IONOSPHERIC DATA

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NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

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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 usually as equal to or greater than the median. Other characteristics missing because of E are omitted from the median count.

Values missing because of D are counted as equal to or greater than the upper limit of the recorder.

Values missing because of G are counted:

1. For foF2, as equal to or less than foF1.
2. For h'F2, as equal to or greater than the median.

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

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

c. For MUF factor (M-factors):

Values missing because of G or W are counted as equal to or less than the median.

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

d. For sporadic E (Es):

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

Values of fEs missing for any other reason, and values of h'Es missing for any reason at all are omitted from the median count.

Beginning with data for November 1945, doubtful monthly median values for ionospheric observations at Washington, D. C., are indicated by parentheses, in accordance with the practice already in use for doubtful hourly values. The following are the conventions used to determine whether or not a median value is doubtful:

1. If only four values or less are available, the data are considered insufficient and no median value is computed.

2. For the F2 layer, if only five to nine values are available, the median is considered doubtful. The E and F1 layers are so regular in their characteristics that, as long as there are at least five values, the median is not considered doubtful.

3. For all layers, if more than half of the values used to compute the median are doubtful (either doubtful or interpolated), the median is considered doubtful.

The same conventions are used by the CRPL in computing the medians from tabulations of daily and hourly data for stations other than Washington, beginning with the tables in IRPL-F18.

The tables and graphs of ionospheric data are correct for the values reported to the CRPL, but, because of variations in practice in the interpretation of records and scaling and manner of reporting of values, may at times give an erroneous conception of typical ionospheric characteristics at the station. Some of the errors are due to:

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

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

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

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

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

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

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

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

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

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

Month	Predicted Sunspot Number									
	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945
December		15	33	53	86	108	114	126	85	38
November		16	38	52	87	112	115	124	83	36
October		17	43	52	90	114	116	119	81	23
September		18	46	54	91	115	117	121	79	22
August	8	18	49	57	96	111	123	122	77	20
July	8	20	51	60	101	108	125	116	73	
June	9	21	52	63	103	108	129	112	67	
May	10	22	52	68	102	108	130	109	67	
April	10	24	52	74	101	109	133	107	62	
March	11	27	52	78	103	111	133	105	51	
February	12	29	51	82	103	113	133	90	46	
January	14	30	53	85	105	112	130	88	42	

WORLD-WIDE SOURCES OF IONOSPHERIC DATA

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

Republica Argentina, Ministerio de Marina:
Buenos Aires, Argentina
Decepcion I.

Commonwealth of Australia, Ionospheric Prediction Service of the Commonwealth Observatory:
Canberra, Australia
Townsville, Australia

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

University of Graz:
Graz, Austria

British Department of Scientific and Industrial Research, Radio Research Board:
Falkland Isa
Ibadan, Nigeria (University College of Ibadan)
Inverness, Scotland
Khartoum, Sudan (University College of Khartoum)
Port Lockroy
Singapore, British Malaya
Slough, England

Defence Research Board, Canada:
Baker Lake, Canada
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

Danish National Committee of URSI:
Godhavn, Greenland

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

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

Manila Observatory:
Baguio, P. I.

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

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

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

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

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

National Bureau of Standards (Central Radio Propagation Laboratory):
Anchorage, Alaska
Fairbanks, Alaska (Geophysical Institute of the University of Alaska)
Guam I.
Huancayo, Peru (Instituto Geofisico de Huancayo)
Maui, Hawaii
Narsarssuak, Greenland
Panama Canal Zone
Point Barrow, Alaska
Puerto Rico, W. I.
Washington, D. C.

HOURLY IONOSPHERIC DATA AT WASHINGTON, D. C.

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

IONOSPHERIC STORMINESS AT WASHINGTON, D.C.

Table 85 presents ionosphere character figures for Washington, D. C., during August 1954, 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 87a and 87b give for July 1954 the radio propagation quality figures for the North Atlantic area, the relevant CRPL advance and short-term forecasts, a summary geomagnetic activity index and sundry comparisons, specifically as follows:

(a) radio propagation quality figures, Qa, separately for each 6-hour interval of the Greenwich day, viz., 00-06, 06-12, 12-18, 18-24 hours UT (Universal Time or GCT).
(b) whole-day radio quality indices (beginning October 1952). Each index is a weighted average of the four quarter-day Qa-figures, before rounding off, with half weight given to quality grades 5 and 6. This procedure tends to give whole-day indices suitable for comparison with whole-day advance forecasts which designate whenever possible the days when significant disturbance or unusually quiet conditions will occur.
(c) short-term forecasts, issued by CRPL every six hours (nominally one hour before 00^h, 06^h, 12^h, 18^h UT) and applicable to the period 1 to 13 (especially 1 to 7) hours ahead. Note that new scoring rules have been adopted beginning with October 1952 data.
(d) advance forecasts, issued semiweekly (CRPL-J reports) and applicable 1 to 3 or 4 days ahead, 4 or 5 to 7 days ahead, and 8 to 25 days ahead. These forecasts are scored against the whole-day quality indices.
(e) half-day averages of the geomagnetic K indices measured by the Cheltenham Magnetic Observatory of the U. S. Coast and Geodetic Survey.
(f) illustration of the comparison of short-term forecasts with Qa-figures and also with estimates of radio quality based on CRPL observations only.
(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.

These radio propagation quality figures, Qa, 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:--Coast Guard, Navy, Army Signal Corps, and U. S. Information Agency. The method of calculation, summarized below, is similar to that described in a 1946 report, IRPL-R31, now out of print. Only reports of radio transmission on North Atlantic paths closely approximating New York-London are included in the estimation of quality.

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

Table 86 gives for July 1954, the radio propagation quality figures for the North Pacific area, the relevant CRPL advance and short-term forecasts, and sundry comparisons, specifically as follows:

(a) radio propagation quality figures, Qp, separately for each of three 9-hour intervals of the Greenwich day, viz., 03-12, 09-18 and 18-03 UT (Universal Time or GCT).
(b) whole-day radio quality indices for each Greenwich day. These are derived from the same basic data as the 9-hour indices, separately reduced.
(c) short-term forecasts, issued daily at 02, 09 and 18 hours UT.
(d) advance forecasts, issued semiweekly (CRPL-Jp 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.

These radio quality indices, Qp, refer to radio propagation on optimum frequencies over moderately long transmission paths in the North Pacific area. Typical paths are Anchorage (Alaska) to Seattle, or Anchorage to Tokyo. The indices are derived from reports submitted regularly by communications agencies of the U. S. Army and Air Force, and by Aeronautical Radio, Inc. The method of derivation of Qp differs from that of Qa. For data prior to June 1954, the reported quality ratings were reduced to a Q-scale with assumed mean and standard deviation for each of the periods of the day; the Qp published was the average converted rating for each date. Beginning with the data for June 1954 a ranking method has been used with the Q-scale bound statistically to magnetic character figures, as follows:

The original reports from the various contributors are used only to rank the days of the month in order of degree of disturbance. The numerical value of Qp assigned to each day is taken from a table which gives the Qp that corresponds in a statistical sense to the magnetic activity observed during the month, it being assumed that the one-month sample is large enough that the distribution of quiet and disturbance will be the same for magnetic and radio quality indices. This table comes from equating the expected distributions of magnetic activity indices and Qp (for the former, the years 1952-53 of K-Cheltenham were used; for the latter the distribution was arbitrary but strongly influenced by experience with Qa and the previous Qp). In order to avoid the statistic "average rank," the raw scores for each reporter-period are first converted to the 1-9 scale by ranking and the use of the same table. Mean quality indices for each day-period are then computed and these means ranked and converted by the table to give Qp.

The expected distributions adopted for Qp differ slightly for the different periods of the day for which quality figures are derived. For the 03-12, 18-03 and 00-24 periods 23% of the quality figures are 4 or less and for the 09-18 period 25% are. In the periods 18-03 and 00-24, indices of seven or greater are expected 25% of the time; in the 03-12 period 22% and in the 09-18 period 16%. (These forecasts and quality indices are prepared by the North Pacific Radio Warning Service, the CRPL forecasting center at Anchorage, Alaska.)

These quality figures are, in effect, a consensus of reported radio propagation conditions. 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.

OBSERVATIONS OF THE SOLAR CORONA

Tables 88 through 90 give the observations of the solar corona during August 1954, obtained at Climax, Colorado, by the High Altitude Observatory of Harvard University and the University of Colorado. Tables 91 through 93 list the coronal observations obtained at Sacramento Peak, New Mexico, during August 1954, derived by Harvard College Observatory as a part of its performance of a research contract with the Upper Air Research Observatory, Geophysical Research Directorate, Air Force Cambridge Research Center. The data are listed separately for east and west limbs at 5-degree intervals of position angle north and south of the Solar Equator at the limb. The time of observation is given to the nearest tenth of a day, GCT.

Table 88 gives the intensities of the green (5303A) line of the emission spectrum of the solar corona; table 89 gives similarly the intensities of the first red (6374A) coronal line; and table 90, the intensities of the second red (6702A) coronal line; all observed at Climax in August 1954.

Table 91 gives the intensities of the green (5303A) coronal line; table 92, the intensities of the first red (6374A) coronal line; and table 93, the intensities of the second red (6702A) coronal line; all observed at Sacramento Peak in August 1954.

The following symbols are used in tables 88 through 93: a, observation of low weight for whole limb (if in date column) or for portion of limb indicated; -, corona not visible; and X, no observation for whole limb (if in date column) or for portion of limb indicated.

RELATIVE SUNSPOT NUMBERS

Table 94 lists the daily provisional Zürich relative sunspot number, R_Z, for August 1954, as communicated by the Swiss Federal Observatory. Table 95 contains the daily American relative sunspot number, R_A', for July 1954, as compiled by the Solar Division, American Association of Variable Star Observers.

OBSERVATIONS OF SOLAR FLARES

Table 96 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

Tables 97 and 98 list 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 three criteria: (1) the sum of the eight Kp's; (2) the greatest Kp; and (3) the sum 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. Kp is available from 1937 to date as noted in F108.

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. Current tables are also published quarterly in the Journal of Geophysical Research along with data on sudden commencements (sc) and solar flare effects (sfe).

SUDDEN IONOSPHERE DISTURBANCES

Table 99 shows that no sudden ionosphere disturbances were observed at Ft. Belvoir, Virginia, during the month of August 1954.

TABLES OF IONOSPHERIC DATA

Table 1

Washington, D. C. (38.7°N, 77.1°W) — August 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	2.7					2.3	3.2
01	(290)	2.4					2.5	3.1
02	(290)	(2.2)					2.1	(3.1)
03	300	(2.0)						3.1
04	(300)	(2.0)					2.4	3.15
05	(270)	(2.0)					2.4	3.2
06	270	3.3	230	---	120	1.7	3.2	3.4
07	320	4.1	220	3.5	110	2.2	3.9	3.2
08	350	4.4	210	3.8	110	2.5	4.3	3.2
09	330	4.8	200	4.0	100	2.8	4.5	3.2
10	350	4.8	200	4.1	100	2.9	4.2	3.1
11	360	4.8	200	4.2	100	(3.0)	4.2	3.0
12	400	4.8	200	4.2	100	(3.1)	3.9	3.0
13	380	4.8	200	4.2	100	3.2	3.9	3.0
14	390	4.7	200	4.1	100	3.0	3.9	3.0
15	380	4.6	210	4.0	100	2.9	3.8	3.0
16	370	4.5	210	3.8	110	2.8	3.2	3.0
17	320	4.6	220	3.6	110	2.4	3.7	3.2
18	290	4.6	230	3.3	120	1.9	3.2	3.2
19	250	4.9					3.0	3.2
20	240	5.0					3.2	3.2
21	240	4.2					3.0	3.2
22	260	3.5					2.8	3.2
23	270	3.0					2.3	3.1

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

Table 2

Maui, Hawaii (20.8°N, 156.5°W) — July 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	4.2					4.1	2.9
01	290	4.2					3.6	3.0
02	280	3.9					3.8	3.1
03	280	3.4					2.4	3.1
04	290	2.9					3.0	3.1
05	300	2.8					3.0	3.0
06	(290)	3.1	260	---	---	---	3.9	3.1
07	340	4.4	250	3.6	120	2.0	4.5	3.0
08	350	4.9	230	3.8	120	2.6	6.8	3.0
09	400	5.0	220	4.1	110	3.0	6.6	2.85
10	480	5.0	210	4.2	110	3.1	7.0	2.5
11	500	5.4	200	4.2	110	3.3	6.4	2.4
12	470	6.3	200	4.2	110	3.3	4.9	2.5
13	440	7.2	220	4.2	110	3.4	5.6	2.6
14	400	7.9	220	4.2	110	3.3	4.9	2.7
15	370	8.5	240	4.0	110	3.2	5.0	2.7
16	350	8.9	240	3.9	120	2.9	5.0	2.8
17	310	8.6	240	3.7	120	2.6	5.0	3.0
18	300	8.5	240	3.4	120	2.1	4.3	3.1
19	260	7.8	---	---			3.6	3.1
20	260	6.8					3.7	3.0
21	260	5.8					4.6	3.05
22	280	5.0					4.1	2.9
23	300	4.4					4.3	2.9

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

Table 3

Puerto Rico, W. I. (18.5°N, 67.2°W) — July 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.5					3.1	3.0
01	270	3.6					2.8	3.0
02	250	(3.6)					3.1	(3.15)
03	260	3.3					3.0	(3.1)
04	260	2.9					2.5	3.2
05	250	2.6					2.2	3.15
06	250	2.9	230	---			2.1	3.3
07	280	4.1	220	3.5	110	2.0	3.5	3.4
08	300	4.8	210	3.8	110	2.5	3.9	3.3
09	360	4.6	200	4.0	110	2.9	3.7	3.0
10	410	4.7	210	4.1	110	3.1	4.3	2.9
11	420	5.0	200	4.2	110	3.3	3.8	2.8
12	370	5.5	210	4.3	110	3.4	4.8	2.9
13	360	6.2	210	4.2	110	3.4	5.2	2.9
14	330	6.6	210	4.2	110	3.3	5.4	3.0
15	320	6.8	210	4.1	110	3.1	5.4	3.0
16	300	6.8	220	3.9	110	2.9	5.5	3.1
17	300	6.6	220	3.7	110	2.6	4.6	3.2
18	260	7.0	220	3.3	110	2.1	4.1	3.2
19	230	6.4	---	---			3.5	3.4
20	220	5.2					3.2	3.3
21	240	4.5					3.1	3.1
22	260	4.0					2.7	3.1
23	280	3.6					3.0	3.0

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

Table 4

Anchorage, Alaska (61.2°N, 149.9°W) — June 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	3.3					2.6	3.2
01	250	2.6					3.0	3.2
02	260	2.5					2.4	3.1
03	320	3.1	240	2.5	130	1.4	2.8	3.0
04	370	3.5	220	2.9	120	1.7	3.0	2.9
05	380	3.8	210	3.2	110	2.0	3.4	2.9
06	390	4.0	210	3.4	110	2.2	3.6	2.9
07	400	4.2	200	3.6	110	2.5	3.7	2.9
08	410	4.2	200	3.7	100	2.6	3.9	2.9
09	410	4.4	200	3.8	100	2.7	4.1	2.8
10	440	4.3	200	3.9	100	2.8	4.5	2.8
11	420	4.4	200	3.9	100	2.8	4.3	2.8
12	420	4.4	200	4.0	100	2.9	4.1	2.8
13	420	4.3	200	4.0	100	2.9	4.0	2.9
14	460	4.3	200	4.0	100	2.8	3.2	2.7
15	420	4.2	200	3.9	100	2.8	2.9	2.9
16	420	4.1	210	3.8	100	2.7		2.9
17	380	4.1	210	3.7	110	2.5	3.0	3.0
18	340	4.1	220	3.5	110	2.3	3.8	3.1
19	310	4.1	230	3.2	120	(2.0)	4.0	3.1
20	280	4.2	230	2.9	130	1.7	4.1	3.2
21	250	4.2			---	---	4.3	3.3
22	240	4.3					3.7	3.3
23	230	3.9					3.6	3.3

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) — June 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(290)	(3.3)					4.5	(3.25)
01	290	(3.4)					4.8	(3.35)
02	(300)	(3.4)					4.4	---
03	(300)	(3.3)					4.6	(3.4)
04	340	3.5	240	---	---	---	4.4	3.3
05	350	3.5	220	3.4	110	2.0	4.1	3.2
06	360	3.7	220	3.5	100	2.3	3.3	3.2
07	360	3.9	200	3.6	100	2.5	3.1	3.15
08	430	4.0	210	3.7	100	2.6	3.1	2.9
09	360	4.2	210	3.8	100	2.8		3.2
10	390	4.2	200	3.9	100	(2.9)		3.1
11	380	4.4	210	3.9	100	3.0		3.1
12	380	4.3	200	3.9	100	3.0		3.1
13	400	4.3	200	3.9	100	3.0		3.1
14	390	4.3	210	3.9	100	2.9		3.1
15	380	4.2	210	3.8	100	2.8		3.1
16	370	4.3	210	3.7	110	2.7		3.1
17	360	4.3	220	3.6	110	(2.5)	3.0	3.1
18	350	4.1	240	3.5	110	2.4	3.9	3.2
19	330	4.0	250	(3.3)	---	---	4.3	3.3
20	290	(4.0)	---	---			4.5	(3.4)
21	270	(3.8)					7.4	(3.5)
22	(260)	(3.5)					9.0	(3.4)
23	(260)	(3.3)					5.2	(3.4)

Time: 45.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 6

White Sands, New Mexico (32.3°N, 106.5°W) — June 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	<250	(3.0)					4.0	3.3
01	240	3.1					3.6	3.2
02	250	3.1					3.2	3.2
03	250	3.1					4.2	3.2
04	240	3.1					3.8	3.3
05	230	3.1					3.9	3.4
06	290	3.9	200	3.3	110	1.9	4.8	3.2
07	300	4.6	200	3.6	100	2.4	6.4	3.3
08	300	5.1	190	3.9	100	2.7	5.5	3.3
09	300	5.3	200	4.1	100	2.9	5.8	3.2
10	300	5.2	180	4.1	100	3.0	6.6	3.3
11	320	5.3	180	4.2	100	3.1	7.0	3.15
12	400	4.8	190	4.2	100	3.1	7.0	2.8
13	400	5.0	200	4.2	100	3.2	6.0	2.9
14	360	5.2	200	4.1	100	3.2	5.4	2.95
15	330	5.2	210	4.0	100	3.1	4.6	3.1
16	310	5.4	220	3.9	100	2.8	5.0	3.2
17	290	5.5	200	3.7	110	2.5	4.7	3.3
18	260	5.7	200	3.3	110	2.0	4.9	3.3
19	230	6.0	---	---	---	---	4.4	3.3
20	220	5.8					4.5	3.45
21	210	4.8					4.4	3.5
22	230	3.6					6.2	3.4
23	250	3.3					4.4	3.25

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

Table 7

Okinawa I. (26.3°N, 127.8°E) June 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	(4.4)					5.0	(3.0)
01	(260)	(3.8)					4.8	---
02	(240)	(3.3)					4.0	(3.2)
03	(260)	---					4.0	---
04	(250)	(3.0)					4.5	---
05	250	(3.0)					4.2	(3.3)
06	250	4.6	230	---	110	---	4.6	3.5
07	270	5.3	230	---	110	(2.4)	5.4	3.5
08	280	5.1	210	---	110	2.9	7.1	3.4
09	350	5.0	200	4.1	110	3.1	6.9	3.1
10	390	5.0	---	---	110	3.2	8.0	2.9
11	400	5.4	---	---	110	(3.2)	8.1	(2.9)
12	390	6.0	---	---	110	---	7.0	2.8
13	370	6.6	---	---	110	---	7.0	2.8
14	360	7.0	200	---	110	---	6.2	2.8
15	340	7.7	220	4.0	110	3.0	6.3	2.9
16	310	8.2	---	3.9	110	---	6.7	3.05
17	280	8.5	---	---	110	---	5.9	3.1
18	260	7.9	---	---	---	---	5.4	3.3
19	240	7.0					5.4	3.3
20	220	5.2					4.3	3.2
21	260	4.5					4.4	3.05
22	300	4.2					4.4	3.0
23	300	(3.8)					3.9	---

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

Table 8

Maui, Hawaii (20.8°N, 156.5°W) June 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	4.4					4.0	2.9
01	290	4.3					4.0	3.0
02	280	4.2					4.0	3.1
03	270	3.6					3.4	3.1
04	290	(3.2)					2.3	(3.1)
05	280	3.0					3.0	3.1
06	270	3.5	250	---	140	1.5	3.1	3.2
07	340	4.7	230	3.6	120	2.2	4.8	3.0
08	380	5.1	230	3.9	120	2.7	5.8	2.9
09	440	5.5	220	4.1	120	3.0	6.5	2.6
10	460	6.0	200	4.1	110	3.1	6.0	2.5
11	450	6.4	210	4.2	110	3.3	5.4	2.5
12	420	7.4	200	4.2	120	3.3	5.2	2.6
13	400	8.0	220	4.2	120	3.3	4.8	2.6
14	390	8.4	220	4.2	120	3.3	4.6	2.7
15	370	8.6	230	4.0	120	3.1	4.2	2.8
16	360	9.0	240	3.9	120	2.9	4.8	2.8
17	320	9.6	240	3.7	120	2.6	4.4	3.0
18	290	9.7	240	3.4	120	2.0	3.9	3.1
19	250	9.1					3.9	3.2
20	240	7.4					3.5	3.2
21	260	5.9					3.6	3.0
22	290	4.9					3.4	2.9
23	300	4.8					3.8	2.9

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

Table 9

Puerto Rico, W. I. (18.5°N, 67.2°W) June 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.7					3.0	2.9
01	270	3.8					2.9	3.1
02	250	3.8					3.1	3.1
03	260	(3.4)					2.6	3.1
04	250	3.0					2.5	3.1
05	260	2.9					2.9	3.2
06	240	3.3	220	---	---	---	2.7	3.4
07	290	4.3	220	3.5	110	2.1	3.9	3.2
08	330	5.0	210	3.8	110	2.6	4.4	3.2
09	310	5.3	210	4.0	110	2.9	4.5	3.2
10	340	5.6	210	4.2	110	3.0	4.5	3.1
11	360	5.6	200	4.3	110	3.2	4.9	3.0
12	370	5.9	200	4.3	110	3.3	4.4	2.8
13	330	6.3	220	4.3	110	3.3	4.4	3.0
14	330	6.7	210	4.2	110	3.3	4.9	3.0
15	320	6.8	220	4.1	110	3.1	4.8	3.0
16	310	7.2	220	3.9	110	2.9	5.0	3.0
17	290	7.6	220	3.6	110	2.6	4.8	3.1
18	260	8.0	220	3.3	110	2.0	4.8	3.3
19	230	7.3	---	---			4.0	3.3
20	220	6.1					4.4	3.3
21	240	5.0					4.0	3.2
22	260	3.9					3.2	3.1
23	280	3.9					3.2	3.0

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

Table 10

Guam I. (13.6°N, 144.9°E) June 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	2.3					2.7	3.0
01	310	2.2					2.4	3.0
02	320	(1.8)					2.4	3.1
03	310	(1.9)					2.3	(3.15)
04	280	(1.8)					2.2	3.35
05	260	1.6					2.3	3.4
06	240	3.3	220	---	130	---	2.6	3.5
07	260	5.2	220	---	110	2.0	3.6	3.5
08	280	5.8	210	3.8	110	2.6	3.7	3.4
09	330	5.4	200	4.0	110	2.9	4.7	3.1
10	390	5.7	200	4.1	110	3.1	4.9	2.8
11	440	5.7	190	4.2	110	3.2	5.2	2.6
12	440	6.0	200	4.2	110	3.3	5.1	2.5
13	420	6.4	210	4.2	110	3.2	5.0	2.65
14	400	6.7	200	4.1	110	3.2	5.6	2.6
15	410	6.9	210	4.0	110	3.0	6.7	2.7
16	390	7.0	220	3.9	110	2.8	5.4	2.7
17	350	7.6	210	3.6	110	2.5	6.2	2.8
18	280	8.2	---	---	120	(1.6)	4.8	3.0
19	230	7.9					4.5	3.3
20	230	6.1					3.8	3.3
21	250	4.3					3.0	3.2
22	290	3.2					2.8	3.0
23	320	2.6					2.6	3.0

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

Table 11

Panama Canal Zone (9.4°N, 79.9°W) June 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.8					2.0	3.1
01	260	3.5					1.9	3.2
02	270	3.1					2.0	3.0
03	260	3.0					1.9	3.15
04	260	2.8					2.4	3.1
05	260	2.6					1.9	3.1
06	240	3.1					3.2	3.3
07	270	4.3	230	3.5	120	2.1	3.6	3.3
08	340	5.0	210	3.9	110	2.6	4.2	3.1
09	370	4.8	210	4.0	110	3.0	4.3	2.85
10	440	5.2	200	4.1	110	3.2	4.5	2.6
11	420	5.8	200	4.2	110	3.3	4.6	2.7
12	420	6.7	200	4.2	110	3.4	4.2	2.7
13	400	7.2	210	4.2	110	3.3	4.4	2.7
14	370	8.2	210	4.1	110	3.2	4.7	2.8
15	350	8.6	220	4.0	110	3.1	4.8	2.8
16	320	9.2	220	3.8	110	2.8	4.4	3.0
17	290	9.4	230	3.6	110	2.4	4.0	3.1
18	260	9.4	240	3.1	---	---	3.6	3.3
19	220	8.5					3.4	3.4
20	230	5.6					3.2	3.15
21	260	5.1					3.0	3.1
22	270	4.4					2.4	3.1
23	280	4.1					2.2	3.0

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

Table 12

Reykjavik, Iceland (64.1°N, 21.8°W) May 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	---					4.9	---
01	---	---					4.3	---
02	---	---					4.5	---
03	(330)	(3.0)			---	---	4.4	(3.0)
04	(290)	3.0	---	---	---	---	3.4	3.1
05	(270)	3.2	230	3.0	---	---	2.7	3.2
06	310	3.5	230	3.2	---	---		3.2
07	380	3.7	230	3.4	110	---		3.0
08	420	3.9	220	3.6	110	2.4		2.8
09	420	4.0	210	3.7	110	(2.6)		2.7
10	400	4.2	210	3.8	110	2.8		2.9
11	390	4.3	210	3.8	110	2.8		3.0
12	400	4.3	210	3.8	110	(2.9)		2.9
13	400	4.3	210	3.9	110	2.8		2.9
14	400	4.2	220	3.8	110	2.7		2.9
15	400	4.3	210	3.8	110	2.8		3.0
16	390	4.2	220	3.7	110	(2.7)		2.9
17	380	4.2	230	3.6	110	2.4		3.0
18	360	4.1	230	3.5	110	---		3.0
19	320	4.0	240	3.3	120	---	3.3	3.0
20	300	4.0	---	---	---	---	3.9	3.2
21	(270)	(3.7)			---	---	3.8	(3.15)
22	(280)	(3.6)			---	---	3.8	(3.0)
23	---	---					5.1	---

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

Table 13

Okinawa I. (26.3°N, 127.8°E) May 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	4.5					4.8	(3.1)
01	270	4.2					3.9	3.3
02	260	(4.3)					4.3	3.1
03	240	4.1					3.7	(3.4)
04	240	(3.2)					4.1	(3.2)
05	240	3.4					3.5	3.4
06	240	5.0	230	---	110	---	3.8	3.5
07	250	5.7	---	---	110	2.4	5.4	3.6
08	260	5.6	---	4.0	110	2.8	6.4	3.5
09	310	5.8	200	(4.3)	110	3.0	8.4	3.35
10	360	6.0	200	4.4	110	3.2	7.2	3.0
11	370	6.9	---	4.4	110	3.3	6.2	2.85
12	340	8.1	210	4.4	110	3.2	6.5	3.0
13	330	9.0	220	4.3	110	3.2	5.6	3.0
14	320	9.4	210	4.2	110	3.2	4.6	3.05
15	300	10.2	220	4.1	110	3.1	4.6	3.1
16	280	9.6	220	4.0	110	2.8	5.4	3.3
17	260	9.4	220	3.6	110	(2.4)	6.0	3.35
18	240	8.8	---	---	100	---	5.0	3.4
19	220	7.8					4.5	3.4
20	220	5.7					5.5	3.3
21	250	4.8					4.9	3.0
22	(300)	4.5					4.8	(2.95)
23	(300)	(4.4)					4.3	(3.0)

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

Table 14

Resolute Bay, Canada (74.7°N, 94.9°W) April 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	3.3			---	1.0		3.3
01	250	3.1			---	1.0		3.2
02	250	3.0			---	1.1		3.2
03	250	3.0			120	1.4		3.3
04	260	3.1	230	---	120	1.5		3.2
05	270	3.2	230	---	110	1.7		3.2
06	300	3.3	230	3.0	110	1.8		3.2
07	360	3.3	230	3.1	110	2.0		3.0
08	400	3.8	220	3.2	110	2.1		3.0
09	370	3.8	220	3.3	110	2.2		3.0
10	420	3.8	230	3.3	100	2.3		2.9
11	410	3.8	220	3.3	100	2.4		2.9
12	430	3.8	220	3.4	100	2.4		2.8
13	400	3.8	220	3.3	100	2.4		2.9
14	400	3.8	220	3.3	100	2.4		2.9
15	410	3.8	220	3.2	100	2.3		2.8
16	390	3.9	220	3.2	110	2.1		3.0
17	350	3.9	220	3.1	110	2.0		3.1
18	320	3.9	220	3.0	110	2.0		3.2
19	280	4.0	230	---	110	1.8		3.2
20	270	3.9	230	---	120	1.6		3.2
21	250	3.8	230	---	120	1.4		3.2
22	250	3.8	---	---	120	1.3		3.3
23	250	3.3	---	---	---	1.2		3.2

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

Table 15

Tromso, Norway (69.7°N, 19.0°E) April 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06								
07	---	(3.8)	230	---	115	2.0		2.9
08	(435)	3.9	230	3.6	110	2.2	1.8	2.95
09	390	4.0	220	3.6	115	2.4		3.0
10	370	4.2	220	3.7	120	2.4		3.0
11	380	4.2	220	3.8	110	2.5		2.95
12	370	4.3	220	3.8	115	2.6		3.05
13	355	4.3	220	3.8	120	2.5		3.1
14	360	4.2	220	3.7	115	2.4		3.1
15	(375)	4.0	225	3.5	110	2.4	2.7	3.1
16	(320)	4.2	230	---	115	2.1	2.3	3.3
17	(310)	4.2	240	---	120	1.9	3.2	3.25
18	(280)	3.9	250	---	---	---	4.1	3.2
19	(265)	3.8	---	---	---	---	3.5	3.2
20	(275)	3.4			---	---	4.2	3.2
21	---	(3.2)					3.9	(3.05)
22	---	(3.2)					3.8	(3.0)
23	---	---					(3.8)	---

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

Table 16

Godhavn, Greenland (69.2°N, 53.5°W) April 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		(3.0)						(3.1)
01		(2.8)						(3.0)
02		(2.8)					1.5	(2.95)
03		(2.9)					2.6	(3.0)
04		(3.0)						(3.05)
05		(3.2)						(3.2)
06		(3.4)						(3.3)
07		(3.6)					5.8	(3.2)
08		(4.0)					3.7	(3.3)
09		(4.2)					2.8	(3.1)
10		(4.2)					3.2	(3.0)
11		(4.4)						3.0
12		(4.4)						(2.9)
13		(4.3)						(2.9)
14		(4.3)					2.2	(2.9)
15		(4.3)					3.0	3.0
16		(4.2)					2.6	(2.95)
17		(4.1)						3.0
18		4.0						3.1
19		3.8						3.2
20		3.6						3.2
21		(3.4)					1.9	(3.2)
22		(3.1)					1.6	(3.1)
23		3.0						3.1

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

Table 17

Kiruna, Sweden (67.8°N, 20.3°E) April 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	---					3.6	---
01	(340)	(2.8)					2.9	(3.1)
02	(310)	(2.2)					2.0	(3.4)
03	310	2.2						3.5
04	280	2.2			---	---		3.5
05	(255)	(2.9)	---	---	---	---		(3.4)
06	(240)	(3.2)	---	---	---	---		(3.3)
07	(320)	(3.7)	250	3.1	110	2.1		(3.2)
08	(340)	(3.8)	240	3.2	110	2.2		(3.4)
09	(370)	(4.0)	230	3.5	110	2.3		(3.2)
10	(360)	(4.1)	220	3.6	110	2.6		(3.2)
11	(370)	(4.2)	210	3.8	110	2.8		(3.2)
12	(320)	(4.2)	220	3.8	110	2.8		(3.5)
13	(310)	---	230	3.7	110	2.8		---
14	(350)	(4.2)	220	3.6	110	2.6		(3.3)
15	300	(4.0)	240	3.4	110	2.5		(3.2)
16	300	4.0	240	3.2	110	2.2		3.5
17	280	3.9	240	3.1	110	2.0		3.55
18	250	3.9	230	3.0	---	---		3.4
19	250	3.8	---	---				3.4
20	260	3.2					2.1	3.35
21	(300)	(3.1)					2.5	(3.3)
22	(275)	(3.0)					2.8	(3.3)
23	(290)	(2.8)					2.9	(3.3)

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

Table 18

Fairbanks, Alaska (64.9°N, 147.8°W) April 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	340	(2.6)					4.5	(2.6)
01	(340)	(2.6)					5.0	(2.8)
02	(340)	(2.6)					5.8	(2.9)
03	360	2.9					4.8	2.7
04	350	3.0					4.0	2.9
05	360	3.2	250	3.0			3.0	2.9
06	500	3.3	230	3.1	110	2.0	3.0	2.5
07	480	3.5	210	3.2	110	2.2	3.0	2.6
08	(550)	(3.6)	210	3.5	110	2.4	2.8	8
09	(650)	(3.7)	210	3.5	110	2.5	2.7	(2.3)
10	510	3.9	200	3.6	110	2.6	2.8	2.6
11	470	4.0	200	3.7	110	2.6	2.2	2.7
12	480	4.0	200	3.7	110	2.7	2.6	2.7
13	440	4.0	200	3.7	110	2.7		2.7
14	420	4.1	210	3.8	110	2.6		2.75
15	420	4.1	210	3.7	110	2.4		2.8
16	360	4.0	220	3.6	110	2.2		3.0
17	300	4.0	220	3.4	110	2.0		3.2
18	280	4.0	220	---	---	---	2.2	3.2
19	250	3.8	230	---	---	---	2.4	3.3
20	270	3.3			---	---	3.3	3.1
21	300	3.2					4.3	3.0
22	300	3.0					4.0	(2.8)
23	320	2.8					4.0	2.75

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

Table 19

Baker Lake, Canada (64.3°N, 96.0°W) April 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	230	2.9			---	E	3.2	3.1
01	220	2.6			---	E	3.0	3.2
02	240	2.4			---	E	3.0	3.1
03	250	2.4			---	E	3.2	3.0
04	250	2.6			160	1.2	2.8	3.15
05	240	2.9			120	1.6	1.8	3.2
06	240	3.2	200	3.0	110	1.9		3.1
07	280	3.4	200	3.1	110	2.1	2.8	3.1
08	510	3.5	200	3.4	110	2.3	3.4	G
09	G	3.6	210	3.6	100	2.8	3.3	G
10	G	4.0	220	3.7	100	3.0	5.3	G
11	490	4.1	230	3.8	100	3.0		2.5
12	480	4.0	220	3.8	100	3.0		2.55
13	465	4.1	210	3.7	100	2.9		2.6
14	400	4.3	200	3.7	100	2.8		2.8
15	360	4.3	210	3.6	100	2.8		2.8
16	370	4.3	220	3.4	100	2.6		2.9
17	340	4.3	230	3.4	110	2.5		2.95
18	290	4.0	220	3.1	110	2.2	5.6	3.1
19	260	4.0	210	---	110	1.9	3.7	3.2
20	240	3.6	---	---	110	1.6	4.5	3.2
21	230	3.4			---	E	4.4	3.1
22	230	3.3			---	E	3.6	3.1
23	230	3.1			---	E	3.0	3.1

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

Table 20

Reykjavik, Iceland (64.1°N, 21.8°W) April 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00							4.3	
01							4.8	
02	---	---					5.4	---
03	---	---					5.0	---
04	---	---					3.8	---
05	---	---			---	---	3.8	---
06	(250)	(3.0)	---	---	---	---	3.4	(3.3)
07	(260)	3.3	---	(3.2)	---	---		(3.2)
08	(350)	3.7	230	(3.4)	120	(2.4)		(3.0)
09	370	3.9	240	3.5	110	2.4		3.0
10	400	4.0	220	3.6	120	(2.5)		2.9
11	400	4.1	220	3.7	110	(2.8)		2.8
12	380	4.3	230	3.7	110	(2.6)		3.0
13	380	4.3	220	3.8	110	(2.7)		3.0
14	380	4.3	230	3.8	110	2.6		3.0
15	360	4.4	230	3.7	110	(2.4)		3.0
16	350	4.3	240	3.6	110	2.2		3.1
17	350	4.1	240	3.4	120	2.1		3.2
18	320	3.7	250	3.2	120	---	3.7	3.2
19	300	3.7	---	---	---	---	4.0	3.1
20	270	(3.8)					4.4	(3.15)
21	---	---					3.8	---
22	---	---					4.6	---
23							4.7	

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

Table 21

Oslo, Norway (60.0°N, 11.1°E) April 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	285	2.0						2.9
01	300	1.7						2.9
02	300	1.6						2.9
03	300	1.5						2.9
04	290	1.8			---	---		2.9
05	260	2.6	---	---	130	1.4	1.6	3.1
06	245	3.2	235	---	120	1.8	1.5	3.3
07	(375)	3.6	230	3.4	120	2.0	2.0	3.1
08	425	3.9	220	3.6	115	2.3		2.9
09	405	4.1	220	3.7	110	2.4	2.8	2.9
10	370	4.4	200	3.8	110	2.6	2.8	3.05
11	375	4.5	205	3.9	110	2.7	2.9	3.0
12	365	4.6	205	4.0	110	2.8		3.05
13	350	4.5	210	4.0	110	2.8		3.1
14	345	4.6	210	3.9	110	2.7	2.9	3.1
15	335	4.5	220	3.8	110	2.6	2.7	3.1
16	345	4.5	230	3.7	110	2.4	2.8	3.1
17	300	4.5	230	3.5	115	2.1		3.1
18	270	4.6	245	---	120	1.8		3.2
19	255	4.6	250	---	---	1.6		3.1
20	250	4.3						3.1
21	245	4.0						3.1
22	250	3.0						3.0
23	255	2.4						3.0

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

Table 22

Upsala, Sweden (59.8°N, 17.6°E) April 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	305	2.0						2.9
01	320	2.0						2.8
02	320	1.8						2.8
03	320	1.7						2.8
04	295	2.1			---	E		2.9
05	250	2.9	---	---	---	E		3.2
06	240	3.4	235	(3.1)	120	1.8		3.2
07	400	3.7	225	3.4	115	2.2		3.1
08	440	4.0	220	3.6	110	2.4		2.9
09	375	4.2	220	3.8	110	2.5		2.9
10	375	4.4	215	3.8	105	2.6		3.0
11	335	4.6	205	4.0	105	2.7		3.1
12	350	4.6	210	4.0	105	2.8		3.1
13	345	4.5	220	4.0	105	2.8		3.1
14	345	4.6	215	3.9	110	2.7		3.1
15	330	4.5	220	3.8	105	2.5		3.1
16	330	4.4	230	3.6	115	2.3		3.1
17	290	4.4	235	3.3	115	2.0		3.1
18	260	4.4	240	2.8	130	1.6	1.8	3.15
19	250	4.4	---	---	---	E		3.1
20	240	4.2			---	E		3.1
21	240	3.5						3.0
22	260	2.6						3.0
23	270	2.2						2.9

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

Table 23

Churchill, Canada (58.8°N, 94.2°W) April 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	2.8			---	E	6.0	(3.2)
01	280	2.6			---	---	6.8	(3.0)
02	290	2.3			---	E	5.0	(3.0)
03	310	2.4			---	---	5.0	---
04	310	2.4			---	---	4.0	(3.4)
05	300	3.2			---	(1.8)	4.0	(3.1)
06	320	3.3			110	(2.8)	5.0	(3.1)
07	(370)	3.7	---	---	120	(2.8)	5.4	(2.9)
08	470	3.8	260	3.6	100	(2.9)	6.0	(2.4)
09	550	3.9	240	3.7	110	2.9	6.0	2.6
10	640	3.9	220	3.8	110	2.8	4.0	2.15
11	540	3.9	210	3.8	110	2.9	3.2	2.5
12	520	4.0	210	3.9	110	2.9	3.5	2.55
13	480	4.1	220	3.9	110	2.9		2.7
14	440	4.3	230	3.8	110	2.8	2.5	2.7
15	380	4.5	230	3.8	110	2.8		2.9
16	360	4.6	250	3.8	110	2.8	3.6	3.0
17	340	4.3	260	3.5	110	2.6	3.4	3.0
18	330	4.0	280	3.2	110	2.6	4.1	3.1
19	340	3.8	---	---	120	(2.5)	5.2	3.0
20	330	3.4			120	(2.6)	4.7	3.1
21	290	3.0			---	---	6.4	3.15
22	260	3.0			---	---	8.0	(3.15)
23	260	3.0			---	---	6.9	3.3

Time: 90.0°W.
Sweep: 0.6 Mc to 10.0 Mc in 16 seconds.

Table 24

Fort Chimo, Canada (58.1°N, 68.3°W) April 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(280)	2.3			---	---	4.6	
01	(240)	(2.4)			---	---	4.7	
02	---	---			---	---	4.0	
03	---	---			100	3.1	4.1	
04	---	---			100	3.5	4.4	
05	---	---			100	4.3	4.0	---
06	(270)	(3.4)			100	3.6	3.5	---
07	(430)	3.5	---	3.4	100	3.3	3.3	---
08	420	4.0	220	3.6	100	2.7		(2.9)
09	480	3.8	200	3.7	100	2.7		G
10	480	4.0	200	3.7	100	2.8		G
11	450	4.1	210	3.8	100	2.8		2.8
12	420	4.1	200	3.8	100	2.9		2.9
13	410	4.3	210	3.8	100	3.0		2.8
14	390	4.4	200	3.7	100	2.7		2.9
15	390	4.5	220	3.6	100	2.7		3.0
16	350	4.2	230	3.4	100	2.6		(3.1)
17	320	4.1	230	3.2	100	2.4	2.8	3.1
18	300	3.9	---	---	100	2.5	4.3	(3.0)
19	230	3.4			---	---	5.0	---
20	240	3.0			---	---	5.8	
21	210	2.9			---	---	5.5	---
22	(230)	2.5			---	---	5.0	
23	(240)	(2.9)			---	---	6.2	

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

Table 25

Prince Rupert, Canada (54.3°N, 130.3°W) April 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	1.8						(3.0)
01	300	1.6						(3.0)
02	300	1.5					2.2	---
03	(310)	1.5					2.2	---
04	(320)	1.6					2.4	---
05	300	2.0			---	---	2.1	(3.0)
06	260	2.7	---	---	110	1.7	2.0	3.2
07	260	3.2	230	3.2	110	2.0	2.3	0
08	0	(3.5)	210	3.4	100	2.3	2.0	0
09	0	(3.6)	210	3.6	100	2.6		0
10	0	(3.8)	200	3.7	100	2.8		0
11	0	4.3	200	3.8	100	2.9	3.2	2.7
12	430	4.4	200	3.8	100	2.9		2.8
13	460	4.3	200	3.9	100	3.0		2.8
14	440	4.4	200	3.9	100	2.9		2.9
15	400	4.3	210	3.9	100	2.9		2.9
16	390	4.2	210	3.8	110	2.7		3.0
17	350	4.1	220	3.7	110	2.5		3.1
18	300	4.0	230	3.3	110	2.3		3.2
19	250	3.8	240	2.7	120	1.8		3.3
20	240	3.6			---	---	1.6	3.2
21	250	3.3					1.4	3.1
22	260	2.8						3.1
23	270	2.4					1.3	3.0

Time: 120.0°W.
Sweep: 1.0 Mc to 10.0 Mc in 15 seconds.

Table 26

De Bilt, Holland (52.1°N, 5.2°E) April 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	2.8						2.9
01	---	2.8						2.9
02	---	2.6						2.9
03	---	2.5						3.0
04	---	2.6						3.0
05	250	3.2	---	---	---	R		3.3
06	260	3.7	240	3.3	130	2.0		3.2
07	0	3.9	240	3.6	120	2.3		3.2
08	370	4.3	230	3.8	120	2.6		3.2
09	360	4.6	230	3.9	120	2.7		3.2
10	350	4.9	220	4.0	120	2.8		3.1
11	340	4.9	220	4.0	120	2.9	3.0	3.2
12	360	5.0	220	4.0	120	3.0		3.05
13	330	5.0	230	4.0	120	3.0		3.25
14	340	5.0	230	4.0	120	2.9		3.2
15	330	4.9	230	3.8	120	2.7		3.15
16	300	4.8	240	3.6	120	2.4		3.2
17	290	4.6	240	3.4	130	2.1		3.2
18	260	5.0	260	3.0	---	R		3.2
19	260	5.0						3.2
20	250	4.8						3.2
21	240	4.1						3.25
22	<260	3.3						3.0
23	<260	2.9						3.0

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

Table 27

Winnipeg, Canada (49.9°N, 97.4°W) April 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	370	2.2					2.9	(3.0)
01	350	2.1					2.8	(3.0)
02	330	2.2					3.0	(2.9)
03	330	2.1					2.8	(3.05)
04	350	2.0					2.8	(2.9)
05	320	2.1			---	---	2.7	3.1
06	260	2.9			120	1.8		3.2
07	310	3.4	220	3.2	120	2.0		3.1
08	520	3.6	220	3.5	120	2.4		2.55
09	530	3.8	200	3.7	110	2.6		2.5
10	0	3.9	200	3.8	110	2.9		0
11	480	4.1	190	3.9	110	3.0		2.7
12	480	4.2	200	3.9	110	3.0		2.7
13	470	4.2	200	3.9	110	3.0		2.7
14	450	4.3	210	3.9	110	3.0		2.7
15	420	4.3	220	3.9	110	2.9		2.8
16	400	4.3	220	3.8	110	2.7		2.85
17	360	4.2	230	3.6	120	2.4		2.9
18	300	4.2	240	3.3	120	2.0		3.1
19	260	4.0	---	---	130	1.8		3.2
20	250	3.8						3.1
21	260	3.2						3.1
22	280	2.6						3.1
23	320	2.1						(3.0)

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

Table 28

St. John's, Newfoundland (47.6°N, 52.7°W) April 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	330	1.8						(2.9)
01	370	1.7					2.2	2.8
02	340	1.8					2.8	2.9
03	320	1.6					2.7	(3.0)
04	300	1.7	---	---	---	---	2.6	3.0
05	250	2.8	230	---	120	1.6		3.25
06	250	3.6	230	2.9	120	2.1		3.3
07	320	4.1	230	3.6	110	2.4		3.25
08	320	4.2	220	3.9	110	2.9		3.2
09	350	4.6	200	4.0	110	3.0		3.2
10	350	4.9	200	4.0	110	3.0		3.2
11	380	4.7	200	4.1	110	3.1		3.1
12	350	4.9	200	4.1	110	3.1		3.1
13	340	5.0	210	4.1	110	3.1		3.2
14	360	4.9	220	4.0	110	3.0		3.1
15	340	5.0	220	3.9	110	2.8		3.1
16	310	5.2	240	3.6	110	2.4		3.2
17	290	5.2	240	3.2	120	2.1		3.2
18	270	5.2	250	2.4	130	1.6		3.2
19	240	4.9	---	---				3.3
20	240	4.0						3.3
21	240	3.1						3.1
22	290	2.4						3.0
23	320	2.0						3.0

Time: 60.0°W.
Sweep: 0.9 Mc to 10.0 Mc in 18 seconds.

Table 29

Graz, Austria (47.1°N, 15.5°E) April 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.1						
01	300	3.1						
02	300	3.0						
03	300	2.9						
04	300	2.9						
05	280	3.0						
06	250	3.9	230	---				
07	260	(4.1)	220	3.5				
08	(300)	(4.8)	210	3.7			2.9	
09	(295)	(5.0)	210	4.0	110	2.9	3.0	
10	(280)	(5.0)	200	4.0	115	3.0	3.4	
11	(280)	(5.2)	200	(4.1)	110	3.0	3.3	
12	(300)	(5.0)	200	(4.0)	110	3.1	3.4	
13	(290)	(5.1)	200	(4.0)	110	3.0	3.1	
14	(290)	(5.0)	200	4.0	110	3.0	3.0	
15	(280)	(5.1)	210	3.9	110	2.9		
16	(260)	(5.0)	210	3.8				
17	250	(5.0)	230	3.5			3.0	
18	250	(5.1)						
19	240	(5.0)						
20	245	(5.0)						
21	230	(4.3)						
22	260	3.9						
23	300	3.3						

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

Table 30

Schwarzenburg, Switzerland (46.8°N, 7.3°E) April 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.9						3.2
01	300	3.0						3.2
02	300	3.0						3.2
03	290	2.9						3.3
04	300	2.7						3.3
05	250	2.8						3.4
06	210	3.4						3.65
07	200	3.8	200	3.2	100	2.0		3.6
08	260	4.2	200	3.5	100	2.4		3.55
09	300	4.5	200	3.8	100	2.6		3.5
10	300	5.0	200	4.0	100	2.8		3.45
11	300	5.2	200	4.0	100	3.0		3.5
12	300	5.0	200	4.1	100	3.0		3.5
13	300	5.2	200	4.0	100	3.0		3.4
14	300	5.1	200	4.0	100	3.0		3.4
15	300	5.4	200	4.0	100	2.8		3.4
16	300	5.2	200	3.8	100	2.8		3.45
17	300	5.1	200	3.6	100	2.4		3.5
18	220	5.4	220	3.4	100	2.0		3.5
19	220	5.5						3.5
20	210	5.8						3.6
21	200	5.1						3.6
22	210	4.0						3.6
23	290	3.1						3.4

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

Table 31

Ottawa, Canada (45.5°N, 75.9°W) April 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	330	1.9						(3.0)
01	360	1.9					2.9	—
02	(360)	1.9					3.0	—
03	(370)	(1.8)					3.0	—
04	(360)	1.9					3.1	—
05	280	2.2						3.1
06	240	3.2	—	---	130	1.8		3.3
07	410	3.6	220	3.4	120	2.3		0
08	0	3.8	210	3.7	110	2.6		0
09	420	4.0	200	3.8	110	2.8		2.9
10	400	4.3	200	3.9	110	3.0		2.9
11	410	4.5	200	4.0	110	3.0		2.9
12	420	4.5	200	4.0	110	3.2		2.85
13	410	4.6	200	4.0	110	3.1		2.8
14	380	4.6	210	4.0	110	3.0		3.0
15	360	4.7	220	3.9	110	2.9		3.0
16	360	4.6	220	3.8	110	2.6		3.0
17	310	4.6	230	3.4	120	2.3		3.1
18	280	4.8	250	3.0	130	1.9		3.1
19	250	4.8	—	---	—	—		3.2
20	240	4.2						3.1
21	250	3.2						3.2
22	280	2.3						3.1
23	300	2.0						3.0

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

Table 32

Wakkanai, Japan (45.4°N, 141.7°E) April 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	4.1					2.4	2.8
01	280	4.0					2.3	2.9
02	270	4.0					2.3	2.8
03	260	4.0					1.9	2.9
04	240	3.6					2.3	3.0
05	250	4.0			---	---	2.2	3.1
06	240	4.6	---	---	130	2.0		3.3
07	280	4.8	250	3.5	120	2.4		3.2
08	290	5.4	240	3.9	120	2.7	3.9	3.2
09	290	5.6	240	4.1	110	2.9	4.0	3.2
10	300	5.6	230	4.2	110	3.0	4.2	3.2
11	300	5.9	220	4.3	110	3.0		3.2
12	320	5.8	220	4.3	110	3.0		3.1
13	310	5.9	220	4.3	110	3.0		3.1
14	310	6.1	230	4.2	110	2.9	3.8	3.1
15	290	6.0	240	4.0	120	2.7		3.2
16	280	6.0	250	3.7	120	2.5		3.2
17	270	5.6	250	3.3	130	2.1	2.4	3.2
18	260	5.8	—	---			2.8	3.1
19	250	6.4					2.5	3.05
20	250	6.0					2.6	3.1
21	250	5.2					2.4	3.0
22	260	4.5					2.0	2.9
23	280	4.1					2.2	2.8

Time: 135.0°E.
Sweep: 1.0 Mc to 22.0 Mc in 1 minute.

Table 33

Akita, Japan (39.7°N, 140.1°E) April 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.7					2.5	2.9
01	280	3.8					2.3	2.8
02	270	3.7					2.2	2.9
03	250	3.6					2.3	3.0
04	250	3.5					2.3	3.0
05	240	3.6			---	---	2.3	3.3
06	230	4.8	240	---	130	2.0	2.5	3.5
07	250	5.2	240	3.6	110	2.5		3.5
08	270	5.4	240	3.9	110	2.7	4.3	3.4
09	280	5.7	230	4.1	110	2.9	4.2	3.3
10	290	6.2	230	4.2	110	3.0	4.2	3.3
11	300	6.1	210	4.3	110	3.0	4.1	3.1
12	310	6.4	220	4.3	110	3.0	4.0	3.1
13	300	6.6	220	4.3	100	3.0	4.2	3.1
14	300	6.8	220	4.2	110	2.9	4.0	3.2
15	290	6.8	240	4.0	110	2.8	4.2	3.2
16	270	6.5	240	3.7	110	2.6	3.7	3.3
17	260	6.2	240	3.3	120	2.2	3.5	3.3
18	250	6.5			---	---	3.5	3.3
19	240	6.7					3.5	3.2
20	230	5.9					3.1	3.25
21	260	4.5					3.0	3.0
22	280	4.0					2.9	2.8
23	280	4.0					2.8	2.8

Time: 135.0°E.
Sweep: 0.85 Mc to 22.0 Mc in 2 minutes.

Table 34

Tokyo, Japan (35.7°N, 139.5°E) April 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.6					3.0	2.9
01	280	3.8					3.0	2.9
02	260	3.7					2.9	3.0
03	240	3.6					2.5	3.1
04	240	3.3					2.4	3.0
05	240	3.3					2.5	3.2
06	230	5.1	230	---	130	2.0	3.0	3.5
07	240	5.5	240	3.5	110	2.4	3.9	3.5
08	260	5.6	230	4.0	110	2.8	4.4	3.4
09	270	6.0	220	4.1	110	3.0	4.7	3.2
10	300	6.4	230	4.3	110	3.0	4.7	3.1
11	310	6.6	210	4.4	110	3.1	4.6	3.0
12	300	7.5	220	4.4	110	3.1	4.8	3.1
13	300	7.6	220	4.4	110	3.0	4.9	3.1
14	290	8.0	220	4.3	110	3.0	4.5	3.1
15	280	8.0	240	4.1	110	2.9	5.3	3.2
16	270	7.5	240	4.0	110	2.6	4.3	3.2
17	260	7.4	250	3.5	120	2.2	4.5	3.3
18	240	7.5	---	---			4.2	3.3
19	230	7.1					3.4	3.3
20	230	5.5					4.0	3.3
21	250	4.0					3.0	3.0
22	300	3.6					3.0	2.8
23	300	4.0					3.1	2.9

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

Table 35

Yamagawa, Japan (31.2°N, 130.6°E) April 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	3.5					2.6	2.8
01	300	3.5					2.5	2.9
02	280	3.6					2.5	3.0
03	250	3.4					2.4	3.3
04	260	3.0					2.3	3.05
05	260	3.0					2.3	3.15
06	240	4.3			---	1.6	2.6	3.4
07	240	5.3	---	---	120	2.2	3.2	3.5
08	250	5.5	240	—	110	2.7	3.8	3.45
09	290	6.0	250	4.2	110	2.9	4.6	3.35
10	310	6.1	230	4.4	110	3.0	5.0	3.15
11	340	6.8	240	4.5	110	3.1	5.3	2.9
12	330	8.3	240	4.5	110	3.2	4.9	2.9
13	310	9.4	240	4.5	110	3.2	5.3	3.0
14	300	9.3	230	4.4	110	3.1	4.8	3.1
15	300	9.6	250	4.3	110	3.0	5.7	3.1
16	280	10.1	250	4.2	110	2.8	3.6	3.2
17	270	9.4	240	3.8	110	2.5	3.7	3.2
18	250	8.5	---	—	140	1.9	3.5	3.3
19	240	7.9					3.6	3.4
20	220	6.5					3.2	3.4
21	240	3.8					3.5	3.15
22	320	3.6					3.2	2.8
23	320	3.6					3.0	2.8

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

Table 36

Okinawa I. (26.3°N, 127.8°E) April 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.8					3.0	3.0
01	280	3.7					2.9	3.1
02	250	3.8					2.2	3.4
03	220	3.3					2.2	3.6
04	240	2.8						3.5
05	220	2.9					2.3	3.4
06	210	4.6			---	---	2.9	3.7
07	220	5.4	220	---	110	---	3.8	3.6
08	250	5.7	220	---	110	2.8	4.6	3.5
09	270	6.2	200	---	110	3.0	5.4	3.3
10	310	6.9	200	4.5	110	(3.1)	5.1	3.0
11	330	8.4	200	4.4	110	3.2	5.0	2.9
12	320	9.8	210	4.5	110	(3.3)	4.7	3.0
13	300	11.0	200	4.4	110	---	4.8	3.1
14	280	11.6	220	4.3	110	(3.2)	4.8	3.2
15	270	12.0	220	4.2	110	3.0	5.0	3.3
16	260	11.8	220	3.9	110	2.7	4.8	3.3
17	240	11.3	230	---	110	---	4.5	3.4
18	230	10.2	---	---	---	---	4.5	3.5
19	210	8.4					4.5	3.6
20	210	5.0					3.4	3.45
21	280	4.2					3.2	3.0
22	320	3.8					3.0	2.9
23	310	3.7					4.0	2.9

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

Table 37

Formosa, Ohima (25.0°N, 121.5°E) April 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	4.0					3.1	2.8
01	270	4.4					2.7	3.0
02	240	4.1					2.2	3.2
03	240	3.4					2.0	3.4
04	240	2.8					1.9	3.2
05	240	3.1					2.0	3.3
06	220	4.4			---	---	2.6	3.5
07	240	5.6			110	2.2	4.3	3.6
08	260	6.1	230	4.0	110	2.7	5.0	3.2
09	300	6.5	220	4.3	110	3.0	5.4	3.15
10	320	7.4	220	4.5	110	3.2	4.6	2.9
11	330	9.2	220	4.5	120	3.3	4.6	2.9
12	320	11.2	240	4.5	---	---	5.4	3.0
13	320	12.8	240	4.5	---	---	5.6	3.15
14	300	13.5	230	4.4	120	3.2	4.2	3.2
15	280	13.5	240	4.2	120	3.2	4.2	3.3
16	260	13.4	230	4.1	120	2.8	4.2	3.3
17	240	12.8	240	3.7	120	2.4	4.2	3.5
18	240	11.8			---	---	4.2	3.55
19	220	8.7					3.6	3.6
20	210	6.1					4.0	3.2
21	260	4.7					3.3	3.05
22	320	4.3					3.3	2.8
23	320	3.8					3.5	2.8

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

Table 38

Baguio, P. I. (16.4°N, 120.6°E) April 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	5.0					2.6	2.9
01	240	5.6					2.0	3.3
02	200	6.0					2.6	3.7
03	200	3.4					2.8	3.5
04	230	2.6					3.2	3.4
05	230	2.3					3.3	3.25
06	230	4.2					3.6	3.5
07	220	5.8			110	---	4.9	3.5
08	(280)	6.6	210	---	110	2.6	5.4	3.1
09	320	7.5	200	---	110	---	5.4	2.8
10	340	8.4	200	---	---	---	5.6	2.6
11	360	9.2	190	4.2	---	---	5.2	2.4
12	350	9.2	190	4.3	110	---	5.4	2.4
13	340	9.4	190	4.2	110	3.3	4.4	2.6
14	330	9.8	200	---	110	3.2	4.0	2.8
15	310	10.5	200	---	110	3.0	4.0	2.95
16	280	10.9	210	---	100	2.6	4.3	3.0
17	250	11.8	220	---	100	2.2	4.2	3.25
18	230	10.8					4.2	3.35
19	220	8.7					3.8	3.2
20	240	7.7					3.0	3.0
21	260	6.8					3.2	3.0
22	280	6.0					2.6	2.9
23	300	5.0					2.6	2.8

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

Table 39

Huancayo, Peru (12.0°S, 75.3°W) April 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	210	5.4						3.5
01	210	5.3						3.4
02	210	4.4						3.4
03	240	3.4						3.4
04	250	3.0						3.35
05	250	2.5						3.35
06	260	3.1			--	E	3.8	3.2
07	(260)	6.0	230	---	110	2.2	5.8	3.4
08	280	7.2	210	---	110	2.6	9.4	3.2
09	310	7.8	200	4.2	110	---	11.5	2.85
10	330	7.4	200	4.2	100	---	11.6	2.6
11	350	7.0	190	4.3	100	---	11.7	2.65
12	360	6.8	190	4.3	100	---	11.8	2.7
13	350	7.0	190	4.2	100	---	11.7	2.7
14	330	7.4	190	4.2	100	---	11.4	2.7
15	300	7.6	180	4.0	100	---	10.6	2.8
16	(270)	7.6	190	---	110	---	9.7	2.8
17	240	7.9	230	---	110	---	5.8	2.8
18	250	7.7			---	---	3.4	2.9
19	280	7.4						2.9
20	270	7.1						3.0
21	240	7.2						3.2
22	220	6.8						3.4
23	210	5.8						3.4

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

Table 40

Johannesburg, Union of S. Africa (26.2 S, 28.1 E) April 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	< 250	3.0					1.5	3.05
01	240	3.0						3.1
02	240	3.0					1.8	3.1
03	240	3.1						3.2
04	220	2.8						3.3
05	230	2.6						3.1
06	240	2.7						3.2
07	220	5.0	---	---	130	1.9		3.6
08	240	6.0	220	3.6	110	2.5		3.5
09	260	6.3	220	4.0	110	2.8	3.3	3.4
10	270	7.0	210	4.2	110	3.0	3.7	3.3
11	270	7.4	210	4.3	110	3.1	3.8	3.3
12	280	6.8	200	4.3	110	3.2	3.6	3.2
13	290	7.0	190	4.3	110	3.2		3.1
14	280	7.4	210	4.2	110	3.1		3.2
15	260	7.2	220	4.0	110	2.9	3.7	3.3
16	240	6.4	220	3.6	110	2.6	3.4	3.4
17	230	6.0	220	2.7	120	2.0	2.8	3.5
18	220	5.0			---	---		3.4
19	220	4.0					1.8	3.4
20	<240	3.3					1.6	3.3
21	240	3.6					1.8	3.3
22	230	3.4					1.6	3.4
23	240	3.1						3.2

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

Table 41

Watheroo, W. Australia (30.3°S, 115.9°E) April 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	3.2					2.7	3.1
01	250	3.4					2.8	3.1
02	250	3.4					2.7	3.2
03	250	3.4					2.8	3.1
04	240	3.3					2.2	3.3
05	240	3.1					2.7	3.3
06	240	3.0					2.4	3.2
07	240	4.3	220	2.4		1.8	2.7	3.5
08	250	5.0	230	3.6		2.4	3.0	3.6
09	280	6.0	220	3.9		2.7	3.6	3.4
10	280	6.4	200	4.1		2.8	3.5	3.35
11	(300)	(5.9)	200	4.2		3.2	(3.7)	(3.25)
12	280	6.7	210	4.3		3.2	3.6	3.3
13	290	7.0	200	4.2		3.2	3.6	3.25
14	(280)	6.4	220	4.2		3.1	3.5	3.35
15	270	6.4	220	4.0		2.9	3.8	3.4
16	250	6.0	220	3.7		2.5	3.8	3.4
17	230	5.5	220	3.1		2.2	3.0	3.5
18	210	4.5					2.7	3.6
19	230	3.6					3.0	3.4
20	270	3.0					2.6	3.1
21	(250)	3.0					2.7	3.1
22	250	3.0					2.8	3.1
23	250	3.0					2.6	3.1

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

Table 42

Capetown, Union of S. Africa (34.2°S, 18.3°E) April 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	<250	3.0						3.2
01	<250	3.0						3.1
02	<260	3.0						3.1
03	<260	3.0						3.0
04	240	3.1						3.2
05	230	3.0						3.3
06	<240	2.9						3.3
07	230	3.6						3.4
08	230	5.0	230	---	120	1.9		3.65
09	240	5.6	220	3.6	120	2.5		3.5
10	270	6.2	220	4.0	120	2.8	3.2	3.4
11	270	6.6	210	4.2	110	3.0	3.2	3.3
12	280	6.6	200	4.2	110	3.1	3.5	3.2
13	290	7.4	200	4.2	110	3.1		3.2
14	280	8.0	200	4.2	120	3.1		3.2
15	270	7.4	230	4.1	120	3.0		3.3
16	260	6.8	230	3.8	120	2.6	2.9	3.35
17	240	6.8	230	3.2	120	2.3	2.6	3.5
18	220	5.8	---	---	---	---	2.2	3.6
19	<220	4.0						3.4
20	<240	3.0					1.8	3.2
21	230	3.1					1.6	3.3
22	240	3.1						3.3
23	240	3.0						3.2

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

Table 43

Buenos Aires, Argentina (34.5°S, 58.5°W) April 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	3.3						3.0
01	300	3.2						3.0
02	310	3.1						3.0
03	280	3.3						3.15
04	220	3.6					1.3	3.55
05	250	2.6						3.4
06	260	3.0						3.3
07	220	5.0						3.6
08	230	5.6	220	---	---	---	2.8	3.5
09	270	6.1	210	---	110	2.9	3.7	3.4
10	280	6.9	210	---	110	3.1	4.0	3.3
11	290	7.8	200	4.2	110	3.2	4.5	3.25
12	280	9.2	200	4.3	---	---	4.4	3.3
13	270	9.4	200	4.3	---	---	5.1	3.4
14	260	9.2	220	---	---	---	4.2	3.4
15	250	8.3	220	---	---	---	5.0	3.5
16	230	8.0	220	---	---	---	5.0	3.5
17	210	6.6					4.2	3.6
18	210	5.4					3.6	3.5
19	240	4.3						3.4
20	260	4.0						3.3
21	270	3.7						3.3
22	300	3.2						3.1
23	310	3.1						3.0

Time: 60.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 44

Christchurch, New Zealand (43.5°S, 172.8°E) April 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	2.7					3.2	3.0
01	280	2.8					3.0	3.0
02	280	2.7					2.7	3.0
03	270	2.7					3.3	3.1
04	270	2.5					2.8	3.1
05	260	2.2					2.8	3.2
06	260	2.2				---		3.2
07	240	3.7	240	2.4		1.4		3.4
08	250	4.5	230	3.2		2.1		3.5
09	270	4.7	220	3.7		2.3	4.0	3.4
10	290	5.0	210	3.9		2.5	4.2	3.3
11	280	5.5	220	4.0		2.8	4.2	3.3
12	280	5.5	220	4.1		2.9	4.2	3.4
13	280	5.7	230	4.0		2.8	4.0	3.4
14	270	5.5	230	3.8		2.6	4.2	3.4
15	270	5.4	230	3.7		2.5	4.0	3.4
16	260	5.2	240	3.2		2.6	3.6	3.4
17	240	5.0	---	---		1.6	3.2	3.3
18	240	4.6					3.2	3.2
19	250	4.2						3.1
20	260	3.6					2.9	3.0
21	260	3.0					3.4	3.0
22	270	2.9					3.1	3.0
23	270	2.8					2.9	3.0

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

Table 45

Decepcion I. (63.0°S, 60.7°W) April 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.1						(3.1)
01	300	3.1						(3.1)
02	300	3.2						(3.2)
03	300	3.1						(3.1)
04	300	3.1						(3.2)
05	270	3.3						(3.3)
06	250	3.3						(3.4)
07	250	3.6						(3.5)
08	240	4.4					3.4	(3.5)
09	240	4.7					4.3	(3.5)
10	250	5.0					4.4	(3.6)
11	250	4.8					4.5	(3.5)
12	250	5.2					4.5	(3.5)
13	240	5.2					4.5	(3.6)
14	240	5.0					4.4	(3.6)
15	240	4.9					4.0	(3.6)
16	230	4.7					2.8	(3.6)
17	240	4.2					2.0	(3.6)
18	230	4.2						(3.6)
19	240	4.1						(3.5)
20	240	4.1						(3.4)
21	250	3.7						(3.4)
22	280	3.6						(3.3)
23	290	3.1						(3.2)

Time: 60.0°W.
Sweep: 1.5 Mc to 16.0 Mc in 15 minutes, manual operation.

Table 46

Point Barrow, Alaska (71.3°N, 156.8°W) March 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(320)	(2.6)					7.0	(3.0)
01	(300)	2.4					5.8	3.1
02	(310)	2.4					6.3	---
03	(330)	(2.4)					4.8	(3.0)
04	320	2.4					4.6	(3.1)
05	(360)	2.6					4.1	3.0
06	340	2.8					4.3	(3.05)
07	(320)	(3.1)					4.4	(3.0)
08	(330)	(3.6)	---	---	---	---	4.8	---
09	(350)	(3.7)	---	---	---	---	4.8	(3.2)
10	(340)	3.7	250	3.3	---	---	3.8	(3.0)
11	(370)	3.6	250	3.4	---	---	3.5	3.1
12	(320)	3.7	250	3.4	---	---	3.2	3.0
13	340	3.8	250	3.4	---	---		3.0
14	350	3.9	250	3.4	120	2.2		3.0
15	330	3.9	250	3.3	(120)	(2.3)		3.1
16	320	3.9	250	3.2	120	2.0		3.1
17	290	3.7	250	---	110	1.8	1.8	3.2
18	280	3.4	---	---	120	1.4	2.5	3.2
19	300	3.0					3.4	3.2
20	(340)	(2.6)					3.9	(3.0)
21	(300)	(2.6)					4.5	(3.0)
22	(310)	(2.7)					6.5	(2.9)
23	(270)	2.6					7.8	(3.25)

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

Table 47

Godhavn, Greenland (69.2°N, 53.5°W) March 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		(2.5)					3.3	(3.1)
01		(2.5)					2.6	(3.1)
02		(2.4)					2.8	(3.0)
03		(2.4)					3.1	(2.9)
04		(2.6)					4.6	(2.9)
05		(2.8)					4.6	(3.0)
06		(2.8)					4.4	(3.1)
07		(3.1)					3.2	(3.15)
08		(3.3)					3.2	(3.3)
09		(3.6)					3.0	(3.2)
10		(4.2)					2.5	(3.1)
11		(4.3)					2.5	3.1
12		(4.2)					3.4	(3.05)
13		(4.2)					5.3	(3.1)
14		(4.1)					4.6	(3.0)
15		(3.8)						(3.0)
16		(3.8)						(3.1)
17		(3.7)						(3.2)
18		(3.6)					1.9	3.2
19		(3.5)					(1.4)	(3.1)
20		(3.2)					4.0	(3.1)
21		(3.0)					(2.0)	(3.2)
22		(2.7)					2.6	(3.1)
23		(2.4)					(3.1)	(3.1)

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

Table 48 *

Inverness, Scotland (57.4°N, 4.2°W) March 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	350	(1.5)						(2.6)
01	340	(1.5)					1.0	(2.7)
02	340	(1.4)					0.9	(2.6)
03	325	(1.5)					1.1	(2.7)
04	310	(1.3)						
05	310	(1.3)						
06	270	2.2					1.8	3.0
07	250	3.1			(135)	(1.7)	2.1	3.2
08	270	3.6	225	3.2	130	1.9	2.2	3.3
09	310	4.1	220	3.5	120	2.2	2.7	3.2
10	325	4.4	210	3.6	120	2.4	2.9	3.1
11	320	4.6	205	3.8	115	2.5	2.8	3.2
12	315	4.7	205	3.8	115	2.6	2.9	3.2
13	310	4.7	210	3.8	115	2.6	2.6	3.2
14	295	4.8	205	3.8	115	2.5	2.8	3.3
15	290	4.8	215	3.6	115	2.4	2.6	3.2
16	285	4.8	225	3.4	120	2.2		3.2
17	250	4.6	235	3.0	130	1.9	2.1	3.2
18	250	4.4			(160)	(1.7)		3.2
19	245	4.2						3.1
20	255	3.4						3.1
21	280	(2.4)						2.9
22	330	(2.0)						(2.7)
23	345	(1.8)						(2.7)

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

Table 49 *

Slough, England (51.5°N, 0.6°W) March 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	285	2.5					2.4	2.8
01	285	2.5					2.5	2.8
02	275	2.5					2.6	2.85
03	270	2.4					2.6	2.85
04	270	2.1					2.6	2.9
05	255	1.8					2.6	3.0
06	260	2.4			(145)	(1.6)	2.6	3.05
07	250	3.7	230	2.9	130	1.8	2.6	3.35
08	280	4.2	220	3.3	125	2.1	3.2	3.25
09	300	4.6	220	3.7	120	2.4	3.5	3.25
10	310	4.9	215	3.9	115	2.6	4.3	3.25
11	305	5.1	210	4.0	120	2.8	3.9	3.25
12	310	5.1	210	4.0	115	2.9	3.3	3.2
13	295	5.1	220	4.0	115	2.9	3.7	3.35
14	290	5.3	215	3.9	115	2.8	2.6	3.3
15	285	5.2	220	3.8	115	2.6	2.8	3.35
16	270	5.1	235	3.5	120	2.3	3.1	3.3
17	250	5.0	235	3.1	125	1.9	2.6	3.3
18	240	4.7					2.5	3.25
19	235	4.6					2.2	3.15
20	245	3.8					2.1	3.15
21	255	3.2					2.0	3.05
22	280	2.8						2.95
23	290	2.6					2.2	2.85

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

Table 50

Wakkanai, Japan (45.4°N, 141.7°E) March 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.9					2.3	2.9
01	270	3.8					2.3	2.9
02	250	3.7					2.3	2.9
03	260	3.6					2.3	3.0
04	240	3.4					2.3	3.0
05	240	3.0					2.3	3.1
06	240	3.8	---	---	---	---	2.0	3.3
07	250	4.8	250	3.5	130	2.1		3.3
08	260	5.3	240	3.7	120	2.4	3.5	3.2
09	280	5.9	240	4.0	120	2.6	3.6	3.3
10	280	6.4	230	4.1	120	2.7	3.6	3.2
11	280	6.4	220	4.2	120	2.8		3.3
12	280	6.5	230	4.2	120	2.9		3.25
13	280	6.3	230	4.1	110	2.8		3.3
14	280	6.1	230	4.0	120	2.7		3.3
15	270	5.9	240	3.7	120	2.5		3.3
16	260	5.7	250	3.5	130	2.3		3.4
17	240	5.4	240	2.6	140	1.9		3.4
18	230	4.7	---	---			2.0	3.2
19	250	4.2					2.3	3.1
20	260	4.0						3.0
21	280	3.8						2.9
22	280	4.0						2.9
23	280	3.9						2.9

Time: 135.0°E.
Sweep: 1.0 Mc to 22.0 Mc in 1 minute.

Table 51

Akita, Japan (39.7°N, 140.1°E) March 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.6					1.8	2.9
01	270	3.8					2.2	2.9
02	250	3.7					2.0	3.0
03	240	3.6					2.3	3.1
04	230	3.2					2.3	3.1
05	250	2.9					2.2	3.0
06	240	3.7			---	---	2.3	3.3
07	240	4.8	240	---	120	2.1		3.4
08	260	5.6	240	3.6	110	2.4		3.4
09	260	5.9	220	4.0	110	2.8	3.5	3.4
10	280	6.7	220	4.1	110	2.8	4.1	3.2
11	280	7.2	220	4.2	110	3.0	4.1	3.2
12	280	7.4	220	4.2	110	3.0	4.0	3.2
13	270	7.4	220	4.2	110	3.0	3.5	3.3
14	270	6.7	220	4.1	110	2.9	3.0	3.3
15	260	6.2	230	3.8	110	2.7	2.3	3.4
16	250	6.0	240	3.5	110	2.4	2.1	3.4
17	230	5.7	240	---	130	1.8	3.1	3.5
18	220	4.7					2.8	3.4
19	240	4.0					2.3	3.05
20	260	3.8					2.2	3.0
21	260	3.6					1.8	2.9
22	290	3.7					2.1	2.8
23	280	3.6					1.9	2.8

Time: 135.0°E.
Sweep: 0.85 Mc to 22.0 Mc in 2 minutes.

Table 52

Tokyo, Japan (35.7°N, 139.5°E) March 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.6					2.0	2.9
01	260	3.7					2.0	3.0
02	240	3.8					2.2	3.1
03	230	3.4					2.5	3.2
04	230	3.0					2.4	3.1
05	250	2.8					2.3	3.0
06	230	3.8			140	1.6	2.5	3.3
07	230	5.2	230	3.1	120	2.0	2.7	3.4
08	250	5.7	230	3.9	110	2.5	3.3	3.4
09	270	6.5	230	4.1	110	2.7	3.6	3.2
10	280	6.9	220	4.2	110	3.0	4.3	3.2
11	290	7.5	210	4.4	110	3.0	4.0	3.15
12	280	8.5	210	4.4	110	3.1	3.9	3.15
13	270	9.0	220	4.3	110	3.0	3.6	3.2
14	260	7.5	220	4.1	110	3.0	3.5	3.3
15	260	6.5	230	4.0	120	2.8	3.5	3.3
16	250	6.4	220	3.5	120	2.4	3.3	3.4
17	230	6.2	230	---	120	1.8	3.0	3.5
18	220	5.0					2.8	3.4
19	230	4.0					2.5	3.2
20	260	3.6					2.4	3.0
21	260	3.6					2.3	3.0
22	270	3.6					1.8	2.9
23	280	3.6					1.8	2.9

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

Table 53

Yamagawa, Japan (31.2 N, 130.6 E) March 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	3.2						2.8
01	300	3.2						2.9
02	280	3.4						3.0
03	250	3.3						3.2
04	250	2.9						3.1
05	280	2.6						3.0
06	300	2.7						3.0
07	250	4.8	---	---	150	1.8		3.3
08	260	5.9	250	---	120	2.3		3.3
09	280	6.3	250	4.0	120	2.7	3.2	3.2
10	300	6.5	240	4.3	110	2.9	4.0	3.1
11	320	7.3	250	4.5	110	3.0	3.8	3.0
12	320	8.8	240	4.5	110	3.2	4.2	3.0
13	290	10.1	240	4.4	110	3.2	4.2	3.2
14	280	9.4	250	4.3	110	3.0	4.0	3.3
15	290	8.2	250	4.2	110	3.0	4.0	3.3
16	270	7.4	250	3.9	110	2.7	3.4	3.4
17	250	6.6	250	3.5	120	2.4	3.2	3.4
18	250	5.8	---	---	140	1.8	2.6	3.4
19	240	4.6					2.2	3.2
20	250	3.6					2.2	3.1
21	300	3.2						2.8
22	310	3.2					1.8	2.9
23	320	3.2						2.8

Time: 135.0°E.
Sweep: 0.8 Mc to 20.0 Mc in 15 minutes, manual operation.

Table 54 *

Singapore, British Malaya (1.3°N, 103.8°E) March 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	225	5.4					2.2	3.3
01	245	4.6					2.4	3.0
02	255	3.9					2.0	3.1
03	250	3.4					2.3	3.2
04	240	2.5					2.7	3.3
05	245	2.0					2.9	3.3
06	260	2.6				E	2.9	3.1
07	250	6.0	235	(3.6)	125	2.1	3.1	3.3
08	290	6.6	225	4.1	120	2.7	5.0	3.0
09	335	7.5	215	4.3	115	3.0	4.3	2.5
10	390	8.2	210	4.3	110	3.3	4.4	2.3
11	380	8.7	205	4.4	110	3.4	6.3	2.2
12	375	8.6	200	4.5	110	3.4	5.3	2.3
13	365	8.7	205	4.4	110	3.4	6.0	2.4
14	355	8.9	200	4.4	110	3.3	5.4	2.4
15	335	9.1	210	4.3	110	3.1	5.7	2.5
16	310	9.3	225	4.2	115	2.8	5.1	2.6
17	285	9.4	240		125	2.4	5.5	2.7
18	260	9.5			(135)	(1.6)	4.2	2.7
19	265	9.0					4.6	2.8
20	255	9.0					4.3	3.0
21	245	8.2					3.6	3.1
22	230	7.8					2.9	3.2
23	225	7.0					2.7	3.2

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

Table 55

Buenos Aires, Argentina (34.5°S, 58.5°W) March 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.8						3.0
01	300	3.8						3.0
02	280	3.6						3.1
03	250	3.8						3.4
04	250	3.7					3.4	3.4
05	250	2.9						3.4
06	230	4.0	---	---	---	---	1.5	3.5
07	220	5.5	220	---	---	---	2.8	3.6
08	250	5.8	220	---	110	2.8	3.7	3.5
09	270	6.1	210	---	100	3.0	4.2	3.4
10	290	6.9	200	---	100	3.2	4.2	3.2
11	300	7.9	200	4.4	110	3.2	4.5	3.0
12	300	9.0	200	4.4	---	---	4.8	3.3
13	290	9.8	200	4.4	---	---	4.5	3.3
14	280	10.5	210	---	---	---	4.9	3.4
15	260	10.2	220	---	---	---	4.4	3.4
16	240	10.2	220	---			4.0	3.5
17	220	9.9	---	---			4.0	3.5
18	220	8.0					3.9	3.5
19	(220)	(7.2)					3.0	(3.4)
20	220	5.8						3.3
21	280	4.7					4.0	3.1
22	300	4.5						3.0
23	300	4.0						3.0

Time: 60.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 56

Christchurch, New Zealand (43.6°S, 172.8°E) March 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.1					2.5	3.0
01	280	2.9					2.2	3.0
02	280	2.8					2.2	3.0
03	270	2.7					2.0	3.1
04	260	2.4					2.4	3.1
05	270	2.0				---	2.5	3.1
06	260	2.9	---	---		1.4	2.4	3.2
07	280	4.0	230	3.2		1.8		3.4
08	280	4.4	220	3.6		2.3	2.9	3.4
09	300	4.8	220	3.9		2.6		3.3
10	310	5.2	220	4.1		2.7		3.3
11	300	5.4	220	4.2		2.9		3.3
12	310	5.5	220	4.2		3.0		3.2
13	300	5.6	220	4.2		3.0		3.3
14	300	5.5	220	4.2		2.8		3.3
15	280	5.6	230	3.9		2.7		3.35
16	270	5.2	230	3.7		2.3		3.3
17	260	5.2	240	3.2		2.0		3.35
18	250	5.1	260	---		1.6		3.2
19	240	4.9				---	2.3	3.1
20	260	4.8					3.4	3.0
21	260	4.3					3.4	3.1
22	260	3.9					2.8	3.05
23	270	3.3					2.4	3.0

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

Table 57

Decepcion I. (63.0°S, 60.7°W) March 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.9						(3.2)
01	300	4.0						(3.2)
02	300	3.7						(3.2)
03	300	3.5						(3.2)
04	300	3.7					2.0	(3.2)
05	280	3.6						(3.3)
06	250	3.6					2.2	(3.4)
07	250	4.0					3.0	(3.5)
08	240	4.4					4.0	(3.5)
09	240	5.0					4.2	(3.5)
10	(240)	(5.0)					4.5	(3.6)
11	(230)	(5.2)					4.5	(3.6)
12	(230)	(5.2)					4.5	(3.6)
13	240	5.0					4.5	(3.6)
14	240	4.6					4.5	(3.6)
15	250	4.5					4.2	(3.65)
16	240	4.6					4.5	(3.6)
17	250	4.5					3.8	(3.5)
18	260	4.6					3.2	(3.5)
19	260	5.0					3.6	(3.4)
20	250	4.6					2.5	(3.45)
21	260	4.1					2.3	(3.4)
22	280	4.1						(3.3)
23	280	4.1						(3.25)

Time: 60.0°W.
Sweep: 1.5 Mc to 16.0 Mc in 15 minutes, manual operation.

Table 58 *

Inverness, Scotland (57.4°N, 4.2°W) February 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	305	(1.8)						(2.8)
01	305	(1.7)						(2.8)
02	300	1.7					1.0	2.8
03	315	1.6						2.8
04	305	(1.4)						(2.8)
05	305	1.4						(2.9)
06	(300)	(1.4)						
07	290	(1.8)						(3.0)
08	240	3.0					1.6	3.4
09	235	3.7	215	(2.8)	130	1.8	1.9	3.4
10	260	4.1	210	3.2	125	2.0	2.6	3.4
11	265	4.6	210	3.4	115	2.2	2.4	3.4
12	270	4.7	210	3.5	120	2.3	2.5	3.4
13	260	5.0	210	3.5	120	2.3	2.6	3.5
14	260	4.9	205	3.4	125	2.2	2.6	3.5
15	245	4.8	220	3.1	130	2.0	2.4	3.5
16	240	4.6	235	(2.9)	150	1.8		3.4
17	235	4.0						3.4
18	250	3.7						3.1
19	260	3.1						3.1
20	275	2.4						3.1
21	305	(1.9)						(3.1)
22	325	1.7						2.9
23	335	1.7						(2.8)

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

Table 59 *

Slough, England (51.5°N, 0.6°W) February 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	2.6					2.6	2.9
01	270	2.6					2.5	2.9
02	265	2.6					2.6	2.95
03	265	2.4					2.6	2.9
04	270	2.2					2.6	2.9
05	275	1.7					2.6	2.95
06	280	1.8					2.6	3.0
07	240	2.6					2.6	3.25
08	230	3.9	210	(2.2)	135	1.8	3.0	3.5
09	240	4.6	215	3.1	125	2.1	3.4	3.5
10	260	4.9	225	3.5	120	2.4	3.6	3.45
11	265	5.4	215	3.7	120	2.5	3.8	3.4
12	265	5.3	220	3.7	120	2.6	3.8	3.45
13	260	5.4	215	3.7	120	2.6	3.6	3.4
14	255	5.3	210	3.5	120	2.5	3.4	3.5
15	245	5.2	225	3.4	125	2.3	3.4	3.45
16	235	5.1	(230)	(3.1)	130	2.0	2.6	3.5
17	225	4.5			140	1.7	2.6	3.35
18	240	4.0					2.4	3.1
19	245	3.8					2.4	3.15
20	250	3.1					2.3	3.1
21	280	2.6					2.3	2.95
22	285	2.6					2.4	2.95
23	290	2.6					2.3	2.9

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

Table 60

Delhi, India (28.6°N, 77.1°E) February 1954

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	2.8						3.15
01	290	2.4						3.15
02	---	---						3.15
03	---	---						
04	280	2.7						3.35
05	260	2.7						3.45
06	240	2.9						3.45
07	240	4.8						3.65
08	240	5.5						3.6
09	240	6.3						3.55
10	240	6.5						3.6
11	240	6.9						3.55
12	240	6.4						3.55
13	240	7.4						3.55
14	240	>7.0						3.55
15	240	6.5						3.6
16	240	6.1						3.6
17	240	5.9						3.6
18	240	5.3						3.7
19	240	4.1						3.6
20	240	3.6						3.55
21	240	3.2						3.6
22	260	2.7						3.35
23	280	2.6						3.2

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 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) February 1954

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06								
07	270	4.9						3.3
08:30	300	6.6						3.1
09	300	7.0						3.05
10	330	8.1						2.95
11	330	9.0						2.9
12	360	9.8						2.85
13	360	10.0						2.8
14	360	10.2						2.8
15	360	10.4						2.75
16	360	10.9						2.75
17	360	10.8						2.8
18	330	10.2						2.9
19	330	9.0						2.95
20	300	6.9						3.15
21	300	6.3						3.15
22	270	5.4						3.25
23								

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 62 *

Khartoum, Sudan (15.6°N, 32.6°E) February 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	4.7						(2.6)
01	290	4.6						2.8
02	260	4.7						(3.0)
03	220	3.7						(3.4)
04	220	2.9						(3.5)
05	(230)	(2.1)					3.1	
06	(260)	2.5						
07	235	5.5			145	2.3	3.1	3.0
08	(280)	6.7	210	(4.2)	(125)	2.6	3.1	3.0
09	300	7.6	205	4.2	(115)	2.9	3.3	3.0
10	310	8.3	200	4.3	(115)	(3.2)	3.6	2.8
11	325	9.0	200	4.3	(110)	(3.3)	3.8	2.7
12	320	9.1	205	4.4			3.4	2.7
13	315	9.4	210	4.3			3.4	2.7
14	300	9.6	205	4.3	(115)	(3.1)	3.6	2.8
15	290	10.0	210	4.2	115	(2.9)	3.4	2.9
16	275	10.1	225	4.2	(125)	(2.7)	3.4	3.0
17	245	10.0			(130)		4.0	3.1
18	235	9.8					3.1	3.1
19	230	9.6					3.1	3.1
20	225	8.7					3.1	3.0
21	230	(7.8)					3.1	
22	250	(6.4)					3.1	
23	280	5.8						(2.8)

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

Table 63

Madras, India (13.0°N, 80.2°E) February 1954

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	300	4.2						3.0
07	340	6.0						2.85
08	390	7.0						2.7
09	420	8.0						2.55
10	420	8.0						2.55
11	420	7.5						2.5
12	420	7.7						2.5
13	420	8.0						2.5
14	420	8.2						2.45
15	450	8.2						2.4
16	420	8.6						2.45
17	420	>8.5						2.5
18	420	>8.4						2.6
19	390	7.4						2.7
20	360	7.0						2.75
21	360	6.2						2.85
22	330	6.0						2.95
23								

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 64

Tiruchy, India (10.8°N, 78.8°E) February 1954

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	380	3.8						2.75
07	420	6.0						2.55
08	440	6.8						2.45
09	480	6.9						2.3
10	510	7.0						2.25
11	510	6.9						2.2
12	540	7.0						2.15
13	510	7.3						2.2
14	540	7.7						2.2
15	510	8.1						2.25
16	480	8.2						2.3
17	480	8.4						2.35
18	450	8.4						2.45
19	420	7.6						2.45
20	420	6.6						2.5
21	420	6.4						2.55
22								
23								

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 65 *

Singapore, British Malaya (1.3°N, 103.8°E) February 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	215	3.7						3.3
01	255	3.1					1.8	2.9
02	265	2.9					1.8	2.9
03	265	2.6					1.9	3.0
04	270	2.5					2.1	3.1
05	270	2.3					2.3	3.0
06	270	2.4				E	2.4	3.1
07	245	5.3			125	1.9	3.1	3.3
08	280	6.5	225	4.0	120	2.6	4.6	3.1
09	330	6.8	220	4.2	115	2.9	4.9	2.7
10	390	7.6	210	4.3	110	3.2	4.7	2.4
11	400	8.2	205	4.3	110	3.3	5.8	2.2
12	395	8.2	200	4.4	110	3.4	5.2	2.2
13	390	8.4	205	4.4	110	3.4	5.2	2.2
14	365	8.4	200	4.3	110	3.3	5.4	2.2
15	355	8.6	205	4.2	110	3.1	5.4	2.4
16	325	8.7	215	4.2	115	2.8	4.7	2.5
17	(280)	8.6	230		120	2.4	4.1	2.5
18	255	8.4			145	1.6	3.2	2.6
19	280	8.2					3.2	2.7
20	285	7.6					3.0	2.8
21	270	7.2					3.0	2.9
22	245	7.4					2.9	3.2
23	215	6.8					1.6	3.5

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

Table 66 *

Falkland Is. (51.7°S, 57.8°W) February 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	4.8					3.6	2.8
01	295	4.5					4.2	(2.8)
02	290	4.4					3.6	(2.8)
03	280	4.2					3.4	2.9
04	275	3.9					3.2	(2.8)
05	260	4.0	250		160	(1.4)	2.2	2.9
06	265	4.6	255		130	(1.8)	2.6	3.1
07	285	4.8	240	(3.6)	115	2.3	3.8	3.2
08	315	5.0	240	3.9	110	2.6	4.3	3.1
09	325	5.4	240	4.0	105	2.8	5.4	3.2
10	320	5.6	---	4.1	105	3.0	5.8	3.1
11	320	5.4	---	4.2	105	3.0	6.0	3.1
12	330	5.8	(225)	4.2	105	3.1	6.3	3.0
13	340	5.7	235	4.2	105	3.1	5.7	3.1
14	300	5.5	240	4.2	105	3.0	5.4	3.1
15	305	5.6	235	4.1	105	2.9	5.5	3.2
16	300	5.6	235	3.9	105	2.6	5.7	3.2
17	(285)	5.6	230	3.8	110	2.4	5.1	3.3
18	270	5.9		(3.4)	120	2.0	4.5	3.3
19	270	6.0					3.4	3.2
20	270	6.1					4.7	3.1
21	275	5.7					5.0	3.0
22	275	5.4					4.2	2.9
23	285	5.1					4.4	2.9

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

Table 67 *

Port Lockroy (64.8°S, 63.5°W) February 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	265	5.0						(2.9)
01	270	4.6					2.0	2.9
02	270	4.4					2.4	(2.8)
03	270	3.7					2.0	2.8
04	285	3.6					2.1	2.9
05	280	3.7	(260)	(2.7)	120	1.5	2.9	2.8
06	315	4.3	250	(3.1)	105	1.8	3.5	2.9
07	310	4.2	235	3.3	100	2.0	3.6	3.0
08	340	4.4	(235)	3.6	100	2.3	3.6	(3.1)
09	345	4.3	230	3.7	100	2.5	4.5	(3.0)
10	340	4.4	215	3.7	100	2.6	4.9	(3.2)
11	320	4.5	230	3.9	100	2.7	4.7	(3.2)
12	320	4.5	(225)	4.0	100	2.7	5.2	3.3
13	335	4.6	(225)	4.0	100	2.8	5.0	3.1
14	310	4.6	225	4.0	100	2.7	5.2	3.2
15	310	4.7	225	3.9	100	2.6	3.4	3.2
16	305	4.8	235	3.8	100	2.5	3.7	3.2
17	310	4.9	240	(3.7)	105	2.5	3.6	3.1
18	290	4.9	(250)		115	2.2	4.0	3.1
19	280	5.1	(245)		110	1.8	4.0	3.0
20	260	5.4			(130)	(1.6)	2.4	3.0
21	265	5.8						2.9
22	255	5.8						3.0
23	255	5.6						(2.9)

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

Table 68 *

Falkland Is. (51.7°S, 57.8°W) January 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	295	5.3					3.3	(2.8)
01	280	5.2					3.2	(2.9)
02	270	5.0					3.1	(2.9)
03	260	4.5					2.7	
04	270	4.5	260		150	1.3	1.4	2.9
05	275	4.9	235	(3.2)	135	1.8	2.5	3.2
06	305	4.8	245	3.5	115	2.3	3.4	3.0
07	340	4.8		3.8	110	2.6	5.0	2.9
08	325	5.3		(3.9)	105	2.8	5.7	3.0
09	(350)	5.5		4.1	105	3.0	6.2	3.0
10	(365)	5.7	(225)	4.2	105	3.1	6.8	(2.9)
11	(345)	6.0	220	4.3	105	3.2	6.2	2.9
12	325	5.9	215	4.3	105	3.2	6.0	3.1
13	330	5.8	225	4.2	105	3.2	6.0	3.1
14	340	5.6	220	4.2	105	3.1	5.4	3.1
15	350	5.2	220	4.2	105	3.0	5.9	3.1
16	345	5.1	225	4.0	105	2.8	5.8	3.0
17	305	5.6	220	3.8	110	2.5	6.0	3.2
18	280	6.2	235	3.5	120	2.2	5.6	3.2
19	260	6.1	235				4.5	3.2
20	250	5.4					4.2	3.1
21	290	5.4					4.3	2.9
22	285	5.5					3.3	2.9
23	290	5.4					3.1	2.9

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

Table 69 *

Port Lockroy (64.8°S, 63.5°W) January 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	6.6					1.4	2.9
01	260	6.2					1.9	2.9
02	260	6.0					1.8	(3.0)
03	270	5.9			(125)	(1.4)	1.9	(2.9)
04	280	6.0	(250)	(2.8)	115	1.6	2.4	(3.0)
05	290	5.6	245	3.2	105	1.9	3.4	2.9
06	310	5.0	240	3.4	100	2.1	3.8	2.9
07	340	4.8	235	3.6	100	2.4	4.8	3.0
08	335	4.8	(225)	(3.7)	100	2.6	5.0	(2.9)
09	(345)	4.8	(220)	(3.9)	100	2.8	6.2	
10	370	4.8	(220)	4.0	100	2.9	5.0	(2.9)
11	350	4.9	(215)	(4.1)	100	2.9	5.8	(3.1)
12	335	5.0	(220)	4.1	100	3.0	5.7	(3.2)
13	365	4.6	215	4.1	100	2.9	5.0	(3.1)
14	(360)	4.6	(215)	4.1	100	2.9	6.3	
15	355	4.8	(220)	(4.0)	100	2.9	5.7	(3.1)
16	345	4.8	(220)	(3.9)	100	2.8	6.9	(3.1)
17	(325)	4.9	(225)	(3.8)	100	2.5	6.0	3.0
18	305	5.1	(235)	(3.7)	100	2.4	5.6	3.0
19	280	5.4	(230)		100	2.1	3.8	3.1
20	260	5.8			110	1.8	3.7	3.1
21	265	5.8			(120)	(1.6)	3.0	3.0
22	260	6.2					2.5	3.0
23	270	6.4					1.8	2.9

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

Table 70 *

Ibadan, Nigeria (7.4°N, 4.0°E) November 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	---						
01	259	>6.0						
02	252	(5.0)					1.2	
03	243	4.2						
04	235	2.8						
05	238	>2.0						
06	249	4.7			129	1.7		
07	240	6.8			113	2.5	4.8	
08	(302)	7.7	221		110	3.0	5.3	
09	326	7.0	208	4.3	109	3.2	9.0	
10	358	6.7	200	4.4	106	3.3	10.4	
11	359	6.6	199	4.4	106	3.4	10.3	
12	364	6.8	196	4.4	105	3.4	10.2	
13	362	7.2	196	4.4	106	3.4	10.2	
14	332	7.5	203	(4.3)	106	3.2	10.0	
15	(318)	8.3	(219)		107	(3.0)	6.6	
16	(259)	8.5			110	(2.5)	5.6	
17	254	8.2			118	1.8	4.8	
18	283	7.7					2.2	
19	322	7.2					1.9	
20	306	---						
21	(262)	---						
22	238	(7.2)						
23	(236)	(6.7)						

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

Table 71

Townsville, Australia (19.3°S, 146.8°E) October 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	(4.4)					1.9	(3.2)
01	230	4.0						3.4
02	220	3.4						3.4
03	250	3.0					1.4	3.0
04	260	3.1						3.1
05	260	3.0						3.1
06	240	4.0			140	1.4		3.4
07	250	5.4	240	3.5	100	2.3	3.7	3.3
08	290	6.5	230	4.0	120	2.8	4.5	3.3
09	290	6.5	220	4.3	120	3.0	4.5	3.1
10	280	7.6	210	4.3	120	3.2	5.0	3.2
11	290	7.4	200	4.4	120	3.3	4.6	3.1
12	290	7.8	200	4.4	110	3.3	4.5	3.2
13	300	7.6	200	4.3	120	3.3	4.4	3.2
14	290	6.7	200	4.3	120	3.3	4.8	3.3
15	280	6.7	210	4.2	120	3.0	4.5	3.2
16	270	6.5	230	4.0	120	2.8	4.4	3.2
17	250	6.8	230	---	110	2.3	4.2	3.4
18	240	6.5			---	1.6	3.1	3.3
19	250	5.0					3.2	---
20	270	(4.4)					2.4	(3.1)
21	270	(4.4)						(2.95)
22	280	4.4					2.6	(3.0)
23	280	4.5					2.5	(3.1)

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

Table 72

Canberra, Australia (35.3°S, 149.0°E) October 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	3.8					2.7	3.0
01	---	3.6					3.0	3.0
02	---	3.6					2.7	3.1
03	(220)	3.2					2.9	3.1
04	---	(2.9)					3.0	3.0
05	---	2.9					2.8	3.0
06	240	3.9			---	1.6	3.3	3.2
07	250	4.3	230	3.6	100	2.0	3.3	3.2
08	320	4.9	220	4.0	100	2.7	3.3	3.2
09	320	5.2	210	4.1	100	3.0	3.3	3.2
10	300	5.6	200	4.2	100	3.1	3.4	3.2
11	320	5.8	195	4.2	100	3.2	3.5	3.2
12	295	6.0	190	4.3	100	3.3	3.4	3.2
13	320	5.8	190	4.2	100	3.2	3.2	3.1
14	290	6.0	200	4.2	100	3.1	3.4	3.2
15	290	5.6	210	4.1	100	3.0	3.4	3.2
16	280	5.4	220	3.9	100	2.7	3.2	3.2
17	255	5.4	230	(3.5)	110	1.9	2.8	3.2
18	240	5.4					2.6	3.2
19	(230)	5.4					2.6	3.1
20	(235)	4.7					2.6	3.05
21	(240)	4.4					2.7	3.0
22	---	4.1					2.9	3.0
23	---	4.0					2.7	3.0

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

TABLE 73

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

Form adopted June 1946

IONOSPHERIC DATA

h'F2 (Characteristic), Km (Unit), August (Month), 1954

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Scaled by E.J.W., J.W.P., J.J.S.

Lat 38.7° N, Long 77.1° W

75° W Mean Time

Calculated by E.J.W., J.W.P., J.J.S.

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	[illegible]	(240)H	(270)S	—	S	(280)S	G	430	380	470	470	450	[480]S	500	[520]S	540	400	310	300	250	250	270	280	(310)S
2	300	(300)S	[240]A	280	270	(270)S	(260)L	340	G	330	400	350	360	[360]A	370	410	370	310	290	[260]A	230	(270)S	260	(270)S
3	230	(240)S	S	—	280	230H	240	280	340H	420	320	310	320	400	360	480	400	300	290	(240)A	230	240	240	(300)S
4	250S	S	S	—	(320)S	[280]S	G	340	350	360	G	420	440H	350	400	650	350	300	300	260	230	230	(280)S	(300)S
5	240S	300S	S	S	260	260	300	330	330	300	320	360	330	380	G	340	370	330	290	260	240	240	(260)S	250
6	[260]S	270S	240	S	(290)S	S	L	470	340	430	450	420H	410	380	G	G	460	330H	340	300	240	(250)S	260	290
7	[illegible]	[illegible]	[illegible]	—	S	250	L	430	440	450	[410]A	[340]A	G	G	G	440	470	350	[310]A	260	240	240	(270)A	[280]A
8	230	300	270	(320)	[310]A	(290)S	(270)A	L	A	330	340	350	430	460	360	320	480	350	300	250	230	230	250	260
9	230	280	280	280	280	270	[300]L	320	300	330	340	340	330	370	350	340	360	300	(280)A	250	260	220	250	270
10	270	270	S	S	A	A	A	300	440	330	400	350	380	G	400	(460)S	420	340	280	240	250	240	280	250
11	260	(240)S	(230)S	S	S	S	(230)L	(240)L	(450)S	360	400	400	G	G	(420)S	420H	[400]S	320	300	(240)A	(250)A	(250)A	(270)A	[270]A
12	[illegible]	230S	240S	(300)S	S	A	250	G	360	340	[340]A	330	[370]A	410	420	390	380	340	300	[260]A	(220)A	250	280	280
13	230	230	250	[illegible]	270	[270]A	270	290	280	280	350	350	360H	430	340	380	[340]A	310	290	250	250	230	A	A
14	230	(240)S	250	L 9A	(320)S	280	(270)L	330	300	270	340	330	370	340	[400]L	410	320	310	290	250	230	230	240	260
15	240	230S	(240)S	(250)S	S	S	L	300	330	290	300	450	390	[380]S	360	370	330	310	290	250	240	240	270	270
16	270	290	(290)S	S	S	S	L	320H	410H	330	370	460	440	S	G	440	[450]S	410	310	260	220	(270)S	[300]A	A
17	270	290	290	300	S	S	290	340	320	290	320	540	440	380	420	340	310	300	270	230	240	250	280	260
18	250	(320)S	240	(270)S	300	(270)S	(290)L	370H	420	360	380	(470)S	700	350	390	550	350	330	300	(250)A	(250)A	(250)S	[250]S	(250)S
19	(250)S	(300)S	S	S	(260)S	(250)S	250	(240)L	290	320	320	350H	410H	400	390	[350]S	310	300H	270	250	230	220	240	250
20	270	[280]A	[290]A	(290)S	A	A	250	290	360	310H	350	360	400	380	310	340	350	330	280	(290)A	260	260	290	(280)A
21	260	280	(330)S	330	S	S	250	410	A	A	510	390	450	440	[430]S	370	410	330	280	250	290	280	290	260
22	250	260	(300)S	270	S	S	L	A	370	290	330	340	340	370	360	310	350	330	280	290	250	280	290	290
23	260	300	A	S	S	S	(290)L	260	270	310	350H	350	360	400H	360	320	370	320	290	250	220	240	290	250
24	290	290	(300)S	[300]S	(310)S	(280)S	[320]L	(350)L	300	480	550	640	430	520	520	450	390	300	260	250	250	290	220	S
25	S	S	S	S	S	S	290	[280]L	320	290	320	290	380	430	380	340	340	330	290	290	220	220	(290)S	(260)S
26	270	290	290	(270)S	310	280	230	280	300	300	330	330	380	370	340	350	390	350	280	290	290	270	260	270
27	290	280	[illegible]	[illegible]	(300)S	[260]S	220	250H	300H	270	320	310H	350	350	320	320	310H	260	260	230	290	220	300	290
28	[illegible]	310S	(270)S	290	(300)S	[260]S	230	270	390	330	290	370	360	360	370	350	370	330	260	290	250	290	260	250
29	290	[illegible]	(290)S	310	S	S	L	380	290	300	440	460	400	360	460	370	370	300	290	230	230	270	250	280
30	280	290S	(300)S	320	S	S	360	270	350	340	370	G	420	430	360	370	410	320	270	290	290	260	(290)A	280
31	280	280	270	S	S	S	230	300	300	330H	300H	320	420	360	360	310	330	300	250	290	(290)A	250	(250)S	260
Median	280	(290)	(290)	300	(300)	(290)	270	320	350	330	350	360	400	380	390	380	370	320	290	250	290	290	260	270
Count	30	27	29	18	15	16	27	29	29	30	31	31	31	30	31	31	31	31	31	31	31	31	30	28

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U.S. GOVERNMENT PRINTING OFFICE 1946 O - 702519

TABLE 74

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

Form adopted June 1946

IONOSPHERIC DATA

foF2 (Characteristic), Mc (Unit), August (Month), 1954

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

Scaled by: E.J.W., J.W.P., J.J.S.

Calculated by: E.J.W., J.W.P., J.J.S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.4	(2.1)$^{J}_{S}$	2.0	(1.9)$^{J}_{S}$	[2.0]^{S}	(2.1)$^{J}_{S}$	<3.2^{G}	(3.9)^{S}	4.2	4.3	4.6	4.5	(4.7)$^{J}_{S}$	4.4	[4.3]^{S}	4.2	4.3	4.6	4.5	4.3	(3.6)^{S}	(3.5)^{S}	3.1$^{F}_{S}$	3.0
2	2.9	2.9	2.8	2.8	(2.5)^{S}	2.9	3.6	4.1	<3.8^{G}	4.9	4.6	4.9	4.8	[4.8]^{A}	4.7	(4.5)$^{S}_{P}$	4.5	4.5	4.5	[4.6]^{A}	4.4	3.8	(3.1)^{S}	2.8
3	2.3	(2.0)^{S}	(1.8)$^{F}_{S}$	1.9	(2.1)^{P}	2.6^{H}	3.9	4.4	(4.2)$^{S}_{H}$	4.6	5.1	5.5	5.4	4.7	4.4	4.5	4.7	5.5	5.2	5.4	5.7	4.0	3.2	(2.2)$^{P}_{S}$
4	(2.3)$^{P}_{S}$	S	S	S	(2.0)$^{P}_{S}$	[2.2]^{S}	<3.0^{G}	4.0	4.2	4.5	<4.1^{G}	4.7	4.7^{H}	5.0	4.6	4.2	4.8	4.8	4.6	4.7	5.0	4.3	3.4	(3.0)$^{P}_{S}$
5	3.0	(2.5)$^{J}_{S}$	[2.4]^{S}	(2.3)^{S}	(2.3)$^{P}_{S}$	(2.4)$^{J}_{S}$	3.8	4.4	4.9	5.4	5.3	5.1	5.3	4.8	<4.2^{G}	(4.7)$^{S}_{P}$	4.9	4.9	5.8	6.4	5.8	5.0	3.9	3.3
6	[2.8]^{S}	(2.3)$^{J}_{S}$	(2.2)$^{S}_{P}$	[2.1]^{S}	(2.0)^{S}	[2.2]^{S}	3.1	3.6	4.3	4.4	4.5	4.7^{H}	4.5	4.2	<4.1^{G}	<4.0^{G}	4.3	4.7^{H}	4.3	4.4	4.8	3.9	2.7	2.2
7	(2.0)$^{J}_{S}$	[2.0]$^{A}_{S}$	2.0	(1.9)$^{J}_{S}$	[2.1]$^{A}_{S}$	2.3	3.5	(3.7)^{S}	4.2	4.1	[4.6]^{A}	[4.4]^{A}	<4.1^{G}	<4.2^{G}	<4.0^{G}	4.3	4.3	4.5	[4.6]^{A}	4.7	4.7	3.7	2.8	(2.6)^{A}
8	2.4	2.2	(2.1)^{S}	(1.9)^{S}	(2.0)$^{J}_{A}$	2.2	3.2$^{F}_{H}$	3.7	[4.4]^{A}	5.2	5.0	4.8	4.7	4.5	4.8	4.7	4.2	4.5	4.9	5.6	5.8	4.3	3.6	2.9
9	(2.4)$^{F}_{S}$	(2.5)^{S}	(2.0)$^{F}_{S}$	(2.1)$^{F}_{S}$	2.2	2.5	3.6	4.5	4.2	4.7	5.0^{H}	5.1	5.2	5.0	5.2	4.8	4.4	4.9	5.2	5.4	(6.0)$^{S}_{P}$	4.9	4.1	3.5
10	(3.3)$^{F}_{S}$	2.7^{F}	(2.0)$^{J}_{S}$	(1.5)$^{J}_{S}$	A	A	(3.7)^{A}	4.1	4.2	4.6	4.6	4.8	4.7	<4.2^{G}	4.6	(4.4)$^{P}_{S}$	4.4	4.5	4.9	4.8	5.1	4.3	3.4	3.1
11	2.7	2.2	2.2	(1.8)$^{J}_{S}$	[2.0]$^{A}_{S}$	(2.1)$^{J}_{S}$	3.5	(4.2)$^{P}_{H}$	(4.1)^{S}	4.4	4.5	4.6	<4.2^{G}	<4.1^{G}	(4.3)$^{P}_{S}$	4.5^{H}	[4.4]$^{J}_{H}$	4.7	4.6	5.0	5.0$^{J}_{S}$	4.0	(3.2)$^{J}_{A}$	[3.0]^{A}
12	(2.7)$^{P}_{S}$	(2.6)$^{P}_{F}$	(2.2)$^{F}_{S}$	(2.0)$^{F}_{S}$	(1.8)$^{P}_{S}$	[1.8]^{A}	3.7	<3.8^{G}	4.2	4.6	(4.7)^{A}	4.7	[4.7]^{A}	4.7	4.7	4.6	4.5	4.6	4.8	[5.3]^{A}	(5.8)$^{S}_{P}$	(4.2)^{S}	3.7	3.5
13	3.1	2.9^{F}	2.8^{F}	2.6^{F}	2.5	(2.7)^{A}	3.5	4.3	4.7	4.6	4.9	4.9	4.8^{H}	4.7	4.9	4.9	[4.7]^{A}	4.9	4.7	4.9	5.0	4.7	[4.0]^{A}	(3.4)$^{P}_{S}$
14	3.7	2.8	(2.5)^{S}	[1.9]^{A}	1.8	2.1	3.6	4.3	5.0	5.3	4.8	4.9	4.8	4.8	4.4	4.8	5.0	5.0	5.2	5.7	5.6	4.5	3.8	3.4
15	2.9	(2.4)^{S}	(2.1)$^{P}_{S}$	1.8	[1.8]^{S}	(1.7)^{S}	3.3	4.3	4.7	5.2	5.0	4.9	4.8	4.6	5.0	4.7	5.1	4.4	4.9	5.5	5.0	4.2	3.7	3.4
16	3.1	2.7	(2.1)^{S}	(2.0)$^{J}_{S}$	1.9	(2.0)^{S}	(3.1)^{S}	3.8^{H}	4.4^{H}	5.2	4.7	4.4	4.6	5	<4.2^{G}	(4.4)$^{P}_{S}$	(4.4)$^{J}_{S}$	(4.0)^{S}	4.3	4.7	4.4	3.1	[2.6]^{A}	A^{S}
17	2.4	(2.3)^{S}	2.1	(2.0)^{S}	(1.7)$^{J}_{S}$	(2.0)$^{J}_{S}$	3.5	4.1	4.4	4.9	5.0	4.4	4.8	4.9	4.7	4.8	4.7	4.7	4.6	4.4	(4.4)^{S}	3.6	3.0	2.8
18	2.4	(2.5)^{S}	(2.4)^{S}	2.2	2.0	(1.7)^{S}	3.2	(3.9)^{H}	4.1	4.4	4.5	(4.6)$^{P}_{S}$	4.6	(4.8)$^{P}_{S}$	4.3	4.3	4.4	4.5	4.6	(5.0)^{S}	(4.6)$^{J}_{A}$	4.0	(3.1)^{S}	(3.2)$^{P}_{S}$
19	(2.7)$^{J}_{S}$	(2.2)^{S}	2.2$^{J}_{S}$	2.0^{S}	2.1	(2.0)$^{P}_{S}$	3.1	3.7	4.7^{H}	4.7	4.9	4.6^{H}	4.9^{H}	4.8	4.7	[4.8]^{S}	(4.8)^{S}	4.6^{H}	4.5	4.8	5.0	3.9	3.4	2.9
20	2.7	[2.5]^{A}	(2.3)^{A}	2.0	(1.9)$^{J}_{A}$	[1.9]^{A}	3.3	4.5	4.6	5.4^{H}	4.9	4.9	4.7	4.7	5.0	(4.7)^{S}	4.5	4.4	4.5	4.9	4.7	4.3	4.1	(3.7)^{A}
21	3.0	2.5	(2.0)^{S}	1.7	(1.6)$^{J}_{S}$	(1.4)$^{J}_{S}$	2.8$^{H}_{F}$	3.5	A	A	4.2	4.7	4.5	4.5	[4.4]^{S}	4.5	4.3	4.2	4.5	4.5	4.8	4.2	3.7	3.2
22	3.3	2.6$^{F}_{S}$	2.3	2.1	1.9	(1.9)^{S}	3.1	[3.6]^{A}	4.4^{H}	4.8	5.0	5.0	5.2	4.8	4.9	4.9	4.5^{H}	4.6	4.8	5.4	4.7	4.4	4.0	3.0
23	2.4	1.9	[1.7]^{A}	(1.5)$^{J}_{S}$	[1.6]^{S}	(1.7)$^{J}_{S}$	3.3	4.3	5.1	4.9	4.5^{H}	5.0	4.8	4.7^{H}	5.2	5.1	4.7	4.9	4.9	5.8	5.8	4.5	3.6	3.2
24	2.6	2.5	(2.0)^{S}	(1.7)$^{J}_{S}$	2.0	2.1	3.3	3.7	4.4	(4.3)$^{P}_{S}$	4.3	4.4	4.6	4.4	4.4)^{P}	4.4	4.4	4.8	4.2	4.2	4.6	4.2	3.5	(1.8)$^{J}_{S}$
25	(1.7)$^{J}_{S}$	(1.7)$^{J}_{S}$	(1.8)^{S}	(1.7)$^{J}_{S}$	(1.8)$^{J}_{S}$	(1.8)$^{J}_{S}$	3.4	4.2	4.6^{H}	(5.1)^{P}	4.8	4.9	4.7	4.7	4.8	4.7	4.7	4.6	4.7	5.7	5.7	(4.4)^{P}	3.5	2.9
26	2.4	2.4	(2.3)^{S}	2.2	2.1	(2.2)^{P}	3.7	(4.0)^{S}	4.5	4.9	5.0	5.0	5.0	4.7	4.7	4.6	4.3	4.5	4.8	5.8	5.4	(4.5)$^{J}_{S}$	3.8	3.3
27	3.0$^{F}_{S}$	2.6	2.2	(2.1)^{P}	1.9	(1.8)$^{J}_{S}$	3.3	(4.3)$^{H}_{S}$	4.8^{H}	5.6	5.0	5.0^{H}	5.0	5.0	5.3	5.2	5.1^{H}	5.0	4.9	(5.2)$^{P}_{S}$	(5.2)$^{P}_{S}$	3.6	3.1	3.1
28	2.8	2.5	2.4^{F}	2.1^{F}	1.9	(1.7)$^{J}_{S}$	3.3	4.2	4.4	5.4	5.4	4.8	4.9	4.8	4.8	4.8	(4.5)^{S}	4.6	(5.1)^{S}	5.0	4.8	4.2	3.7	3.1
29	2.4	2.1	1.9	1.8	(1.6)$^{J}_{S}$	(1.6)$^{J}_{S}$	2.9	3.7	4.4	4.3	4.3	4.5	4.7	4.6	4.5	3.7	4.6	4.5	4.3	4.8	4.3	3.7	3.1	2.7
30	2.6	2.4	2.2	1.9	(1.8)$^{J}_{S}$	(1.8)$^{J}_{S}$	3.7	4.4	4.6	4.7	4.7	<4.2^{G}	4.6	4.7	4.7	4.5	4.2	4.3	(4.1)$^{S}_{P}$	4.2	3.8	3.2	2.8	2.5^{F}
31	2.3	2.4	(2.0)$^{F}_{S}$	(1.6)$^{J}_{S}$	(1.6)$^{J}_{S}$	(1.7)$^{J}_{S}$	3.2	4.7	(5.0)$^{P}_{S}$	(5.4)^{H}	5.1^{H}	4.8	4.8	5.0	5.1	5.2	4.4	4.7	4.6	4.5	4.6	3.8	(3.5)$^{P}_{S}$	3.1
Median	2.7	2.4	(2.2)	(2.0)	(2.0)	(2.0)	3.3	4.1	4.4	4.8	4.8	4.8	4.8	4.8	4.7	4.6	4.5	4.6	4.6	4.9	5.0	4.2	3.5	3.0
Count	31	30	30	30	30	30	31	31	30	30	31	31	31	30	31	31	31	31	31	31	31	31	31	30

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U.S. GOVERNMENT PRINTING OFFICE 1946 O 702519

TABLE 75

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

Form adopted June 1946

IONOSPHERIC DATA

foF2 (Characteristic) . Mc (Unit) August (Month) 1954

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

Scaled by E.J.W., J.W.P., J.J.S.

Calculated by E.J.W., J.W.P., J.J.S.

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			2.0	5		2.9	<3.3 G	4.1	4.6	(4.4) S	4.9	4.7 H	(4.3) S P	[4.4] S	(4.4) S	4.4	4.5	4.6	4.5	3.8	3.7	3.1 F S	3.0	2.8
2				2.6 S	2.5	3.2	3.7	<3.8 G	4.4	4.5	4.8	4.9	A	A	[4.6] S	4.5	4.6	4.5	4.6	4.6	4.1	[3.4] F S	2.9	[2.4] S
3				1.7	2.1	3.6 H	3.8 H	4.2	[4.2] S	5.0 H	5.1	5.3	5.2	5.1	4.6	4.7	5.0	5.2	5.4	(5.6) S H	4.8	3.6	2.5	[2.2] S
4					1.9 J	2.5	<3.2 G	4.0	4.1	<4.1 G	4.5	4.7	5.0	5.0	<4.0 G	4.6	4.6	4.6	4.6	4.8	(4.7) F S	(3.6) F S	3.0 F S	(2.6) F S
5						3.1	4.2	4.8	5.3	5.3	5.2	5.0	(4.9) J S	4.4	4.8	4.5	4.9	5.3	6.0	6.2	5.8	(4.8) S	3.6	2.9
6							<3.3 G	<3.6 G	4.2	4.2	4.7	4.7	4.6	<4.2 G	4.4	(4.4) F	(4.4) P	4.8	4.3	4.8	4.3	3.2	(2.4) S	2.0
7						3.1	3.7	(3.8) H	4.2	4.1	(4.5) J S	4.2	<4.1 G	<4.0 G	<4.1 G	4.2	4.5	[4.4] A	4.4	4.7	4.4	3.1	[2.8] A	<2.4
8						2.7	2.6	[4.1] H	4.6	4.9	5.3	[4.8] A	<4.3 G	4.8	4.9	4.7	4.5	4.8	5.1	5.8	5.0	3.9	3.2	(2.5) F S
9					3.2	3.2	3.7 J S	4.9	4.8	4.8	4.9	5.0	5.1	5.0	5.0	4.7	5.0	4.9	5.2	5.1	5.1	4.5	3.9	3.6
10						3.4	[3.1] H	4.3	4.8	4.4	4.5	4.9	<4.2 G	<4.1 G	<4.0 G	4.4	4.4	4.8	4.9	5.6	4.8	3.7	3.2	3.0
11						2.9	3.7	4.2	4.2	4.7	4.8	<4.6 G	(4.1 G	<4.0 G	(4.3) F S	(4.4) F H	4.4 J S	4.5	4.7	5.2	(4.4) J S	(3.6) J H	[3.2] A	(2.9) J F
12						5.0	4.1	<3.8	4.7	4.6	5.2	4.9	A	4.6	4.7	(4.4) J S	4.5	4.7	[5.6] H	6.6	(4.9) S	4.1	3.6 F	3.5 F
13						3.2	3.1	(4.6) J	4.5 J S	[5.0] A	5.4	4.7	4.7	[4.8] A	4.8	4.9	[4.9] A	4.9	4.7	5.0	4.9	4.9	4.9	(3.8) J S
14					1.7 J S	2.8	(2.6) J S	4.3	5.7 H	5.0	5.2	5.0	4.6	4.6	4.5	4.9	5.1	5.2	5.0	5.7	4.9	4.1	3.4	3.1
15							3.9	4.5	4.9	5	4.8	4.9	4.7	5.0	5.2	4.9	5.2	4.9	5.2	5.3	4.7	4.1	3.5	3.3
16			2.1				3.3	4.0	4.8	5.2	4.2	4.1	4.7	[4.5] S	4.3 S H	(4.2) S	4.2	(4.1) S	4.4	(4.6) S	3.7	3.5	(2.4) S	[2.4] A
17						2.8	3.6 H	4.8	4.9	4.8	4.7	4.9	4.7	4.9	5.0	4.9	4.9	4.6	4.4	4.5	4.2	3.4	2.9	2.5
18						3.8	4.0	3.9	[4.6]	(4.2 F S	[4.6]	[4.6] S	(4.9) F S	(4.5) S	4.3	4.4 J S	4.3	4.6	4.8	(5.5) F S	4.3	(4.0) J	(3.2) S	3.0
19						2.5	3.7 H	4.3	4.1	4.6 H	[4.8] S	4.8 H	4.7	4.8	4.8	(4.7) S	(4.5) F S	(4.4) S	4.4	5.2	4.6	3.4	3.1	2.7
20								4.8	5.0	5.2	4.8	4.8	4.6	5.0	4.8	(4.6) J S	(4.4) S	4.2	4.9	4.8	4.7	4.2	3.6	(3.0) J S
21								3.5	4.0	4.3	4.2	[4.4] S	4.3	4.5	4.4	4.3	4.4	4.4	4.7	4.7	4.1	3.5	3.0	
22								4.0	4.6	4.8 H	5.1	5.2	4.8	4.9	4.9	4.6	4.5	4.7 H	5.0	5.3	4.8	4.2	3.7	2.7
23							<4	4.2	5.0	5.0	5.0	4.9	4.8	5.0	5.4	4.8	4.9	4.8	5.2	6.1	5.2	4.2	3.5	2.7
24							3.5	4.1	(4.2) S	4.4	4.5 H	4.7	[4.5] S	(4.4) J S	[4.4] S	(4.3) S	4.7	4.4	4.1	4.5	4.3	3.9	2.5	(1.7) J S
25						6	3.7	4.2 H	4.8 H	5.2	5.2	4.4	(4.8) J S	4.8	4.9 H	4.7	4.6	4.7	5.0	5.8	5.2	3.7	3.1	2.6
26								4.2	4.6	4.7	5.1	4.8	4.7	4.9 H	4.7	4.5	4.4	4.7	5.3	6.0	4.4	4.2	3.7	3.2
27								4.6 H	(5.0) J	5.2 H	5.0	4.8	5.1	5.4 H	5.2	5.1	5.2 H	5.0	4.9	5.3	5.0	3.5	3.1	3.0
28								4.2	5.0	5.8	5.0	4.7	4.9	4.8	4.5	4.6	4.5	4.9	5.1	5.0	4.5	3.8	(3.4) S	(2.6) S
29							3.5	3.9	4.5	4.2	4.4	4.5	4.7	(4.5) J	4.3	4.5	4.5	4.5	4.6	4.7	(3.9) S	3.5	3.0	2.7
30							3.9	4.1	4.7	4.5	4.7	[4.6]	4.5	4.7	4.5	(4.5) S	4.2	4.3	4.1	4.3	[3.4] C	3.0	2.6	2.4 F S
31							3.8	4.9	5.6	5.5	4.9	4.8	4.7	4.9	5.2	5.0	4.8	4.5	4.5	4.6	4.2	3.5	3.1	2.9
Median	2.5	(2.3)	(2.1)	(1.9)	(1.9)	2.8	3.7	4.2	4.6	4.8	4.8	4.8	4.7	4.8	4.6	4.6	4.5	4.7	4.9	5.2	4.6	3.7	3.2	2.7
Count	29	29	25	26	25	31	31	31	30	30	31	30	29	30	31	31	31	31	31	31	31	30	30	31

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

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U.S. GOVERNMENT PRINTING OFFICE 1946 O - 925519

TABLE 76

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

Form adopted June 1946

IONOSPHERIC DATA

h'F1 (Characteristic), Km (Unit), August (Month), 1954

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: E.J.W., J.W.P., J.J.S.

Calculated by: E.J.W., J.W.P., J.J.S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
1							250^{H}	(220)^{A}	(200)^{A}	[200]^{A}	190	210	200^{H}	200^{H}	210	(200)^{A}	[200]^{A}	190^{H}	230	Q						
2							240	220^{H}	210	200	190	180^{H}	200^{H}	[200]^{A}	190	210	200^{H}	230	A	A						
3							220	240	210	190	230^{H}	190	180^{H}	180^{H}	210	220	220	220^{H}	240	A						
4							230	210	210	200	190^{H}	180^{H}	180^{H}	200	220^{H}	210	210	230^{H}	220							
5							240	230	[220]^{A}	210	190	200	180	180^{H}	200	200^{H}	210^{H}	220	250							
6							240	220	200	200	200^{H}	200^{H}	200	200	230	210^{H}	200^{H}	210^{H}	230	S						
7							220^{H}	220^{H}	[210]^{A}	200	A	A	[200]^{A}	220	230	210	200^{H}	(220)^{A}	A							
8							A	A	A	A	220	200	200	190^{H}	210^{H}	200	200^{H}	210^{H}	240							
9							220	220^{H}	200^{H}	(200)^{A}	190^{H}	200^{H}	200^{H}	200^{H}	190^{H}	210	240	A	A							
10							A	(250)^{A}	A	A	210	[200]^{A}	180^{H}	200	220	210	220	220	220							
11							(240)^{A}	220	210	220	200	190	(200)^{A}	190^{H}	220	210^{H}	210^{H}	210^{H}	220^{H}							
12							A	210	210^{H}	210	A	A	A	(210)^{A}	230	230	A	A	A	A						
13							220^{H}	[230]^{A}	240	[220]^{A}	(200)^{A}	200^{H}	[200]^{A}	200^{H}	[200]^{A}	200	A	A	220							
14							230	A	A	(210)^{A}	210	210^{H}	210	210	220	A	A	(240)^{A}	(230)^{A}							
15							230	(230)^{A}	220	[220]^{A}	210	190	200^{H}	200^{H}	180^{H}	220	220^{H}	210^{H}	230							
16							250	240^{H}	(220)^{A}	(200)^{S}	200	180	180	200^{H}	180^{H}	200^{H}	200^{H}	220^{H}	240							
17							250	220^{H}	210	200^{H}	190	230	210^{H}	180^{H}	200^{H}	210^{H}	210	220	220							
18							230	220^{H}	220	210	200	200	(220)^{H}	190^{H}	230	210^{H}	220^{H}	A	A							
19							S	230	230^{H}	200	190^{H}	170^{H}	180^{H}	190^{H}	200^{H}	[200]^{S}	200	220	220							
20							230	220	210	200^{H}	190^{H}	200^{H}	180^{H}	210	200	200	210	210	240							
21							200	210	A	A	A	190	180^{H}	200^{H}	200	190^{H}	200^{H}	210^{H}	230							
22							230	(240)^{A}	210^{H}	[210]^{A}	210	200	200^{H}	200^{H}	198^{H}	210	220	230	(240)^{A}							
23							240	230	210	200	200^{H}	210^{H}	210^{H}	200	200	240	230	220	(240)^{A}							
24							230	220	200^{H}	200^{H}	180^{H}	240	200	200	200	220	210^{H}	220^{H}	220							
25							240^{H}	200^{H}	200^{H}	200^{H}	180^{H}	180^{H}	180^{H}	190	210	190	220	220	240							
26							220	220	(210)^{A}	200	190^{H}	190	200^{H}	200	200^{H}	210	210	230	230							
27							Q	220	200^{H}	190^{H}	190	180^{H}	200	200	230^{H}	210^{H}	190^{H}	230^{H}	210							
28							Q	230	230^{H}	210^{H}	200	210	210^{H}	180^{H}	190^{H}	230	220	220	240							
29							240	220	230^{H}	200	200^{H}	200	200^{H}	200	200	210	230	230	230							
30							240	230	220	210	200^{H}	190^{H}	190	220	210^{H}	220	220	230	230							
31							Q	220	210	200^{H}	190	200^{H}	200	190	200^{H}	200^{H}	230	230	240							
Median							230	220	210	200	200	200	200	230	200	210	210	220	230							
Count							24	24	27	28	28	29	30	31	31	30	28	27	26							

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U.S. GOVERNMENT PRINTING OFFICE 1946 O 762519

TABLE 77

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

Form adopted June 1946

IONOSPHERIC DATA

foF1 (Characteristic) Mc (Unit) August (Month) 1954

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

Scaled by E.J.W., J.W.P., J.J.S.

Calculated by E.J.W., J.W.P., J.J.S.

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

Sweep 1.0 Mc to 25.0 Mc in .025 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE: 1948 O - 702519

TABLE 78

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

Form accepted June 1946

IONOSPHERIC DATA

h'E (Characteristic), Km (Unit), August (Month), 1954

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: E.J.W., J.W.P., J.J.S.

Calculated by: E.J.W., J.W.P., J.J.S.

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

Sweep 10 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U.S. GOVERNMENT PRINTING OFFICE 1948 O - 702519

TABLE 79

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

Form accepted June 1946

IONOSPHERIC DATA

foE (Characteristic), Mc (Unit), August (Month), 1954

National Bureau of Standards (Institution)

Observed at Washington, D.C.

at 38.7°N, Long 77.1°W

75° W Mean Time

Scaled by: E.J.W., J.W.P., J.J.S.

Calculated by: E.J.W., J.W.P., J.J.S.

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							15	22 H	24	A	A	(31) A	34 H	[32] A	30	30	28	25	20	S						
2							17	23	26	(27) A	(24) A	31	(31) P	A	A	A	30	24	20	S						
3							18	(23) P	A	A	A	A	(32) A	(32) A	30 H	[25] A	28	25	S	S						
4							S	23	(25) P	(24) P	A	A	(34) A	[32] A	32	30	28	25	19							
5							S	(23) P	25	A	A	33	A	A	A	30	28 H	24 H	22 H							
6							S	22	[26] A	27	30	32 H	30	32	31	29	27	23	20	S						
7							17	22	23	(25) S	[27] A	(29) A	32	30	31	29	27	(23) P	18							
8							S	22 H	24	28	27	(30) A	[30] A	30	29	26	27 H	25	(20) S							
9							S	23	A	A	A	A	31 H	[31] A	31	[29] A	(27) A	(24) P	19 H							
10							S	22	(24) A	(28) A	A	A	A	A	A	30	24	25	(19) S							
11							(17) A	(22) A	(25) A	(28) A	(30) A	A	A	A	A	(31) A	A	A	(22) A							
12							A	A	24	27	28 H	(29) P	A	A	(32) A	29	28	25	20 H	A						
13							S	A	A	A	A	A	A	A	A	31	29 H	25 H	(18) A							
14							17	22 H	25	26	30	(31) P	(30) A	(32) A	32	30	28	25	(20) P							
15							18 H	22	25	27	30	(30) P	A	A	31 H	30 H	29 H	24	20							
16							18 H	23 H	25 S	26	28	(28) P	A	A	31 H	30 H	(28) S	(24) S	S							
17							S	21 H	27	29 H	(27) P	31	(31) P	31	30 H	28	26 H	25	19							
18							S	22 H	(26) A	[28] A	(29) A	(30) A	(30) A	[30] A	30 H	(30) H	(28) A	25 H	(18) A							
19							S	A	25 H	27 H	28	30 H	31	31	(31) S	[31] S	(30) S	[25] S	(20) S							
20							S	22 H	26	28	[27] A	30 H	[30] A	31 H	31 H	[28] A	(26) P	25	18							
21							S	22	25 H	28	30	(30) P	A	A	30	29	27	24 H	18							
22							A	21	25	A	A	A	(31) A	32 H	[30] A	29 H	26	22	19							
23							18	21	25	28	30 H	31 H	31 H	31 H	30 H	30	28	24	18							
24							(17) S	20	24 H	(27) P	27	[30] A	32 H	32	30	29 H	27	24	17							
25							(17) S	23	24	(25) P	(28) A	32	32 H	32 H	31 H	[29] A	(27) A	(23) A	(17) S							
26							17	A	A	A	30	31 H	(31) P	32	32	30	27	23	A							
27							S	20	24	28	29	30 H	31 H	32 H	31	30 H	28	[23] A	18 H							
28							S	21	25	27	29	[30] A	31 H	(31) A	[30] A	29 H	(26) S	22	18							
29							S	(22) S	25 H	(28) A	29 H	32 H	31	32 H	30	29	27	22	S							
30							S	A	A	A	A	(31) A	[31] A	31	30	29	26	23 H	S							
31							S	21	26	27	[29] A	(31) A	[33] A	32	30	29	27	22	S							
Median							17	22	25	28	29	(30)	(31)	32	30	29	28	24	19							
Count							12	26	26	23	22	24	23	22	26	30	30	30	25							

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U.S. GOVERNMENT PRINTING OFFICE 1946 O 782519

TABLE 80

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

Form adopted June 1946

IONOSPHERIC DATA

Es (Characteristic), Mc, Km (Unit) August (Month), 1954

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W — 75°W Mean Time

Scaled by: E.J.W., J.W.P., J.J.S.

Calculated by: E.J.W., J.W.P., J.J.S.

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	2.5 100	(2.7) (110)S	(2.8) (100)S	(4.0) (110)S	E	E	4.8 H 110	5.1 110	9.0 H 110	5.8 110	4.7 110	4.8 110	4.0 110	4.8 100	4.8 130	7.8 120	7.6 120	10.7 120	6.7 120	7.0 H 120	7.0 H 120	3.2 120	E	3.3 120
2	(3.0) S (120)	5.6 110	4.0 110	4.2 110	4.2 110	4.3 110	2.0 120	3.4 120	4.2 120	4.2 110	4.3 110	G	G	7.6 H 100	6.4 100	4.9 100	3.7 120	4.3 (110) S	6.8 110	11.0 110	3.2 110	(2.4) S (120)	(2.4) S (110)	(2.3) (110) S
3	E	2.4 100	3.8 (100) S	4.2 110	4.7 110	7.4 H 130	G	4.6 110	7.4 110	4.2 110	4.3 110	4.3 100	3.8 Y 110	3.3 110	3.6 Y 110	3.1 110	3.2 130	3.6 120	2.5 110	5.2 110	1.8 (110) S	4.1 110	2.8 120	E
4	3.0 S 110	E	E	E	E	S	2.4 Y 120	3.7 110	3.8 Y 110	4.1 110	4.5 110	4.2 110	3.3 100	4.0 100	4.9 120	G	G	3.1 130	3.5 120	4.7 110	E	3.0 110	3.1 110	E
5	E	E	E	E	E	E	5.8 100	2.4 Y 110	5.0 110	4.5 110	4.9 110	4.2 110	4.7 110	3.8 110	3.3 110	G	G	3.8 130	3.5 130	3.3 120	5.6 110	(3.0) S (120)	E	E
6	E	(4.5) S 120	(2.8) (110) S	E	(2.3) S 120	(2.4) S 120	3.0 120	3.4 120	4.0 110	G	3.1 120	G	3.9 120	G	4.9 110	G	4.7 Y 110	G	2.5 130	2.7 120	3.3 Y 110	4.3 110	(2.4) S (130)	(3.3) S (100)
7	E	3.9 120	3.0 100	E	4.5 120	2.4 140	3.0 120	3.6 110	7.8 110	5.8 110	7.0 110	5.8 110	4.5 120	5.5 110	4.2 120	3.7 110	4.3 120	6.2 120	8.0 120	6.8 110	4.5 110	3.8 140	5.0 120	4.5 110
8	2.2 110	3.0 110	3.0 110	2.8 110	2.8 130	3.1 110	4.3 120	5.6 110	7.8 110	6.4 110	4.2 110	4.4 110	4.2 110	3.1 120	4.0 110	3.8 110	G	4.3 120	7.0 Y 120	6.6 H 110	3.2 130	2.3 110	E	E
9	E	E	E	E	3.2 120	E	11.0 Y 110 H	3.2 120	3.0 110	4.5 100	2.9 100	2.9 100	G	3.8 110	G	4.6 110	4.3 100	4.2 110	6.0 110	5.8 110	3.7 110	(2.9) S (110)	(3.1) S (110)	4.9 110
10	(5.0) S 110	3.3 110	(5.4) S 110	E	4.0 120	5.0 120	7.0 110	1.9 0 120	4.4 110	4.5 110	4.9 Y 100	4.7 100	4.2 100	3.8 100	4.5 100	G	G	G	3.2 120	3.2 110	3.5 110	2.8 110	4.2 110	3.7 110
11	E	5.0 100	2.1 100	E	3.0 120	E	1.2 0 Y 130	7.6 Y 110	4.8 110	4.5 110	4.9 100	4.7 110	4.3 110	4.6 Y 110	3.3 110	4.2 Y 0	5.2 Y 100 H	4.7 H 110	3.3 Y 120	4.6 120	3.7 120	4.9 110	6.6 Y 110	3.8 110
12	2.9 Y 110	3.6 Y 110 H	E	2.5 130	4.4 Y 120	13.5 Y 110	3.5 120	4.9 Y 120	4.0 110	6.9 H 100	5.2 100	5.6 0 0	7.5 100	7.3 H 100	5.2 100	4.3 130	4.2 120	5.4 120	5.0 110	11.5 110	10 0 110	6.0 100	4.2 100	4.2 100
13	(3.0) S 100	E	2.8 110	2.8 100	3.0 120	5.0 H 100 H	5.0 110	6.6 110	5.1 100	8.4 120	5.9 100	3.0 100	4.9 H 100	4.7 100	5.8 H 100	5.6 H 100	11.3 110	9.0 H 100	4.9 110	E	2.5 100	6.6 100	7.2 110	5.0 110
14	3.7 110	5.0 100	3.3 100	3.2 110	E	3.8 120	4.8 Y 120	4.1 110	5.8 110	5.2 100	3.5 100	G	3.3 110	3.3 110	4.8 120	4.9 120	4.7 120	3.4 120	4.2 110	3.2 110	3.2 110	(3.2) S 110	E	E
15	E	E	E	E	2.4 100	5.0 Y 100	2.4 H 120	4.7 110	4.4 110	5.1 110	4.3 110	4.7 110	3.4 110	4.0 110	3.3 110	4.2 100	G	2.9 130	2.7 140	E	3.7 110	E	E	3.0 110
16	3.0 110	2.7 110	3.0 110	(2.6) S 100	E	E	3.6 H 120	3.0 110	4.3 110	4.5 110	4.1 110	4.9 H 100	3.7 100	4.7 100	(3.8) S 110	G	3.0 110	4.0 110	3.2 120	4.3 110	3.2 110	3.2 110	5.0 110	3.0 100
17	3.2 110	E	3.2 100	E	E	E	3.0 100	G	3.7 120	3.0 130	3.0 110	G	3.5 100	4.2 Y 100	5.0 110	4.4 110	3.2 120	(3.2) S 120	3.0 130	E	3.0 110	(2.3) S (120)	(2.9) S 110	(2.7) S 110
18	(4.3) S 110	2.8 100	E	(2.4) S 110	(2.4) S 110	4.5 H 110	(1.9) S (110)	(3.2) S (120)	3.8 120	4.2 110	4.3 Y 110	4.3 110	4.3 100	4.4 Y 100	2.9 110	3.6 Y 110	2.9 120	4.1 120	4.1 120	3.7 110	4.5 110	(2.1) S 110	6.6 Y 110	E
19	E	E	E	E	E	E	G	3.0 Y 110	4.8 110	G	2.9 120	G	G	G	G	G	G	G	G	E	E	E	E	E
20	3.0 100	6.4 100	3.9 100	3.3 100	4.0 100	4.0 100	3.4 3 3 H	3.2 120	4.2 110	4.8 100	4.1 100	3.6 H 110	4.0 100	4.6 110	4.2 100	4.2 110	(4.2) S 110	(3.6) S 110	(3.2) S 130	4.7 110	6.4 H 110	4.5 110	3.8 120	5.8 110
21	2.4 110	(2.9) S 110	E	E	E	E	2.8 1 3 3	3.7 120	7.0 100	7.0 110	5.6 110	4.2 110	6.6 100	3.4 100	4.0 110	3.2 10	G	G	(2.6) S 120	E	4.1 110	3.1 110	2.4 110	E
22	4.8 100	E	E	2.7 100	2.9 100	2.5 100	(3.8) S 110	6.8 110	(7.0) S 1.0	5.0 100	5.3 100	6.1 H 100	4.3 10	3.4 140	3.9 110	3.8 140	G	3.8 Y 110	3.2 120	2.7 100	5.3 110	4.5 110	5.3 110	3.0 110
23	2.4 110	2.9 110	2.9 100	2.4 110	2.7 110	E	3.6 H 120	3.7 110	4.5 110	7.0 Y 110	3.0 110	G	G	3.3 120	G	4.2 130	3.8 140	G	3.6 120	2.8 120	E	(3.0) S 110	E	E
24	E	4.7 100	E	3.8 120	E	E	(4.5) S 130	5.0 120	3.5 110	3.9 110	4.2 110	4.0 100	3.3 100	G	3.2 110	G	G	2.5 120	1.9 120	3.0 110	3.2 110	3.7 110	E	E
25	E	E	E	E	E	2.6 110	1.8 120	2.9 120	3.4 H 120	3.9 110	(3.8) S 110	G	G	G	3.9 130	3.4 110	3.0 100	(3.7) S 110	3.1 H 100	(2.8) S 110	E	E	E	E
26	E	E	E	E	E	E	G	4.4 H 110	5.0 110	4.3 110	3.9 110	G	3.3 110	3.8 100	(3.9) S 1.0	G	2.7 100	3.9 120	3.2 110	E	E	E	E	E
27	E	E	E	E	E	E	1.9 130	4.0 110	4.8 110	3.9 110	4.0 110	7.0 Y 110	3.5 H 110	4.8 H 110	4.6 110	3.9 120	3.8 120	(4.7) S 120	G	E	E	3.6 Y 110	4.7 Y 110	2.5 110
28	2.3 100	3.5 100	2.8 110	2.3 110	2.5 110	2.6 120	1.8 120	4.0 120	3.6 110	3.6 110	3.8 110	3.7 100	3.9 100	4.7 H 100	4.2 H 100	3.5 100	3.2 100	3.0 100	3.0 120	E	3.4 110	2.5 110	(2.4) S (120)	E
29	E	E	E	E	2.9 120	E	5.0 120	2.9 110	3.2 10	4.7 H 100	3.1 H 100	4.9 100	G	2.9 100	3.6 110	4.8 100	2.9 140	G	2.8 120	E	2.1 110	2.9 100	E	E
30	E	E	E	E	E	2.6 100	1.8 120	3.8 110	3.7 H 110	4.5 H 110	4.3 100	4.3 100	3.4 100	G	G	G	(3.3) S 110	G	3.0 120	E	2.4 120	2.3 110	2.9 110	2.8 100
31	2.7 100	E	3.0 120	E	E	2.1 120	(2.5) S 130	3.2 120	G	3.0 120	4.2 H 110	3.4 120	4.1 110	G	G	G	3.0 Y 100	G	2.0 130	E	2.1 110	2.3 110	E	E
Medion	2.3	2.5	2.1	* *	2.4	2.4	3.2	3.4	4.3	4.5	4.2	4.2	3.4	3.9	3.9	3.8	3.2	3.7	3.2	3.0	3.2	3.0	2.8	2.3
Count	31	31	31	31	31	30	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 2.5 0 Mc in 0.25 min

Manual ☐ Automatic ☒

U S GOVERNMENT PRINTING OFFICE 1948 O - 702,119

TABLE 81

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

Form adopted June 1946

IONOSPHERIC DATA

(M1500)F2 (Characteristic) August (Month), 1954

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Scaled by: E.J.W., J.W.P., J.J.S.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

Calculated by: E.J.W., J.W.P., J.J.S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.2	(2.2)^{s}	2.2	J^{s}	S	J^{s}	G	(1.9)^{s}	2.0	2.0	1.8	1.9	J^{s}	1.7	S	1.6	2.0	2.2	2.2	2.3	(2.2)^{s}	(2.1)^{s}	2.2$^{F}_{s}$	2.0
2	2.0	2.0	A	2.1	(2.2)^{s}	2.2	2.4	2.0	G	2.2	2.0	2.1	2.2	A	2.1	(1.9)$^{s}_{p}$	2.0	2.2	2.3	A	2.2	2.2	(2.2)^{s}	2.1
3	2.2	(2.2)^{s}	(2.3)$^{F}_{s}$	2.3	(2.2)^{p}	2.5^{M}	2.5	2.3	(2.0)$^{s}_{H}$	1.9	2.2	2.2	2.2	2.0	2.1	1.8	1.9	2.2	2.2	2.1	2.2	2.1	2.2	(2.1)$^{p}_{s}$
4	(2.3)$^{p}_{s}$	S	S	S	(2.0)$^{p}_{s}$	S	G	2.2	2.2	2.1	G	1.9	1.9^{H}	2.1	2.0	1.5	2.1	2.3	2.2	2.2	2.2	2.2	2.1	(2.1)$^{p}_{s}$
5	2.0	J^{s}	S	(2.0)^{s}	(2.2)$^{p}_{s}$	S	2.2	2.2	2.2	2.2	2.2	2.0	2.2	2.0	G	(1.9)$^{s}_{p}$	2.0	2.1	2.1	2.2	2.2	2.2	2.2	2.2
6	S	J^{s}	(2.1)$^{s}_{p}$	S	(2.3)^{s}	S	2.2	1.8	2.0	1.9	1.8	1.9^{H}	1.9	2.1	G	G	1.8	2.1^{H}	2.0	1.9	2.2	2.2	2.2	2.1
7	(2.2)$^{J}_{s}$	A^{s}	2.0	(2.0)$^{J}_{s}$	A^{s}	2.3	2.3	(1.9)^{s}	1.8	1.8	A	A	G	G	G	1.9	1.8	2.1	A	2.2	2.2	2.3	2.3	A
8	2.1	2.1	(2.1)^{s}	(2.1)^{s}	J^{A}	2.2	2.3$^{F}_{H}$	2.0	A	2.1	2.1	2.1	1.9	1.8	2.1	2.2	1.8	2.1	2.2	2.1	2.3	2.2	2.1	2.1
9	(2.1)$^{F}_{s}$	(2.0)^{s}	(2.1)$^{F}_{s}$	(2.2)$^{F}_{s}$	2.1	2.2	2.1	2.2	2.2	2.2	2.1^{H}	2.1	2.1	2.0	2.1	1.9	2.0	2.3	2.2	2.2	(2.2)$^{s}_{p}$	2.2	2.1	2.2
10	(2.2)$^{F}_{s}$	2.2^{F}	S	J^{s}	A	A	(2.4)^{A}	2.3	1.8	2.3	2.0	2.2	2.1	G	2.0	(1.8)$^{p}_{s}$	1.9	2.1	2.3	2.1	2.2	2.0	2.0	2.2
11	2.2	2.1	2.0	J^{s}	A^{s}	J^{s}	2.3	(2.1)$^{p}_{H}$	(1.9)^{s}	2.0	2.0	2.0	G	G	(1.9)$^{p}_{s}$	1.9^{H}	S^{H}	2.2	2.2	2.3	(2.3)$^{J}_{s}$	2.2	(2.2)$^{s}_{A}$	A
12	(2.1)$^{s}_{p}$	(2.2)$^{p}_{F}$	(2.0)$^{p}_{s}$	(2.0)$^{p}_{s}$	S	A	2.5	G	2.1	2.2	(2.1)^{A}	2.2	A	1.9	1.9	2.0	2.0	2.1	2.2	A	(2.6)$^{F}_{p}$	(2.0)^{s}	2.1	2.0
13	2.1	2.2^{F}	2.2^{F}	2.3^{F}	2.3	A	2.4	2.3	2.4	2.4	2.1	2.0	2.1^{H}	1.9	2.0	2.0	A	2.2	2.1	2.2	2.2	2.1	A	(2.1)$^{p}_{s}$
14	2.2	2.1	(2.2)^{s}	A	2.1	2.2	2.3	2.1	2.3	2.4	2.1	2.2	2.1	2.0	1.7	1.9	2.2	2.2	2.1	2.2	2.3	2.2	2.1	2.2
15	2.2	(2.1)^{s}	(2.1)$^{p}_{s}$	2.2	S	(2.2)^{s}	2.2	2.3	2.2	2.3	2.3	1.8	2.0	S	2.0	2.0	2.1	2.1	2.1	2.2	2.2	2.1	2.0	2.1
16	2.1	2.2	(2.3)^{s}	J^{s}	2.1	(2.2)^{s}	(2.4)^{s}	2.3^{H}	1.9^{H}	2.1	2.1	1.8	1.8	S	G	(1.8)$^{s}_{p}$	J^{s}	(1.9)^{s}	2.1	2.1	2.4	2.2	A	A^{s}
17	2.1	(2.1)^{s}	2.2	(2.1)^{s}	J^{s}	J^{s}	2.2	2.1	2.2	2.4	2.3	1.6	1.8	2.0	1.8	2.1	2.3	2.3	2.3	2.3	(2.3)^{s}	2.2	2.2	2.2
18	2.2	(2.2)^{s}	(2.0)^{s}	2.0	2.0	(2.2)^{s}	2.3	(2.1)$^{s}_{H}$	1.9	2.1	2.0	(1.8)$^{p}_{s}$	1.5	(2.1)$^{p}_{s}$	1.7	1.6	2.2	2.2	2.1	(2.2)^{s}	(2.2)$^{J}_{A}$	2.0	(2.1)^{s}	(2.3)$^{p}_{s}$
19	J^{s}	(2.2)^{s}	J^{s}	J^{s}	2.3	(2.5)$^{p}_{s}$	2.4	2.3	2.4^{H}	2.3	2.2	2.2^{H}	1.9^{H}	1.9	1.9	S	(2.2)^{s}	2.2^{H}	2.3	2.2	2.3	2.3	2.2	2.1
20	2.2	J^{A}	(2.2)$^{A}_{s}$	2.2	J^{A}	A	2.4	2.2	2.1	2.2^{H}	2.2	2.0	1.9	2.0	2.3	(2.2)^{s}	2.1	2.2	2.2	2.3	2.1	2.1	2.1	(2.2)^{A}
21	2.2	2.3	(2.1)^{s}	2.0	J^{s}	J^{s}	2.4$^{H}_{F}$	1.9	A	A	1.7	2.0	1.8	1.9	S	2.0	2.0	2.1	2.2	2.1	2.0	2.0	2.2	2.1
22	2.1	2.2$^{F}_{s}$	2.0	2.1	2.0	(2.3)^{s}	2.3	A	2.0^{H}	2.4	2.2	2.1	2.2	2.0	2.1	2.3	2.0^{H}	2.1	2.1	2.1	2.3	2.1	2.3	2.3
23	2.3	2.1	A	J^{s}	S	J^{s}	2.3	2.4	2.4	2.2	2.1^{H}	2.0	2.1	1.9^{H}	2.0	2.2	2.0	2.1	2.1	2.1	2.3	2.2	2.2	2.2
24	2.0	2.1	(2.1)^{s}	J^{s}	2.1	2.2	2.3	2.0	2.3	(1.8)$^{p}_{s}$	1.6	1.5	1.9	1.6	(1.7)$^{s}_{p}$	1.8	2.0	2.2	2.2	2.1	2.0	2.2	2.4	J^{s}
25	J^{s}	J^{s}	(2.1)^{s}	J^{s}	J^{s}	J^{s}	2.4	2.4	2.2^{H}	(2.4)$^{s}_{p}$	2.3	2.4	2.1	1.9	2.0	2.2	2.1	2.2	2.2	2.1	2.2	(2.3)$^{s}_{p}$	2.2	2.3
26	2.3	2.1	(2.2)^{s}	2.2	2.0	(2.2)$^{s}_{p}$	2.5	(2.3)^{s}	2.3	2.4	2.2	2.2	2.0	2.0	2.2	2.1	2.0	2.0	2.2	2.2	2.2	(1.9)$^{J}_{s}$	2.2	2.1
27	2.2$^{F}_{s}$	2.1	2.1	(2.1)$^{s}_{p}$	2.2	J^{s}	2.3	(2.5)$^{M}_{s}$	2.2^{H}	2.4	2.2	2.3^{H}	2.1	2.1	2.2	2.2	2.2^{H}	2.3	2.2	(2.2)$^{p}_{s}$	(2.2)$^{p}_{s}$	2.1	2.1	2.0
28	2.1	2.0	2.2^{F}	2.2^{F}	2.2	J^{s}	2.5	2.3	2.0	2.1	2.2	2.0	2.1	2.1	2.0	2.1	(2.0)^{s}	2.1	(2.3)^{s}	2.2	2.1	2.1	2.0	2.2
29	2.1	2.1	2.0	2.2	J^{s}	J^{s}	2.2	2.0	2.4	2.3	1.8	1.8	2.0	2.1	1.8	2.0	2.0	2.2	2.2	2.2	2.3	2.1	2.3	2.0
30	2.1	2.1	2.0	2.1	J^{s}	J^{s}	2.3	2.4	2.1	2.0	2.0	G	1.9	1.8	2.1	2.0	1.9	2.2	(2.2)$^{s}_{p}$	2.2	2.2	2.1	2.0	2.1^{F}
31	2.2	2.1	(2.2)$^{F}_{s}$	J^{s}	J^{s}	J^{s}	2.3	2.3	(2.2)$^{p}_{s}$	(1.8)^{H}	2.3^{H}	2.2	1.8	2.0	2.0	2.1	2.1	2.2	2.3	2.2	2.2	2.1	(2.2)$^{p}_{s}$	2.1
Median	2.2	2.1	(2.1)	2.1	2.2	2.2	2.3	2.2	2.2	2.2	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.2	2.2	2.2	2.2	2.1	2.2	2.1
Count	28	25	25	19	16	13	31	30	29	30	30	30	29	28	29	30	28	31	30	29	31	31	29	27

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U.S. GOVERNMENT PRINTING OFFICE 1948 O - 702318

TABLE 82

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

Form adopted June 1946

IONOSPHERIC DATA

(M3000)F2 (Characteristic), (Unit) August (Month), 1954

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: E.J.W., J.W.P., J.J.S.

Calculated by: E.J.W., J.W.P., J.J.S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	3.2	(3.2)^{S}	3.2	J^{S}	S	J^{S}	G	(2.9)^{S}	3.0	3.0	2.7	2.8	J^{S}	2.6	S	2.5	3.0	3.3	3.2	3.3	(3.3)^{S}	(3.1)^{S}	3.2$^{F}_{S}$	3.0
2	3.0	3.0	A	3.1	(3.2)^{S}	3.3	3.5	3.0	G	3.2	3.0	3.1	3.2	A	3.1	(2.8)$^{S}_{P}$	3.0	3.3	3.3	A	3.2	3.2	(3.2)^{S}	3.1
3	3.2	(3.3)^{S}	(3.3)$^{F}_{S}$	3.3	(3.2)^{P}	3.5^{H}	3.6	3.4	(3.0)$^{S}_{H}$	2.9	3.2	3.3	3.2	3.0	3.1	2.7	2.9	3.2	3.2	3.2	3.2	3.2	3.3	(3.1)$^{P}_{S}$
4	(3.3)$^{P}_{S}$	S	S	S	(3.0)$^{P}_{S}$	S	G	3.2	3.2	3.1	G	2.9	2.8^{H}	3.2	3.0	2.3	3.1	3.4	3.3	3.2	3.2	3.3	3.2	(3.1)$^{P}_{S}$
5	3.0	J^{S}	S	(3.0)^{S}	(3.2)$^{P}_{S}$	S	3.2	3.2	3.2	3.2	3.2	3.0	3.2	3.0	G	(2.9)$^{S}_{P}$	3.0	3.1	3.1	3.3	3.3	3.3	3.2	3.2
6	S	J^{S}	(3.1)$^{S}_{P}$	S	(3.3)^{S}	S	3.2	2.7	3.0	2.9	2.7	2.8^{H}	2.9	3.1	G	G	2.7	3.2^{H}	3.0	2.9	3.3	3.3	3.2	3.2
7	(3.2)$^{J}_{S}$	A^{S}	3.0	(3.0)$^{J}_{S}$	A^{S}	3.4	3.3	(2.8)^{S}	2.8	2.8	A	A	G	G	G	2.8	2.7	3.1	A	3.2	3.2	3.3	3.3	A
8	3.1	3.1	(3.1)^{S}	(3.1)^{S}	J^{A}	3.2	3.3$^{F}_{H}$	3.0	A	3.1	3.1	3.1	2.8	2.7	3.1	3.3	2.7	3.1	3.2	3.1	3.3	3.2	3.1	3.1
9	(3.1)$^{F}_{S}$	(3.0)^{S}	(3.1)$^{F}_{S}$	(3.2)$^{F}_{S}$	3.1	3.2	3.1	3.2	3.3	3.2	3.1^{H}	3.1	3.1	3.0	3.1	2.9	3.0	3.3	3.3	3.2	(3.2)$^{S}_{P}$	3.2	3.1	3.2
10	(3.2)$^{F}_{S}$	3.2^{F}	S	J^{S}	A	A	(3.5)^{A}	3.4	2.7	3.3	3.0	3.2	3.1	G	3.0	(2.7)$^{P}_{S}$	2.9	3.1	3.3	3.1	3.2	3.1	3.0	3.2
11	3.2	3.1	3.0	J^{S}	A^{S}	J^{S}	3.3	(3.1)$^{P}_{H}$	(2.8)^{S}	3.0	3.0	3.0	G	G	(2.9)$^{P}_{S}$	2.9^{H}	S^{H}	3.2	3.2	3.3	(3.3)$^{J}_{S}$	3.2	(3.2)$^{S}_{A}$	A
12	(3.1)$^{P}_{S}$	(3.2)$^{P}_{F}$	(3.0)$^{P}_{S}$	(3.0)$^{P}_{S}$	S	A	3.6	G	3.2	3.2	3.1	3.3	A	2.9	2.8	3.0	3.0	3.1	3.2	A	(3.6)$^{S}_{P}$	(3.0)^{S}	3.1	3.0
13	3.2	3.2^{F}	3.2^{F}	3.3^{F}	3.3	A	3.5	3.4	3.4	3.4	3.1	3.0	3.1^{H}	2.9	3.0	3.0	A	3.2	3.1	3.3	3.2	3.1	A	(3.1)$^{P}_{S}$
14	3.2	3.1	(3.2)^{S}	A	3.1	3.2	3.4	3.1	3.3	3.5	3.2	3.2	3.1	3.0	2.6	2.8	3.2	3.2	3.1	3.2	3.4	3.3	3.1	3.2
15	3.2	(3.2)^{S}	(3.2)$^{P}_{S}$	3.3	S	(3.2)^{S}	3.2	3.3	3.2	3.4	3.4	2.8	3.0	S	3.0	3.0	3.1	3.1	3.1	3.2	3.2	3.1	3.0	3.1
16	3.1	3.2	(3.3)^{S}	J^{S}	3.1	(3.2)^{S}	(3.4)^{S}	3.3^{H}	2.8^{H}	3.1	3.1	2.7	2.8	S	G	(2.7)$^{S}_{P}$	J^{S}	(2.9)^{S}	3.1	3.1	3.5	3.2	A	A^{S}
17	3.1	(3.1)^{S}	3.2	(3.1)^{S}	J^{S}	J^{S}	3.3	3.1	3.3	3.5	3.3	2.5	2.7	3.0	2.8	3.1	3.3	3.3	3.3	3.4	(3.3)^{S}	3.2	3.2	3.2
18	3.2	(3.2)^{S}	(3.0)^{S}	3.0	3.0	(3.2)^{S}	3.4	(3.1)$^{S}_{H}$	2.9	3.2	3.0	(2.7)$^{P}_{S}$	2.2	(3.2)$^{P}_{S}$	2.6	2.5	3.2	3.2	3.1	(3.3)^{S}	(3.2)$^{J}_{A}$	3.0	(3.1)^{S}	(3.3)$^{P}_{S}$
19	J^{S}	(3.2)^{S}	J^{S}	J^{S}	3.4	(3.5)$^{P}_{S}$	3.4	3.4	3.4^{H}	3.3	3.3	3.3^{H}	2.9^{H}	2.9	2.9	S	(3.2)^{S}	3.2^{H}	3.4	3.3	3.3	3.3	3.2	3.1
20	3.2	J^{A}	(3.2)$^{A}_{S}$	3.2	J^{A}	A	3.5	3.2	3.1	3.2^{H}	3.2	3.0	2.9	3.0	3.3	(3.2)^{S}	3.2	3.2	3.3	3.3	3.2	3.1	3.1	(3.2)^{A}
21	3.2	3.3	(3.2)^{S}	3.0	J^{S}	J^{S}	3.5$^{H}_{E}$	2.9	A	A	2.6	3.0	2.7	2.8	S	3.0	3.0	3.1	3.2	3.2	3.0	3.0	3.2	3.1
22	3.1	3.3$^{F}_{S}$	3.0	3.1	3.0	(3.4)^{S}	3.3	A	3.0^{H}	3.4	3.2	3.1	3.2	3.0	3.1	3.3	3.0^{H}	3.1	3.1	3.1	3.4	3.1	3.4	3.3
23	3.3	3.1	A	J^{S}	S	J^{S}	3.4	3.5	3.5	3.3	3.1^{H}	3.0	3.1	2.9^{H}	3.0	3.2	3.0	3.1	3.1	3.1	3.3	3.2	3.2	3.2
24	3.0	3.1	(3.1)^{S}	J^{S}	3.1	3.2	3.4	3.0	3.4	(2.7)$^{P}_{S}$	2.5	2.2	2.8	2.5	(2.5)$^{S}_{P}$	2.7	3.0	3.3	3.3	3.1	3.0	3.3	3.4	J^{S}
25	J^{S}	J^{S}	(3.1)^{S}	J^{S}	J^{S}	J^{S}	3.5	3.4	3.3^{H}	(3.4)$^{S}_{P}$	3.3	3.5	3.1	2.8	3.0	3.2	3.1	3.2	3.2	3.1	3.3	(3.3)$^{S}_{P}$	3.3	3.3
26	3.3	3.2	(3.2)^{S}	3.2	2.9	(3.2)$^{S}_{P}$	3.6	(3.4)^{S}	3.3	3.4	3.2	3.2	3.0	3.0	3.2	3.1	3.0	3.0	3.2	3.2	3.2	(2.8)$^{J}_{S}$	3.2	3.1
27	3.2$^{F}_{S}$	3.1	3.1	(3.1)$^{S}_{P}$	3.2	J^{S}	3.4	(3.5)$^{H}_{S}$	3.2^{H}	3.5	3.2	3.4^{H}	3.2	3.2	3.3	3.2	3.2^{H}	3.3	3.2	(3.2)$^{P}_{S}$	(3.2)$^{P}_{S}$	3.1	3.1	3.0
28	3.1	3.0	3.2^{F}	3.3^{F}	3.2	J^{S}	3.6	3.4	3.0	3.2	3.3	3.0	3.1	3.1	3.0	3.1	(3.0)^{S}	3.1	(3.4)^{S}	3.2	3.1	3.1	3.0	3.2
29	3.1	3.1	3.0	3.2	J^{S}	J^{S}	3.3	3.0	3.5	3.4	2.7	2.7	3.0	3.1	2.7	3.0	3.0	3.3	3.3	3.2	3.3	3.1	3.3	3.0
30	3.1	3.1	3.0	3.1	J^{S}	J^{S}	3.4	3.5	3.1	3.0	3.0	G	2.8	2.8	3.1	3.0	2.9	3.2	(3.2)$^{S}_{P}$	3.2	3.2	3.1	3.0	3.1^{F}
31	3.3	3.1	(3.2)$^{F}_{S}$	J^{S}	J^{S}	J^{S}	3.4	3.3	(3.3)$^{P}_{S}$	2.7^{H}	3.4^{H}	3.3	2.8	3.0	3.0	3.2	3.1	3.3	3.3	3.3	3.3	3.1	(3.2)$^{P}_{S}$	3.2
Median	3.2	3.1	(3.1)	3.1	3.15	3.2	3.4	3.2	3.2	3.2	3.1	3.0	3.0	3.0	3.0	3.0	3.0	3.2	3.2	3.2	3.2	3.2	3.2	3.1
Count	28	25	25	19	16	13	31	30	29	30	30	30	29	28	29	30	28	31	30	29	31	31	29	27

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE 1946 O - 703319

TABLE 83

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

Form adopted June 1946

IONOSPHERIC DATA

(M3000)F1 (Characteristic), _____ (Unit), August (Month), 1954

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Lat. 38.7°N, Long. 77.1°W

75° W Mean Time

Scaled by: E.J.W., J.W.P., J.J.S.

Calculated by: E.J.W., J.W.P., J.J.S.

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

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

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TABLE 84

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

Form adopted June 1946

IONOSPHERIC DATA

(M1500) E (Characteristic), ____ (Unit), August (Month), 1954

Observed at Washington, D.C.

Lat. 38.7°N, Long. 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: E.J.W., J.W.P., J.J.S.

Calculated by: E.J.W., J.W.P., J.J.S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							4.3	4.4 H	4.4	A	A	(4.3) A	4.4 H	A	4.3	4.3	4.3	4.3	4.3	S				
2							4.4	4.4	4.4	(4.5) A	(4.4) A	4.4	(4.4) P	A	A	A	4.5	4.4	4.4	S				
3							4.4	(4.4) P	A	A	A	A	(4.6) A	(4.5) A	4.6 H	A	4.3	4.4	S	S				
4							S	4.5	(4.5) P	(4.5) P	A	A	(4.5) A	A	4.4	4.4	4.3	4.3	4.4					
5							S	(4.3) P	4.4	A	A	4.5	A	A	A	4.5	4.4 H	4.4 H	4.3 H					
6							S	4.4	A	4.5	4.4	4.4 H	4.4	4.4	4.4	4.4	4.3	4.4	4.3	S				
7							4.5	4.4	4.5	(4.5) S	A	(4.4) A	4.4	4.5	4.4	4.5	4.4	(4.3) P	4.4					
8							S	4.4 H	4.5	4.5	4.5	(4.5) A	A	4.5	4.5	4.5	4.3 H	4.3	(4.4) S					
9							S	4.5	A	A	A	A	4.5 H	A	4.4	A	(4.4) A	(4.4) P	4.5 H					
10							S	4.4	(4.4) A	(4.4) A	A	A	A	A	A	4.5	4.3	4.3	(4.3) S					
11							(4.4) A	(4.4) A	(4.4) A	(4.5) A	(4.4) A	A	A	A	A	(4.4) A	A	A	(4.3) A					
12							A	A	4.5	4.4	4.5 H	(4.4) P	A	A	(4.4) A	4.5	4.4	4.3	4.4 H	A				
13							S	A	A	A	A	A	A	A	A	4.4	4.4 H	4.4 H	(4.4) A					
14							4.3	4.4 H	4.4	4.4	4.3	(4.4) P	(4.4) A	(4.4) A	4.4	4.4	4.4	4.4	(4.4) P					
15							4.4 H	4.4	4.5	4.4	4.4	(4.4) P	A	A	4.4 H	4.4 H	4.3 H	4.4	4.4					
16							4.3 H	4.4 H	4.4 S	4.5	4.6	(4.5) P	A	A	4.5 H	4.4 H	(4.4) S	(4.4) S	S					
17							S	4.4 H	4.4	4.3 H	(4.4) P	4.4	(4.4) P	4.4	4.5 H	4.5	4.4 H	4.4	4.3					
18							S	4.4 H	(4.5) A	A	(4.5) A	(4.6) A	(4.5) A	A	4.3 H	(4.6) H	(4.4) A	4.3 H	(4.3) A					
19							S	A	4.4 H	4.4 H	4.5	4.4 H	4.4	4.4	(4.4) S	S	(4.4) S	S	(4.4) S					
20							S	4.4 H	4.5	4.5	A	4.4 H	A	4.4 H	4.4 H	A	(4.4) P	4.4	4.3					
21							S	4.4	4.4 H	4.4	4.5	(4.4) P	A	A	4.4	4.4	4.4	4.4 H	4.4					
22							A	4.4	4.4	A	A	A	(4.6) A	4.5 H	A	4.4 H	4.4	4.4	4.3					
23							4.4	4.4	4.4	4.4	4.4 H	4.4 H	4.4 H	4.4 H	4.4 H	4.4	4.3	4.3	4.3					
24							(4.4) S	4.4	4.4 H	(4.4) P	4.5	A	4.3 H	4.4	4.4	4.4 H	4.4	4.3	4.4					
25							(4.5) S	4.4	4.5	(4.5) P	(4.5) A	4.5	4.4 H	4.4 H	4.5 H	A	(4.4) A	(4.5) A	(4.5) S					
26							4.3	A	A	A	4.4	4.3 H	(4.4) P	4.4	4.4	4.5	4.5	4.5	A					
27							S	4.4	4.4	4.5	4.5	4.5 H	4.4 H	4.3 H	4.4	4.4 H	4.4	A	4.4 H					
28							S	4.5	4.5	4.5	4.5	A	4.4 H	(4.5) A	A	4.3 H	(4.4) S	4.3	4.5					
29							S	(4.3) S	4.4 H	(4.4) A	4.4 H	4.3 H	4.5	4.4 H	4.5	4.4	4.4	4.5	S					
30							S	A	A	A	A	(4.4) A	A	4.4	4.4	4.4	4.4	4.4 H	S					
31							S	4.3	4.3	4.4	A	(4.5) A	A	4.3	4.3	4.4	4.4	4.5	S					
Median							4.4	4.4	4.4	4.4	4.5	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4					
Count							12	26	25	22	19	22	19	18	24	25	30	28	25					

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

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Table 85

Ionospheric Storminess at Washington, D. C.

August 1954

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

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

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

Erratum. CRPL-F120, p. 37, table 90, footnote #: Delete words "conditions probably disturbed."

Table 86

Radio Propagation Quality Figures

(Including Comparisons with Short-Term and Advance Forecasts)

July 1954

Day	North Pacific 9 - hourly quality figures			Short-term forecasts issued at			Whole day quality index	Advance forecasts (Jp reports) for whole day; issued in advance by:		
	03 to 12	09 to 18	18 to 03	02	09	18		1-4 days	4-7 days	8-25 days
1	6	6	6	7	6	7	6	7	7	
2	6	6	6	6	6	7	6	7	7	
3	6	6	7	6	6	6	6	7	7	
4	7	7	7	7	6	7	7	7	7	
5	7	7	6	7	6	7	7	7	7	
6	7	7	7	7	6	6	7	7	7	
7	7	7	6	7	6	7	7	6	7	
8	7	7	7	7	7	7	7	7	7	
9	6	6	7	7	6	7	7	7	7	
10	6	6	6	7	6	7	6	7	6	
11	6	5	5	7	6	7	6	6	6	
12	6	7	6	7	7	7	6	6	6	
13	7	7	7	7	6	6	7	7	7	
14	7	6	6	6	6	6	7	6	7	
15	5	6	7	6	6	6	6	7	7	
16	6	7	7	6	6	7	7	7	7	
17	6	6	6	6	6	7	6	6	7	
18	6	6	6	6	5	7	6	6	7	
19	6	6	6	6	6	7	7	6	7	
20	6	5	7	6	5	7	5	6	7	
21	5	6	5	7	7	7	6	6	7	
22	5	6	6	7	6	7	5	6	7	
23	6	6	6	7	7	7	6	6	7	
24	6	6	7	6	6	7	6	6	6	
25	7	6	6	6	5	6	7	6	6	
26	6	5	7	6	6	6	6	7	7	
27	7	7	7	6	6	7	7	7	7	
28	6	6	5	6	6	5	6	6	6	
29	6	6	7	6	5	6	6	6	6	
30	7	6	6	6	5	6	7	6	6	
31	6	6	6	6	6	6	6	6	6	
Score:										
Quiet Periods			P	18	16	12		18	18	
			S	11	15	17		13	11	
			U	2	0	2		0	2	
			F	0	0	0		0	0	
Disturbed Periods			P	0	0	0		0	0	
			S	0	0	0		0	0	
			U	0	0	0		0	0	
			F	0	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

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 ≥ 5, or both ≤ 5
F - Failure: other times when forecast quality two or more grades different from observed

Symbols:

X - probable disturbed date

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

Table 87a

Radio Propagation Quality Figures

(Including Comparisons with Short-Term and Advance Forecasts)

July 1954

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

Score:

Quiet Periods	P	20	17	24	30	25	28	
	S	10	11	7	1	6	3	
	U	1	3	0	0	0	0	
	F	0	0	0	0	0	0	
Disturbed periods	P	0	0	0	0	0	0	
	S	0	0	0	0	0	0	
	U	0	0	0	0	0	0	
	F	0	0	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; $K_{Ch} \geq 4$ 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 ≥ 5, or both ≤ 5
- F - Failure: other times when forecast quality two or more grades different from observed

Symbols:
- X - probable disturbed date

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

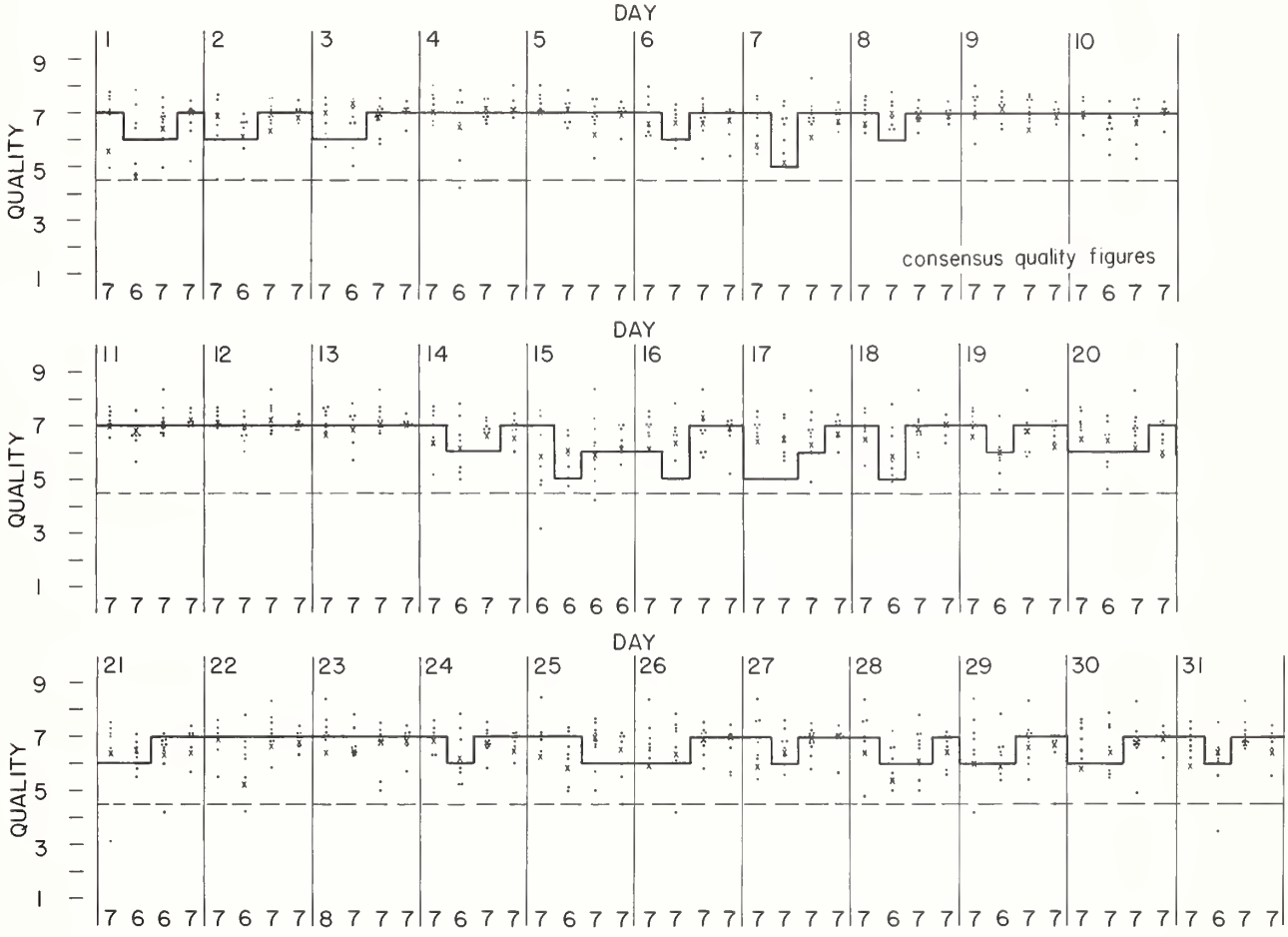
Table 87b

Short-Term Forecasts--- July 1954

– forecast

x CRPL observation (not in consensus)

• individual reports of quality (adjusted to CRPL scale)



Outcome of Advance Forecasts (1 to 4 days ahead) --- July 1954

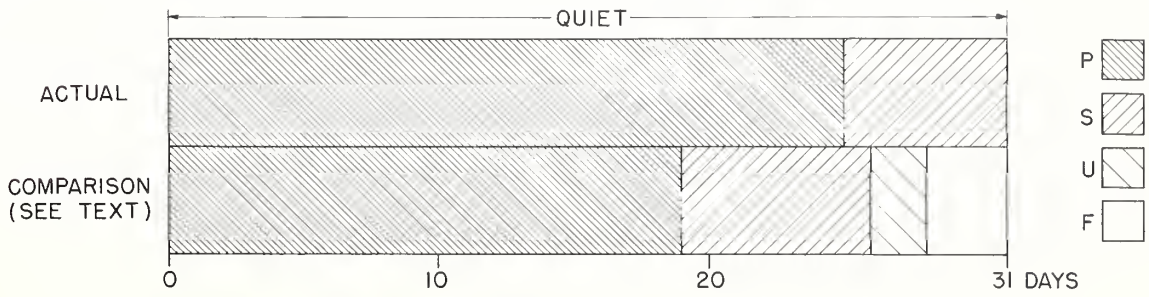


Table 88a

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

Date UT	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
1954																																					
Aug 1.6a	-	-	-	-	-	-	-	-	-	-	-	-	2	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.6	-	-	-	-	-	-	-	-	1	2	2	2	3	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.x																																					
4.x																																					
5.x																																					
6.x																																					
7.6	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.6a	-	-	-	-	-	-	-	-	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X
11.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	-	-	-	-	-	-	-	-
12.6	-	-	-	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.8	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-
14.6	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15.6a	-	-	-	-	-	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
16.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.6	-	-	-	-	-	-	-	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	-	-	-	-	-	-	-	-
18.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.6	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.x																																					
25.6	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-
26.7	-	-	-	-	-	-	-	-	1	2	3	2	2	1	-	-	-	-	-	-	1	1	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-
27.6	-	-	-	-	-	-	1	1	1	1	2	5	6	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.7	-	-	-	-	-	-	-	-	-	1	1	6	9	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29.7a	-	-	-	-	-	-	-	1	3	4	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30.7a	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.7a	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 89a

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

Date UT	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
1954																																					
Aug 1.6a	1	1	1	1	1	1	-	-	-	-	-	2	6	6	3	1	1	1	1	2	4	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2
2.6	1	1	-	-	-	-	-	-	-	2	2	3	5	8	8	7	7	8	5	4	5	5	5	4	4	4	4	4	4	3	2	1	1	1	2	2	2
3.x																																					
4.x																																					
5.x																																					
6.x																																					
7.6	1	1	1	1	1	1	1	1	1	2	5	6	6	6	3	3	4	5	5	6	7	7	3	2	2	2	2	1	1	1	1	1	1	1	2	2	2
8.6a	1	1	2	2	2	2	1	1	1	1	2	3	4	4	3	3	3	4	5	4	4	4	3	2	2	2	2	2	2	1	1	1	1	1	2	2	2
9.6	2	2	2	2	2	1	1	1	1	1	1	2	3	4	4	2	2	2	4	4	3	3	4	2	3	2	1	1	1	1	1	1	1	1	2	2	2
10.6a	2	2	2	2	2	2	2	2	2	3	3	3	2	2	2	2	3	3	3	3	2	2	2	2	X	X	X	X	X	X	X	X	X	X	X	X	X
11.9a	3	2	2	2	1	1	1	1	1	2	3	3	3	3	4	4	4	6	6	6	6	5	5	4	4	4	3	1	1	1	1	1	2	2	3	3	3
12.6	2	2	1	X	X	X	2	2	2	2	3	3	3	5	4	4	3	4	6	6	5	5	3	5	4	4	2	1	1	1	1	1	1	2	3	3	2
13.8	3	2	1	1	1	1	1	1	1	1	6	6	5	6	6	5	6	5	6	6	5	5	6	5	5	6	3	1	1	1	1	1	1	2	2	2	2
14.6	2	2	2	2	1	1	1	1	1	1	2	3	3	5	5	5	6	5	6	4	4	3	3	3	4	4	3	2	1	1	1	1	1	1	1	2	2
15.6a	2	2	2	2	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
16.6	2	2	1	1	1	1	1	1	1	2	1	1	3	5	6	5	5	5	5	6	6	5	5	4	4	4	3	2	1	1	1	1	1	2	3	3	2
17.6	2	2	1	1	1	1	1	1	2	2	2	3	4	4	4	4	4	3	4	4	5	5	4	3	3	4	4	3	2	1	1	1	1	1	2	2	2
18.6	2	2	2	1	1	1	1	1	2	2	2	3	3	4	4	5	4	2	3	4	5	4	4	4	4	4	3	1	1	1	1	1	1	1	2	2	
19.6a	1	1	1	1	1	1	1	1	1	1	1	2	2	3	4	3	2	2	3	3	4	5	4	3	3	3	2	1	1	1	1	1	1	3	4	4	1
20.6a	2	2	2	1	1	1	1	1	1	2	2	2	3	3	5	6	6	8	7	7	6	5	4	3	1	1	1	1	1	1	1	1	1	1	1	2	2
21.6a	2	1	1	1	1	1	1	1	1	1	1	2	2	3	3	3	3	4	4	3	3	2	2	2	4	2	1	1	1	1	1	1	1	2	2	2	3
22.7a	2	1	1	1	1	1	1	1	1	1	1	1	2	3	4	5	5	6	5	5	4	3	5	4	3	4	3	2	1	1	1	1	2	2	2	2	2
23.6	1	1	1	1	1	1	1	1	1	1	1	2	4	5	6	8	7	9	6	5	6	5	5	5	4	4	3	2	1	1	2	2	2	2	2	2	3
24.x																																					
25.6	2	1	1	1	1	1	1	1	2	3	4	4	4	5	5	5	5	5	6	5	5	5	4	4	4	4	5	4	3	2	2	2	2	2	2	2	2
26.7	2	1	1	1	1	1	1	2	3	3	6	7	6	6	6	6	6	6	6	6	6	6	7	7	5	4	4	5	4	1	1	1	1	2	2	3	2
27.6	2	2	1	1	1	1	1	1	1	2	2	3	4	9	3	3	6	4	6	6	5	6	6	7	3	3	3	3	2	2	2	2	2	2	2	3	3
28.7	2	2	2	2	1	1	1	1	1	1	2	3	13	12	5	3	5	6	5	4	4	4	4	5	3	2	1	1	1	1	1	1	1	2	2	2	2
29.7a	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	3	4	4	4	4	4	4	4	5	5	5	3	2	2	2	2	2	2	2	2	2
30.7a	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	3	3	4	4	4	5	5	4	3	4	4	4	3	1	1	1	1	1	1	1	-	-
31.7a	1	1	1	1	1	1	1	1	1	1	2	3	3	3	4	5	6	5	4	4	4	3	3	3	3	3	3	2	1	1	1	1	2	2	2	2	2

Table 88b

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

Date UT	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
1954																																					
Aug 1.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.6	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-
3.x																																					
4.x																																					
5.x																																					
6.x																																					
7.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.6a	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	-	-	-	-	-	-	-	-
11.9a	-	-	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	-	-	-	-	-	-	-	-
12.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	4	3	3	3	3	3	2	1	-	-	-	-	-
14.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	6	8	6	2	1	1	2	2	1	-	-	-	-	-
15.6a	X	X	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	2	2	2	1	-	-	-
16.6	-	-	-	-	-	-	-	-	-	-	-	-	4	6	1	-	-	-	-	-	-	-	-	1	4	3	3	3	2	2	1	-	-	-	-	-	-
17.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3	3	1	-	-	-	-	-	-	1	1	1	1	1	-	-	-	-	-	-	-	-	-
18.6	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-
19.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22.7a	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-
23.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.x																																					
25.6	-	-	-	-	-	-	-	-	-	-	1	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26.7	-	-	-	-	-	-	-	-	-	1	3	5	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27.6a	-	-	-	-	-	-	-	-	-	-	3	9	8	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.7a	-	-	-	-	-	-	-	-	-	1	3	6	6	5	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29.7	-	-	-	-	-	-	-	-	-	-	1	3	3	1	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
30.7a	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 89b

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

Date UT	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
1954																																					
Aug 1.6a	2	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	3	4	4	3	3	3	3	3	2	1	1	1	1	1	1	1	1
2.6	2	2	1	1	2	2	1	1	1	1	2	2	2	4	4	3	3	7	9	8	8	9	8	8	5	3	2	2	1	1	1	1	2	2	2	2	1
3.x																																					
4.x																																					
5.x																																					
6.x																																					
7.6a	2	2	2	2	1	1	1	1	2	2	2	3	3	3	3	4	4	5	5	5	6	4	4	4	3	2	1	1	1	1	1	2	2	2	2	2	2
8.6	2	1	1	1	1	1	1	1	1	2	3	3	3	3	4	4	5	5	5	4	4	4	3	2	2	1	1	1	1	1	1	2	2	2	2	2	1
9.6	2	1	1	1	1	1	1	1	1	1	2	2	2	3	3	3	4	5	5	5	5	4	4	2	2	2	1	1	1	1	2	2	2	2	2	2	2
10.6a	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2	2	2	2	2	2	2	2	2
11.9a	3	3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2	2	2	2	2	3	3	3	
12.6	2	3	2	1	1	1	1	1	1	1	3	3	4	4	4	4	5	5	5	5	5	4	9	9	8	7	4	3	2	2	2	2	2	2	2	2	2
13.8	2	2	1	1	1	1	1	1	1	2	3	3	4	6	6	6	7	9	8	7	12	13	14	25	15	5	5	5	2	1	1	2	2	2	2	2	3
14.6	2	2	2	2	1	1	1	2	2	2	2	3	6	5	5	5	5	6	6	6	5	4	3	20	2	2	2	2	2	2	2	2	2	2	2	2	2
15.6a	X	X	X	X	X	X	X	X	X	X	2	2	2	2	2	2	3	4	4	4	4	4	4	5	7	7	2	2	2	2	2	2	2	2	2	2	2
16.6	2	2	1	1	1	1	1	1	1	2	1	3	3	15	4	4	4	5	5	5	5	5	5	5	7	15	2	1	1	1	1	1	1	2	2	2	2
17.6a	2	2	1	1	1	1	1	1	3	3	3	3	3	3	10	4	5	5	5	5	5	4	5	5	5	4	3	3	2	1	1	2	2	2	2	2	2
18.6	2	1	1	1	1	1	1	1	1	2	3	3	3	3	4	3	3	5	4	4	4	3	3	3	3	4	2	2	1	1	1	1	1	1	1	2	2
19.6a	1	1	1	1	1	1	1	1	1	2	2	3	4	4	4	4	4	5	5	5	5	4	4	4	4	4	2	1	1	1	1	1	2	2	2	2	1
20.6	2	1	1	1	1	1	1	1	1	1	2	2	3	3	4	5	4	4	5	5	5	5	4	3	3	3	2	1	1	1	1	1	2	2	2	2	2
21.6	3	2	2	2	1	1	1	1	1	1	2	2	3	5	6	6	6	6	5	4	4	5	5	5	5	4	3	2	2	2	2	2	2	1	1	1	2
22.7a	2	1	1	1	1	1	1	1	1	2	3	2	2	7	8	8	8	8	8	8	4	4	4	4	5	5	2	1	1	1	2	2	2	2	2	2	2
23.6	3	2	1	1	1	1	1	2	3	4	5	5	6	5	6	6	6	6	7	6	6	4	4	5	5	4	2	1	1	1	1	1	1	1	2	2	1
24.x																																					
25.6	2	3	2	1	1	1	1	1	7	14	14	13	8	9	8	5	5	6	6	5	4	3	3	3	4	4	3	2	2	2	2	2	2	2	2	2	2
26.7	2	2	2	2	1	1	1	1	1	3	6	15	11	4	4	5	6	6	6	5	5	4	4	4	4	3	2	2	2	2	2	2	2	2	2	2	2
27.6a	3	2	2	2	1	1	1	1	1	1	1	12	18	2	3	3	4	5	6	4	4	5	5	5	3	3	3	2	1	1	1	1	2	2	3	2	2
28.7a	2	2	1	1	1	1	1	1	1	1	1	1	3	2	1	7	6	7	7	6	7	6	6	6	6	5	4	4	3	2	2	2	2	2	2	2	2
29.7	2	2	2	2	1	1	1	1	1	1	1	5	4	4	5	4	4	4	4	4	3	3	3	3	3	2	2	2	2	2	2	2	2	2	1	1	1
30.7a	-	-	-	-	1	1	1	1	1	1	1	1	1	4	4	3	3	3	3	3	2	2	3	3	3	3	1	1	1	1	1	1	1	1	1	1	1
31.7	2	2	2	2	1	1	1	1	1	1	1	1	2	2	3	4	2	2	2	3	4	3	4	6	2	2	3	2	1	1	1	1	1	1	2	2	1

Table 90a

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

Date UT	Degrees north of the solar equator 90 85 80 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5	0°	Degrees south of the solar equator 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90
1954			
Aug 1.6a	The 6702A coronal line was not visible at the east limb on any of the observation dates in August; the position angles observed were the same as for the 5303A coronal line.		
2.6			
3.x			
4.x			
5.x			
6.x			
7.6			
8.6a			
9.6			
10.6a			
11.9a			
12.6			
13.8			
14.6			
15.6a			
16.6			
17.6			
18.6			
19.6a			
20.6a			
21.6a			
22.7a			
23.6			
24.x			
25.6			
26.7			
27.6			
28.7			
29.7a			
30.7			
31.7			

Table 91a

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

Date UT	Degrees north of the solar equator 90 85 80 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5	0°	Degrees south of the solar equator 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90
195			
Aug 1.7	- - - - - - - 2 2 3 2 2 4 8 16 12 5 4	3	2 2 - - - - - - - - - - - - - - - - -
2.x			
3.x			
4.x			
5.7	- - - - - - - - 4 8 12 2 2 2 2 - - 2	3	2 - - - - - - - 3 2 2 - - - - - - - -
6.x			
7.x			
9.0a	- - - - 2 3 2 - - - - - - 2 3 3 3 4	3	3 2 2 - - - - - - - 2 3 - - - - - - -
9.x			
10.8a	- - - - - - - - - - 2 3 2 2 3 3 2 2	2	3 2 2 2 3 2 3 3 3 4 3 2 - - - - - - -
11.7a	- - - - - - - - - - 2 2 3 3 3 3 2 -	-	- - - - - - - 2 3 3 2 - - - - - - - -
12.9a	- - - - - - - - 2 3 2 2 - - - - - -	-	- - - - - 2 3 3 3 3 4 3 - - - - - - -
13.7	- - - - - - - 2 2 2 2 3 3 5 4 4 5 4	3	3 2 2 - - - - 2 3 2 3 - - - - - - - -
14.8	- - - - - 2 3 3 3 3 2 3 2 - - - - -	-	- - - - - - - 2 2 3 2 2 - - - - - - -
15.x			
16.6	- - - - - - - - - - - - - - - - - -	-	- - - - - - - - - - - - - - - - - - -
17.x			
18.7a	- - - - - - - - - 2 3 3 3 3 2 2 3 2	2	2 3 2 - - - - - - - - - - - - - - - -
19.x			
20.6a	- - - - - - - - - 2 3 3 3 3 4 3 2 -	-	- - - - - - - - - 4 4 3 4 2 - - - - -
21.x			
22.x			
23.x			
24.x			
25.9	- - - - - - 2 3 3 4 4 5 4 3 3 2 2 2	2	- - - - - - 3 4 4 3 2 - - - - - - - -
26.6a	- - - - - - - 2 3 4 4 3 2 3 3 2 3 3	2	- - - - - - - - - - - - - - - - - - -
27.7	- - - 3 3 3 5 6 8 9 10 14 20 23 14 5 3 2	2	- - - - - - - 2 4 4 3 2 - - - - - - -
28.7	- - - - 2 3 5 7 6 5 6 8 14 17 16 11 4 3	-	- - - - - - - 2 3 2 2 - - - - - - - -
29.6	- - - - - 2 3 3 4 5 5 5 8 12 8 5 3 3	2	2 - - - 3 2 2 - - - - - - - - - - - -
30.6	- - - - - 2 3 3 5 7 6 5 3 4 4 3 2 2	3	2 3 2 3 2 4 5 5 4 3 3 3 3 2 - - - -
31.x			

Table 90b

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

Date UT	Degrees south of the solar equator 90 85 80 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5	0°	Degrees north of the solar equator 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90
1954			
Aug 1.6a			
2.6			
3.x			
4.x			
5.x			
6.x			
7.6a	The 6702A coronal line was not visible at the west limb on any of the observation dates in August;		
8.6	the position angles observed were the same as for the 5303A coronal line.		
9.6			
10.6a			
11.9a			
12.6			
13.8			
14.6			
15.6a			
16.6			
17.6a			
18.6			
19.6a			
20.6			
21.6			
22.7a			
23.6			
24.x			
25.6			
26.7			
27.6a			
28.7a			
29.7			
30.7			
31.7			

Table 91b

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

Date UT	Degrees south of the solar equator 90 85 80 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5	0°	Degrees north of the solar equator 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90
1954			
Aug 1.7a	- - - - - 2 3 3 2 3 2 2 - - - - - - -	-	- - - - - - - - - - - - - - - - - -
2.x			
3.x			
4.x			
5.7	- - - - - - - 2 3 3 3 4 2 2 2 2 2 3	2	3 11 20 5 2 3 4 3 3 3 2 2 2 2 - - - -
6.x			
7.x			
9.0	- - - - - 2 2 2 2 2 - - - - - - - 2	-	- - 2 2 2 2 3 3 2 2 2 - - - - - - -
9.x			
10.8a	- - - - - 2 2 3 3 2 - - - - - 2 3 2	2	- - - - 2 3 3 2 3 4 3 - - - - - - -
11.7a	- - - - - - - 3 3 3 2 2 - - - 2 2 3	3	2 3 3 2 2 2 3 3 3 3 2 - - - - - - -
12.9a	- - - - - - - 2 3 3 2 - - - - - - -	-	- - - - 3 3 3 2 3 2 - - - - - - - -
13.7	- - - - - - - - - - - - 3 3 3 3 3 2	2	- - 2 3 3 8 9 9 7 5 6 6 3 2 - - - -
14.8	- - - - - - - - - - - - - - - - - -	2	3 3 3 4 15 20 19 6 5 5 5 4 3 2 - - - -
15.x			
16.6	- - - - - - - - - - - - 2 3 8 12 5 4	3	2 2 3 3 4 3 5 6 5 3 3 3 2 - - - - - -
17.x			
18.7a	- - - - - - - - - - - - - - - - - -	-	- - - - - - 2 3 5 4 5 3 2 4 4 3 - - -
19.x			
20.6a	- - - - - - - - - - - - - - - - - -	-	- - - - - - - 3 4 4 4 3 2 - - - - - -
21.x			
22.x			
23.x			
24.x			
25.9a	- - - - - - - 2 2 3 4 5 7 13 5 4 3 3	2	- - - - - 2 2 3 3 5 5 4 3 2 - - - -
26.6a	- - - - - - - 2 3 3 5 8 12 10 5 3 2 2	2	2 - - - - - - - - - - - - - - - - -
27.7	- - - - - 2 3 4 5 6 5 8 39 36 8 5 3 3	2	- - - 2 3 3 3 3 3 3 2 - - - - - - -
28.7	- - - - - - 2 3 4 5 4 8 16 20 13 6 5 3	2	2 2 3 2 2 - 2 3 2 2 - - - - - - - -
29.6	- - - - - - 2 3 4 3 4 5 13 5 4 3 3 2	2	2 2 2 3 4 4 4 4 4 3 3 2 - - - - - -
30.6	- - - - - 2 3 5 8 9 5 5 11 10 9 7 5 3	2	- - - - 2 3 3 2 2 - - - - - - - - -
31.x			

Table 92a

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

Date UT	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
1954																																					
Aug 1.7	2	3	3	2	2	2	2	3	3	2	2	2	8	17	18	15	12	8	7	8	7	6	5	4	3	4	2	2	3	2	2	3	2	2	2	-	2
2.x																																					
3.x																																					
4.x																																					
5.7	4	3	5	4	3	4	3	2	3	5	10	14	13	13	11	11	12	13	14	14	15	14	13	14	13	11	10	10	9	5	3	2	2	3	4	4	4
6.x																																					
7.x																																					
9.0a	2	2	3	2	2	3	3	2	2	3	-	-	3	4	5	4	4	4	4	5	5	4	4	3	3	2	4	2	2	2	2	-	2	2	3	2	3
9.x																																					
10.8a	4	3	4	3	3	3	2	2	-	2	3	4	4	5	5	6	8	7	8	9	9	9	8	8	7	6	5	4	2	2	2	2	2	3	3	3	3
11.7a	3	2	2	2	2	-	2	-	3	3	3	2	4	3	3	4	6	8	10	11	8	7	6	6	5	5	4	3	4	3	2	2	-	2	2	4	3
12.9a	-	-	-	-	-	-	-	-	-	3	3	4	4	4	3	4	5	5	5	6	6	8	7	6	6	7	5	4	3	-	-	-	-	-	-	-	-
13.7	4	4	3	3	2	2	3	2	3	3	5	8	6	6	7	7	6	8	8	9	8	7	7	7	8	7	8	6	4	4	3	3	2	2	3	5	4
14.8	2	3	3	3	2	-	2	2	-	-	2	3	5	6	7	8	7	8	8	10	8	7	6	6	6	5	6	5	3	2	3	3	3	2	3	2	3
15.x																																					
16.6	3	3	3	2	2	2	3	2	2	-	3	3	4	5	8	7	8	7	7	8	9	8	7	7	7	7	6	5	4	3	2	3	2	2	3	3	3
17.x																																					
18.7a	3	3	2	2	2	2	-	-	2	3	3	2	3	3	2	3	5	5	6	5	4	6	6	5	5	4	5	5	3	-	-	-	-	-	-	-	-
19.x																																					
20.6a	3	3	3	2	2	-	2	2	2	3	4	5	3	5	8	11	13	14	15	14	13	12	12	10	8	6	5	4	2	2	2	2	3	2	2	2	3
21.x																																					
22.x																																					
23.x																																					
24.x																																					
25.9	5	6	2	3	3	4	3	3	2	3	6	11	13	12	11	14	13	13	14	12	11	11	10	8	8	9	8	7	8	6	4	3	2	-	2	2	3
26.6a	3	2	3	2	3	2	2	2	2	3	4	5	6	6	4	5	4	8	9	11	10	8	9	11	7	5	6	7	8	4	3	2	-	3	2	3	3
27.7	4	4	5	6	4	3	3	2	4	5	6	5	9	20	7	14	16	11	12	14	13	13	13	14	15	11	8	7	5	6	5	4	3	2	3	3	4
28.7	4	4	3	3	3	3	2	2	3	4	3	5	5	7	12	14	16	15	15	14	14	15	14	11	12	14	13	12	8	4	3	2	-	2	3	2	5
29.6	3	4	3	3	4	2	2	3	3	3	2	4	9	11	8	7	8	11	14	11	11	12	11	10	8	11	10	10	4	3	3	2	2	2	3	4	4
30.6	4	5	4	5	4	4	3	3	3	2	4	4	4	10	11	10	11	13	13	11	7	5	6	8	9	6	4	5	3	3	2	3	3	3	3	3	3
31.x																																					

Table 93a

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

Date UT	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
1954																																					
Aug 1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.x																																					
3.x																																					
4.x																																					
5.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.x																																					
7.x																																					
9.0a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.x																																					
10.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15.x																																					
16.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.x																																					
18.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19.x																																					
20.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.x																																					
22.x																																					
23.x																																					
24.x																																					
25.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.7	-	-	-	-	-	-	-	-	-	-	-	-	2	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.x																																					

Table 92b

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

Date UT	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
1954																																						
Aug 1.7a	2	2	2	2	2	-	2	3	2	2	-	3	3	4	3	4	3	3		5	4	6	7	7	6	5	5	4	3	2	2	2	-	2	-	2	3	2
2.x																																						
3.x																																						
4.x																																						
5.7	4	3	4	3	2	2	3	3	4	5	4	4	5	6	5	6	10	13		12	12	14	17	14	8	5	4	5	6	4	3	2	2	3	2	3	4	4
6.x																																						
7.x																																						
9.0	3	2	2	2	2	2	2	2	-	-	2	3	3	3	3	4	5	5		6	8	7	6	5	4	3	2	2	2	3	2	2	3	2	3	3	3	2
9.x																																						
10.8a	3	2	3	2	2	2	2	3	3	3	4	3	3	3	3	4	5	8		7	11	12	13	13	12	11	11	10	5	4	2	-	2	2	2	3	3	4
11.7a	3	2	4	3	2	2	2	2	2	3	4	7	8	7	5	8	9	13		11	11	12	13	13	12	11	9	11	8	5	4	2	2	2	2	2	3	3
12.9a	-	-	-	-	-	-	-	-	-	2	2	3	3	3	3	4	4	4		5	5	4	5	6	5	8	7	5	3	-	-	-	-	-	-	-	-	-
13.7	4	5	6	5	3	2	2	2	3	4	5	8	7	7	6	8	8	9		11	10	9	8	8	10	23	11	8	6	5	4	2	2	2	2	3	4	4
14.8	3	2	3	2	2	2	2	2	2	2	5	4	8	11	8	9	6	7		8	10	11	10	8	7	25	6	3	2	2	2	2	2	2	2	3	2	2
15.x																																						
16.6	3	3	2	3	2	3	3	2	-	3	2	4	5	5	15	5	4	6		7	6	6	5	6	7	5	8	11	3	2	-	-	-	-	-	2	2	3
17.x																																						
18.7a	-	2	2	2	-	-	-	-	-	-	2	2	2	2	2	3	3	5		5	6	5	5	5	4	5	7	3	2	-	-	-	-	-	-	-	2	3
19.x																																						
20.6a	3	2	2	2	3	2	2	2	2	3	3	4	5	6	6	8	11	10		11	12	13	8	8	7	7	5	5	4	2	2	-	-	-	-	2	3	3
21.x																																						
22.x																																						
23.x																																						
24.x																																						
25.9a	3	3	3	3	4	2	3	2	2	5	12	20	16	11	13	14	12	11		11	12	11	10	5	4	5	8	8	7	4	3	2	2	3	3	3	4	5
26.6a	3	3	4	3	3	2	-	2	-	-	4	5	12	13	10	8	5	8		11	8	6	7	6	5	5	5	6	4	2	2	-	-	-	-	-	-	3
27.7	4	3	3	4	5	2	-	-	2	3	5	8	36	36	5	11	12	15		14	12	9	10	13	12	11	8	8	6	5	3	3	2	3	2	3	3	4
28.7	5	4	3	4	3	2	3	2	3	4	6	8	23	25	16	11	12	15		15	11	12	11	11	9	9	8	6	5	3	2	2	-	2	3	2	3	4
29.6	4	-	-	2	2	2	-	2	2	3	3	2	12	10	8	7	7	9		12	11	8	7	7	6	5	5	5	4	3	2	2	2	3	3	2	2	3
30.6	3	4	3	4	5	5	4	3	3	4	3	4	5	13	10	11	13	13		14	13	12	11	10	8	7	5	6	5	4	3	4	3	2	3	3	3	4
31.x																																						

Table 93b

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

Date UT	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
1954																																						
Aug 1.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.x																																						
3.x																																						
4.x																																						
5.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.x																																						
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9.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.x																																						
10.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	2	3	2	-	-	-	-	-	-	-	-	-	-	-
15.x																																						
16.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.x																																						
18.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19.x																																						
20.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.x																																						
22.x																																						
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24.x																																						
25.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27.7	-	-	-	-	-	-	-	-	-	-	2	3	4	4	3	2	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.7	-	-	-	-	-	-	-	-	-	-	-	2	3	3	2	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.x																																						

Table 94

Zürich Provisional Relative Sunspot Numbers

August 1954

Date	R_Z*	Date	R_Z*
1	8	17	0
2	9	18	0
3	16	19	0
4	9	20	0
5	12	21	9
6	19	22	15
7	14	23	18
8	10	24	16
9	13	25	11
10	23	26	7
11	14	27	7
12	14	28	0
13	8	29	0
14	0	30	0
15	0	31	0
16	0	Mean:	8.1

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

Table 95

American Relative Sunspot Numbers

July 1954

Date	R_A'	Date	R_A'
1	0	17	8
2	0	18	3
3	0	19	0
4	0	20	0
5	0	21	0
6	0	22	0
7	0	23	0
8	5	24	5
9	1	25	7
10	0	26	3
11	0	27	0
12	4	28	0
13	10	29	0
14	9	30	1
15	5	31	0
16	5	Mean:	2.1

Table 96

Solar Flares, August 1954

Observatory	Date 1954	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	Aug. 6	1215B	1245A			N28	E15				1	
McMath	Aug. 6	1600B				N28	E15				1	
McMath	Aug.22	1525B				S31	W23				1	
McMath	Aug.22	2125	2140	15		S31	W26				1-	
McMath	Aug.23	1325	1420	55		S30	W33				1	

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

Table 97

Indices of Geomagnetic Activity for July 1954

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

Gr. Day 1954	C	Values Kp* Three-hour interval 1	2	3	4	5	6	7	8	Sum	Final Selected Days
1	0.7										Five
2	0.2										Quiet
3	0.1										
4	0.1										2
5	0.3										3
											4
6	0.8										9
7	0.4										10
8	0.3										
9	0.1										
10	0.1										
11	0.2										Five
12	0.7										Disturbed
13	0.3										
14	0.8										1
15	0.7										14
											25
16	0.6										27
17	0.7										28
18	1.0										
19	0.7										
20	0.4										
21	0.4										Ten
22	0.2										Quiet
23	0.3										
24	0.6										2
25	0.8										3
											4
26	0.6										5
27	0.8										8
28	1.1										9
29	0.7										10
30	0.4										11
31	0.6										13
Mean:	0.51										22

* Note: The geomagnetic planetary three-hour-range indices, Kp for July have not been received at publication date (September 15) The July table will be published in October.

Table 98

Indices of Geomagnetic Activity for May 1954

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

Gr. Day 1954	C	Values Kp Three-hour interval 1	2	3	4	5	6	7	8	Sum	Final Selected Days
1	0.1	3-	1+	1o	1-	1o	0+	0+	2-	9o	Five
2	0.4	2+	4-	3-	1+	1-	1o	1+	1+	14+	Quiet
3	0.2	2-	3-	1o	1+	1o	1+	1o	2o	12o	
4	1.0	2o	2o	2+	2+	2+	3o	3+	4o	21+	1
5	0.3	2+	2o	2+	2+	2o	2-	1+	1+	15+	7
											17
6	0.2	2+	3-	2+	1o	0+	0+	1-	0+	10o	25
7	0.1	0+	1-	0+	0+	1-	2-	1o	1+	6+	30
8	0.8	2+	1+	1o	1o	2o	3o	4-	3-	17o	
9	0.9	4-	3+	3o	3-	2o	2-	2o	3-	21o	
10	0.6	1o	1o	2+	1+	1-	2o	3+	2+	14o	
11	0.9	4-	3+	3+	3o	2+	2o	3o	2+	23o	Five
12	0.4	2+	1-	1-	2o	2+	1+	2+	2+	14o	Disturbed
13	0.5	2+	2o	1+	1+	3-	2o	2+	2o	16o	
14	0.2	3o	2-	2o	3-	0+	1+	1+	1o	13+	4
15	0.7	2-	3-	2-	1+	3+	2+	2-	2+	17o	9
											11
16	0.2	3-	3-	1o	1+	0+	0+	1+	1-	10+	18
17	0.0	0+	0+	0+	0+	0+	1-	1o	1+	5-	21
18	0.9	3+	3+	1o	3o	3-	2-	3+	3o	21+	
19	0.8	3o	2o	1+	2+	2o	2o	3-	3+	19-	
20	0.7	2+	2+	2-	1o	2o	2-	3+	3o	17+	
21	0.8	3+	2o	2o	2+	3+	3+	2+	2-	20+	Ten
22	0.2	2-	1+	2-	1-	0+	0+	1+	3-	10o	Quiet
23	0.2	2+	1+	3-	1-	0+	0+	1+	2-	11-	
24	0.4	2-	1+	2o	2-	2-	1o	2o	2o	13+	1
25	0.2	2-	2o	1+	1o	1o	1-	1o	0+	9o	6
											7
26	0.2	2-	2-	2-	0+	2-	2o	1o	2-	12-	16
27	0.2	2+	3o	1+	0+	0+	1-	0+	0o	8+	17
28	0.2	0+	1-	1+	3-	1o	1o	2-	2-	10+	22
29	0.7	3-	2o	4-	1+	2-	2-	2-	2-	16+	25
30	0.1	1+	1o	1o	2-	1o	1-	0+	1+	8+	26
31	0.4	1o	1-	1o	2o	2o	2o	2+	1+	12+	27
											30
Mean:	0.44										

Note: These indices derived from the 11 Kp-observatories replace those published in F119 (derived from 9 stations only).

Table 99

Sudden Ionosphere Disturbances Observed at Washington, D. C.

August 1954

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

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, Boulder, Colorado; Attention: Mr. Vaughn Agy.

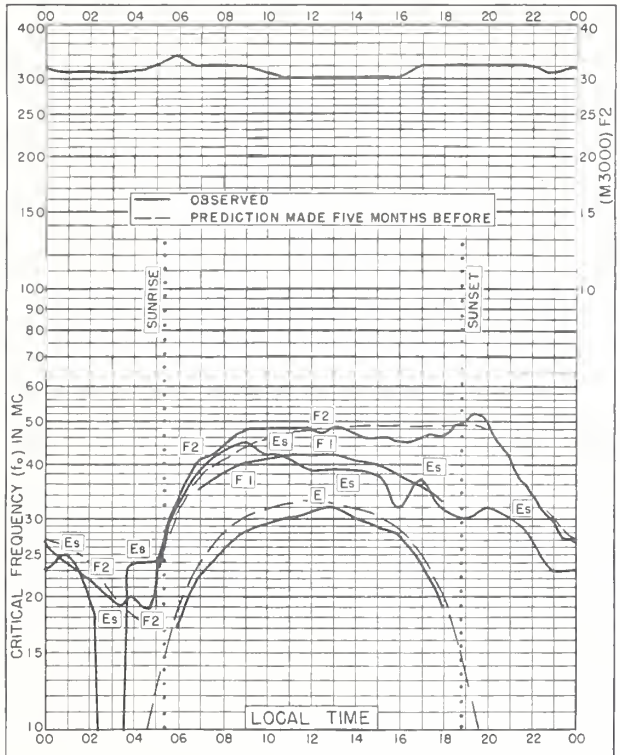


Fig. 1. WASHINGTON, D.C.
38.7°N, 77.1°W AUGUST 1954

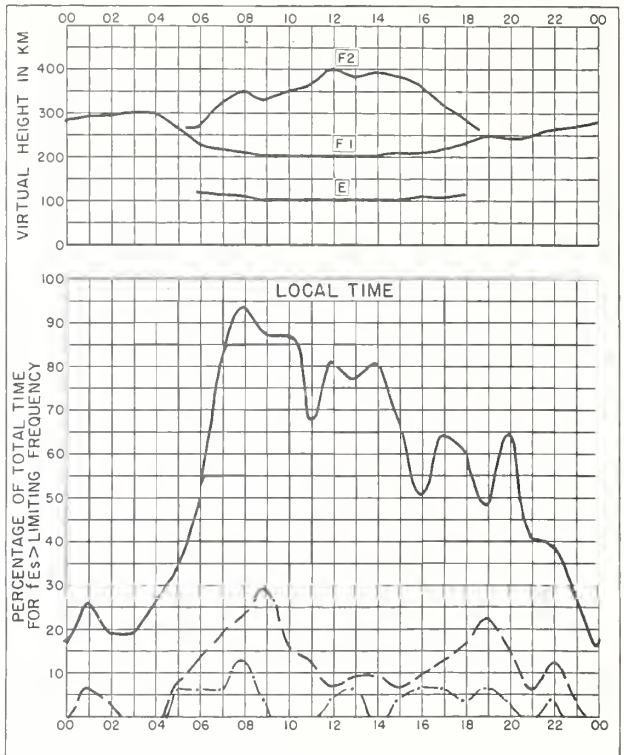


Fig. 2. WASHINGTON, D.C. AUGUST 1954

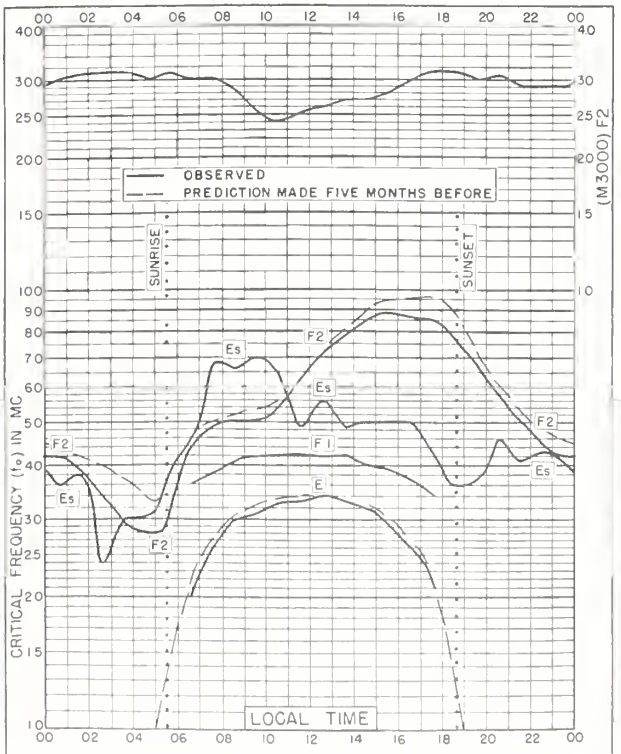


Fig 3. MAUI, HAWAII
20.8°N, 156.5°W JULY 1954

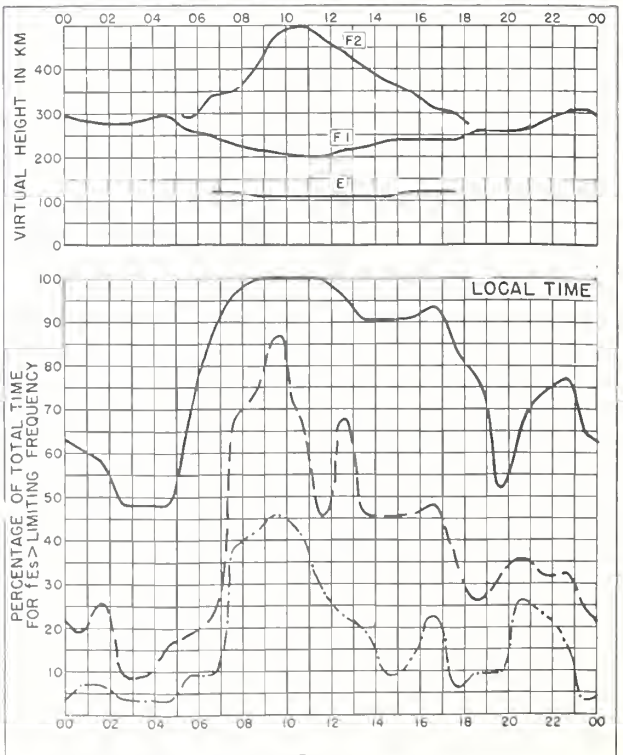


Fig. 4. MAUI, HAWAII JULY 1954

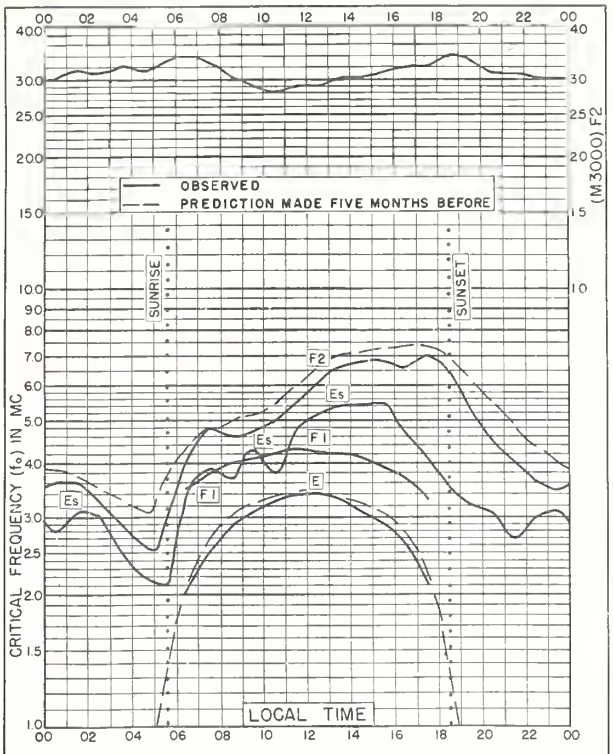


Fig. 5. PUERTO RICO, W. I.
18.5°N, 67.2°W JULY 1954

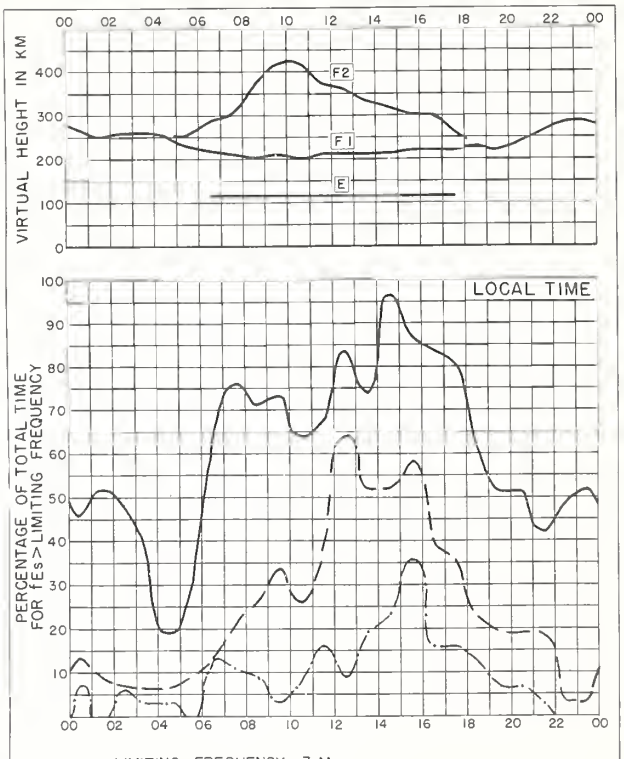


Fig. 6. PUERTO RICO, W. I. JULY 1954

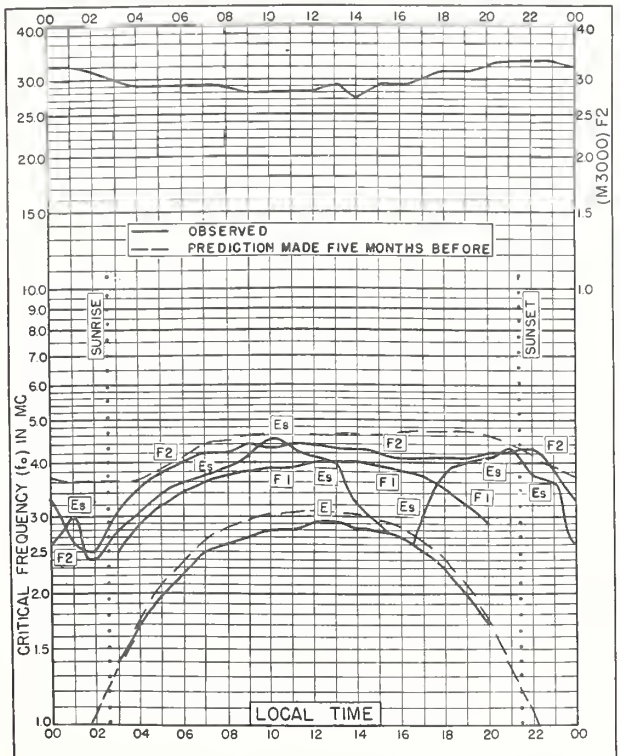


Fig. 7. ANCHORAGE, ALASKA
61.2° N, 149.9° W JUNE 1954

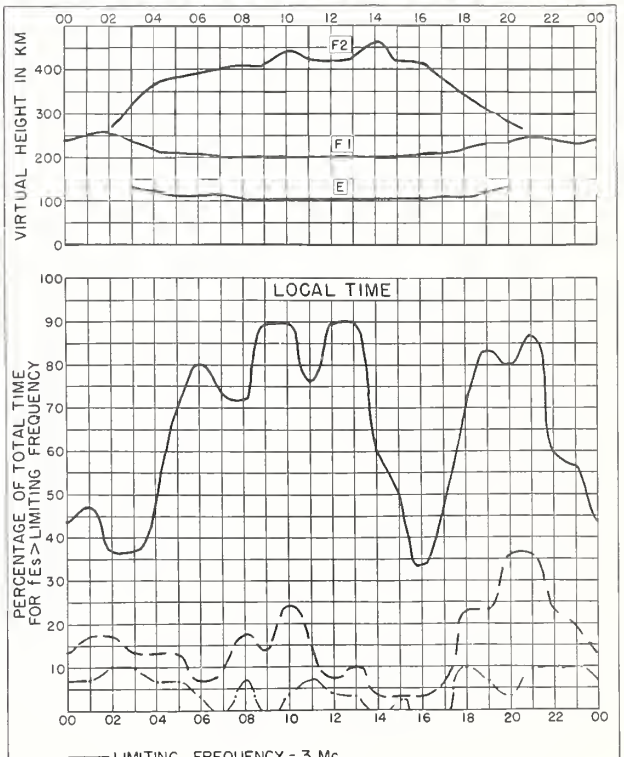


Fig. 8. ANCHORAGE, ALASKA JUNE 1954

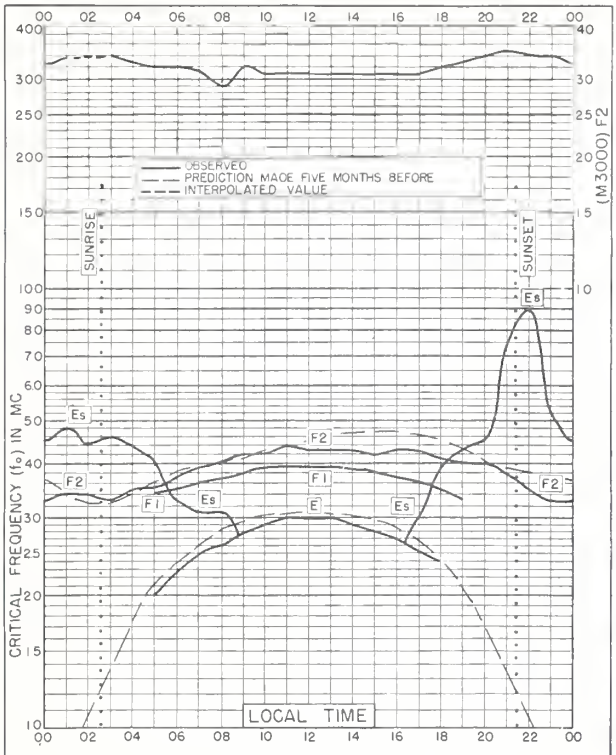


Fig. 9. NARSARSSUAK, GREENLAND
61.2°N, 45.4°W JUNE 1954

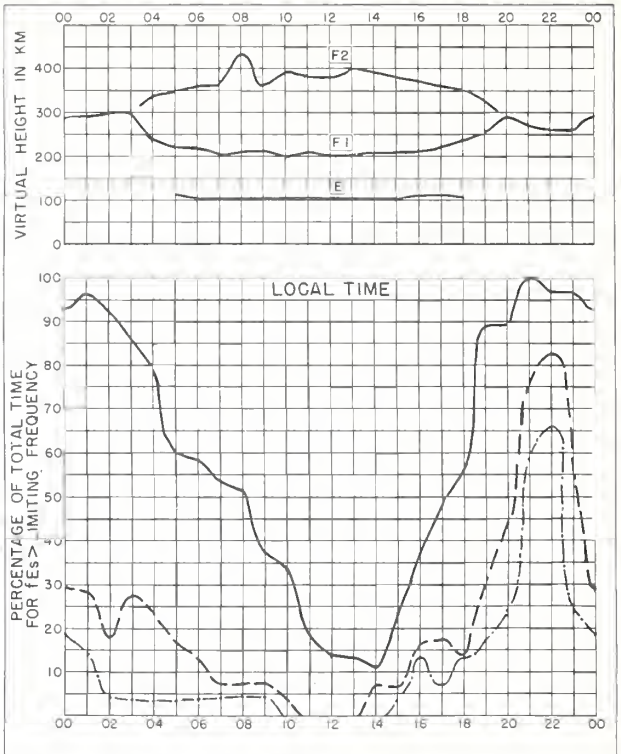


Fig. 10. NARSARSSUAK, GREENLAND JUNE 1954

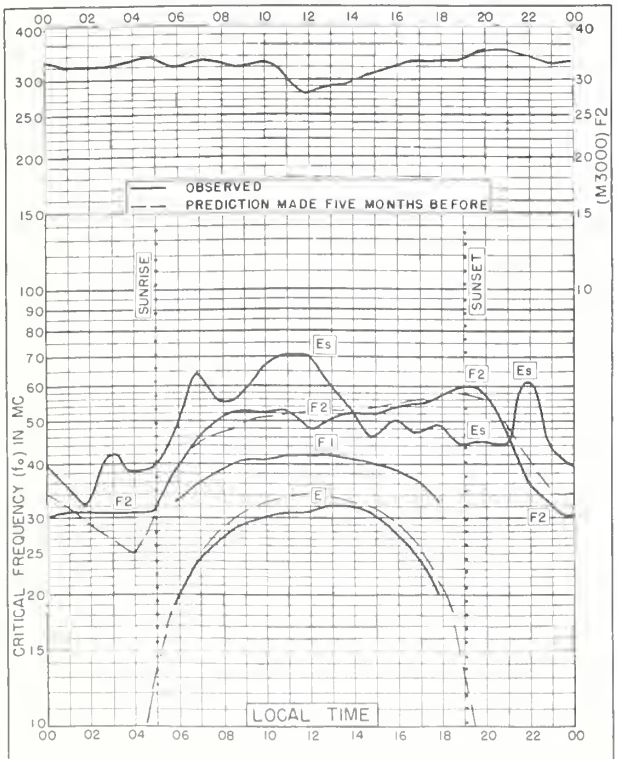


Fig. 11. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W JUNE 1954

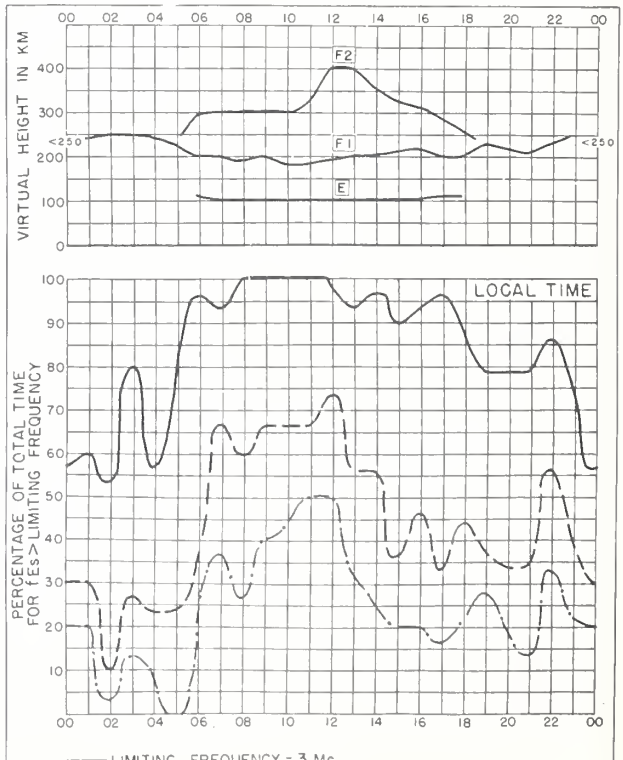


Fig. 12. WHITE SANDS, NEW MEXICO JUNE 1954

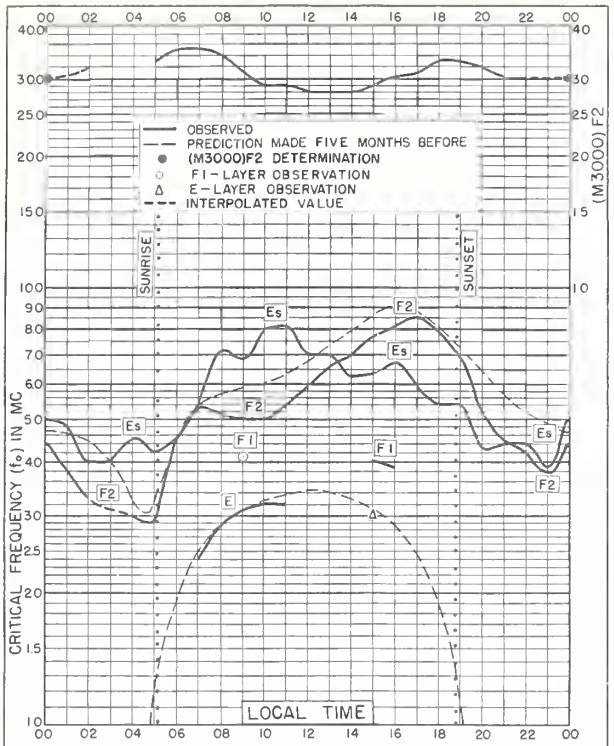


Fig. 13. OKINAWA I.
26.3° N, 127.8° E
JUNE 1954

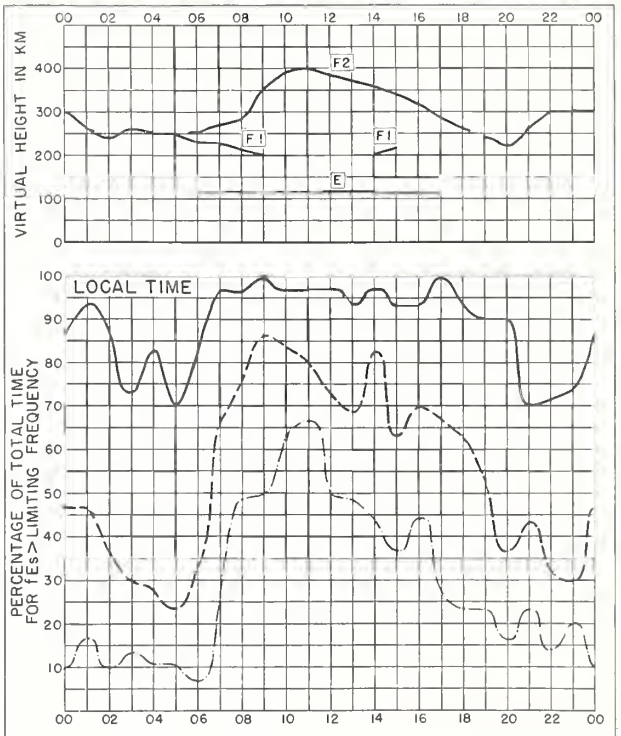


Fig. 14. OKINAWA I.
JUNE 1954

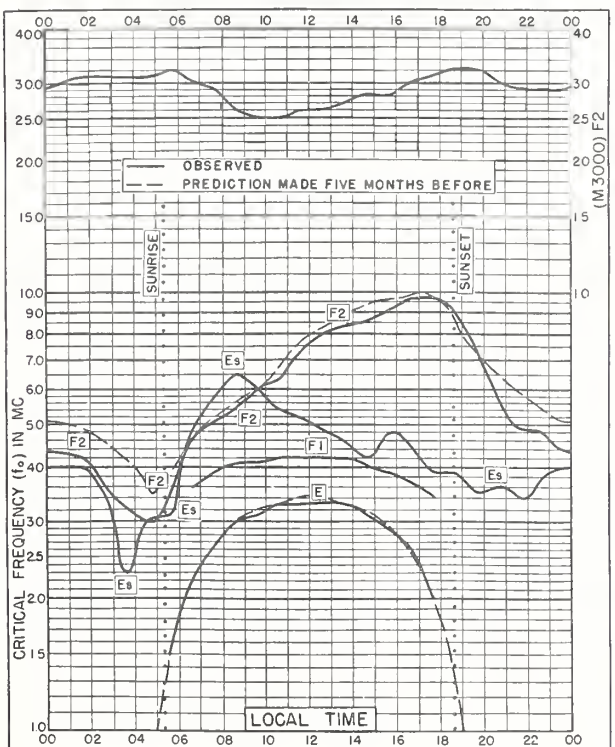


Fig 15. MAUI, HAWAII
20.8°N, 156.5°W
JUNE 1954

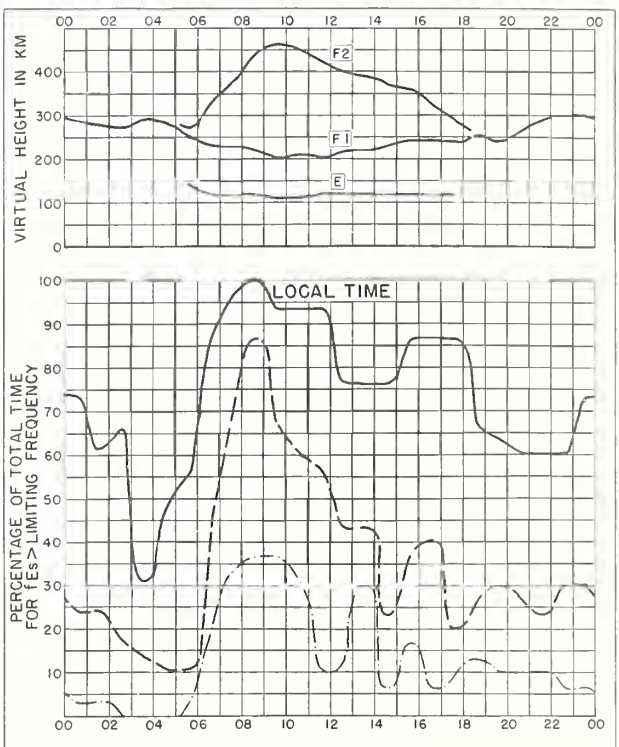


Fig 16. MAUI, HAWAII
JUNE 1954

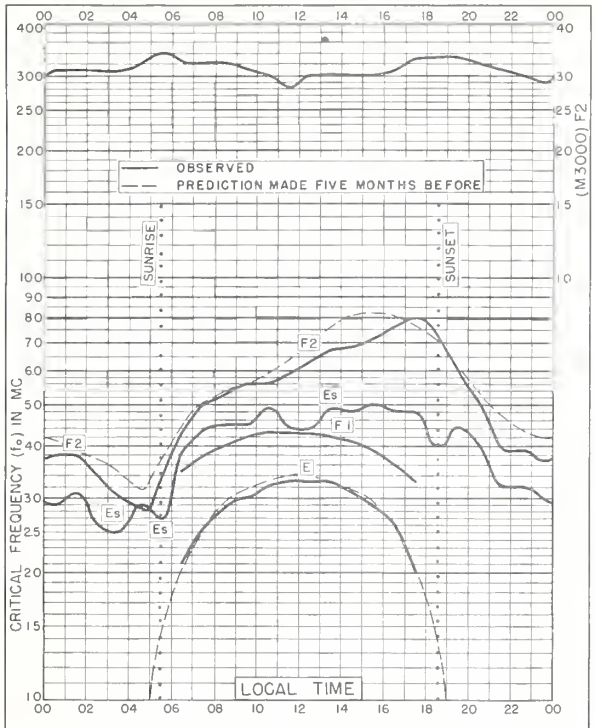


Fig. 17. PUERTO RICO, W I.
18.5° N, 67.2° W
JUNE 1954

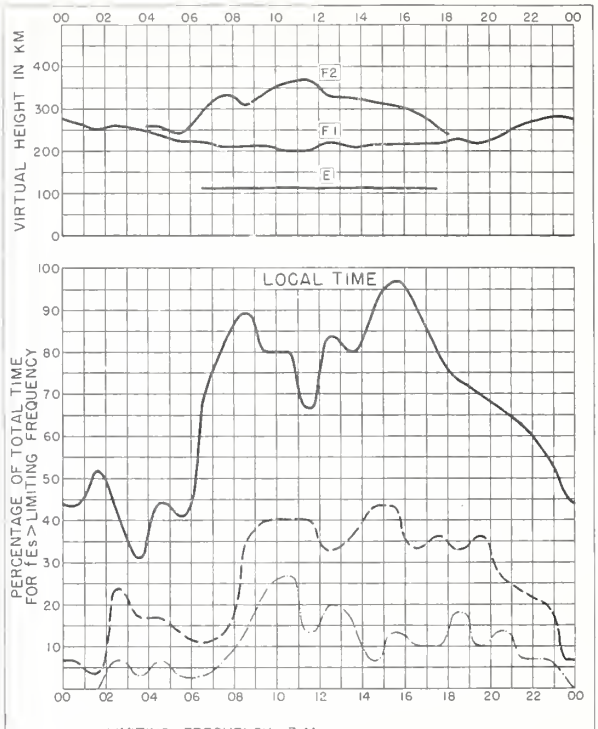


Fig 18. PUERTO RICO, W I.
JUNE 1954

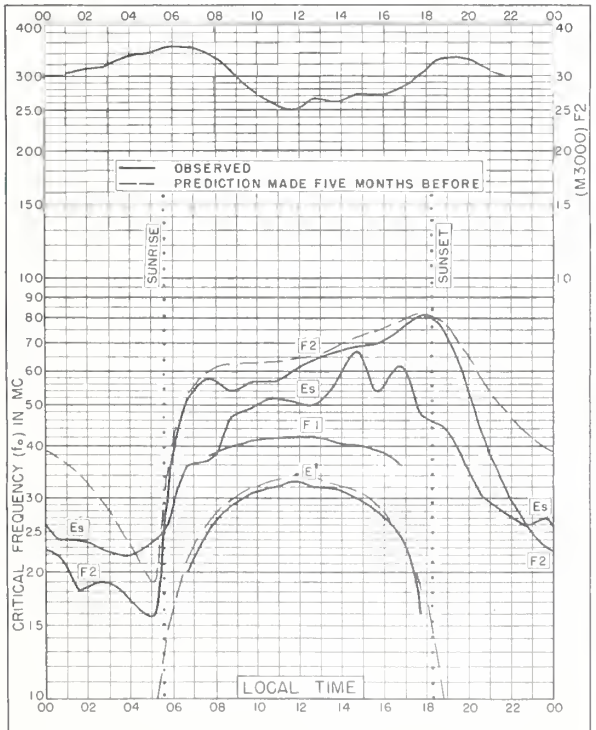


Fig 19. GUAM I.
13.6° N, 144.9° E
JUNE 1954

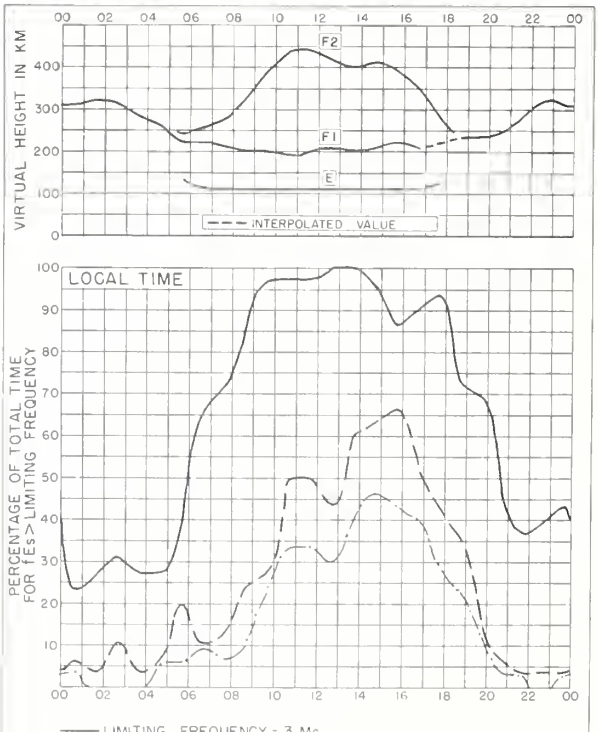


Fig 20. GUAM I.
JUNE 1954

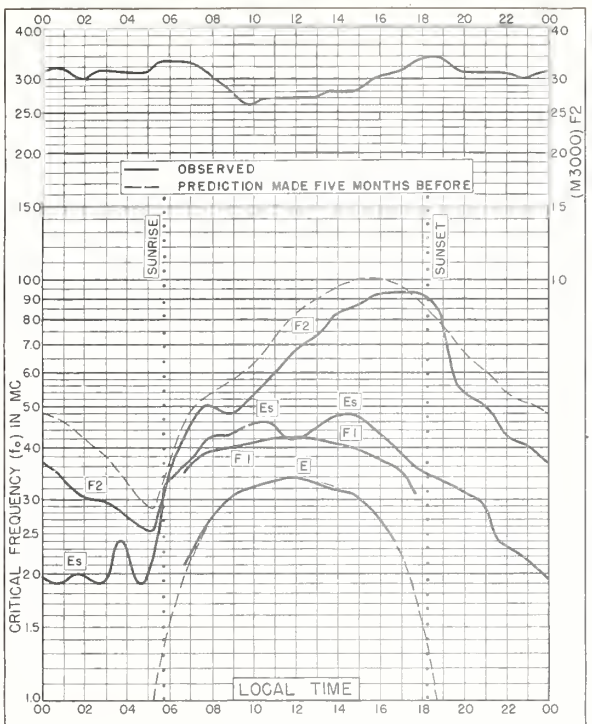


Fig. 21. PANAMA CANAL ZONE
9.4°N, 79.9°W JUNE 1954

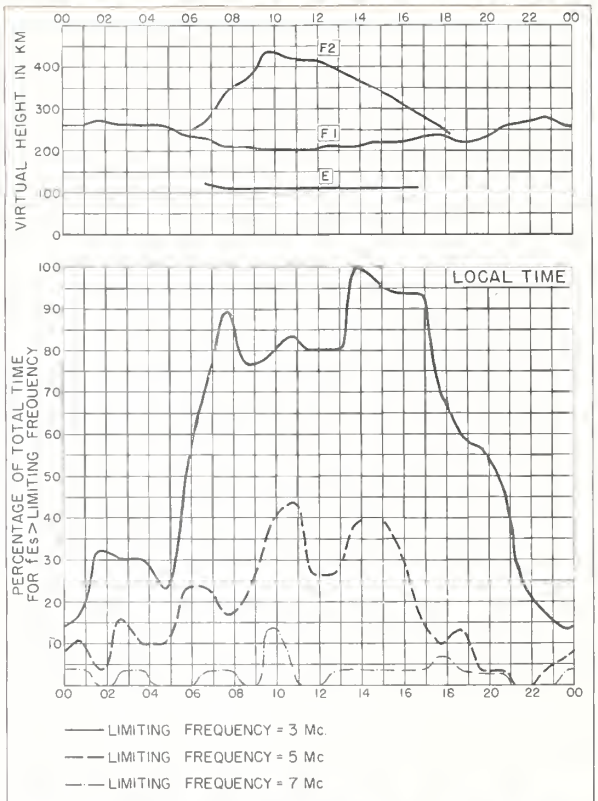


Fig. 22. PANAMA CANAL ZONE JUNE 1954

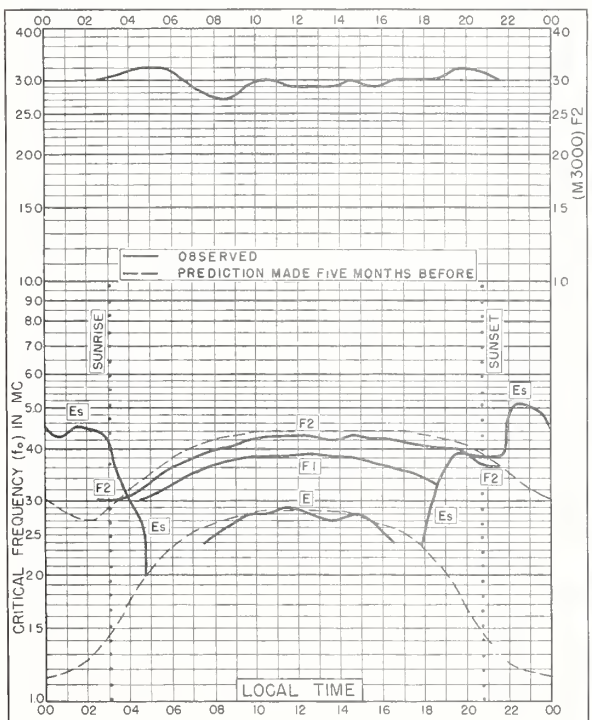


Fig 23. REYKJAVIK, ICELAND
64.1°N, 21.8°W MAY 1954

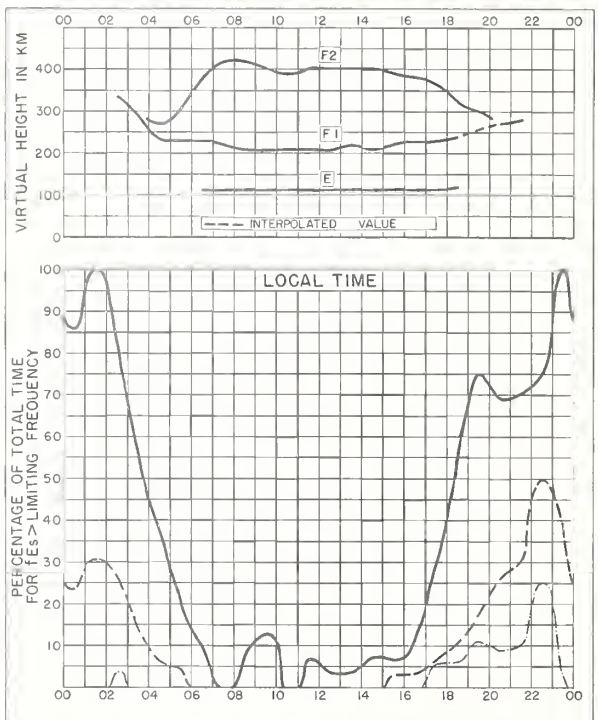


Fig. 24. REYKJAVIK, ICELAND MAY 1954

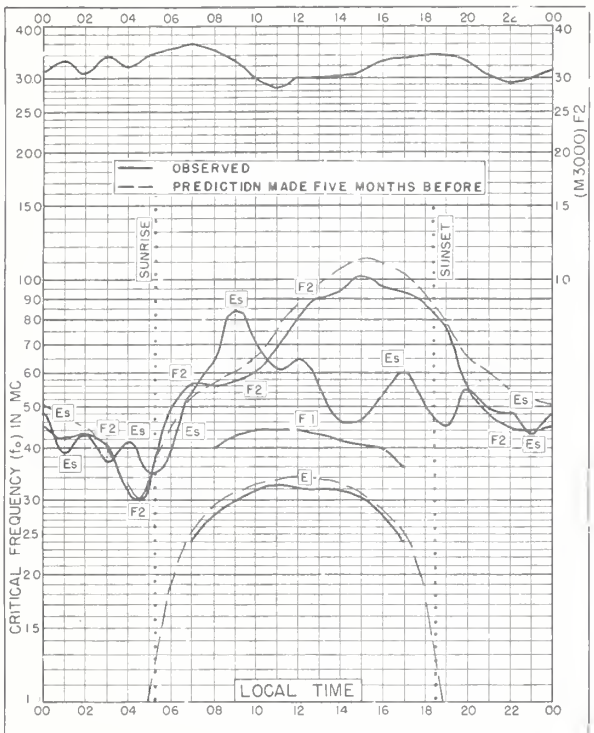


Fig. 25. OKINAWA I.
26.3°N, 127.8°E MAY 1954

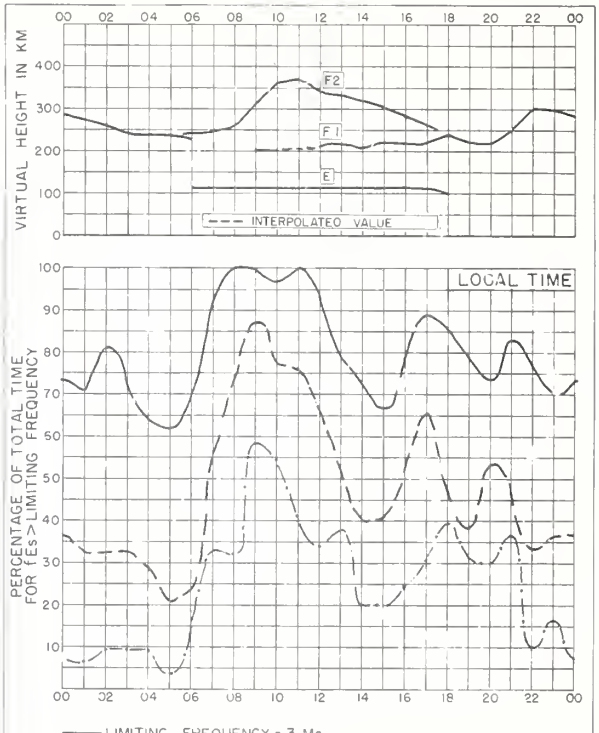


Fig. 26. OKINAWA I. MAY 1954

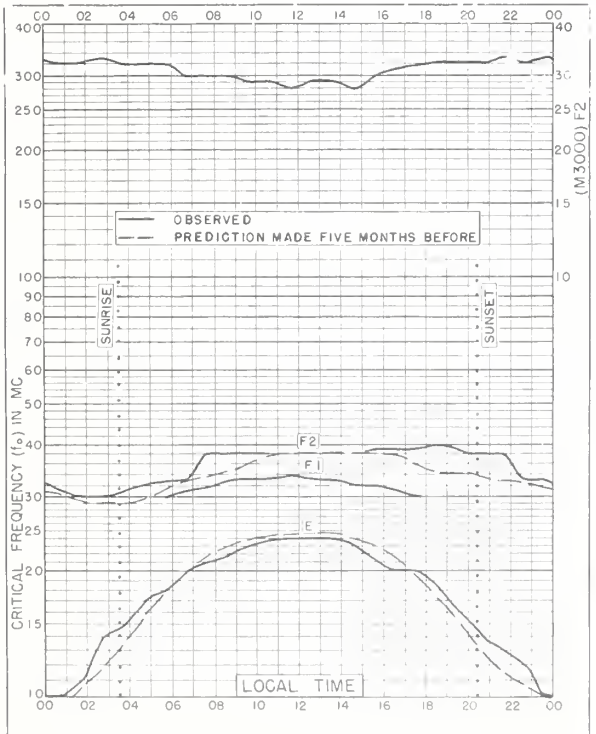


Fig 27. RESOLUTE BAY, CANADA
74.7°N, 94.9°W APRIL 1954

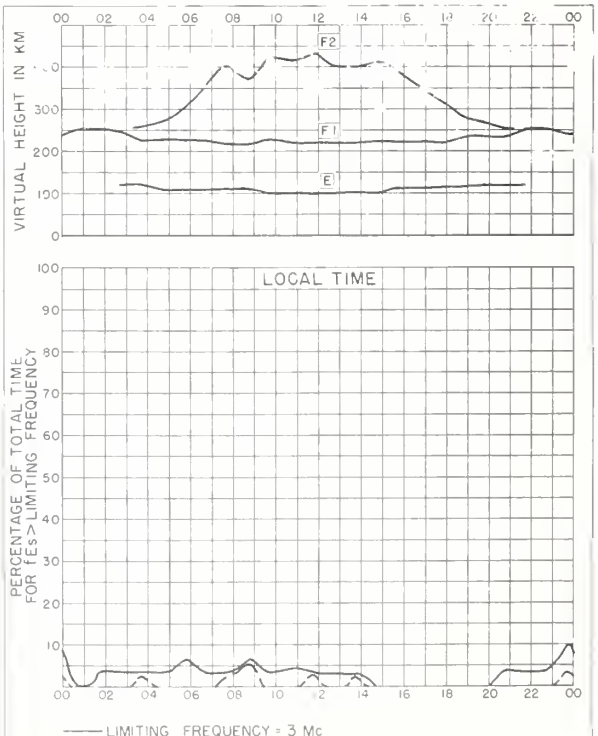


Fig 28. RESOLUTE BAY, CANADA APRIL 1954

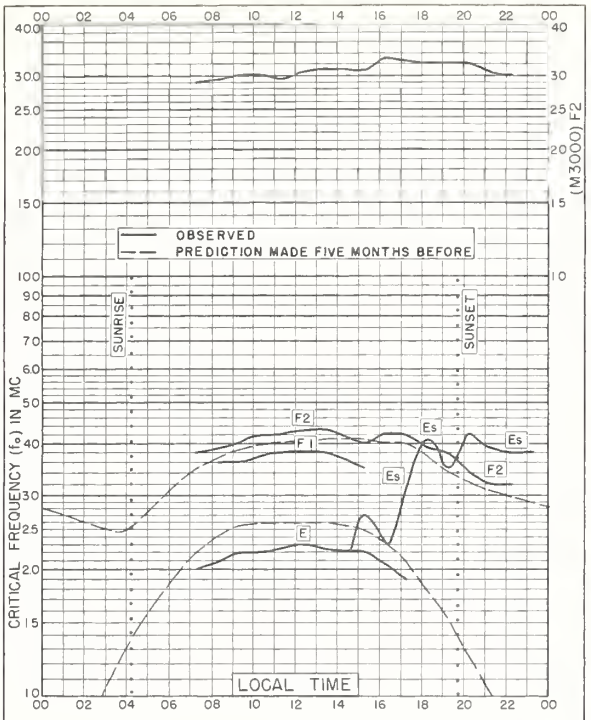


Fig 29. TROMSO, NORWAY
69.7°N, 19.0°E APRIL 1954

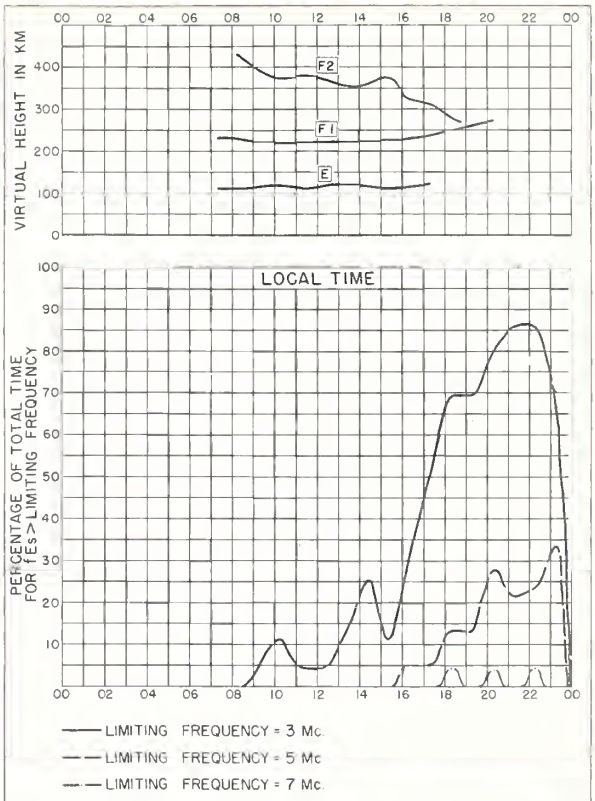


Fig 30. TROMSO, NORWAY APRIL 1954

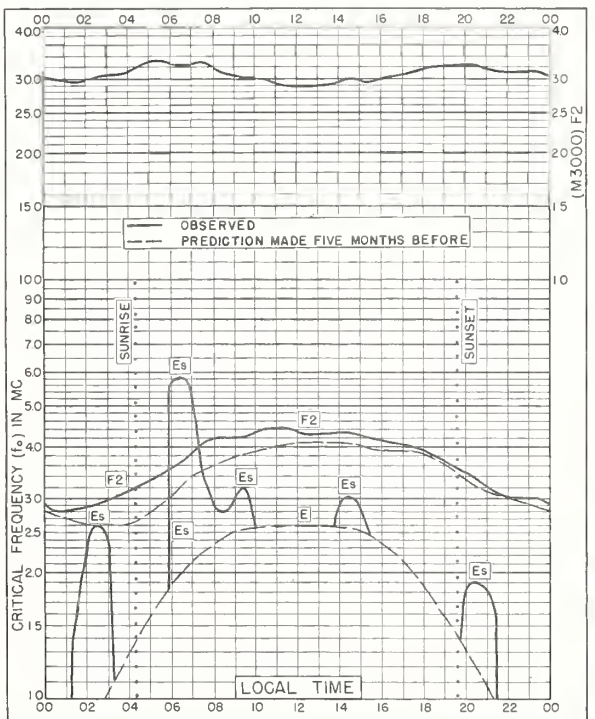


Fig. 31. GODHAVN, GREENLAND
69.2°N, 53.5°W APRIL 1954

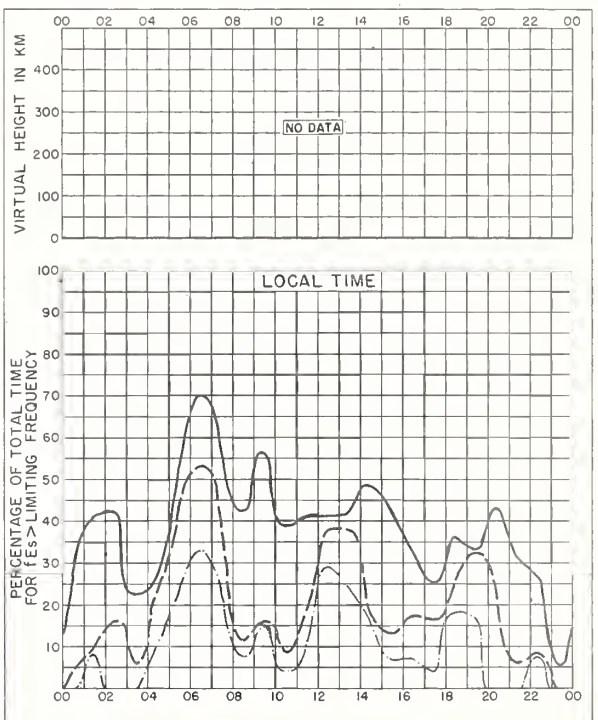


Fig 32. GODHAVN, GREENLAND APRIL 1954

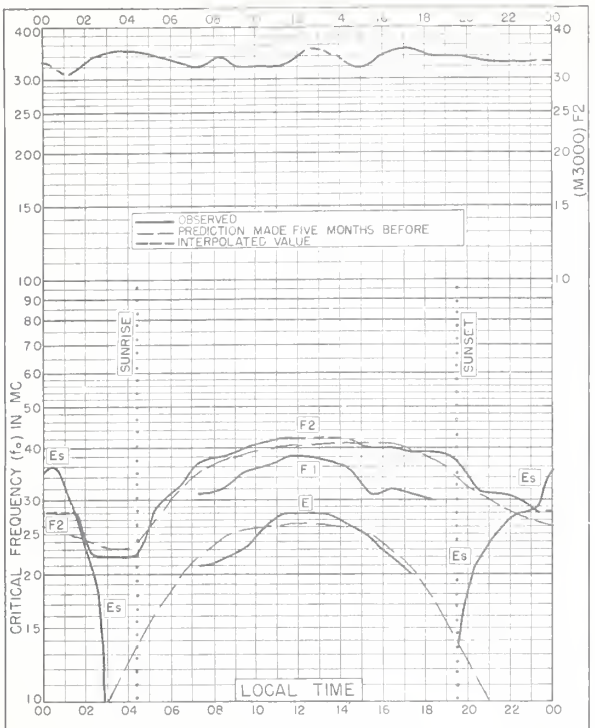


Fig. 33. KIRUNA, SWEDEN
67.8°N, 20.3°E APRIL 1954

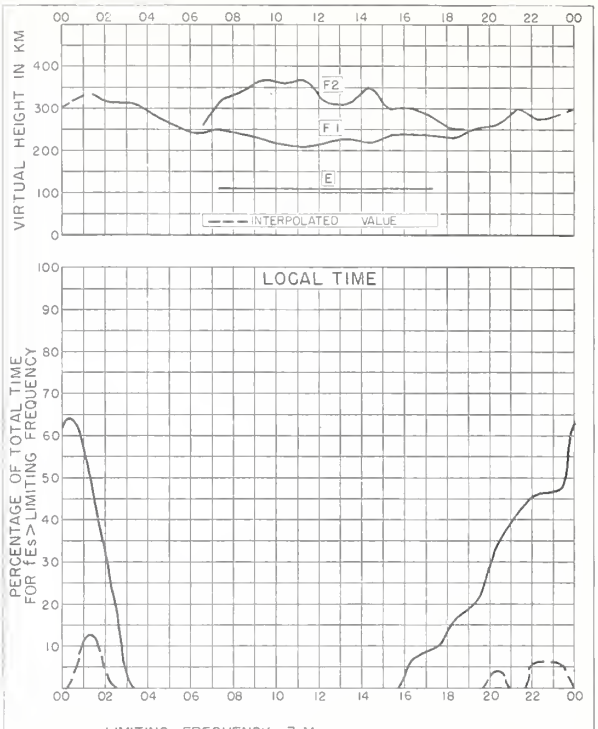


Fig. 34. KIRUNA, SWEDEN APRIL 1954

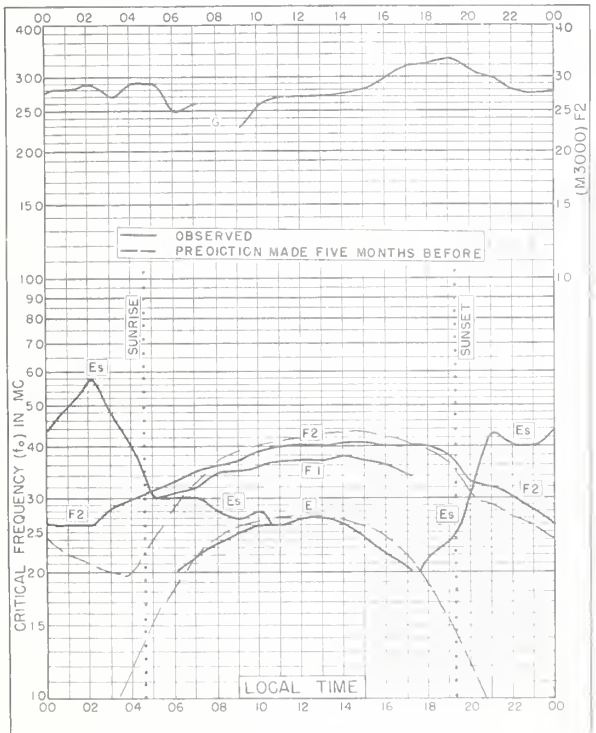


Fig. 35. FAIRBANKS, ALASKA
64.9°N, 147.8°W APRIL 1954

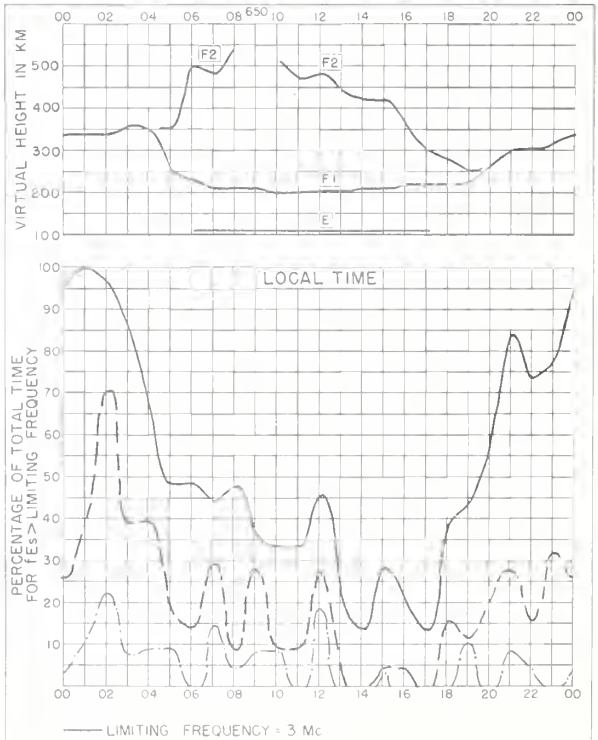


Fig. 36. FAIRBANKS, ALASKA APRIL 1954

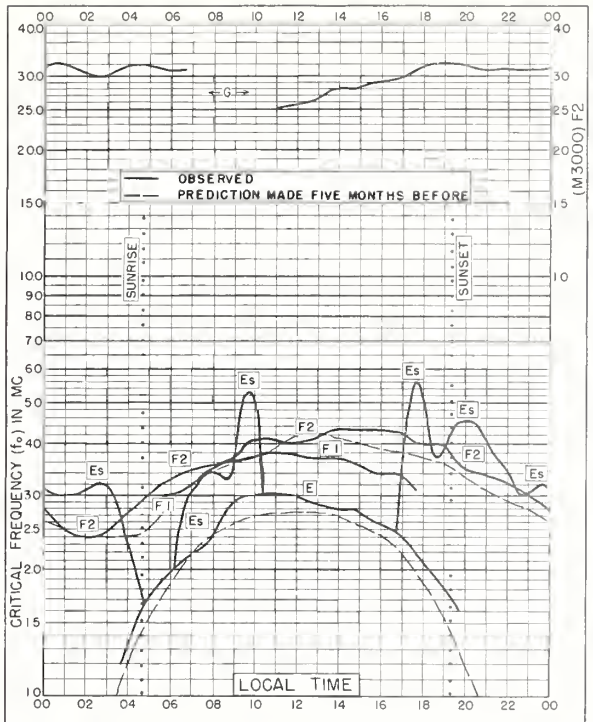


Fig 37. BAKER LAKE, CANADA
64.3°N, 96.0°W APRIL 1954

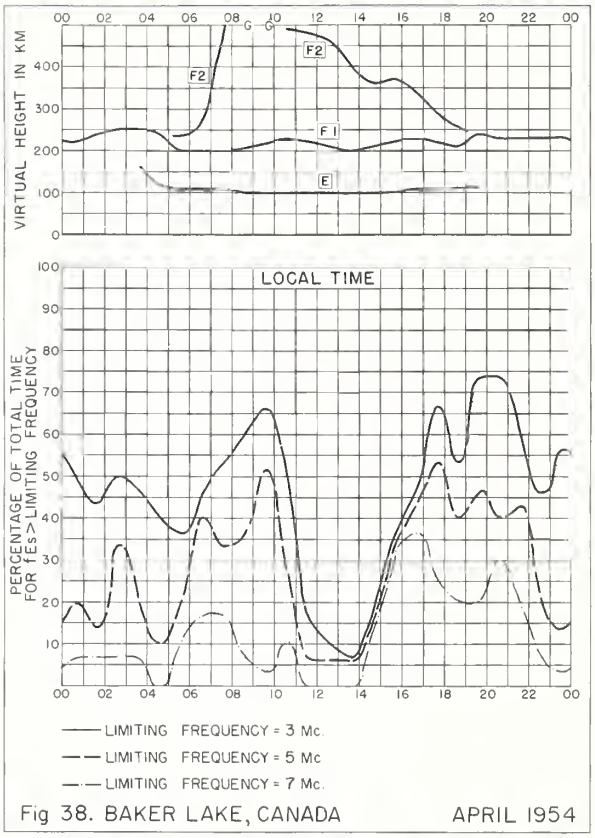


Fig 38. BAKER LAKE, CANADA APRIL 1954

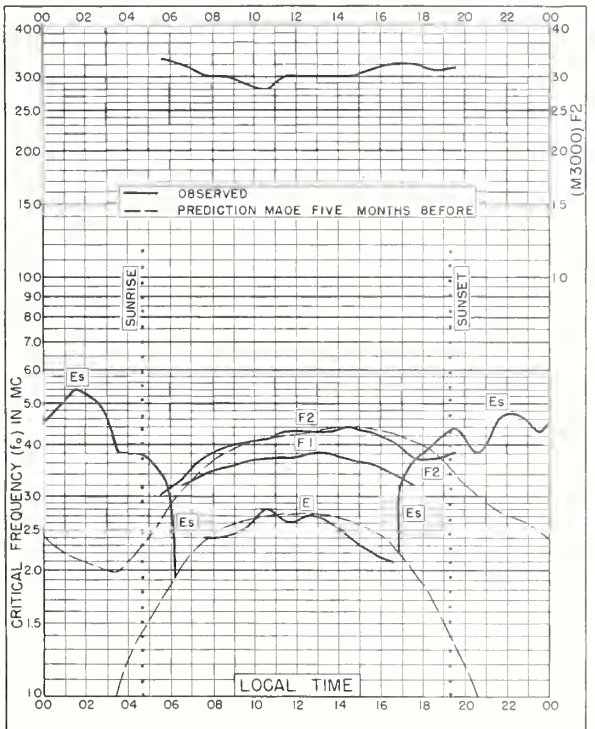


Fig. 39. REYKJAVIK, ICELAND
64.1°N, 21.8°W APRIL 1954

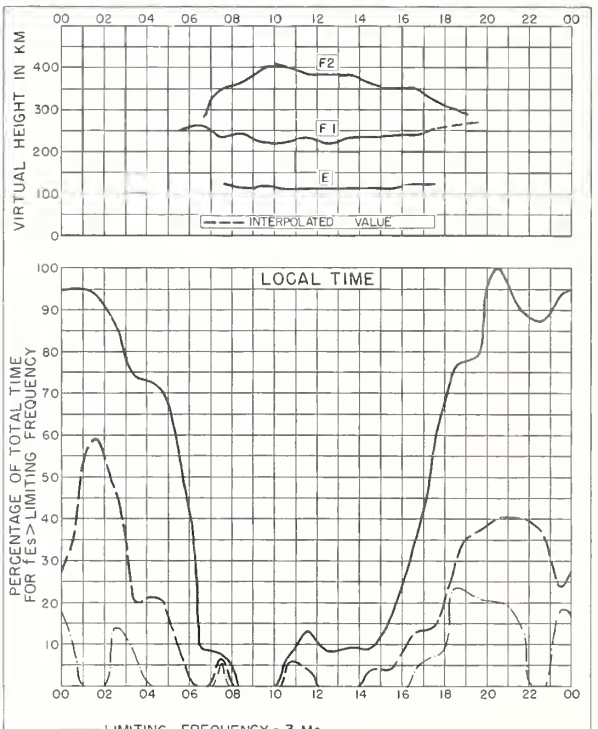


Fig. 40. REYKJAVIK, ICELAND APRIL 1954

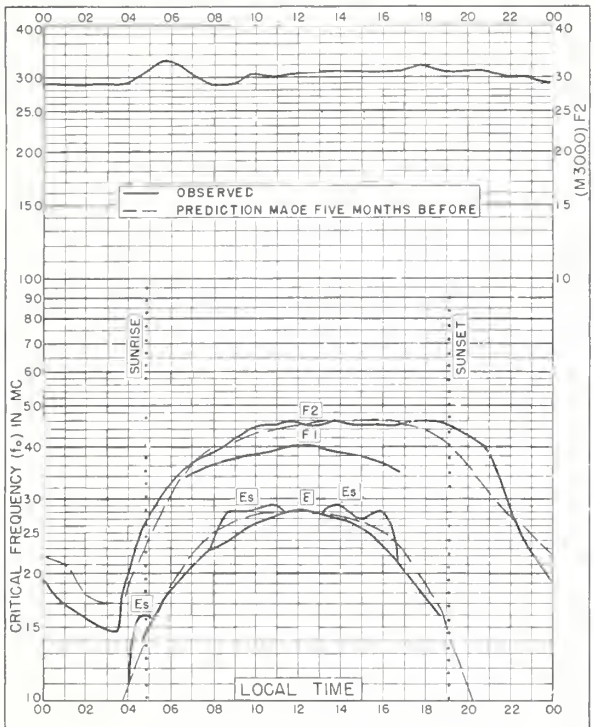


Fig. 41. OSLO, NORWAY
60.0°N, 11.1°E APRIL 1954

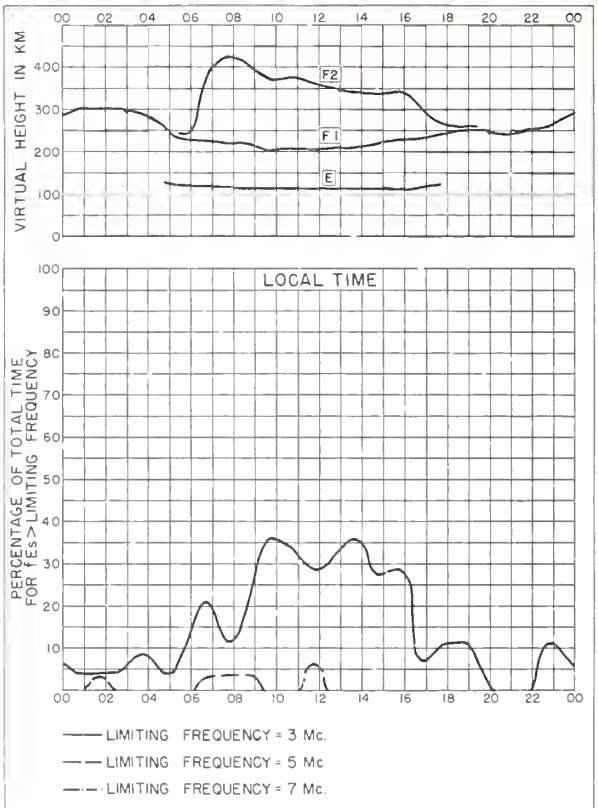


Fig. 42. OSLO, NORWAY APRIL 1954

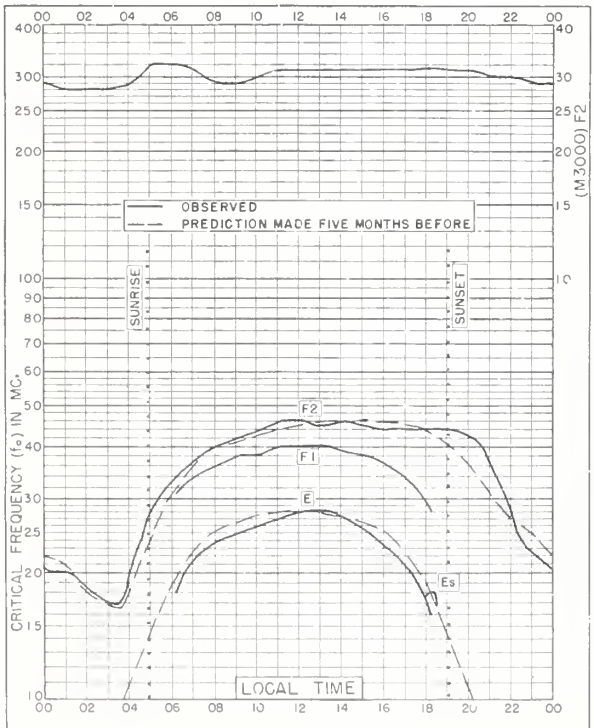


Fig 43. UPSALA, SWEDEN
59.8°N, 17.6°E APRIL 1954

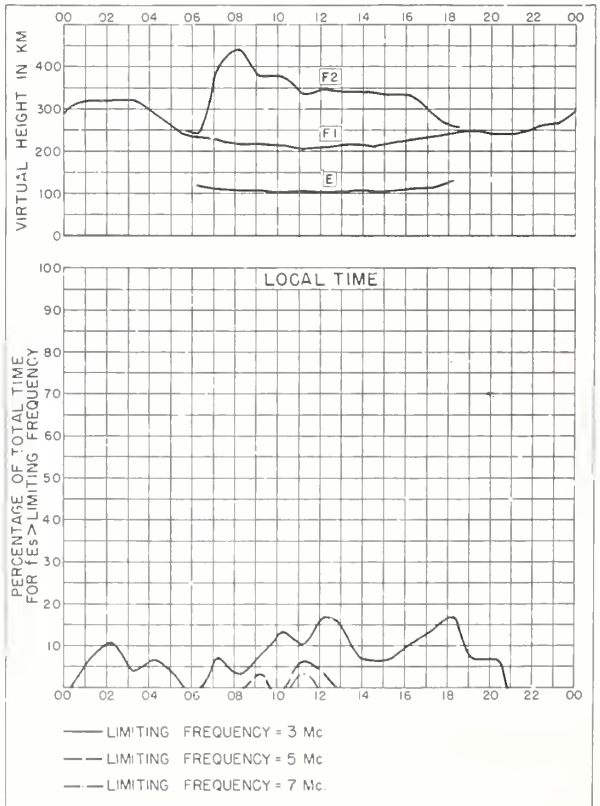


Fig 44. UPSALA, SWEDEN APRIL 1954

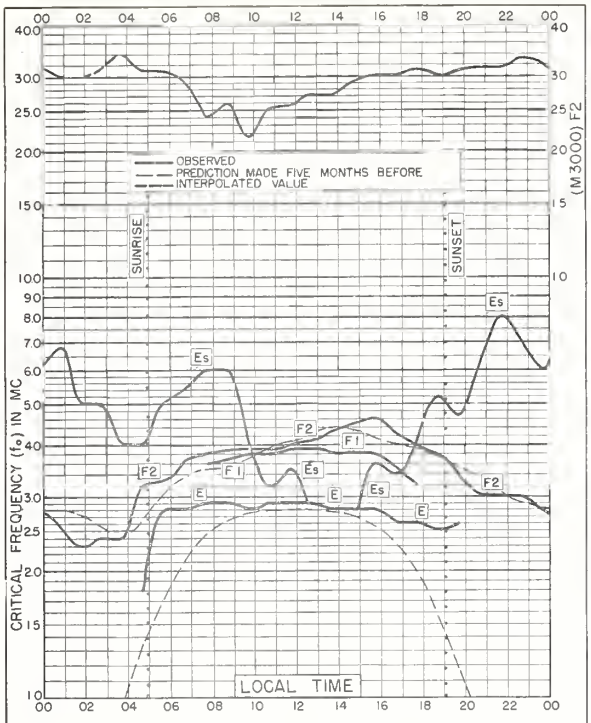


Fig. 45. CHURCHILL, CANADA
58.8°N, 94.2°W APRIL 1954

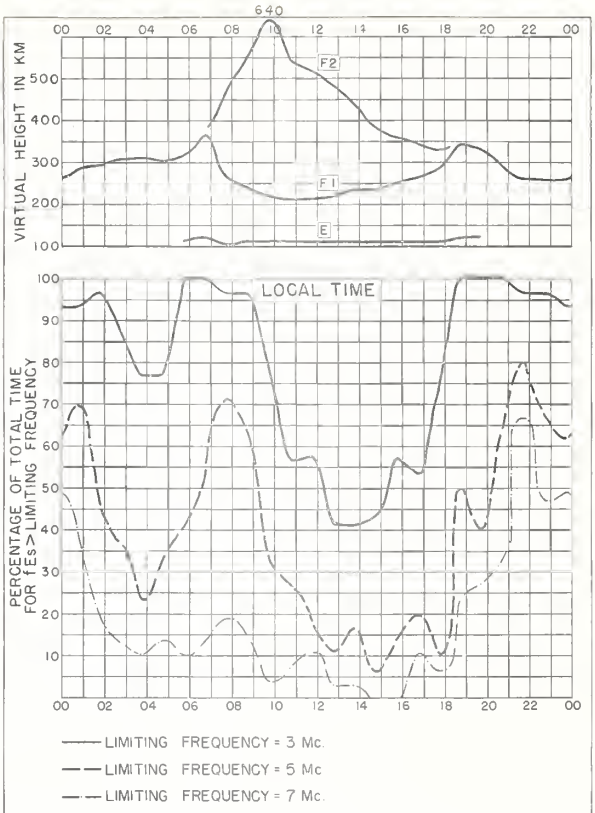


Fig. 46. CHURCHILL, CANADA APRIL 1954

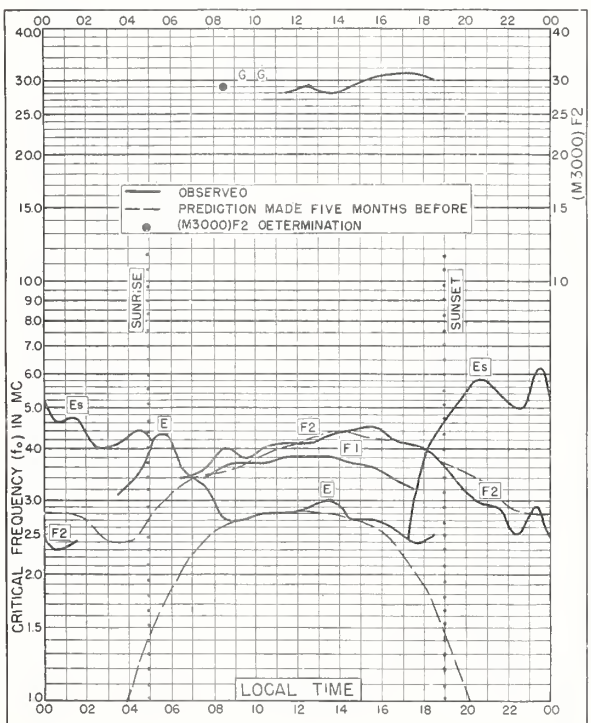


Fig. 47. FORT CHIMO, CANADA
58.1°N, 68.3°W APRIL 1954

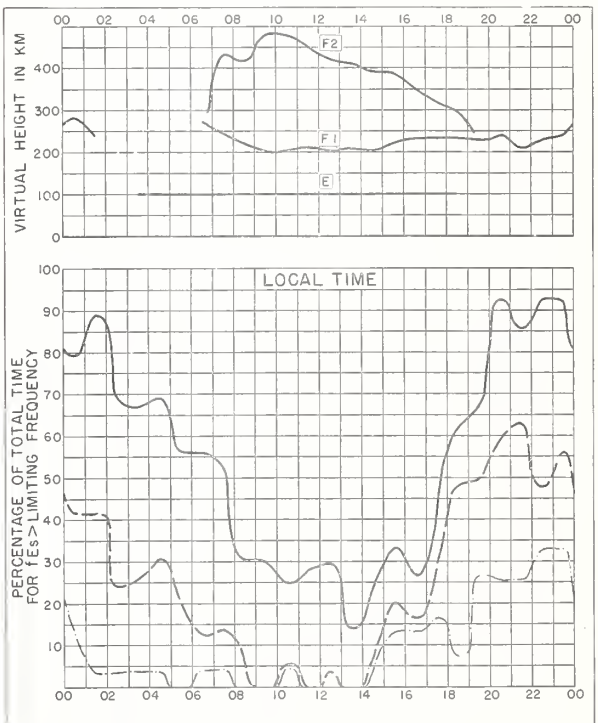


Fig. 48. FORT CHIMO, CANADA APRIL 1954

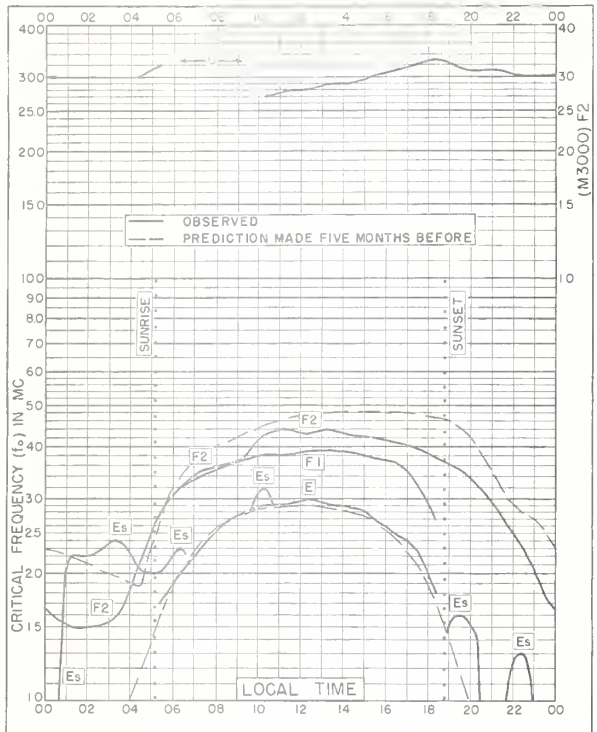


Fig. 49. PRINCE RUPERT, CANADA
54.3°N, 130.3°W APRIL 1954

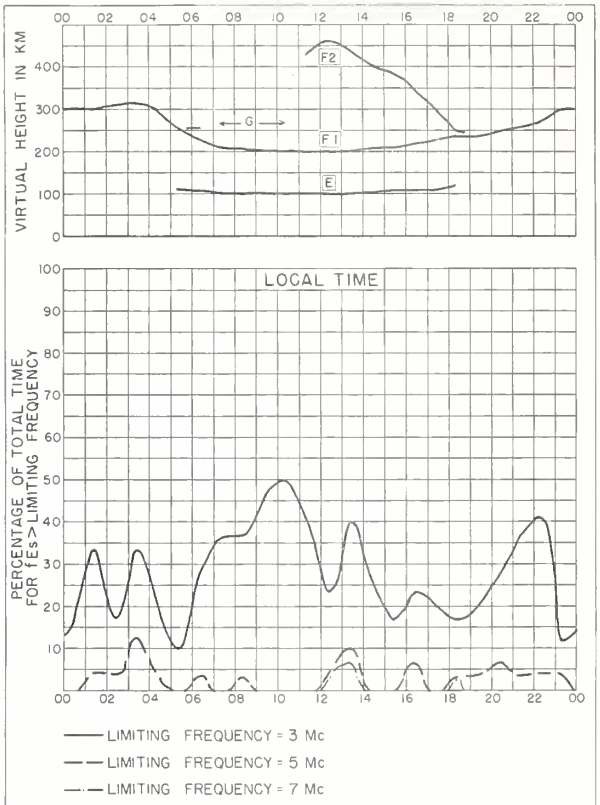


Fig. 50. PRINCE RUPERT, CANADA APRIL 1954

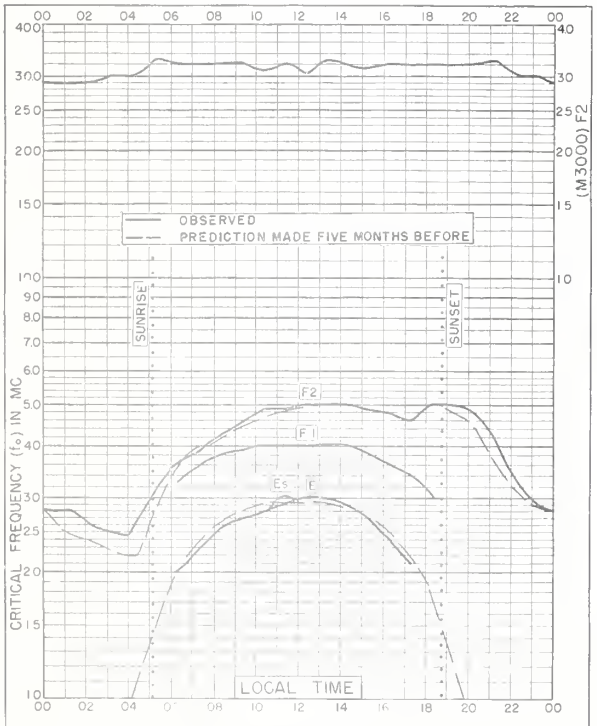


Fig. 51. De BILT, HOLLAND
52.1°N, 5.2°E APRIL 1954

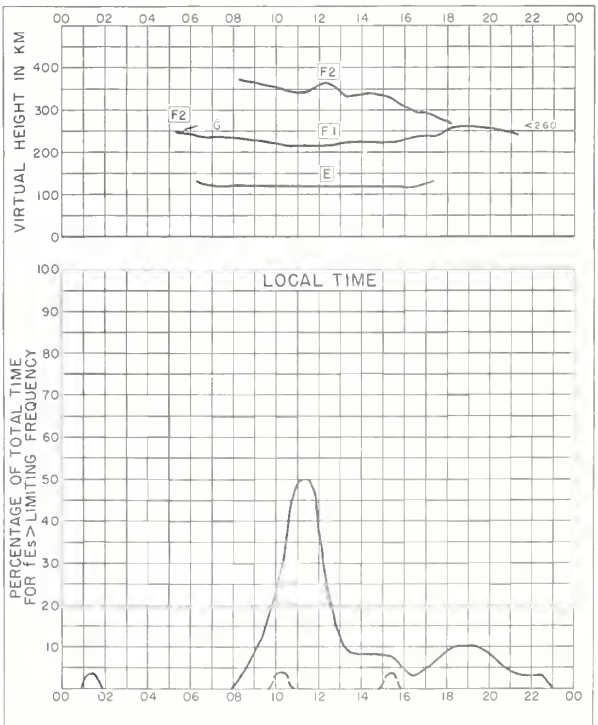


Fig. 52. DeBILT, HOLLAND APRIL 1954

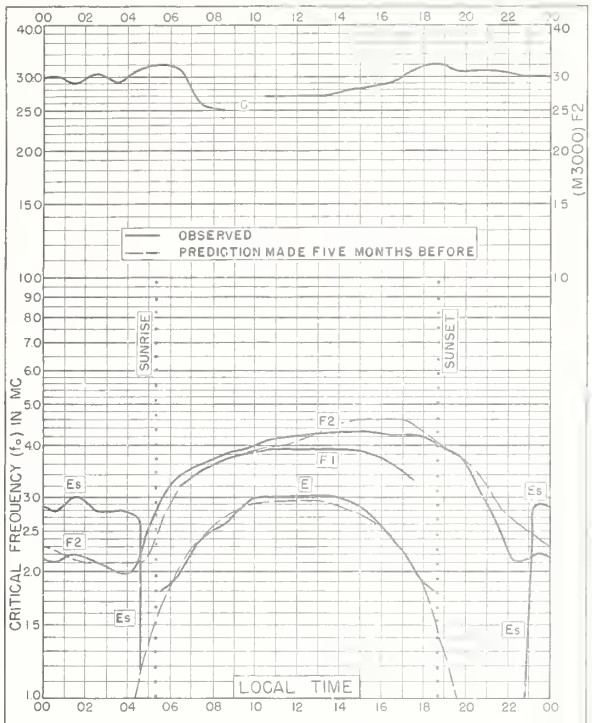


Fig 53. WINNIPEG, CANADA
49.9° N, 97.4° W APRIL 1954

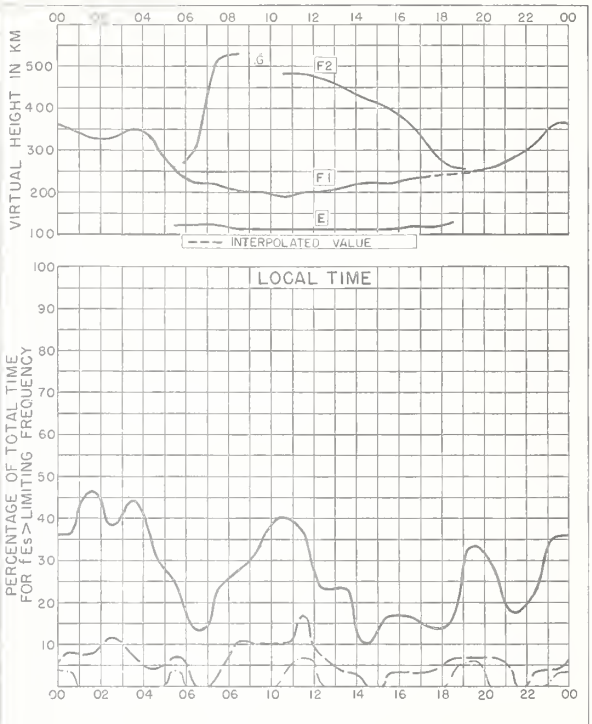


Fig. 54. WINNIPEG, CANADA APRIL 1954

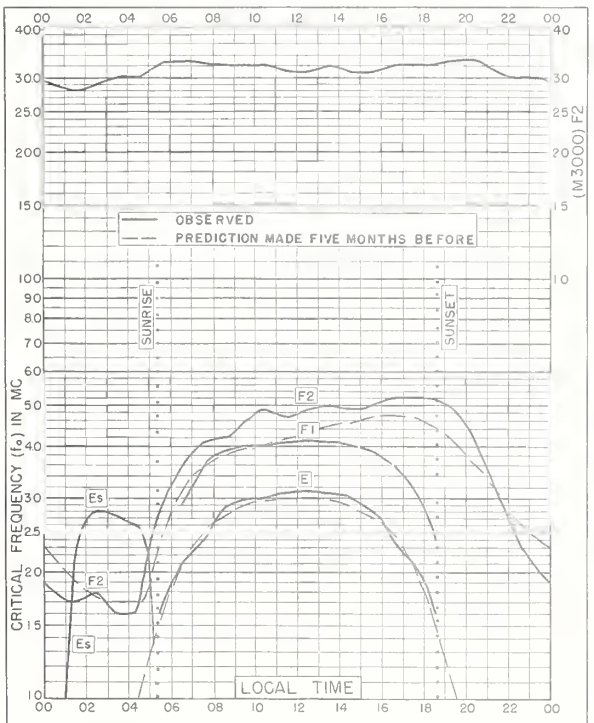


Fig 55. ST. JOHN'S, NEWFOUNDLAND
47.6° N, 52.7° W APRIL 1954

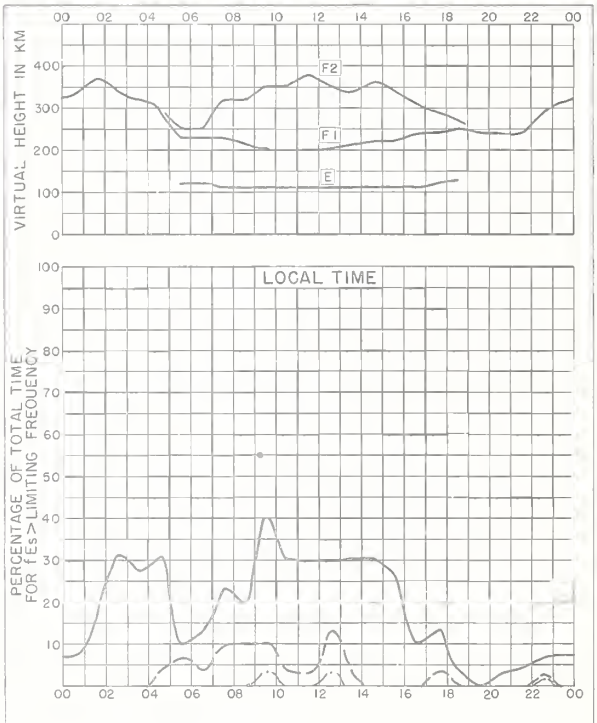


Fig. 56. ST. JOHN'S, NEWFOUNDLAND APRIL 1954

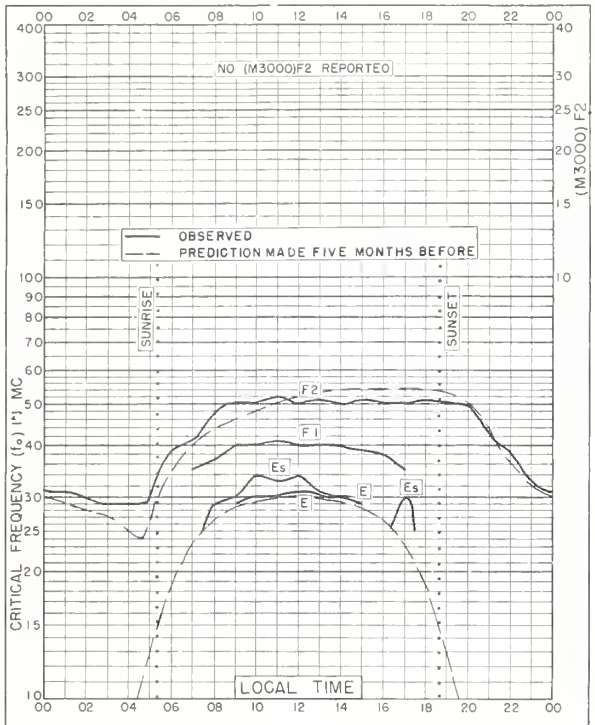


Fig 57. GRAZ, AUSTRIA
47.1°N, 15.5°E APRIL 1954

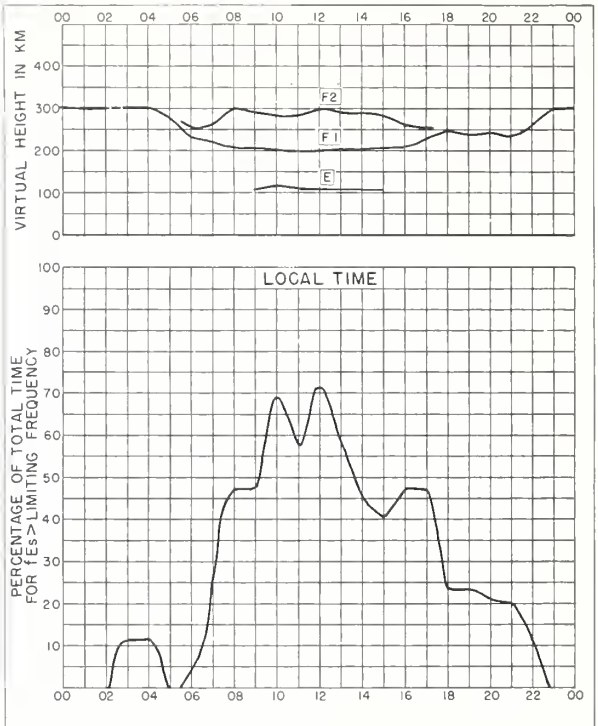


Fig. 58. GRAZ, AUSTRIA APRIL 1954

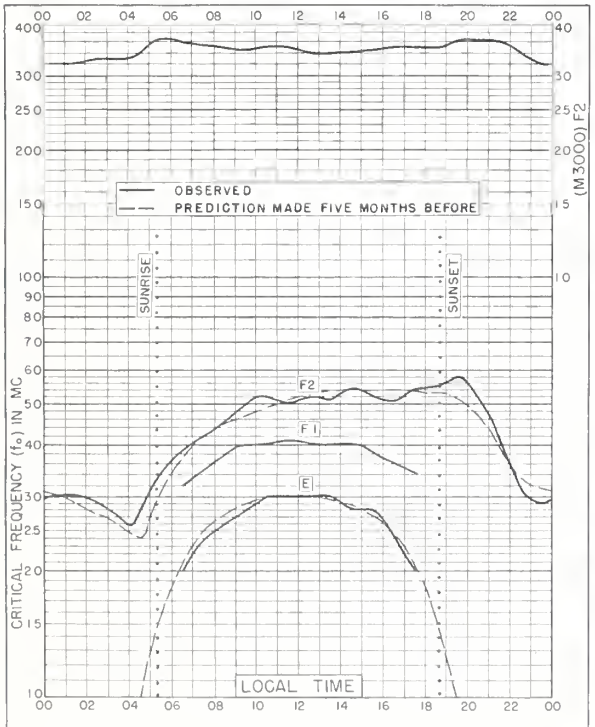


Fig 59. SCHWARZENBURG, SWITZERLAND
46.8°N, 7.3°E APRIL 1954

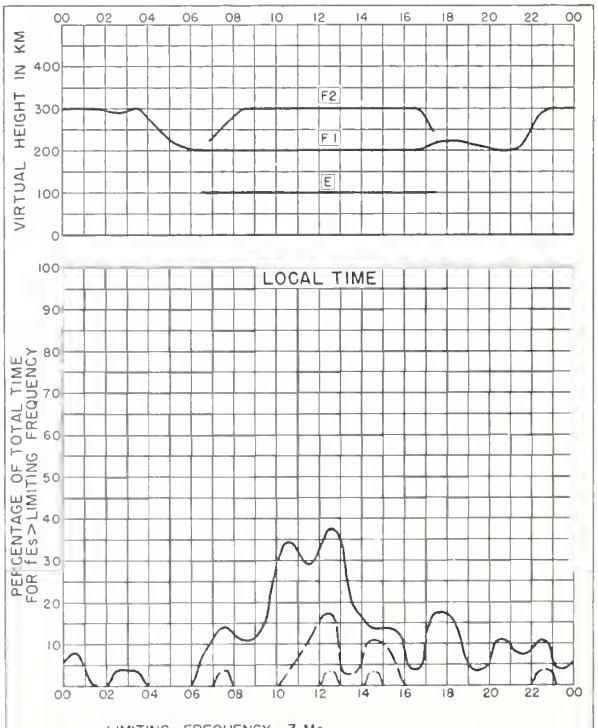


Fig 60. SCHWARZENBURG, SWITZERLAND APRIL 1954

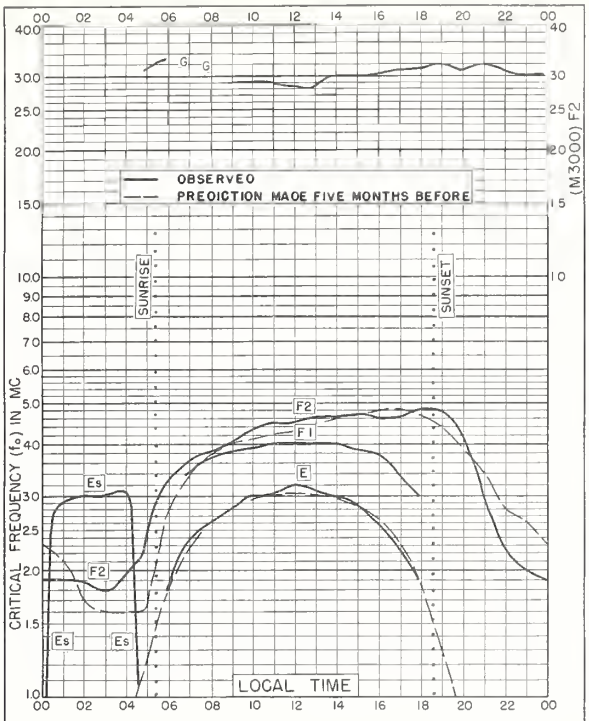


Fig. 61. OTTAWA, CANADA
45.4°N, 75.9°W
APRIL 1954

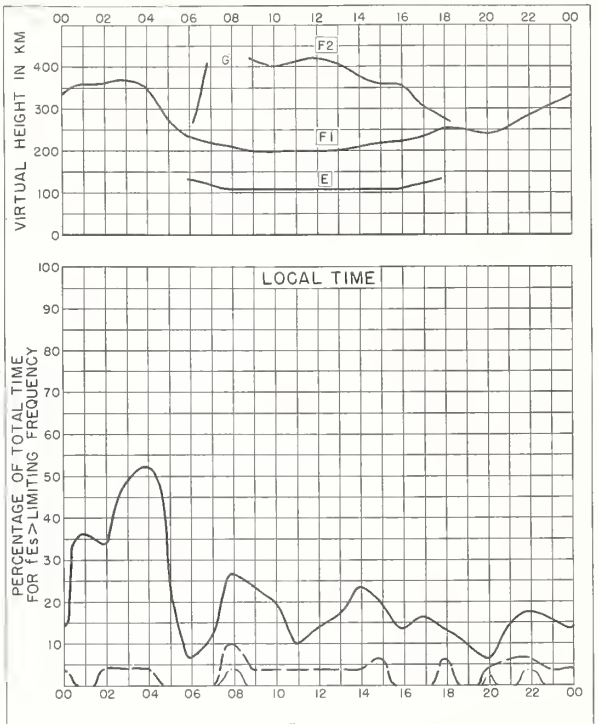


Fig 62. OTTAWA, CANADA
APRIL 1954

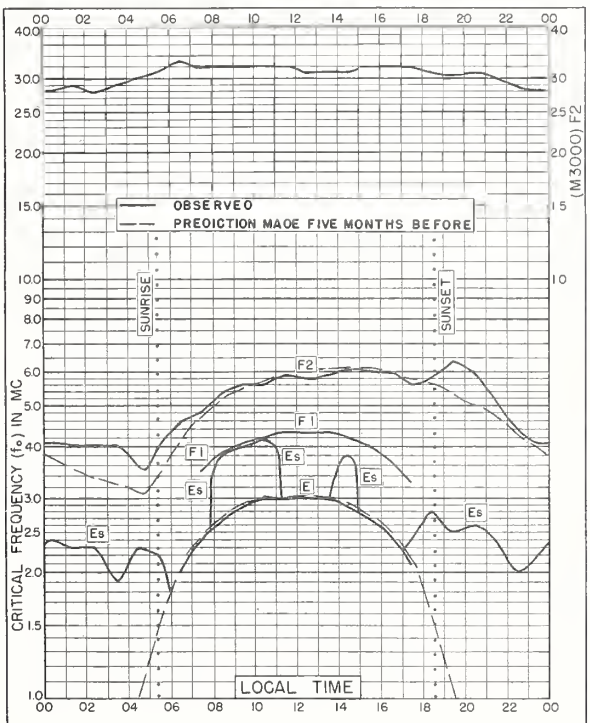


Fig. 63. WAKKANAI, JAPAN
45.4° N, 141.7° E
APRIL 1954

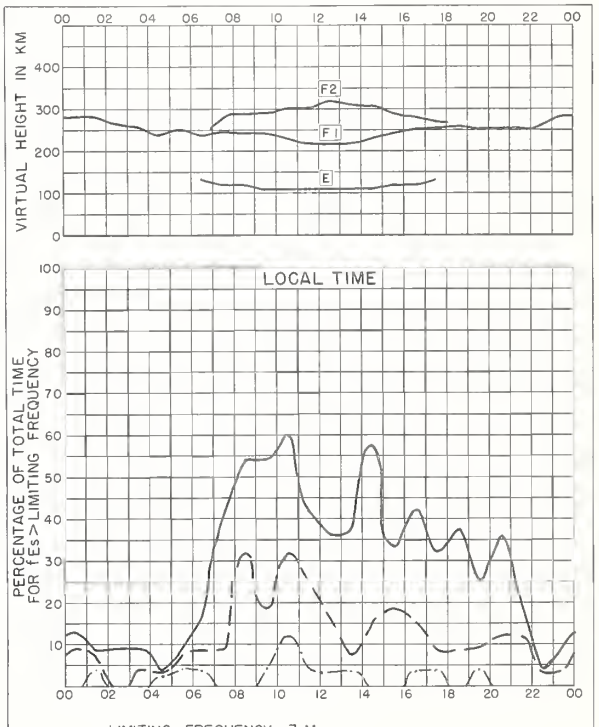


Fig. 64. WAKKANAI, JAPAN
APRIL 1954

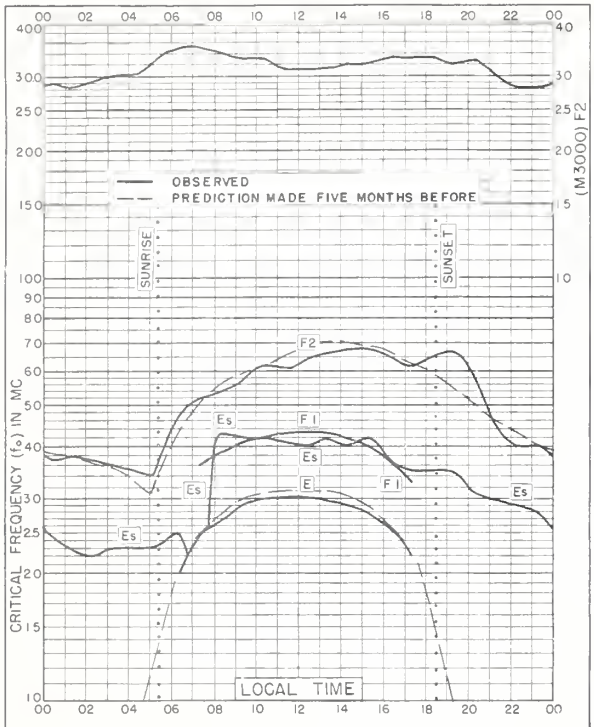


Fig. 65. AKITA, JAPAN
39.7°N, 140.1°E
APRIL 1954

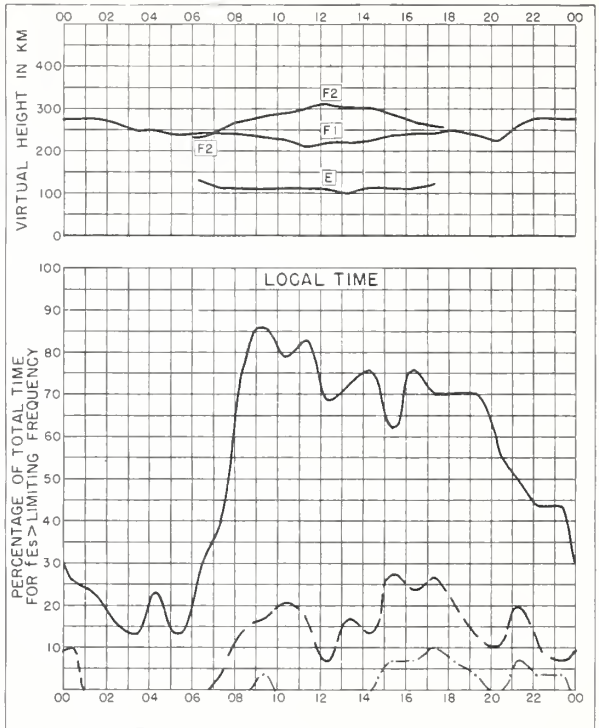


Fig. 66. AKITA, JAPAN
APRIL 1954

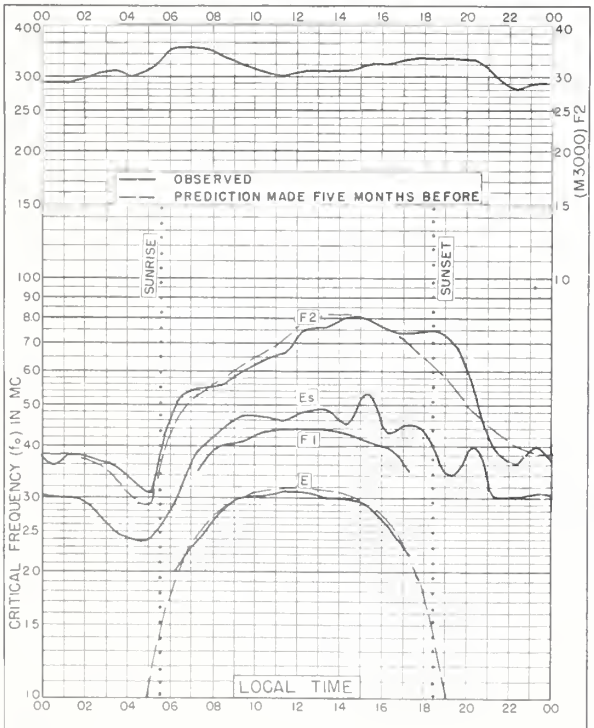


Fig. 67. TOKYO, JAPAN
35.7°N, 139.5°E
APRIL 1954

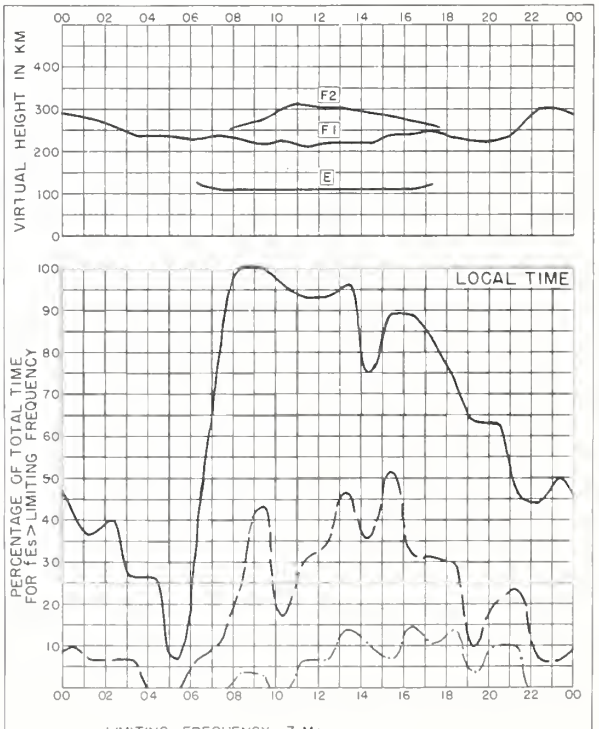


Fig. 68. TOKYO, JAPAN
APRIL 1954

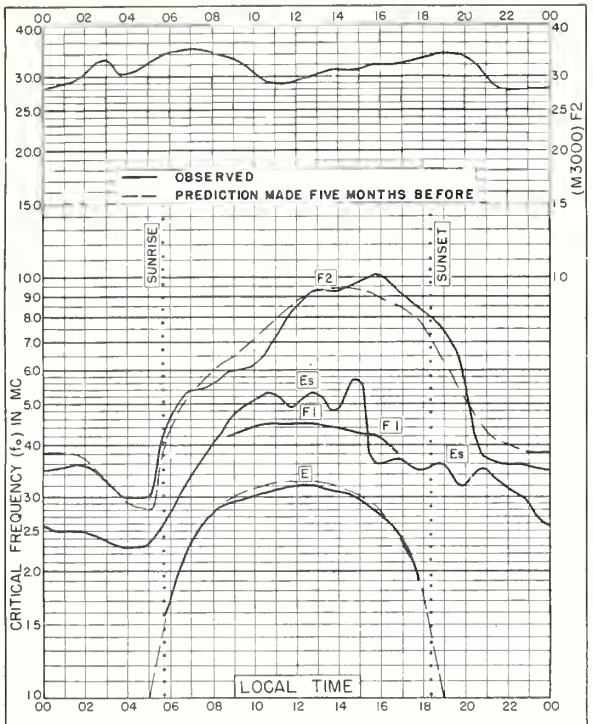


Fig. 69. YAMAGAWA, JAPAN
31.2°N, 130.6°E APRIL 1954

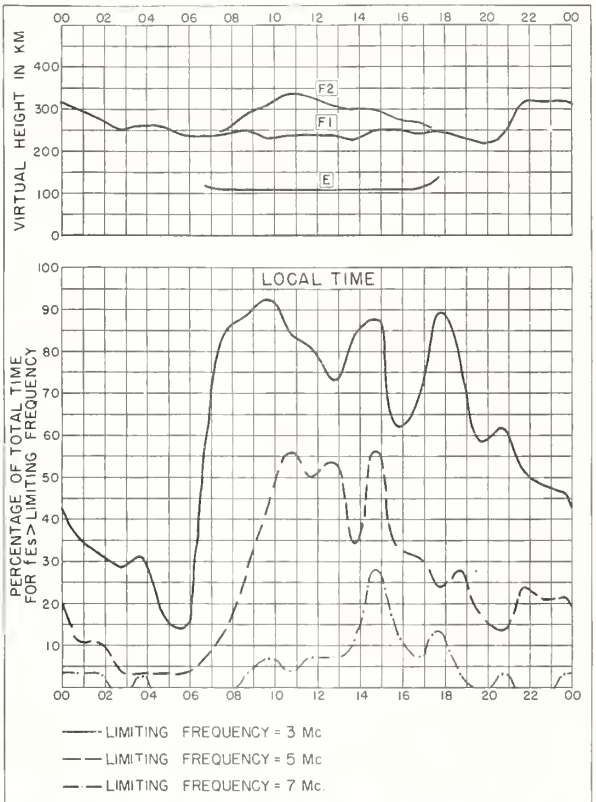


Fig. 70. YAMAGAWA, JAPAN APRIL 1954

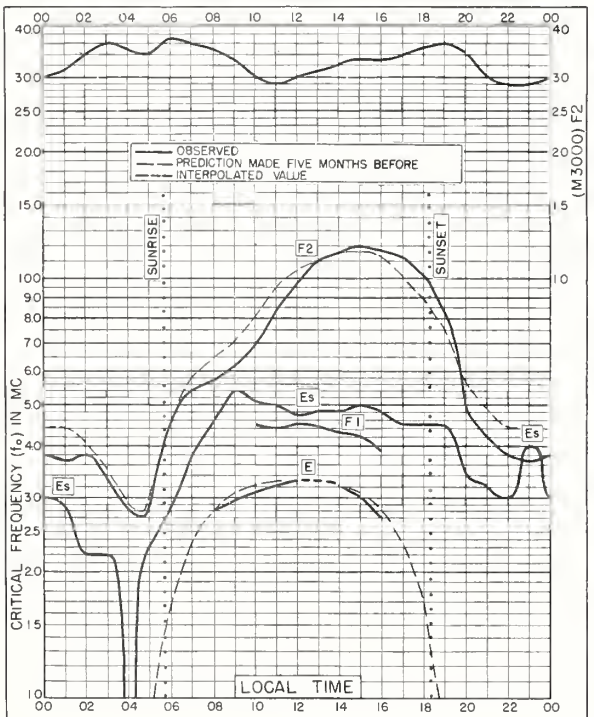


Fig. 71. OKINAWA I.
26.3°N, 127.8°E APRIL 1954

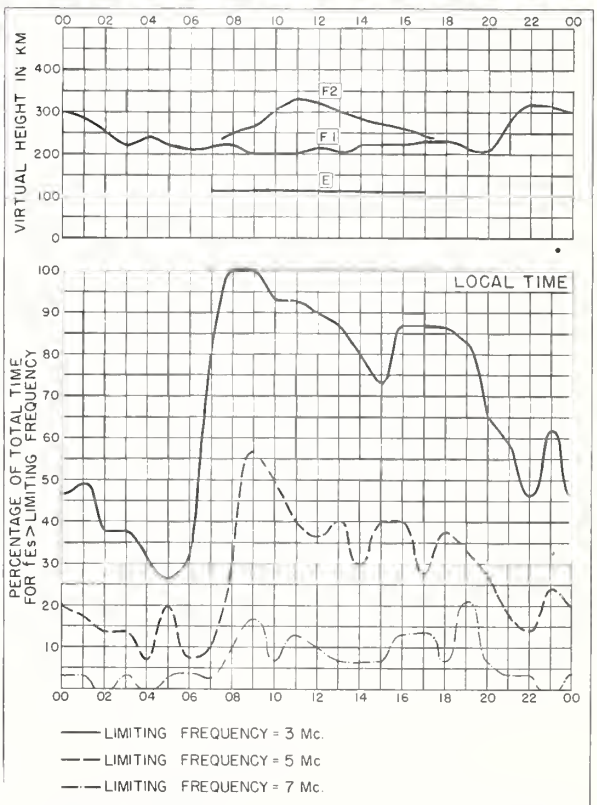


Fig 72. OKINAWA I. APRIL 1954

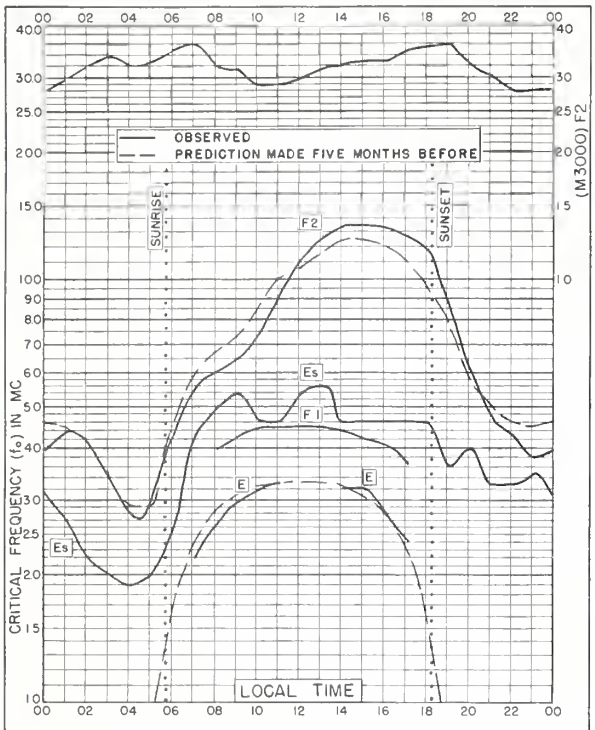


Fig. 73. FORMOSA, CHINA
25.0°N, 121.5°E APRIL 1954

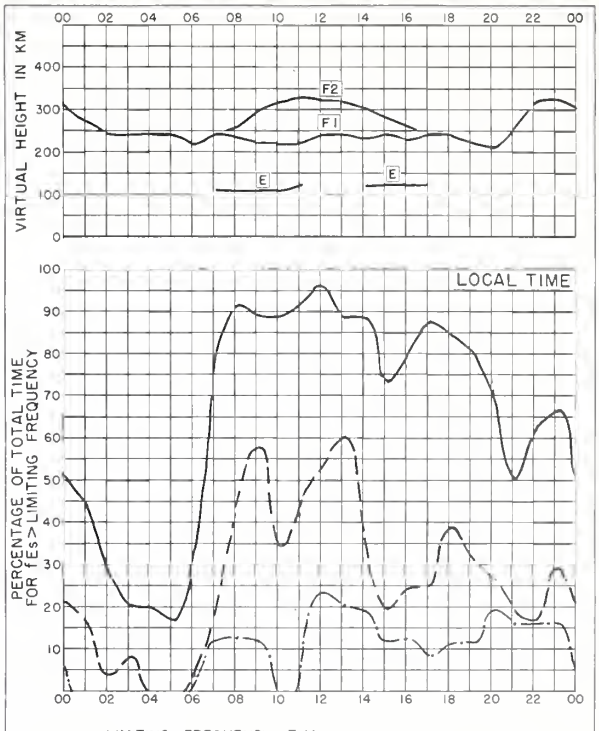


Fig. 74. FORMOSA, CHINA APRIL 1954

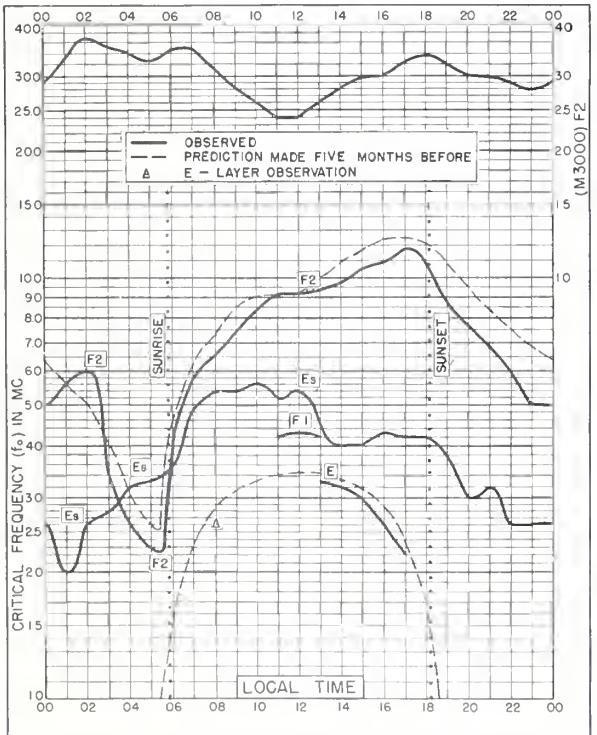


Fig. 75. BAGUIO, P.I.
16.4°N, 120.6°E APRIL 1954

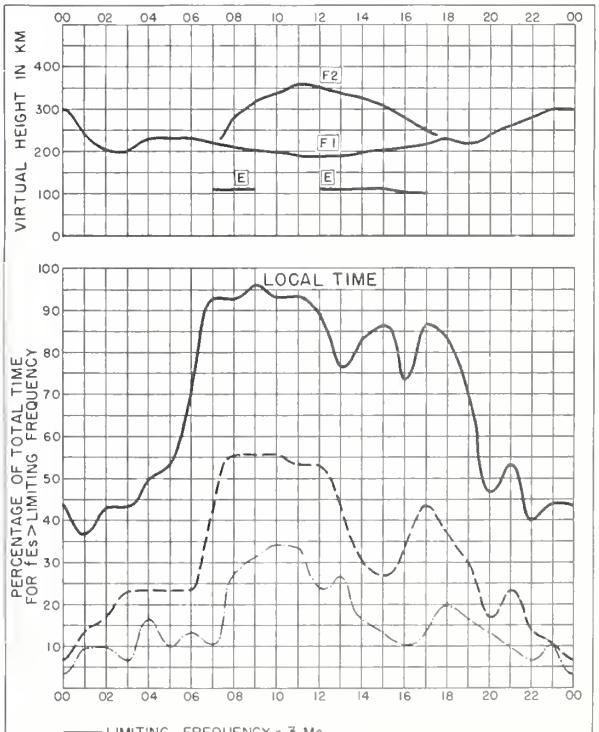


Fig. 76. BAGUIO, P.I. APRIL 1954

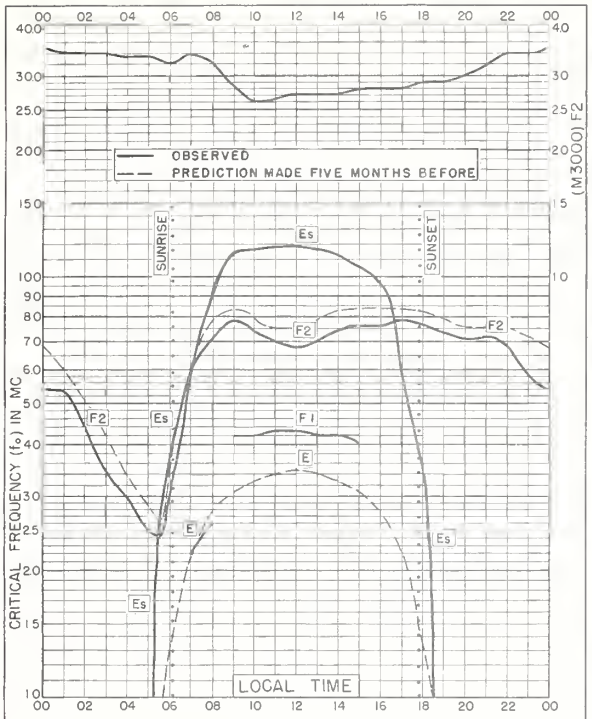


Fig. 77. HUANCAYO, PERU
12.0° S, 75.3° W
APRIL 1954

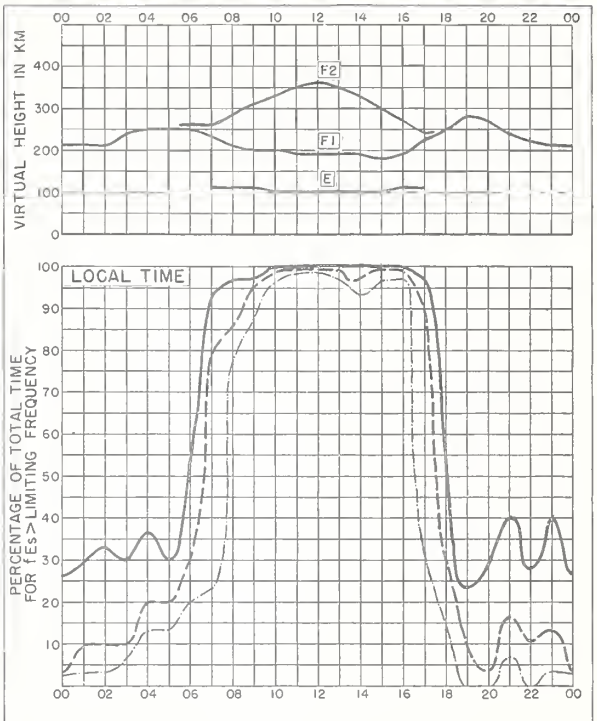


Fig. 78. HUANCAYO, PERU
APRIL 1954

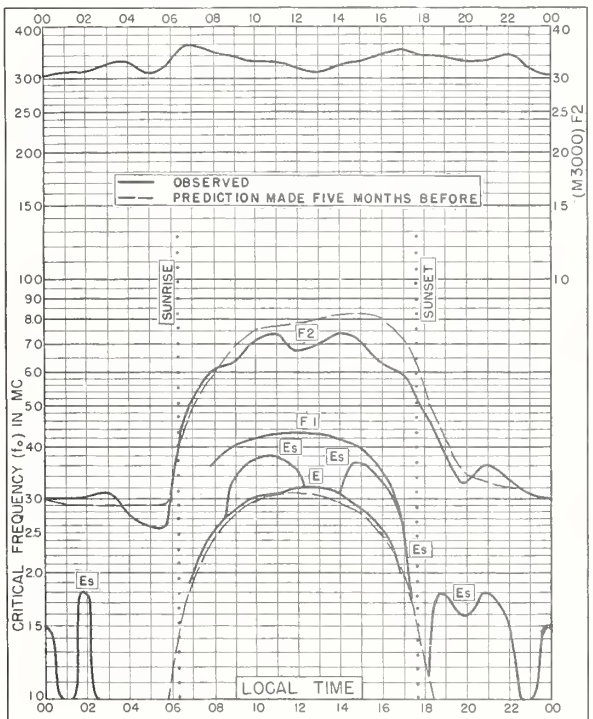
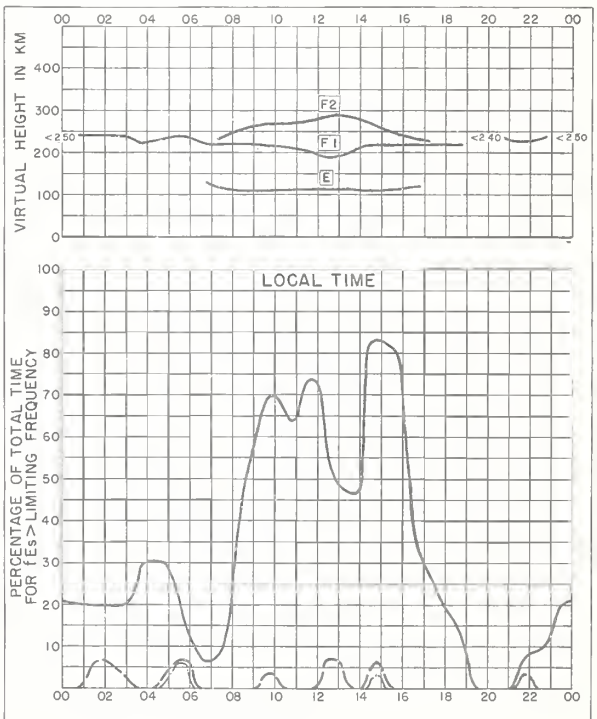


Fig. 79. JOHANNESBURG, UNION OF S. AFRICA
26.2°S, 28.1°E
APRIL 1954



APRIL 1954
Fig. 80. JOHANNESBURG, UNION OF S. AFRICA

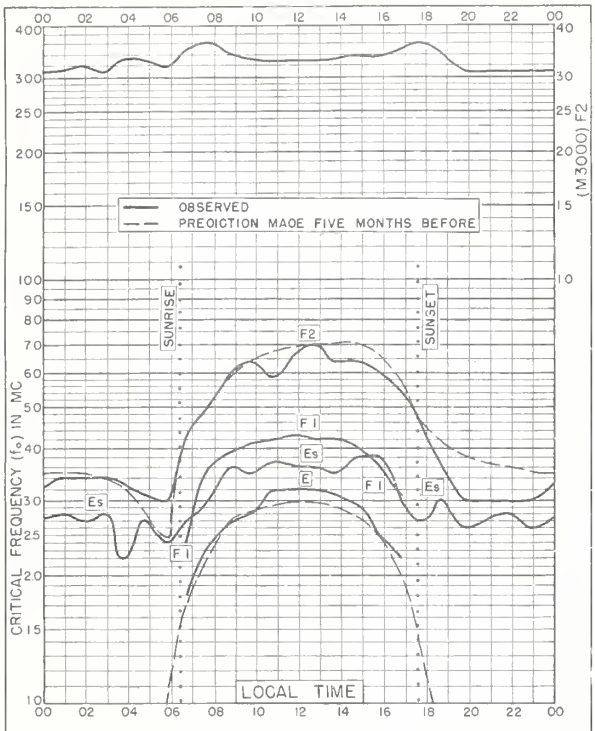


Fig 81. WATHEROO, W. AUSTRALIA
30.3°S, 115.9°E APRIL 1954

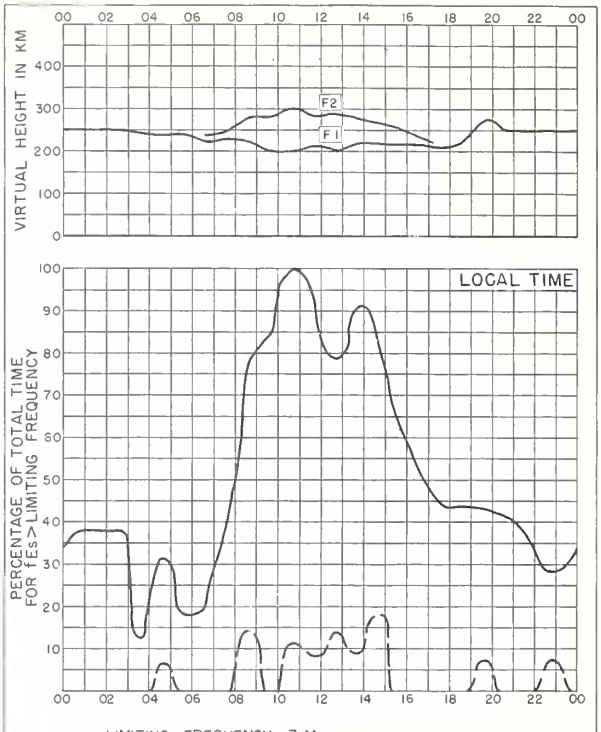


Fig. 82. WATHEROO, W. AUSTRALIA APRIL 1954

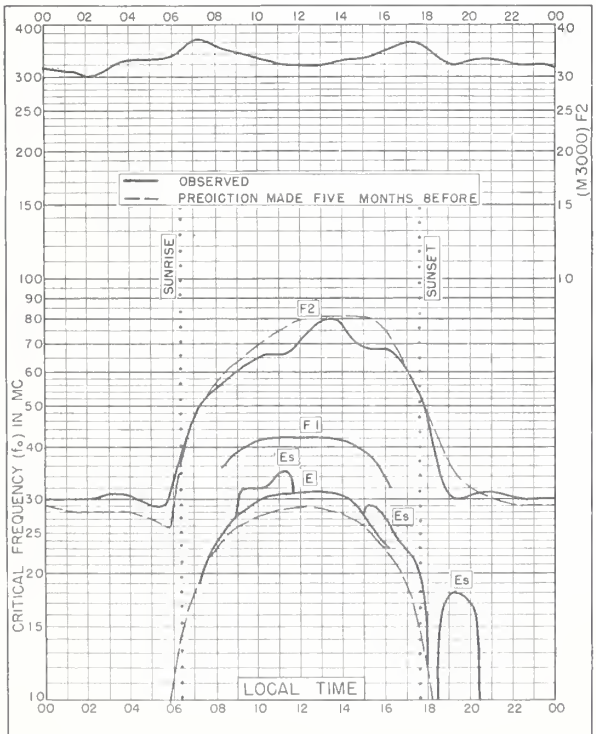
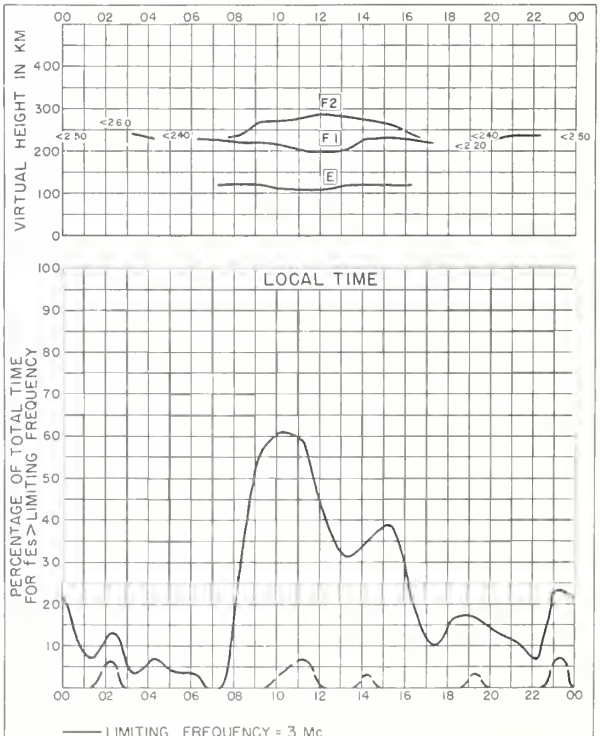


Fig. 83. CAPETOWN, UNION OF S. AFRICA
34.2° S, 18.3°E APRIL 1954



APRIL 1954
Fig. 84. CAPETOWN, UNION OF S. AFRICA

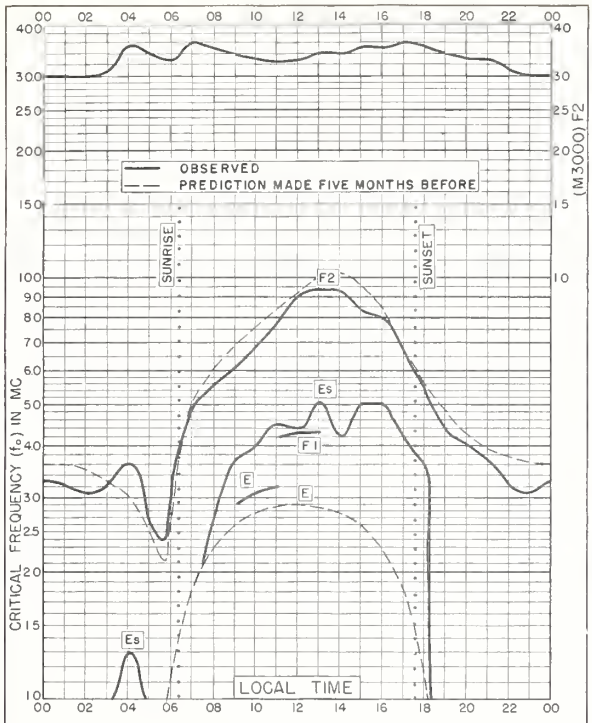


Fig. 85. BUENOS AIRES, ARGENTINA
34.5°S, 58.5°W APRIL 1954

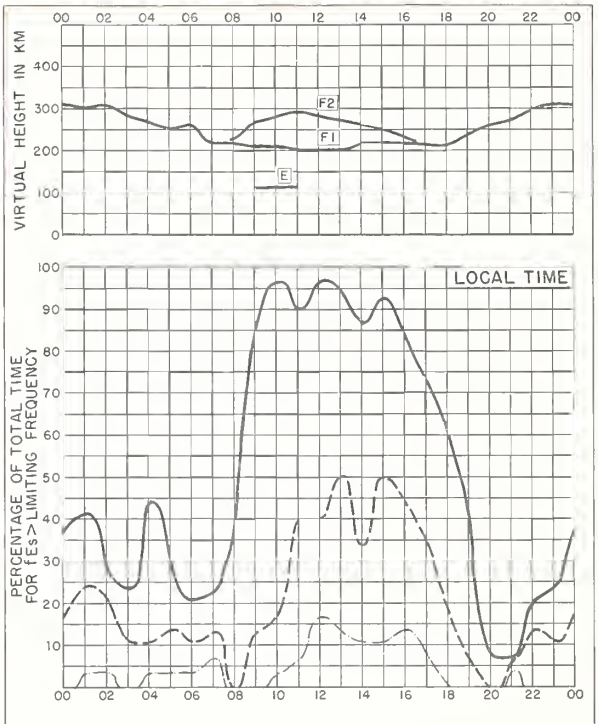


Fig 86. BUENOS AIRES, ARGENTINA APRIL 1954

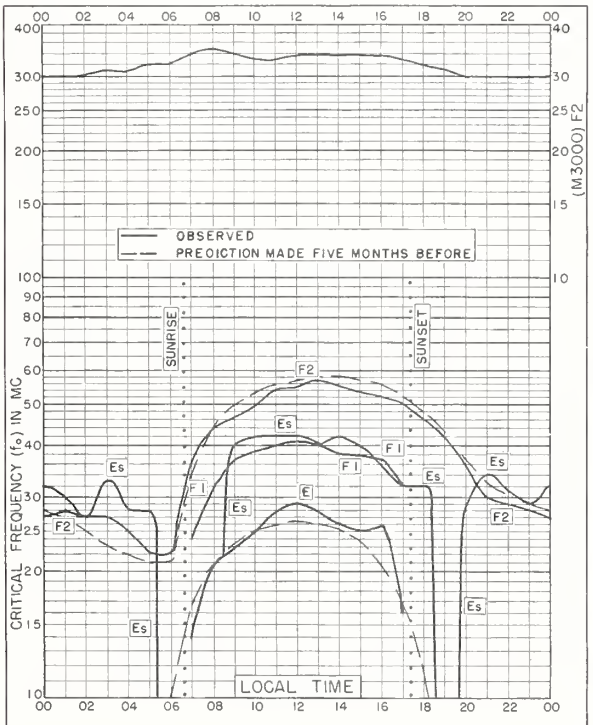


Fig 87. CHRISTCHURCH, NEW ZEALAND
43.5°S, 172.8°E APRIL 1954

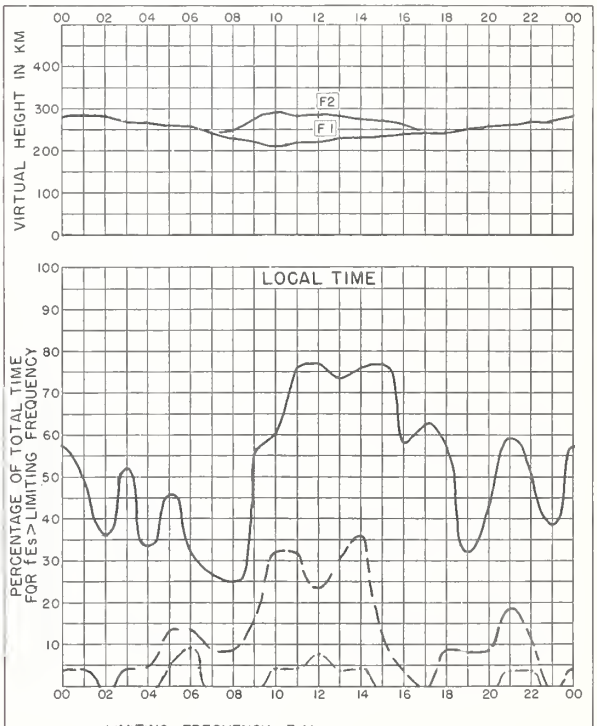


Fig. 88. CHRISTCHURCH, NEW ZEALAND APRIL 1954

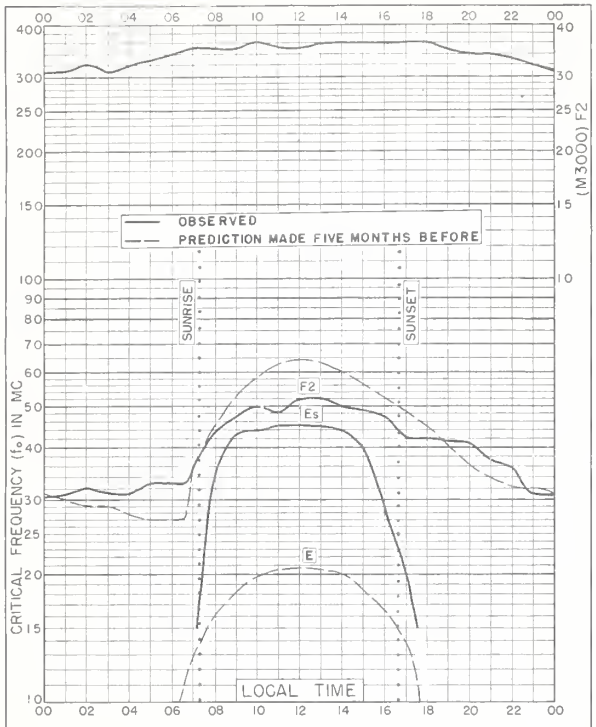


Fig 89. DECEPCION I.
63.0°S, 60.7°W
APRIL 1954

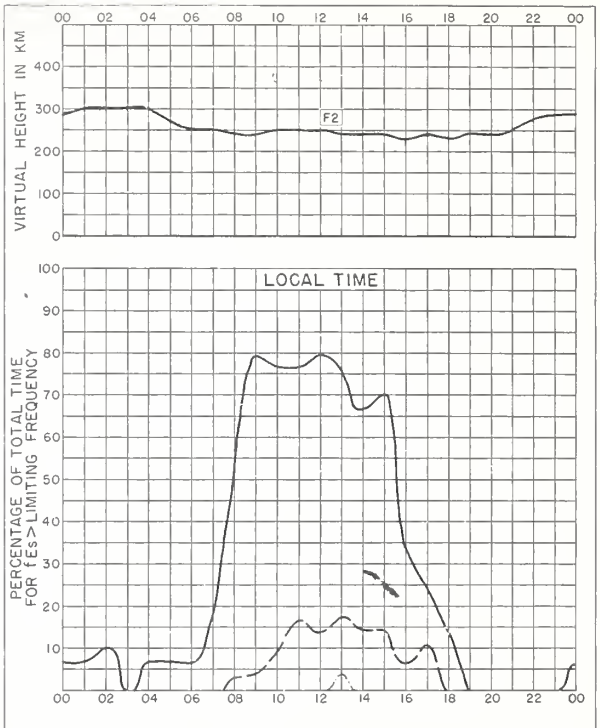


Fig 90. DECEPCION I.
APRIL 1954

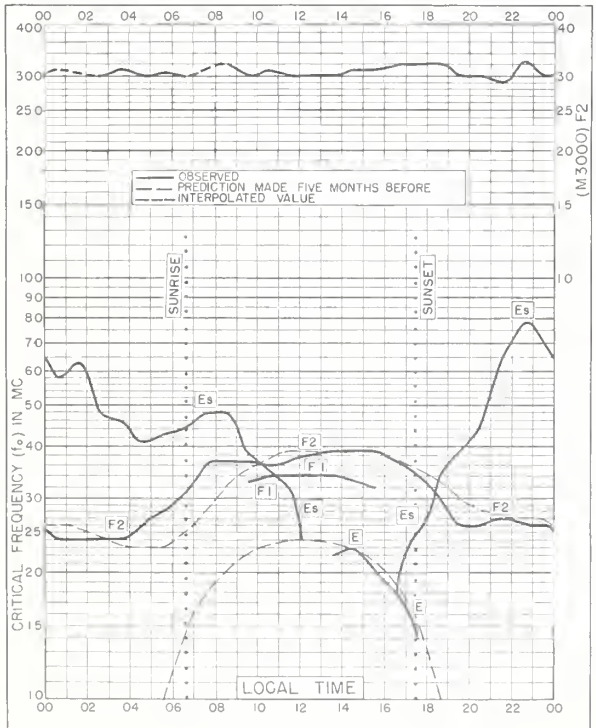


Fig 91. POINT BARROW, ALASKA
71.3° N, 156.8° W
MARCH 1954

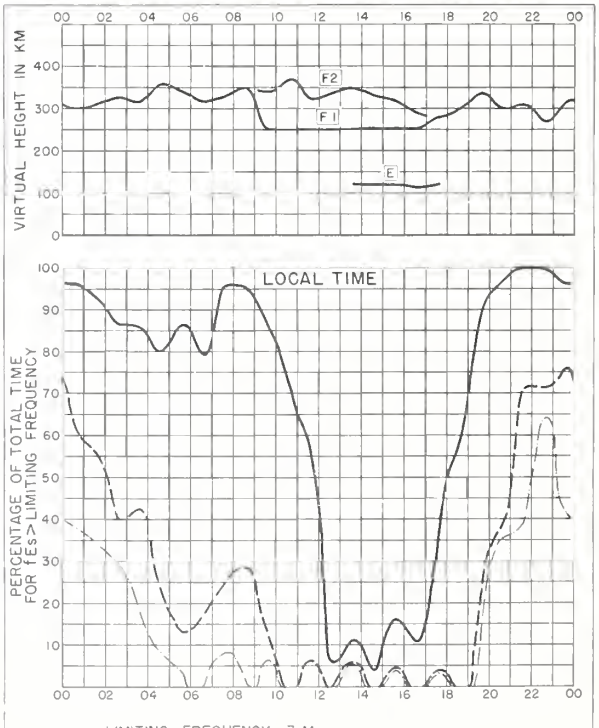


Fig 92. POINT BARROW, ALASKA
MARCH 1954

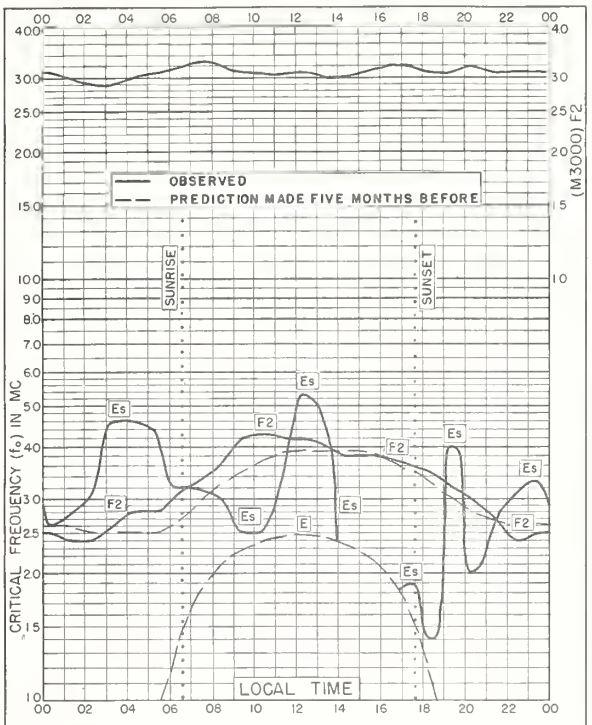


Fig. 93. GODHAVN, GREENLAND
69.2°N, 53.5°W MARCH 1954

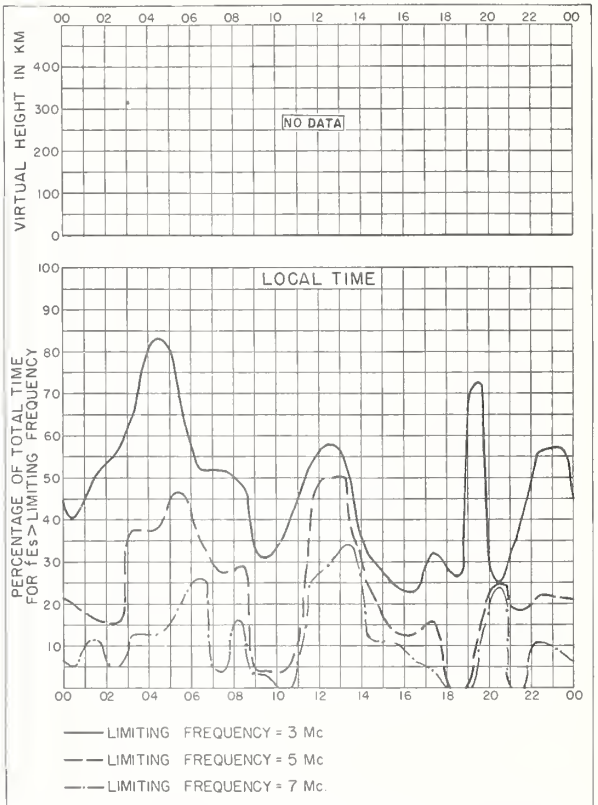


Fig. 94. GODHAVN, GREENLAND MARCH 1954

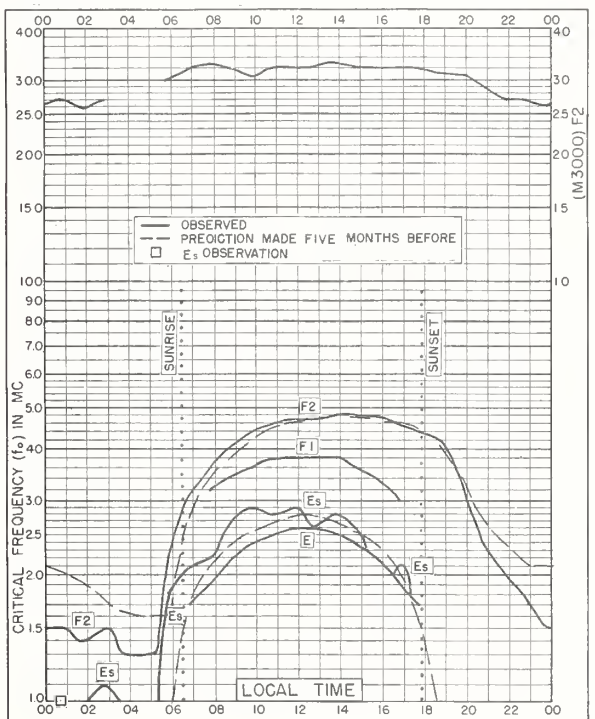


Fig. 95. INVERNESS, SCOTLAND
57.4°N, 4.2°W MARCH 1954

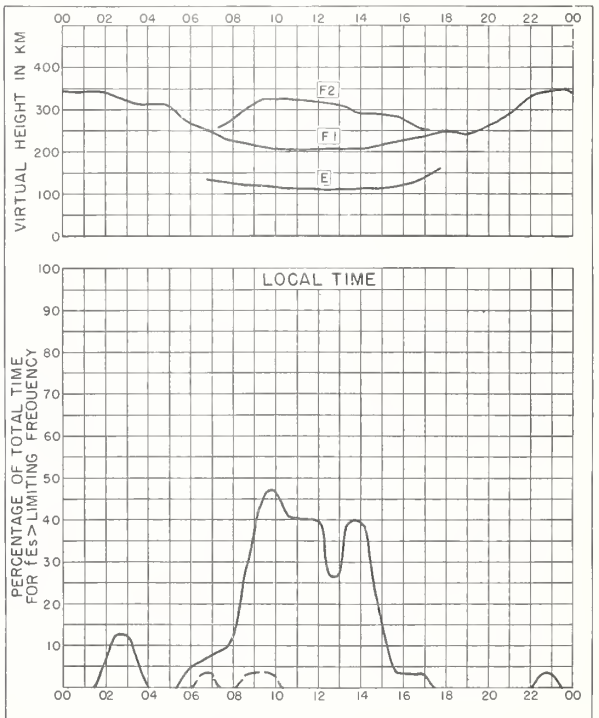


Fig. 96. INVERNESS, SCOTLAND MARCH 1954

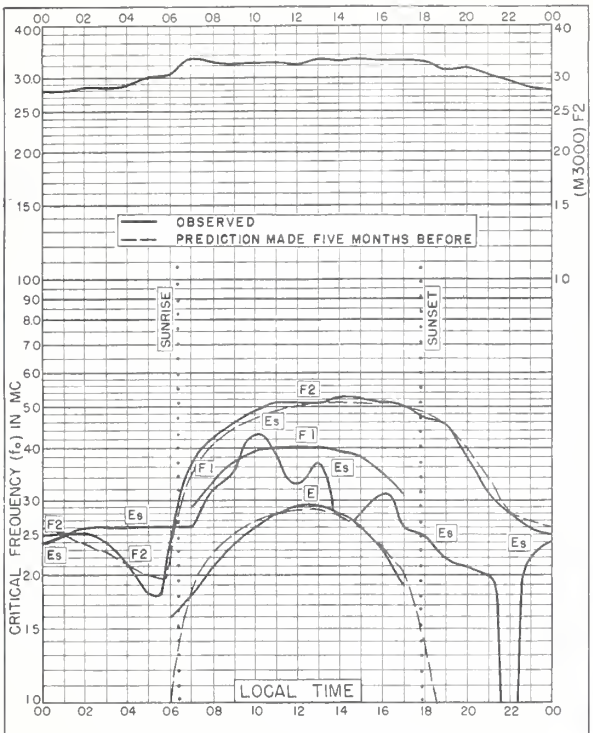


Fig. 97. SLOUGH, ENGLAND
51.5° N, 0.6° W
MARCH 1954

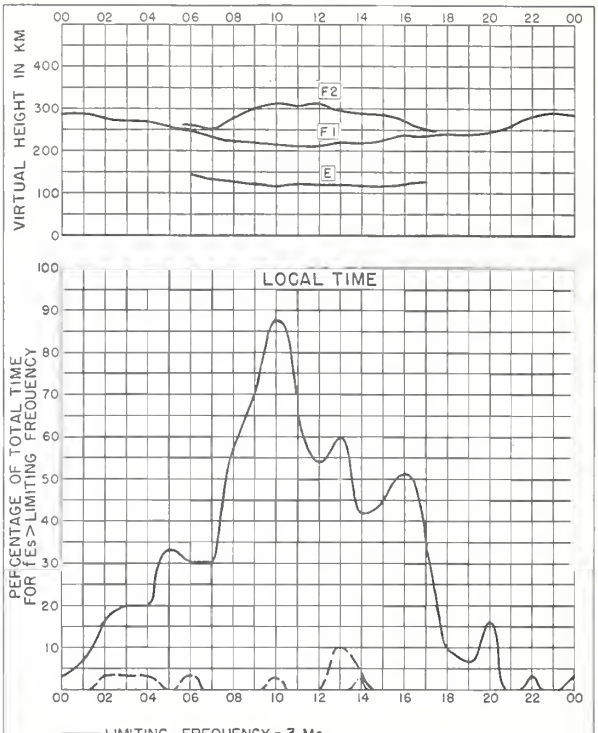


Fig 98. SLOUGH, ENGLAND
MARCH 1954

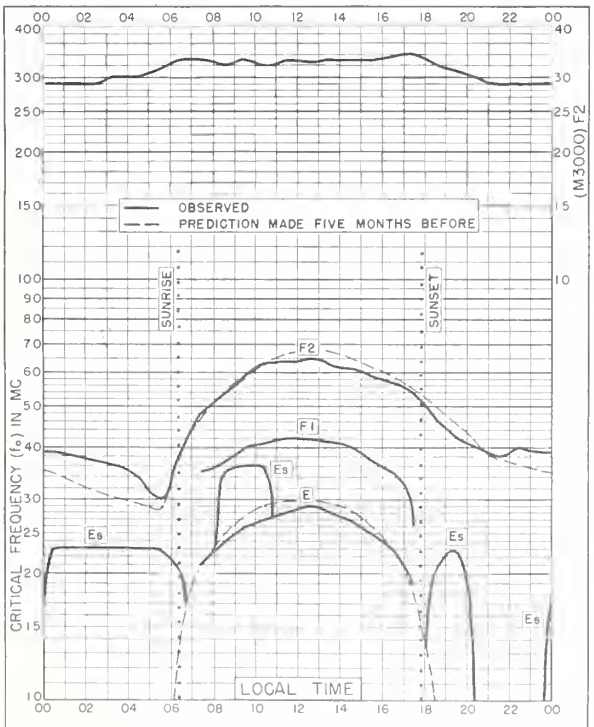


Fig 99. WAKKANAI, JAPAN
45.4° N, 141.7° E
MARCH 1954

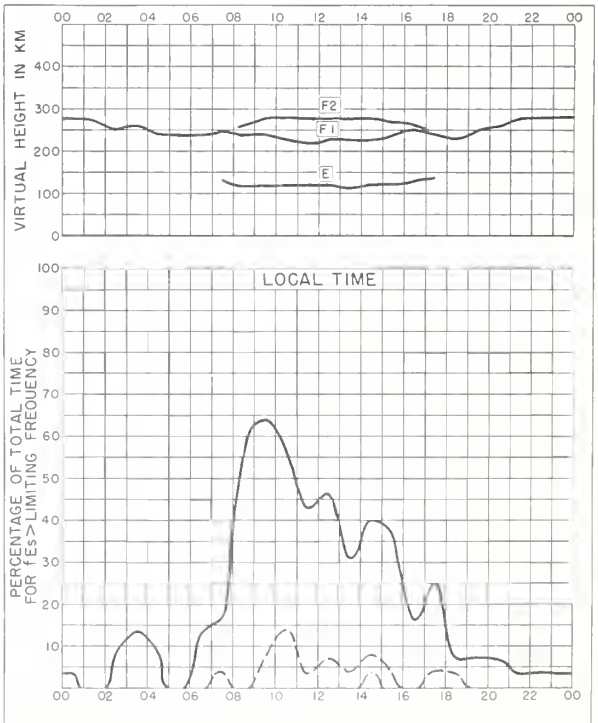


Fig 100. WAKKANAI, JAPAN
MARCH 1954

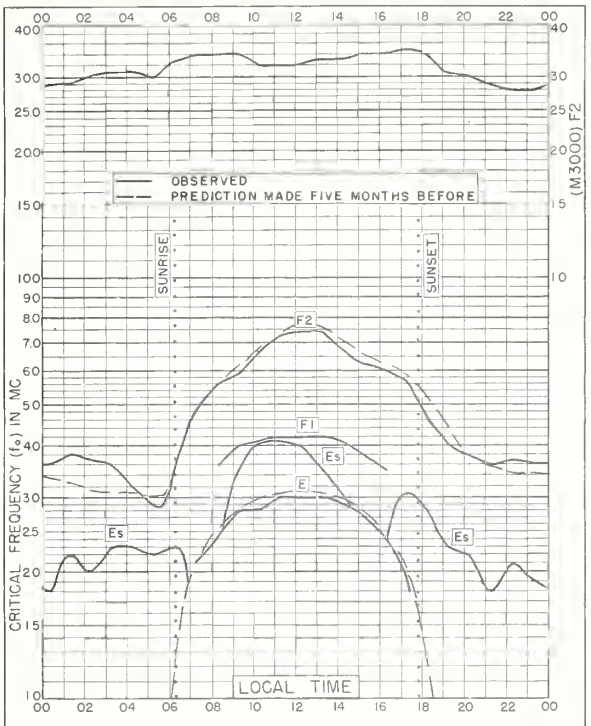


Fig. 101. AKITA, JAPAN
39.7° N, 140.1° E
MARCH 1954

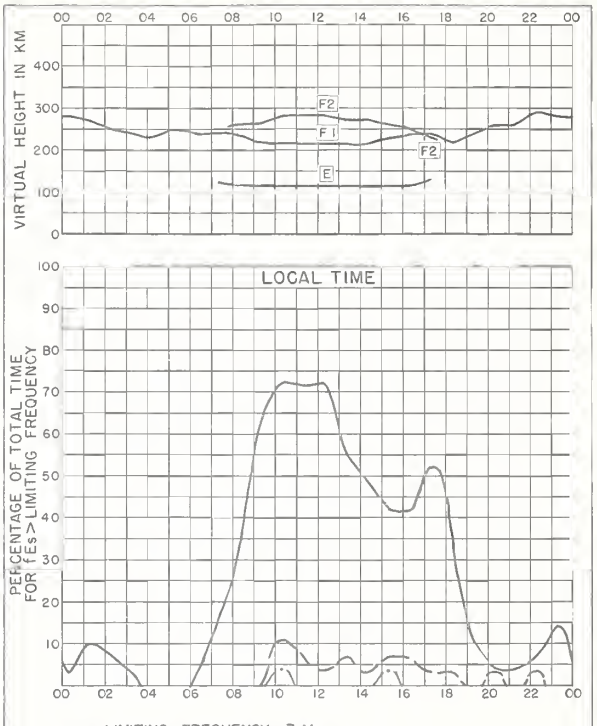


Fig. 102. AKITA, JAPAN
MARCH 1954

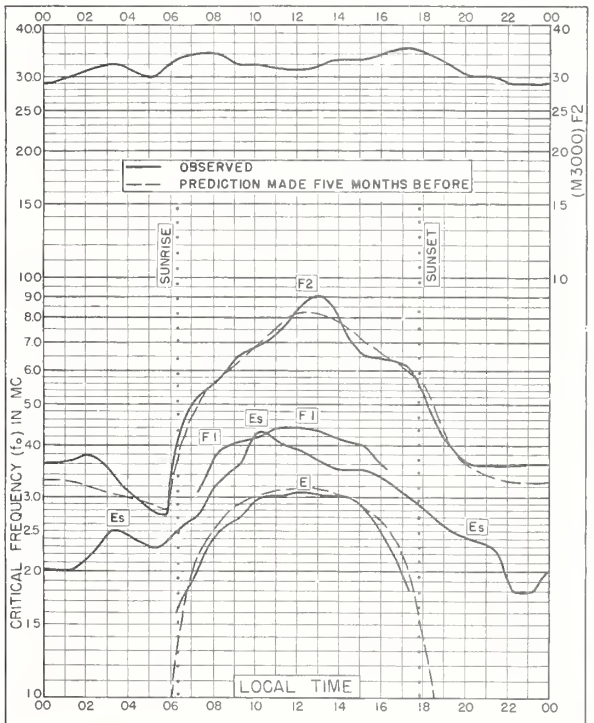


Fig. 103. TOKYO, JAPAN
35.7° N, 139.5° E
MARCH 1954

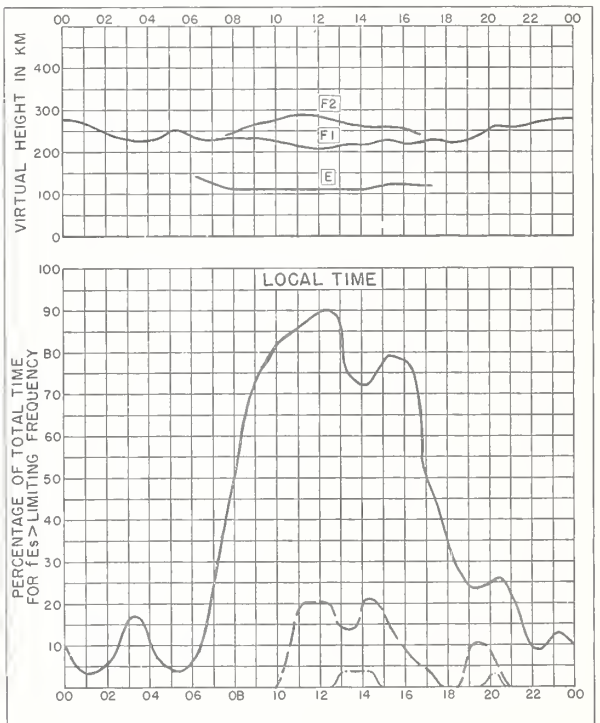


Fig. 104. TOKYO, JAPAN
MARCH 1954

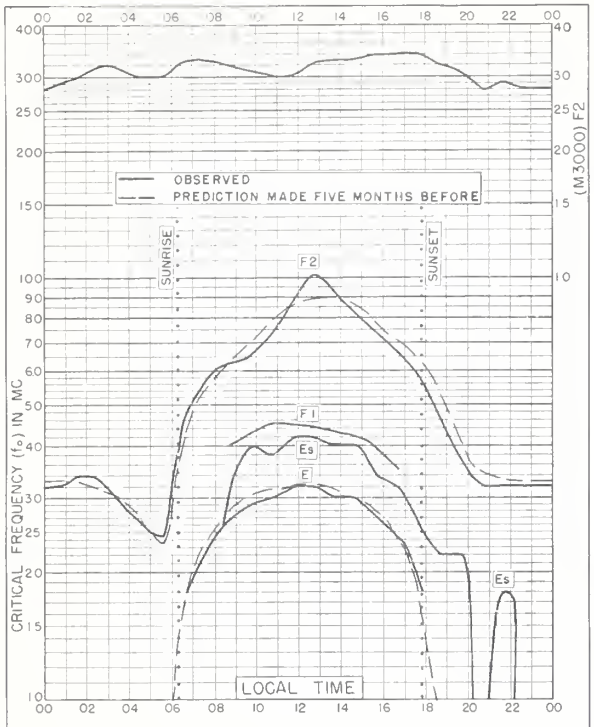


Fig 105. YAMAGAWA, JAPAN
31.2°N, 130.6°E MARCH 1954

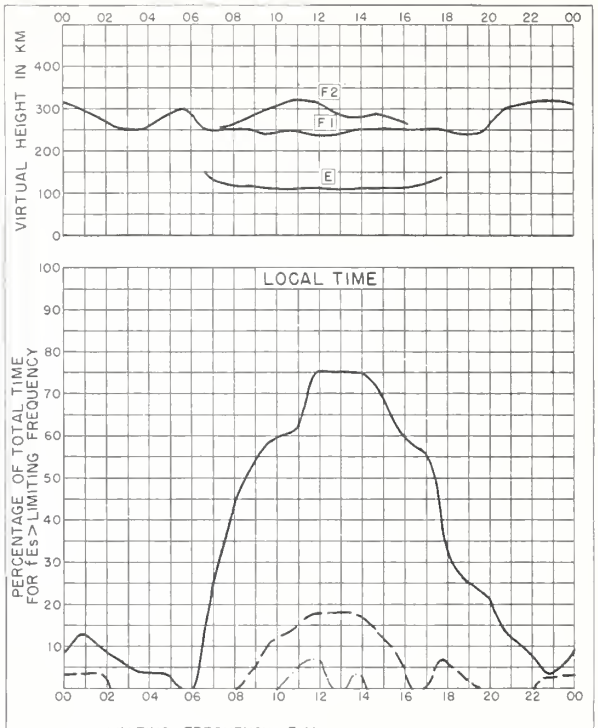


Fig 106. YAMAGAWA, JAPAN MARCH 1954

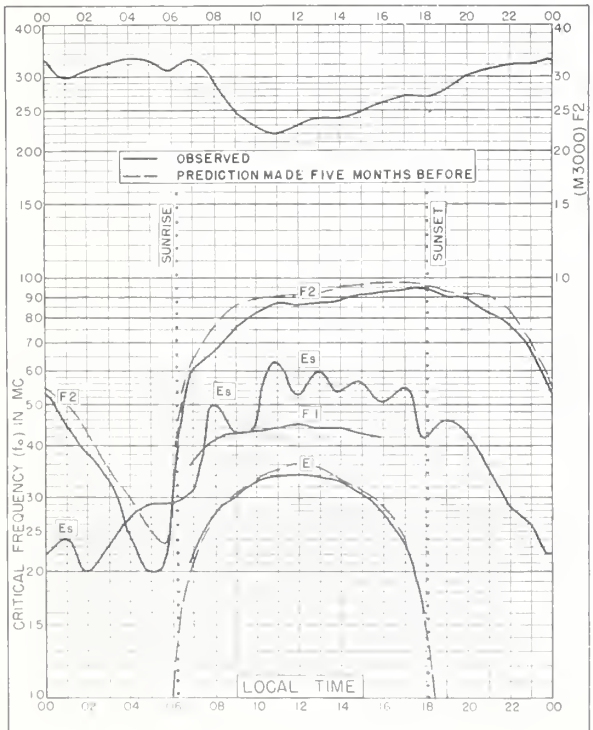


Fig. 107. SINGAPORE, BRITISH MALAYA
1.3°N, 103.8°E MARCH 1954

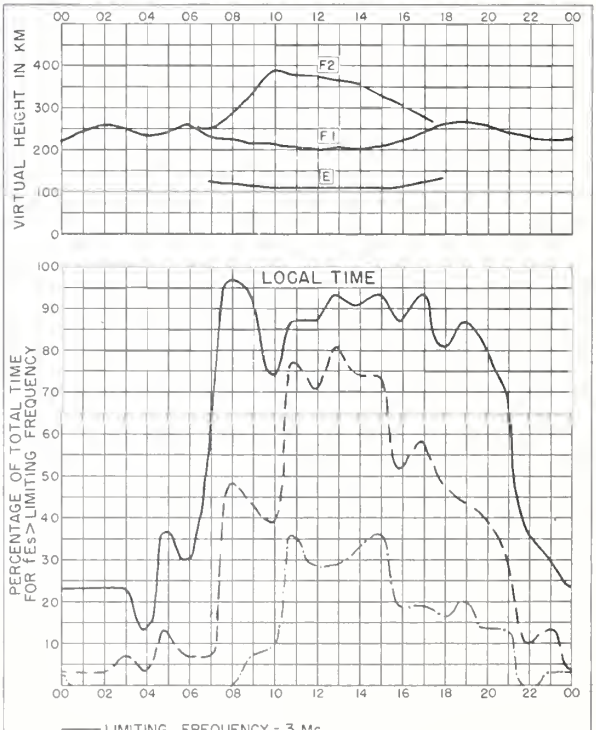


Fig. 108. SINGAPORE, BRITISH MALAYA MARCH 1954

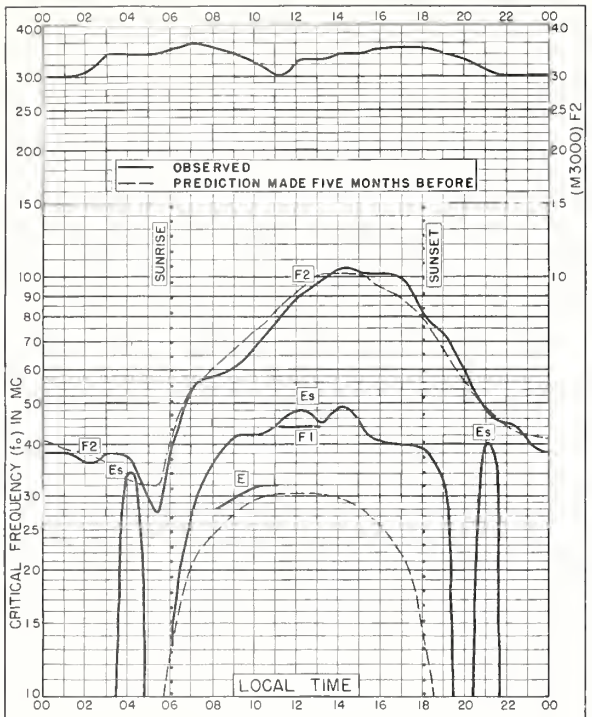


Fig 109. BUENOS AIRES, ARGENTINA
34.5°S, 58.5°W MARCH 1954

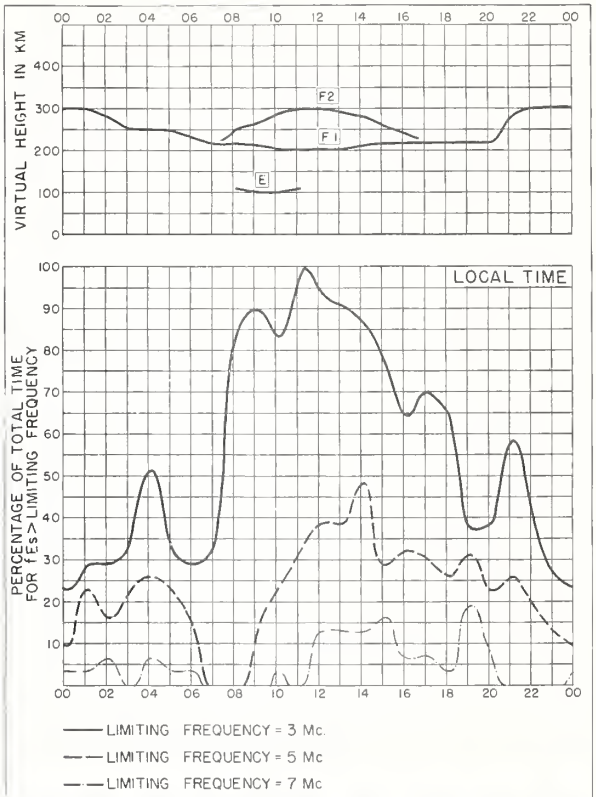


Fig 110. BUENOS AIRES, ARGENTINA MARCH 1954

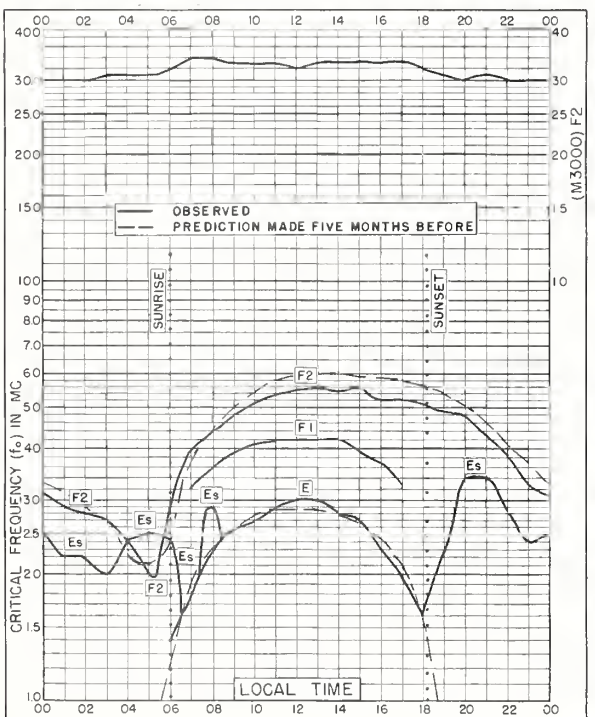
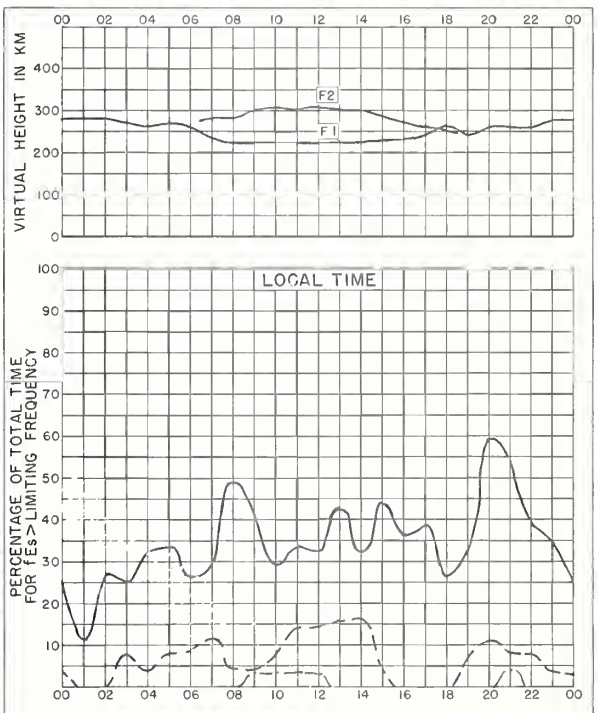


Fig. 111. CHRISTCHURCH, NEW ZEALAND
43.6°S, 172.8°E MARCH 1954



MARCH 1954
Fig. 112. CHRISTCHURCH, NEW ZEALAND

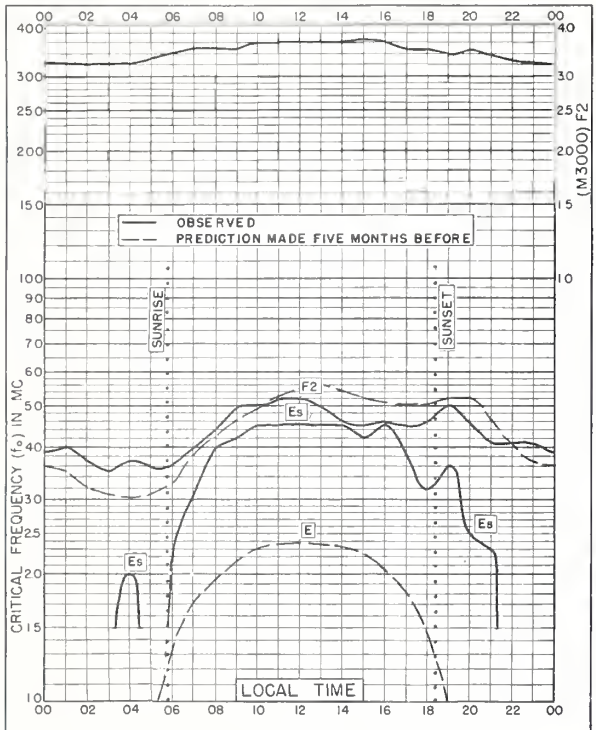


Fig 113. DECEPCION I.
63.0°S, 60.7° W MARCH 1954

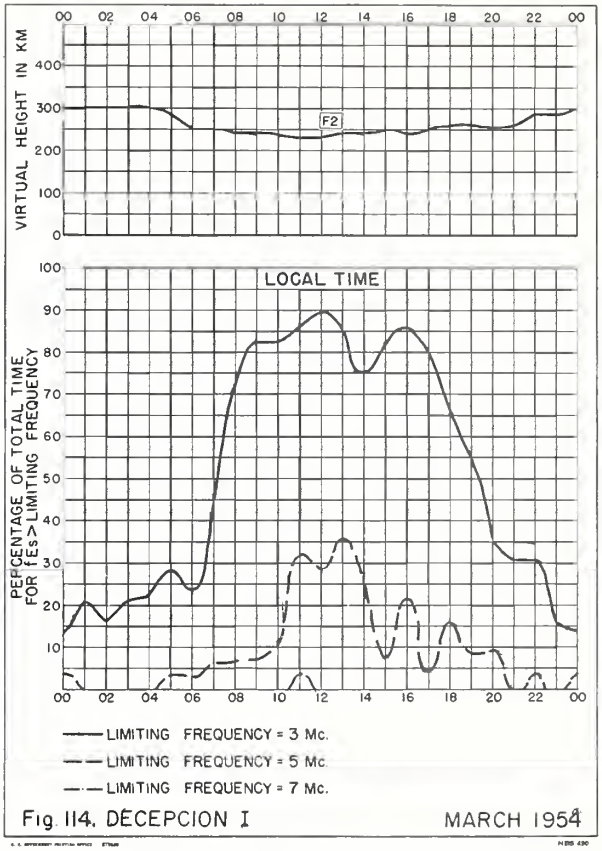


Fig. 114. DECEPCION I MARCH 1954

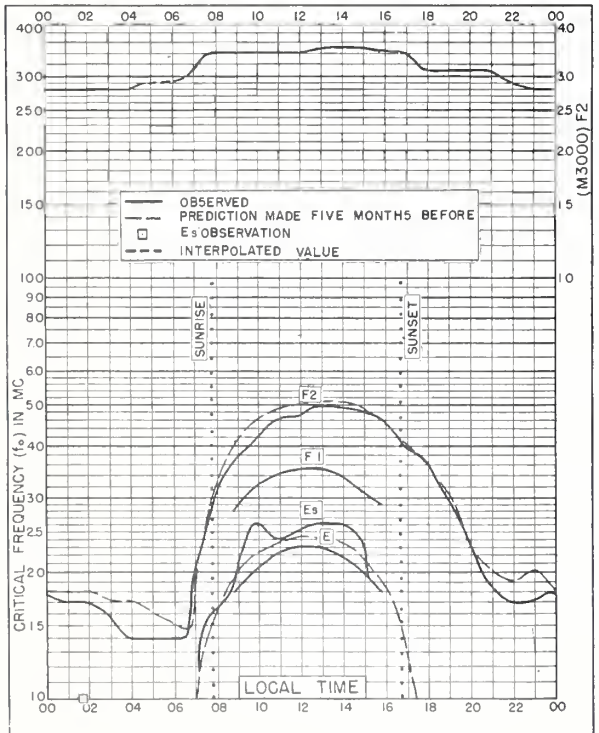


Fig. 115. INVERNESS, SCOTLAND
57.4° N, 4.2° W FEBRUARY 1954

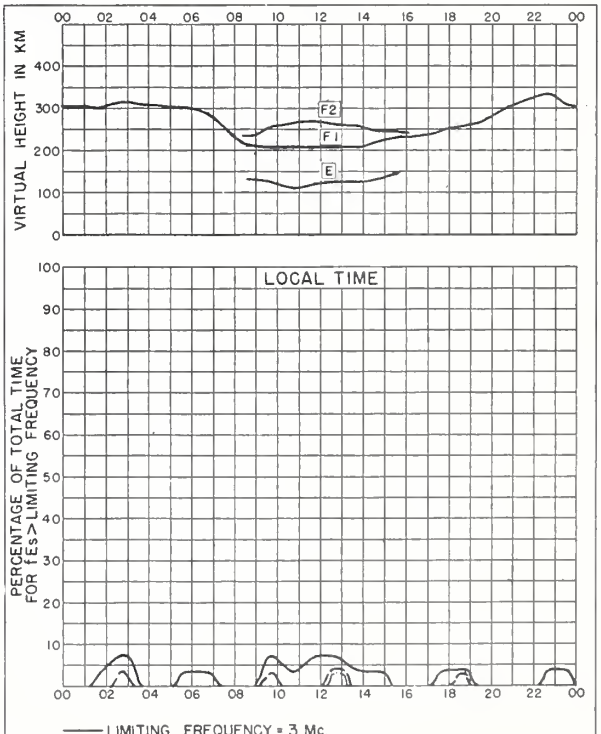


Fig. 116. INVERNESS, SCOTLAND FEBRUARY 1954

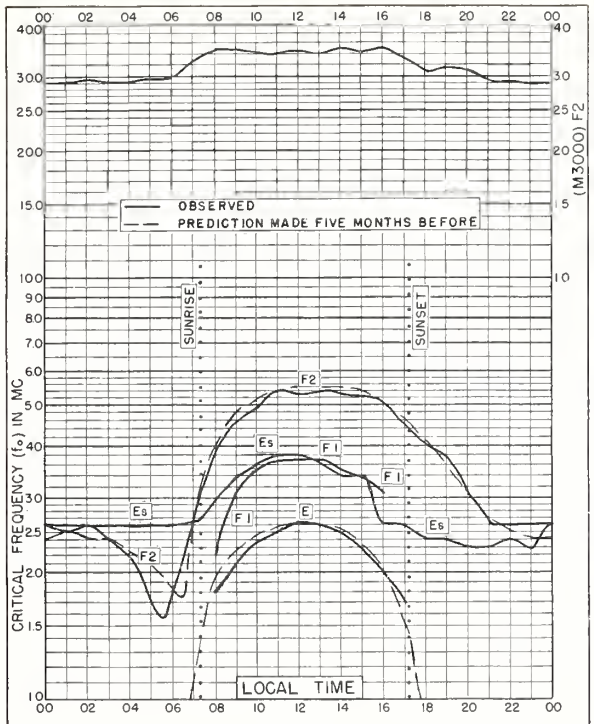


Fig. 117. SLOUGH, ENGLAND
51.5°N, 0.6°W FEBRUARY 1954

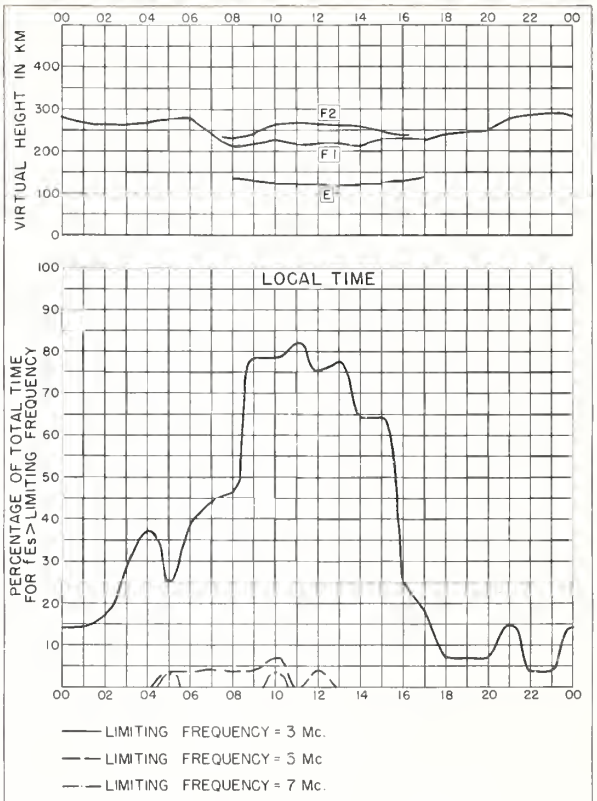


Fig. 118. SLOUGH, ENGLAND FEBRUARY 1954

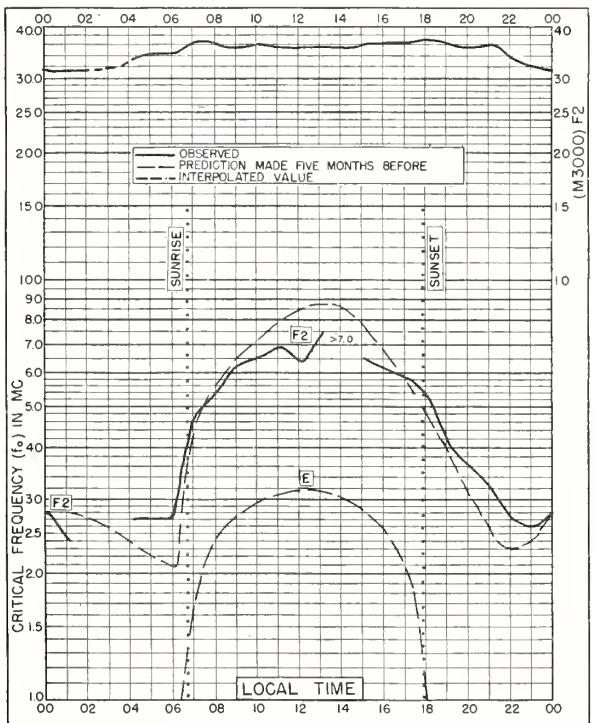


Fig. 119. DELHI, INDIA
28.6°N, 77.1°E FEBRUARY 1954

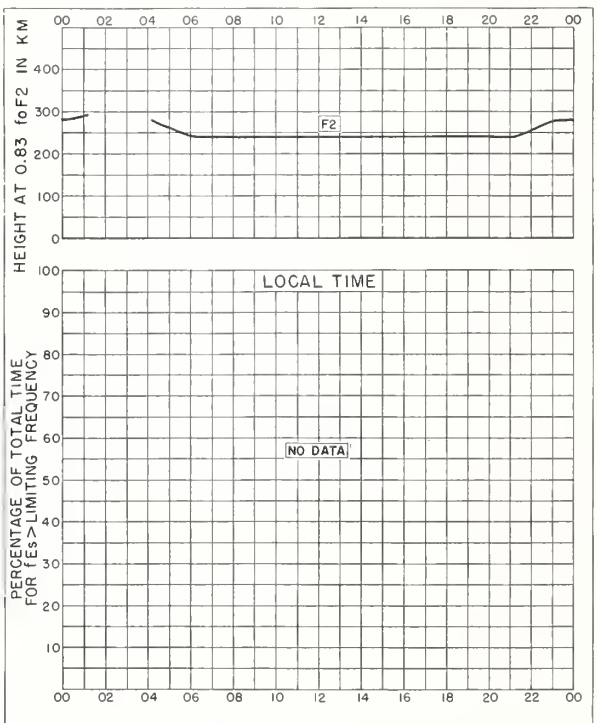


Fig. 120. DELHI, INDIA FEBRUARY 1954

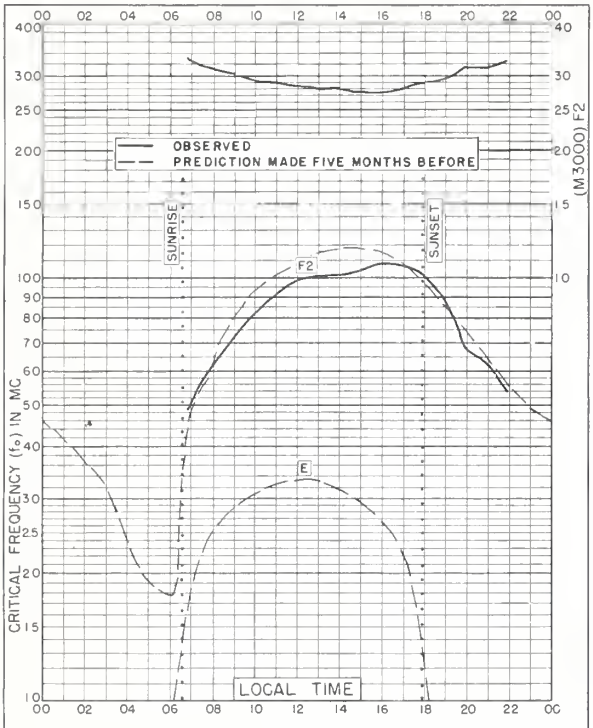


Fig. 121. BOMBAY, INDIA
19.0°N, 73.0°E FEBRUARY 1954

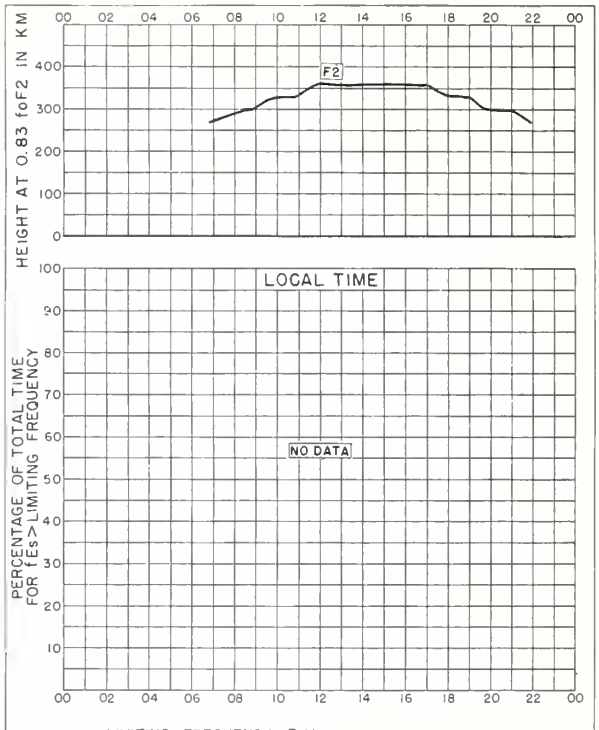


Fig. 122. BOMBAY, INDIA FEBRUARY 1954

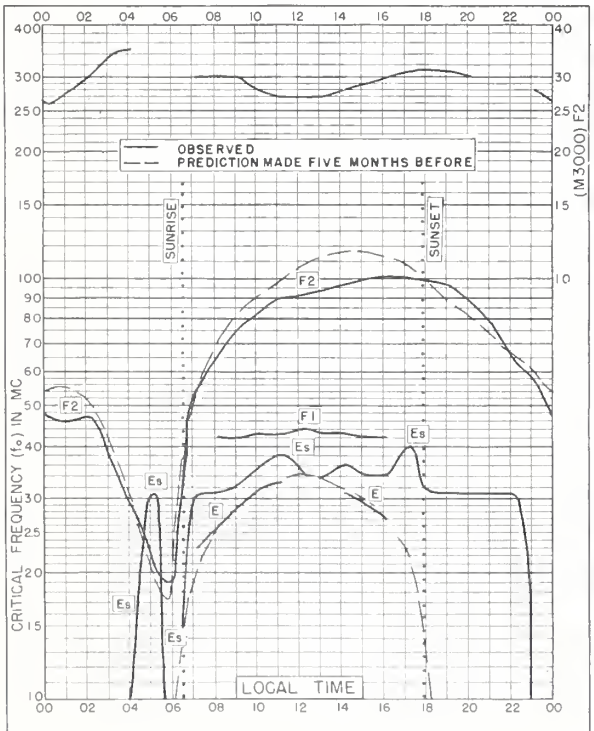


Fig. 123. KHARTOUM, SUDAN
15.6°N, 32.6°E FEBRUARY 1954

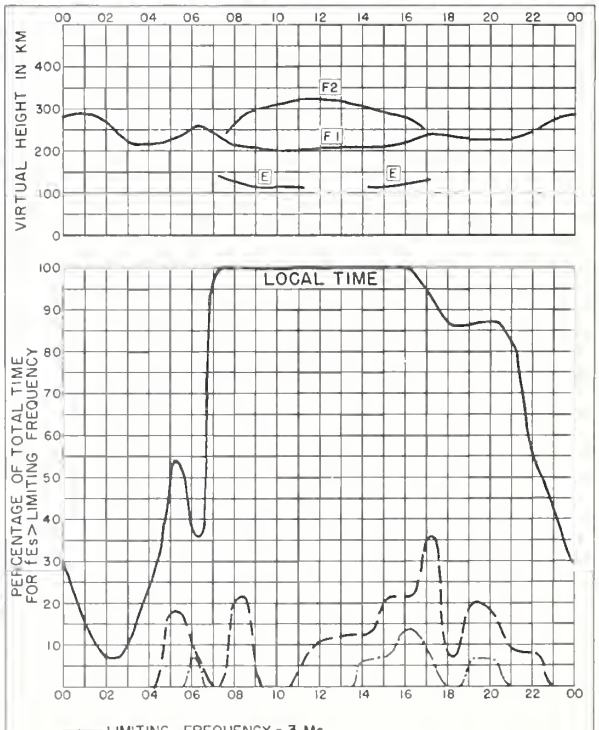


Fig. 124. KHARTOUM, SUDAN FEBRUARY 1954

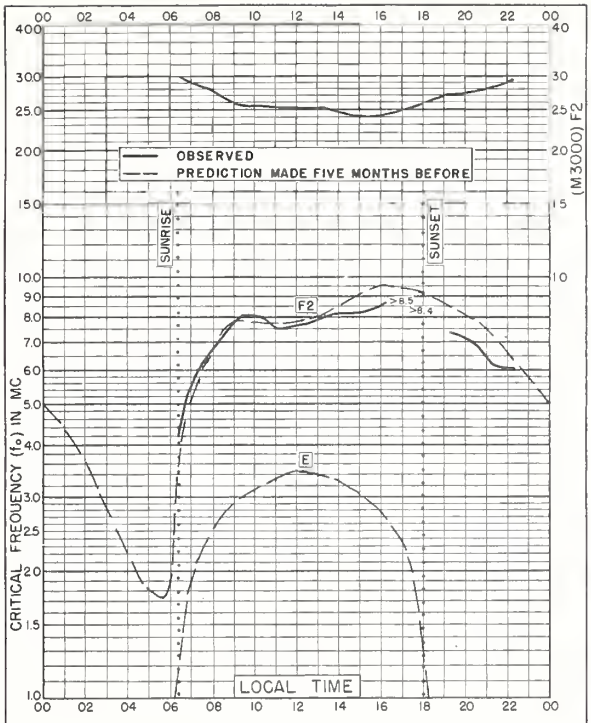


Fig. 125. MADRAS, INDIA
13.0°N, 80.2°E FEBRUARY 1954

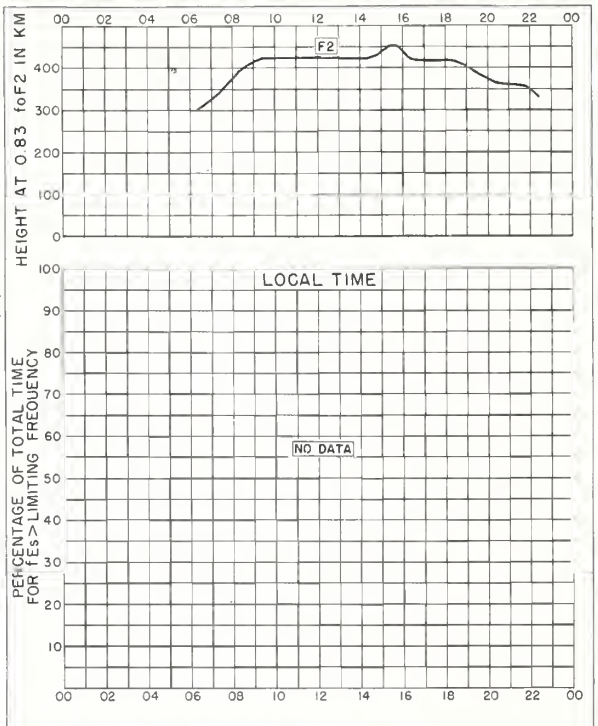


Fig. 126. MADRAS, INDIA FEBRUARY 1954

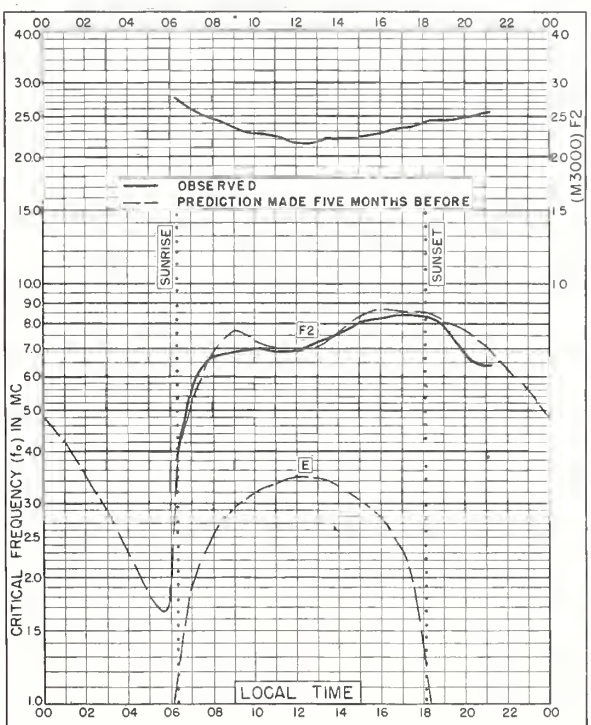


Fig. 127. TIRUCHY, INDIA
10.8°N, 78.8°E FEBRUARY 1954

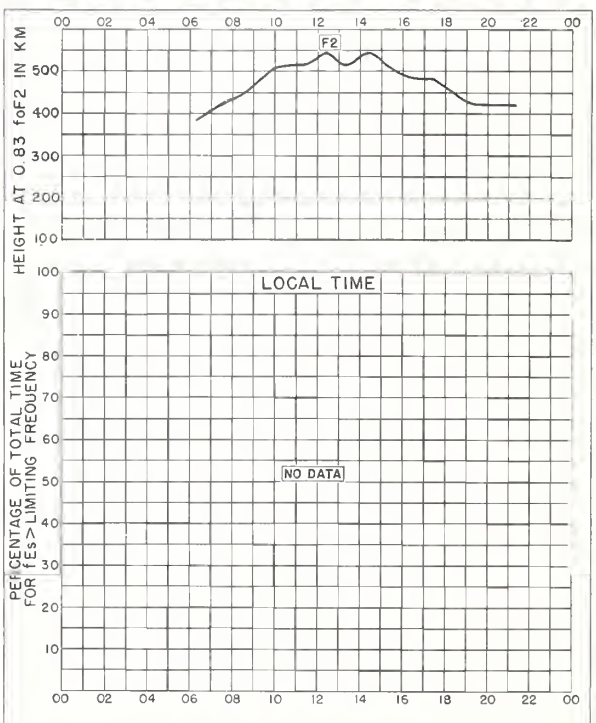


Fig. 128. TIRUCHY, INDIA FEBRUARY 1954

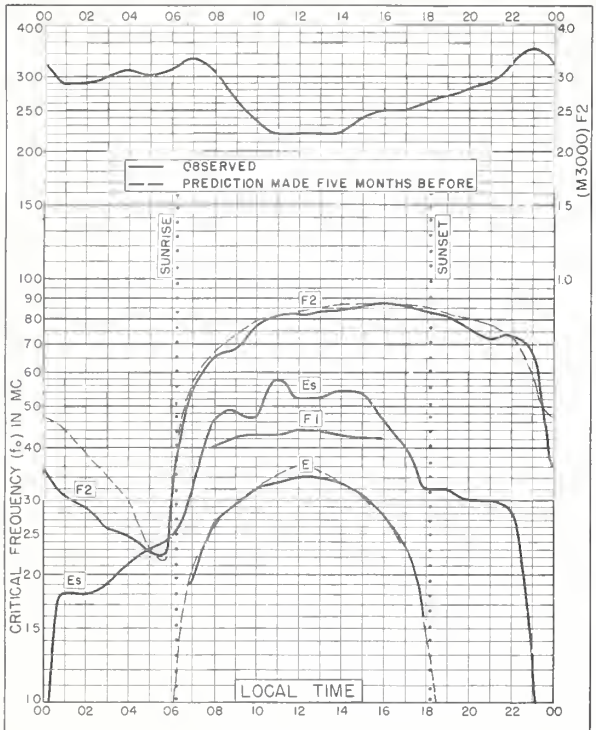
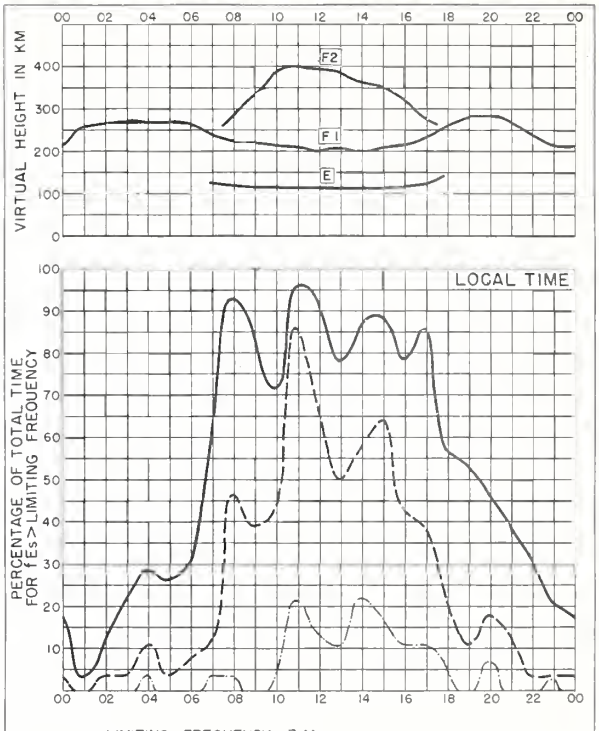


Fig 129. SINGAPORE, BRITISH MALAYA
1.3° N, 103.8°E FEBRUARY 1954



FEBRUARY 1954
Fig 130. SINGAPORE, BRITISH MALAYA

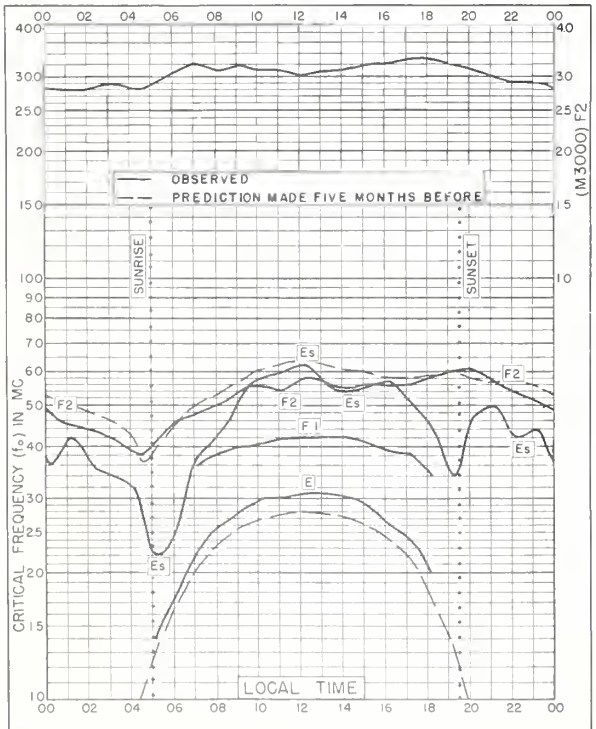


Fig. 131. FALKLAND IS.
51.7°S, 57.8° W FEBRUARY 1954

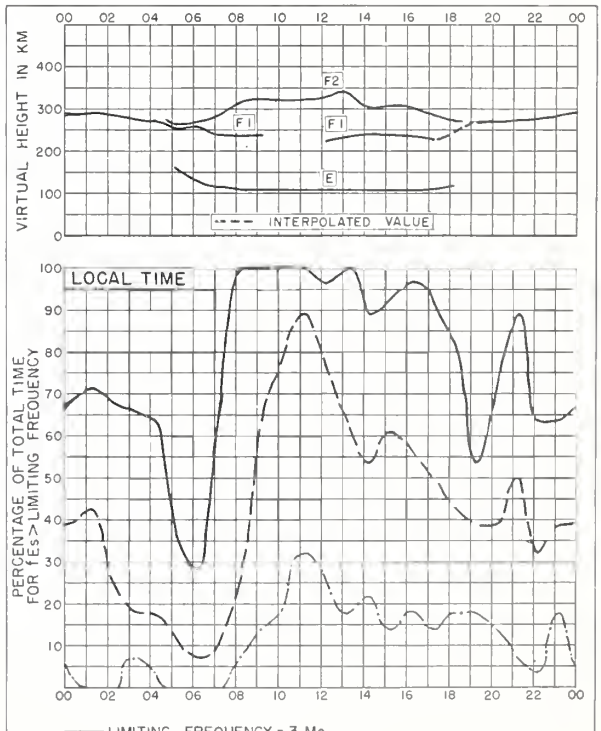


Fig. 132. FALKLAND IS. FEBRUARY 1954

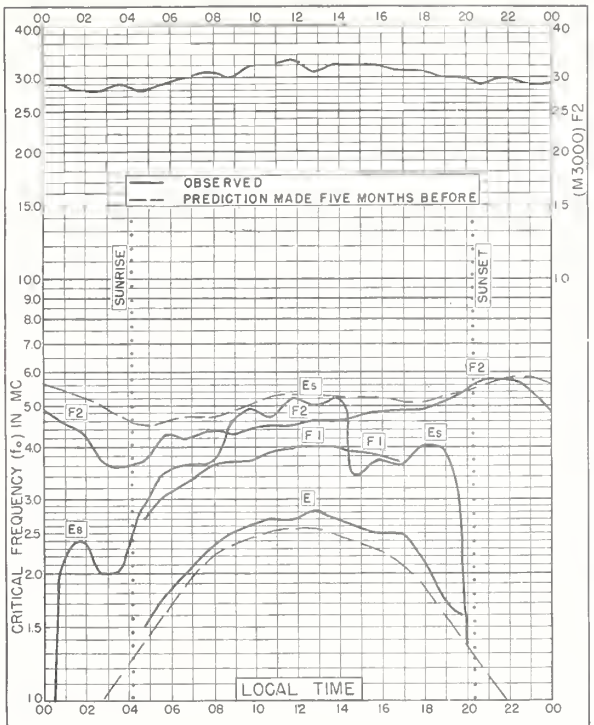


Fig. 133. PORT LOCKROY
64.8°S, 63.5°W FEBRUARY 1954

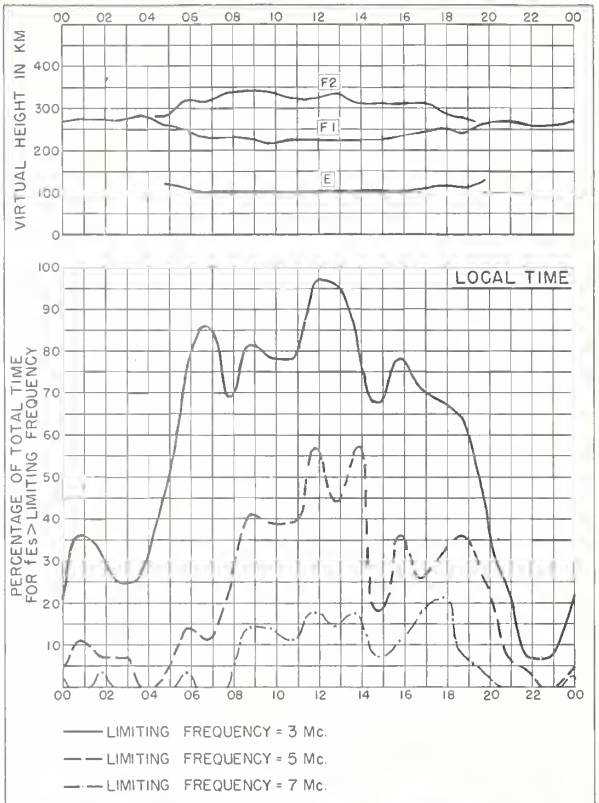


Fig. 134. PORT LOCKROY FEBRUARY 1954

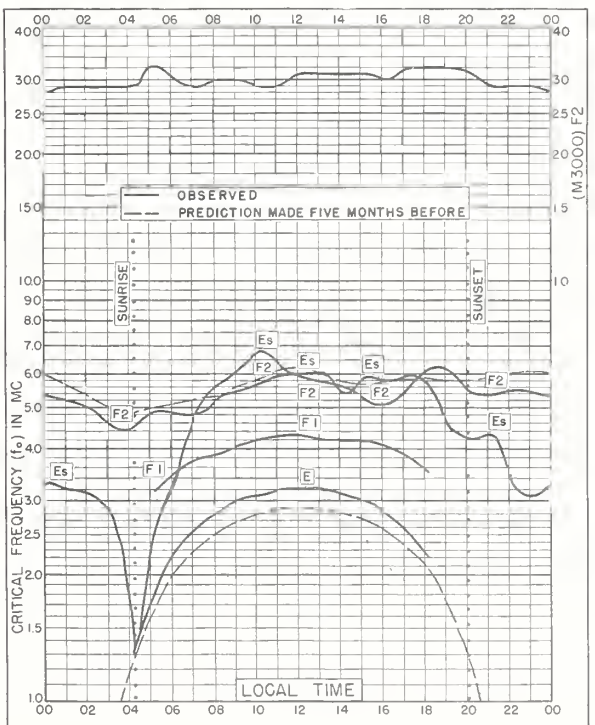


Fig. 135. FALKLAND IS.
51.7° S, 57.8°W JANUARY 1954

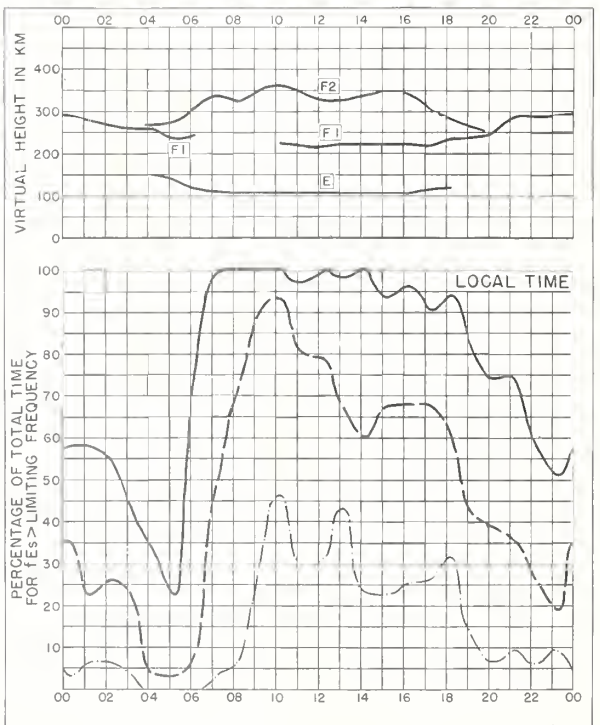


Fig. 136. FALKLAND IS JANUARY 1954

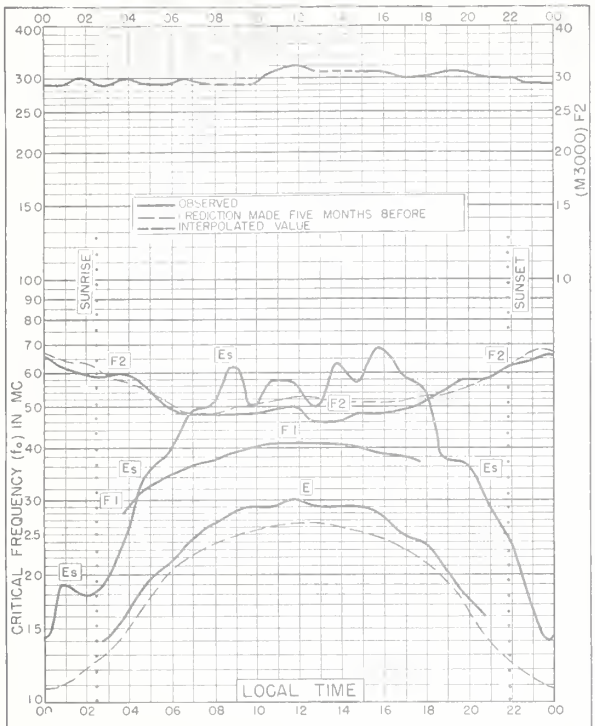


Fig 137. PORT LOCKROY
64.8° S, 63.5° W JANUARY 1954

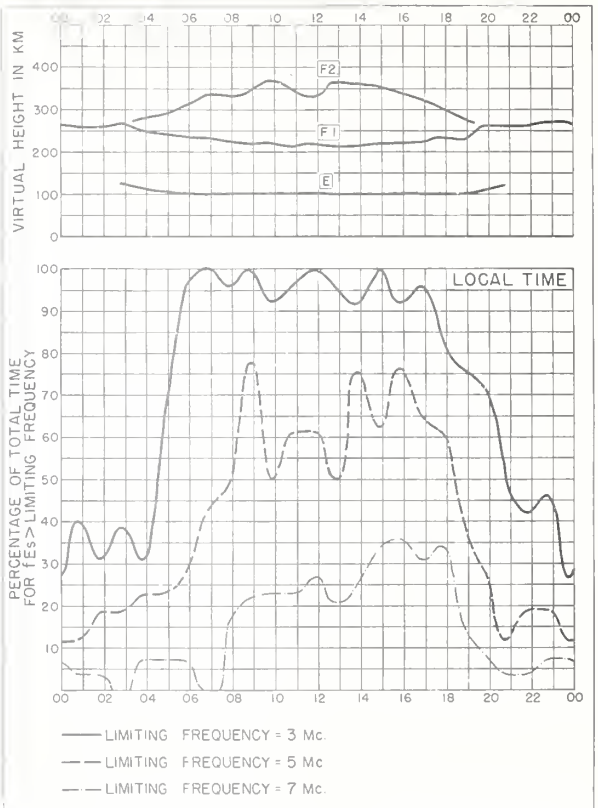


Fig 138. PORT LOCKROY JANUARY 1954

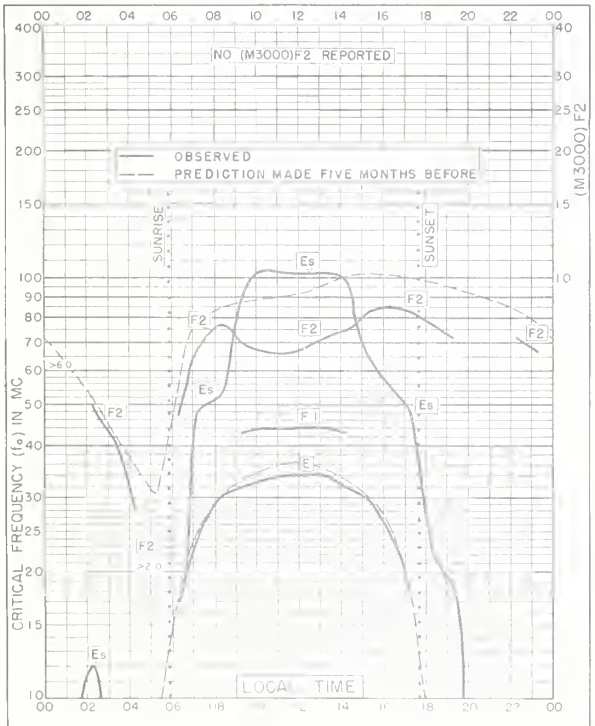


Fig 139. IBADAN, NIGERIA
7.4° N, 4.0° E NOVEMBER 1953

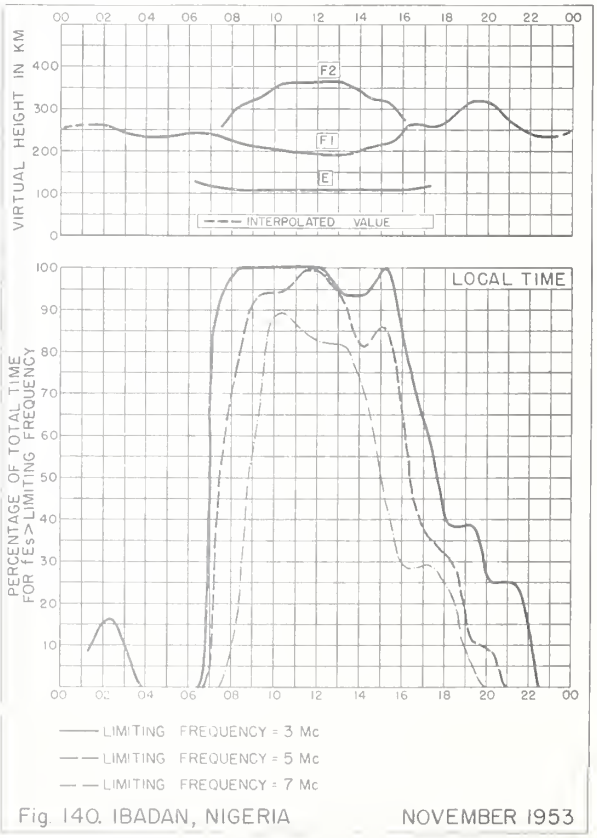


Fig. 140. IBADAN, NIGERIA NOVEMBER 1953

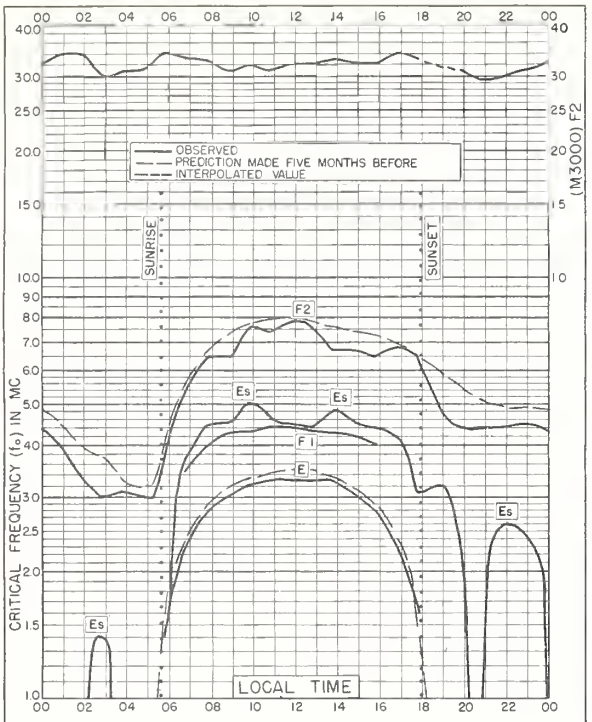


Fig. 141. TOWNSVILLE, AUSTRALIA
19.3°S, 146.8°E OCTOBER 1953

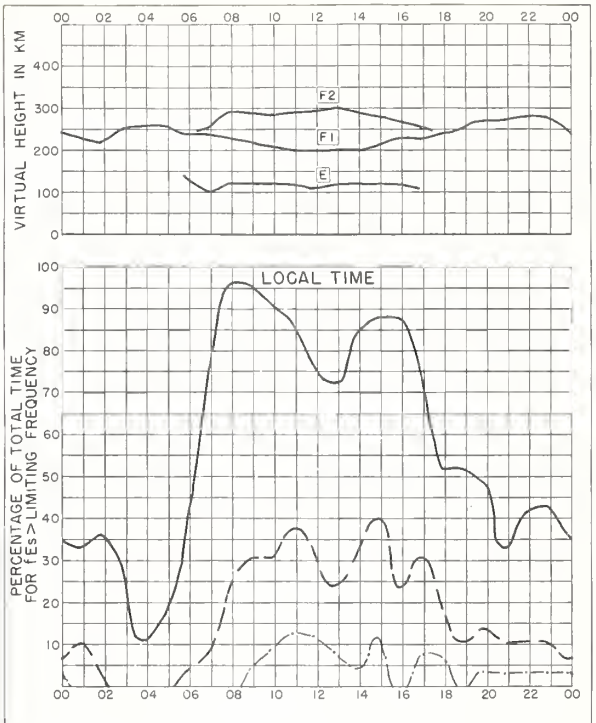


Fig. 142. TOWNSVILLE, AUSTRALIA OCTOBER 1953

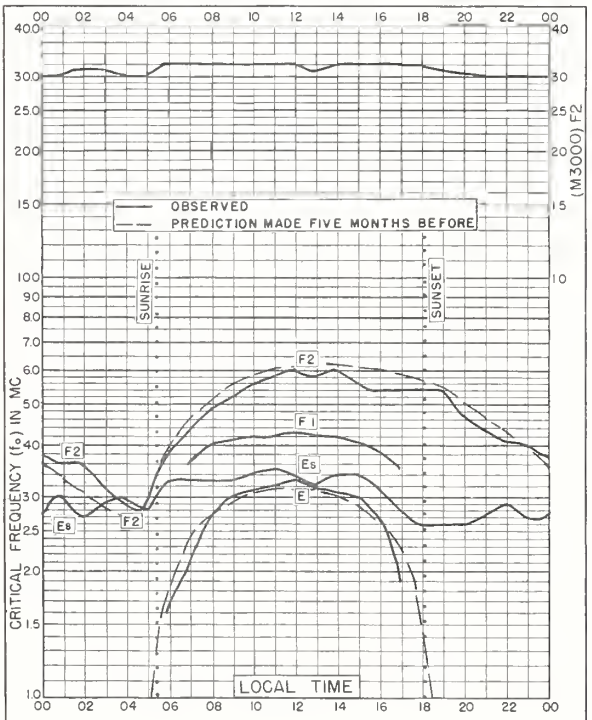


Fig. 143. CANBERRA, AUSTRALIA
35.3°S, 149.0°E OCTOBER 1953

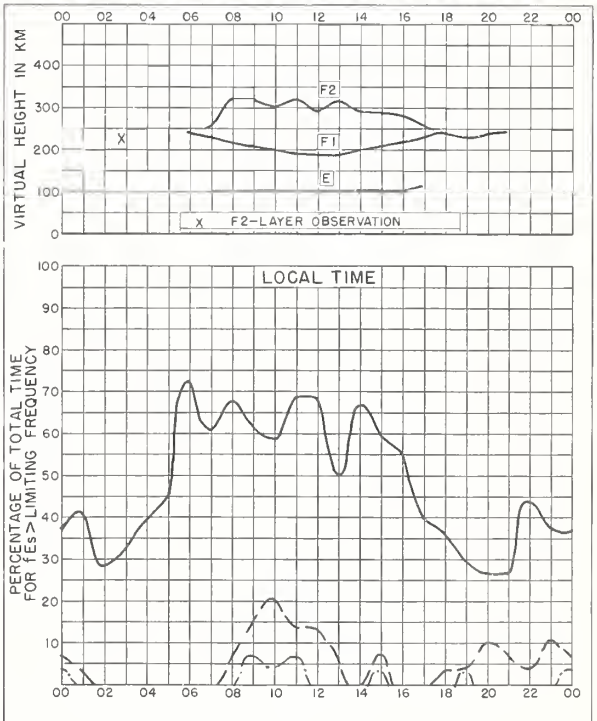


Fig. 144. CANBERRA, AUSTRALIA OCTOBER 1953

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