A							
6									A	2.3	2.5H	2.7H	A	A	2.4H	(2.0)P	(1.8)A							
7									1.9	(2.3)F	(2.3)H	2.7	2.8	2.8H	2.4H	1.9	1.6							
8									1.7H	2.3	(2.5)P	2.8H	2.8	2.8	2.6	2.3	1.9							
9									1.9H	(2.3)H	2.6H	2.8H	(2.9)P	(2.9)P	2.5	1.9H	1.7H							
10									2.2	2.5	2.8	2.9	2.8	2.5	2.2	2.4H	2.0							
11									1.8	2.2	2.4	2.7H	2.8	2.8	2.5	2.2	1.9H							
12									1.9	(2.4)P	(2.5)P	A	B	2.8	2.7	2.2	A							
13									1.7K	2.2HK	2.4K	2.5K	2.8HK	2.7K	2.6K	(2.3)PK								
14									1.8A	2.3H	2.6H	[2.8]A	2.9H	2.9	2.7	2.3	1.9							
15									S	2.0H	2.6	2.7	A	A	A	A	A							
16									A	2.5H	2.7	(2.8)P	A	A	2.7	A								
17									A	(2.4)A	2.5H	2.9	3.0	2.9	2.7	2.3	A							
18									A	2.4	2.6	(2.9)A	A	A	A	A	A							
19									A	A	2.6	A	A	A	(2.6)A	2.5	A							
20									A	2.5	2.7H	A	A	A	(2.7)P	A	A							
21									A	A	(2.5)H	2.6H	2.9H	2.9	[2.6]A	(2.4)A	1.8H							
22									A	A	A	A	2.9	A	A	A	A							
23									A	A	A	A	2.9	(3.0)P	2.8	2.4	A							
24									A	2.3H	[2.5]A	(2.7)P	B	B	2.5	2.2A	(1.8)P							
25									(1.9)P	2.2H	2.6	2.7H	2.9H	2.9	2.6	2.3	(1.7)H							
26									S	(2.1)H	2.5H	(2.5)P	2.7	2.5	2.6	2.4	(1.7)S							
27									(1.9)F	(2.2)H	2.4H	A	A	(2.6)A	(2.5)A	(2.1)H	S							
28									A K	(2.0)PK	2.3K	[2.5]AK	(2.7)PK	2.7HK	(2.4)AK	A K	A K							
29									1.9	A	A	2.7	2.6	2.7	2.5	2.2	1.9H							
30									S	(2.0)P	2.4H	2.6	(2.6)P	(2.8)P	2.5	(2.3)P	A							
31									B	A	(2.5)B	(2.8)P	[2.8]B	2.8	(2.5)P	2.2	(1.7)P							
Median									1.9	2.3	2.5	2.7	2.8	2.8	2.6	2.3	1.8							
Count									14	24	26	25	21	21	26	23	14							

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 80

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

IONOSPHERIC DATA

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

Observed at Washington, D.C.

Lat. 38.7°N, Long. 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC., E.J.W.

Calculated by: McC., 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	E	3.6Y 100 H	2.2Y 100	38Y 110 H	41Y 110 H	3.9Y 100	49 100	46 100 H	45Y 100 H	3.5 110	4.9 100	40Y 100 H	4.2 100	6.6Y 100	35 100 H	3.0Y 100	32Y 100	30 100 H	E	52 110	E	E	E
2	3.0Y 120	3.7Y 110	E	3.3 120	4.2Y 120	32 140	4.0Y 110 H	35Y 110 H	33Y 110 H	4.2 110	38 100	7.8Y 100	29 100	2.2 100	31Y 110	38Y 100	2.0Y 100	20Y 110 H	2.0 100 H	1.2 110	1.7Y 110	E	E	E
3	E	2.7Y 110	E	2.5Y 100	4.3Y 100 H	E	32Y 110	24Y 120	4.2Y 110 H	33Y 130	G	G	G	12.5Y 110	G	34Y 130	3.0Y 130	2.0 120	1.9 110	1.2 110	3.0 110	E	E	E
4	31Y 110	40 100 H	49Y 100	36Y 110	31 120	3.2 110	42 110	29 110	3.7 110	3.8 110	7.0 110 H	24 100	40Y 100	4.5 100	5.2Y 100	5.2Y 100	38Y 100	4.2 100	1.8Y 100	E	E	34 100	E	E
5	E	E	E	E	E	E	5.0 120	6.2Y 110 H	G	G	2.0 110	4.3 100	G	G	G	28 130 H	22 100	E	E	E	E	E	6.4Y 110	5.0 100
6	40 100	3.4 100	2.5Y 110	E	38Y 130	E	E	25 110	32 110	G	G	3.2 110	43 100	49Y 100	G	G	3.5Y 100	3.5Y 100	3.5 100	24Y 110	24 110	3.2 110 H	E	3.1 100
7	46 100	3.2 110	E	70Y 100	32Y 110	2.2 110	4.4 110	5.2Y 110	70Y 110	G	1.9 110	G	G	G	G	G	2.0 120	30Y 120	30Y 120	E	E	E	E	2.6Y 110
8	30 100	2.2 100	E	E	3.6Y 120	E	E	90 110	42Y 100	G	G	G	G	1.9 100	G	22Y 100	3.0Y 100	37Y 100	2.0Y 100	E	E	E	E	1.9Y 110
9	2.5 120	2.1 110	E	E	E	E	E	3.14 110	G	G	G	G	G	G	G	4.4Y 120	G	E	E	E	E	E	E	E
10	3.7 110	E	E	E	2.4Y 120	3.7 100	E	E	11.5Y 110	G	G	1.9 110	58Y 100	G	G	G	G	E	3.5 100	1.9 100	E	E	E	3.6 100
11	2.4Y (100)S	E	E	E	E	E	2.3Y 100	E	G	G	G	G	G	G	G	G	1.9 100	33 100	3.2 100	2.1 110	E	E	31Y 110	2.6 100
12	3.7 100	1.7Y 100	20 100	19 100	1.8 110	E	3.7Y 100	32 110	2.3 110	G	G	23 110	G	G	G	24 120	2.1 100	2.0 100	23 100	E	E	23Y 110	2.2Y 110	E
13	E	E	4.7Y 100	39 120	2.5 110	48Y 110	E	E	G	G	G	G	G	3.0 130	30 130	3.7Y 120	22 120	1.7 110	E	E	E	7.0Y 110	E	28 110
14	2.7 100	2.6 100	B	E	3.1Y 100	2.6Y 110	3.7Y 110 H	3.9Y 110 H	20 140	G	3.2Y 110	29 120	G	G	G	2.3 120	1.7 110	E	E	2.3Y 110	E	E	3.0 110	E
15	E	E	22 100	E	E	34Y 110	2.2 140	38 130	G	G	2.0 100	G	3.8 100	38 100	39Y 100 H	3.5Y 110 H	4.0 110	4.2 110 H	1.7 110	27Y 110	E	E	23Y (120)S	E
16	E	E	E	E	E	2.6 110	2.4 110	E	5.0 120	G	3.1 110	3.5 120	39Y 100 H	3.9 120	43Y 100 H	47Y 100 H	68Y 100 H	130Y 110 H	68 110	3.1 110	E	2.3 130	E	E
17	23Y 120	E	E	E	E	E	E	E	23 140	4.3 110	3.9H 100	1.9 100	22 100	G	G	2.0 100	3.0Y 100 H	33 100	26Y 110	3.0 100	E	E	2.6Y 120	4.3 110
18	2.5 120	3.7 100	3.3Y 110	E	E	2.3Y 110	2.7 100	3.7 100	38 100	50 100 H	5.5 100 H	4.9 100 H	6.1 100 H	4.3 100	43 100	45 100	4.9 100	43 100	72 100	7.5 100 H	6.6 110	44 100	7.4 100	4.9 100
19	5.8 110	E	E	24Y 120 H	3.7 110 H	4.6 100	44 100	32 100	30Y 100	3.2Y 100 H	3.8Y 100 H	4.1 100 H	54 100	4.7 100	29 100 H	3.3Y 120	9.2 100 H	5.0H 100	11.0 100	98Y 100 H	7.2 100	7.6H 100	4.9 100	3.2 100
20	3.8 100	3.1Y 110 H	39 100	43 100	4.5 100	4.2 100	66 100	72Y 100 H	48Y 100 H	7.0Y 100 H	29 100	3.7Y 100	2.9 100	3.0 100	26 90	4.2 90	4.2 90	3.4 90	2.4 90	3.6 100	3.9H 110 H	48 110	4.5 110	7.0Y 110 H
21	44 110 H	3.3 100	4.0Y 100 H	3.2 100	E	E	E	4.6 110	3.5 100	3.7 100	5.0Y 100	G	7.6Y 110	G	2.9 100	26 100	2.0 140	3.1Y 110 H	24 110	6.8 100	8.0Y 100 H	3.1Y 110 H	40 100	3.0 100
22	5.0 100	3.2 100	27 100	23 90	3.5 100	4.2 100	56 100	38 100	44 100	3.7Y 100	3.8 100	45 100	2.5 90	5.2 100	3.8 100	4.2 100	28Y 100 H	31Y 100	25Y 100 H	2.4 110	7.0Y 110	5.8Y 110	58 110	7.2Y 110 H
23	50 110 H	3.9Y 110	74 110	7.2 100	45 110 H	3.8 110 H	3.8 110	4.0Y 110 H	90 110 H	4.2 110 H	43Y 100	5.4 100	2.8 100	2.7 100	24 100	G	2.3 130	1.9 110 H	E	38 100	47 110	8.8 100	4.5 100	3.9 100
24	2.4 100	E	2.4 100	3.1Y 110 H	38 110	3.6Y 110	40 110	34 110	2.2 110	23 100	5.2Y 100	2.7 100	2.7 100	G	G	G	G	19 110	1.3Y 110	1.2 100	E	E	E	E
25	3.7Y 120	2.9Y 110	25 110	1.9 140	E	29 130	B	E	G	G	G	G	G	G	G	G	G	1.6 100	1.3Y 100	1.8 110	E	E	E	E
26	E	E	E	E	E	E	2.7 110	6.5Y 110	G	G	G	2.5 110	G	G	1.9 100	G	G	E	E	E	E	3.2 130	2.4Y 100	E
27	3.0Y 110 H	110 110	10.4 110	43Y 130	7.3Y 110 H	E	2.3Y 110	E	G	G	G	5.3H 100	4.5 110 H	3.3 110	3.0 110	G	G	E	E	E	E	E	E	E
28	25 130	E	2.4Y 110	E	E	E	E	2.2Y 110	1.9 120	6.8Y 110	3.5Y 120	3.7H 100	2.7H 110	G	25 120	2.6Y 110	4.9 120	3.5 120 H	4.2Y 110 H	4.2 110 H	2.4 130	E	E	E
29	E	E	E	8.6Y 120 H	7.8Y 120 H	2.4 110	2.4Y 110	2.5 110	G	3.6Y 100	3.6Y 100 H	24 100	G	G	G	2.3Y 110	23 120 H	11.0 140	E	E	E	E	4.5H 130	E
30	E	E	E	E	22 110	2.3 110	E	E	1.7Y 100	G	2.6 120	3.9Y 120	3.2 120	30 120	3.7Y 110 H	3.2Y 110	3.0Y 110 H	4.7Y 110 H	5.2 100	E	E	E	E	E
31	E	3.8Y 120	E	E	E	3.0Y 110	2.5Y 110	3.9Y 110 H	2.7Y 100	2.5Y 100	G	G	B	G	G	G	G	12 120	E	E	1.9Y 100 H	E	E	3.6Y 110
Median	2.5	2.1	**	1.9	2.5	2.4	2.5	3.2	2.7	**	2.6	2.5	2.7	1.9	1.9	2.6	2.3	3.1	2.0	1.2	**	**	**	**
Count	31	31	30	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 ☒

TABLE 81

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

IONOSPHERIC DATA

Form adopted June 1946

(M1500)F2, ____ (Unit), December (Month), 1952

(Characteristic)

Observed at Washington, D.C.

Lat. 38.7°N, Long. 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC., E.J.W.

Calculated by: McC., E.J.W.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.0F	2.1F	2.1F	(2.1)JS	2.2	2.3	2.2	2.3	2.5S	2.6	2.5	2.4	2.3H	2.3	2.4	2.3	2.4	2.4	1.9H	2.4	2.0	2.0F	2.0F	1.9F
2	(2.0)F	2.0F	2.0F	2.0F	2.0	2.0F	(2.0)F	2.3	2.4	2.4	2.2	2.2	2.3	2.3	2.4	2.3	2.4	2.4	2.1	2.0	2.1	2.2	2.0	2.1F
3	(2.0)F	2.0F	2.0F	1.9F	2.0	2.1	2.3	2.1	2.5	(1.8)H	2.4	2.3	2.3	2.4	2.3	2.3	2.4	2.3	2.2	2.2	(2.4)JS	1.9F	1.8	1.8F
4	(2.0)F	(2.0)JF	1.9F	(2.0)PF	1.9F	(1.9)F	2.0F	2.2F	2.5	2.4SF	(2.3)JH	2.3	2.2	2.2	2.2	2.3	2.2	2.3	2.4	2.2F	2.1F	(1.9)FS	(1.9)FP	(2.1)FP
5	(2.0)FJ	(2.0)FP	2.0V	2.0	2.3	2.3	S	2.1	2.3	2.4	2.4	2.2	2.4	2.3	2.4	2.3	2.4	2.4	2.1	2.2	2.6	2.0	1.9	1.8
6	A	A	(1.9)JF	2.1F	(2.1)F	2.2	2.2	2.3	2.6	2.8	(2.3)JH	2.4	2.3	(2.3)JS	2.3	2.4	2.4	(2.5)JH	2.0	2.2	2.3	1.9	1.9	2.0
7	(2.1)S	2.1F	2.1F	2.2F	(2.0)JF	(2.1)F	(2.1)JF	2.3F	(2.5)H	2.5	(2.4)JH	2.3H	2.4	2.4	2.3	2.4	2.4	2.6	(2.2)SF	2.1	2.2	2.1F	2.0F	2.0F
8	2.0F	1.9F	2.0F	2.0F	(2.0)F	2.1F	(2.1)SF	2.1F	2.5S	2.7	2.4	2.1	(2.3)JS	2.3H	2.3	2.5	2.5	2.4	2.1	2.0	2.1	2.2	2.0	2.0F
9	2.0F	2.2F	2.0F	2.0F	2.1F	2.1	2.3	2.4	2.5	(2.4)JH	2.6	(2.3)H	2.4	2.4	2.4	2.4	2.3	2.5	2.2	2.4S	(2.1)JS	2.2	(1.9)JS	2.0
10	2.0F	2.0F	2.0	2.1	2.2	2.4	2.2	2.3	2.3H	(2.4)H	2.1	2.3	2.4	2.3	2.4	2.2	2.3	2.4	2.0	(2.4)JS	2.3	2.0	2.0	A
11	B	2.0F	1.9	2.0	2.3	2.3	2.4	2.2	2.5	2.5	(2.2)H	C	2.4H	2.3	2.3	(2.4)JS	2.4	2.4	2.4	2.3	2.1	2.0	2.3	2.2
12	2.0	2.1	2.0	2.1F	2.2F	2.0F	2.0F	2.2F	2.4	2.4	2.2	2.4	2.3	2.3	2.3H	2.4	2.4	2.4	2.2	2.1	2.0F	2.1FS	2.2	2.4F
13	2.2F	2.0FK	(2.0)FK	AK	J(1.7)FK	AK	2.4FK	1.9FK	2.0K	2.1HK	1.8K	1.9K	2.0K	2.1K	2.3K	(2.0)HK	2.1ZK	2.1K	2.2K	(2.1)SK	2.2K	BK	SK	AK
14	BSK	BSK	BSK	2.1K	2.1K	2.2K	BK	2.0H	2.3	2.4	2.2	2.3	2.3	2.3	2.3	2.3	2.4	2.3	2.1	2.2	2.1	2.1	2.0	1.9
15	1.9	(1.9)JS	1.9	2.0	2.0	2.2	BS	2.0	2.3	2.3	2.4	2.4	2.3	2.2	2.2	2.2	2.4	2.3	2.2F	2.4	2.3	2.0F	1.9FS	2.1F
16	2.1F	2.0F	(2.1)J	2.0	2.0	2.1F	2.2	2.2S	2.4	2.3	2.5	2.4	2.3	2.3	2.3	2.4	2.3	2.2	2.2F	2.4F	2.0F	2.0F	(2.0)A	2.0F
17	2.0F	(2.0)F	(1.9)F	2.0	2.0	2.0F	2.0F	2.1F	(2.5)JS	2.4	2.5	(2.3)H	2.4	2.6	2.4H	2.4	(2.2)JS	2.3	2.3FS	2.0	2.3	2.2	2.0	A
18	2.0	2.0	2.1F	2.1FS	2.1F	2.0FS	2.2FS	2.3	2.3	2.6	2.4	2.4	2.5	2.4	2.3	2.3	(2.5)JS	2.5	(2.3)JA	2.2	A	A	A	A
19	(2.1)A	2.1F	2.3S	2.1	2.0F	2.2	2.2F	2.3	2.5	(2.6)JS	2.5	2.4	2.4	2.3S	2.5S	2.4	2.4	2.4	A	A	A	A	A	2.1
20	(2.1)JA	2.1	2.1F	2.2	2.2	2.1	A	(2.3)PA	2.7	2.6	2.7	2.5	2.5	2.5S	(2.5)J	2.5	2.6	2.4	2.2	2.5	2.4S	A	A	A
21	2.1F	(2.0)FP	(2.1)FJ	2.2	(2.1)JF	(2.2)F	(2.3)JF	2.5S	2.4	2.6	2.6	2.5F	2.4	2.5	2.4	2.5	2.5	2.5F	2.2F	2.2	2.4	(2.4)FJ	A	2.0F
22	2.1F	2.2F	(2.2)FJ	2.2F	2.2F	2.4F	A	2.4F	2.4	2.5	2.5	2.5	2.3	2.2	2.3	2.4	2.4	2.4	2.4SF	2.4F	(2.0)A	2.3	A	A
23	A	2.1F	A	(2.1)A	2.2F	2.4F	(2.6)A	(2.5)S	(2.5)A	2.6	(2.7)SH	2.4	2.1H	2.3	2.4	2.3	2.6	2.4	2.3	2.4	(2.4)A	A	A	A
24	1.8	1.9	2.1	2.1	2.2	2.5	1.9	(1.9)JS	2.2	2.1	2.2	2.0	2.3	2.3	2.3	2.3	2.3	2.4	2.0	2.3	2.3	2.0	(2.0)JF	2.0FS
25	(2.1)JF	(2.2)JF	(2.0)JS	2.2F	2.2FS	(2.1)PF	BS	2.2	2.5F	2.6F	2.4F	2.4	2.4	2.5	2.3	2.3S	2.5	2.3	2.3FS	2.2F	2.3	2.2	2.0	2.1F
26	(2.0)JF	(2.0)FS	(2.0)PF	(2.1)FS	(2.2)FJ	(2.3)JS	2.3	2.2	2.4	2.5	2.5	2.3	2.2	2.4	(2.4)JS	2.5	(2.3)JS	2.5	2.3	2.2	2.4S	2.3	2.0	2.1
27	2.1	A	2.1	2.2F	2.1F	2.3F	2.2F	(2.3)PS	2.4FS	2.3	2.5	2.3	2.4	2.4	(2.3)S	2.4S	2.4	2.2	1.9F	1.8	(1.9)FS	(1.9)JF	2.1	2.2F
28	2.0F	(2.1)JF	1.9F	1.9F	1.9F	2.1	2.0	2.1K	2.2K	2.0HK	2.1K	2.3K	2.1K	2.2K	2.4K	2.4K	2.4K	2.2K	2.0	2.1	1.9	2.1	2.1	(2.0)F
29	2.0F	2.1	2.1F	2.1	2.1	(2.0)JA	(2.0)JS	2.0	2.5	2.4	2.3	2.3	2.4	2.3	2.2	(2.4)S	2.3	2.5	(2.4)S	2.4	(1.7)GS	(1.9)GS	2.0FS	(1.9)F
30	2.0F	2.0	2.1F	2.0	2.0	2.1F	(2.0)JS	1.9	2.7	2.5	2.4	2.2	2.5	2.1	2.3	2.1	2.3	2.3	2.4	2.1	2.0	2.0	2.0	(2.0)SF
31	(2.0)F	2.1	2.2	2.1F	2.1F	2.0F	(2.2)F	(2.2)F	2.5F	2.4	2.4	2.2	2.4	2.2	2.3	2.4	2.3	2.4	2.2	2.3F	(2.2)S	2.2F	(2.2)FS	(2.0)PA
Median	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.2	2.5	2.4	2.4	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.2	2.2	2.2	2.0	2.0	2.0
Count	27	28	29	30	31	30	25	31	31	31	31	30	31	31	31	31	31	31	30	30	29	26	24	24

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 82

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

IONOSPHERIC DATA

(M3000)F2 (Characteristic), ___ (Unit), December (Month), 1952

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: McC., E.J.W.

Calculated by: McC., 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	30F	31F	31F	(31)JS	32	33	33	33	36S	37	35	35	33H	33	35	33	35	35	29H	35	30	30F	29F	28F
2	(30)F	29F	30F	30F	30	30F	(30)F	33	34	34	32	32	33	34	34	34	34	35	31	30	31	32	30	31F
3	(29)F	29F	30F	29F	30	31	34	31	35	(27)H	35	33	33	34	34	34	35	33	32	32	(35)JS	28F	27	27F
4	(30)F	(30)JF	29F	(29)PF	29F	(29)F	30F	32F	35	35SF	(34)JH	34	32	33	32	33	33	34	35	33F	32F	(28)FS	(29)FP	(31)FP
5	(30)FJ	(30)FP	30V	30	33	33	S	31	33	35	34	32	35	33	34	34	34	35	31	32	36	30	28	28
6	A	A	(28)JF	31F	(31)F	32	32	33	36	39	(33)JH	34	34	(33)JS	33	35	35	(35)JH	30	32	33	29	29	30
7	(31)S	31F	31F	32F	(30)JF	(31)F	(31)JF	33F	(35)H	35	(35)JH	33H	34	35	34	35	35	37	(32)SF	31	32	31F	29F	30F
8	30F	29F	29F	30F	(30)F	31F	(31)SF	31F	35S	37	34	31	(33)JS	33H	34	35	36	35	31	30	31	32	30	30F
9	30F	32F	30F	30F	31F	31	34	34	35	(35)JH	37	(34)H	35	35	34	35	33	35	32	34S	(31)JS	32	(29)JS	30
10	29F	30F	30	31	32	35	32	33	33H	(35)H	31	33	35	33	34	32	33	35	30	(35)JS	33	30	30	A
11	BS	30F	29	30	33	33	34	32	36	35	32H	C	34H	33	34	(34)JS	35	34	34	34	31	30	34	32
12	29	31	30	31F	32F	30F	30F	32F	34	34	32	35	33	33	33H	34	34	34	32	31	30F	31FS	32	35F
13	32F	29FK	(30)FK	AK	K(26)JF	AK	35FK	28FK	29K	30HK	28K	28K	30K	31K	33K	(30)HK	31ZK	31K	32K	(31)SK	32K	BSK	SK	AK
14	BSK	BSK	BSK	31K	31K	32K	BK	30H	34	35	32	34	34	34	33	33	34	33	31	32	31	31	29	28
15	28	(28)JS	29	29	29	32	BS	29S	33	34	35	34	34	32	32	33	34	34	32F	35	33	29F	28FS	31
16	31F	30F	(31)FS	30	30	31F	32	32	35	33	35	35	34	34	34	35	34	32	32F	34F	30F	29F	(30)A	30F
17	30F	(29)F	(28)F	30	29	30F	30F	31	(35)JS	34	36	(34)H	34	37	34H	35	(32)JS	33	33FS	30	33	32	30	A
18	30	30	31F	31FS	31F	30FS	32FS	33	33	37	35	35	35	35	33	34	(36)JS	35	(34)JA	32	A	A	A	A
19	(31)A	32F	34S	31	30F	32	32F	34	36	(37)JS	35	35	35	33S	35S	35	34	34	A	A	A	A	A	31
20	(31)JA	31	31F	32	32	31	A	(33)PA	38	36	37	35	36	35S	(35)J	36	36	35	33	35	34S	A	A	A
21	31F	(30)FP	(31)PJ	32	(31)JF	(32)F	(34)JF	35S	34	37	37	35F	34	35	35	35	35	35F	32F	32	35	(34)FJ	A	30F
22	31F	32F	(32)F	32F	32F	35F	A	34F	35	36	35	36	33	32	33	34	34	35	35FS	35F	(30)A	28	A	A
23	A	31F	A	(31)A	32F	34F	(36)A	(36)S	(35)A	37	(37)SH	34	31H	34	35	34	36	34	33	35	(34)A	A	A	A
24	27	29	31	31	32	35	28	(28)JS	32	31	32	30	34	34	34	34	33	34	30	34	33	30	(30)JF	30FS
25	(31)JF	(32)JF	(30)JS	32F	33FS	(31)PF	BS	32	35F	37F	34F	34	35	35	33	34S	35	33	34FS	33F	33	33	30	31F
26	(30)JF	(30)FS	(30)FP	(31)FS	(32)FJ	(33)JS	33	32	34	36	36	34	32	35	(35)JS	36	(33)JS	35	34	33	35S	34	30	31
27	31	A	31	32F	31F	33F	32F	(34)PS	35FS	34	36	33	34	35	(33)S	35S	34	32	29F	27	(29)FS	(28)JF	31	32F
28	30F	(31)JF	28F	29F	28F	31	30	31K	32K	29HK	31K	33K	31K	32K	34K	35K	34K	33K	30	31	29	31	31	(30)F
29	30F	31	31F	31	31	(30)JA	(30)JS	30	35	35	33	34	34	33	32	(35)S	33	36	(34)S	35	(26)BS	(28)BS	29FS	(28)F
30	30F	30	31F	30	30	31F	(30)JS	28	37	36	35	33	36	31	33	31	33	34	35	31	30	30	30	(30)SF
31	(29)F	31	32	31F	31F	29F	(32)F	(32)F	35F	34	34	32	34	32	34	35	33	35	33	34F	(32)S	32F	(32)FJ	(30)PA
Median	30	30	30	31	31	31	32	32	35	35	35	34	34	34	34	34	34	34	32	32	32	30	30	30
Count	27	28	29	30	31	30	25	31	31	31	31	30	31	31	31	31	31	31	30	30	29	26	24	24

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 83

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

Form adopted June 1946

IONOSPHERIC DATA

(M 3000)F1 (Characteristic), ____ (Unit), December (Month), 1952

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Lat. 38.7°N, Long 77.1° W

Scaled by: McC., E.J.W.

Calculated by: McC., E.J.W.

75° W Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									L	L	L	4.0 F	4.0	L	L	L								
2									Q	L	3.9	L	L	L	L	L								
3									L	L	L	L	L	L	L	L								
4									Q	L	3.9 H	3.7 H	3.6	L	L	L								
5									Q	L	L	L	4.0	L	L	L								
6										Q	L	L	L	L	L	L								
7										Q	4.1	L	L	L	L	Q								
8										Q	L	L	L	L	L	Q								
9										L	L	L	L	L	L	L								
10										Q	L	L	3.9	L	4.0	L								
11										Q	L	L	L	L	L	Q								
12										Q	3.6 H	L	L	L	L	L								
13										Q K	3.3 K	3.6 K	3.7 K	L K	3.6 K	L K								
14										Q	L	L	L	L	L	L								
15										Q	L	L	L	L	L	Q								
16										Q	L	L	L	L	A	A								
17										Q	Q	L	L	L	L	L								
18										Q	Q	L	L	L	L	L								
19										Q	L	L	L	L	L	Q								
20										Q	Q	3.8	L	L	(4.0) P	L								
21										L	L	L	L	L	L	L								
22										Q	L	L	L	L	L	L								
23										Q	Q	L	L	L	L	L								
24										L	3.6	L	3.9 H	L	L	L								
25										L	L	(3.9) P	4.0	L	L	L								
26										L	L	(3.7) H	L	L	L	Q								
27										Q	(3.9) P	L	L	L	L	L								
28									L K	L K	3.6 H K	(3.7) H K	(3.8) H K	(3.8) P K	L K	L K								
29										Q	L	3.7	3.7	L	(3.7) L	L								
30										L	L	L	L	L	L	(4.0) L								
31										L	L	(3.9) L	L	L	L	L								
Median									—	—	3.8	3.7	3.9	—	—	—								
Count											8	7	9	1	4	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

(M1500) E, ____ (Unit), December (Month), 1952 (Characteristic)

National Bureau of Standards (Institution)

Observed at Washington, D.C.

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

Lat. 38.7°N, Long. 77.1°W

75°W Mean Time

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

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Table 85

Ionospheric Storminess at Washington, D. C.

December 1952

Day	Ionospheric character* 00-12 GCT	Ionospheric character* 12-24 GCT	Principal storms Beginning GCT	Principal storms End GCT	Geomagnetic character** 00-12 GCT	Geomagnetic character** 12-24 GCT
1	2	2			2	3
2	1	2			3	5
3	3	2			4	3
4	3	3			4	4
5	3	3			4	3
6	2	2			2	2
7	2	2			2	1
8	2	1			2	1
9	2	1			1	1
10	2	1			2	2
11	2	1			3	2
12	2	1			2	2
13	3	5	0600	----	5	3
14	4	3	----	1200	1	1
15	3	1			2	2
16	2	3			2	2
17	2	1			3	1
18	1	1			2	2
19	2	2			1	2
20	1	1			2	1
21	1	1			2	1
22	1	1			2	2
23	3	2			1	1
24	3	2			3	4
25	1	2			4	2
26	2	2			3	2
27	1	1			3	3
28	3	4	1200	2300	3	4
29	1	1			4	4
30	2	1			4	4
31	1	3			3	4

*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)

November 1952

Day	North Atlantic quality figure		Short-term forecasts issued about one hour in advance of 12-hour period, UT:				Whole day quality index	Advance forecasts (J-reports) for whole day; issued in advance by:			Geomagnetic K_{Ch}	
Nov	Half Day UT (1)	(2)	00 to 12	06 to 18	12 to 24	18 to 06	UT	1 to 3/4 days	4/5 to 7 days	8 to 25 days	Half day UT (1)	(2)
1	(4)	5	(3)	(30	5	(4)	(4)	(3)	(4)	X	3	(4)
2	(4)	6	(4)	(3)	5	5	(4)	(3)	(4)	X	3	3
3	5	7	(4)	(4)	6	6	6	(4)	5		3	2
4	5	7	5	5	6	6	6	5	5		2	1
5	5	6	5	5	6	6	5	6	6		2	1
6	5	6	6	(4)	6	6	5	6	6		3	2
7	5	6	5	(4)	6	6	5	6	6		3	3
8	5	6	5	(4)	6	6	5	5	5		3	3
9	6	6	(4)	(4)	6	6	6	5	5		2	2
10	6	7	6	6	6	7	6	6	6		1	1
11	5	7	6	6	7	7	6	7	7		1	2
12	7	8	7	7	7	7	7	7	7		1	1
13	6	8	6	6	7	7	7	6	6		1	1
14	6	7	7	6	7	6	7	6	6		2	2
15	7	7	6	6	6	6	7	7	7		3	2
16	6	7	6	6	6	5	7	7	7		2	2
17	6	8	6	6	6	6	7	7	7		2	3
18	6	7	(4)	(4)	6	6	6	7	6		2	2
19	7	7	6	5	7	7	7	6	7		2	1
20	7	7	6	6	7	7	7	6	7		2	2
21	6	6	6	5	(4)	(4)	6	(4)	6		(4)	3
22	5	6	(4)	(4)	5	5	5	(3)	(4)	X	3	2
23	5	7	(4)	(3)	5	6	6	(4)	(4)	X	(4)	1
24	5	7	5	5	6	6	6	5	5		2	2
25	6	7	6	5	7	6	6	5	5		2	1
26	6	6	5	5	5	5	6	(4)	(4)	X	2	(4)
27	(4)	(4)	(4)	(4)	5	(4)	(4)	(3)	(3)	X	(4)	(4)
28	(4)	5	(3)	(3)	(4)	5	(4)	(3)	(3)	X	(4)	3
29	5	6	(3)	(4)	5	5	5	(4)	(4)	X	2	3
30	5	6	(4)	(4)	5	6	5	(4)	5		2	2

Score: Quiet periods

	Short-term (00 to 12)	Short-term (12 to 24)	1 to 3/4 days	4/5 to 7 days
P	12	11	6	11
S	11	15	15	13
U	1	2	1	0
F	2	1	4	2

Disturbed periods

	Short-term (00 to 12)	Short-term (12 to 24)	1 to 3/4 days	4/5 to 7 days
P	2	0	0	2
S	2	1	4	2
U	0	0	0	0
F	0	0	0	0

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

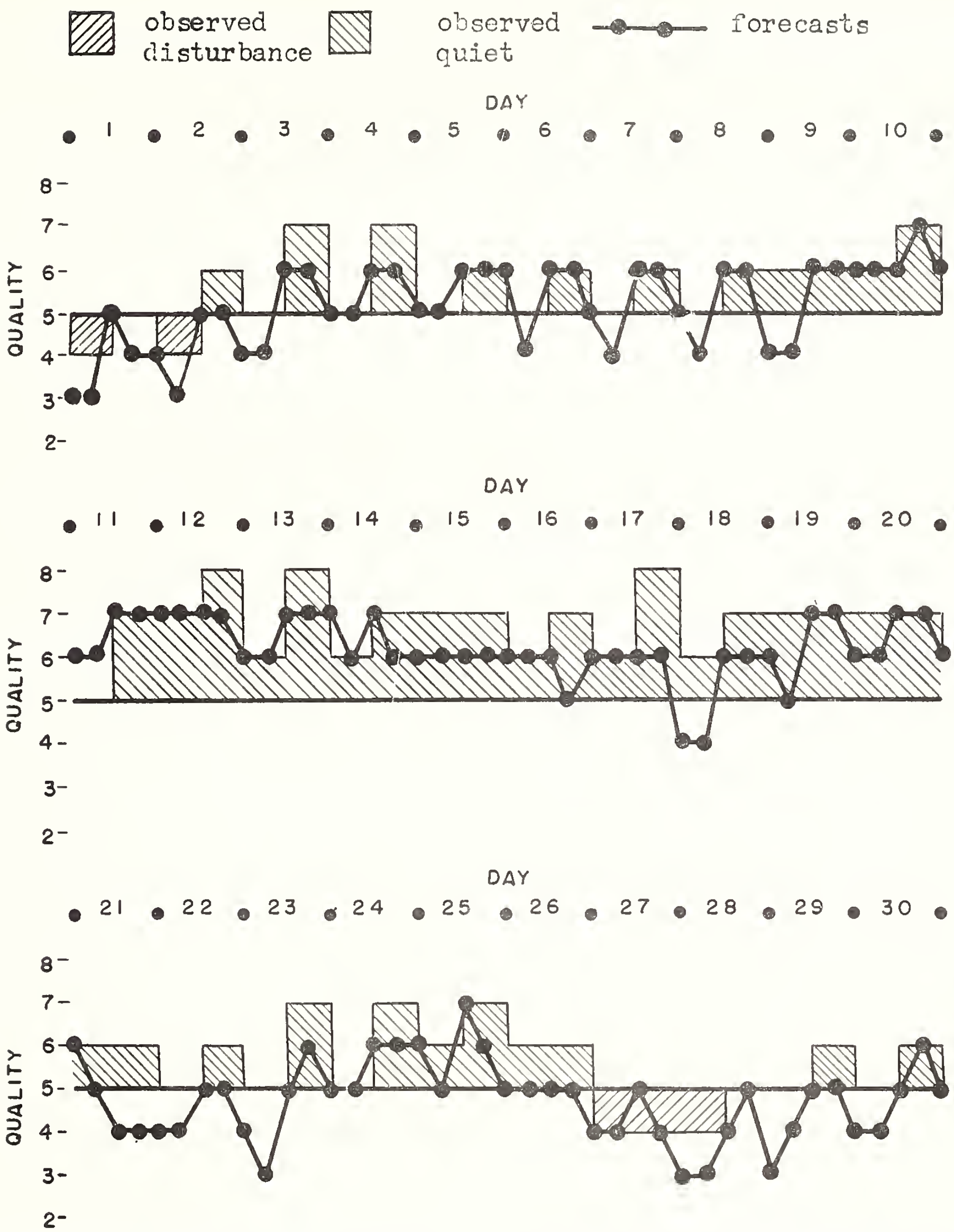
K-scale of Geomagnetic Activity
0 to 9, 9 representing the greatest disturbance; $K_{Ch} \geqslant 4$ indicates significant disturbance, enclosed in ( ) for emphasis

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

Table 86b

Short-Term Forecasts--November 1952



Outcome of Advance Forecasts (1 to 3 or 4 days ahead)--November 1952

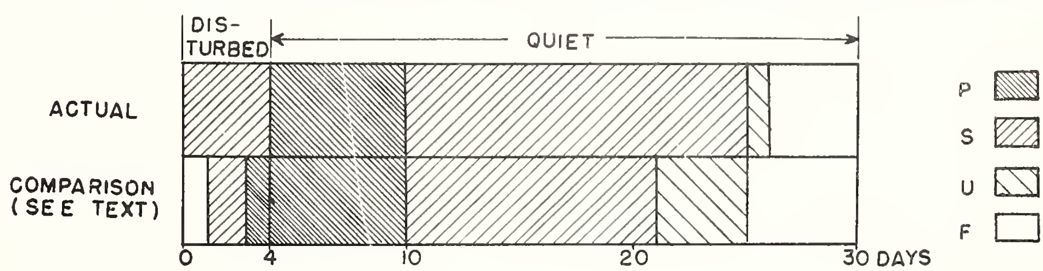


Table 87a

Coronal observations at Climax, Colorado (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
1952																																					
Dec. 1.7	-	-	-	-	-	3	3	4	5	6	6	5	4	3	2	3	3	4	4	3	4	8	13	12	6	3	2	2	2	3	4	5	3	2	-	-	-
2.7a	X	X	X	X	X	X	-	-	-	5	5	-	-	-	-	5	5	5	-	-	-	5	5	5	5	-	X	X	X	X	X	X	X	X	X	X	X
4.8a	-	-	-	-	-	-	-	-	-	5	6	5	5	5	6	11	15	18	5	5	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	7	8	10	12	11	10	7	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.7	-	-	-	1	1	1	1	1	2	1	1	2	2	4	6	12	17	20	17	15	16	12	7	4	3	3	2	1	1	1	-	-	-	-	-	-	-
11.7	-	X	X	X	X	X	X	-	-	-	-	-	-	2	4	12	19	13	15	17	14	13	5	3	2	-	-	-	-	-	-	-	-	-	-	-	-
14.8a	-	-	-	-	-	-	-	-	-	2	3	3	2	2	2	2	3	3	7	13	17	18	15	7	4	3	-	-	-	-	-	-	-	-	-	-	-
15.8	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	3	8	9	8	6	4	3	2	2	2	3	3	2	-	-	-	-	-	-	-
16.8	1	1	1	1	1	1	1	1	1	2	2	2	2	3	4	6	8	4	5	5	7	9	8	6	5	3	3	4	5	3	1	1	-	-	-	-	-
24.7a	-	-	-	-	-	1	2	3	5	5	4	6	8	9	13	12	9	3	2	1	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-
25.7a	-	-	-	-	-	1	2	3	3	2	1	2	3	6	11	8	6	6	1	1	1	1	1	-	-	-	-	1	3	1	-	-	-	-	-	-	-
27.7	-	-	-	-	-	-	1	3	2	2	1	1	1	1	1	1	2	3	5	2	1	1	2	4	2	2	1	1	-	-	-	-	-	-	-	-	-
29.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	4	6	7	8	6	3	-	-	3	5	5	4	-	-	-	-	-	-	-	-	-	-	-	-
30.8	-	-	-	-	2	3	3	3	4	5	6	7	6	9	11	15	17	10	6	5	4	4	5	6	5	3	2	3	4	4	2	-	-	-	-	-	-
31.7	-	-	-	-	2	2	3	4	4	5	6	8	10	11	12	13	18	11	6	3	2	2	2	2	2	3	3	3	3	3	-	-	-	-	-	-	-

Table 88a

Coronal observations at Climax, Colorado (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
1952																																					
Dec. 1.7	5	5	3	2	2	1	1	1	2	3	3	3	5	10	12	8	10	17	9	4	4	9	2	3	3	3	3	3	2	2	2	3	4	6	7	6	6
2.7a	X	X	X	X	X	X	-	-	-	-	2	2	3	6	13	14	8	6	3	3	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X
4.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	5	5	6	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	5	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.7	4	3	4	2	1	1	-	-	1	2	3	5	5	4	3	2	10	1	1	2	12	5	4	2	4	3	2	1	1	1	1	1	1	1	2	3	3
11.7	6	X	X	X	X	X	X	-	3	3	4	4	5	4	3	3	12	2	2	3	8	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
14.8a	4	3	2	2	1	1	1	1	1	4	8	10	11	10	9	11	11	7	4	2	11	9	8	1	3	4	5	3	-	-	-	-	-	-	-	-	-
15.8	5	2	3	2	1	-	-	-	1	2	3	3	4	3	2	3	6	3	1	1	1	-	-	-	-	-	-	-	-	-	-	1	1	3	4	4	3
16.8	6	6	5	4	2	2	1	1	1	4	7	8	5	5	4	5	6	4	2	2	2	1	1	1	1	2	2	2	1	1	2	2	3	5	6	4	4
24.7a	4	3	2	1	1	-	-	-	-	-	-	-	1	1	2	4	7	6	5	4	6	8	7	6	6	5	3	2	1	1	1	1	1	2	4	5	4
25.7a	3	2	2	1	-	-	-	-	-	-	1	1	1	2	3	4	5	9	1	4	4	6	7	6	5	4	3	2	2	1	1	1	2	2	3	4	4
27.7	3	4	3	2	1	1	1	1	1	1	3	4	5	5	5	5	8	10	12	6	3	5	5	3	2	2	1	3	2	1	1	1	1	2	2	2	3
29.8a	3	3	-	-	-	-	-	-	-	-	-	-	2	3	3	3	5	8	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30.8	4	3	3	3	3	2	1	2	2	2	1	2	2	2	3	4	8	6	7	5	5	4	3	3	2	2	1	1	1	1	2	2	2	2	3	3	4
31.7	3	3	2	2	1	1	1	1	1	2	2	3	3	3	3	5	9	9	3	6	4	5	4	3	4	4	5	2	1	1	1	1	2	3	3	4	4

Table 89a

Coronal observations at Climax, Colorado (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
1952																																					
Dec. 1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.7a	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X
4.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	5	5	4	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.7	-	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	3	3	3	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
15.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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	50	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Dec. 1.7	-	X	X	X	X	X	X	X	X	X	X	X	X	X	10	10	11	11	10	9	6	5	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	7	8	6	5	7	8	6	6	5	-	-	-	-	-	-	-	-	-	-	-	-	-
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	X	X	-
10.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	5	10	14	12	16	14	13	10	6	3	2	2	2	1	1	-	-	-	-	-
11.7	-	X	X	X	X	X	1	2	3	3	2	1	2	2	1	1	1	3	5	9	12	10	6	6	5	5	3	2	3	4	3	2	2	-	-	-	-
14.8a	-	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	-
15.8	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	-	1	2	2	3	7	3	1	-	-	-	1	1	1	-	-	-	-	-	-	-
16.8	-	-	-	-	-	1	2	3	3	2	2	2	3	4	4	4	3	4	5	8	15	21	26	10	2	2	2	2	3	3	2	2	-	-	-	-	1
24.7a	-	-	-	-	-	-	-	1	2	2	3	3	4	5	12	21	36	37	25	21	21	21	14	5	3	2	1	-	-	-	-	-	-	-	-	-	-
25.7a	-	-	-	-	-	-	-	-	1	1	1	2	2	4	11	19	33	35	33	27	25	18	12	5	2	1	1	1	-	-	-	-	-	-	-	-	-
27.7	-	-	-	-	-	-	1	1	2	3	3	3	4	4	5	16	18	17	12	10	6	4	3	2	2	1	1	1	1	-	-	-	-	-	-	-	-
29.8a	-	-	-	-	-	-	-	-	-	-	5	5	5	-	-	5	5	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30.8	-	-	-	-	-	-	-	3	4	5	4	3	3	3	6	8	7	5	4	4	5	5	7	5	4	4	-	-	-	-	-	-	-	-	-	-	-
31.7	-	-	-	-	-	-	-	2	3	5	4	3	3	4	6	5	4	3	-	3	4	7	9	8	5	4	3	3	3	3	-	-	-	-	-	-	-

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
1952																																					
Dec. 1.7	6	X	X	X	X	X	X	X	X	X	X	X	X	X	4	4	3	3	4	8	12	13	12	10	9	8	6	5	4	4	4	4	4	4	5	6	5
2.7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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	X	X	-
10.7	3	3	2	2	2	2	2	2	2	4	9	10	5	3	3	6	9	12	8	2	4	8	3	2	1	1	1	1	2	1	1	1	1	2	2	3	4
11.7	-	4	6	8	5	4	4	3	1	1	2	4	3	4	5	3	5	9	4	6	7	10	12	9	4	2	2	2	2	2	2	2	2	3	3	4	6
14.8a	-	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	10	11	12	10	10	-	-	X	X	X	X	X	X	X	X	X	4
15.8	3	2	1	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	3	6	15	14	11	6	4	3	3	2	1	-	-	-	1	3	3	4	5
16.8	4	4	3	3	2	1	1	1	1	1	1	1	1	1	2	2	2	4	5	5	26	25	8	6	8	8	5	3	2	2	2	2	3	5	5	6	6
24.7a	4	3	3	2	1	1	1	1	1	1	3	3	5	5	2	12	18	5	7	5	1	3	1	5	3	1	4	5	4	2	1	1	1	2	2	3	4
25.7a	4	3	3	2	1	1	1	1	2	2	3	4	5	2	4	17	5	26	3	5	1	6	2	1	3	5	6	4	3	3	2	1	1	2	3	4	3
27.7	3	2	2	2	1	1	1	1	1	1	1	1	1	1	1	3	15	1	1	4	7	6	5	5	6	5	4	3	2	1	1	1	2	5	5	4	3
29.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
30.8	4	3	2	3	3	4	3	2	2	1	1	2	4	3	3	3	3	4	6	5	5	5	5	4	4	3	2	3	1	1	1	1	2	2	3	3	4
31.7	4	4	3	3	3	3	2	2	2	1	1	2	2	3	3	4	4	3	3	4	2	2	2	2	2	2	3	2	1	1	2	2	2	2	3	3	3

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
1952																																					
Dec. 1.7	-	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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	X	X	-
10.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.7	-	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.8a	-	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	-
15.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	4	1	-	-	-	-	-	-	-	-	-	-	-	-	-
24.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	4	4	3	3	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	2	3	3	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 90a

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

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Dec. 1.7	-	-	-	-	2	4	5	4	4	5	5	5	5	5	4	5	5	6	5	5	4	14	18	11	6	5	3	3	2	2	5	4	2	-	-	-	-
3.7	3	4	4	4	4	3	3	4	5	5	5	4	5	5	5	8	18	8	6	5	5	5	5	5	4	4	3	3	3	3	3	3	-	-	-	-	-
4.8	-	-	-	-	-	-	2	3	4	5	4	4	4	4	5	12	24	23	14	5	4	4	5	5	5	4	3	3	3	3	4	3	2	-	-	-	-
6.7	-	-	-	-	2	3	5	4	4	4	5	5	6	8	11	13	12	11	5	4	8	8	5	4	3	2	3	2	-	-	-	-	-	-	-	-	-
7.7	-	-	-	-	-	4	5	5	6	5	4	5	11	12	13	17	18	13	11	8	9	10	8	8	5	4	3	2	2	2	2	2	-	-	-	-	-
8.8	-	-	-	3	4	5	4	5	5	6	4	4	5	8	7	11	15	14	11	8	7	7	6	5	3	3	3	2	2	3	2	2	2	2	2	3	2
9.7	-	-	-	-	3	3	4	5	5	6	5	4	5	5	8	11	16	20	15	13	11	10	10	8	5	3	3	4	3	2	2	3	2	2	-	-	-
10.7	-	2	2	3	4	3	3	4	4	4	3	3	4	5	6	16	30	44	22	20	22	36,	38	11	7	5	4	3	3	3	2	2	2	-	-	2	2
11.7	-	-	-	2	3	3	3	3	3	3	4	3	4	5	8	15	34	36	20	23	28	42	23	12	7	6	7	8	8	7	-	-	-	-	-	-	-
12.7	-	-	-	3	3	3	2	2	2	3	3	3	4	5	9	11	18	23	28	32	39	38	23	20	11	8	5	3	4	3	3	2	2	2	-	-	-
13.8	-	2	2	3	3	2	2	3	3	3	3	3	3	4	5	6	7	14	16	20	22	30	22	15	10	7	3	4	4	5	3	2	2	-	-	-	-
14.7	-	-	2	2	-	2	2	2	2	2	3	3	5	5	6	7	8	13	14	16	20	28	30	22	10	8	5	6	8	7	5	3	2	2	-	-	-
15.7	-	-	-	-	-	2	2	3	3	3	4	4	4	4	5	5	6	9	10	11	13	14	12	10	7	5	3	3	8	9	10	4	3	2	2	-	-
17.8	X	X	3	3	2	2	3	3	4	4	4	3	5	4	8	9	8	7	5	5	4	5	5	5	4	3	4	3	3	3	3	3	2	-	-	-	-
22.8	-	-	3	3	3	4	4	5	6	5	5	5	5	5	5	7	8	8	5	5	4	4	4	3	3	2	2	2	2	3	2	2	-	-	-	-	-
23.7	2	2	-	-	-	3	4	6	8	8	7	5	6	7	8	13	14	12	8	5	2	2	3	3	3	3	2	2	2	3	3	4	4	2	2	-	-
24.7	-	2	3	3	3	3	3	4	5	7	7	6	8	7	11	13	14	11	6	5	4	3	4	3	3	2	2	3	3	3	3	3	2	2	-	-	-
25.8	-	2	2	3	3	4	4	4	5	10	6	4	5	7	8	13	12	13	16	10	11	5	4	3	3	3	3	2	2	3	2	2	2	X	X	X	X
27.9	-	-	-	3	3	3	4	5	7	5	4	3	5	4	5	6	4	7	8	5	3	4	4	6	5	4[a]	5[a]	5[a]	4	3	3	3	2	2	-	-	-
30.8	-	-	-	-	3	3	4	5	5	5	5	6	7	7	8	11	20	16	14	10	6	5	5	4	4	4	4	2	3	3	5	4	3	4	-	-	-
31.8	-	-	-	-	2	3	3	4	5	5	4	4	5	7	11	13	15	16	5	3	3	3	3	2	3	3	3	3	3	2	3	-	-	-	-	-	-

Table 91a

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

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Dec. 1.7	4	3	5	3	2	2	2	2	-	2	2	3	5	6	8	11	6	5	12	5	3	3	8	2	3	3	2	2	2	2	2	3	3	2	2	2	3
3.7	3	3	3	3	4	3	3	2	3	3	4	4	5	5	6	14	11	12	5	4	3	3	2	2	2	2	2	3	3	2	2	2	2	3	2	3	3
4.8	4	4	5	4	4	3	3	2	2	3	5	5	4	5	5	12	13	11	8	3	3	4	3	3	3	2	2	3	5	3	2	3	2	3	3	3	4
6.7	3	3	3	3	3	2	2	2	2	3	3	3	2	2	3	4	3	4	2	2	2	2	2	2	2	3	3	3	2	3	3	2	3	2	2	3	3
7.7	4	5	5	6	3	2	2	2	2	3	4	5	4	5	3	4	4	2	2	2	2	3	2	3	2	3	3	3	4	4	3	2	2	2	2	3	2
8.8	5	6	7	5	3	2	2	3	2	2	5	7	8	11	5	3	2	2	2	3	5	5	6	5	5	3	3	3	3	4	3	2	3	2	2	3	3
9.7	3	6	8	7	5	3	3	4	3	3	4	8	8	6	6	5	3	2	3	3	5	4	5	5	5	4	3	3	2	2	3	3	2	3	2	3	3
10.7	4	5	5	6	3	3	3	3	3	7	8	11	12	9	8	5	11	16	3	3	14	16	8	7	6	6	5	4	3	3	3	4	3	2	3	3	3
11.7	3	4	5	5	3	4	3	3	2	8	11	12	9	8	5	6	8	18	3	5	5	11	11	5	6	5	3	2	2	3	3	3	3	3	2	3	3
12.7	4	5	5	3	4	4	3	2	3	3	5	8	9	10	3	6	11	20	4	5	13	10	12	2	3	4	4	3	2	3	4	3	2	4	3	2	3
13.8	4	4	4	4	3	3	2	2	2	3	4	5	8	5	4	4	6	8	5	2	11	8	3	2	2	3	3	2	2	3	2	2	2	2	3	2	2
14.7	4	4	5	5	4	5	3	3	2	3	5	8	11	12	11	8	9	8	6	4	9	8	8	2	3	4	4	3	3	2	2	2	2	3	3	2	3
15.7	4	6	5	5	4	5	3	4	3	3	5	6	7	8	9	5	8	9	6	4	3	5	4	3	2	3	3	4	2	2	3	3	2	2	3	3	3
17.8	5	4	4	4	4	3	2	2	2	3	5	6	3	4	3	4	4	3	4	3	3	4	4	2	3	2	3	2	3	3	3	3	3	4	3	2	2
22.8	3	2	3	3	2	3	3	2	2	3	2	4	4	5	2	3	2	5	4	5	5	5	6	3	2	2	3	3	2	3	3	3	2	2	2	3	3
23.7	4	5	4	3	3	3	2	2	2	3	3	3	3	3	2	2	8	7	4	3	5	8	7	6	4	4	5	4	3	3	3	2	3	3	3	2	3
24.7	4	5	3	3	4	4	3	3	3	2	3	3	2	2	3	4	5	5	5	4	5	8	9	8	6	4	5	3	2	3	3	2	3	3	2	2	3
25.8	4	5	3	3	2	2	3	3	2	2	3	5	4	2	3	4	4	4	5	4	4	5	5	4	3	2	3	3	2	-	2	2	3	X	X	X	X
27.9	3	4	3	3	3	2	3	3	2	3	4	5	6	7	7	7	8	8	9	8	4	3	4	3	3	4[a]	4[a]	4[a]	2	2	2	2	2	2	2	2	3
30.8	4	5	4	4	4	5	3	2	2	3	4	5	4	5	5	4	6	6	5	5	4	4	4	4	4	3	3	2	2	2	2	2	2	2	2	2	-
31.8	3	3	3	3	3	3	3	2	3	2	2	3	4	4	4	6	6	8	5	5	4	3	3	3	3	3	2	3	2	2	2	2	2	2	3	3	2

Table 92a

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

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Dec. 1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.7	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	3	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.8	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	3	3	3	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	3	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.7	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	3	3	3	3	4	4	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
11.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	3	3	4	4	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-
12.7	-	-	-	-	-	-	-	-	-	-	-	-	2	3	2	3	2	3	4	5	5	4	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-
13.8	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	2	3	3	3	5	4	4	3	2	-	-	-	-	-	-	-	-	-	-	-	-
14.7	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	5	4	4	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	3	2	3	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
17.8	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X
27.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-[a]	-[a]	-[a]	-	-	-	-	-	-	-	-	-
30.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 90b

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

Date GCT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	50	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Dec. 1.7	-	-	-	-	-	-	-	3	4	4	4	4	5	6	8	8	11	12	11	10	8	5	4	3	3	3	3	3	2	2	2	2	2	-	-	-	-
3.7	-	-	-	-	-	2	2	3	3	3	4	3	4	4	5	6	11	8	6	5	5	6	6	5	4	4	4	4	4	3	3	3	2	2	2	3	3
4.8	-	-	-	-	-	2	3	4	4	5	4	4	4	4	4	6	14	15	5	3	5	14	11	5	5	5	4	4	5	4	4	3	3	2	-	-	-
6.7a	-	-	-	-	-	-	-	2	2	3	3	3	4	3	3	4	3	2	2	2	3	5	5	4	4	4	4	4	5	4	4	3	2	2	-	-	-
7.7	-	-	-	-	-	-	2	2	3	4	3	4	5	5	4	4	3	3	4	4	4	8	7	7	6	6	5	5	5	4	5	4	4	3	2	-	-
8.8	2	-	-	-	-	-	-	2	2	3	3	3	3	2	2	3	3	3	4	5	10	7	8	9	8	7	8	6	5	4	4	4	3	2	2	-	-
9.7	-	-	-	2	2	2	2	3	3	3	3	4	4	4	4	3	3	3	5	7	13	11	12	11	9	8	6	5	4	4	5	4	3	2	2	-	-
10.7a	2	3	3	2	2	3	2	2	3	4	5	4	4	4	3	4	4	3	5	11	14	13	23	16	14	12	9	7	5	5	4	3	3	2	-	-	-
11.7	-	-	-	-	2	2	3	3	3	5	4	4	4	4	5	5	4	5	7	10	11	13	11	9	9	8	6	5	8	7	5	4	3	2	-	-	-
12.7	-	-	-	2	2	3	3	3	3	4	5	4	5	5	6	7	6	5	8	16	20	16	8	9	8	6	5	5	6	7	6	5	4	3	2	-	-
13.8	-	-	-	-	-	2	3	4	4	5	5	4	5	5	7	8	8	4	5	11	14	11	7	5	5	6	4	5	5	5	5	4	4	3	3	-	-
14.7	-	-	-	-	-	2	3	4	5	5	4	3	4	5	12	11	10	8	5	5	6	7	8	7	5	3	3	3	3	3	3	4	3	2	2	-	-
15.7	-	-	-	-	-	2	3	5	5	5	6	4	5	7	8	8	9	6	5	6	7	11	20	11	4	3	3	4	4	4	4	4	3	2	2	-	-
17.8	-	-	-	-	-	-	4	5	5	4	5	4	5	6	7	8	7	7	8	16	45	50	18	8	9	11	10	8	8	11	13	3	2	X	X	X	X
22.8	-	-	-	-	2	3	3	3	3	3	3	4	5	5	5	8	14	13	11	9	10	11	12	11	5	3	3	2	5	5	4	5	4	4	4	3	-
23.7	-	-	-	-	-	-	2	3	3	4	5	5	6	5	14	20	41	47	43	30	28	28	23	16	11	5	4	3	4	4	4	5	4	4	3	2	2
24.7	-	-	-	-	2	2	3	3	3	3	4	5	4	5	11	32	45	54	46	39	38	37	32	14	6	3	2	2	3	3	3	3	2	-	-	-	-
25.8	X	X	5	5	4	4	4	3	4	5	4	6	5	6	8	14	28	47	39	32	22	20	15	8	5	3	2	2	2	4	3	3	2	2	2	-	-
27.9	-	-	-	-	-	-	2	3	5	5	6	6	5	7	11	20	36	38	28	16	15	11	5	5	5	4	3	3	3	3	5	4	4	2	2	2	-
30.8a	-	-	-	-	-	-	2	3	5	5	6	5	5	4	5	8	12	11	5	5	4	5	8	7	4	4	3	4	3	3	3	3	2	2	-	-	-
31.8	-	-	-	-	-	-	2	3	3	3	3	4	3	3	3	4	5	4	3	3	3	4	5	5	4	6	5	4	4	3	3	2	2	2	-	-	-

Table 91b

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

Date GCT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Dec. 1.7	3	2	3	3	3	2	2	3	2	3	3	4	4	4	5	4	3	3	3	5	12	13	12	9	8	6	11	8	10	4	3	3	2	3	3	3	4
3.7	3	3	3	4	3	2	2	3	2	2	2	3	4	5	3	4	4	6	3	2	3	3	2	2	2	3	5	4	4	2	2	3	3	3	4	3	3
4.8	4	3	3	3	3	3	2	2	2	2	2	4	4	3	3	5	3	4	4	5	4	5	4	3	2	2	3	3	2	2	2	3	3	3	4	5	4
6.7a	3	2	3	3	3	3	3	3	3	2	2	3	4	3	3	4	4	4	5	3	4	3	3	3	2	2	2	2	2	2	2	3	3	3	3	3	3
7.7	2	3	3	3	3	3	2	3	3	3	5	4	5	5	4	4	5	5	5	5	5	6	5	4	3	3	3	2	2	2	2	3	2	3	4	4	4
8.8	3	4	4	4	5	4	3	2	2	2	5	6	7	8	5	5	6	9	10	9	7	5	6	3	5	4	3	5	4	4	3	2	2	3	4	4	5
9.7	3	4	4	3	4	4	3	2	2	2	3	5	11	8	5	6	11	10	9	5	7	11	4	3	3	4	3	6	5	4	2	2	3	4	4	4	3
10.7a	3	5	5	4	5	5	4	2	3	3	4	11	12	11	8	5	8	10	11	7	5	6	5	4	3	2	3	3	5	3	3	4	4	4	4	3	4
11.7	3	2	5	4	5	3	3	2	2	2	3	3	6	6	5	6	5	8	4	4	8	8	14	5	3	3	3	5	4	3	4	5	3	3	2	3	3
12.7	3	2	3	3	3	3	2	2	3	3	4	5	5	5	5	8	7	5	5	6	14	13	12	8	8	7	6	5	4	3	4	3	2	3	4	4	4
13.8	2	2	4	5	3	2	3	2	2	2	2	3	3	3	4	5	4	4	4	5	10	12	13	10	8	8	7	6	4	4	3	3	3	-	-	-	4
14.7	3	3	4	5	4	3	4	2	2	2	3	3	3	2	3	5	5	4	5	7	14	13	12	10	6	6	6	11	5	4	3	3	3	2	3	4	4
15.7	3	3	4	5	4	3	4	2	3	2	2	3	4	5	4	5	4	4	5	5	25	23	18	11	7	6	5	12	11	5	3	3	3	3	4	5	4
17.8	2	3	3	4	3	2	3	2	2	3	3	3	3	3	3	4	5	5	5	6	20	22	19	11	6	5	5	4	3	2	2	2	3	X	X	X	X
22.8	3	3	3	3	3	3	3	3	2	3	2	2	3	3	4	5	7	5	3	3	2	2	2	3	3	3	2	3	3	2	3	2	2	2	3	3	3
23.7	3	2	4	4	3	3	3	2	3	2	2	3	3	6	8	16	36	8	11	7	4	3	3	9	5	5	6	8	7	5	4	2	2	4	3	3	4
24.7	3	3	4	5	4	4	3	3	2	3	3	3	5	6	7	14	20	11	5	8	3	3	4	5	4	4	5	6	8	7	4	3	2	3	3	3	4
25.8	X	X	4	4	3	4	3	2	3	4	3	4	5	4	4	11	14	12	11	3	2	5	4	3	3	4	5	5	8	6	4	3	2	3	3	5	4
27.9	3	2	2	3	2	3	2	3	2	2	3	3	2	3	2	3	8	9	2	3	5	8	10	8	6	5	5	4	3	3	3	3	4	5	5	4	3
30.8a	-	-	2	3	3	4	3	4	2	2	2	3	3	5	6	5	4	4	5	5	4	5	5	4	5	5	4	4	4	3	3	2	3	3	4	4	4
31.8	2	3	3	3	2	3	2	3	2	2	2	2	3	4	5	5	5	4	5	4	5	4	3	2	3	3	3	4	5	4	3	3	3	2	2	4	3

Table 92b

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

Date GCT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Dec. 1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	3	3	2	2	-	-	-	-	-	-	-	-	-	-	-
11.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	6	5	2	-	-	-	-	-	-	-	-	X	X	X	X
22.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-
23.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	7	5	3	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	7	5	4	4	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
25.8	X	X	-	-	-	-	-	-	-	-	-	-	2	2	3	3	3	5	4	4	3	3	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-
27.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	3	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Tablo 93

Particulars of Observations, Climax, Colorado
July – December 1952

Date GCT	Greenline threshold intensity at 45°	90°	135°	225°	270°	315°	Obs.	Meas.
1952								
Jul. 9.6	10	10	8	7	8	8	At.	W
11.6	11	7	7	-	-	-	At.	W
12.6	7	8	9	7	6	9	At.	W
13.6	13	11	11	10	10	10	At.	W
14.6	7	7	6	6	6	6	At.	W
15.6	11	13	11	11	10	11	At.	W
16.6	9	10	9	9	8	10	A	W
17.9	13	13	12	13	12	12	At.	W
18.6	13	13	13	12	13	12	A	W
19.6	10	11	10	9	10	9	At.	W
20.6	>15	>15	>15	15	15	12	At.	W
21.6	12	12	12	12	11	12	A	W
22.6	12	14	15	12	13	14	A	W
23.6	13	12	12	11	11	11	H	W
24.6	7	7	7	5	5	6	H	W
26.7	11	10	10	9	9	8	A	W
Aug. 2.7	-	14	-	6	7	9	H	R
3.8	>15	8	-	11	8	10	H	R
4.6	11	12	12	12	14	11	H	R
5.6	9	9	10	8	7	6	H	R
6.6	10	14	10	10	10	9	H	R
8.9	-	6	-	-	6	-	A	R
9.6	-	8	-	-	-	-	H	R
11.7	-	7	8	-	7	8	H/A	R
12.7	-	5	5	13	11	12	H	R
14.8	-	6	7	-	5	-	H	R
15.8	10	11	11	6	6	6	H	R
16.7	-	10	-	-	-	-	A	R
18.6	5	5	5	5	4	6	H	R
19.6	5	6	5	5	4	5	A	R
22.7	-	2	-	-	-	-	H	R
23.6	5	2	3	2	2	2	H	R
24.7	-	5	5	-	-	-	H	R
25.6	3	4	3	6	5	5	A	R
26.6	10	6	12	7	5	8	A	R
29.7	6	2	4	3	-	2	H	R
30.7	-	9	12	-	7	8	A	R
31.6	8	9	9	7	7	7	H	R
Sep. 1.7	10	8	12	9	6	7	D	R
2.7	-	6	5	5	5	4	H	R
3.7	6	7	6	4	5	5	D	R
4.7	7	7	6	6	-	-	H	R
5.8	-	7	7	6	6	5	D	R
7.7	-	7	-	-	-	-	D	R
8.7	-	5	9	7	5	6	H	R
9.8	13	9	12	-	12	12	D/H	R
11.7	9	9	10	8	8	8	D	R
13.8	10	10	11	>15	>15	>15	D	R
14.8	9	6	7	7	9	8	D	R
15.7	11	10	10	11	11	11	D	R
17.7	7	7	8	7	6	7	D	R
18.9	4	5	5	5	4	5	D	R
19.8	8	8	8	9	6	6	D	R
22.7	3	3	4	4	4	4	H/D	R
23.6	4	4	4	5	4	3	H	R
24.6	5	5	6	8	6	5	D	R
25.7	7	7	8	9	6	7	H/D	R

Date GCT	Greenline threshold intensity at 45°	90°	135°	225°	270°	315°	Obs.	Meas.
1952								
Sep. 26.7	7	9	9	11	10	10	D	R
27.6	13	12	12	-	-	-	H	R
Oct. 1.7	11	11	12	12	12	9	D	R
2.7	8	8	9	6	7	6	H	R
3.8	5	6	6	4	3	3	H	R
4.7	7	6	7	7	6	6	H	R
5.7	4	5	7	6	5	4	D	R
7.0	9	8	8	-	-	-	H	R
7.7	4	3	4	5	4	3	D	R
8.6	3	3	3	6	6	5	H	R
9.7	12	6	7	-	6	7	H/D	R
10.7	10	7	7	7	6	6	D	R
11.7	13	13	12	10	10	10	D	R
12.7	7	7	8	9	7	8	H/D	R
15.9	14	>15	11	-	-	-	D	R
16.6	7	9	9	6	5	5	D	R
17.7	10	10	13	9	9	8	H	R
18.9	-	-	-	14	10	11	H	R
21.7	7	9	11	6	4	4	D/H	R
22.7	5	6	11	7	8	6	H/D	R
23.7	3	3	3	4	3	3	H	R
24.7	3	2	2	3	4	2	D	R
25.7	2	3	3	4	3	4	D	R
26.8	5	5	6	5	4	4	H	R
27.9	12	6	6	7	6	5	D	R
28.7	2	2	3	3	3	3	H	R
29.7	3	4	7	-	-	-	D	R
30.8	9	8	10	12	8	5	H	R
31.7	2	3	4	4	4	4	H/D	R
Nov. 3.8	2	3	3	3	-	2	D	R/B
4.7	3	3	3	3	3	3	D	R/B
5.7	2	2	3	4	3	3	D	R/B
7.0	-	-	7	-	-	-	H	R/B
7.7	6	6	7	8	7	7	D	R/B
10.7	3	4	4	3	3	3	D	R/B
11.7	3	3	3	3	3	3	H	R/B
12.7	2	2	2	3	2	1	D	R/B
14.7	1	1	1	1	1	1	H	R/B
20.7	2	2	2	2	2	2	D	R/B
21.7	-	-	5	-	-	-	D	R/B
29.6	3	4	5	3	3	3	H	R/B
Dec. 1.7	4	5	5	>15	>15	6	D	R
2.7	-	5	-	-	-	-	D	R
4.8	10	10	10	11	11	11	H	R
5.8	11	11	11	-	-	-	D	R
10.7	4	-	4	4	5	4	D	R
11.7	-	9	10	-	6	7	H	R
14.8	7	6	12	-	14	-	D	R
15.8	6	7	6	8	7	6	H	R
16.8	3	3	3	3	3	3	H/D	R
24.7	4	4	4	5	4	4	H	R
25.7	6	5	6	6	6	6	D	R
27.7	4	4	4	4	4	4	D	R
29.8	9	8	9	8	11	13	H	R
30.8	3	3	3	5	4	5	H	R
31.7	3	3	3	4	3	3	D	R

A = Allen
At = Athay
B = Billings
D = F. Dolder
H = Hansen
R = Roberts
W = I. Witte

Table 94

Particulars of Observations, Sacramento Peak, New Mexico
July - December 1952

Date GCT	Greenline threshold intensity at 0°	45°	90°	135°	180°	225°	270°	315°	Obs.	Meas.
1952										
Jul. 1.7	15	14	13	14	11	11	12	11	R	Y
2.8	13	13	12	12	14	14	13	14	W	Y
4.7	14	12	-	-	-	-	-	-	R	Y
6.8	10	9	9	8	9	9	9	9	S	Y
13.0	-	7	7	6	8	8	6	-	S	Y
14.6	8	7	8	8	9	8	8	7	W	Y
16.7	4	4	5	4	5	5	6	5	C	Y
17.7	11	9	8	8	8	8	8	9	Y	Y
18.7	15	13	13	15	>15	>15	15	14	S	Y
20.7	10	9	9	10	14	14	14	14	R	Y
23.8	6	6	7	6	7	7	7	8	R	Y
24.7	6	7	7	7	8	8	8	9	S	Y
25.7	9	9	10	9	10	10	9	9	R	Y
26.7	14	13	11	12	11	11	12	12	W	Y
27.7	13	12	12	12	12	12	11	12	C	Y
30.7	15	14	14	12	14	14	13	13	S	Y
31.7	>15	>15	>15	15	>15	15	15	-	R	Y
Aug. 2.7	10	9	8	9	7	7	9	7	C	Y
3.7	6	6	6	6	6	6	6	6	R	Y
4.6	10	9	[illegible]	9	9	8	9	9	Y	Y
5.9	13	11	11	14	15	-	13	13	S	Y
6.7	11	11	11	10	12	11	11	11	R	Y
7.9	11	9	8	9	10	10	10	9	W	Y
8.8	13	12	12	13	15	14	11	11	S	Y
10.9	5	6	5	6	5	5	6	5	R	Y
11.7	15	8	10	-	-	-	-	-	R	Y
12.8	6	5	6	6	6	6	5	5	C	Y
15.6	7	7	8	10	8	10	13	13	S/F	Y
16.6	7	7	7	8	9	8	9	7	R	Y
17.8	-	-	14	8	15	14	13	9	R	Y
18.7	8	8	9	9	9	8	8	8	S	Y
19.8	11	11	11	>15	>15	>15	>15	>15	S	Y
20.6	11	11	11	11	11	11	11	11	C	Y
21.7	11	10	11	11	10	10	9	9	F	Y
22.6	10	10	11	10	11	8	9	8	R	Y
23.8	9	9	9	8	12	-	8	7	R	Y
24.7	10	9	9	9	8	9	8	8	C	Y
25.7	8	8	8	8	7	7	8	7	S	Y
26.7	15	13	12	12	12	12	12	13	S	Y
27.8	8	8	9	10	9	9	10	10	F	Y
29.8	9	10	11	11	8	8	9	9	R	Y
30.8	11	11	11	12	11	13	12	12	S	Y
31.7	7	8	7	7	7	8	8	7	S	Y
Sep. 1.8	10	9	12	11	9	13	13	12	S	Y
3.7	14	9	10	10	9	10	9	9	R	Y
5.7	-	-	15	15	-	-	14	14	C	Y
6.7	7	8	8	8	9	9	9	9	S	Y
7.7	7	6	6	7	7	7	7	7	S	Y
8.7	10	9	10	10	10	10	10	9	R	Y
9.7	9	9	9	9	9	10	9	9	R	Y
11.7	11	10	9	11	10	10	10	9	C	Y
12.7	10	9	9	10	10	9	11	9	C	Y
13.7	3	4	4	3	3	4	4	4	S	Y
15.7	7	7	7	7	7	7	7	6	R	Y
16.7	9	9	9	9	9	8	9	9	R	Y
17.8	11	9	8	9	9	8	8	8	C	Y
18.7	6	7	6	6	6	7	6	7	S	Y
19.7	11	11	11	11	12	12	11	11	S	Y
23.6	-	-	10	-	-	-	-	-	C	Y
25.6	4	4	4	5	5	5	5	5	S	Y
26.7	6	4	4	4	5	4	4	5	F	Y
27.7	8	8	8	8	7	8	8	7	C	Y
28.7	6	6	7	7	6	7	7	7	R	Y
Oct. 1.7	4	4	5	5	4	4	5	5	S	Y
2.7	9	7	7	6	7	7	7	7	S	Y
Oct. 3.7	9	9	9	9	9	9	9	8	R	Y
4.7	11	10	10	9	10	10	10	10	R	Y
5.8	7	5	6	5	5	6	6	6	C	Y
6.7	11	11	10	10	10	10	10	11	S	Y
7.7	11	10	9	9	11	10	9	10	S	Y
8.7	5	5	5	5	5	5	5	5	S	Y
9.7	11	10	10	10	11	9	10	10	R	Y
10.6	10	10	10	9	10	9	10	10	R	Y
11.7	11	9	9	8	10	9	9	9	C	Y
12.7	9	9	9	9	9	9	8	9	S	Y
13.7	9	8	8	8	8	7	8	8	S	Y
14.7	9	8	8	8	9	9	9	9	F	Y
15.8	15	15	15	15	15	15	15	15	R	Y
16.7	6	5	5	5	4	5	5	5	R	Y
17.7	5	4	5	5	4	4	4	5	C	Y
18.7	11	10	10	9	11	11	11	11	S	Y
19.7	5	4	7	5	5	5	5	5	S	Y
22.7	6	5	5	5	5	5	6	5	R	Y
23.7	11	11	10	10	11	11	11	11	S	Y
24.7	11	11	11	10	11	11	11	10	S	Y
25.7	7	6	6	6	7	7	6	6	S	Y
26.8	-	-	-	8	-	-	-	9	F	Y
27.9	14	14	14	14	15	15	15	>15	R	Y
29.7	9	8	9	9	10	9	9	9	C	Y
31.7	5	4	5	5	4	5	7	6	S	Y
Nov. 2.6	5	4	4	4	3	3	4	4	R	Y
4.7	9	9	8	8	8	10	9	9	C	Y
5.7	4	4	4	4	5	4	4	4	S	Y
6.8	3	3	3	3	3	3	3	3	S	Y
8.8	6	5	7	5	6	5	5	5	R	Y
10.7	5	4	4	4	5	5	5	4	C	Y
11.7	3	3	3	3	3	3	3	3	S	Y
12.7	6	7	8	9	11	9	8	8	S	Y
13.7	4	5	6	7	4	10	9	5	F	Y
14.7	3	2	3	3	3	3	3	3	R	Y
18.7	7	6	6	6	6	7	7	6	S	Y
19.7	4	4	4	4	4	5	5	4	S	Y
20.7	3	3	3	3	4	4	4	4	R	Y
21.7	3	3	3	3	3	3	4	3	R	Y
22.7	7	5	6	6	7	6	6	6	C	Y
26.9	10	9	8	7	8	8	11	8	R	Y
27.7	7	8	8	7	8	10	9	8	S	Y
28.7	8	7	8	8	7	7	9	8	S	Y
Dec. 1.7	5	6	6	6	7	7	7	8	S	Y
3.7	11	10	10	10	10	11	11	10	R	Y
4.8	8	7	8	8	8	8	8	8	R	Y
6.7	8	8	8	8	8	9	9	9	S	Y
7.7	4	5	5	5	5	5	5	5	S	Y
8.8	6	6	6	6	6	6	6	5	R	Y
9.7	6	6	7	7	7	7	7	7	R	Y
10.7	5	5	5	6	6	6	6	5	R	Y
11.7	5	5	5	5	5	5	5	6	S	Y
12.7	4	4	4	5	5	6	5	5	S	Y
13.8	15	7	7	9	8	8	8	7	S	Y
14.7	5	5	5	5	5	5	5	5	R	Y
15.7	5	4	6	5	4	4	4	5	R	Y
17.8	-	6	6	5	7	7	5	5	S	Y
22.8	12	11	9	10	13	11	12	11	R	Y
23.7	7	7	7	7	8	8	8	8	S	Y
24.7	7	7	7	7	8	9	8	7	S	Y
25.8	7	7	7	7	-	9	9	8	S/C	Y
27.9	5	4	5	13	7	5	5	4	R	Y
30.8	7	6	7	7	7	7	7	7	S	Y
31.8	5	5	5	5	6	6	5	6	S	Y

C = Crawford
F = Foster
R = Ramsey
S = Schnable
W = Warwick
Y = Yü

Table 95

Zürich Provisional Relative Sunspot Numbers

December 1952

Date	R_Z*	Date	R_Z*
1	13	17	67
2	12	18	66
3	14	19	66
4	16	20	50
5	22	21	40
6	32	22	35
7	38	23	35
8	50	24	29
9	38	25	18
10	28	26	36
11	34	27	15
12	40	28	0
13	47	29	7
14	63	30	9
15	71	31	16
16	67	Mean:	34.6

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

Table 96

American Relative Sunspot Numbers

November 1952

Date	$R_{A'}$*	Date	$R_{A'}$*
1	19	17	25
2	10	18	33
3	0	19	38
4	0	20	44
5	11	21	35
6	16	22	33
7	34	23	28
8	40	24	35
9	33	25	24
10	26	26	20
11	26	27	15
12	20	28	4
13	24	29	5
14	26	30	12
15	20		
16	19	Mean:	22.5

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

Table 97

Solar Flares, December 1952

Observatory	Date 1952	Time Observed Beginning (GCT)	Time Observed Ending (GCT)	Duration (Min)	Area (Mill) (of) (Visible) (Hemisph)	Position Latitude (Deg)	Position Longitude Diff (Deg)	Time of Maximum (GCT)	Int. of Maximum	Relative Area of Maximum (Tenths)	Importance	SID Observed
McMath	Dec. 7	1520				N10	E48	-			1-	
Sac.Peak	7	1735	1950	135	112	N11	E48	1810	10	4	1	
"	7	2000	2145	105	101	N11	E48	2030	15	3	1	
"	8	1815	1846	31	54	N08	E31	1831	10	4	1-	
McMath	8	1826				N10	E22	-			1-	
Sac.Peak	10	2150	2156A	App.10	33	N12	E05	2156A	8	3	1-	
"	11	1950	1959	9	27	N06	W11	1955	7	5	1-	
"	11	2000	2012	12	71	N07	W10	2008	11	2	1-	
"	11	2040	2100	20	54	N08	W09	2050	9	6	1-	
"	12	2010	2028	18	138	N13	W30	2017	12	5	1	
Sac.Peak	14	2155	2159A	App.10	28	N08	E48	2159A	7	8	1-	
McMath	17	1938				S09	E35	-			1-	
Sac.Peak	22	1720	1800	40	71	S10	W76	1742	8	6	1-	
"	22	1805	1900	55	66	S10	W76	1835	9	5	1-	
"	25	1915B	2150	App.160	166	S11	W70	1930	15	3	1	
"	30	1655P	1715P	20P	55	N01	E41	1705P	15	4	1-	

Sac.Peak = Sacramento Peak

B Flare began before given time
A Flare ended after given time
Q Time reported as questionable
P Times only approximate

Table 98

Indices of Geomagnetic Activity for November 1952

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

Gr. Day 1952	C	Values Kp three-hour interval 1	2	3	4	5	6	7	8	Sum	Final Selected Days
1	1.0	4+	3+	2+	3+	4+	4-	4o	5o	30+	Five
2	0.9	4-	4-	3o	2+	4-	3o	4o	1+	25-	Quiet
3	0.6	2+	2+	2+	3+	3-	2+	1-	2+	18+	
4	0.0	3-	1+	2o	1-	0+	1-	1-	0+	9-	10
5	0.2	2-	2-	1o	2o	2o	1+	1-	2-	12o	11
											12
6	0.9	1+	4o	4o	4-	4-	3o	3o	2-	24+	13
7	1.0	3o	3o	2+	3-	2o	3o	4o	4+	24+	19
8	1.0	3o	4-	3-	2+	2+	3-	4-	4+	25-	
9	0.5	4-	3o	1+	1o	1-	3o	2+	2+	17+	
10	0.0	1-	0o	1-	0+	0o	1o	1o	0+	4o	
11	0.2	1-	0+	1-	1-	0o	2-	2o	2o	8o	Five
12	0.0	1+	0o	1+	0o	0+	0+	0+	0+	4o	Disburbed
13	0.0	1+	1-	0o	0+	1-	0o	0+	0+	4-	
14	0.3	1-	2+	2-	2o	1o	1-	2-	3-	13-	1
15	0.6	2-	2+	3o	2+	1o	2-	3-	1-	15+	21
											26
16	0.8	0o	1-	3-	2+	4+	3+	1-	1o	15o	27
17	0.9	2+	1o	3-	2o	2-	2o	4+	4-	20-	28
18	0.3	2o	3-	3-	2o	1+	0+	2-	2-	14+	
19	0.1	1+	1+	1o	1+	2o	1o	1+	1+	11-	
20	0.4	2-	2-	0+	2-	1+	2o	1o	2o	12-	
21	1.2	4o	4o	6+	5-	3o	3o	3-	2+	30o	Ten
22	0.9	5-	3-	3-	4-	3o	4-	2+	0+	23o	Quiet
23	0.3	3o	4-	3o	2+	2-	1-	1-	1-	16-	
24	0.5	2-	1-	2o	3-	2+	3o	1o	0+	14-	4
25	0.5	4-	1+	1o	3-	3-	2o	1+	1+	16o	5
											10
26	1.2	0+	1-	3o	4-	3-	4-	6-	5+	25o	11
27	1.5	4-	4o	4+	6o	6-	4+	4+	4o	36+	12
28	1.1	4o	3+	4o	4-	4o	4o	4-	3o	30-	13
29	0.7	2o	1o	2+	3o	4-	3o	3+	3-	21o	14
30	0.7	3-	1+	3o	3-	2+	3o	2+	3-	20o	18
											19
Mean	0.61										20

Table 99

Sudden Ionosphere Disturbances Observed at Washington, D. C.

December 1952

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

Table 100

Sudden Ionosphere Disturbances Reported by International Telephone and Telegraph Corporation, as Observed at Platanos, Argentina

1952 Day	GCT		Location of transmitters	Other phenomena
	Beginning	End		
November 22	1050	1110	Brazil, Denmark, Germany, Italy	

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

GRAPHS OF IONOSPHERIC DATA

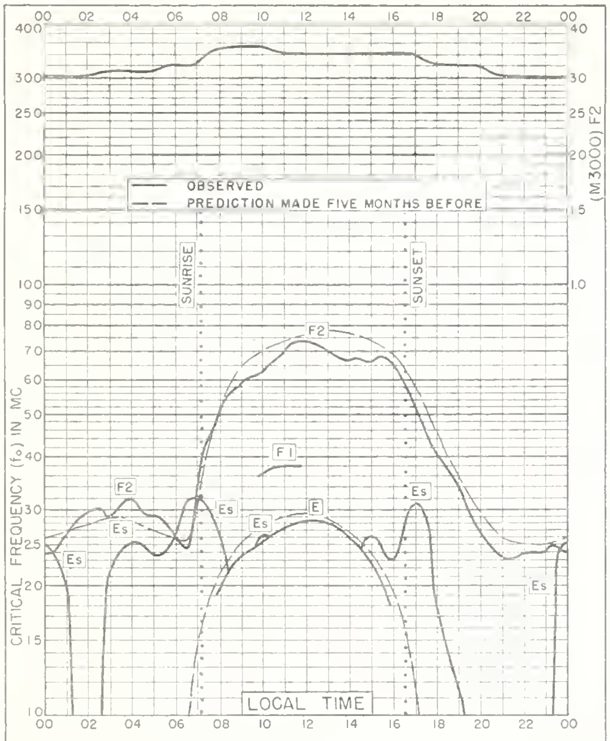


Fig. 1. WASHINGTON, D.C.
38.7°N, 77.1°W DECEMBER 1952

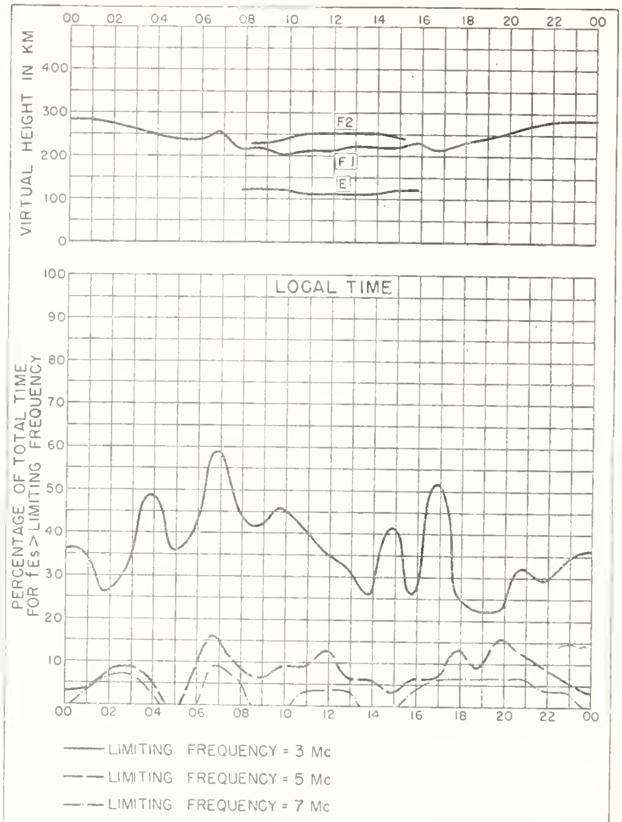


Fig. 2 WASHINGTON, D.C. DECEMBER 1952

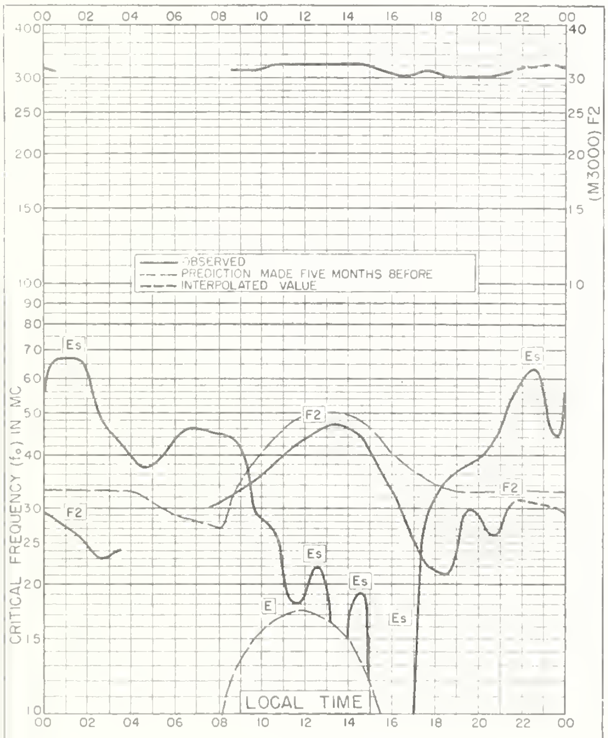


Fig. 3. POINT BARROW, ALASKA
71.3°N, 156.8°W NOVEMBER 1952

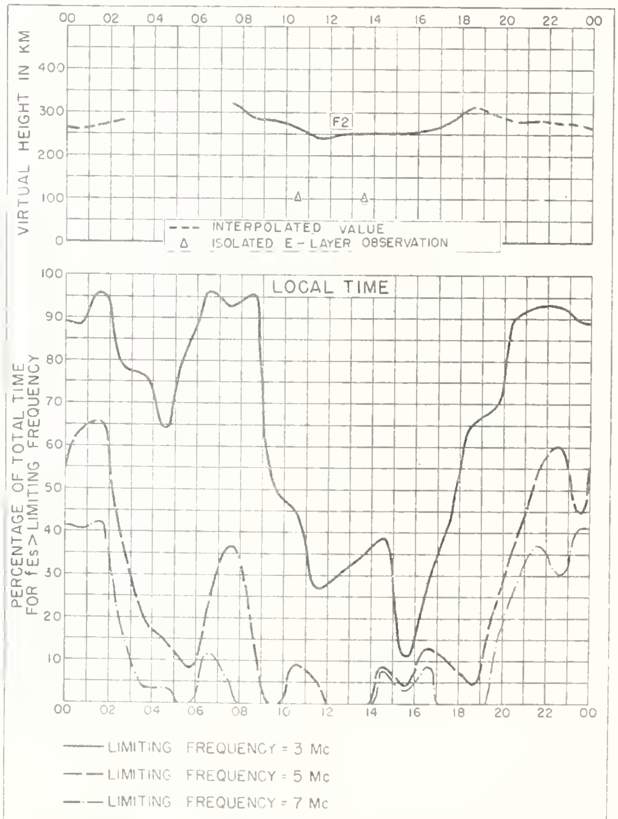


Fig. 4 POINT BARROW, ALASKA NOVEMBER 1952

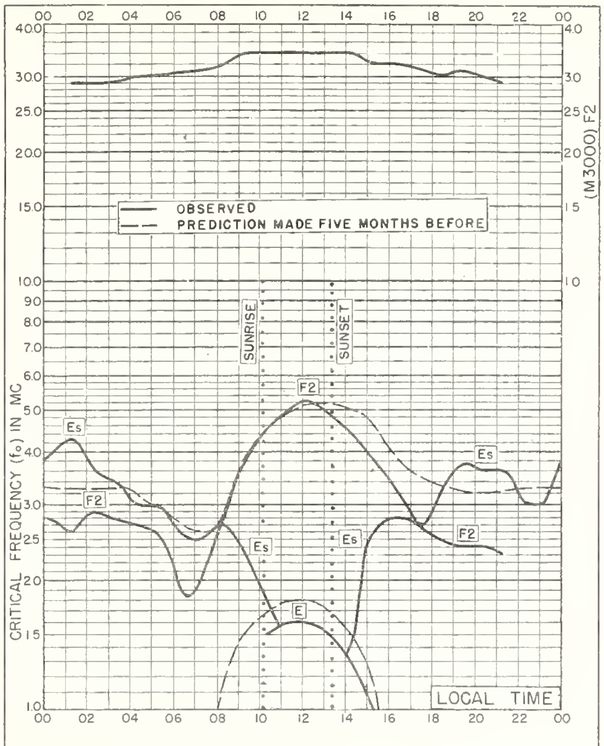


Fig. 5 TROMSO, NORWAY
69.7° N, 19.0° E NOVEMBER 1952

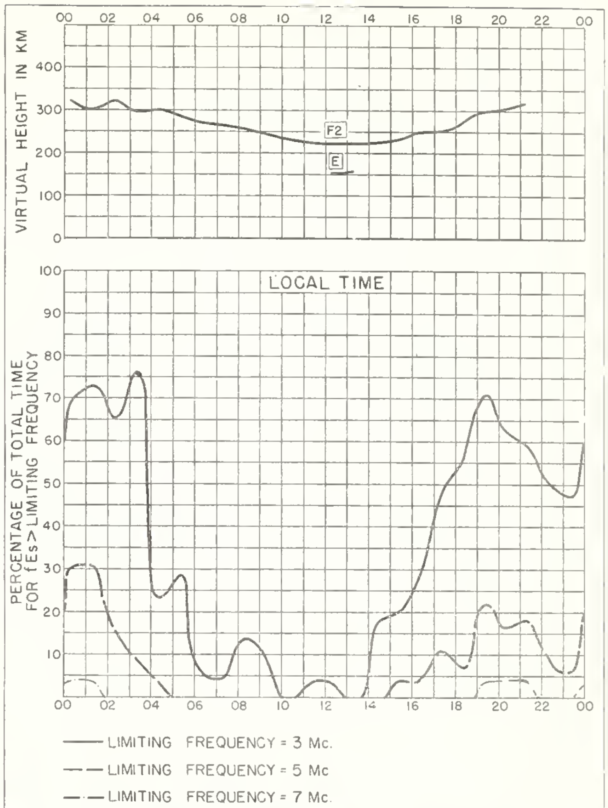


Fig. 6 TROMSO, NORWAY NOVEMBER 1952

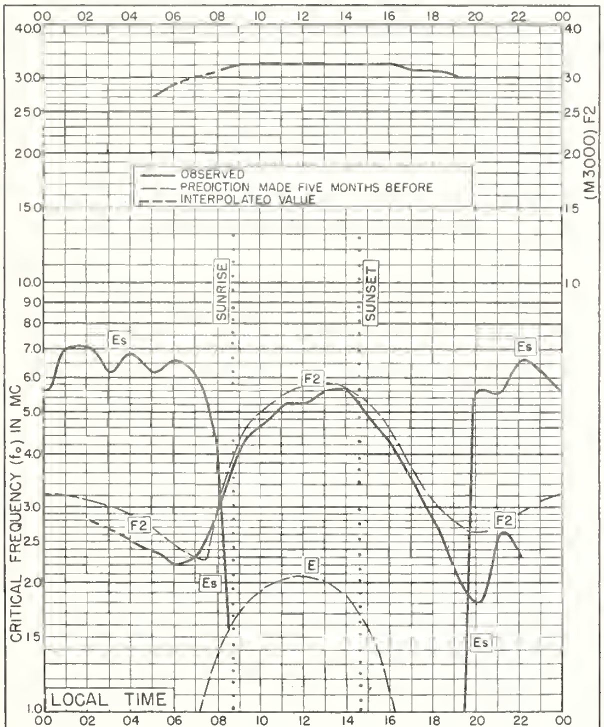


Fig. 7. FAIRBANKS, ALASKA
64.9° N, 147.8° W NOVEMBER 1952

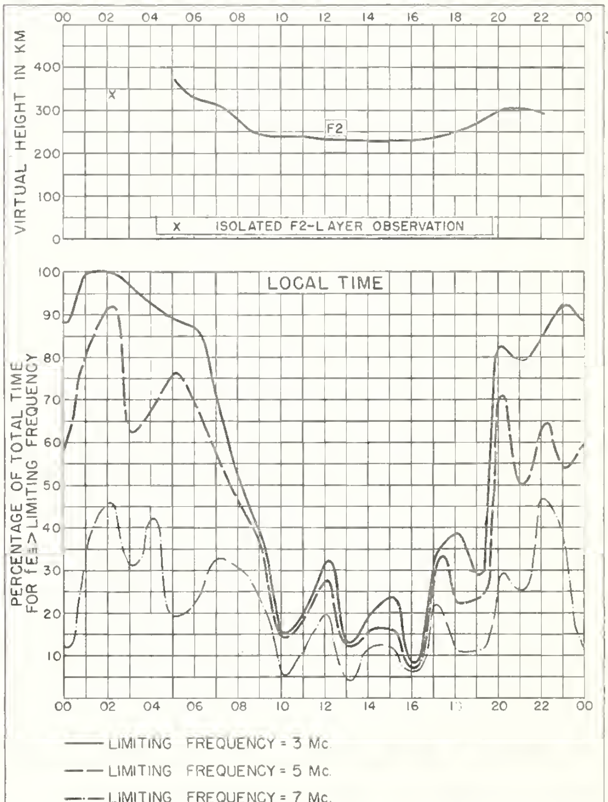


Fig. 8. FAIRBANKS, ALASKA NOVEMBER 1952

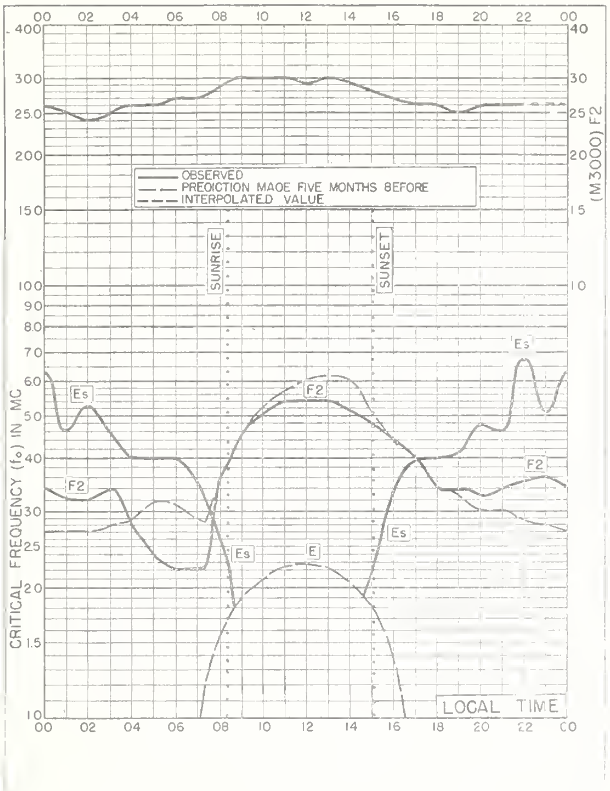
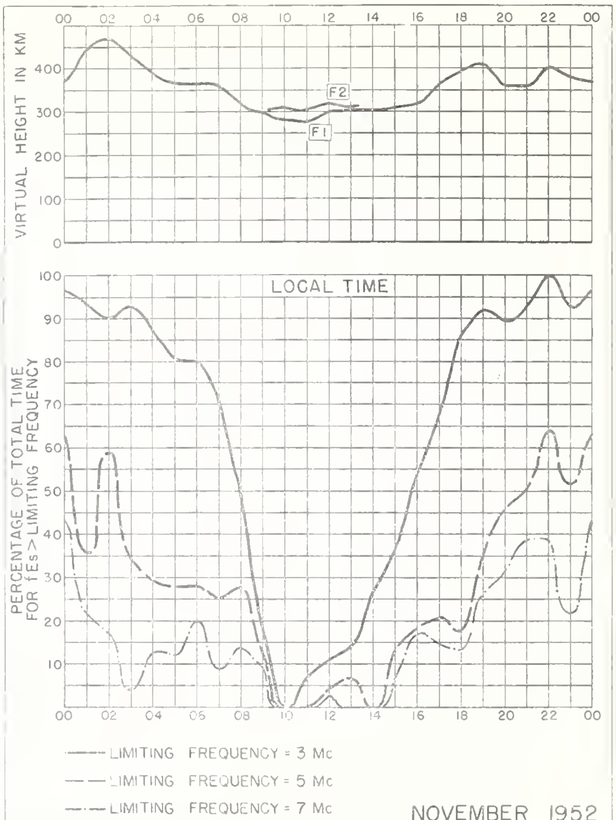


Fig. 9. NARSARSSUAK, GREENLAND
61.2°N, 45.4°W NOVEMBER 1952



NOVEMBER 1952
Fig. 10 NARSARSSUAK, GREENLAND

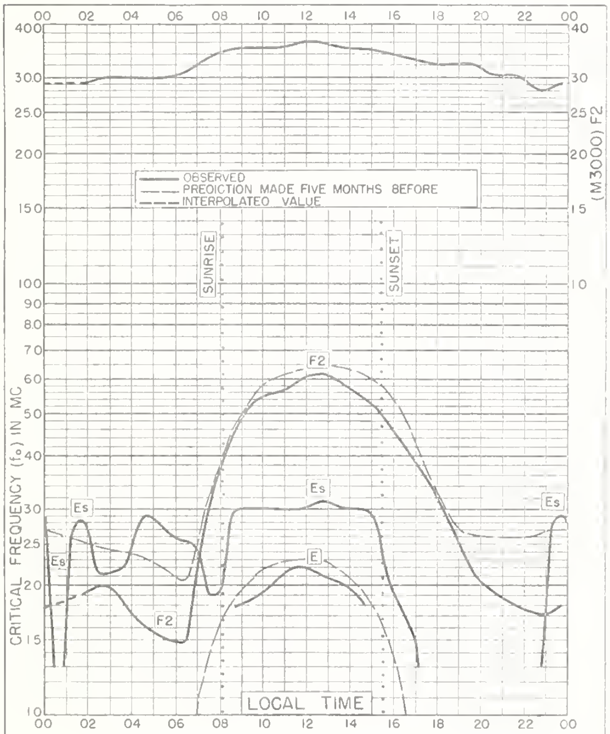


Fig. 11. OSLO, NORWAY
60.0°N, 11.1°E NOVEMBER 1952

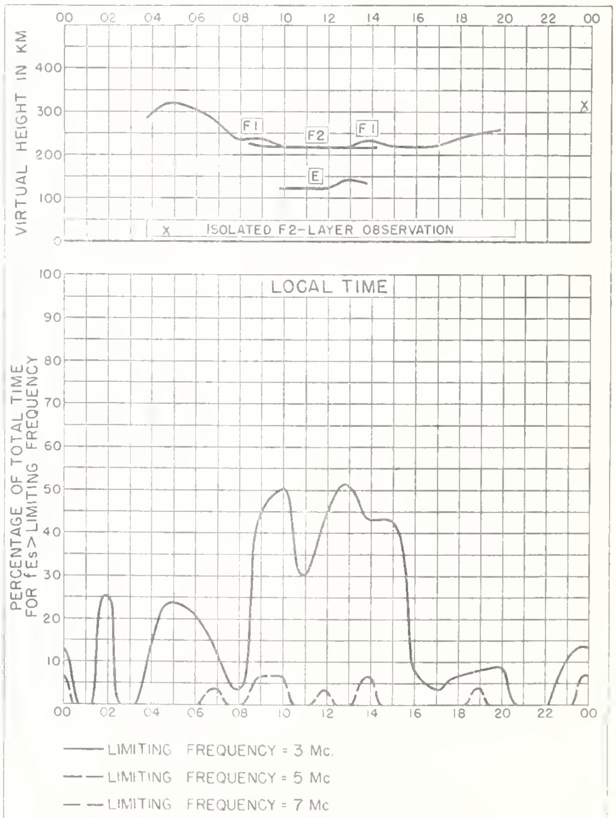


Fig. 12. OSLO, NORWAY NOVEMBER 1952

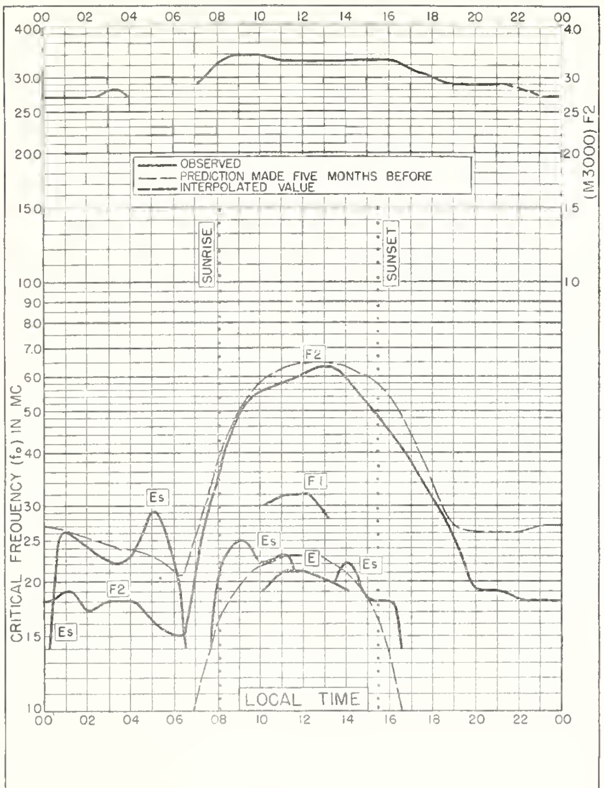


Fig. 13. UPSALA, SWEDEN
59.8° N, 17.6° E NOVEMBER 1952

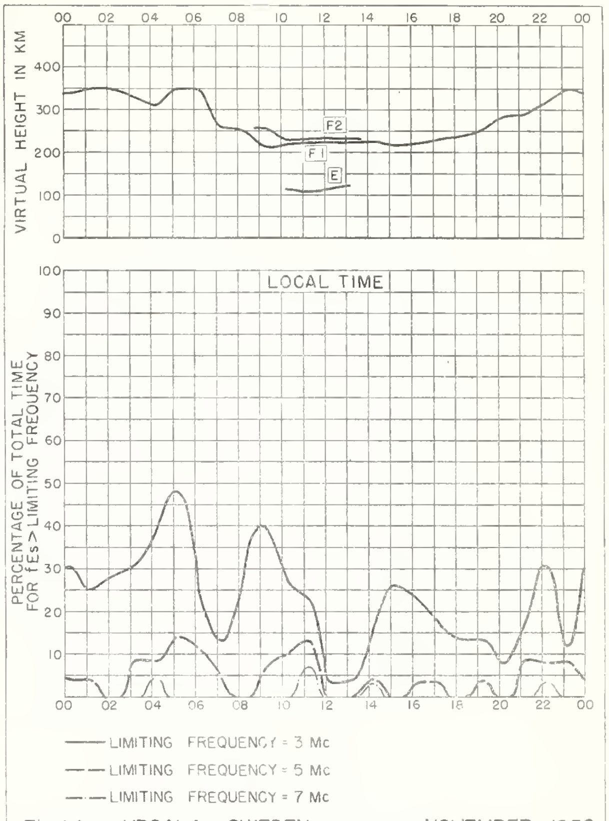


Fig. 14 UPSALA, SWEDEN NOVEMBER 1952

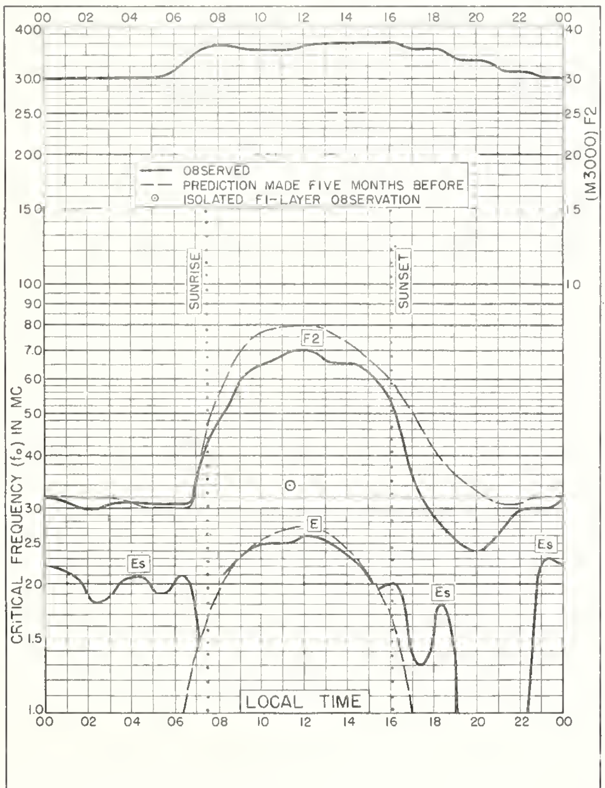


Fig. 15. ADAK, ALASKA
51.9°N, 176.6°W NOVEMBER 1952

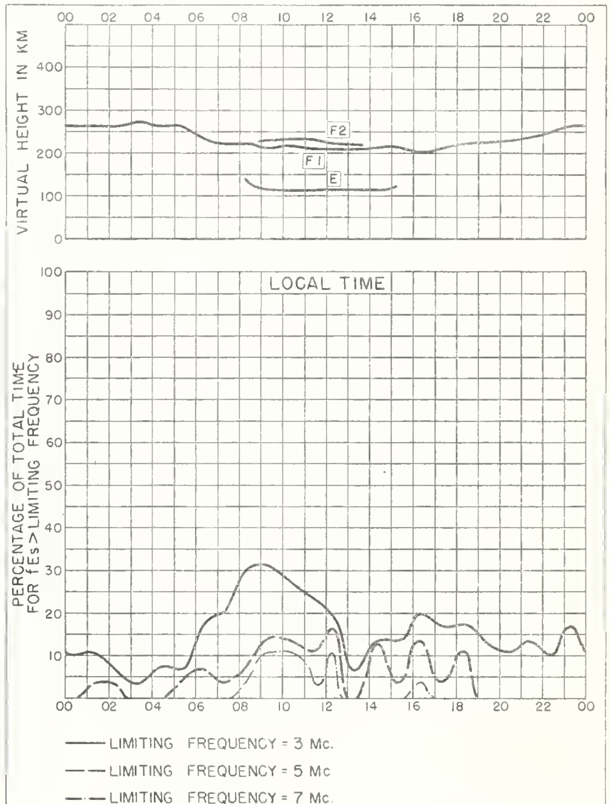


Fig. 16. ADAK, ALASKA NOVEMBER 1952

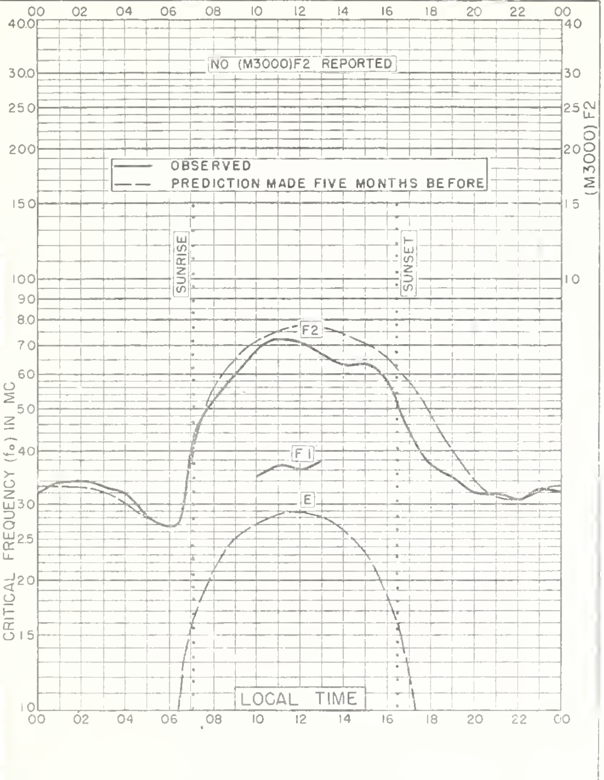


Fig. 17 GRAZ, AUSTRIA
47.1°N, 15.5°E NOVEMBER 1952

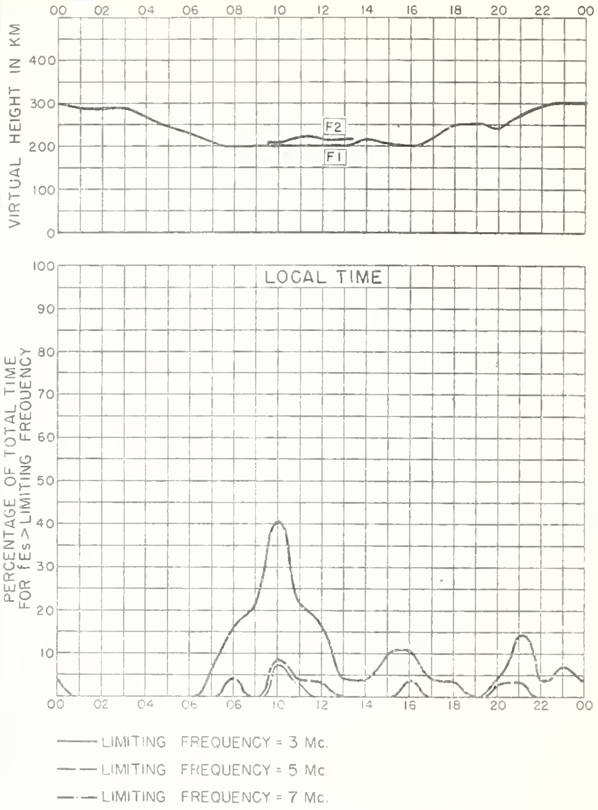


Fig 18 GRAZ, AUSTRIA NOVEMBER 1952

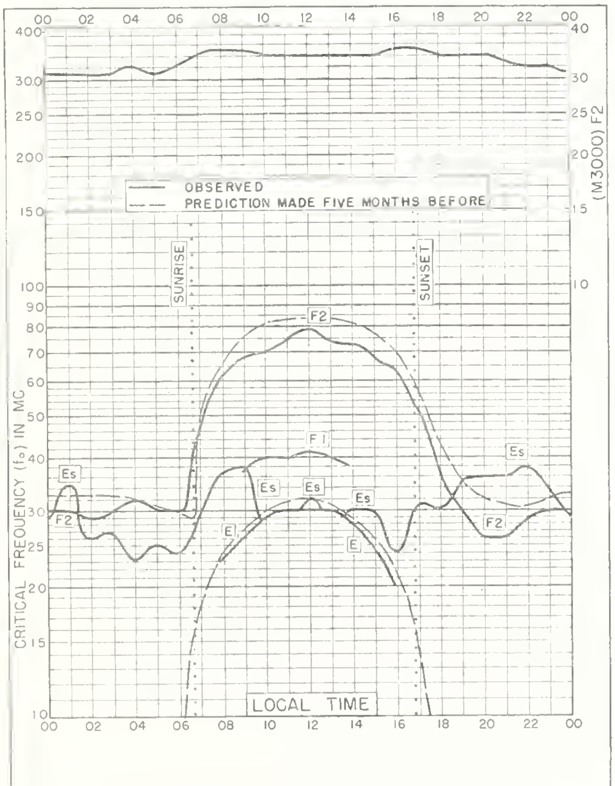
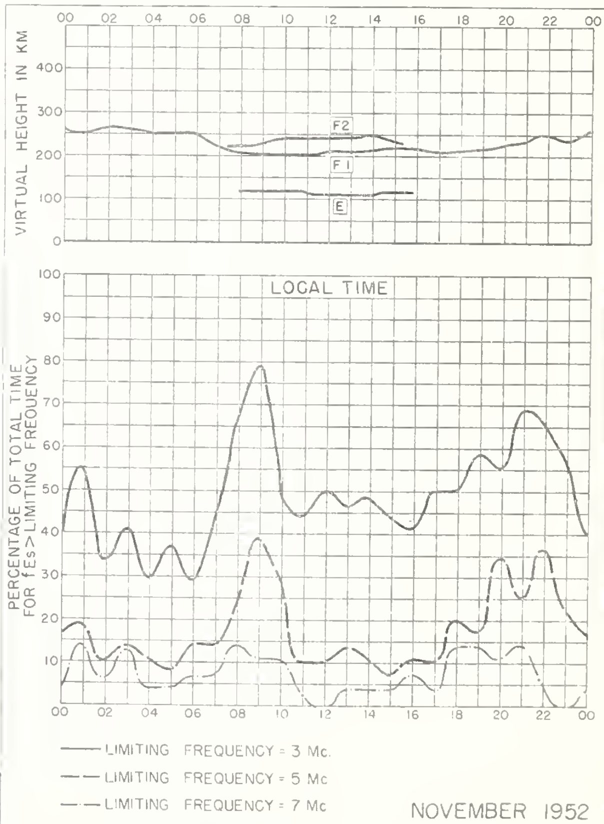


Fig 19. SAN FRANCISCO, CALIFORNIA
37.4°N, 122.2°W NOVEMBER 1952



NOVEMBER 1952
Fig 20. SAN FRANCISCO, CALIFORNIA

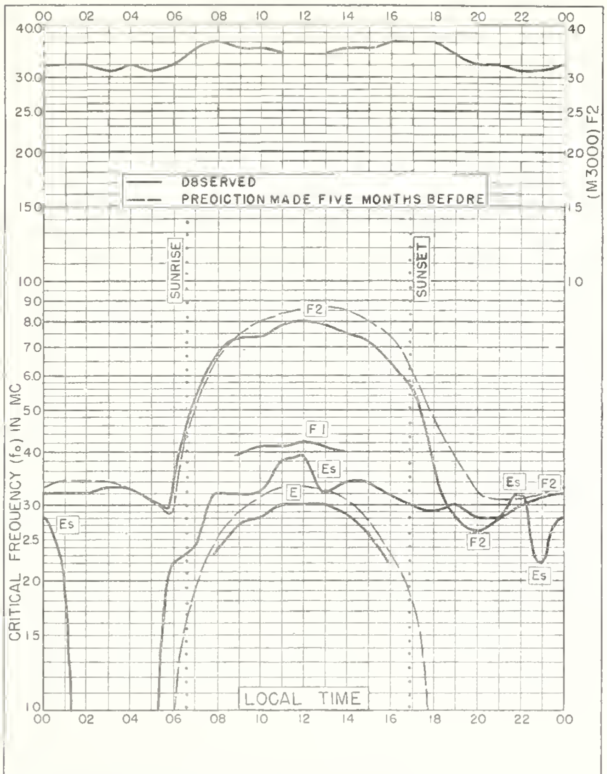
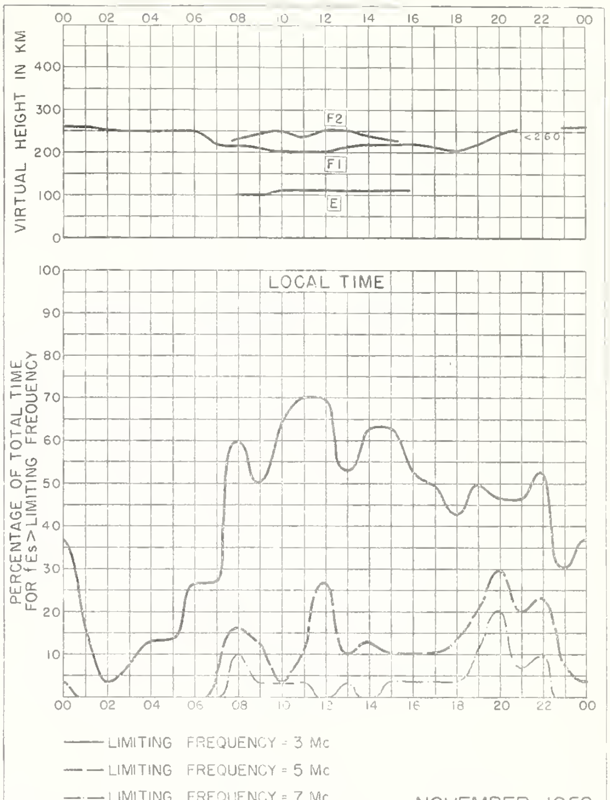


Fig. 21. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W NOVEMBER 1952



NOVEMBER 1952
Fig. 22 WHITE SANDS, NEW MEXICO

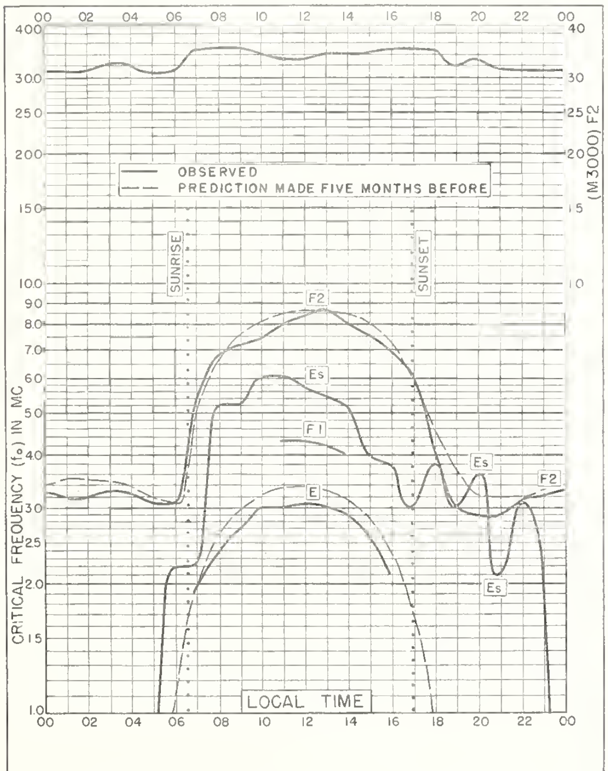


Fig. 23. BATON ROUGE, LOUISIANA
30.5°N, 91.2°W NOVEMBER 1952

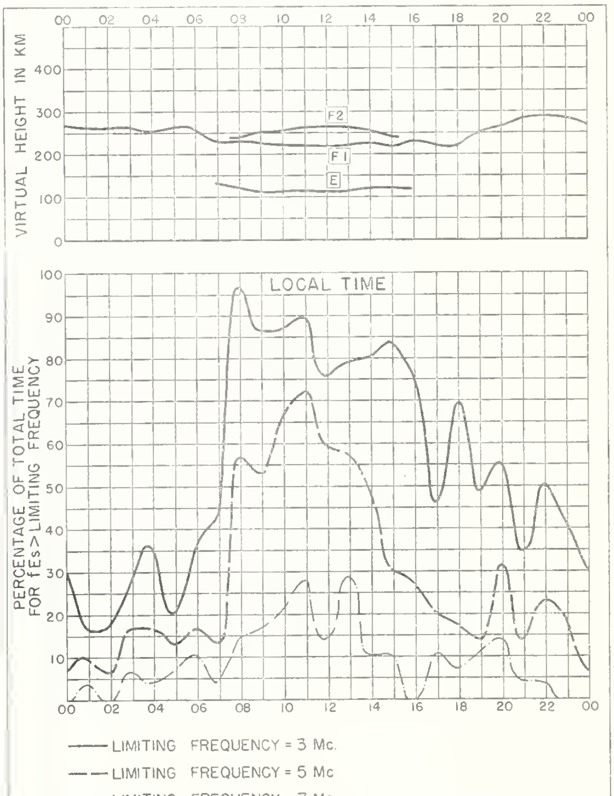


Fig. 24. BATON ROUGE, LOUISIANA NOVEMBER 1952

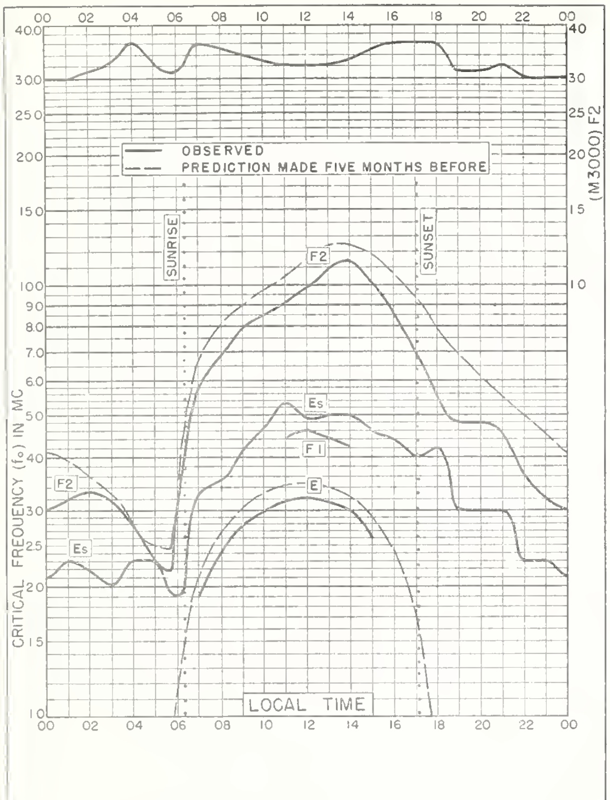


Fig. 25. OKINAWA I.
26.3°N, 127.8°E NOVEMBER 1952

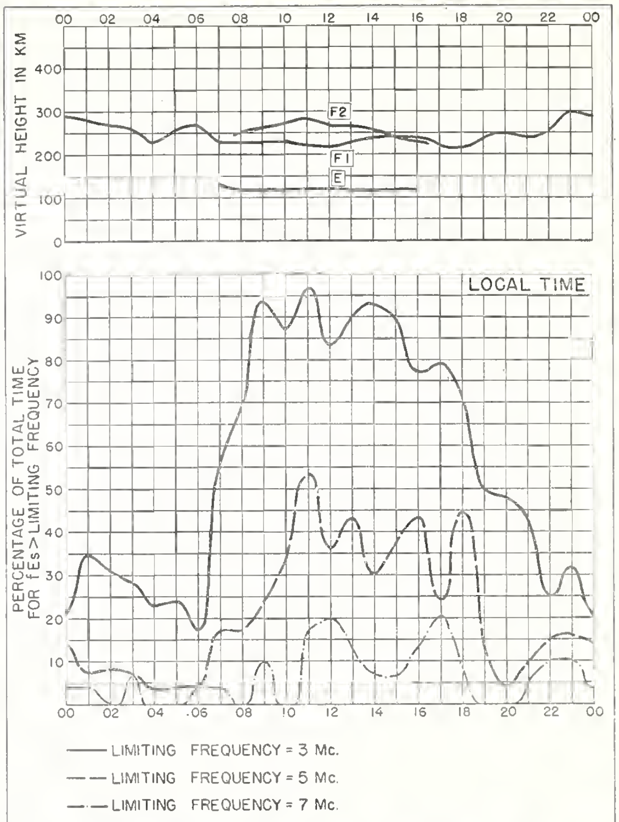


Fig. 26. OKINAWA I. NOVEMBER 1952

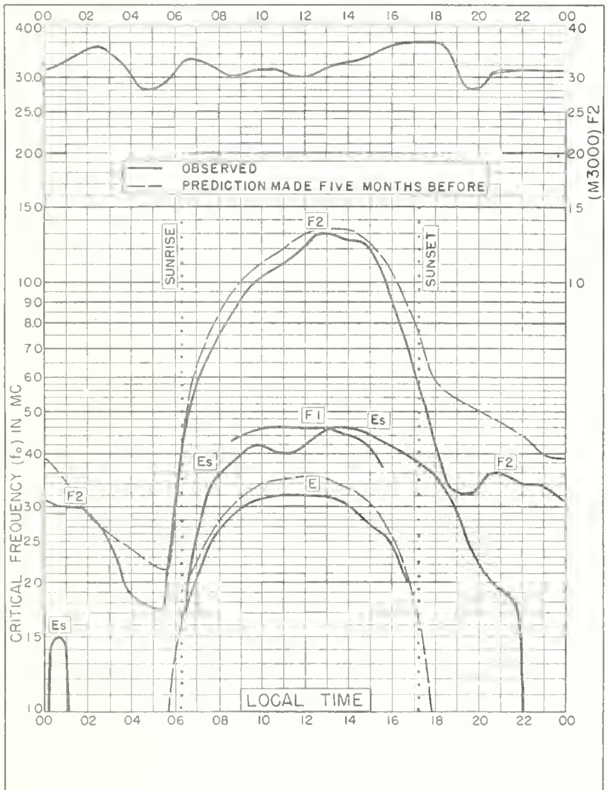


Fig. 27. MAUI, HAWAII
20.8°N, 156.5°W NOVEMBER 1952

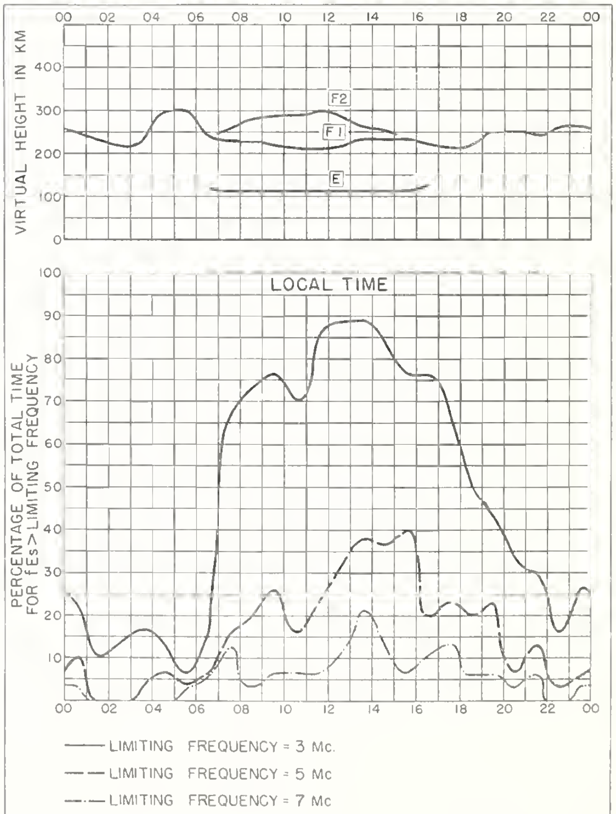


Fig. 28. MAUI, HAWAII NOVEMBER 1952

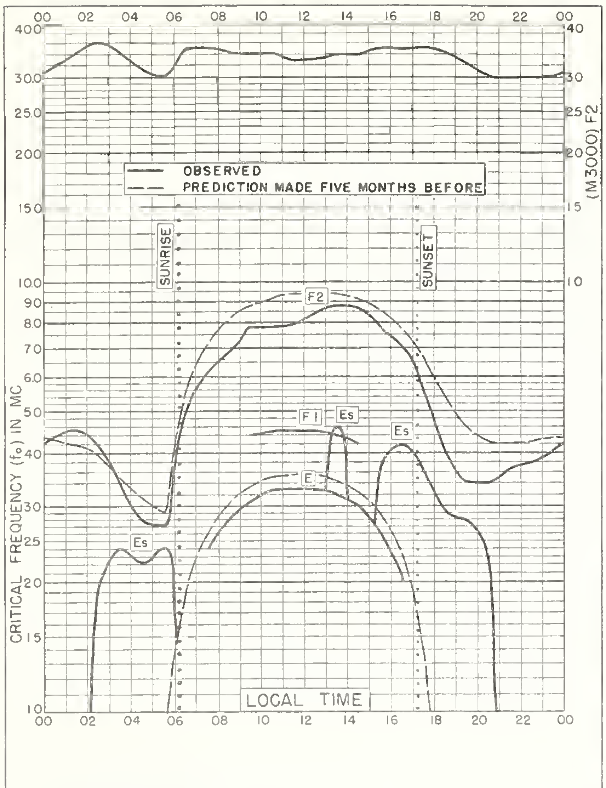


Fig. 29. PUERTO RICO, W.I.
18.5°N, 67.2°W NOVEMBER 1952

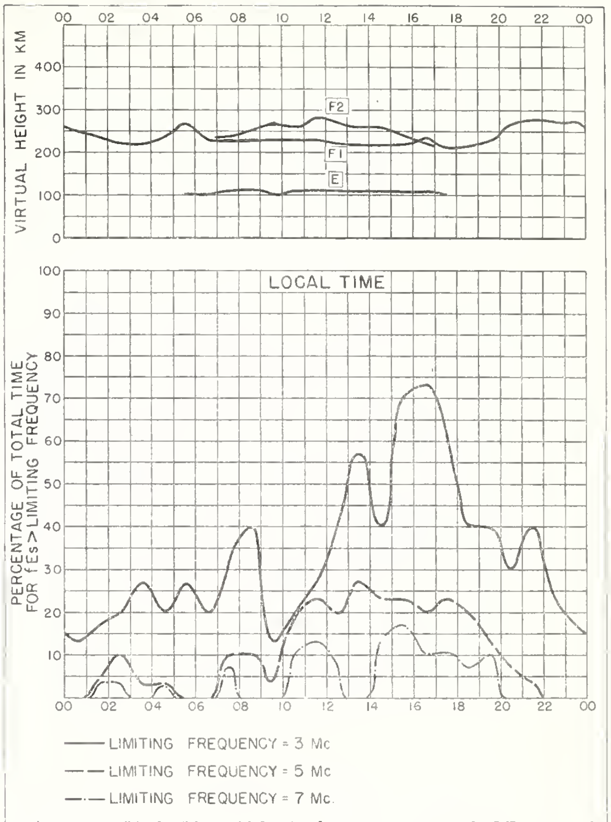


Fig. 30. PUERTO RICO, W.I. NOVEMBER 1952

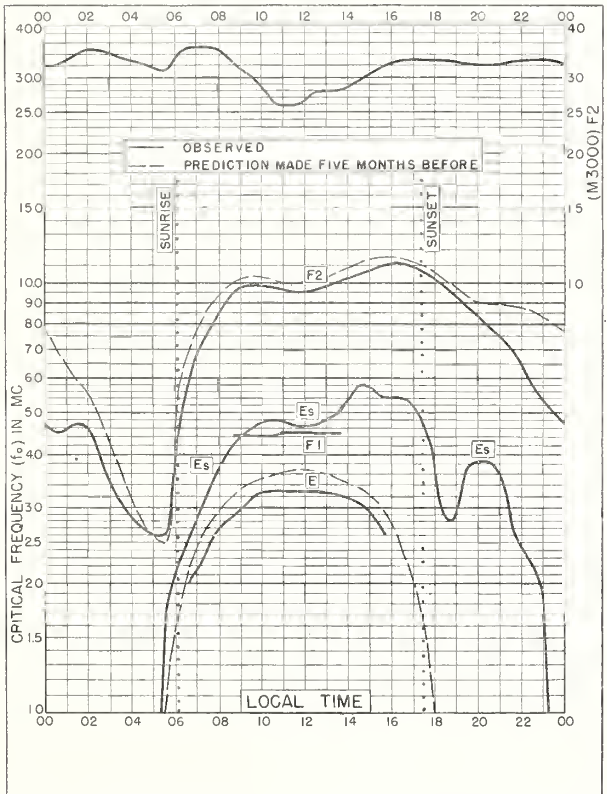


Fig 31 GUAM I.
13.6°N, 144.9°E NOVEMBER 1952

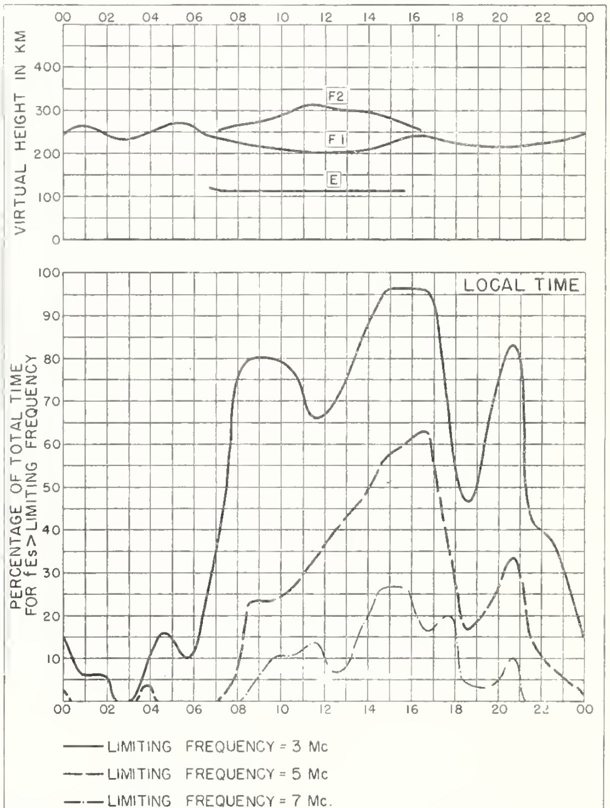


Fig. 32 GUAM I. NOVEMBER 1952

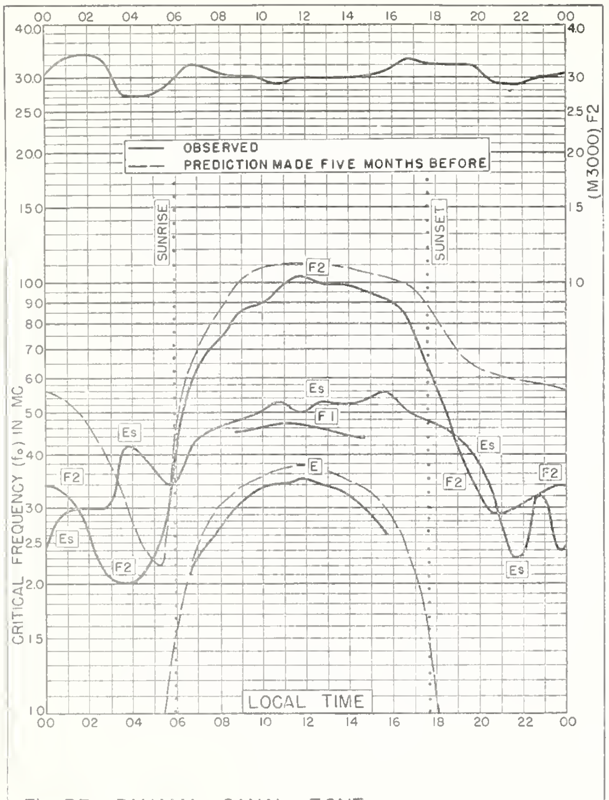


Fig. 33 PANAMA CANAL ZONE
9.4°N, 79.9°W NOVEMBER 1952

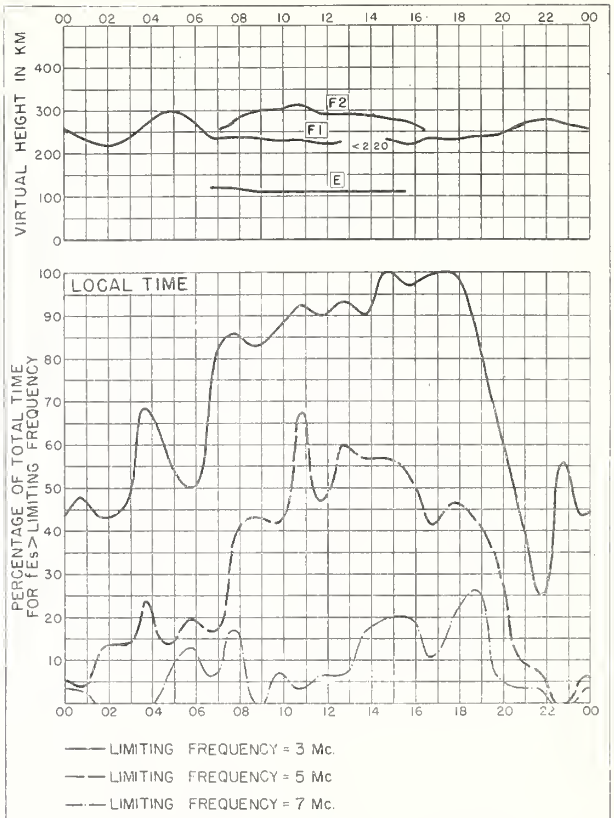


Fig. 34 PANAMA CANAL ZONE NOVEMBER 1952

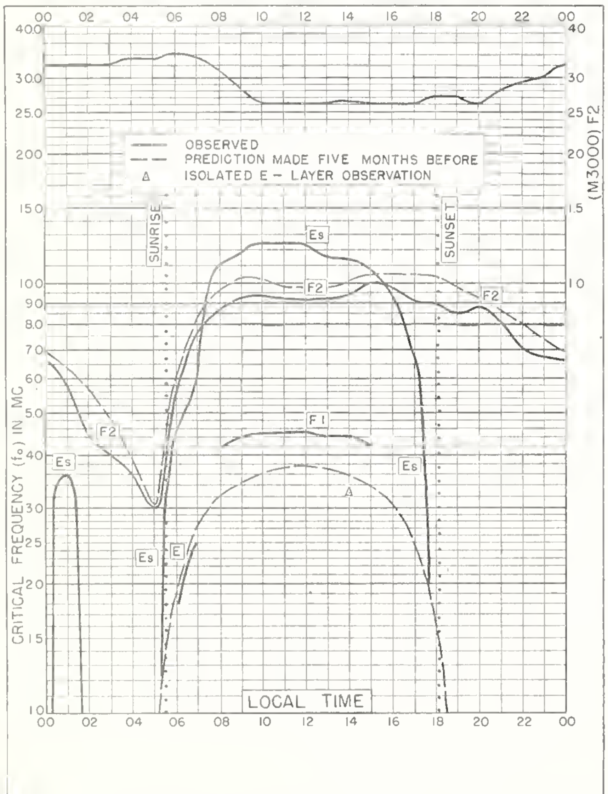


Fig. 35. HUANCAYO, PERU
12.0°S, 75.3°W NOVEMBER 1952

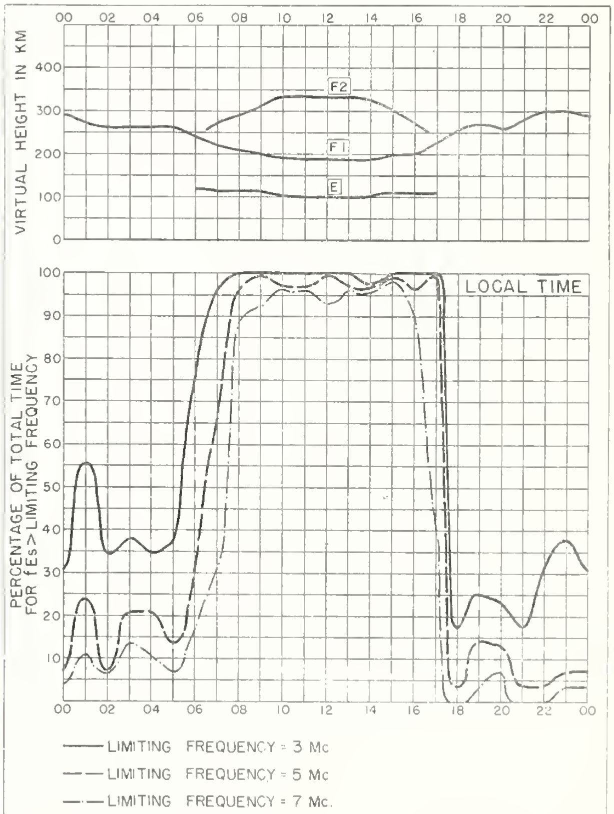


Fig. 36. HUANCAYO, PERU NOVEMBER 1952

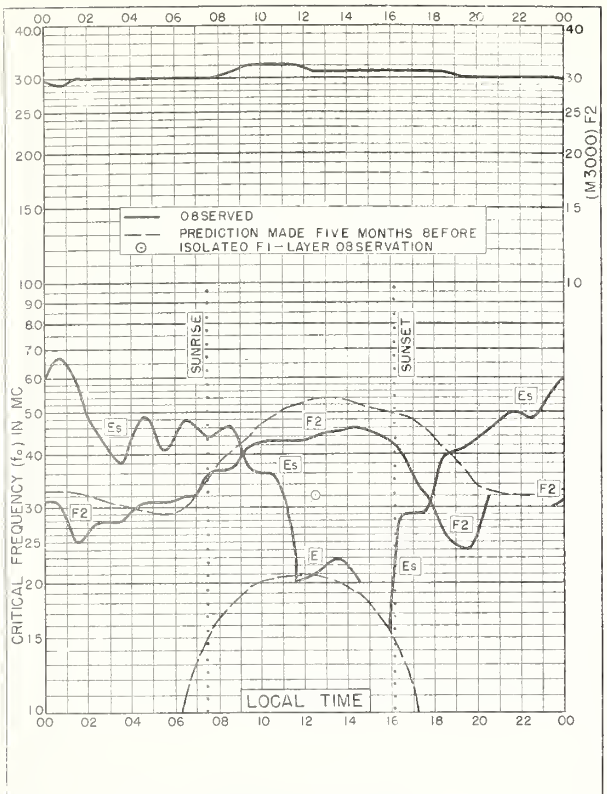


Fig. 37. POINT BARROW, ALASKA
71.3°N, 156.8° W OCTOBER 1952

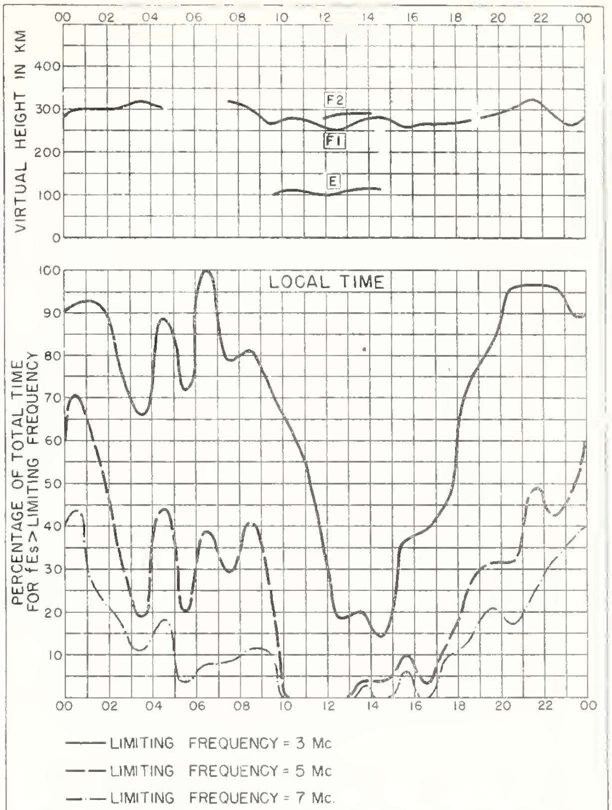


Fig 38. POINT BARROW, ALASKA OCTOBER 1952

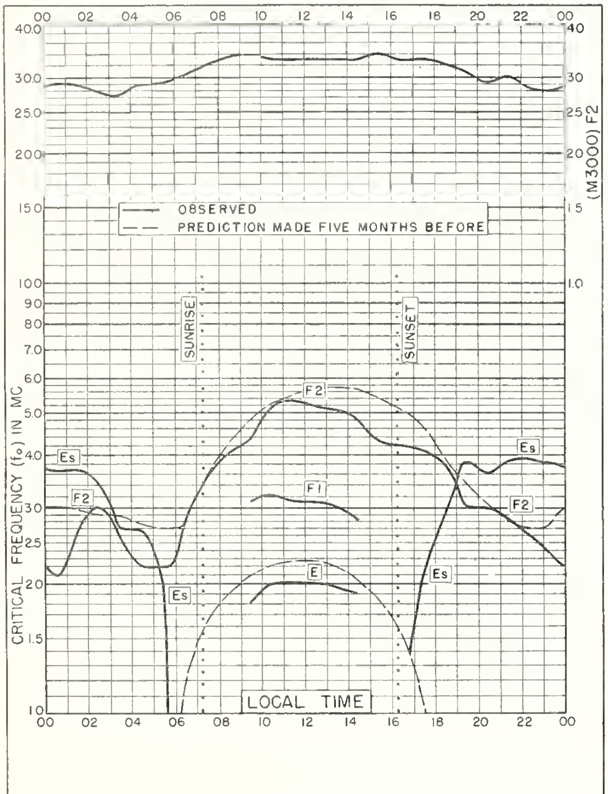


Fig. 39. KIRUNA, SWEDEN
67.8°N, 20.5°E OCTOBER 1952

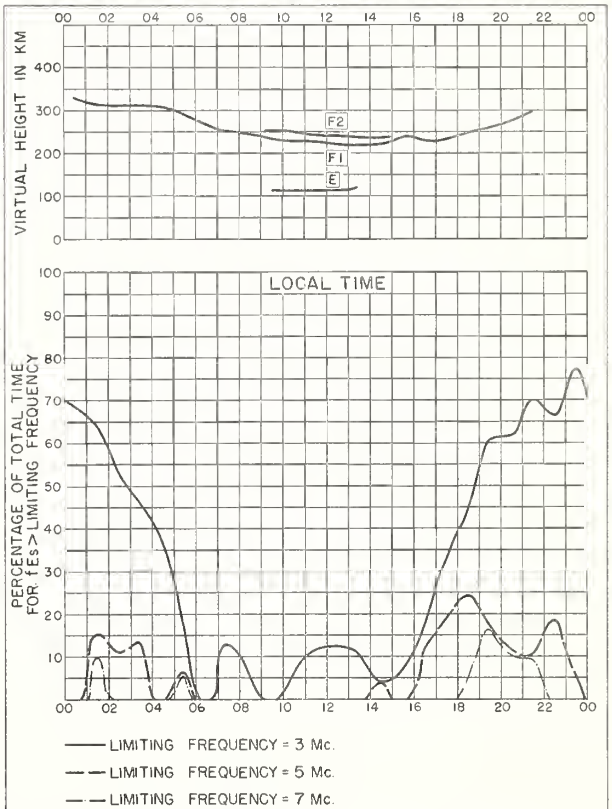


Fig. 40. KIRUNA, SWEDEN OCTOBER 1952

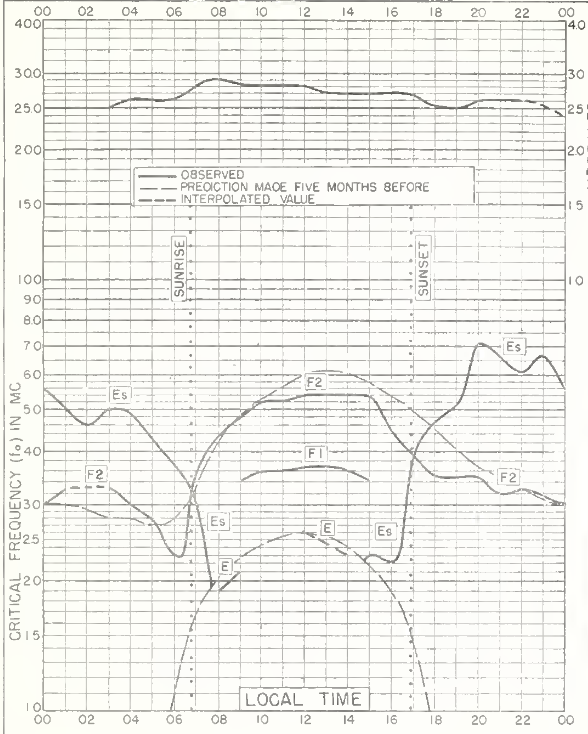


Fig. 41. NARSARSSUAK, GREENLAND
61.2° N, 45.4° W OCTOBER 1952

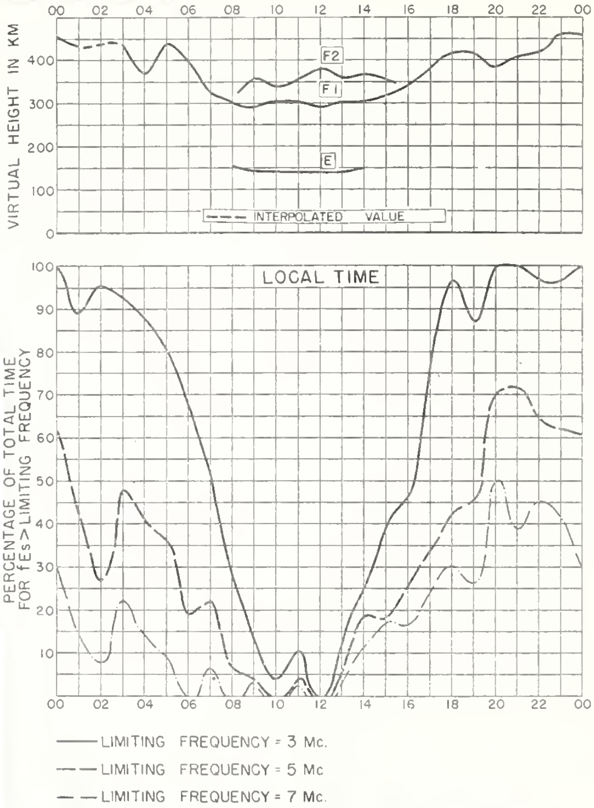


Fig. 42 NARSARSSUAK, GREENLAND OCTOBER 1952

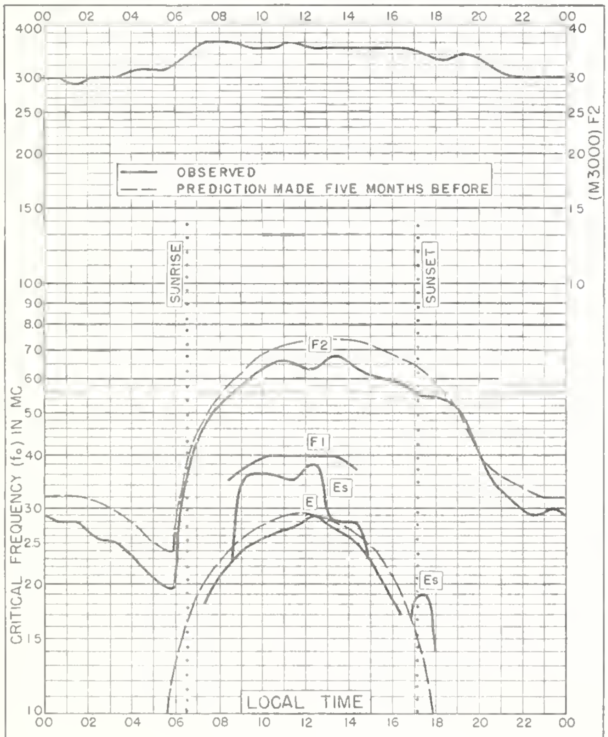


Fig. 43. De BILT, HOLLAND
52.1°N, 5.2°E OCTOBER 1952

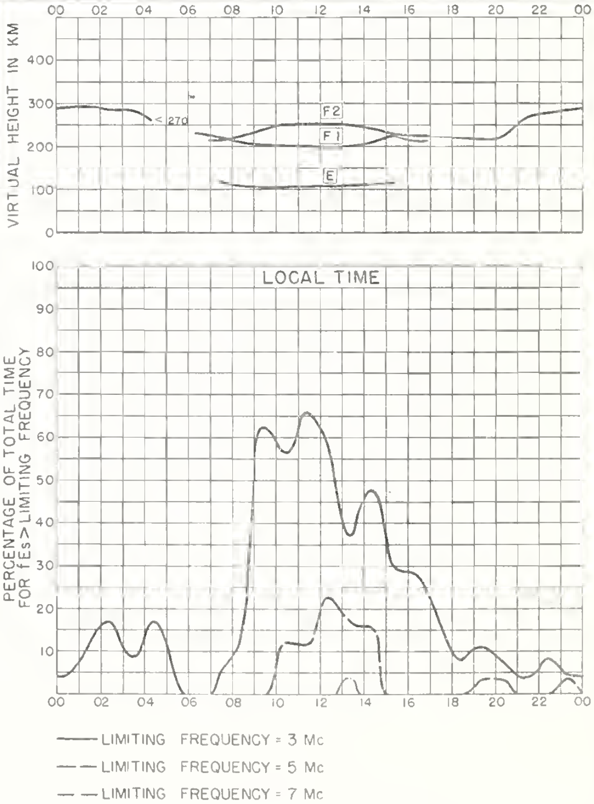


Fig. 44. De BILT, HOLLAND OCTOBER 1952

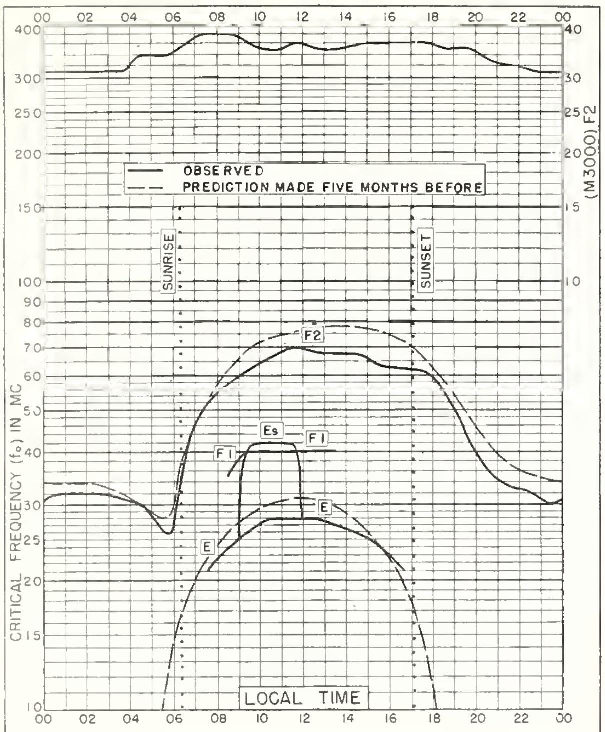
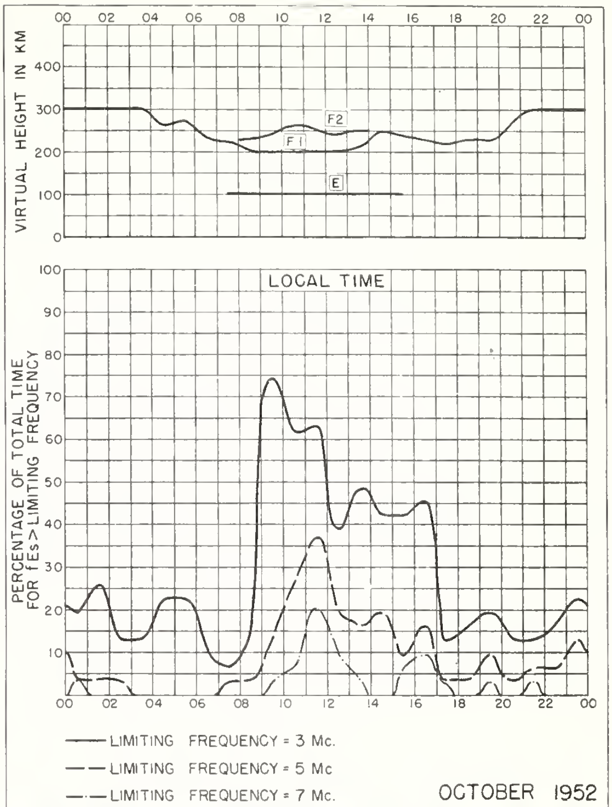


Fig. 45. SCHWARZENBURG, SWITZERLAND
46.8° N, 7.3° E OCTOBER 1952



OCTOBER 1952
Fig. 46. SCHWARZENBURG, SWITZERLAND

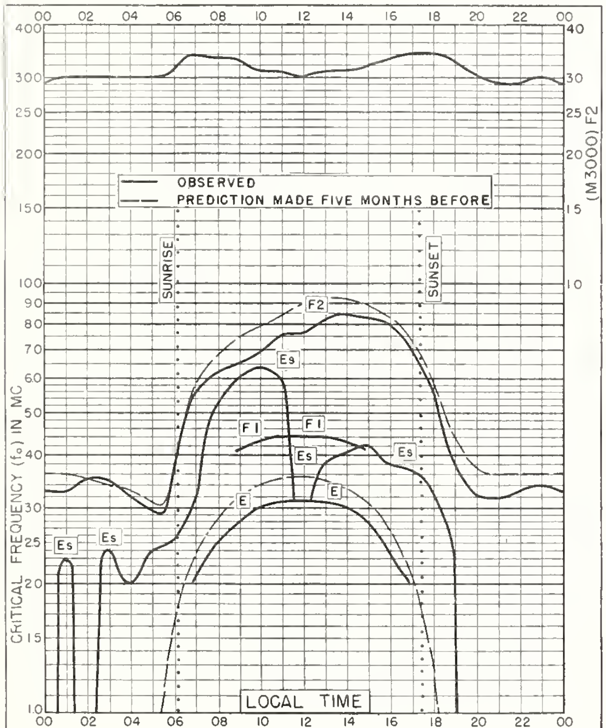


Fig. 47. BATON ROUGE, LOUISIANA
30.5° N, 91.2° W OCTOBER 1952

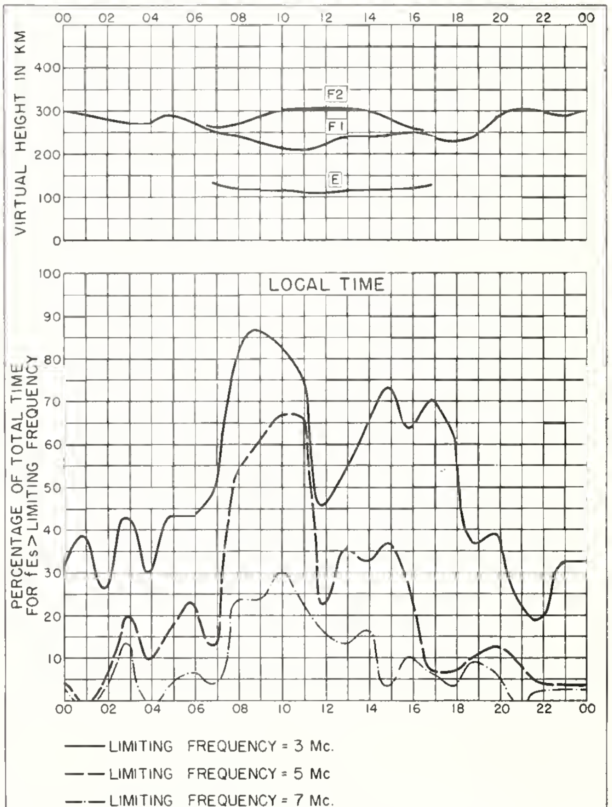


Fig. 48. BATON ROUGE, LOUISIANA OCTOBER 1952

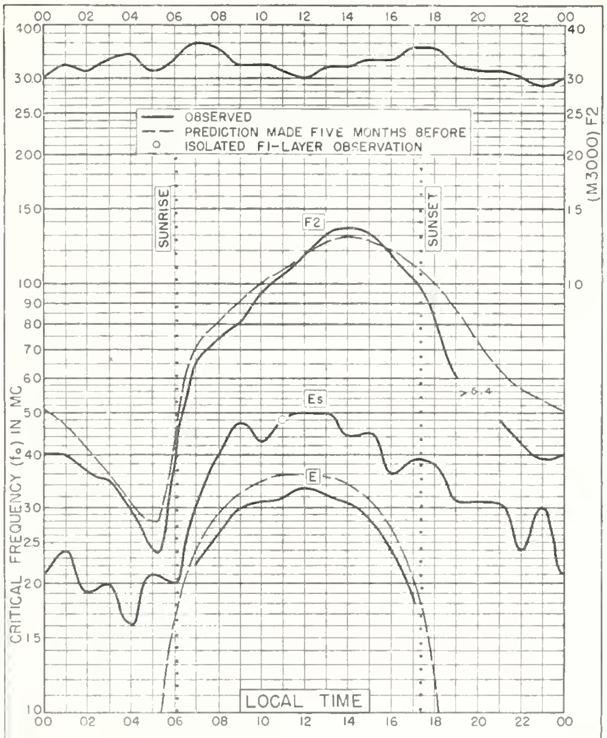


Fig. 49 OKINAWA I.
26.3°N, 127.8°E OCTOBER 1952

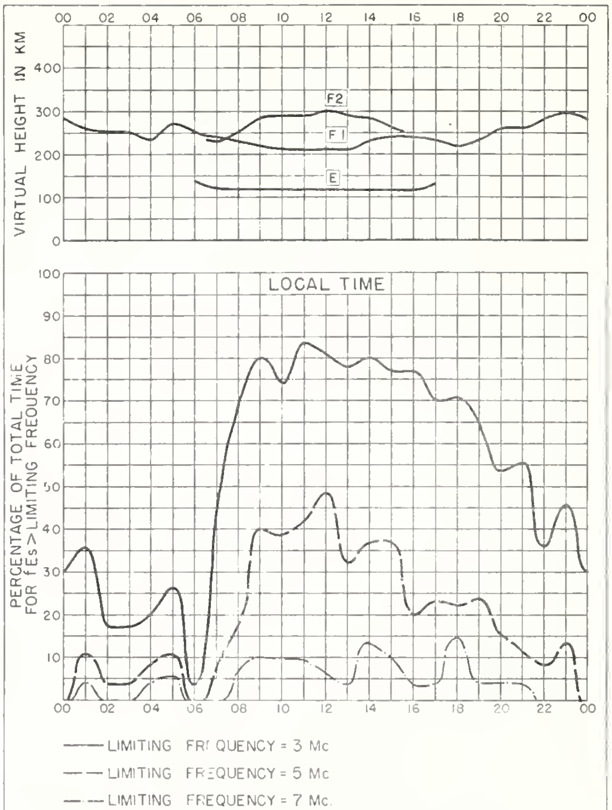


Fig. 50 OKINAWA, I OCTOBER 1952

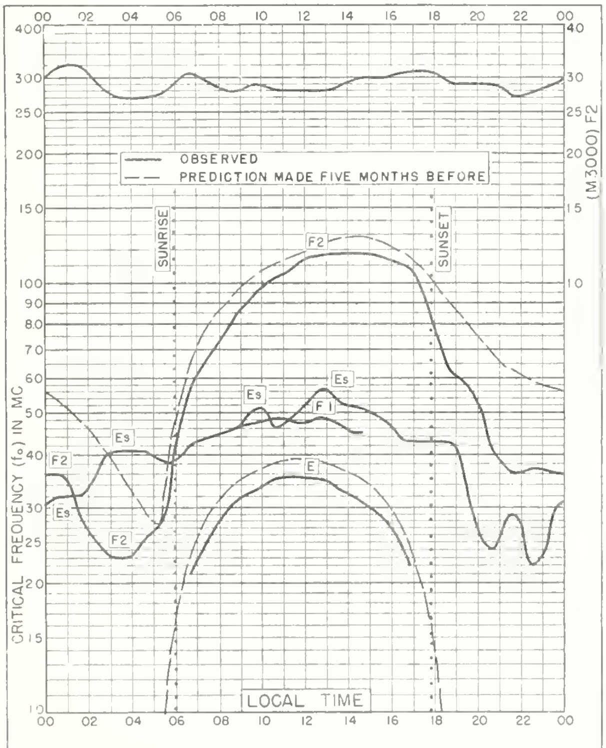


Fig. 51 PANAMA CANAL ZONE
9.4°N, 79.9°W OCTOBER 1952

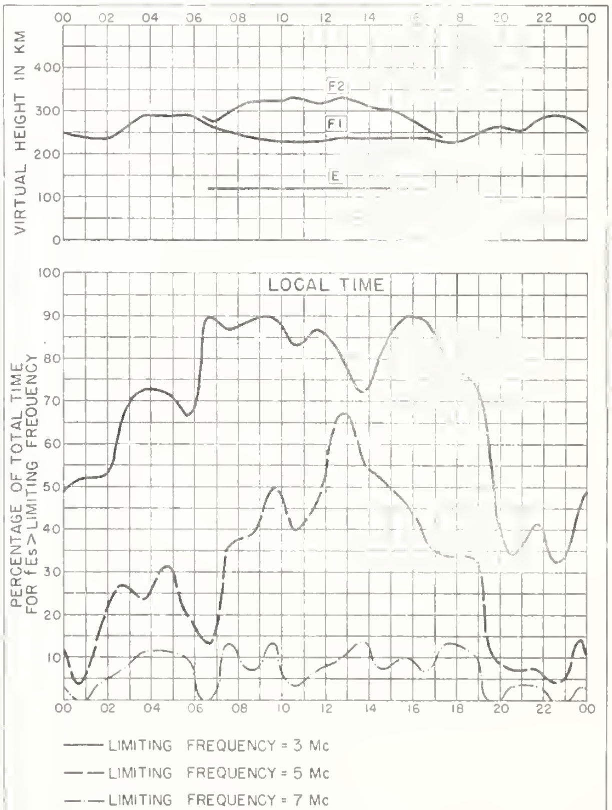


Fig. 52 PANAMA CANAL ZONE OCTOBER 1952

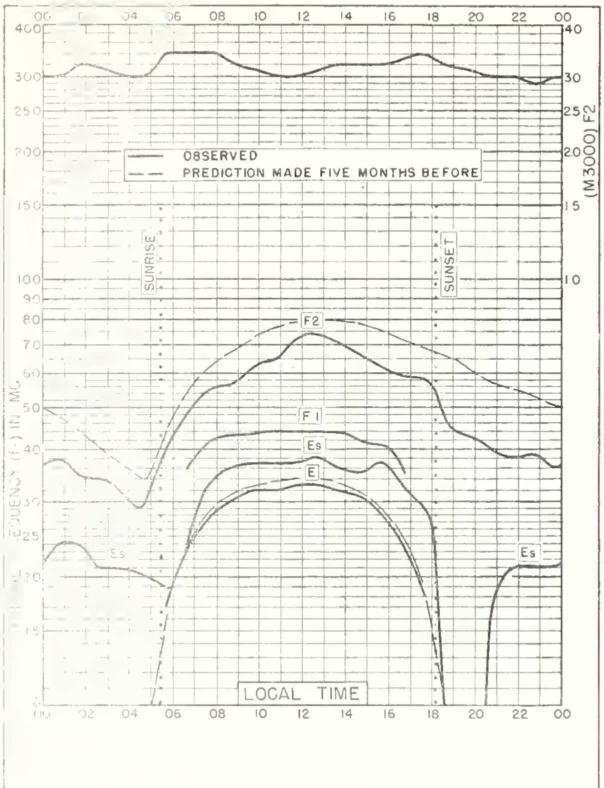


Fig. 53 WATHEROO, W. AUSTRALIA
30.3° S, 115.9°E OCTOBER 1952

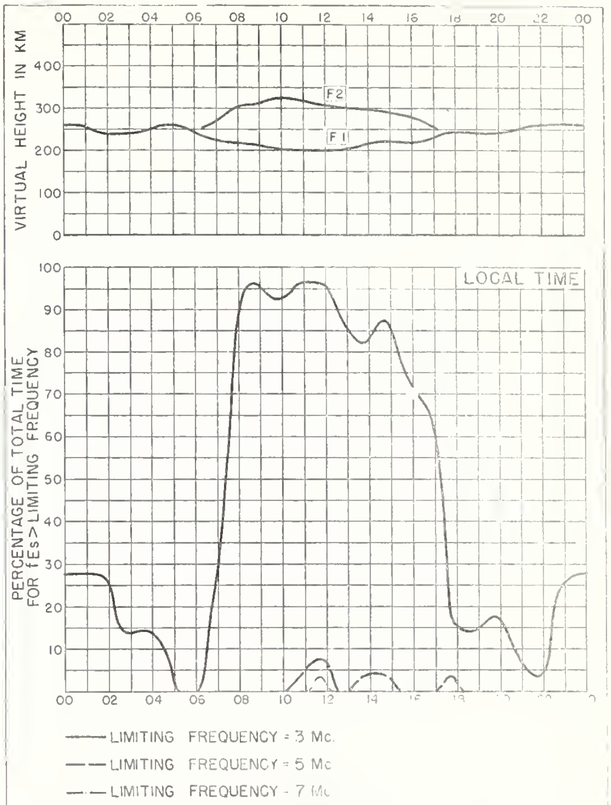


Fig. 54. WATHEROO, W. AUSTRALIA OCTOBER 1952

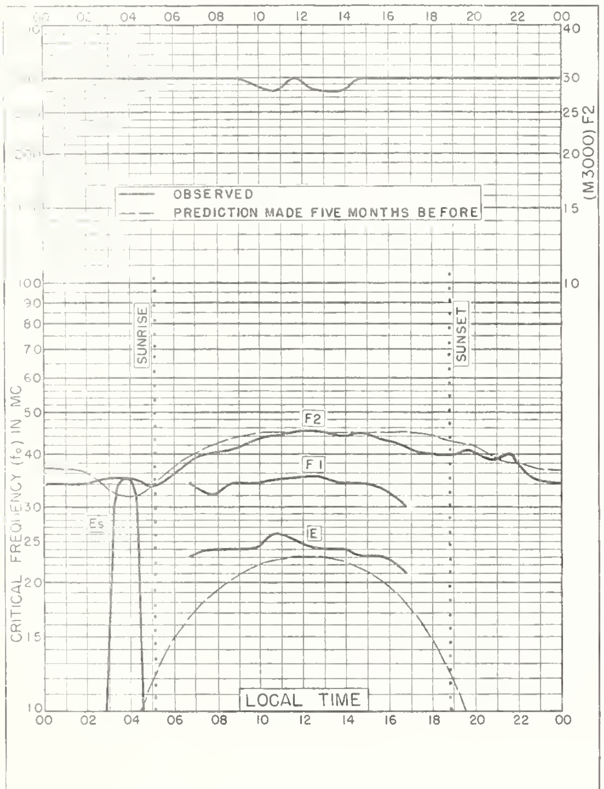


Fig. 55. RESOLUTE BAY, CANADA
74.7°N, 94.9°W SEPTEMBER 1952

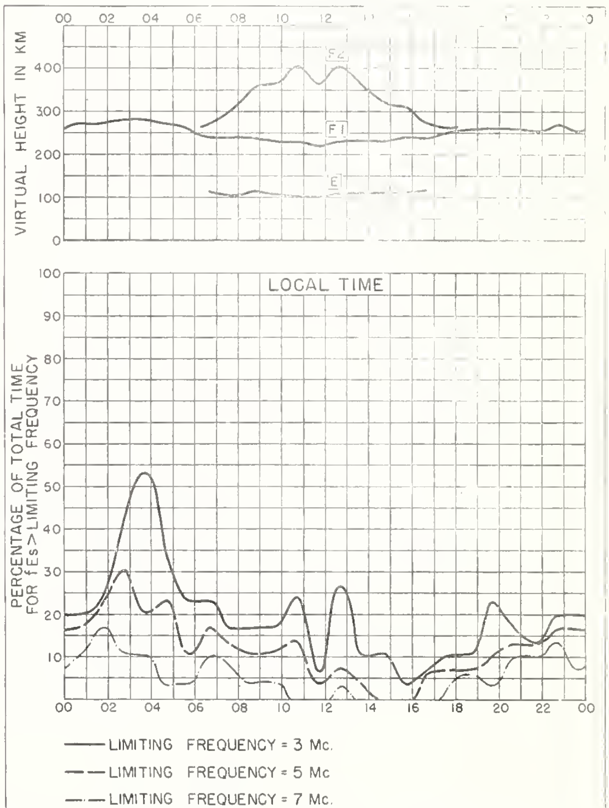


Fig. 56. RESOLUTE BAY, CANADA SEPTEMBER 1952

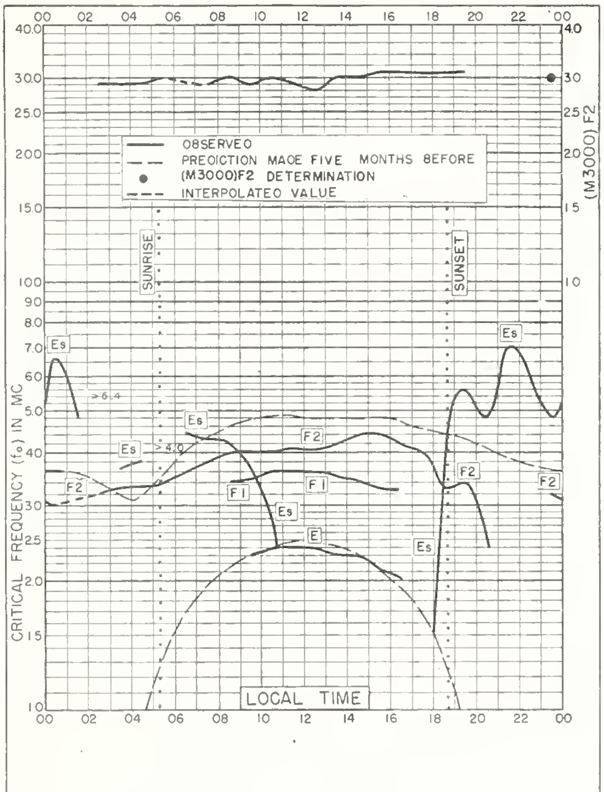


Fig. 57. POINT BARROW, ALASKA
71.3°N, 156.8°W SEPTEMBER 1952

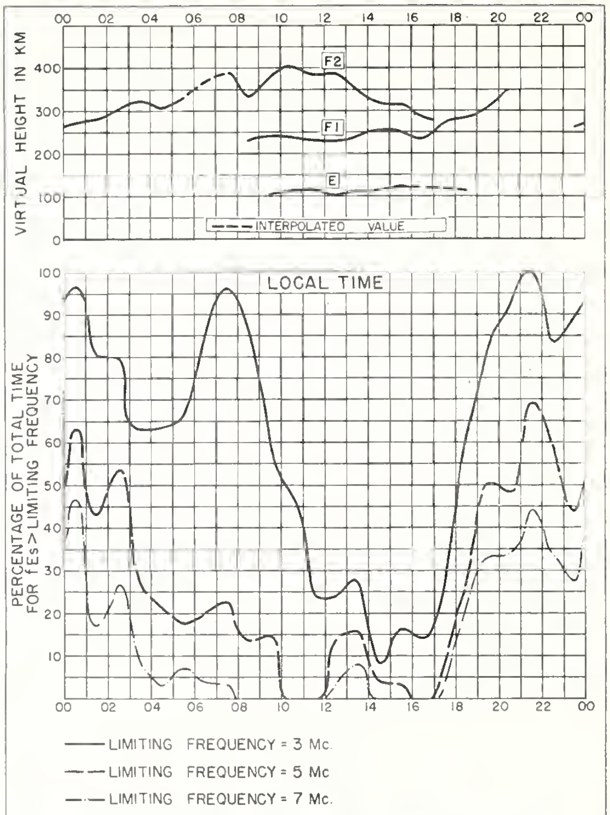


Fig. 58. POINT BARROW, ALASKA SEPTEMBER 1952

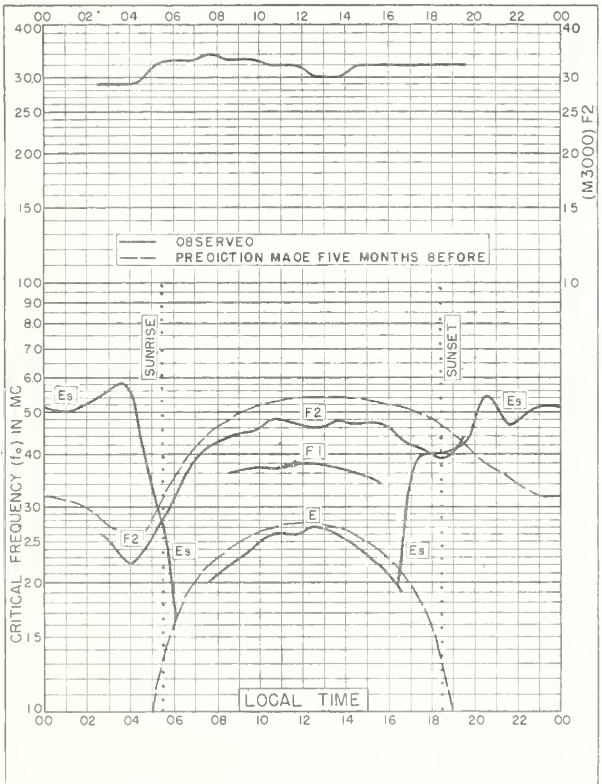


Fig. 59. REYKJAVIK, ICELAND
64.1°N, 21.8°W SEPTEMBER 1952

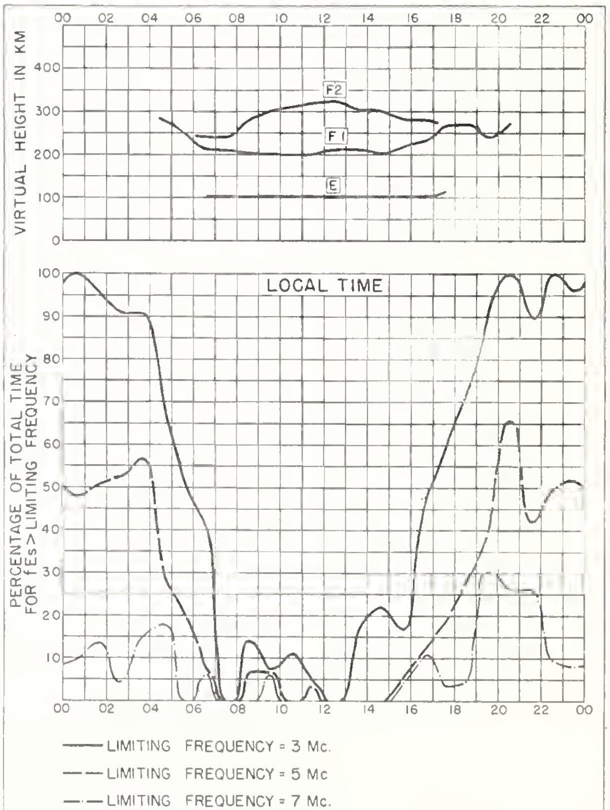


Fig. 60. REYKJAVIK, ICELAND SEPTEMBER 1952

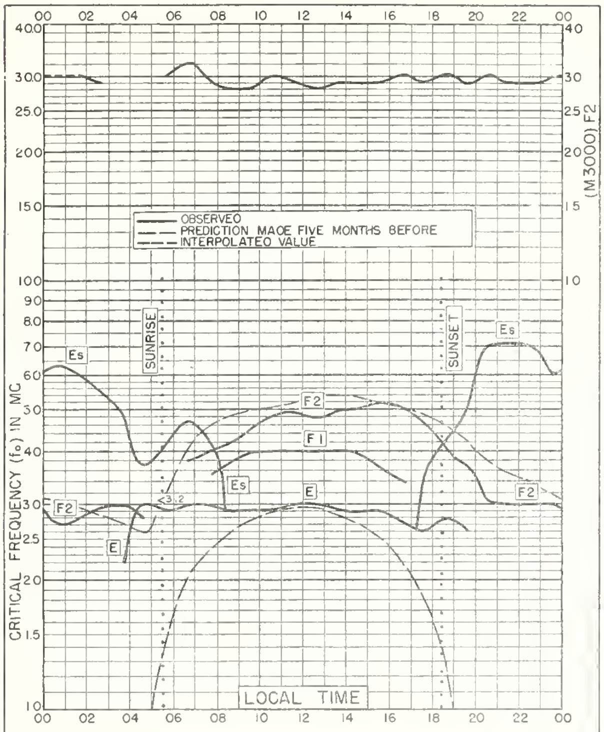


Fig. 61. CHURCHILL, CANADA
58.8° N, 94.2° W SEPTEMBER 1952

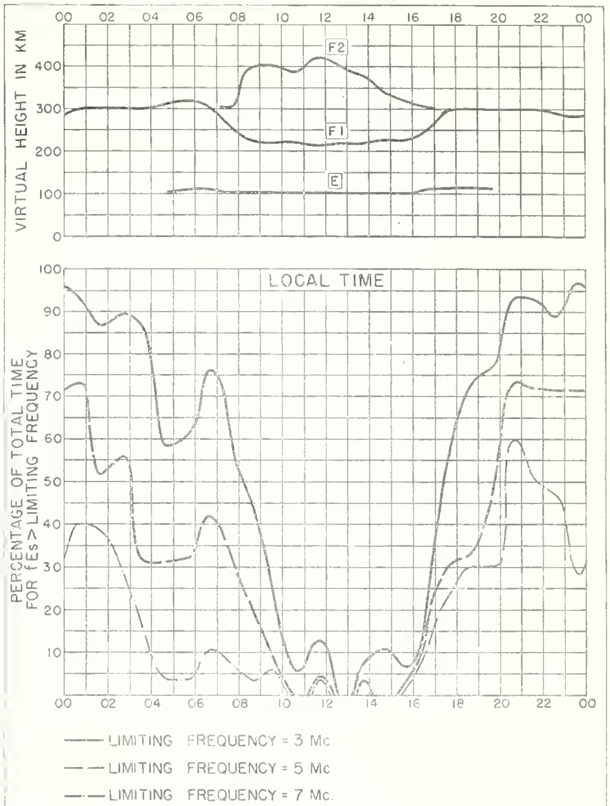


Fig. 62. CHURCHILL, CANADA SEPTEMBER 1952

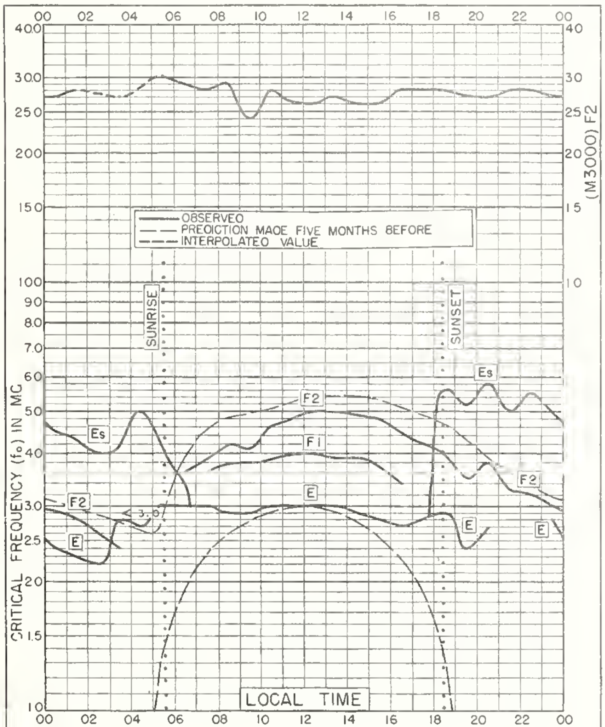


Fig. 63. FORT CHIMO, CANADA
58.1°N, 68.3°W SEPTEMBER 1952

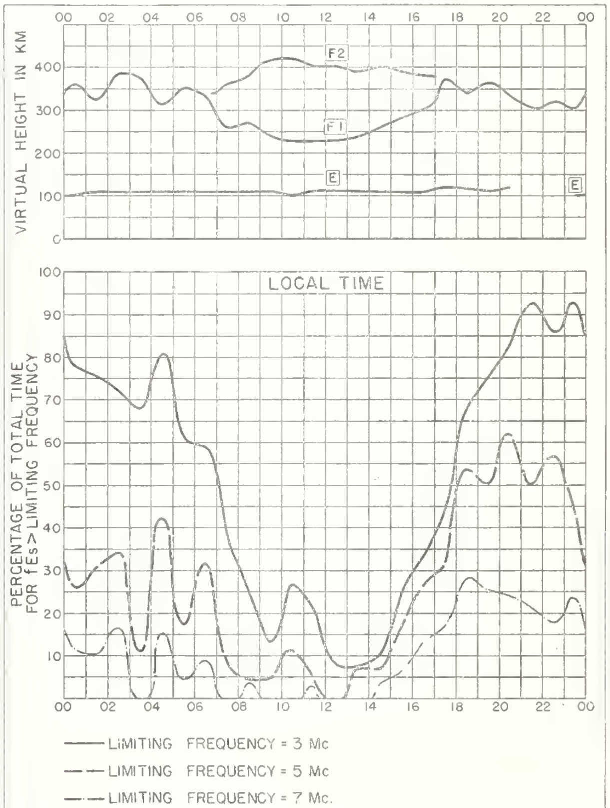


Fig. 64 FORT CHIMO, CANADA SEPTEMBER 1952

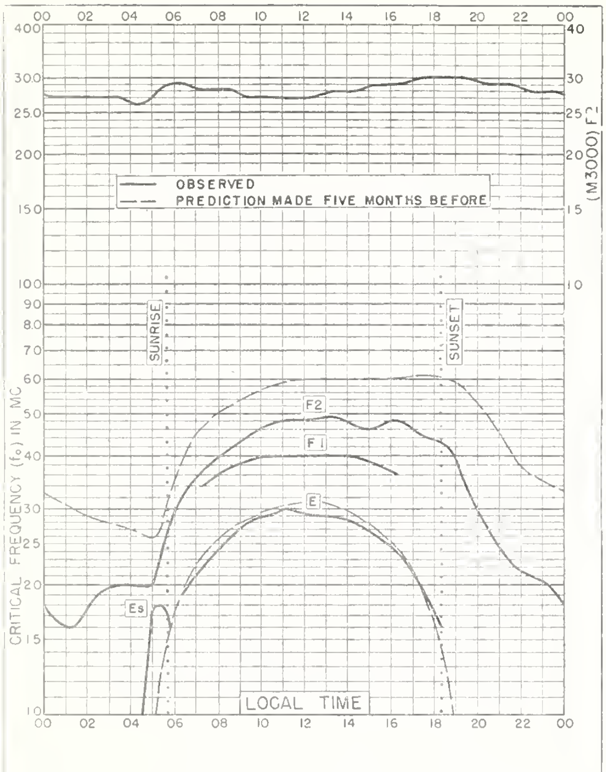


Fig. 65. PRINCE RUPERT, CANADA
54.3° N, 130.3° W SEPTEMBER 1952

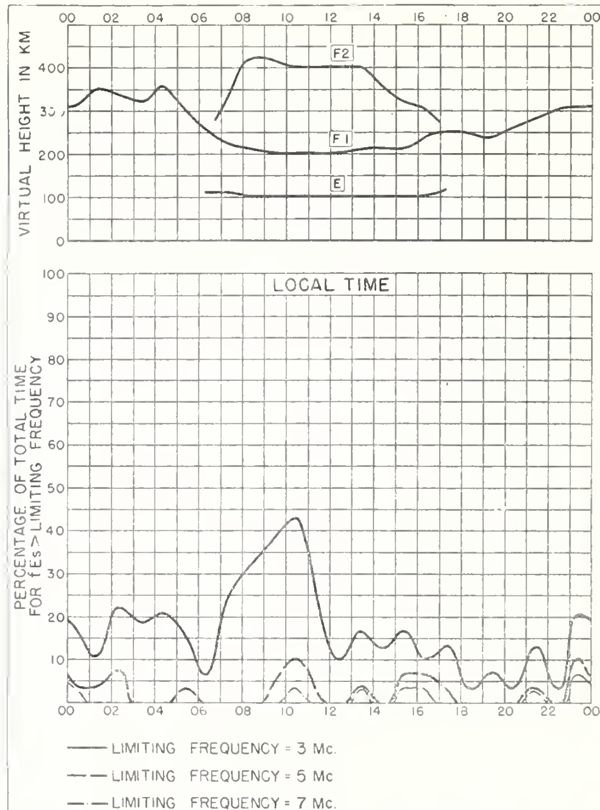


Fig. 66. PRINCE RUPERT, CANADA SEPTEMBER 1952

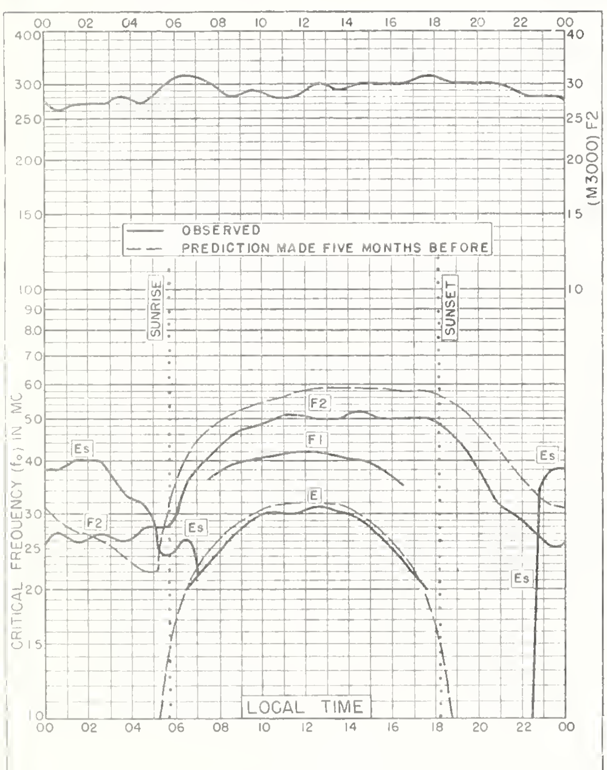


Fig. 67 WINNIPEG, CANADA
49.9° N, 97.4° W SEPTEMBER 1952

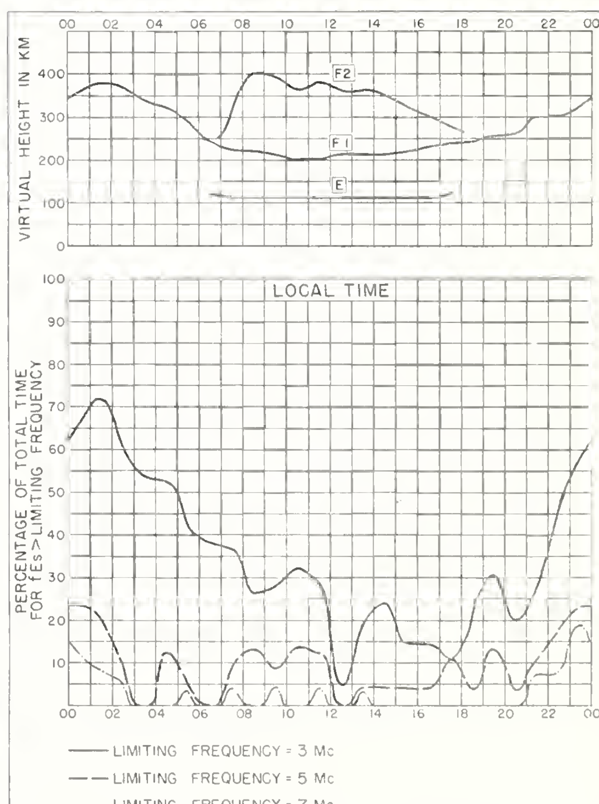


Fig. 68 WINNIPEG, CANADA SEPTEMBER 1952

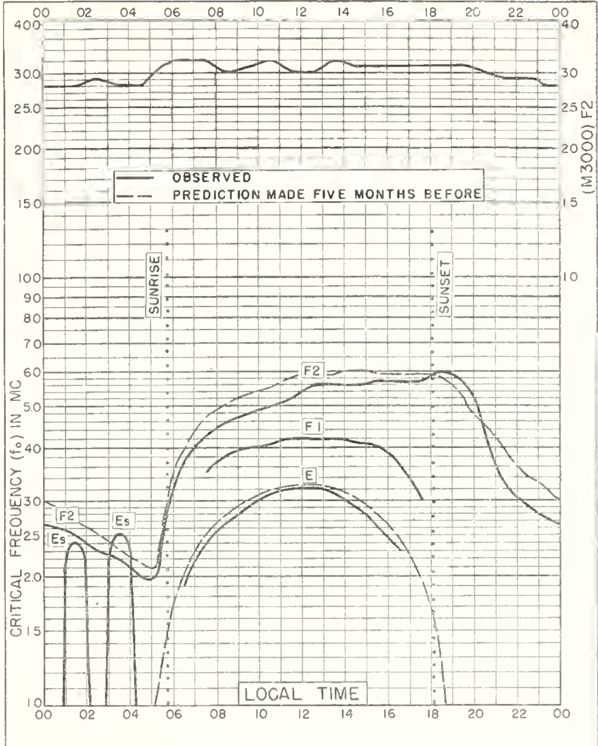
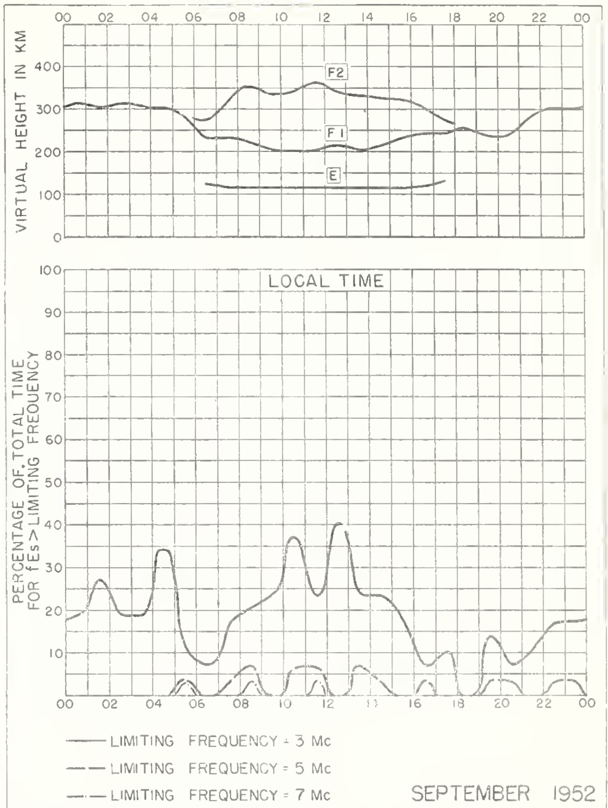


Fig. 69. ST. JOHN'S, NEWFOUNDLAND
47.6° N, 52.7° W SEPTEMBER 1952



SEPTEMBER 1952

Fig. 70. ST. JOHN'S, NEWFOUNDLAND

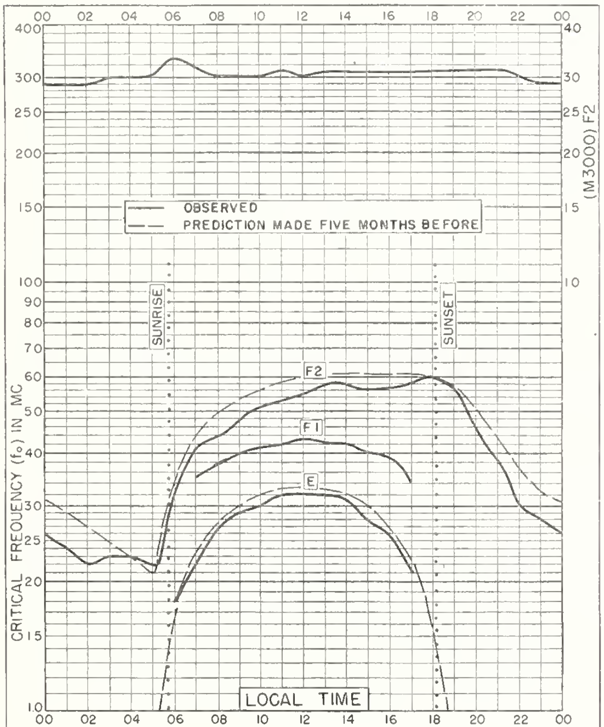


Fig. 71. OTTAWA, CANADA
45.4° N, 75.7° W SEPTEMBER 1952

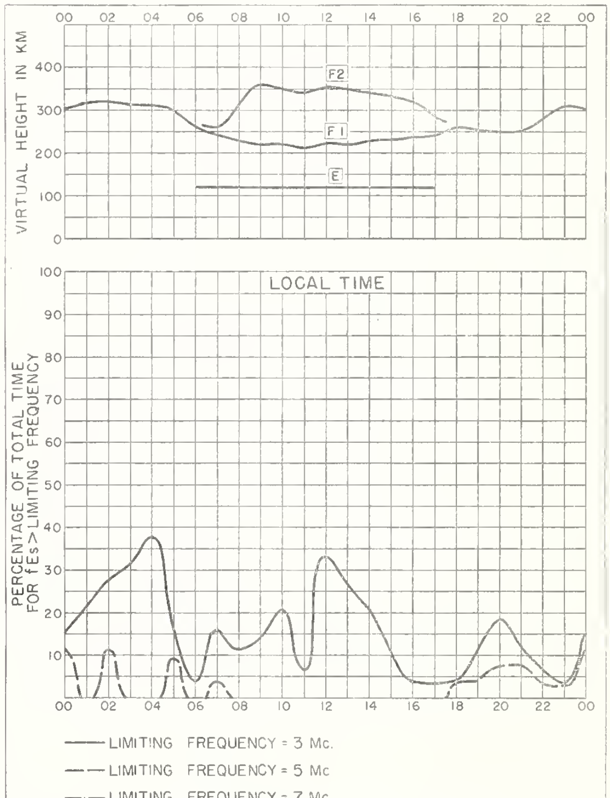


Fig. 72. OTTAWA, CANADA SEPTEMBER 1952

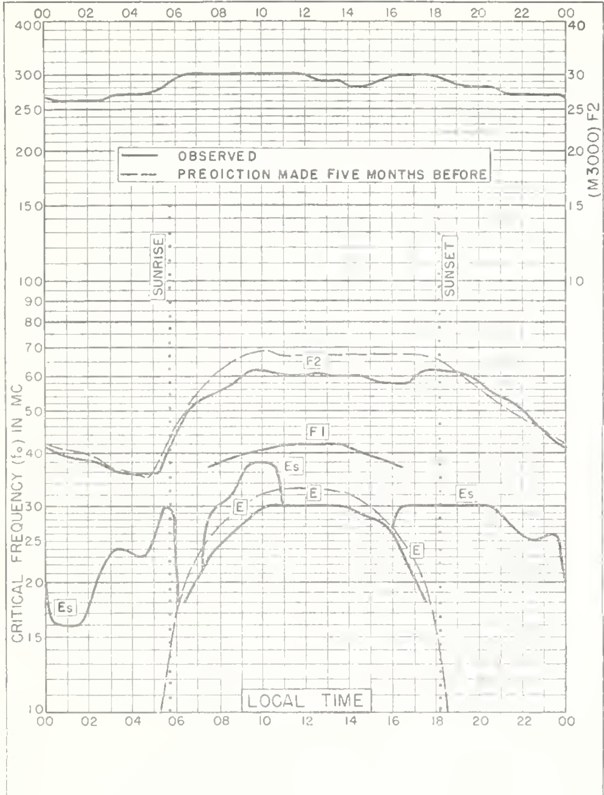


Fig. 73 WAKKANAI, JAPAN
45.4°N, 141.7°E SEPTEMBER 1952

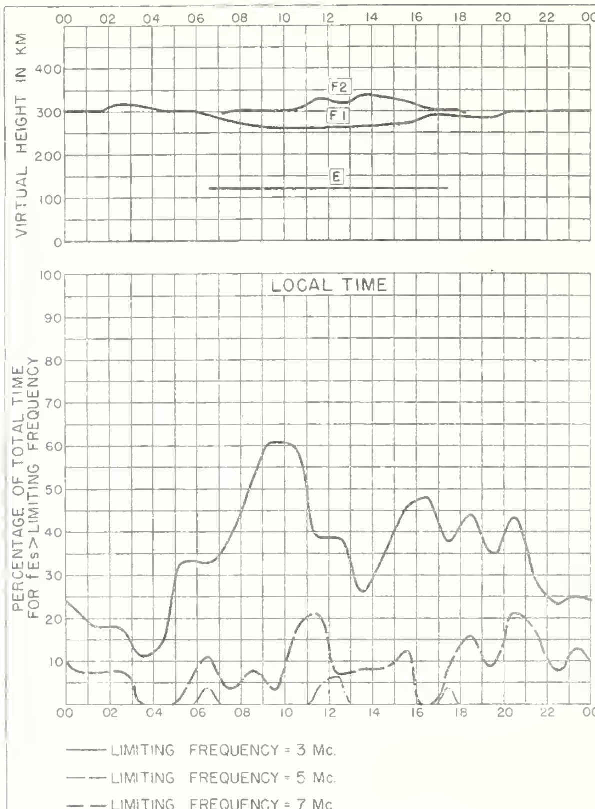


Fig. 74 WAKKANAI, JAPAN SEPTEMBER 1952

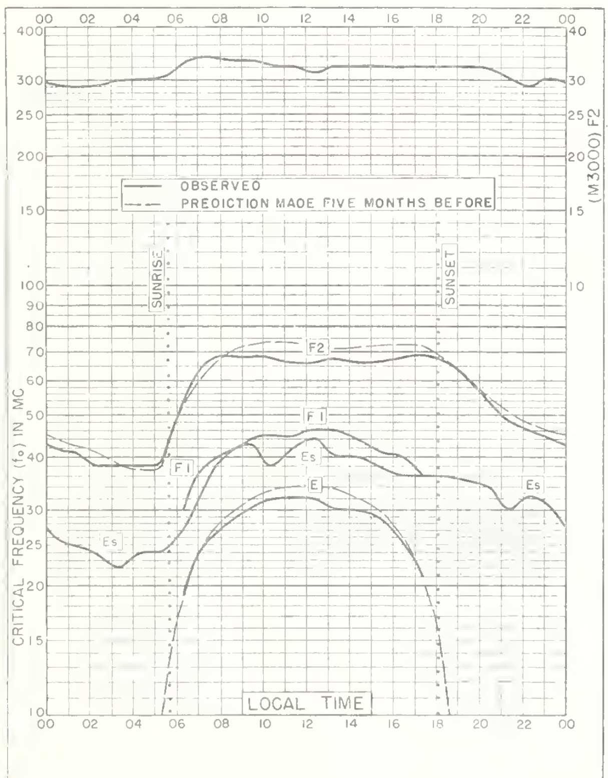


Fig 75 AKITA, JAPAN
39.7°N, 140.1°E SEPTEMBER 1952

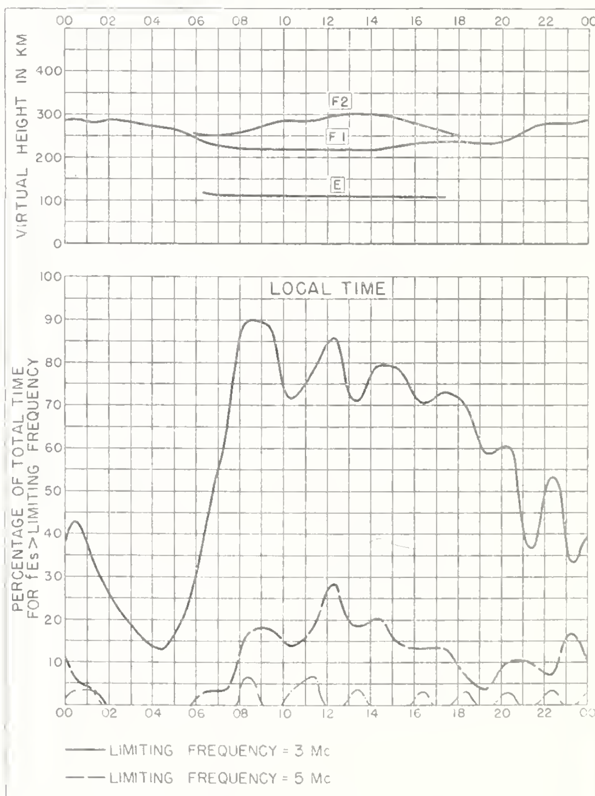


Fig 76. AKITA, JAPAN SEPTEMBER 1952

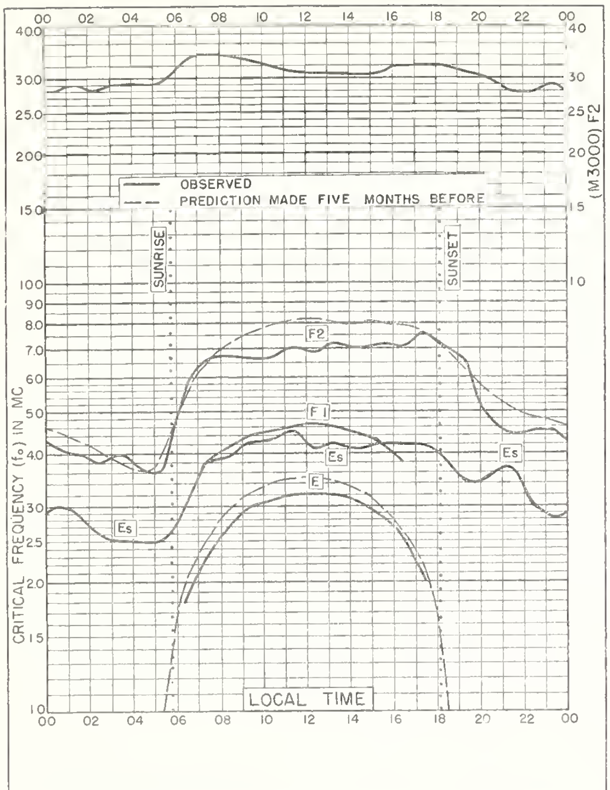


Fig. 77 TOKYO, JAPAN
35.7°N, 139.5°E SEPTEMBER 1952

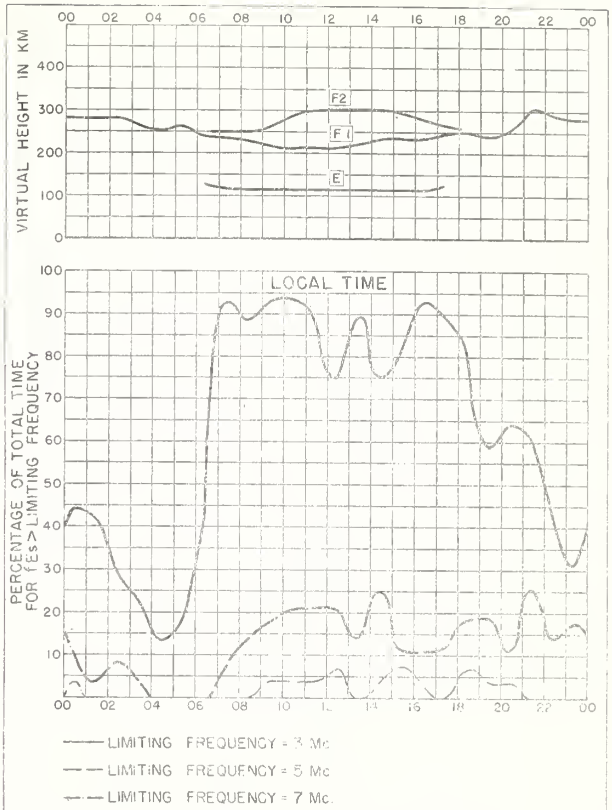


Fig. 78. TOKYO, JAPAN SEPTEMBER 1952

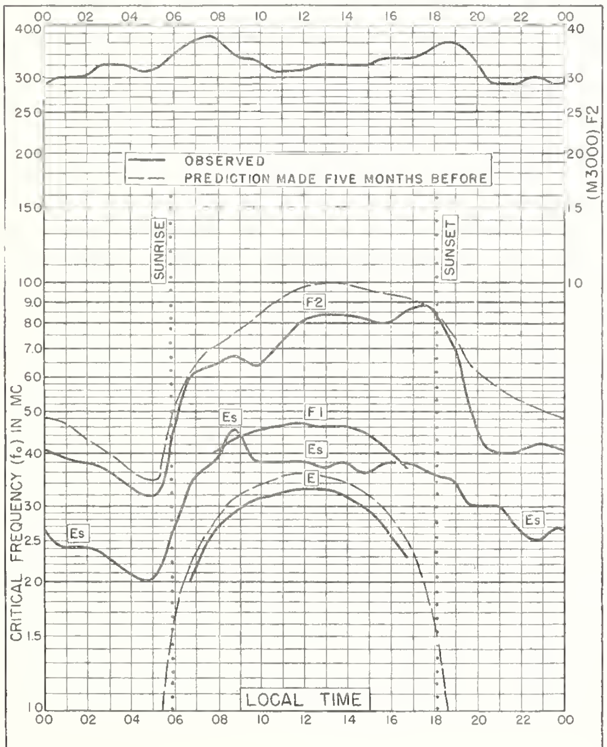


Fig. 79. YAMAGAWA, JAPAN
31.2°N, 130.6°E SEPTEMBER 1952

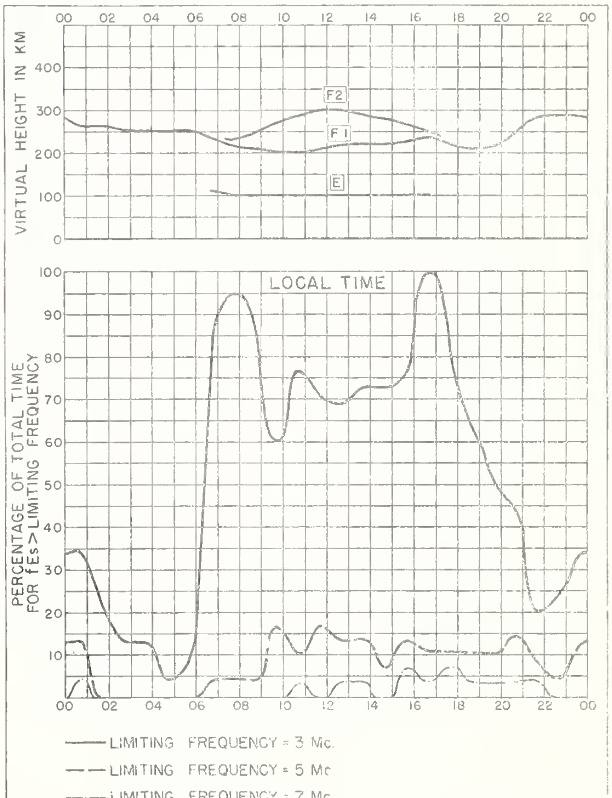


Fig. 80. YAMAGAWA, JAPAN SEPTEMBER 1952

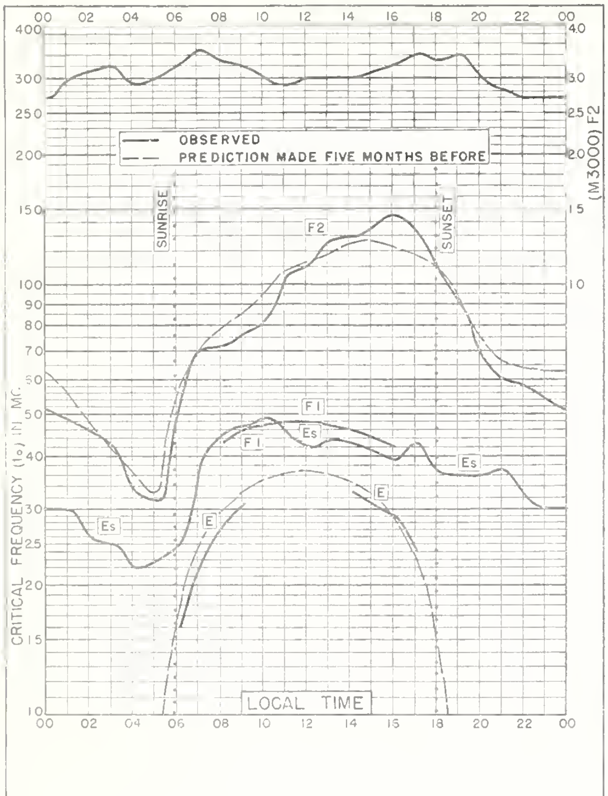


Fig. 81. FORMOSA, CHINA
25.0°N, 121.5°E SEPTEMBER 1952

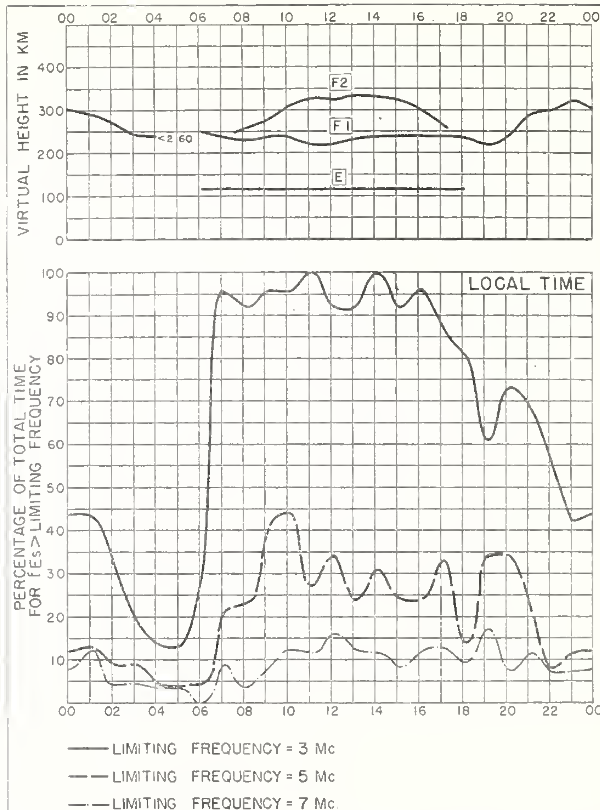


Fig. 82 FORMOSA, CHINA SEPTEMBER 1952

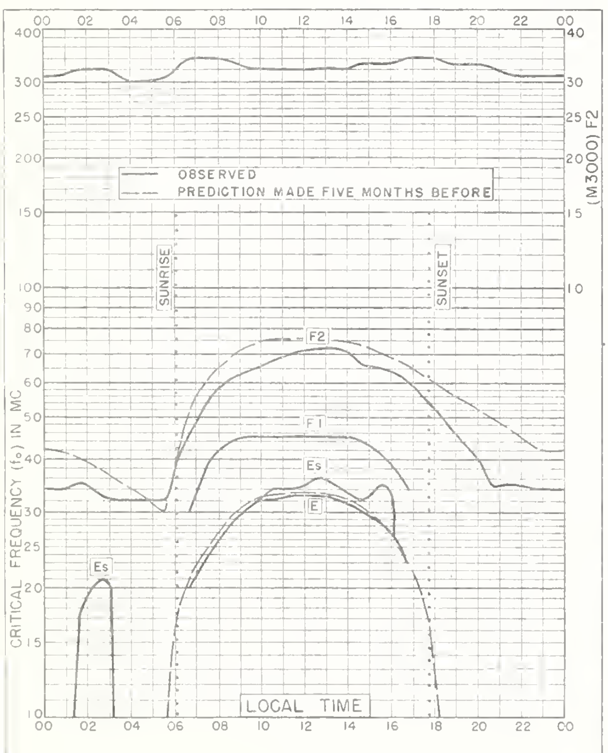


Fig 83. WATHEROO, W AUSTRALIA
30.3°S, 115.9°E SEPTEMBER 1952

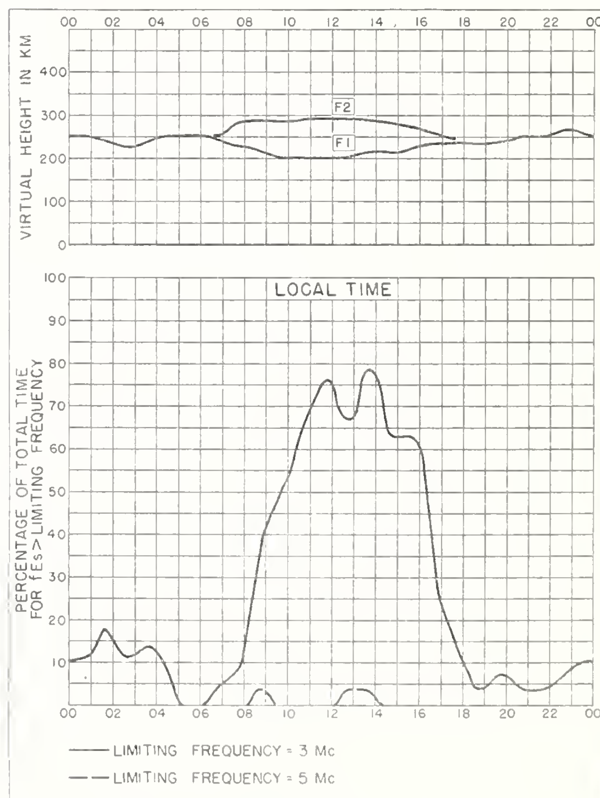


Fig 84 WATHEROO, W. AUSTRALIA SEPTEMBER 1952

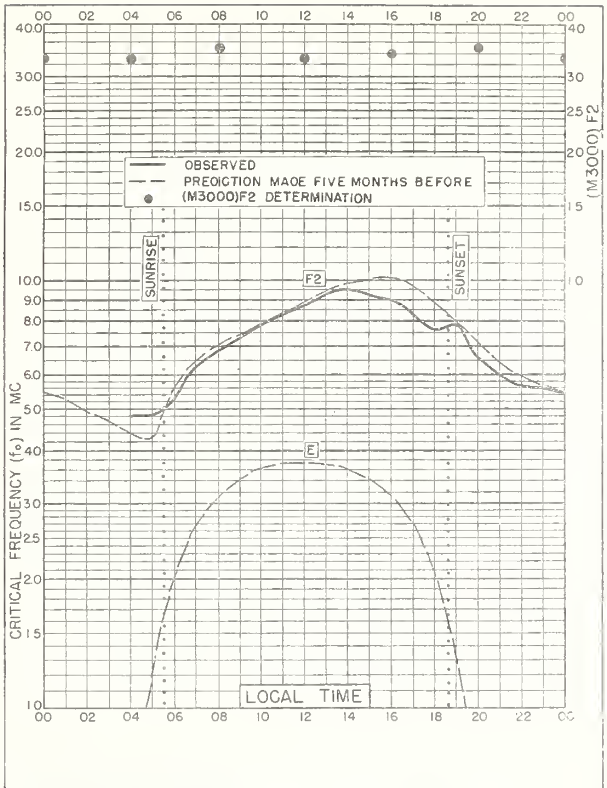


Fig. 85. DELHI, INDIA
28.6°N, 77.1°E AUGUST 1952

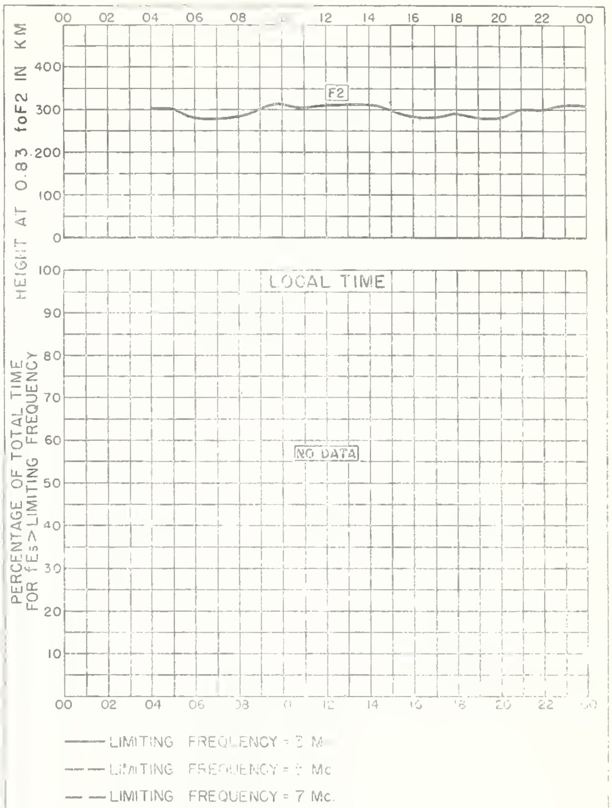


Fig. 86. DELHI, INDIA AUGUST 1952

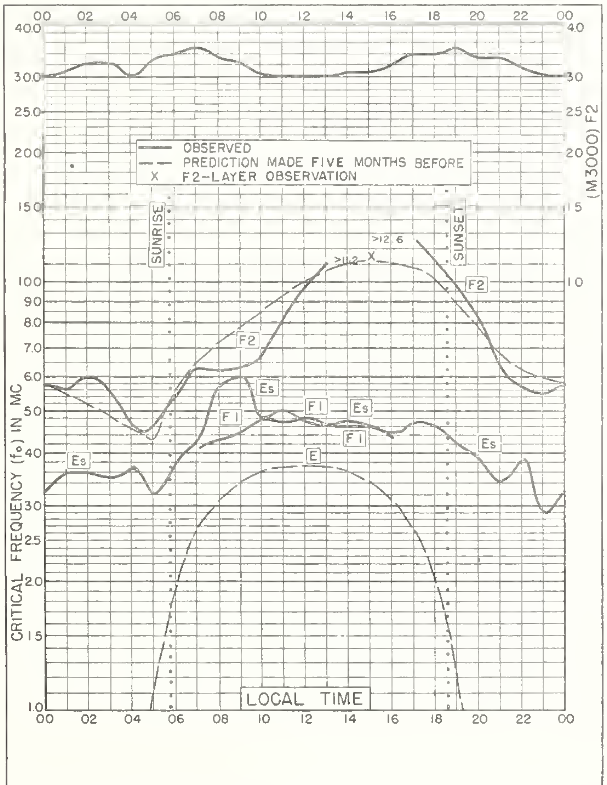


Fig. 87 FORMOSA, CHINA
25.0°N, 121.5°E AUGUST 1952

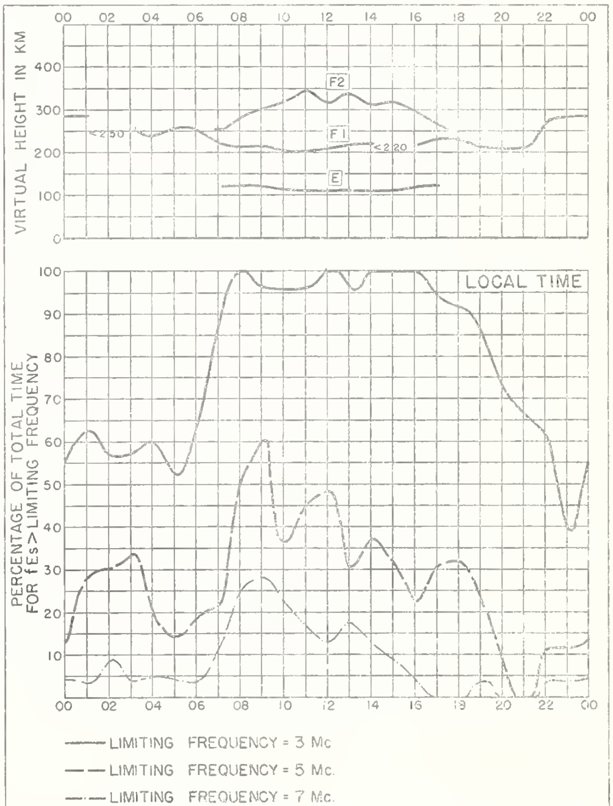


Fig. 88. FORMOSA, CHINA AUGUST 1952

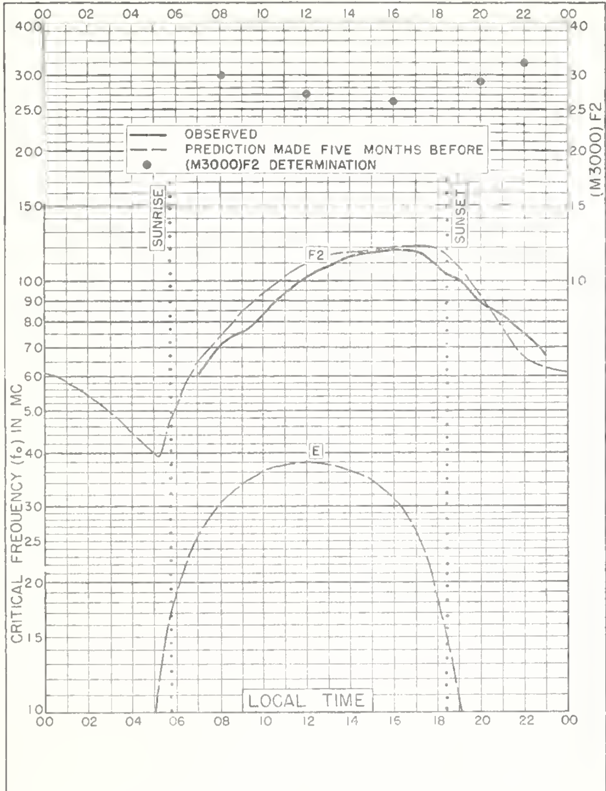


Fig. 89. BOMBAY, INDIA
19.0°N, 73.0°E AUGUST 1952

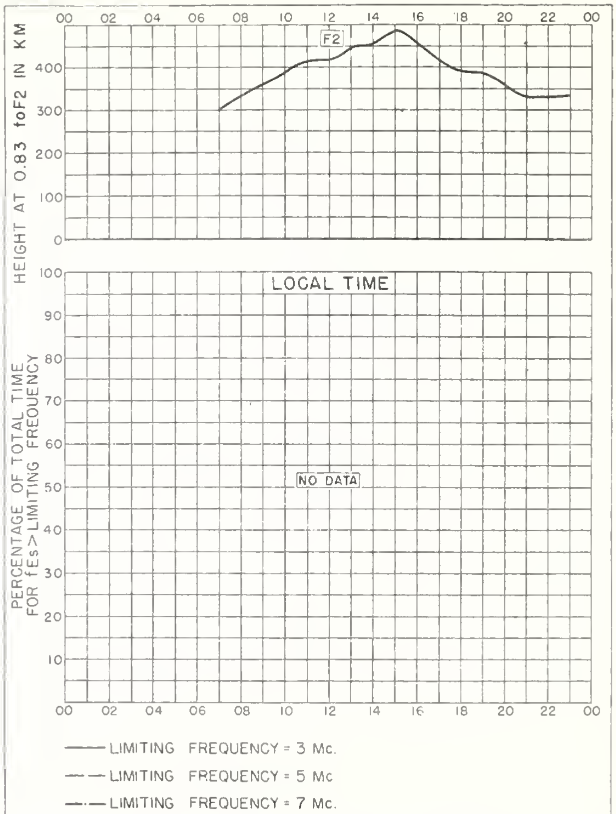


Fig. 90. BOMBAY, INDIA AUGUST 1952

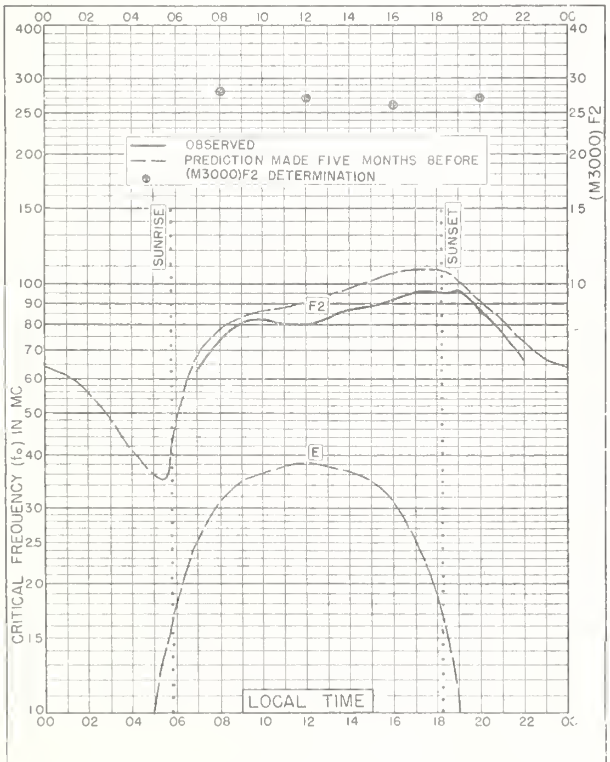


Fig 91 MADRAS, INDIA
13.0°N, 80.2°E AUGUST 1952

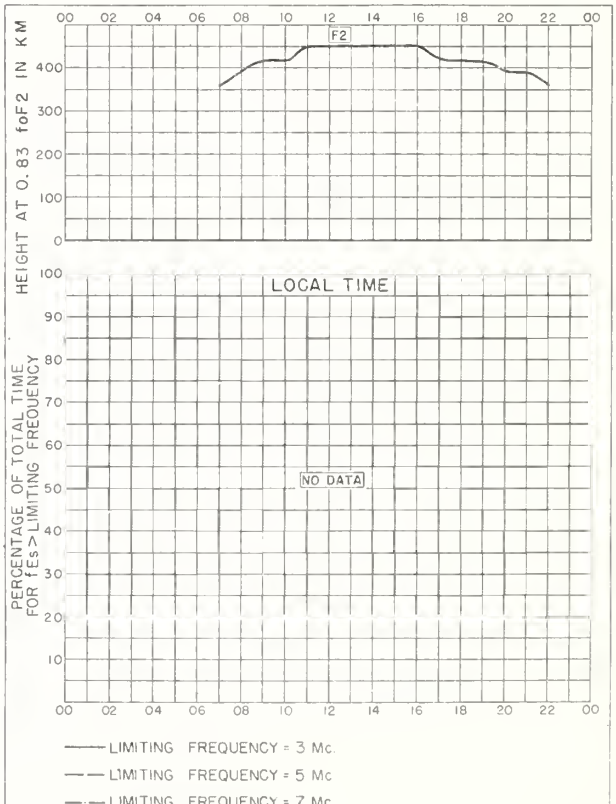


Fig 92. MADRAS, INDIA AUGUST 1952

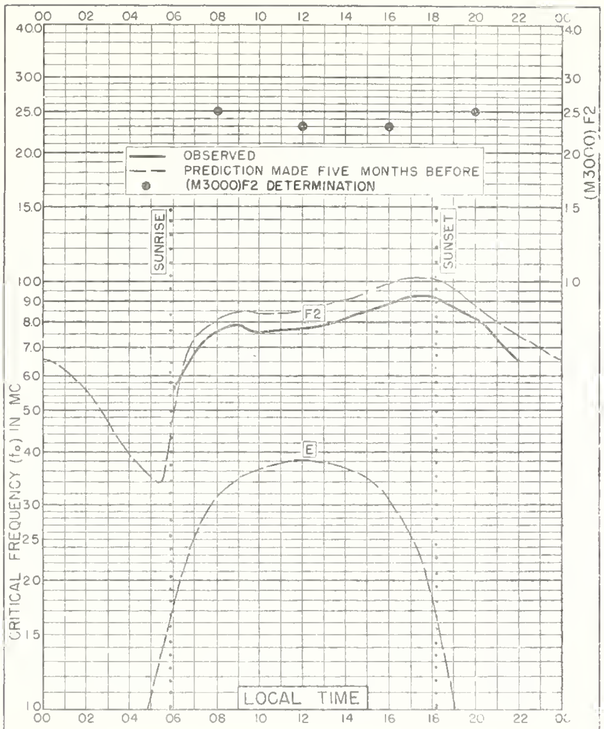


Fig. 93 TIRUCHY, INDIA
10.8°N, 78.8°E AUGUST 1952

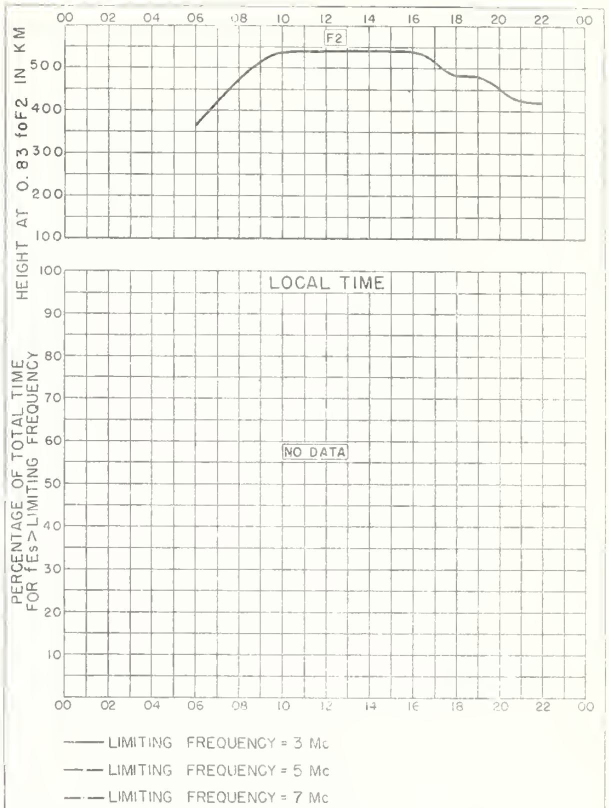


Fig. 94. TIRUCHY, INDIA AUGUST 1952

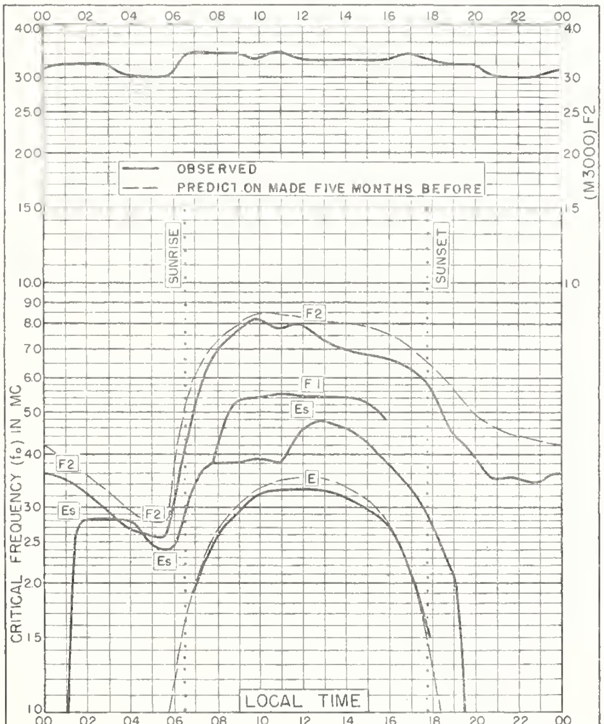


Fig. 95 TOWNSVILLE, AUSTRALIA
19.3°S, 146.8°E AUGUST 1952

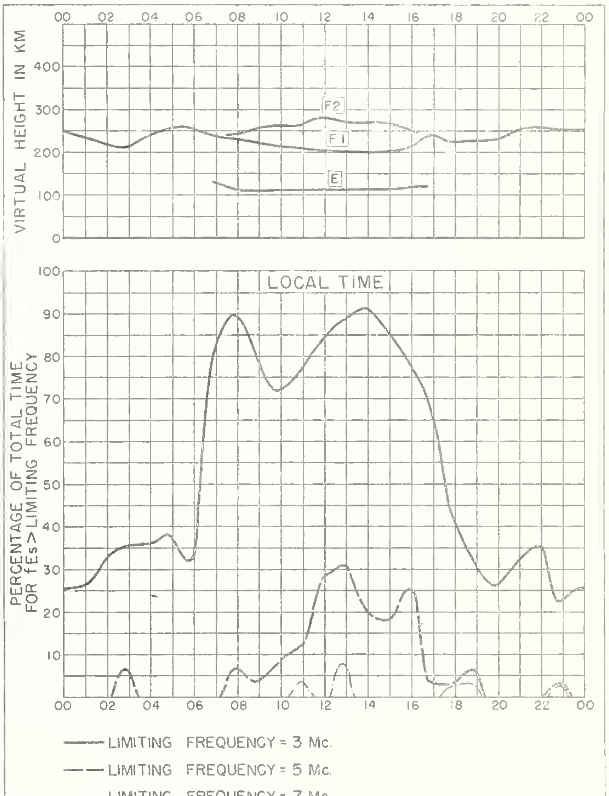


Fig. 96 TOWNSVILLE, AUSTRALIA AUGUST 1952

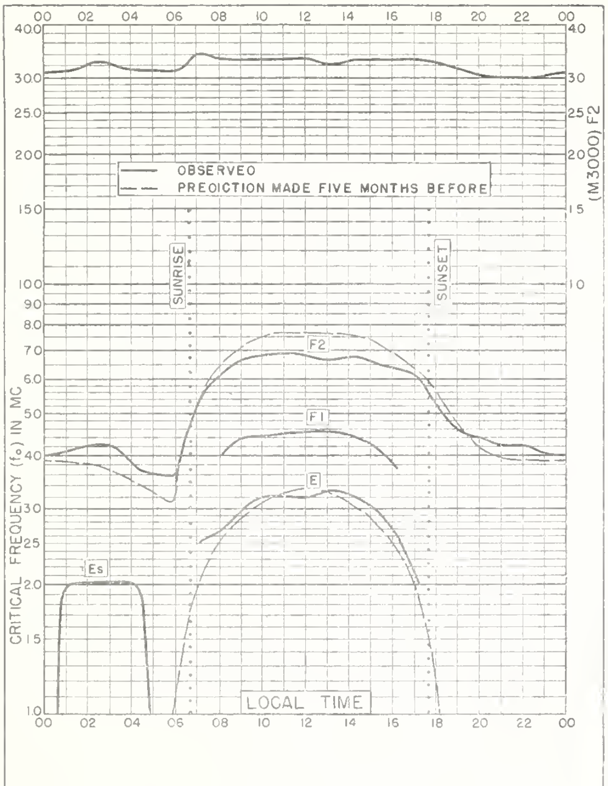


Fig. 97 BRISBANE, AUSTRALIA
27.5° S, 153.0° E AUGUST 1952

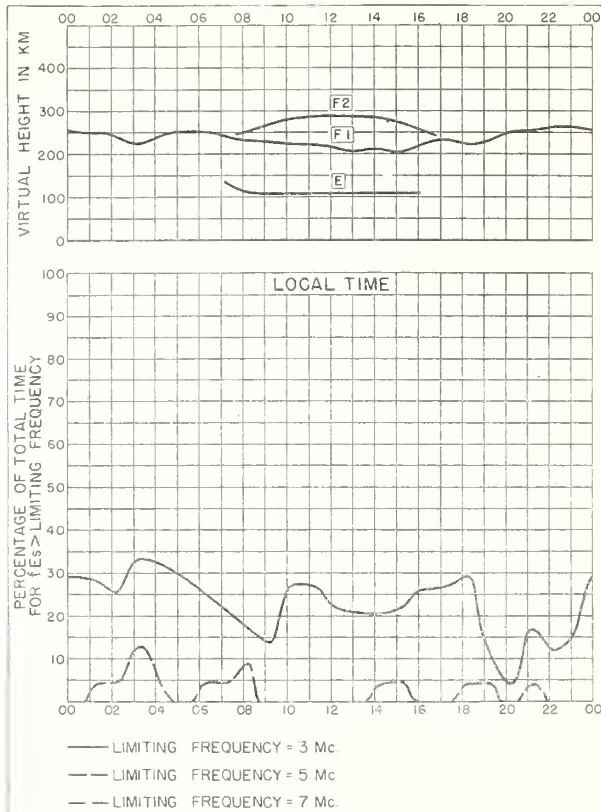


Fig. 98 BRISBANE, AUSTRALIA AUGUST 1952

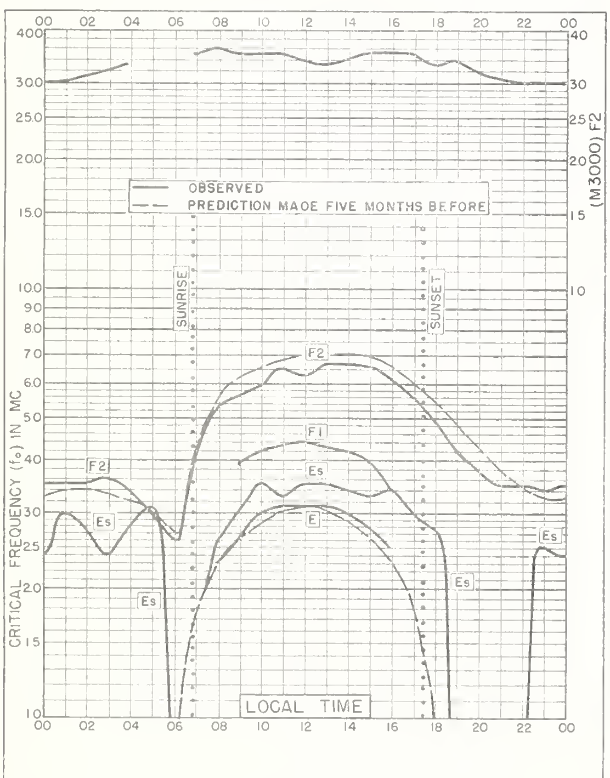


Fig. 99 CANBERRA, AUSTRALIA
35.3° S, 149.0° E AUGUST 1952

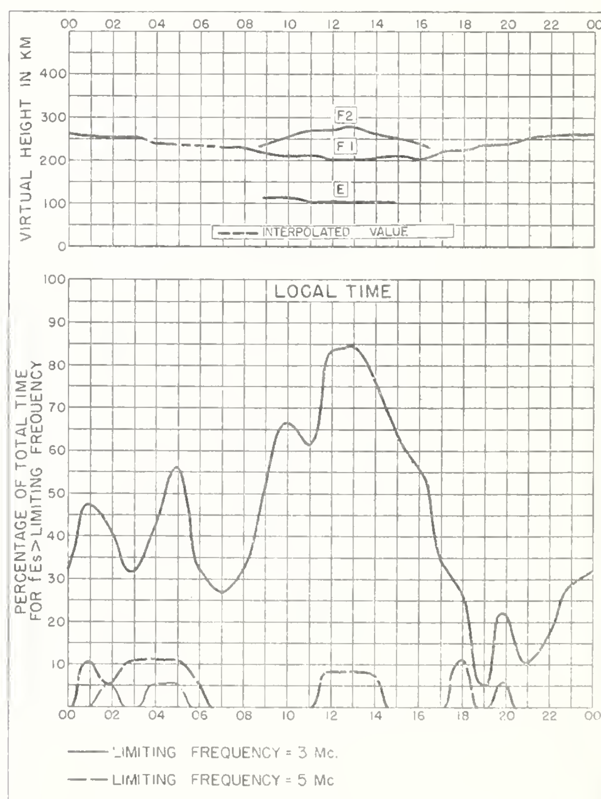


Fig. 100 CANBERRA, AUSTRALIA AUGUST 1952

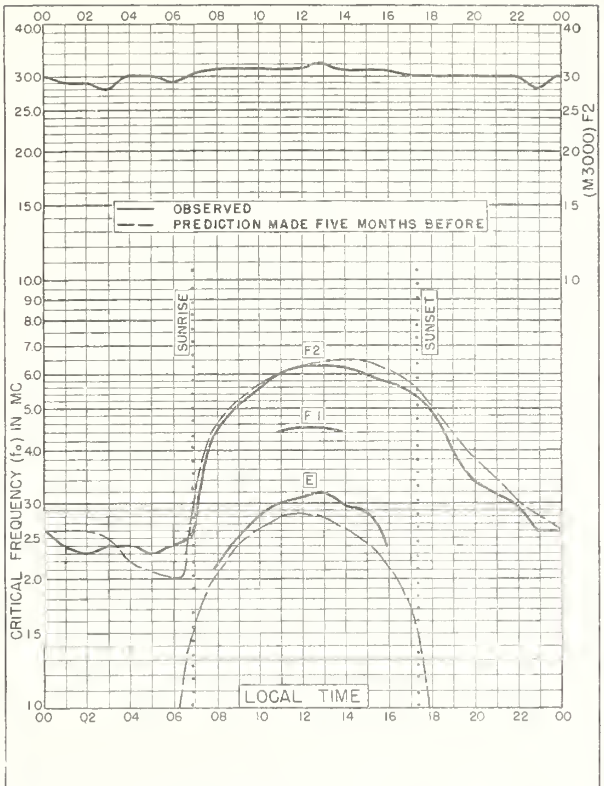


Fig. 101. HOBART, TASMANIA
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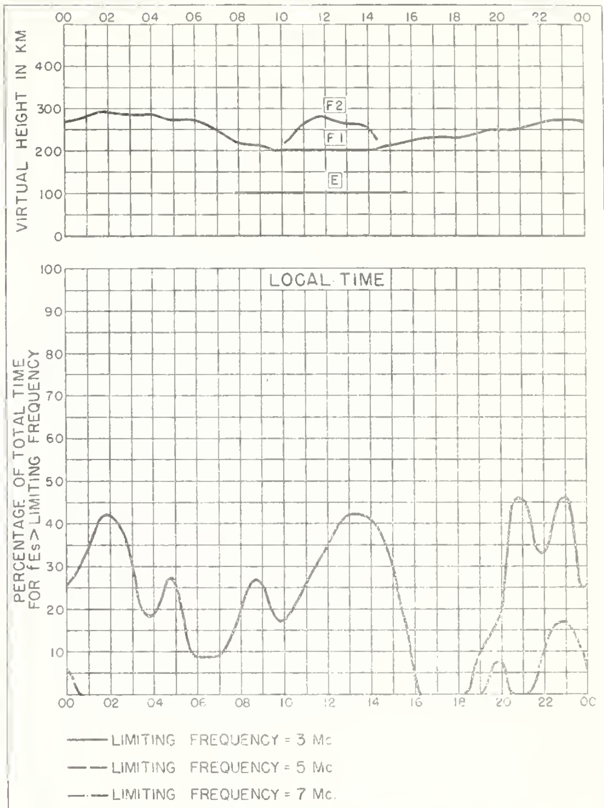

Fig. 102. HOBART, TASMANIA AUGUST 1952

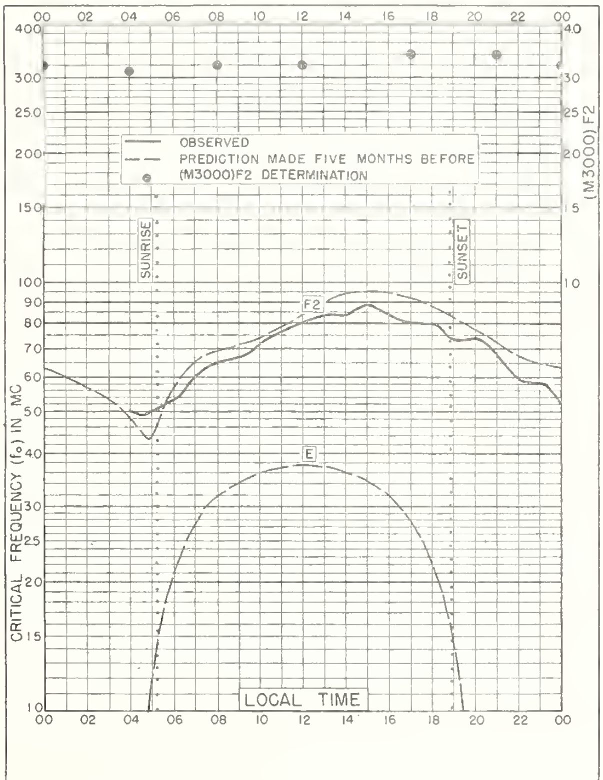

Fig. 103. DELHI, INDIA
28.6°N, 77.1°E JULY 1952

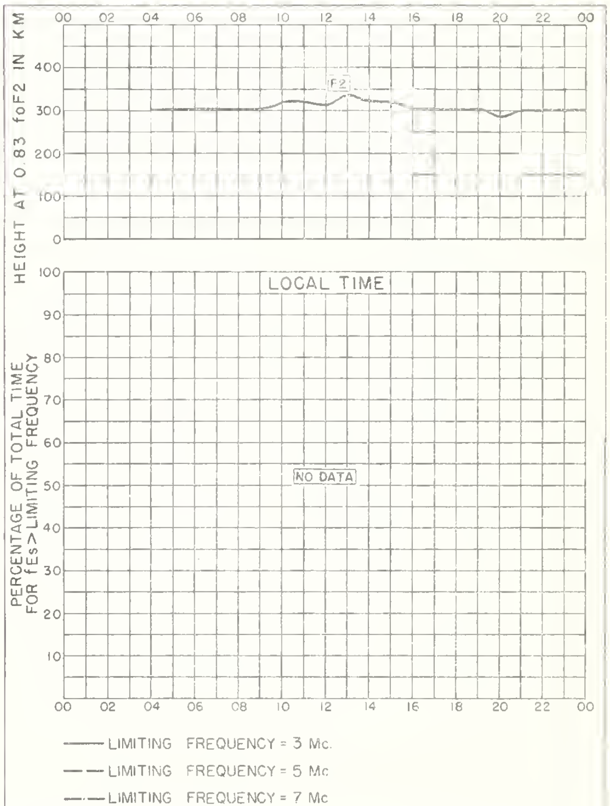

Fig. 104 DELHI, INDIA JULY 1952

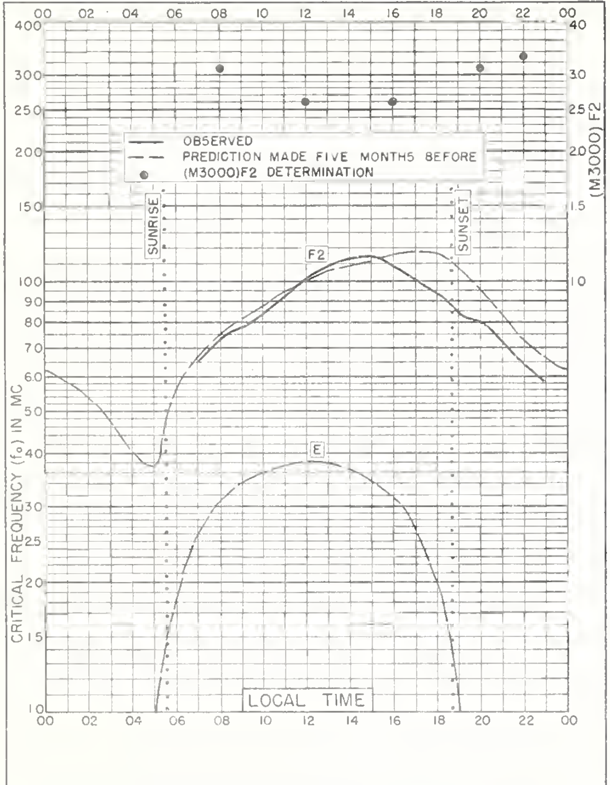

Fig 105 BOMBAY, INDIA
19.0°N, 73.0°E JULY 1952

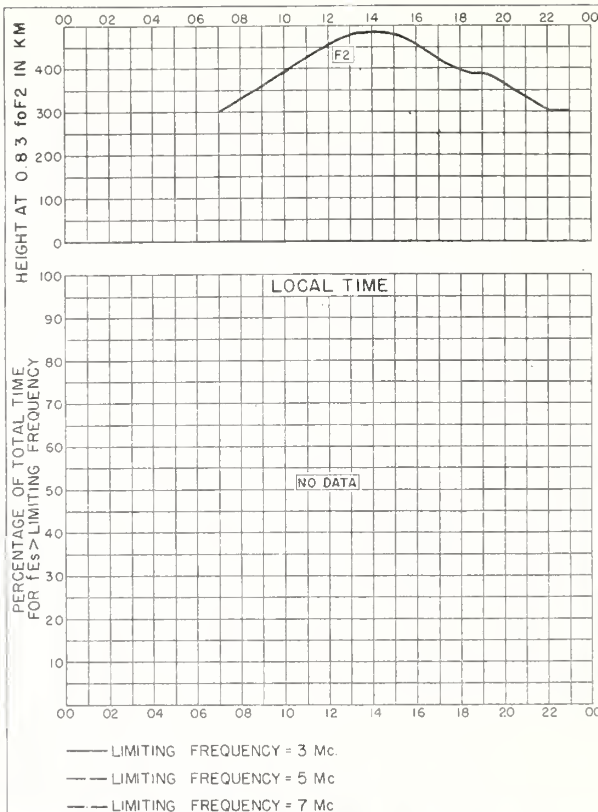

Fig 106. BOMBAY, INDIA JULY 1952

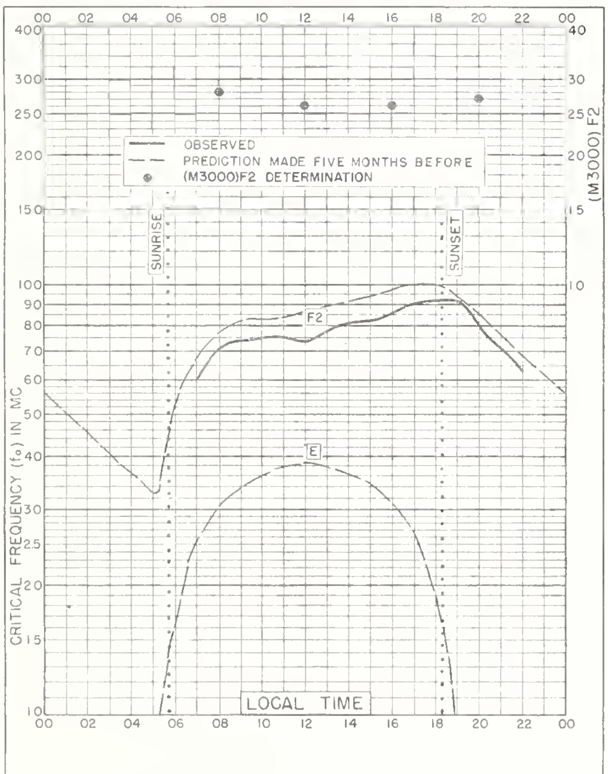

Fig 107 MADRAS, INDIA
13.0°N, 80.2°E JULY 1952

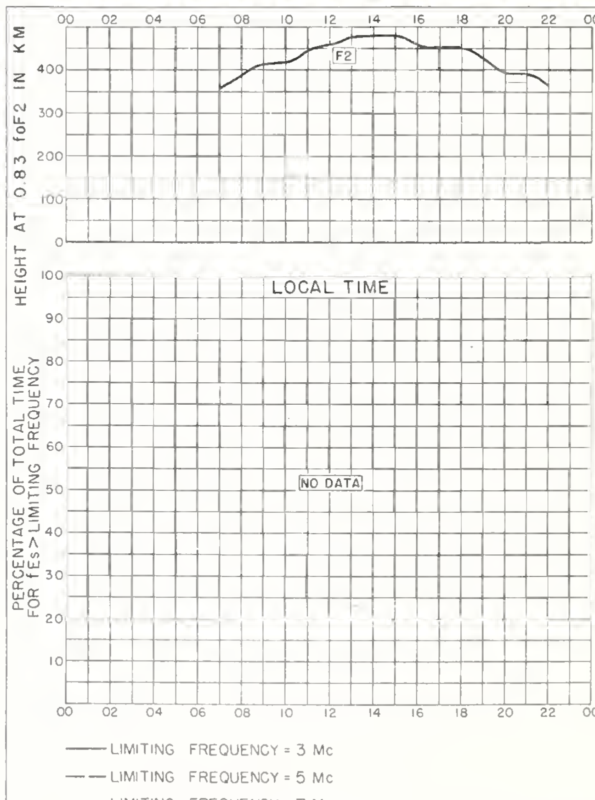

Fig 108 MADRAS, INDIA JULY 1952

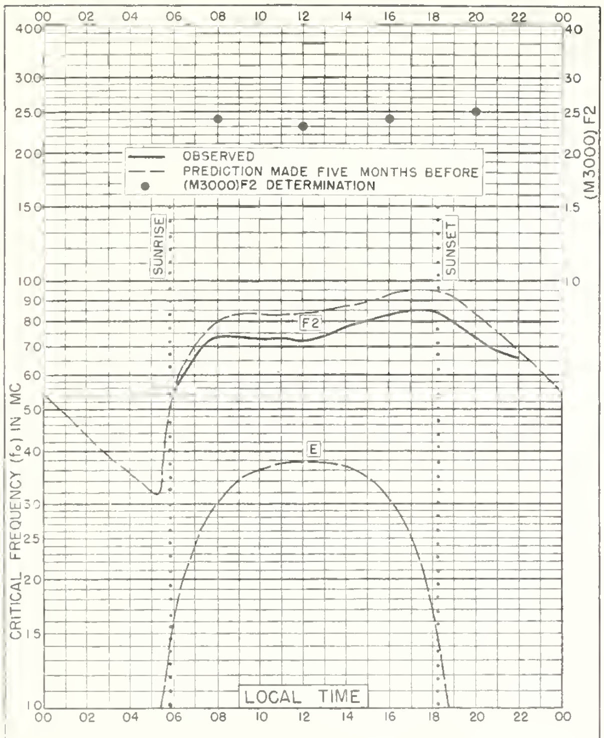

Fig. 109 TIRUCHY, INDIA
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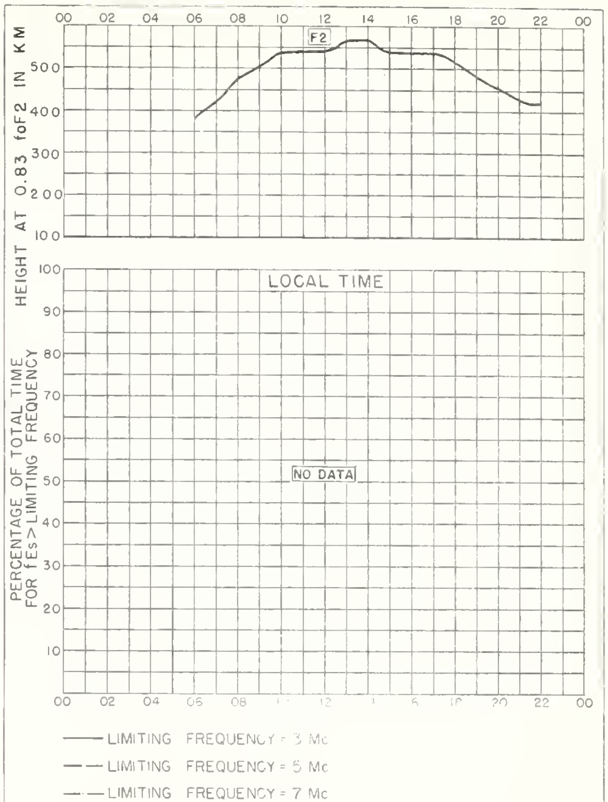

Fig 110. TIRUCHY, INDIA JULY 1952

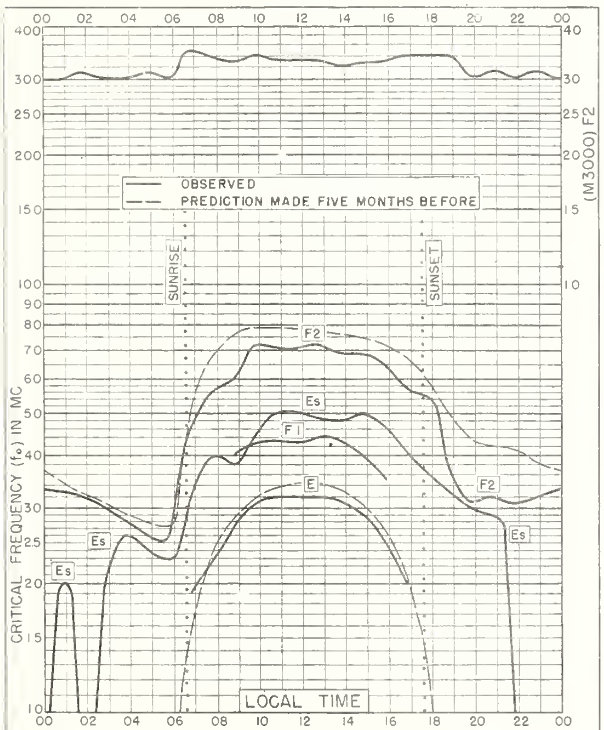

Fig. 111. TOWNSVILLE, AUSTRALIA
19.3°S, 146.8°E JULY 1952

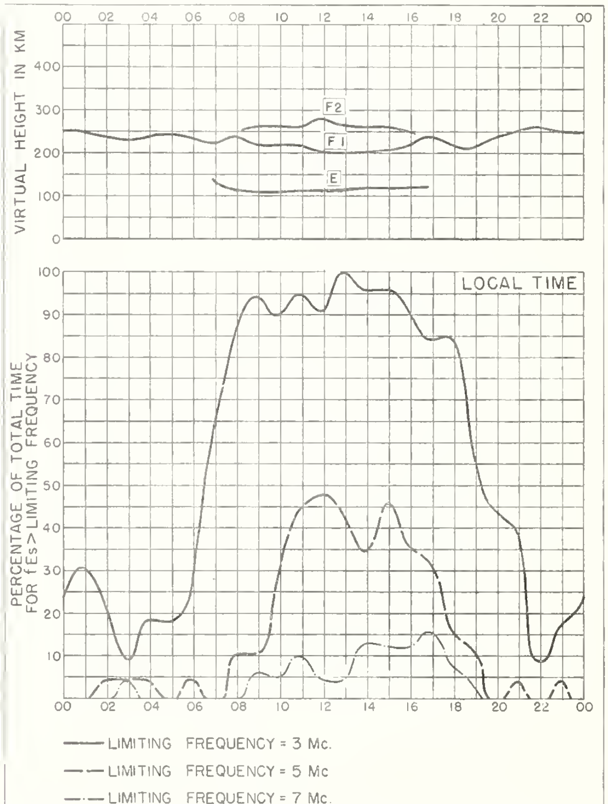

Fig. 112 TOWNSVILLE, AUSTRALIA JULY 1952

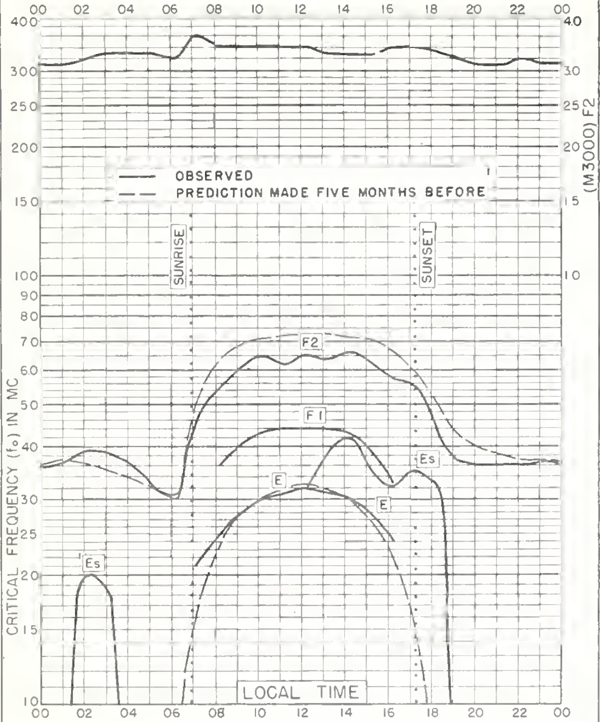

Fig. 113. BRISBANE, AUSTRALIA
27.5° S, 153.0°E JULY 1952

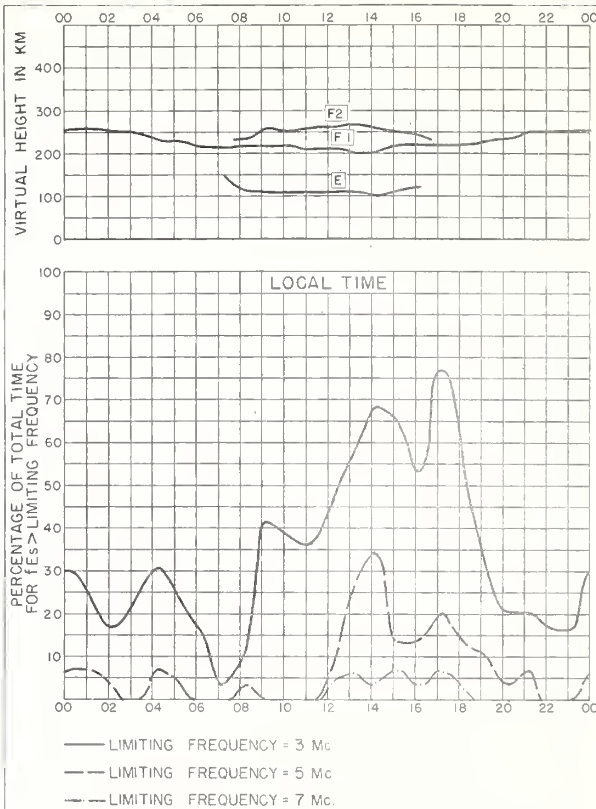

Fig. 114. BRISBANE, AUSTRALIA JULY 1952

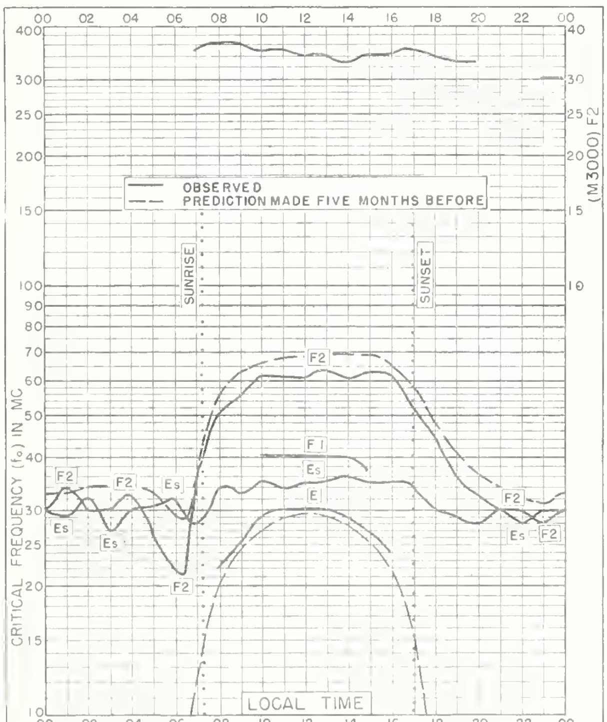

Fig. 115 CANBERRA, AUSTRALIA
35.3°S, 149.0°E JULY 1952

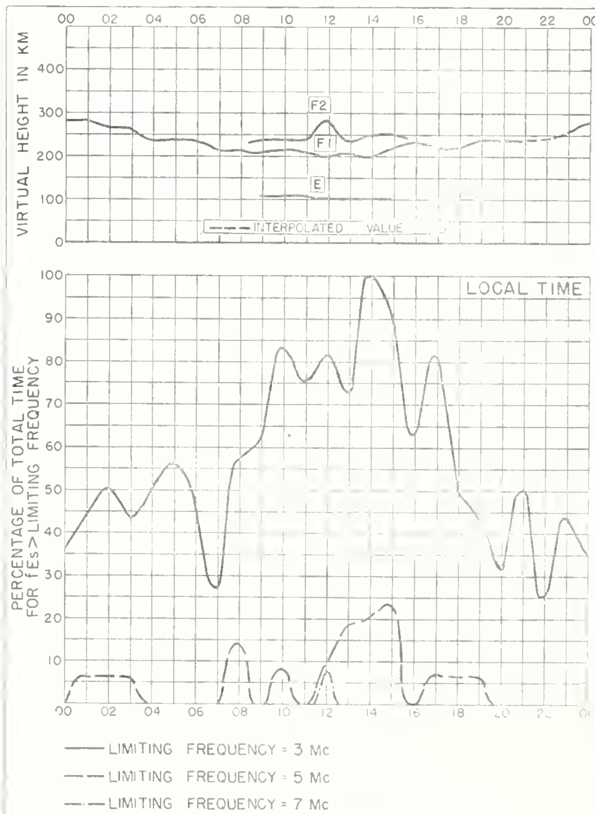

Fig 116. CANBERRA, AUSTRALIA JULY 1952

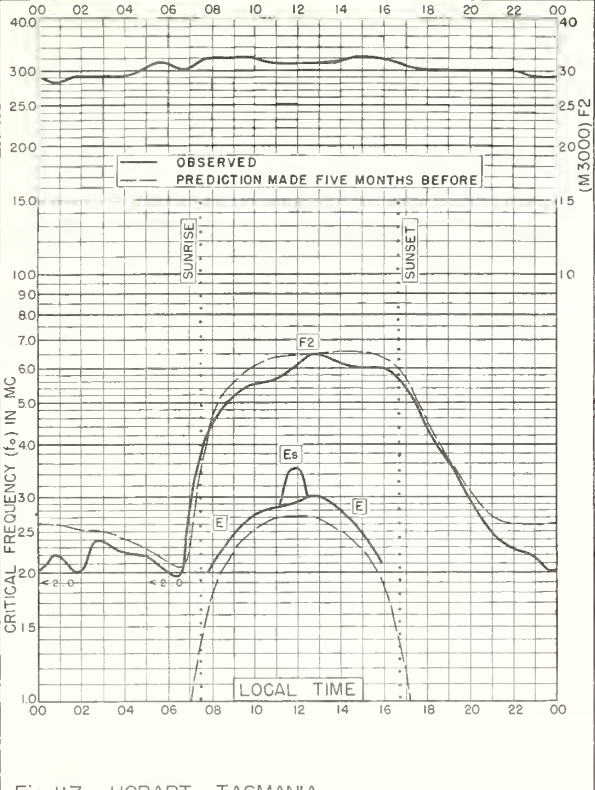

Fig. 117. HOBART, TASMANIA
42.9°S, 147.3°E JULY 1952

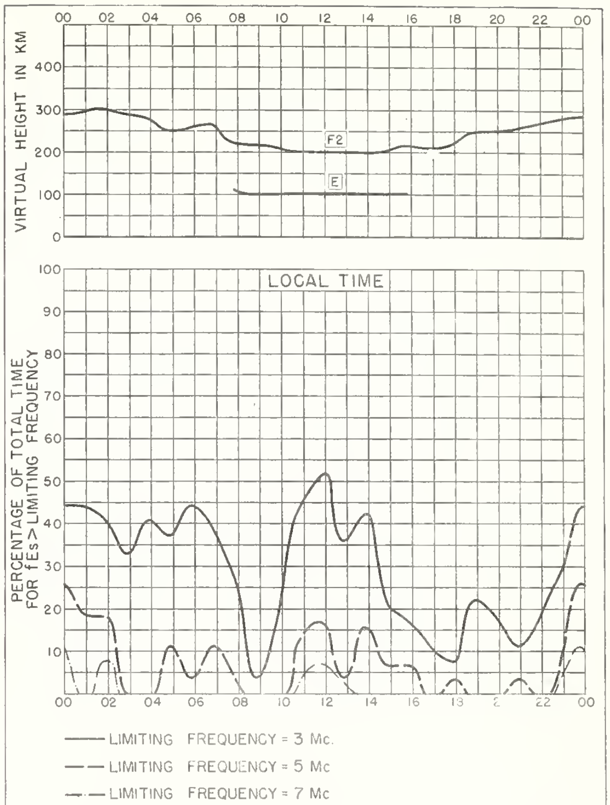

Fig. 118. HOBART, TASMANIA JULY 1952

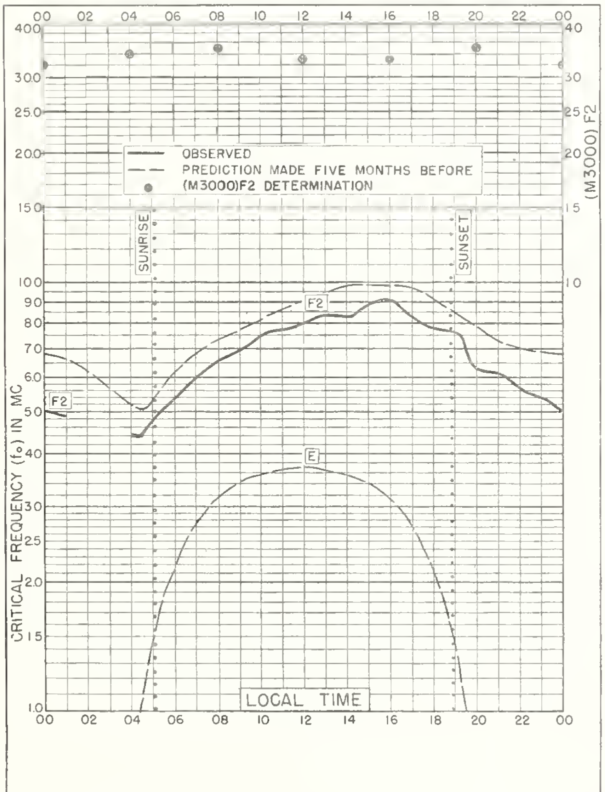

Fig. 119 DELHI, INDIA
28.6°N, 77.1°E JUNE 1952

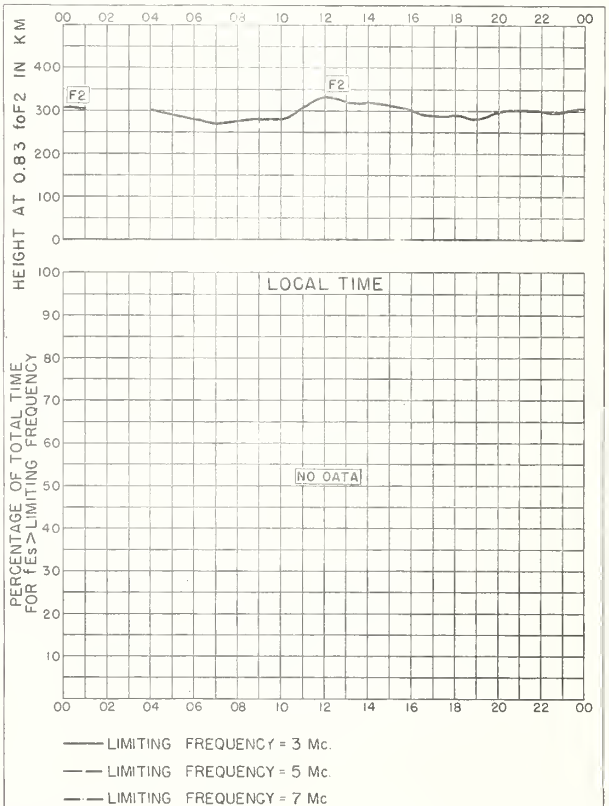

Fig. 120. DELHI, INDIA JUNE 1952

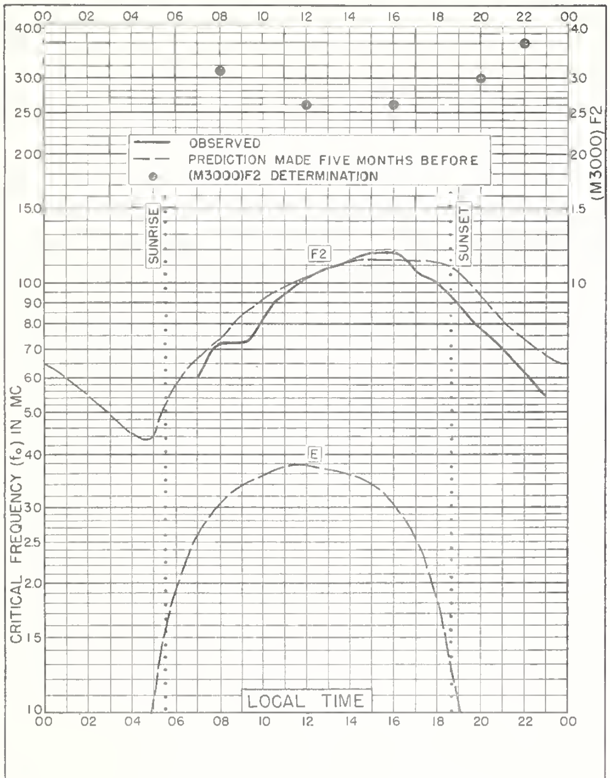

Fig. 121. BOMBAY, INDIA
19.0°N, 73.0°E JUNE 1952

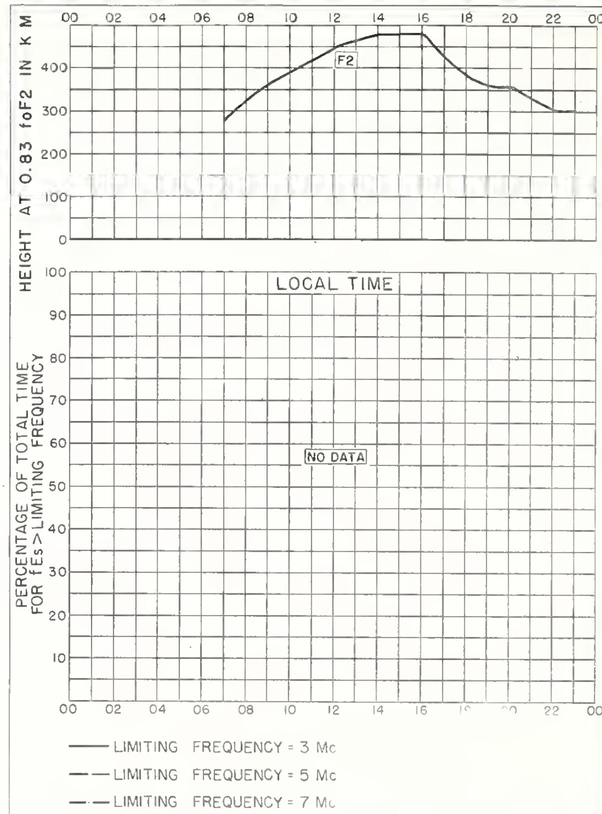

Fig. 122. BOMBAY, INDIA JUNE 1952

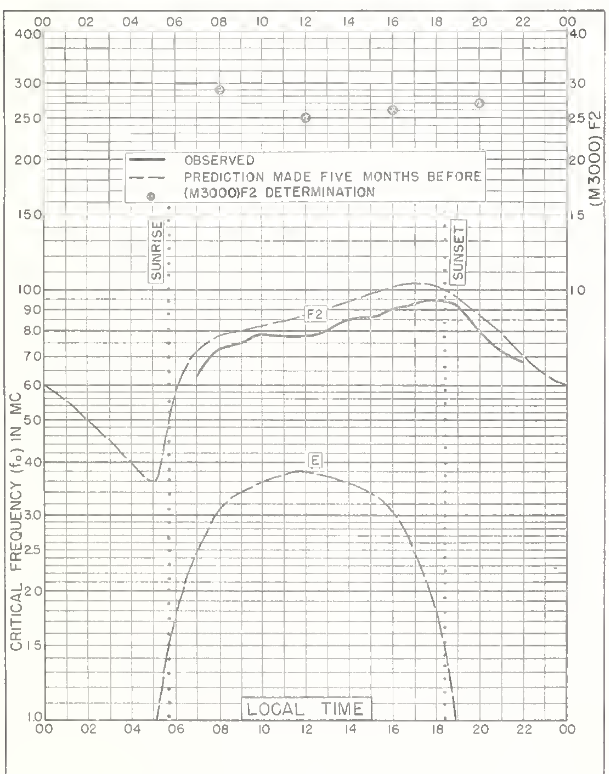

Fig. 123. MADRAS, INDIA
13.0°N, 80.2°E JUNE 1952

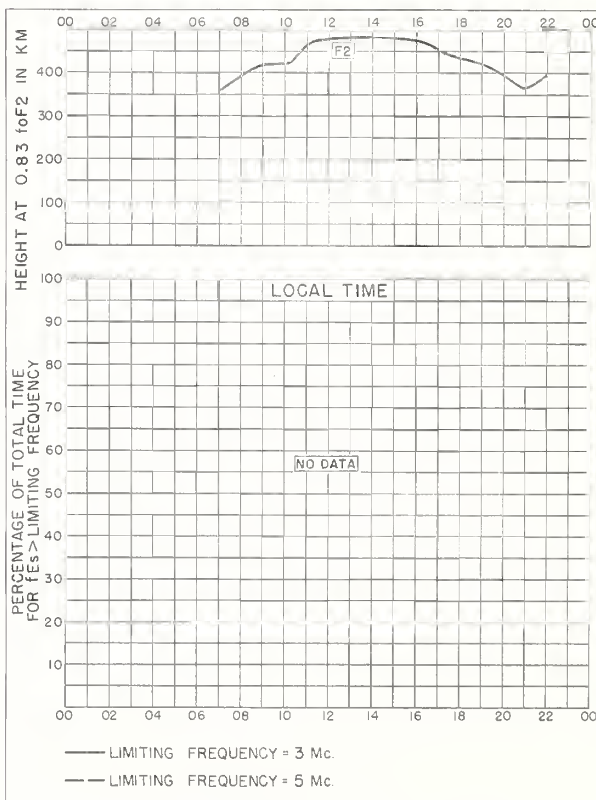

Fig. 124. MADRAS, INDIA JUNE 1952

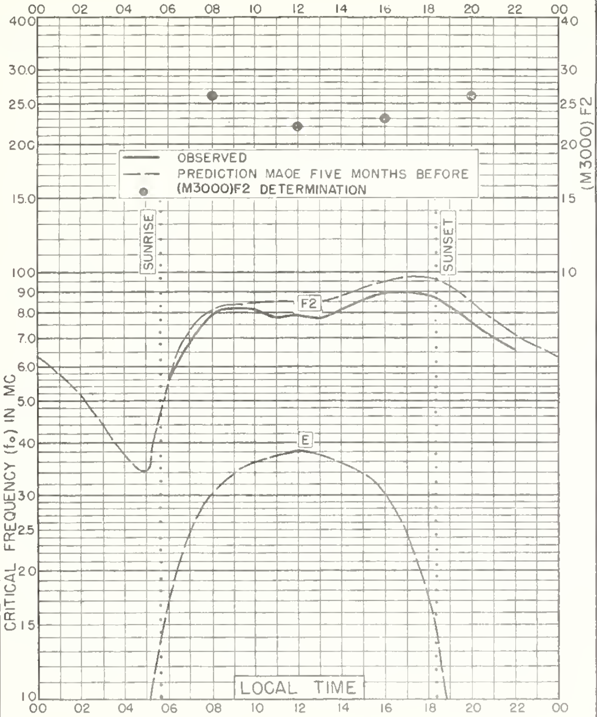

Fig. 125 TIRUCHY, INDIA
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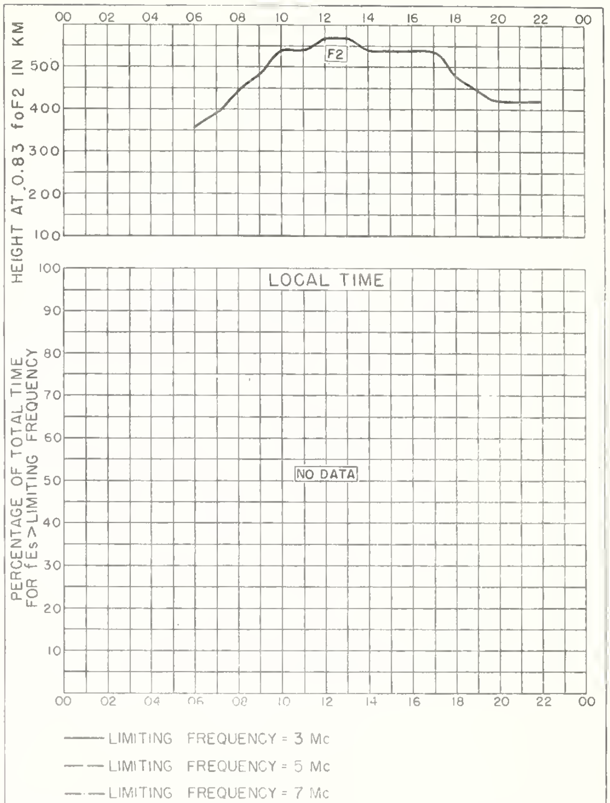

Fig 126 TIRUCHY, INDIA JUNE 1952

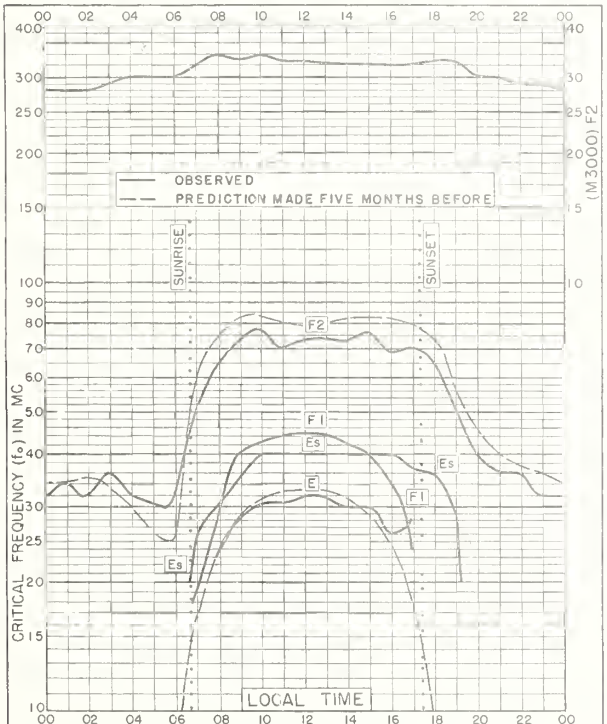

Fig. 127. RAROTONGA I.
21.3°S, 159.8°W JUNE 1952

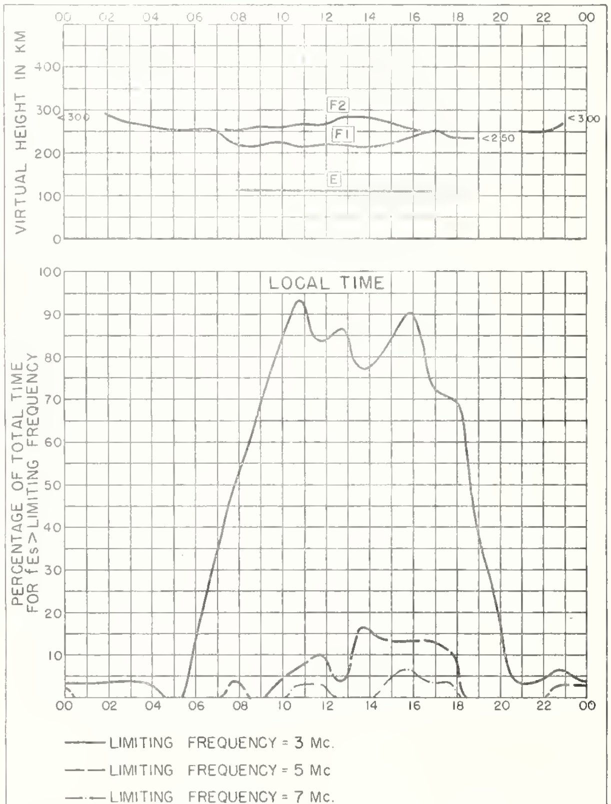

Fig. 128. RAROTONGA I. JUNE 1952

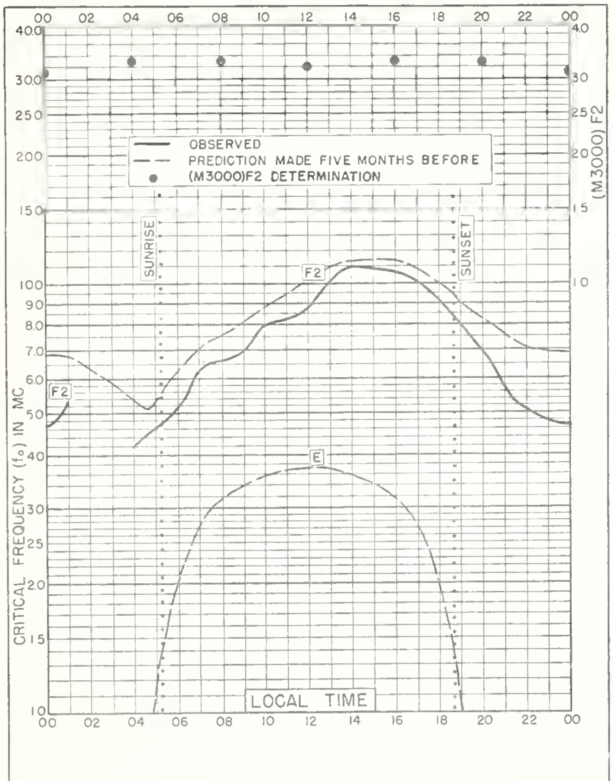

Fig. 129. DELHI, INDIA
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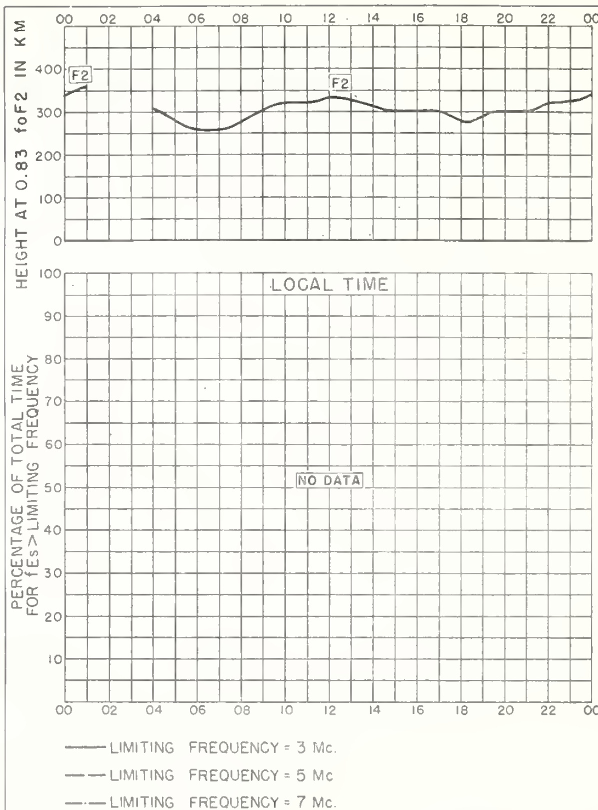

Fig. 130. DELHI, INDIA
MAY 1952

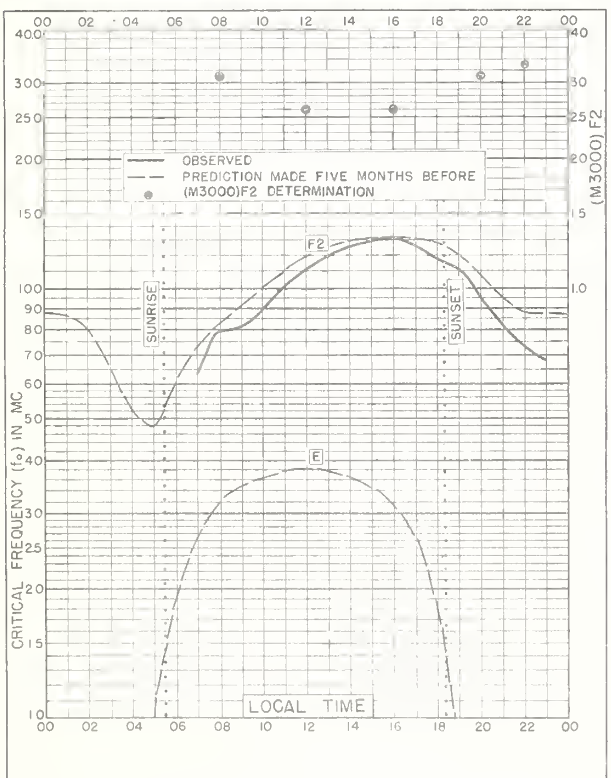

Fig 131. BOMBAY, INDIA
19.0°N, 73.0°E
MAY 1952

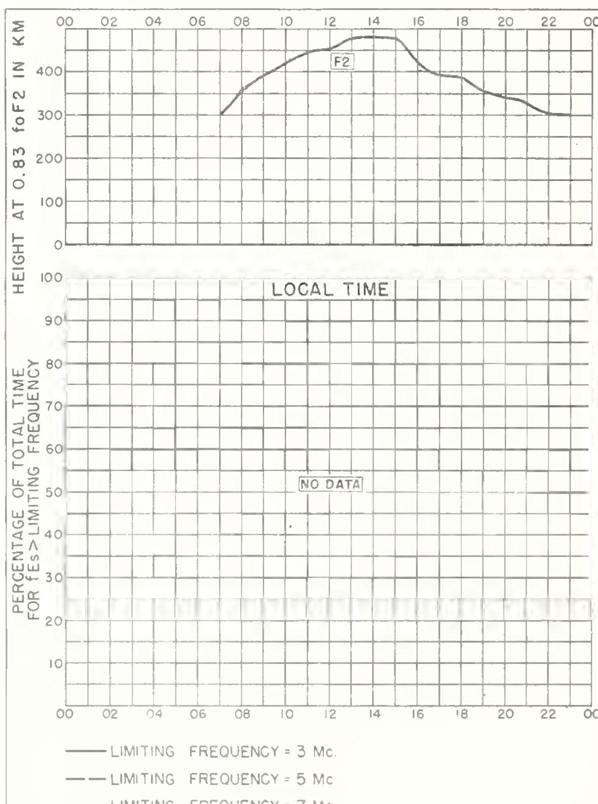

Fig. 132. BOMBAY, INDIA
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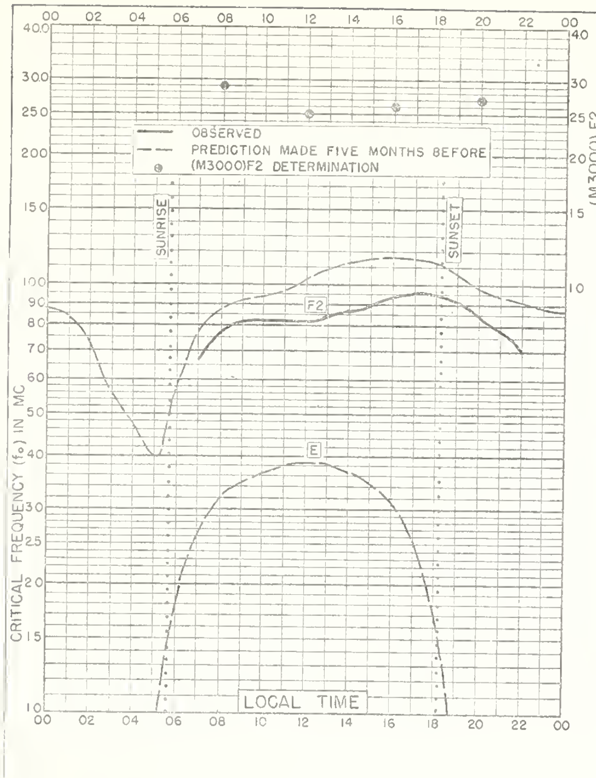

Fig. 133. MADRAS, INDIA
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MAY 1952

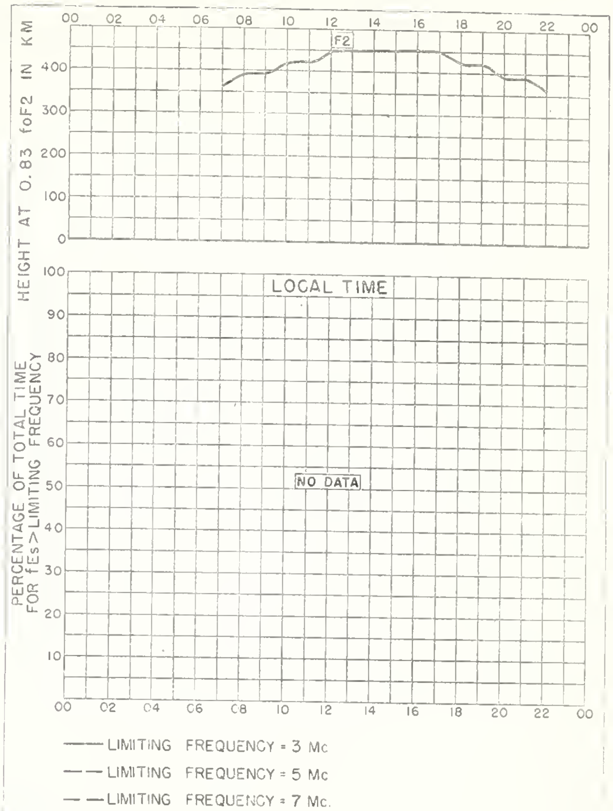

Fig. 134. MADRAS, INDIA
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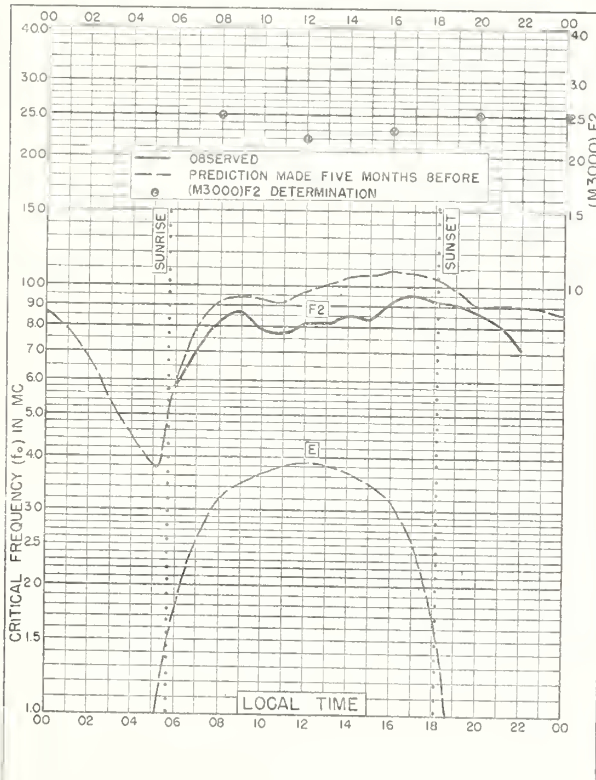

Fig. 135. TIRUCHY, INDIA
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MAY 1952

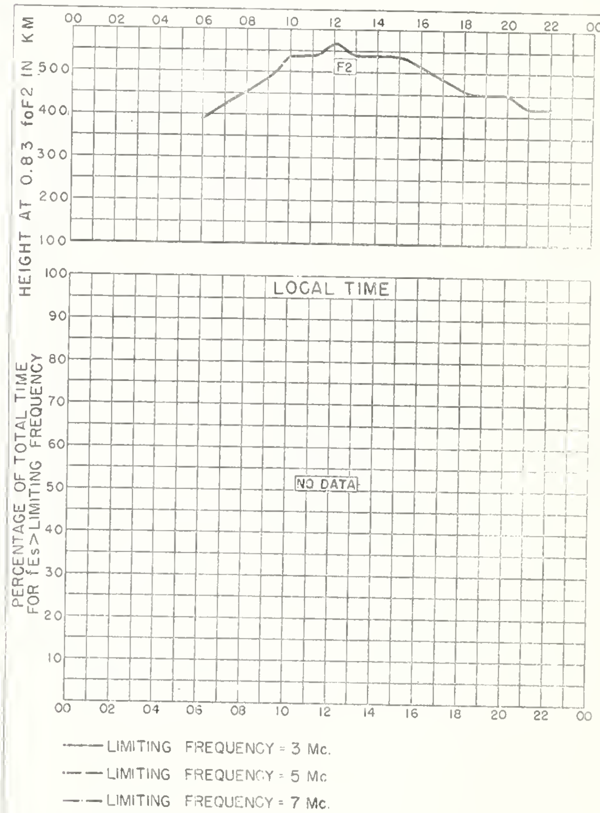

Fig. 136. TIRUCHY, INDIA
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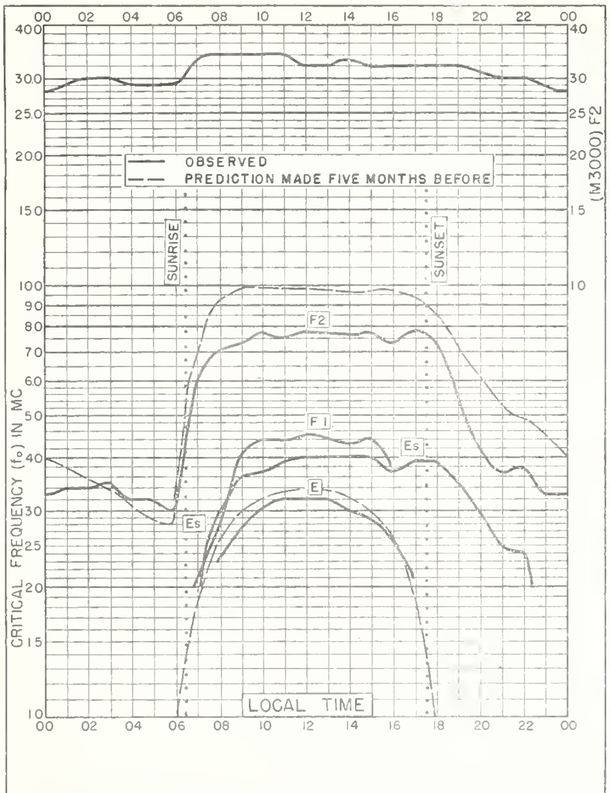


Fig. 137 RAROTONGA I. 21.3°S, 159.8°W MAY 1952

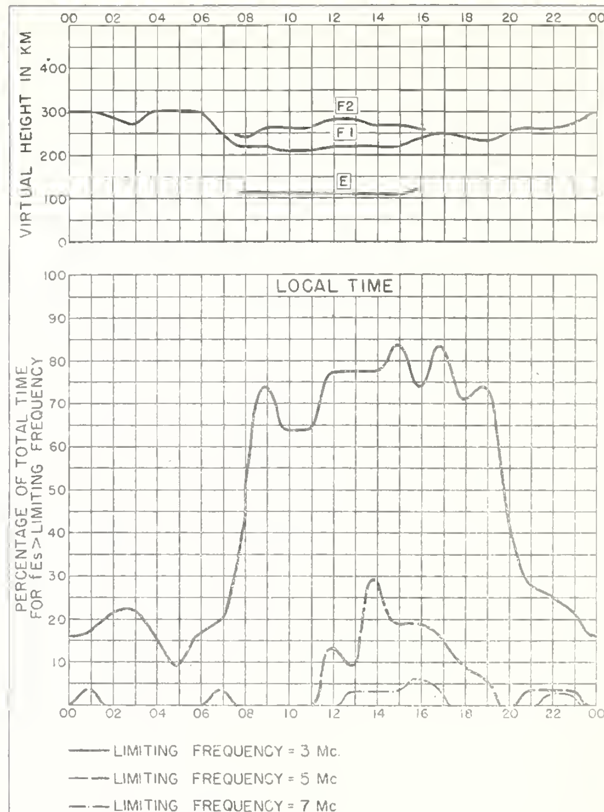
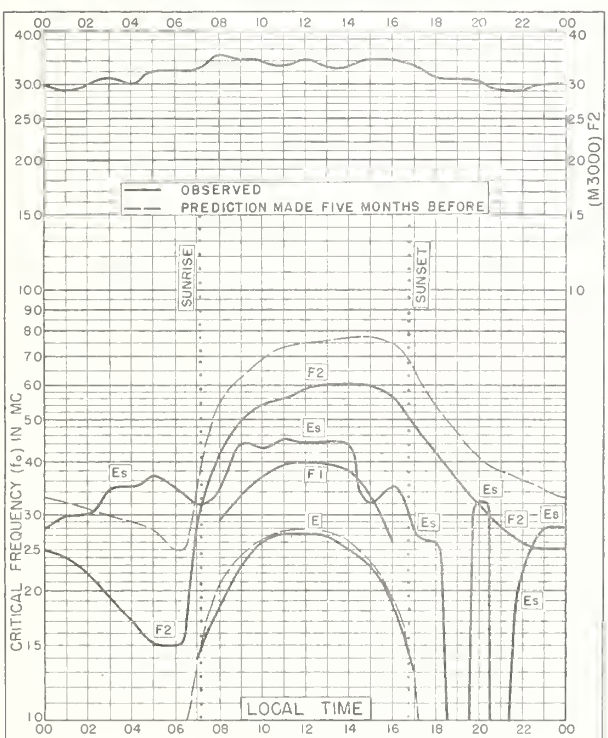


Fig. 138. RAROTONGA I. MAY 1952



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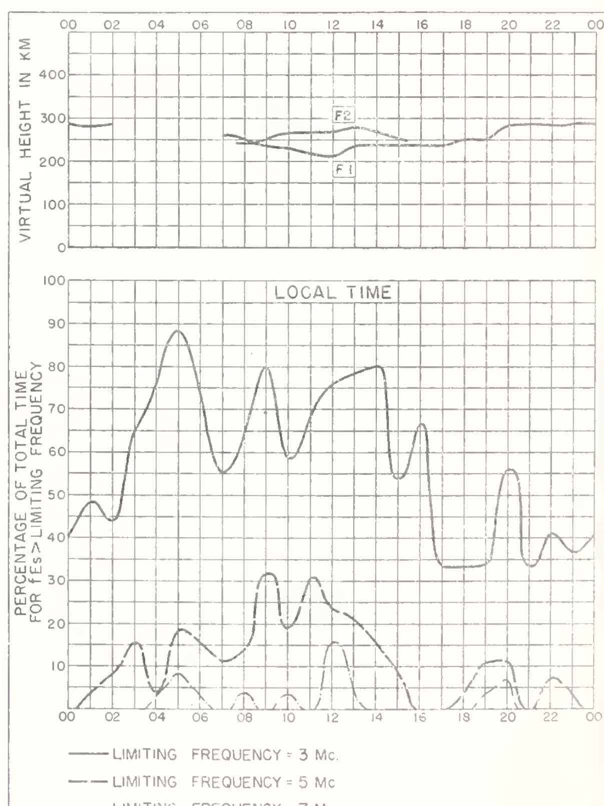

Fig. 140. CHRISTCHURCH, N. Z. MAY 1952

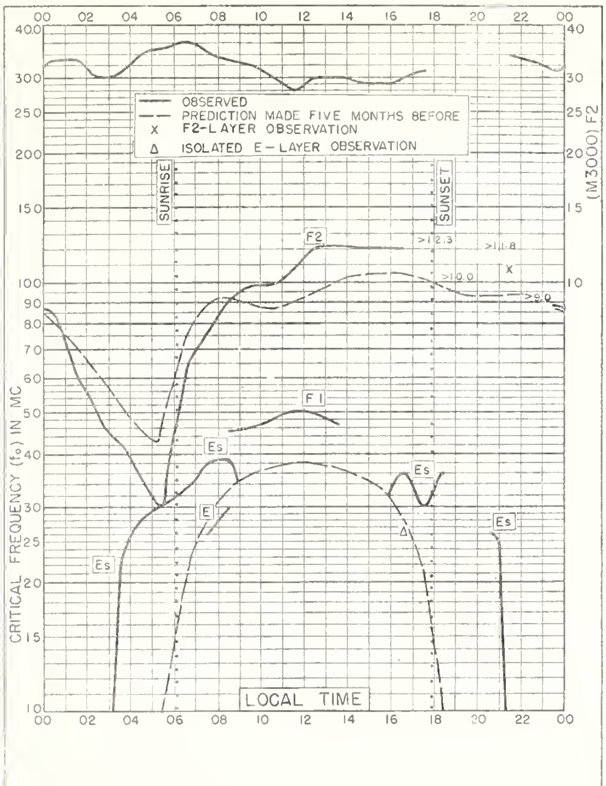

Fig 141. NAIROBI, KENYA
1.0°S, 37.0°E APRIL 1952

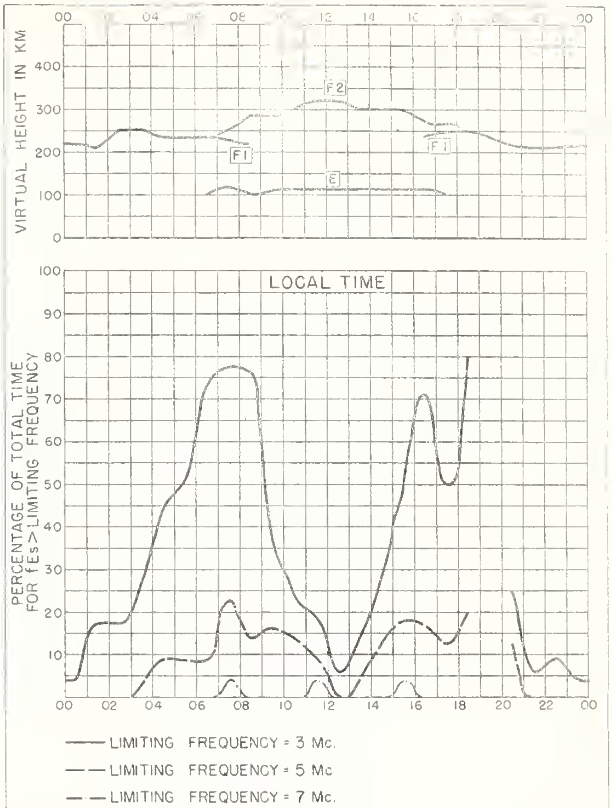

Fig. 142 NAIROBI, KENYA APRIL 1952

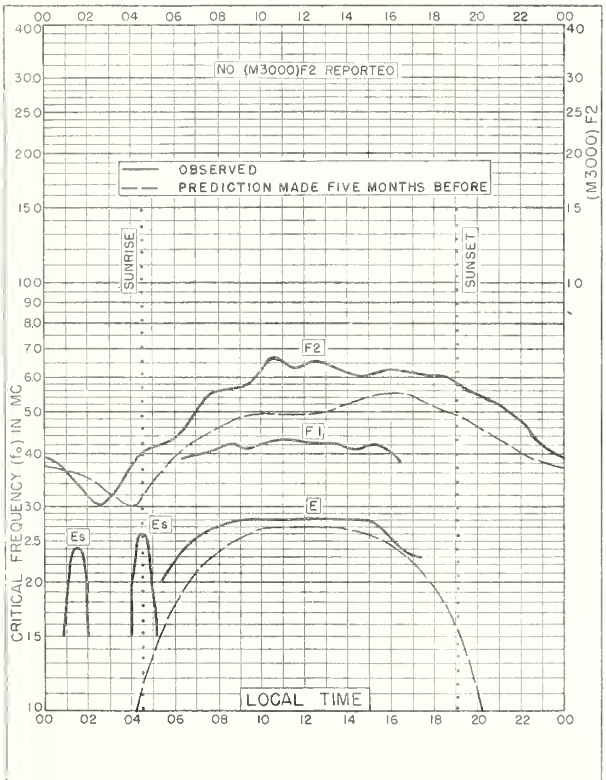

Fig. 143. TERRE ADELIE
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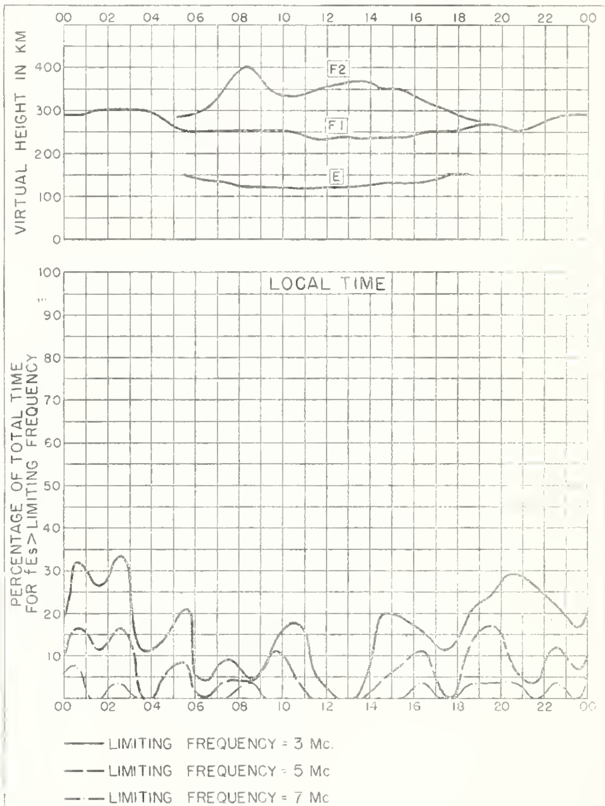

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CRPL and IRPL Reports

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

Daily:

Radio disturbance 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 Thro October 1945.
**R33. Ionospheric Data on File at IRPL.
**R34. The Interpretation of Recorded Values of *fEs*.
**R35. Comparison of Percentage of Total Time of Second-Multiple *Es* Reflections and That of *fEs* in Excess of 3 Mc.
IRPL—T. Reports on tropospheric propagation:
T1. Radar operation and weather. (Superseded by JANP 101.)
T2. Radar coverage and weather. (Superseded by JANP 102.)
CRPL—T3. Tropospheric Propagation and Radio-Meteorology. (Reissue of Columbia Wave Propagation Group WPG—5.)

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