PART A

IONOSPHERIC DATA

ISSUED
JANUARY 1960

U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

CRPL-F185
PART A

NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

Issued
22 Jan. 1960

IONOSPHERIC DATA

CONTENTS

	Page
Symbols, Terminology, Conventions	ii
Predicted and Observed Sunspot Numbers.	v
World-Wide Sources of Ionospheric Data.	vi
Tabulations of Electron Density Data.	viii
Tables of Ionospheric Data.	1
Graphs of Ionospheric Data.	13
Index of Tables and Graphs of Ionospheric Data in CRPL-F185 (Part A).	49

SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1952, and continuing through December 1956, 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 1957, the symbols used are given in NBS Report 5033, "Summary of Changes in Ionospheric Vertical Soundings, Observing and Scaling Procedures - Effective 1 January 1957," which draws upon the First Report of the Special Committee on World-Wide Ionospheric Soundings (URSI/AGI), Brussels, Sept. 2, 1956. A list of these symbols is available upon request.

In the Second Report of the Special Committee on World-Wide Ionospheric Soundings of the URSI/AGI Committee, May 1957, a new descriptive letter was introduced:

M Measurement questionable because the ordinary and extraordinary components are not distinguishable.

There was an expansion in meaning of the following:

Z (1) (qualifying letter) Measurement deduced from the third magnetoionic component.
(2) (descriptive letter) Third magnetoionic component present.

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 above.

a. For all ionospheric characteristics:

Values missing because of A, C, F, H, L, N or R 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'F (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 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; the descriptive symbol D, only when it replaces a frequency characteristic.

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 are counted as equal to or less than the median foE, or equal to or less than the lower frequency limit of the recorder.

B for fEs is counted on the low side when there is a numberical value of a higher layer characteristic; otherwise it is omitted from the median count.

S for fEs is counted on the low side at night; during the day it is omitted from the median count (beginning with data for November 1957).

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 the count is four or less, the data are considered insufficient and no median value is computed.

2. For the F2 layer, h'F or foEs, if the count is from five to nine, the median is considered doubtful. The E and F1 layers are so regular in their characteristics that, as long as the count is at least five, the median is not considered doubtful. A count of at least 5 is considered sufficient for an h'Es median.

3. For all layers, if more than half of the data used to compute the medians 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.

Ordinarily, a blank space in the fEs or foEs 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'F2 or 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.

d. The tables may contain median values of either foEs or fEs. The graph of median Es corresponds to the table. Percentage curves of fEs are estimated from values of foEs when necessary.

PREDICTED AND OBSERVED SUNSPOT NUMBERS

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

Month	Predicted Sunspot Number										
	1960	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950
December		137	150*	150*	150	42	11	15	33	53	86
November		137	150*	150*	147	35	10	16	38	52	87
October		139	150*	150*	135	31	10	17	43	52	90
September		141	150*	150*	119	30	8	18	46	54	91
August		142	150*	150*	105	27	8	18	49	57	96
July		141	150*	150*	95	22	8	20	51	60	101
June	120	143	150*	150*	89	18	9	21	52	63	103
May	125	146	150*	150*	77	16	10	22	52	68	102
April	130	150*	150*	150*	68	13	10	24	52	74	101
March	133	150*	150*	150*	60	14	11	27	52	78	103
February	135	150*	150*	150*	53	14	12	29	51	82	103
January	136	150*	150*	150*	48	12	14	30	53	85	105

*This number is believed represesentative of solar activity at a maximum portion of the current sunspot cycle.

The latest available information follows concerning the corresponding observed Zürich numbers beginning with the minimum of April 1954. Final numbers are listed through June 1958.

Observed Sunspot Number

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1954				3	4	4	5	7	8	8	9	12
1955	14	16	19	23	29	35	40	46	55	64	73	81
1956	89	98	109	119	127	137	146	150	151	156	160	164
1957	170	172	174	181	186	188	191	194	197	200	201	200
1958	199	201	201	197	191	187	185	184	183	181	179	179
1959	177	175	173	167	162	158						

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:

Meteorological Service, Province of Macau, Asia:
Macau

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

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

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

Electronics Directorate of the Brazilian Navy:
Natal, Brazil

British Department of Scientific and Industrial Research, Radio Research Board:
Falkland Is.
Ibadan, Nigeria (University College of Ibadan)
Inverness, Scotland
Singapore, British Malaya

Defence Research Board, Canada:
Baker Lake, Canada
Churchill, Canada
Ottawa, Canada
Resolute Bay, Canada
Winnipeg, Canada

Instituto Geofisico de Los Andes Colombianos:
Bogota, Colombia

Danish National Committee of URSI:
Godhavn, Greenland
Narsarssuak, Greenland

General Direction of Posts and Telegraphs, Helsinki, Finland:
Nurmijarvi, Finland

The Finnish Academy of Sciences and Letters:
Sodankyla, Finland

The Royal Netherlands Meteorological Institute:
De Bilt, Holland

Central Institute of Meteorology, Budapest, Hungary:
Budapest, Hungary

Icelandic Post and Telegraph Administration:
Reykjavik, Iceland

Geophysical and Geodetic Institute, Genoa, Italy:
Monte Capellino, Italy

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:
Cape Hallett (Adare), Antarctica
Christchurch, New Zealand

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

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

Royal Board of Swedish Telegraphs, Radio Department, Stockholm, Sweden:
Lulea, Sweden

United States Army Signal Corps:
Adak, Alaska
Ft. Monmouth, New Jersey
Grand Bahama I.
Okinawa I.
White Sands, New Mexico

National Bureau of Standards (Central Radio Propagation Laboratory):
Anchorage, Alaska
Chiclayo, Peru
Fairbanks (College), Alaska (Geophysical Institute of the University of Alaska)
Huancayo, Peru (Instituto Geofisico de Huancayo)
Little America, Antarctica
Maui, Hawaii

TABULATIONS OF ELECTRON DENSITY DATA

Reduction of hourly ionospheric vertical soundings to electron density profiles has become a part of the systematic ionospheric data program of the Central Radio Propagation Laboratory, National Bureau of Standards. Scalings of ionograms for this purpose are being provided by ionosphere stations operated by CRPL and the U. S. Army Signal Corps. For the present, the hourly profile data from one CRPL station, Puerto Rico, are appearing in the monthly CRPL-F Reports, Part A. These data are in place of the standard ionogram reductions formerly provided by this Station. The very considerable task of scaling the ionograms for this purpose is being undertaken by T. R. Gilliland, Engineer in Charge, Puerto Rico Ionosphere Sounding Station· the computations are performed at the NBS Boulder Laboratories by a group headed by J. W. Wright. Basic conversion of virtual to true heights uses the well-known matrix method developed by K. G. Budden of the Cavendish Laboratory, Cambridge University, programmed for an IBM 650 computer.

The tabulations provide the following basic electron density profile data for each hour of each day of the month:

Quantity	Units	Remarks
Electron Density (N)	$x10^3$ = electrons/cm^3	Body of table; given at each 10 km of height.
NMAX	$x10^3$ = electrons/cm^3	Always the highest value of N at each hour. To maintain this rule, the electron density at the next 10 km increment above HMAX is always given as exactly equal to NMAX (unless HMAX coincides with a 10 km level).
QUALification	(Alphabetic)	A standard scaling letter qualifying the observation when necessary.
HMIN	Kilometers	The height of zero or very low electron density, obtained by linear extrapolation of the electron density vs. height curve.
HMAX	Kilometers	The height of maximum electron density, determined by fitting a parabola to the upper portion of the profile.
SHMAX	$x10^{10}$ = electrons/cm^2 column.	Obtained by integration of the profile between the limits HMIN and HMAX.

Two tabulations of arithmetic mean electron densities are also given for each hour. An average for the undisturbed ionosphere includes the soundings taken when the magnetic character figure K_p is less than 4+; the remaining data are combined to form a disturbed average. The latter may have little physical significance because the number of disturbed hours is usually small and the behavior of the ionosphere during disturbed hours is not consistent. On these tabulations the number of profiles in each average is given by CNT.

Before the averaging process, the individual profiles are extrapolated above HMAX by a Chapman distribution of 100 km scale height. This assumed model seems to agree well with the few published measurements dealing with the topside profile of the F-region. Extrapolation is necessary in order to calculate homogeneous averages near HMAX and the average profiles are, in fact, given up to 950 km. Also given are the integrated electron densities estimated to infinity, SHINF (same units as SHMAX); this is an approximation to the total electron content in a column of the ionosphere.

ELECTRON DENSITY

PUERTO RICO 60 W 1 OCT 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL								A	A	A	A	A
HMIN	287	282	244	230	244	366	308		110	110	115	
HMAX	402	395	319	345	395	493	425		321	331	349	
SHMAX	569	557	368	472	488	277	251		1291	1667	2394	
KM												
500							348					
490							348					
480							344					
470							334					
460							317					
450							295					
440							270					
430							240	362				
420							207	361				
410	834						170	352				
400	833	865				375	131	335				
390	821	862				375	93.9	310				
380	789	843				372	60.0	278				
370	742	806				366	28.3	240				
360	670	747				357		192				
350	573	670			582	346		157			2465	
340	516	562			581	335		119		1846	2451	
330	432	446			574	318		83.8	1446	1845	2401	
320	298	310	875	559	298			53.8	1446	1828	2315	
310	170	179	848	537	273			12.4	1431	1782	2197	
300	77.6	90.5	794	508	243				1391	1707	2048	
290	30.9	46.5	679	472	207				1324	1601	1846	
280			524	427	164				1240	1474	1623	
270			335	372	122				1119	1307	1394	
260			119	310	71.4				1004	1143	1167	
250			49.6	229	40.2				875	931	960	
240				127					742	735	781	
230				12.4					619	573	643	
220									487	456	532	
210									371	368	454	
200									286	310	395	
190									229	266	344	
180									187	226	302	
170									156	191	266	
160									133	147	226	
150									118	130	192	
140									109	122	170	
130									103	116	155	
120									97.8	108	116	
110									12.4	49.6		

ELECTRON DENSITY

PUERTO RICO 60 W 1 OCT 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL												
HMIN	115	113	115	114	114	115	249	[illegible]	[illegible]	344	[illegible]	255
HMAX	363	384	362	369	349	371	392	390	351	347	363	381
SHMAX	2546	3076	2716	2815	1761	1846	1361	1156	952	620	575	437
KM												
400							1528					
390			2500				1527	1445				565
380			2499			1555	1515	1345				565
370	2361	2479	2571	430		1555	1484	1345			716	560
360	2360	2438	2570	431		1554	1431	1334	1265		716	546
350	2335	2375	2543	430	1846	1547	1361	1277	1265	939	707	523
340	2279	2291	2481	426	1836	1473	1277	1210	1253	934	687	494
330	2193	2184	2386	2259	1805	1446	1175	1143	1221	911	656	455
320	2070	2057	2264	2161	1739	1381	1050	1027	1169	869	616	400
310	1922	1907	2105	2043	1658	1304	917	893	1102	807	562	342
300	1747	1737	1914	1891	1556	1216	774	754	1004	726	500	278
290	1555	1555	1708	1745	1446	1131	645	628	885	619	434	205
280	1359	1359	1474	1556	1316	1027	461	446	742	492	362	127
270	1175	1184	1260	1354	1175	917	410	398	572	388	274	67.6
260	1019	1027	1080	1167	1038	807	367	354	417	179	179	9.6
250	865	875	917	982	907	698	334	67.8	140	49.6	112	
240	745	754	767	820	781	599	154	112	49.6	63.8		
230	657	652	655	679	667	500		49.6		33.6		
220	585	573	573	573	557	410						
210	524	502	502	484	467	327						
200	465	446	441	417	382	257						
190	411	394	383	362	316	198						
180	357	348	335	314	262	158						
170	310	307	290	274	222	130						
160	267	272	254	243	190	109						
150	223	237	217	216	163	96.7						
140	197	206	201	187	143	91.4						
130	187	191	188	171	135	88.4						
120	143	181	167	152	127	71.4						

ELECTRON DENSITY

PUERTO RICO 60 W 2 OCT 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL								A		A	A	
HMIN	271	271	290	252	268	310	230		117		115	115
HMAX	390	386	372	401	443	424	350		313		325	345
SHMAX	366	407	304	443	408	380	353		1102		1830	2365
KM												
450					396							
440					396							
430					392	492						
420					382	492						
410				424	369	485						
400				424	354	471						
390	540	599		422	335	454						
380	534	597	573	417	312	429						
370	516	584	573	405	286	393						
360	484	560	560	394	257	346						
350	442	526	528	379	228	292	417					2227
340	394	477	477	362	198	226	415					2223
330	329	410	410	340	169	152	407				2096	2196
320	262	329	323	317	141	83.8	394		1265		2090	2142
310	192	248	209	291	117	40.2	373		1264		2048	2061
300	122	143	104	259	92.8		348		1242		1964	1952
290	74.5	83.8	12.4	226	69.1		321		1193		1831	1816
280	43.9	47.2		179	49.6		289		1119		1669	1652
270				127	12.4		255		1016		1483	1483
260				60.0			215		903		1280	1301
250							167		781		1050	1143
240							107		655		854	960
230							40.2		557		704	820
220									469		585	691
210									403		500	585
200									346		424	492
190									295		362	423
180									249		314	362
170									207		274	310
160									167		232	278
150									143		194	248
140									123		176	205
130									112		166	188
120									40.2		112	143

ELECTRON DENSITY

PUERTO RICO 60 W 2 OCT 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL												
HMIN	112	116	115	112	111	113	198	[illegible]	318	267	250	273
HMAX	357	356	338	345	336	351	348	350	395	380	370	391
SHMAX	2704	2641	2604	2299	1978	1911	1156	839	949	654	573	603
KM												
400									993			865
390									992			864
380									981	993		855
370									958	982	824	830
360	2396	2465				1786			925	946	815	797
350	2390	2459		2294		1786	1555	1265	880	889	790	739
340	2359	2422	2465	2289	2063	1774	1548	1244	827	810	749	657
330	2304	2352	2447	2255	2058	1745	1519	1180	761	716	691	562
320	2224	2245	2343	2188	2022	1697	1466	1084	679	596	616	446
310	2109	2112	2194	2079	1953	1631	1385	982	590	477	529	310
300	1976	1942	2032	1948	1852	1545	1285	896	500	335	437	189
290	1820	1766	1826	1786	1727	1435	1167	754	417	198	323	90.5
280	1650	1574	1623	1593	1555	1316	1019	608	335	83.8	209	44.9
270	1465	1376	1404	1411	1394	1197	875	446	248	30.9	104	
260	1291	1201	1208	1240	1221	1080	679	286	173		53.1	
250	1096	1034	1027	1050	1050	931	477	170	112			
240	931	889	854	875	889	781	310	90.5	71.4			
230	794	754	716	742	735	643	189	43.3	45.8			
220	667	661	608	625	596	508	107		7.8			
210	573	573	516	529	477	389	60.0					
200	502	502	446	446	389	286	12.4					
190	441	441	389	378	323	224						
180	389	384	347	320	274	183						
170	347	340	310	278	234	151						
160	310	298	277	243	204	127						
150	278	260	244	213	179	110						
140	240	235	214	188	157	97.2						
130	211	212	192	172	140	91.1						
120	179	161	170	161	130	85.0						

ELECTRON DENSITY

RUERTO RICO 60 W 3 OCT 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL										A	A	A
HMIN	278	253	230	219	208	278	239	113	114		116	113
HMAX	377	349	314	307	371	404	349	289	297		333	351
SHMAX	522	522	447	276	277	218	245	597	937		1820	2026
KM												
410						280						
400						279						
390						275						
380	854				280	267						
370	849				280	253						
360	824				278	236						1846
350	777	960			273	214	335					1846
340	716	949			265	187	333				1815	1833
330	619	911			253	157	324				1814	1801
320	508	842	875		240	127	310				1794	1749
310	389	742	873	500	222	91.9	290				1748	1677
300	240	590	847	497	204	64.6	262		1215		1677	1584
290	112	432	794	481	183	43.0	229	754	1209		1584	1471
280	26.3	240	707	452	161	8.4	195	749	1176		1460	1341
270		97.3	585	411	139		161	730	1111		1312	1167
260		44.9	432	344	116		119	698	1027		1143	1019
250			219	251	93.4		77.6	653	907		990	875
240			83.8	143	75.0		12.4	590	781		834	742
230				63.8	56.5			516	643		707	631
220				12.4	40.2			427	519		608	540
210					5.5			335	403		524	471
200								248	318		446	412
190								179	240		383	362
180								131	179		330	315
170								97.2	150		286	267
160								80.0	107		248	219
150								70.8	95.4		214	188
140								64.0	91.0		189	175
130								56.8	86.5		167	167
120								47.2	75.6		127	143

ELECTRON DENSITY

RUERTO RICO 60 W 3 OCT 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL			A		A							
HMIN	113	114	113	111	111	115	226	288	197	265	243	267
HMAX	352	377	363	364	363	371	385	398	393	421	411	385
SHMAX	2198	2783	2491	2533	2442	2365	1888	1324	1453	1116	1226	823
KM												
430										1215		
420										1215	1316	
410										1206	1315	
400								1907	1500	1181	1307	
390							2000	1895	1500	1140	1283	1143
380		2396				2294	1997	1849	1487	1082	1245	1140
370		2390	2536	2536	2260	2293	1977	1764	1457	1012	1189	1119
360	2128	2359	2534	2532	2259	2274	1935	1654	1411	926	1127	1073
350	2127	2303	2499	2497	2237	2224	1866	1501	1348	842	1041	1004
340	2104	2222	2418	2418	2188	2137	1786	1301	1271	745	939	926
330	2047	2114	2294	2294	2105	2018	1679	1073	1175	652	824	820
320	1941	1985	2124	2142	2007	1876	1555	834	1061	548	704	704
310	1812	1820	1927	1960	1876	1727	1401	508	931	437	573	573
300	1669	1631	1708	1762	1727	1572	1240	240	794	323	446	446
290	1501	1446	1490	1534	1584	1394	1050	49.6	643	198	323	274
280	1324	1274	1280	1324	1429	1208	834		508	97.2	219	127
270	1171	1111	1050	1159	1257	1050	643		389	44.9	127	40.2
260	1019	960	896	975	1065	889	477		278		75.6	
250	875	834	767	807	917	742	286		198		42.5	
240	754	716	661	679	767	619	143		143			
230	652	625	573	565	643	516	44.9		104			
220	567	540	495	477	540	417			73.9			
210	495	477	437	406	437	335			47.7			
200	435	427	385	356	353	268			12.4			
190	384	381	347	310	291	215						
180	343	343	310	276	240	176						
170	307	310	276	240	205	146						
160	277	276	237	211	179	125						
150	246	243	205	185	157	109						
140	213	213	178	163	142	96.5						
130	191	191	170	152	133	89.0						
120	170	167	162	143	118	71.4						

ELECTRON DENSITY

RUERTO RICO 60 W 4 OCT 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL									A		A	
HMIN	245	257	262	217	223	280	249	114	118	111		112
HMAX	377	350	349	414	369	391	349	322	345	302		348
SHMAX	882	561	578	758	580	483	630	919	1884	1965		2348
KM												
420				716								
410				716								
400				708		794						
390				692		793						
380	1167			666		780						
370	1162			632	726	745						
360	1139			595	720	686						
350	1096	1072	1061	553	703	608	960		2294			2294
340	1034	1054	1050	508	671	508	954		2287			2283
330	952	987	1010	459	628	403	931	1143	2237			2239
320	854	896	943	408	573	286	892	1142	2132			2161
310	729	767	834	362	508	179	840	1126	1978	2865		2043
300	596	596	691	314	439	97.3	754	1084	1786	2864		1907
290	462	432	508	267	368	49.6	631	1019	1534	2816		1735
280	298	219	262	223	302		477	934	1291	2700		1555
270	161	97.2	71.4	179	233		286	834	1027	2524		1376
260	71.4	30.9		139	161		127	716	820	2260		1182
250	33.2			101	102		12.4	590	667	1866		1004
240				69.1	65.7			477	551	1394		861
230				47.7	40.3			362	462	939		729
220				12.4				270	389	679		625
210								205	330	492		540
200								161	276	389		477
190								127	232	316		411
180								104	191	262		356
170								87.2	154	231		305
160								75.6	127	201		259
150								69.0	112	174		222
140								64.9	106	146		190
130								60.8	101	136		173
120								40.2	49.6	127		162

ELECTRON DENSITY

RUERTO RICO 60 W 4 OCT 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A	A				A	A					
HMIN			111	111	112			228	241	252	251	228
HMAX			351	336	337			364	372	375	352	353
SHMAX			2423	2199	2006			895	719	665	587	522
KM												
380									1016	917		
370								1265	1015	915		
360			2607					1263	999	899	917	679
350			2607					1238	960	867	917	679
340			2578	2500	2193			1187	896	822	905	670
330			2500	2492	2185			1111	818	754	875	651
320			2370	2442	2145			1004	726	670	828	622
310			2199	2345	2071			875	616	573	762	582
300			1990	2194	1957			742	508	456	670	529
290			1762	2011	1816			585	389	335	540	469
280			1528	1786	1650			432	262	198	375	396
270			1280	1528	1446			286	161	104	198	318
260			1096	1265	1240			179	90.5	53.1	71.4	229
250			917	1050	1080			104	49.6			135
240			754	834	854			56.5				67.6
230			619	679	643			12.4				12.4
220			524	551	497							
210			446	446	396							
200			383	378	316							
190			331	330	262							
180			290	286	219							
170			248	251	182							
160			207	216	146							
150			174	186	131							
140			159	160	123							
130			152	152	118							
120			145	143	113							

ELECTRON DENSITY

PUERTO RICO 60 W

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL									A			
HMIN	252	287	267	224	208	203	190		118			116
HMAX	364	416	407	423	381	199	173		1.3			318
SHMAX	369	478	484	450	190	107	173		1.12			1937
KM												
420		608										
410		606	573									
400		596	573			163						
390		578	563			151						
380		551	546			147	194					
370	590	516	523			140	194					
360	589	471	49.			131	193					
350	576	410	454			110	187					
340	548	342	406	540		107	180					
330	502	262	348	540		41.6	169					
320	446	189	286	541		73.6	158		1400			
310	371	117	219	511		49.6	143		1499			
300	286	63.4	152	480			127		1478			907
290	198	19.	88.1	447			110		1433			1427
280	122		64.4	375			7.6		1.50			8810
270	71.4		18.0	310	544		7.6		1.51			1669
260	42.1			226	524		10.0		1145			1493
250				127	296		47.3		693			1311
240				60.0	251		20.1		594			1073
230				12.4	198		1.4		70			875
220					112				432			691
210					26.5				310			551
200									259			446
190									175			378
180									141			316
170									119			271
160									106			245
150									96.9			226
140									92.9			177
130									98.9			168
120									85.0			152

ELECTRON DENSITY

PUERTO RICO 60 W

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL									A	A		
HMIN	277	247	208	195	246	207	197	11	114	110	112	109
HMAX	379	327	324	379	375	436	199	147	124	114	326	328
SHMAX	496	451	351	312	251	219	246	1.9	127	1883	2131	1970
KM												
440						262						
430						263						
420						257						
410						249						
400						237						
390						223						
380	814				286	292	203					
370	805				285	291	179					
360	776				281	284	152	219				
350	727				275	272	124	218	616			
340	657				267	258	91.9	216	615		2000	
330	573	928	461		256	235	64.6	213	608	1420	1997	2361
320	467	920	461		243	207	44.9	208	596	1418	1968	2354
310	335	881	455		227	176	1.4	201	578	1397	1907	2311
300	189	810	442		209	143		193	553	1353	1804	2229
290	79.7	698	423		188	115		183	524	1279	1685	2103
280	30.9	524	397		165	83.8		172	488	1196	1519	1942
270		335	365		143	61.9		161	450	1084	1341	1747
260		127	320		121	43.9		147	413	939	1175	1534
250		40.2	268		101	12.4		132	375	774	990	1321
240			212	82.1				114	339	625	814	1073
230			135	64.9				90.5	298	487	661	875
220			65.7	50.9				66.9	258	380	540	698
210			12.4	37.7				45.8	215	302	446	562
200				12.4				12.4	175	240	368	456
190									141	187	310	382
180									117	147	258	320
170								97.3	124	219	272	306
160								83.8	111	187	229	262
150								78.2	100	166	194	226
140								72.6	94.0	155	175	201
130								55.6	89.4	148	165	189
120								41.5	84.7	132	135	179
110										49.6		60.0

ELECTRON DENSITY

PUERTO RICO

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL												
HMIN	111	110		115	12.	1.	3.5			40	48	268
HMAX	365	361		3.1	3.1	44.	7.	174		164	38.	369
SHMAX	2652	2651		1.65	1.1	1.45	1.1	1.1		763	691	651
KM												
390								291		317		
380						441	1240			417		
370	2361	2680			1.1.	1.1.	1.1.	1.1.	1114	06	1060	
360	2368	2679		251			1.1.	1.47	1113	874	1040	
350	2330	2651		1.75	46.		1.1.	1101	1.1.	834	1004	
340	2276	2581		716	1.46.	1.1.	1.1.	1.1.	1.1.	774	963	
330	2191	2456		1.63	1.1.	1.1.	1.1.	760	1.1.	698	875	
320	2070	2294		1.15	1.1.	1.1.	1.1.	961	1.1.	608	767	
310	1922	2096		1.1.	1.1.	1.1.	1068	742	762	508	625	
300	1769	1858		2130	2128	1.1.	1.40	971	608	631	408	446
290	1593	1601		19.7	1960	1.1.	1040	854	447	492	298	240
280	1411	1383		1692	1786	1411	1.1.	74	362	335	189	98.5
270	1240	1185		1448	1574	1.1.	1.1.	1.1.	1.1.	219	104	96.9
260	1096	1004		1.1.	1362	1.1.	1.40	46.	1.1.	112	56.5	
250	946	847		1004	1143	1.1.	1.1.	1.1.	1.1.	54.8	1.1.	
240	820	716		8.0	1.60	767	1.1.	1.1.	1.1.			
230	707	629		679	781	1.1.		71.1.				
220	616	553		573	631	447		1.1.				
210	540	489		484	497	386						
200	471	437		417	398	286						
190	411	389		357	323	209						
180	356	347		314	262	161						
170	310	310		270	222	127						
160	270	282		234	190	108						
150	233	219		202	165	96.4						
140	205	197		179	147	90.0						
130	190	187		167	136	87.7						
120	170	170		112	127	79.7						
110		12.4			40.2							

ELECTRON DENSITY

PUERTO RICO 60 W 7 OCT 1959

TIME	0000	0100	[illegible]	0400	0500	[illegible]	1000	1100
QUAL						A	A	B
HMIN	248	276	321	209	211	262	110	115
HMAX	343	387	283	311	354	381	290	301	323	325
SHMAX	446	493	288	220	160	162	957	1217	1774	1989
KM										
390		707				208				
380		704				208				
370		689				206				
360		661	794		174	201				
350	804	625	788		174	192				
340	802	567	767		172	182				
330	783	500	732		169	167			1938	2294
320	735	408	684	310	163	149			1936	2288
310	665	310	599	310	154	127		1354	1911	2242
300	573	198	491	307	145	102		1354	1854	2148
290	456	90.5	362	726	300	73.9	1290	1341	1764	2014
280	323	40.2	220	724	289	51.8	1275	1305	1652	1826
270	179		82.8	698	271	34.4	1225	1247	1493	1584
260	79.7		30.9	648	242	87.2	1150	1160	1301	1341
250	21.7			540	198	71.4	1050	1061	1065	1119
240				335	198	57.0	896	946	889	917
230				83.8	155	43.7	716	820	742	735
220					97.2	22.6	573	704	619	616
210					12.4		456	573	519	524
200							353	467	446	452
190							274	375	382	398
180							214	298	325	353
170							170	246	276	310
160							135	202	237	274
150							112	170	204	232
140							106	143	176	197
130							101	135	164	184
120							90.5	128	143	152
110							12.4	12.4	40.2	

ELECTRON DENSITY

PUERTO RICO 60 W 7 OCT 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A	S	S			A	A					
HMIN	114	103	114	112	111			198	209	257	298	280
HMAX	332	349	317	340	337			344	391	389	407	371
SHMAX	2026	2441	1640	2193	2080			850	736	536	446	432
KM												
410											716	
400									754		712	
390									754	716	689	
380									749	711	647	794
370									736	693	587	793
360									713	661	508	779
350		2361						1050	682	618	417	739
340	2161	2348		2327	2227			1048	643	560	327	679
330	2160	2302		2308	2219			1033	598	492	229	585
320	2133	2224	2394	2248	2181			999	540	417	127	467
310	2068	2109	2309	2146	2111			948	477	327	63.8	323
300	1948	1960	2064	2000	2007			882	411	248	12.4	179
290	1801	1786	1882	1826	1876			802	348	167		77.6
280	1650	1574	1646	1646	1708			707	286	102		
270	1465	1362	1430	1446	1512			608	227	60.0		
260	1274	1162	1119	1240	1301			508	174	19.3		
250	1073	990	917	1027	1073			408	127			
240	889	834	754	854	875			298	87.2			
230	742	704	625	704	691			189	60.0			
220	631	608	534	585	540			107	42.1			
210	532	527	471	487	427			60.0	4.5			
200	462	472	412	410	348			12.4				
190	403	425	362	351	291							
180	353	385	314	300	245							
170	310	347	270	259	210							
160	270	306	237	228	182							
150	233	266	198	201	158							
140	201	229	176	181	142							
130	185	201	168	169	134							
120	135	186	161	148	119							
110		161										

ELECTRON DENSITY

PUERTO RICO 60 W 8 OCT 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL										A	A	A
HMIN	257	240	238	238	222	263	222	111	111	111		110
HMAX	340	329	321	299	330	388	339	282	291	317		320
SHMAX	417	415	329	200	164	165	180	499	847	1425		1958
KM												
390						208						
380						207						
370						203						
360						195						
350						184						
340	834					171	251					
330	820	774	608		203	155	249					
320	777	765	608		202	134	242			1612		2327
310	707	735	598		199	112	230			1605		2304
300	608	684	573	500	193	86.5	217		1004	1571		2236
290	462	608	535	490	184	65.7	195	688	1004	1505		2118
280	262	492	477	458	174	48.0	166	688	992	1423		1960
270	97.2	323	375	396	163	33.4	135	678	960	1298		1762
260	30.9	152	251	298	148		106	653	910	1127		1501
250		71.4	97.2	119	127		77.6	615	834	960		1240
240		3.1	26.3	26.3	93.9		53.8	560	745	794		982
230					53.1		32.2	487	643	655		754
220								398	540	540		608
210								286	446	454		508
200								198	362	375		435
190								132	300	320		378
180								97.2	249	272		331
170								80.4	205	229		290
160								70.7	171	201		253
150								67.3	146	172		224
140								63.8	131	146		196
130								60.4	119	136		174
120								49.6	102	128		162
110												12.4

ELECTRON DENSITY

PUERTO RICO 60 W 8 OCT 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL					A	A				A		A
HMIN	111	110	111	110	114	110	199	218	228		296	282
HMAX	331	349	341	358	335	335	377	366	347		396	361
SHMAX	1995	2363	2236	2475	1844	1756	1696	928	592		515	469
KM												
400											875	
390											871	
380							1528				846	
370							1525	1167			794	875
360				2294			1513	1163			724	875
350		2327	2396	2286			1491	1144	834		631	861
340	2032	2313	2396	2256	2032	1846	1459	1105	830		508	824
330	2031	2265	2371	2203	2027	1843	1417	1055	812		362	762
320	2014	2181	2306	2124	1993	1819	1365	978	776		198	670
310	1966	2067	2200	2032	1924	1773	1303	885	727		90.5	551
300	1885	1922	2060	1907	1819	1703	1240	767	661		40.2	362
290	1773	1727	1866	1747	1683	1607	1152	643	582			127
280	1640	1534	1669	1555	1519	1495	1050	508	487			
270	1483	1341	1420	1341	1341	1356	896	375	389			
260	1301	1159	1175	1159	1175	1201	735	240	262			
250	1119	982	960	946	982	1019	585	152	143			
240	931	820	781	774	814	861	417	88.3	65.7			
230	781	691	655	631	643	698	274	53.2	12.4			
220	643	573	553	519	497	540	152	12.4				
210	540	500	483	432	389	389	71.4					
200	459	437	427	375	316	286	12.4					
190	400	389	380	327	262	205						
180	354	348	336	289	222	161						
170	317	310	291	256	189	130						
160	282	276	249	222	159	108						
150	248	243	212	193	139	93.9						
140	211	214	184	170	126	83.3						
130	191	193	171	156	119	78.4						
120	170	179	162	146	112	73.4						
110		40.2		12.4		12.4						

ELECTRON DENSITY

PUERTO RICO 60 W 11 OCT 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL												A
HMIN	261	240	34[illegible]	[illegible]	229	260	276	111	111	110	110	110
HMAX	355	346	320	[illegible]	[illegible]	296	490	348	[illegible]	289	317	321	310
SHMAX	340	354	283	227	196	195	159	464	861	1344	1669	1633
KM												
390							240					
380							238					
370							233					
360	608						223					
350	605	634					209	286				
340	588	631					193	283				
330	553	611			286		173	273			1786	
320	502	573	628		285		151	253		1341	1785	
310	427	521	612		278		127	228		1337	1768	1969
300	335	446	574	477	266		104	191		1316	1720	1944
290	229	335	504	474	241	[illegible]	148		[illegible]	1277	1637	1866
280	104	209	408	457	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	15.1	1756
270	49.6	97.[illegible]	268	42[illegible]	191	41.[illegible]	40.[illegible]	[illegible]	[illegible]	[illegible]	140	1593
260		52.1	110	372	154			78[illegible]	473	861	1260	1404
250		45.5	44.0	204	11[illegible]			73[illegible]	492	946	1065	1191
240				179	65.7			649	704	824	943	98[illegible]
230				65.7	12.4			519	698	786	754	794
220				3.1				47[illegible]	59[illegible]	59[illegible]	641	643
210								362	500	500	524	532
200								184	408	417	441	459
190								137	327	356	378	430
180								108	266	305	327	351
170								92.[illegible]	202	267	286	307
160								81.[illegible]	170	226	253	270
150								73.[illegible]	148	196	224	240
140								67.6	129	171	194	211
130								63.2	116	153	173	190
120								44.9	97.2	130	155	168
110										12.4	12.4	12.4

ELECTRON DENSITY

PUERTO RICO 60 W 11 OCT 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A	A	[illegible]	[illegible]	A	A	A					
HMIN	111	110	11[illegible]	10[illegible]	11[illegible]			250	[illegible]	144	7[illegible]	[illegible]
HMAX	330	328	324	33[illegible]	[illegible]			378	354	367	373	345
SHMAX	1991	1834	1871	1[illegible]	1[illegible]			8[illegible]	671	484	474	474
KM												
380								1050			707	
370								1[illegible]		[illegible]	70[illegible]	
360								10[illegible]	[illegible]	[illegible]	[illegible]	
350								980	969	[illegible]	67[illegible]	[illegible]
340				1876	1[illegible]			[illegible]	943	[illegible]	[illegible]	[illegible]
330	206	65[illegible]	[illegible]	1[illegible]	1[illegible]			468	9[illegible]	[illegible]	579	[illegible]
320	2049	2018	[illegible]	1852	1[illegible]			786	854	[illegible]	[illegible]	[illegible]
310	2006	1961	21[illegible]	1799	1704			691	784	462	437	[illegible]
300	1934	1858	1804	1714	1621			[illegible]	684	34[illegible]	335	468
290	1830	1719	1414	1606	151[illegible]			467	58[illegible]	[illegible]	190	35[illegible]
280	1698	1536	17[illegible]	1462	1380			[illegible]	46[illegible]	[illegible]	[illegible]	[illegible]
270	1527	1341	1555	1294	[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
260	1341	1143	1341	117[illegible]	10[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
250	1143	960	1098	1019	941			[illegible]	20[illegible]	[illegible]	[illegible]	[illegible]
240	939	794	[illegible]	81	774			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
230	754	667	69[illegible]	71[illegible]	631			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
220	619	57[illegible]	56[illegible]	596	50[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
210	508	50[illegible]	46[illegible]	477	405			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
200	429	446	389	436	43[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
190	377	401	344	3[illegible]	374			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
180	339	357	307	26[illegible]	327			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
170	307	314	281	238	299			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
160	274	276	251	195	255			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
150	240	240	218	174	214			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
140	211	210	188	15[illegible]	184			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
130	191	191	170	15[illegible]	157			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
120	161	175	162	144	106			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
110		12.4	12.4	12.4				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

ELECTRON DENSITY

PUERTO RICO 60 W 12 OCT 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL											A	
HMIN	254	288	257	235	229	286	308	111	111	110	110	110
HMAX	364	369	340	304	277	453	370	281	295	301	319	314
SHMAX	301	265	255	222	89	200	182	479	920	1273	1773	1754
KM												
460						174						
450						174						
440						173						
430						171						
420						168						
410						163						
400						158						
390						151						
380						145						
370	477	477				136	240					
360	476	472				124	238					
350	464	454				112	233					
340	440	424	508			97.2	223					
330	405	383	498			80.6	211					
320	356	323	468			70.0	196				1922	1969
310	298	240	422	500		56.1	176			1626	1911	1951
300	233	127	355	498		42.9	149		1167	1625	1873	1886
290	167	49.6	270	480		12.4	121	774	1163	1598	1807	1786
280	112		179	446	240		87.2	774	1116	1526	1714	1650
270	67.6		77.6	382	237		54.8	758	1082	1420	1593	1465
260	40.2		30.9	286	221		12.4	716	1004	1283	1446	1291
250				143	195			643	885	1080	1240	1111
240				49.6	149			540	767	896	1073	931
230					49.6			417	631	704	834	781
220								302	508	557	661	643
210								212	417	446	519	540
200								152	335	375	417	462
190								115	268	327	351	400
180								92.2	215	286	302	354
170								78.2	176	248	262	319
160								69.1	148	209	223	286
150								63.4	127	176	193	255
140								58.3	112	150	166	219
130								54.2	105	138	155	194
120								50.0	97.9	130	147	180
110										40.2	49.6	40.2

ELECTRON DENSITY

PUERTO RICO 60 W 12 OCT 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A	A	A	A	A	A						
HMIN	111	110	110	11[illegible]	110	110	[illegible]	[illegible]0	[illegible]	[illegible]	7[illegible]	[illegible]0
HMAX	327	337	331	358	344	30	44[illegible]	16[illegible]	367	4[illegible]	377	350
SHMAX	1937	2038	1845	1[illegible]7	1[illegible]3	16.7	1[illegible]	84[illegible]	560	670	485	480
KM												
410										716		
400										716		
390										710		
380										696	774	
370										675	770	
360				1876				1004	834	646	749	
350				1869	203[illegible]		1528	1001	829	608	712	643
340		1969	1815	1839	2030		1629	982	807	564	657	635
330	203[illegible]	1962	1807	1786	2009	1815	1504	946	764	508	582	611
320	2023	1932	1774	1702	1958	1803	1463	896	709	446	487	573
310	1982	1876	1716	1601	1879	1765	1397	834	634	375	362	514
300	1907	1795	1623	1483	1786	1701	1321	754	548	304	229	439
290	1797	1690	1507	1354	165[illegible]	1607	1216	67[illegible]	456	[illegible]40	104	348
280	1652	1555	1381	1216	1501	1495	1096	58[illegible]	362	173	44.9	240
270	1483	1401	1240	1080	1340	1356	946	49[illegible]	262	104		97.2
260	1291	1240	1065	931	1073	1191	767	408	161	60.0		12.4
250	1111	1080	917	807	875	1010	573	310	83.9	34.1		
240	946	896	781	691	716	814	336	219	12.4			
230	794	742	667	590	573	624	143	119				
220	667	619	565	508	467	462	60.0	40.[illegible]				
210	573	524	484	435	389	335						
200	489	454	417	378	330	246						
190	423	400	367	331	281	191						
180	362	357	323	290	240	155						
170	321	317	281	251	207	131						
160	286	282	236	221	181	112						
150	251	244	195	192	150	99.6						
140	219	210	178	165	126	91.6						
130	194	192	171	152	119	84.6						
120	180	180	164	135	112	65.7						
110		12.4	40.2		12.4	12.4						

ELECTRON DENSITY

PUERTO RICO 60 W 9 OCT 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL	A	A	A				S	A	A	A	A	A
HMIN	256	260	240	218	233	269	268		110	110		
HMAX	345	361	311	303	345	408	372		304	307		
SHMAX	449	409	245	212	190	169	153		968	1174		
KM												
410						193						
400						193						
390						189						
380						184	214					
370		643				175	213					
360		643				166	211					
350	814	635			251	153	205					
340	811	613			251	136	195					
330	788	580			247	116	182					
320	744	534	516		239	95.3	164					
310	679	469	516	403	227	76.7	143		1027	1290		
300	585	380	505	402	214	60.0	118		1026	1285		
290	462	267	477	392	196	47.5	87.3		1015	1261		
280	326	143	431	371	171	31.8	56.5		992	1216		
270	118	69.7	367	339	140	4.1	12.4		955	1150		
260	44.9	3.1	251	286	107				907	1068		
250			97.9	209	68.6				847	960		
240				119	40.2				770	844		
230				63.8					679	716		
220				12.4					585	590		
210									477	477		
200									362	389		
190									262	316		
180									194	258		
170									148	215		
160									126	179		
150									114	151		
140									106	131		
130									99.3	122		
120									88.7	115		
110									12.4	12.4		

ELECTRON DENSITY

PUERTO RICO 60 W 9 OCT 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A		A	A	A	A	A					
HMIN	110	110						220	211	256	282	255
HMAX	348	345						345	359	403	379	369
SHMAX	2223	2276						849	670	603	406	437
KM												
410										688		
400										688		
390										682		
380										667	698	
370										645	690	625
360									794	614	663	620
350	2128	2327						1143	789	577	618	604
340	2118	2323						1140	774	529	553	577
330	2078	2288						1121	747	469	469	536
320	2003	2219						1082	712	396	371	489
310	1907	2109						1024	664	318	240	424
300	1786	1969						949	608	240	112	348
290	1620	1803						844	540	161	54.8	262
280	1446	1623						729	456	102		152
270	1274	1404						596	371	60.0		77.6
260	1119	1143						462	278	23.5		33.2
250	960	960						310	198			
240	820	794						152	127			
230	691	655						67.6	75.6			
220	596	540						3.1	44.9			
210	516	465										
200	452	408										
190	403	362										
180	365	329										
170	310	296										
160	277	262										
150	246	223										
140	216	192										
130	194	175										
120	174	165										
110	12.4	12.4										

ELECTRON DENSITY

PUERTO RICO 60 W 10 OCT 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL								A		A	A	
HMIN	279	258	236	221	238	249	225	119	110	110	117	107
HMAX	370	358	311	292	323	367	337	263	298	293	325	320
SHMAX	368	375	264	208	151	176	190	410	935	1084	1665	1812
KM												
370	625					235						
360	617	608				234						
350	594	603				229						
340	557	585				221	280					
330	508	551			280	208	278				1756	
320	432	503	608		279	193	271				1752	2000
310	335	439	607		272	172	257				1724	1982
300	219	362	591	469	256	146	240		1027	1341	1669	1929
290	90.5	262	546	469	234	115	213		1022	1340	1574	1836
280	12.4	161	477	455	198	86.5	182		1003	1311	1458	1712
270		77.6	362	422	155	62.3	143	735	969	1248	1324	1555
260		21.7	198	368	97.2	43.3	109	734	917	1143	1159	1376
250			77.6	286	54.8	3.1	77.6	709	854	1027	1004	1143
240			26.3	161	12.4		51.7	655	778	903	847	939
230				60.0			21.7	562	688	767	716	767
220								446	590	643	608	631
210								323	487	540	524	519
200								219	389	446	446	441
190								143	302	362	383	393
180								101	235	298	330	354
170								80.7	184	249	281	317
160								70.9	149	212	240	282
150								66.2	127	182	204	246
140								61.4	111	153	183	219
130								53.4	104	138	158	192
120								12.4	97.2	128	97.2	168
110									49.6	12.4		132

ELECTRON DENSITY

PUERTO RICO 60 W 10 OCT 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL		A	S	A	A	A	A			S		
HMIN	117							201	216	253	276	264
HMAX	332							346	365	391	382	372
SHMAX	1952							930	670	485	404	399
KM												
400										625		
390										625	698	
380										618	697	634
370									784	600	683	634
360									782	569	647	623
350								1096	771	526	594	597
340	2000							1093	748	477	516	559
330	1999							1075	716	423	427	508
320	1978							1042	674	362	323	437
310	1928							992	619	298	189	344
300	1841							929	553	233	97.2	240
290	1734							850	484	161	60.0	135
280	1588							764	410	107	23.5	71.4
270	1411							667	335	67.6		40.2
260	1224							551	251	40.2		
250	1050							446	170			
240	875							335	102			
230	742							233	60.0			
220	619							127	23.5			
210	529							60.0				
200	454											
190	400											
180	358											
170	321											
160	289											
150	257											
140	231											
130	191											
120	112											

ELECTRON DENSITY

PUERTO RICO 60 W 13 OCT 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL										A	A	
HMIN	249	267	278	243	226	272	284		118			110
HMAX	343	370	359	338	361	369	400		482			311
SHMAX	303	291	273	344	260	169	141		300			1851
KM												
370		461			280	251						
360		456	492		280	249						
350	548	439	487		278	242						
340	548	410	468	500	274	229	286					
330	532	371	434	498	265	214	282					
320	503	316	389	488	252	191	268					2260
310	456	262	327	470	237	164	245					2260
300	395	192	240	449	220	137	215		1167			2227
290	310	127	143	417	202	101	174		1156			2135
280	209	75.6	54.8	372	181	60.0	122		1118			1996
270	119	40.0		302	159		71.4		1056			1806
260	56.5			209	135		1.4		960			1601
250	5.5			83.8	109				854			1341
240					80.7				745			1076
230					44.9				634			875
220									529			716
210									437			585
200									353			484
190									286			411
180									229			358
170									187			323
160									156			289
150									132			269
140									113			222
130									106			195
120									99.3			176
110									12.4			49.6

ELECTRON DENSITY

PUERTO RICO 60 W

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL												
HMIN	11	110	11	41	118	106	41	102	1	148	86	41
HMAX	320	342	35		341	344	44	4		113	404	191
SHMAX	1945	1994	2144		181	1668	1248	58	94		441	1860
KM												
410											447	
400											447	
390											63	
380										178	604	2000
370									688	133	564	2011
360									686	543	513	1973
350		1907	21.5		161		1640	114	676	587	446	1809
340		1906	2115			1.4	1649	1.4	657	5.1	371	1647
330		1886	2045		116	181	1.4	1.4	1.4	439	86	1477
320	2096	1837	2005		1.4	1.4	1.4	1.4	1.4	1.4	19	1.4
310	2078	1754	1907		1.4	1.4	1.4	1.4	1.4	1.4	11	1.4
300	2026	1641	1777		1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
290	1939	1515	1654		1.4	1.4	1.4	1.4	456	1.4	1.4	83.8
280	1814	1371	1490		1.4	1.4	1.4	1.4	400	1.4		49.6
270	1669	1224	1315		1.4	1.4	1.4	1.4	1.4	1.4		1.4
260	1483	1065	1096		1.4	1.4	1.4	1.4	1.4			
250	1291	928	931	917	917	960	573	415	219			
240	1119	794	781	767	74.	807	410	274	155			
230	917	688	661	643	586	644	284	170	96.5			
220	754	608	565	542	497	508	1.4	1.4	1.4			
210	619	540	489	474	442	396						
200	508	481	423	385	416	351						
190	424	427	373	326	406	186						
180	367	375	331	274	215	143						
170	327	328	303	237	183	113						
160	289	290	266	205	169	101						
150	251	256	231	173	138	88.3						
140	213	225	199	158	125	81.3						
130	190	195	174	151	119	77.6						
120	143	161	165	143	11	7.7						
110		12.4	46.6	12.4		1.4						

ELECTRON DENSITY

PUERTO RICO 60 W 14 OCT 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL								A	A			
HMIN	269	256	228	242	238	247	290		113	109	117	114
HMAX	368	330	307	325	345	462	371		303	314	324	330
SHMAX	397	301	259	226	190	256	159		1195	1585	1988	1860
KM												
470						224						
460						224						
450						223						
440						220						
430						216						
420						211						
410						206						
400						200						
390						192						
380						180	286					
370	643					165	286					
360	638					147	281					
350	619				262	127	268					
340	586				262	105	247					
330	540	670		403	257	83.8	219				2032	1907
320	477	656		402	249	64.9	174			1786	2030	1891
310	389	613	590	392	235	47.7	127		1473	1783	2008	1845
300	286	540	584	374	220	12.4	79.7		1472	1756	1961	1764
290	161	437	550	350	198		12.4		1448	1700	1888	1656
280	71.4	286	492	304	170				1396	1612	1795	1524
270	12.4	112	398	233	137				1311	1501	1669	1371
260		43.3	262	135	97.2				1204	1356	1524	1208
250			112	60.0	60.0				1065	1182	1359	1050
240			57.4		12.4				896	990	1167	889
230			12.4						729	794	975	742
220									573	625	774	625
210									456	497	590	540
200									362	398	467	469
190									286	330	375	406
180									227	286	316	353
170									189	250	274	310
160									159	219	237	270
150									138	194	207	229
140									124	174	183	201
130									115	162	169	185
120									90.5	145	143	135
110										83.8		

ELECTRON DENSITY

PUERTO RICO 60 W 14 OCT 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A	A		A								
HMIN	119	116			110	116	216	32	0	43	137	256
HMAX	340	367			336	329	358	410	444	354	348	366
SHMAX	2123	2531			1928	1654	1342	1070	1030	738	525	462
KM												
370		2161										
360		2156					1907			485		7.5
350		2131					1901			485	774	727
340	2128	2088			1922		1876		240	446	760	702
330	2113	2043			1917	1707	1837	1611	1239	851	749	656
320	2066	1940			1888	1893	1744	1544	1.4	846	713	608
310	1980	1841			1832	1847	1687	1543	1.4	794	661	524
300	1866	1712			1743	1762	1604	1466	1158	715	599	427
290	1727	1570			1631	1643	1493	13.	1104	645	519	323
280	1555	1401			1501	1509	1321	1221	10.7	546	417	179
270	1376	1240			1367	1341	1127	1027	935	447	310	83.8
260	1191	1050			1201	1175	896	814	8.0	389	179	1.4
250	1027	903			1034	1004	643	640	691	286	77.6	
240	875	764			889	814	389	240	573	15.	20.1	
230	729	652			742	643	179	77.6	389	40.3		
220	619	565			619	492	49.6		161			
210	527	489			524	375			12.4			
200	459	429			437	286						
190	400	372			362	219						
180	353	328			304	174						
170	314	293			253	141						
160	274	259			212	118						
150	237	222			179	102						
140	204	185			153	93.6						
130	186	170			138	88.6						
120	143	143			128	77.6						
110					40.2							

ELECTRON DENSITY

PUERTO RICO 60 W 15 OCT 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL								B	A	A	A	
HMIN	245	229	235	203	229	258	211		110	110		
HMAX	342	308	308	289	333	348	299		275	289		
SHMAX	434	388	310	202	195	165	160		900	1308		
KM												
350	754					274						
340	754				286	272						
330	741				285	262						
320	707				281	245						
310	655	804	652		270	221						
300	573	795	645		252	192	292					
290	477	759	616	375	231	156	288			1612		
280	348	698	573	370	202	119	271		1316	1597		
270	198	590	487	354	168	79.7	250		1311	1548		
260	83.8	446	362	326	134	26.3	219		1278	1470		
250	33.2	240	179	286	101		179		1210	1354		
240		90.5	54.8	235	63.8		135		1115	1198		
230		12.4		167	12.4		88.3		975	1034		
220				92.8			49.6		794	861		
210				43.3					590	704		
200									446	562		
190									318	456		
180									226	368		
170									165	298		
160									127	245		
150									111	202		
140									106	175		
130									102	157		
120									97.7	145		
110									12.4	83.8		

ELECTRON DENSITY

PUERTO RICO 60 W 15 OCT 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A		S	A	A	A						
HMIN	110	110	110				199	220	219	240	236	220
HMAX	313	338	346				323	358	340	355	339	294
SHMAX	1712	2141	2393				1045	964	735	576	441	290
KM												
360								1096		774		
350			2193					1092		772		
340		2063	2189					1075	982	759	754	
330		2054	2163				1446	1046	975	734	746	
320	1907	2017	2114				1445	1004	953	696	716	
310	1905	1951	2040				1424	948	917	648	665	
300	1874	1852	1945				1375	882	868	580	590	590
290	1804	1734	1826				1295	794	800	508	497	589
280	1692	1574	1683				1197	698	704	408	389	570
270	1540	1411	1519				1073	596	585	318	262	531
260	1376	1221	1341				917	487	462	198	143	477
250	1191	1050	1162				735	362	323	112	71.4	389
240	1019	889	982				573	219	179	12.4	26.3	262
230	854	754	814				389	104	77.6			127
220	726	652	679				219	12.4	12.4			12.4
210	625	573	565				90.5					
200	540	513	483				12.4					
190	469	462	411									
180	403	411	357									
170	346	362	310									
160	300	318	274									
150	253	282	240									
140	212	248	214									
130	191	217	192									
120	173	195	170									
110	12.4	49.6	12.4									

ELECTRON DENSITY

PUERTO RICO 60 W 16 OCT 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL										A		
HMIN	248	269	241	220	198	268	228	114	110	110	106	110
HMAX	348	347	309	273	291	364	323	264	276	280	291	297
SHMAX	246	222	217	156	132	126	142	475	839	1167	1515	1632
KM												
370						179						
360						179						
350	424	461				176						
340	420	457				170						
330	398	435				162	219					
320	365	394				150	219					
310	325	335	516			135	215					
300	274	251	506		198	117	207				1786	2063
290	219	167	472		198	92.8	194				1785	2051
280	161	77.6	417	461	196	68.6	177		1143	1640	1766	1974
270	102	12.4	323	460	191	26.3	156	754	1137	1617	1715	1861
260	56.5		179	432	181		127	753	1105	1545	1627	1688
250	12.4		65.7	371	168		93.9	734	1042	1429	1515	1490
240				262	152		60.0	693	949	1257	1371	1260
230				112	132		12.4	634	934	1034	1167	1050
220					101			540	704	854	982	834
210					63.8			437	573	667	794	667
200					12.4			310	446	524	631	557
190								198	353	417	500	477
180								123	274	335	410	411
170								90.5	212	274	348	356
160								74.2	164	229	298	310
150								68.4	132	201	256	274
140								64.6	111	161	222	240
130								60.8	105	141	191	205
120								47.2	98.5	132	167	173
110									40.2	97.2	127	12.4

ELECTRON DENSITY

PUERTO RICO 60 W 16 OCT 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A	A	S		A	A	A					
HMIN	112	103	110	110	115			209	238	238	268	243
HMAX	306	337	327	332	327			327	356	366	367	333
SHMAX	1746	2145	1912	2089	1761			842	596	484	424	426
KM												
370										670	716	
360									754	668	711	
350									753	653	687	
340		1922		2128					741	626	643	764
330		1917	1969	2127	1907			1143	719	583	580	763
320		1893	1961	2107	1900			1138	687	534	500	746
310	2000	1849	1924	2059	1865			1115	647	469	403	706
300	1994	1786	1846	1982	1802			1072	590	396	298	649
290	1958	1702	1750	1893	1708			1011	524	318	179	557
280	1885	1601	1626	1752	1593			928	437	229	77.6	446
270	1773	1474	1465	1588	1446			834	344	149	21.7	310
260	1640	1341	1291	1383	1291			716	251	88.3		170
250	1483	1191	1111	1182	1080			573	143	52.2		60.0
240	1301	1050	939	982	903			417	60.0	12.4		
230	1073	903	781	807	735			262				
220	854	767	655	643	590			112				
210	655	655	557	529	477			12.4				
200	508	557	489	439	380							
190	417	477	429	380	304							
180	357	403	380	335	251							
170	310	341	335	296	198							
160	262	291	294	259	168							
150	222	244	255	226	151							
140	210	204	219	196	140							
130	200	190	192	175	134							
120	170	179	174	161	127							
110		60.0	40.2	40.2								

ELECTRON DEN ITY

PUERTO RICO 60 W 17 OCT 1959

TIME	0000	0100	[illegible]	0300	0400	0500	0600	0700	[illegible]	0900	1000	1100
QUAL												
HMIN	231	229	[illegible]	198	223	272	236	169	116	115	110	110
HMAX	322	322	31[illegible]	299	390	412	452	268	272	289	308	315
SHMAX	329	319	248	239	283	217	11	919	913	1332	1777	2025
KM												
420						251						
410						251						
400						249						
390					257	243						
380					256	233						
370					253	222						
360					248	207	286					
350					241	188	286					
340					231	165	282					
330	643	532			222	141	274					
320	643	532	492		209	116	261					2193
310	625	522	492		193	90.6	242				2161	2189
300	586	492	479	355	175	66.7	221				2145	2153
290	521	467	446	355	155	44.4	197			1727	2082	2081
280	437	417	396	343	132	24.6	167		14.0	1715	1962	1969
270	324	351	327	321	115		134	9.4	1417	1660	1803	1831
260	198	278	240	404	96.3		47.6	819	1381	1573	1601	1650
250	104	179	143	274	76.7		56.8	774	1296	1458	1567	1446
240	49.6	89.4	75.6	234	58.3		12.4	723	1171	1280	1096	1240
230		12.4	34.6	187	40.2			641	1004	1096	903	1050
220				138				508	794	854	745	871
210				83.8				375	608	661	616	714
200				21.7				270	437	519	531	585
190								194	327	408	467	487
180								147	257	339	396	410
170								117	203	272	335	351
160								94.6	164	224	280	304
150								82.6	138	187	224	262
140								76.0	123	159	179	228
130								62.9	114	148	171	201
120								57.2	97.2	112	162	175
110								12.4	12.4		40.2	12.4

ELECTRON DENSITY

PUERTO RICO 60 W [illegible] OCT [illegible]

TIME	1200	1300	140[illegible]	[illegible]	1600	1700	1800	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
QUAL												
HMIN	110	109	10[illegible]	11[illegible]	110	110	19[illegible]	[illegible]	1[illegible]	[illegible]	[illegible]4	49
HMAX	330	335	33[illegible]	3[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3[illegible]	[illegible]78	[illegible]4[illegible]
SHMAX	2244	2340	220[illegible]	2[illegible]	[illegible]	1[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	610
KM												
390								[illegible]07[illegible]				
380								[illegible]071	[illegible]			
370								[illegible]861	[illegible]			
360								[illegible]6[illegible]	[illegible]80			[illegible]
350				[illegible]887	[illegible]		[illegible]	[illegible]	1[illegible]	[illegible]81[illegible]	[illegible]	1096
340		[illegible]294	[illegible]	[illegible]2[illegible]	[illegible]761	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]14	1[illegible]88
330	2260	2290	[illegible]	[illegible]204	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	739	1065
320	2245	2260	2180	[illegible]15[illegible]	1[illegible]	1965	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	797
310	2200	2201	2115	[illegible]080	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	529	917
300	2125	2111	[illegible]01[illegible]	1969	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	417	804
290	[illegible]01[illegible]	2004	1[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
280	1891	1[illegible]	1[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
270	1727	1669	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
260	1534	1468	1941	1701	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
250	1321	174[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
240	1127	1065	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
230	931	889	867	767	847	[illegible]	446	[illegible]	[illegible]	[illegible]		
220	754	742	688	634	675	[illegible]	[illegible]	[illegible]	[illegible]			
210	619	619	590	532	540	[illegible]	[illegible]	[illegible]				
200	519	524	[illegible]	446	[illegible]	[illegible]	[illegible]					
190	439	459	[illegible]	[illegible]	[illegible]	[illegible]						
180	378	400	[illegible]	[illegible]	[illegible]	[illegible]						
170	325	[illegible]	[illegible]	[illegible]	[illegible]							
160	278	[illegible]	[illegible]	[illegible]	[illegible]							
150	240	[illegible]	[illegible]	[illegible]	[illegible]							
140	212	[illegible]	[illegible]	[illegible]	[illegible]							
130	194	[illegible]	[illegible]	[illegible]	[illegible]							
120	182	[illegible]	[illegible]	[illegible]	[illegible]							
110	49.6	[illegible]	[illegible]	[illegible]	[illegible]							

ELECTRON DENSITY

PUERTO RICO 60 W 18 OCT 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL									A	A	A	
HMIN	256	241	213	198	185	[illegible]	247	107	110	110	107	110
HMAX	359	353	286	289	385	381	377	284	308	294	273	325
SHMAX	554	551	495	273	340	261	216	611	1480	1673	1367	2374
KM												
390					292	268						
380					291	268	280					
370					289	266	279					
360	928	854			284	261	273					
350	918	853			277	254	262					
340	885	839			268	243	246					
330	827	807			255	229	227					2396
320	745	760			240	213	201					2392
310	631	686			224	192	173		1815			2359
300	492	585			206	170	141		1806	2294		2294
290	348	467	949	432	187	146	109	906	1766	2289		2196
280	198	335	941	428	167	124	81.3	904	1696	2240	2394	2060
270	83.8	198	889	417	147	101	57.9	879	1597	2132	2254	1889
260	40.2	97.2	794	397	129	82.1	41.5	820	1474	1978	2105	1708
250		49.6	625	370	110	64.9	4.9	747	1301	1756	1882	1512
240			389	335	92.2	50.9		652	1073	1501	1640	1301
230			161	280	76.9	37.7		540	834	1143	1367	1111
220			60.0	209	62.9	12.4		417	643	875	1050	931
210				97.2	49.6			310	487	679	814	781
200				26.3	37.7			226	362	524	631	643
190					12.4			161	274	408	497	540
180								119	214	318	398	446
170								93.4	170	253	329	368
160								77.6	139	212	276	310
150								69.4	118	179	233	262
140								65.3	107	150	203	225
130								61.2	101	137	176	198
120								51.9	83.8	128	164	184
110								19.3		40.2	119	40.2

ELECTRON DENSITY

PUERTO RICO 60 W 18 OCT 1959

TIME	1200	1300	140[illegible]	1500	1600	1700	1800	[illegible]	[illegible]	2100	2200	2300
QUAL		A	S	A	A	A	[illegible]					
HMIN	110	111	110				209	198	[illegible]	[illegible]	[illegible]	[illegible]
HMAX	354	339	348				348	[illegible]	[illegible]	348	368	[illegible]
SHMAX	2637	2458	2894				1562	1169	1213	818	655	692
KM												
380									1393			
370								1473	1393		1084	
360	2327							1473	1382		1074	
350	2325		2884				1876	1456	1355	1107	1035	
340	2302	2589	2871				1868	1415	1312	1101	946	1155
330	2253	2570	2819				1834	1349	1254	1077	865	1154
320	2179	2504	2727				1774	1250	1180	1033	742	1135
310	2075	2385	2586				1689	1143	1096	968	608	1088
300	1957	2218	2430				1568	1004	971	885	446	1013
290	1803	2032	2218				1431	847	820	781	286	917
280	1631	1806	1982				1274	679	661	655	143	767
270	1446	1578	1727				1096	508	492	519	60.0	573
260	1274	1362	1468				896	375	335	375		362
250	1111	1171	1221				698	240	198	240		170
240	971	990	1027				477	167	90.5	127		71.4
230	844	847	854				298	107		71.4		3.1
220	735	716	716				143	71.4		26.3		
210	643	616	608				12.4	45.8				
200	557	524	516					7.8				
190	483	446	441									
180	417	382	378									
170	362	325	330									
160	310	281	289									
150	267	240	253									
140	227	207	219									
130	196	191	195									
120	184	180	182									
110	49.6		12.4									

ELECTRON DENSITY

PUERTO RICO 60 W 19 OCT 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL								A			A	
HMIN	209	242	247	219	197	221	197	116	110	111		112
HMAX	284	349	355	317	337	332	316	282	288	286		320
SHMAX	372	377	350	287	320	191	181	531	1074	1443		2350
KM												
360			524									
350		557	523									
340		553	513		368	286						
330		538	491		367	286						
320		513	462	446	362	281	246					2500
310		480	421	444	352	270	245					2480
300		429	362	433	337	251	240					2420
290	834	368	298	411	316	227	231	716	1500	2161		2319
280	831	294	219	379	293	198	217	716	1488	2148		2175
270	799	209	127	343	265	164	200	706	1439	2069		1990
260	732	107	65.7	292	229	127	176	682	1352	1922		1786
250	608	53.1	19.3	233	191	90.5	149	646	1240	1698		1574
240	446			152	150	60.0	121	590	1065	1420		1376
230	262			77.6	115	40.2	87.7	516	875	1119		1191
220	97.2			12.4	79.7		62.3	427	679	834		1019
210	12.4				52.2		44.2	327	524	625		834
200					18.0		12.4	240	389	487		667
190								167	286	396		529
180								115	212	330		432
170								89.6	161	280		355
160								75.9	130	232		298
150								68.9	113	195		249
140								64.7	107	166		210
130								60.4	103	150		191
120								42.5	98.1	127		179
110									12.4			

ELECTRON DENSITY

PUERTO RICO 60 W 19 OCT 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL					S	A						
HMIN	110	109	110	109	110	109	203	209	218	246	242	245
HMAX	326	332	338	327	330	338	344	338	349	366	351	348
SHMAX	2184	2383	2371	2344	2082	1794	1259	836	601	551	477	433
KM												
370										844		
360										840	784	
350							1514		844	817	784	735
340		2396	2396			1697	1512	1155	836	771	771	728
330	2294	2395	2384	2430	2048	1692	1494	1148	810	709	737	701
320	2287	2372	2338	2423	2036	1671	1455	1119	764	634	685	649
310	2247	2317	2249	2386	2002	1634	1395	1067	701	529	608	582
300	2170	2229	2132	2319	1944	1581	1314	996	625	417	519	492
290	2064	2109	1978	2221	1856	1509	1216	907	540	310	403	389
280	1922	1960	1786	2089	1750	1425	1096	794	446	198	286	274
270	1727	1766	1578	1924	1626	1319	946	655	353	117	170	170
260	1534	1555	1362	1739	1478	1204	774	508	255	63.8	88.3	83.8
250	1316	1321	1162	1512	1312	1080	608	362	161	26.3	46.5	43.3
240	1127	1143	982	1291	1143	946	432	240	102			
230	939	939	820	1027	975	794	286	135	56.5			
220	774	767	679	794	794	655	161	71.4	12.4			
210	643	643	582	625	625	508	60.0	12.4				
200	532	540	508	497	492	375						
190	452	469	451	408	380	262						
180	383	406	403	342	298	173						
170	331	356	357	298	246	125						
160	290	310	310	259	205	107						
150	255	262	262	225	174	97.2						
140	219	226	219	198	152	92.9						
130	194	196	196	177	138	88.6						
120	182	186	183	161	127	84.3						
110	12.4	97.2	49.6	49.6	12.4	12.4						

ELECTRON DENSITY

PUERTO RICO 60 W 20 OCT 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL								S				
HMIN	228	212	201	199	187	301	247	116	109	109	109	111
HMAX	327	290	268	268	421	432	365	272	263	309	308	319
SHMAX	519	372	222	123	256	150	155	587	913	1745	2060	2410
KM												
440						174						
430					174	174						
420					174	173						
410					174	169						
400					173	163						
390					170	154						
380					168	144						
370					164	131	219					
360					159	116	218					
350					154	100	214					
340					149	82.1	205					
330	875				143	64.9	190					
320	870				134	48.3	173					2716
310	847				125	27.8	151			1907	2396	2699
300	804				115		124			1894	2382	2641
290	747	814			104		97.2			1851	2326	2541
280	655	797			93.9		75.6	1050		1776	2226	2396
270	508	747	548	257	82.9		55.6	1049	1583	1678	2089	2218
260	335	661	540	254	73.3		40.2	1024	1580	1540	1907	1982
250	161	540	508	243	64.4		9.3	960	1525	1362	1669	1698
240	65.7	348	437	225	56.5			861	1407	1175	1420	1420
230	12.4	161	323	198	49.6			679	1240	990	1143	1096
220		60.0	179	149	43.7			492	960	820	917	854
210			71.4	71.4	34.3			323	716	679	729	679
200				12.4	19.7			209	524	565	596	540
190					5.1			138	362	477	497	439
180								94.5	270	403	417	378
170								74.5	203	342	351	327
160								68.7	164	286	300	286
150								65.2	134	240	253	244
140								61.7	115	202	219	187
130								55.3	107	174	187	172
120								42.1	101	154	168	163
110									71.4	97.2	112	

ELECTRON DENSITY

PUERTO RICO 60 W 20 OCT 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL					A	A					A	
HMIN	110	110	110	110	110	113	209	193	223	269	262	241
HMAX	318	330	315	333	347	327	335	349	307	382	362	348
SHMAX	2259	2584	2177	2383	2389	1598	1409	1124	669	650	513	450
KM												
390										794		
380										793		
370										787	794	
360										770	793	
350					2161			1393		744	782	745
340				2260	2156		1727	1385		709	755	739
330		2716		2259	2131	1846	1724	1355		667	711	713
320	2536	2696	2571	2238	2087	1839	1701	1304		608	655	669
310	2520	2637	2565	2193	2022	1804	1656	1231	1316	540	573	608
300	2458	2538	2511	2118	1936	1740	1589	1143	1305	456	477	519
290	2343	2396	2396	2032	1830	1643	1501	1027	1255	362	348	408
280	2180	2218	2218	1907	1698	1515	1394	889	1169	240	198	298
270	1982	2007	2032	1752	1555	1371	1254	729	1027	60.0	71.4	179
260	1762	1756	1786	1588	1376	1191	1096	557	814			92.8
250	1528	1474	1501	1425	1191	1004	917	417	540			49.6
240	1291	1221	1240	1240	1004	847	679	274	262			
230	1096	1027	1027	1050	834	679	417	179	71.4			
220	917	834	834	889	691	508	143	107				
210	754	679	679	729	582	375	12.4	65.7				
200	608	562	562	596	487	270		40.2				
190	497	469	469	477	403	189						
180	410	403	400	389	335	131						
170	342	351	341	323	272	99.3						
160	286	306	300	272	223	87.2						
150	237	262	262	229	186	81.7						
140	202	219	226	198	161	78.7						
130	190	195	197	178	141	75.7						
120	182	183	181	165	131	72.6						
110	40.2	49.6	40.2	49.6	40.2							

ELECTRON DENSITY

PUERTO RIC 60 W 21 OCT 1959

TIME	0000	01			0400	0500				09	1000	1100
QUAL									A			
HMIN	237	219	218	209	188	234	208	116	11		110	109
HMAX	328	288	280	271	310	342	377	261	287		308	303
SHMAX	399	265	296	128	125	91	194	435	989		1818	1853
KM												
380							179					
370							179					
360							177					
350						127	173					
340						127	169					
330	735					125	162					
320	728					121	154					
310	701				143	115	147				2032	2430
300	653				140	105	136				2021	2427
290	583	661			137	93.2	122		1.15		1976	2378
280	477	649	500	310	134	79.2	110		1.15		1896	2244
270	335	601	486	310	130	64.4	9.4	8.4	1144		1786	2054
260	198	519	446	301	125	51.4	7.4	726	1127		1636	181
250	77.6	389	371	277	118	42.4	6.4	706	1077		1446	1528
240	30.9	198	262	240	105	18.4	5.4	650	981		1240	1140
230		77.6	127	179	85.2		4.4	573	847		1050	981
220		12.4	12.4	83.8	78.4		3.4	477	704		854	781
210				12.4	60.0		3.4	375	564		698	631
200					43.4			286	456		579	524
190					8.4			213	353		477	441
180								156	270		403	384
170								121	209		335	34
160								97.2	164		286	3
150								84.	137		246	26.
140								73.7	121		214	23.
130								64.	11		192	21
120								61.1	10.		170	193
110									48.2		112	112

ELECTRON DENSITY

PUERTO RICO 60 W 20 OCT 1959

TIME	0000	0100	0200	0300	400	0500	0600	0700	0800	0900	1000	1100
QUAL								S		C	C	
HMIN	243	248	229	200	226	316	224		110	113	105	110
HMAX	342	345	312	293	277	476	377		307	294	328	321
SHMAX	310	306	274	236	210	208	234		1295	1503	2294	2298
KM												
480							214					
470							213					
460							211					
450							208					
440							203					
430							196					
420							187					
410							179					
400							167					
390							153					
380						214	136	257				
370						213	116	256				
360						211	95.3	253				
350	540	540				206	76.7	245				
340	540	538				199	58.1	234				
330	529	523				190	42.9	221			2260	2571
320	500	488	524			180	12.4	204			2252	2571
310	456	441	524			167		183		1555	2219	2544
300	396	375	512	362		152		158		1555	1815	2161	2471
290	327	302	485	361		134		134		1537	1813	2080	2353
280	248	209	441	356		115		109		1493	1783	1982	2194
270	152	112	371	345	97.			86.1		1422	1721	1837	1982
260	79.7	60.0	286	328	78.			68.2		1341	1623	1646	1739
250	45.5	12.4	179	307	60.0			53.6		1208	1493	1425	1474
240			77.6	276	42.9			42.3		1034	1341	1216	1208
230			12.4	226	12.4			18.0		854	1143	990	982
220				161						679	939	814	794
210				71.4						524	735	679	643
200				34.1						403	573	562	540
190										310	446	469	465
180										240	353	396	406
170										189	286	330	356
160										150	240	281	314
150										124	202	240	274
140										112	177	207	237
130										105	156	181	212
120										97.9	137	168	194
110										40.2	40.2	138	97.2

ELECTRON DENSITY

PUERTO RI 60 W

TIME	1400	13	14	15	16							
QUA						A	A	A	A			
HMIN	110		111	110	110							
HMAX	338		331	346	335							
HMAX	2644		2135	2427	2104							
KM												
360												
350				2294								
340	2396		177									
330	2389		177									
320	2360		150									
310	2304		124									
300	2235		1904									
290	2134		1466									
280	2035		1214									
270	1883		1015									
260	1708		1365									
250	1534		1167									
240	1341		960									
230	1143		807									
220	939		667									
210	754		551									
200	590		456									
190	477		387									
180	389		323									
170	335		274									
160	291		239									
150	251		201									
140	216		183									
130	194		177									
120	180		163									
110	49.6											

ELECTRON DENSITY

PUERTO RICO 60 W 23 OCT 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL		A							S			
HMIN	249	246	238	209	20	215	212	114		110	114	109
HMAX	358	345	338	271	338	369	376	279		292	293	315
SHMAX	434	370	394	211	204	159	204	517		1493	1557	2016
KM												
380							203					
370						161	203					
360	643					160	201					
350	639	634				158	197					
340	632	632	643		229	154	191					
330	593	616	638		226	148	184					
320	550	584	619		225	141	174					2128
310	495	534	587		219	132	164					2124
300	417	456	540		209	122	151			2032	2144	2093
290	347	362	469		190	110	134			2031	2141	2032
280	251	262	380	540	145	96.9	115	716		1999	2042	1942
270	157	153	274	540	109	85.6	96.6	710		1922	1969	1826
260	67.6	71.4	143	523	140	78.7	74.	688		1800	1803	1669
250	1..4	26.	71.4	441	127	67.6	64.6	654		1631	1578	1483
240			31.7	398	101	47.7	51.6	601		1420	1316	1265
230				262	78.6	36.6	41.6	524		1096	1050	1080
220				97.2	56.9	1..4	19.3	432		854	834	896
210				12.4	26.3			335		625	661	716
200								240		477	540	585
190								173		371	439	477
180								123		298	362	403
170								92.8		240	295	341
160								76.4		191	245	291
150								69.1		156	205	249
140								65.1		140	179	216
130								61.9		134	167	195
120								49.6		128	127	182
110										12.4		127

ELECTRON DENSITY

PUERTO RICO 60 W 23 OCT 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A	A	A	A	A	S	A				A	
HMIN	110			110	110		199	190	221	240	272	234
HMAX	311			326	328		334	348	358	392	379	307
SHMAX	1831			2108	2054		1285	955	740	615	565	428
KM												
400										735		
390										735		
380										727	906	
370										709	899	
360									917	679	871	
350								1084	913	638	827	
340							1612	1080	898	585	754	
330				2294	2096		1610	1062	872	524	652	
320	2128			2287	2087		1588	1030	834	454	524	
310	2128			2247	2053		1542	985	788	382	375	960
300	2104			2170	1993		1472	929	724	310	219	951
290	2040			2055	1907		1379	850	631	233	119	903
280	1929			1907	1797		1265	754	519	167	54.8	820
270	1786			1715	1653		1111	656	389	107		679
260	1601			1512	1493		946	551	262	69.1		477
250	1394			1291	1324		754	446	152	45.8		198
240	1182			1096	1171		573	344	88.3	1.3		60.0
230	960			896	982		403	240	46.5			
220	774			716	794		240	152				
210	608			562	619		112	88.3				
200	497			462	477		12.4	49.6				
190	417			382	348			1.3				
180	356			320	270							
170	310			272	215							
160	259			232	173							
150	222			196	146							
140	200			172	130							
130	190			157	122							
120	180			148	115							
110	12.4			49.6	49.6							

ELECTRON DENSITY

PUERTO RICO 60 W 24 OCT 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL								S	A			
HMIN	217	220	209	194	198	246	192	113	115	109	109	108
HMAX	280	278	276	298	340	395	323	250	262	268	294	304
SHMAX	299	196	145	184	208	206	166	438	765	998	1437	1725
KM												
400						208						
390						208						
380						206						
370						202						
360						196						
350						188						
340					198	180						
330					198	169	219					
320					196	155	219					
310					192	138	215					1907
300				262	187	119	207				1669	1904
290				261	181	99.3	193				1666	1876
280	854	548	348	255	172	79.7	175				1638	1818
270	823	537	345	244	164	60.0	154		1191	1583	1579	1722
260	735	492	324	229	154	47.4	133		1190	1563	1479	1606
250	573	403	290	210	142	1..4	114	875	1160	1483	1365	1462
240	310	262	226	185	127		93.4	851	1086	1341	1221	1280
230	112	97..	149	154	112		75.0	784	975	1143	1050	1111
220	40.2		71.4	115	86.6		58.6	661	834	917	875	917
210			1..4	71.4	54.8		45.4	477	679	716	716	735
200				40.2	12.4		24.7	323	540	540	596	585
190								219	408	417	492	477
180								156	298	327	410	403
170								118	219	257	335	341
160								95.5	165	207	276	291
150								81.3	137	171	233	240
140								73.1	122	148	196	210
130								58.3	112	136	177	193
120								49.6	90.6	127	165	182
110										12.4	112	127

ELECTRON DENSITY

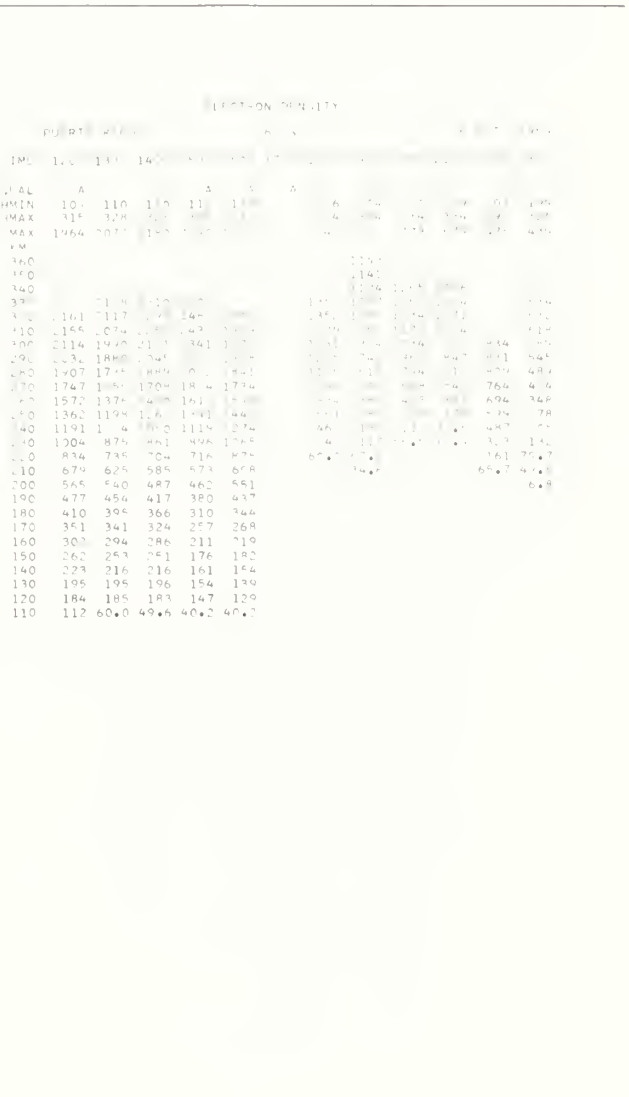
PUERTO RICO 60 W 24 OCT 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL		A	S	A		A					A	
HMIN	110		110		110		215	203	197	229	232	220
HMAX	327		323		330		348	342	356	355	338	311
SHMAX	1982		2111		2032		1417	991	787	612	559	491
KM												
360									960	896		
350							1640	1215	958	894		
340							1634	1215	943	875	917	
330	1938		2396		2032		1609	1203	913	834	910	
320	1931		2394		2019		1565	1173	875	781	883	917
310	1900		2361		1983		1502	1126	814	707	834	917
300	1842		2288		1922		1420	1063	739	608	762	901
290	1754		2174		1826		1329	978	652	492	655	857
280	1643		2014		1715		1198	875	548	375	524	794
270	1509		1826		1584		1050	754	432	262	375	679
260	1356		1601		1429		875	631	310	152	219	540
250	1191		1341		1257		679	508	219	88.3	104	348
240	1034		1073		1096		477	362	149	49.6	49.6	161
230	889		834		917		274	219	101	6.8		65.7
220	754		661		754		71.4	112	69.1			3.1
210	643		540		608			49.6	47.7			
200	548		446		487				12.4			
190	471		378		380							
180	403		330		302							
170	348		286		240							
160	302		245		198							
150	262		213		164							
140	222		190		138							
130	196		175		124							
120	182		166		116							
110	49.6		49.6		49.6							

ELECTRON DENSITY

PUERTO RICO 60 W 26 OCT 1958

TIME	0000	0100		0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL												A
HMIN	202	200	235	209	297	284	198	109	113	110	109	110
HMAX	326	312	38	273	425	382	297	268	276	277	295	298
NMAX	457	357	406	171	221	173	194	1000	1030	1185	1721	1698
KM												
430						284						
420						295						
410						283						
400						271						
390						256	292					
380						238	292					
370						213	286					
360						185	268					
350						154	245					
340				492		121	215					
330	608			488		214	179					
320	606	500		473		64.6	140					
310	595	500		446		44.3	102					
300	573	495		409		12.4	65.7	342			1012	2048
290	543	482		356			26.3	339			2027	2032
280	503	463		291	396			342	1528	1683	1940	1968
270	446	429		211	395			298	1004	1500	1871	1910
260	382	398		135	381			259	993	1476	1613	1808
250	310	341	71.4		350			215	946	1394	1501	1652
240	240	270	33.3		304			170	865	1274	1356	1483
230	170	179			219			123	715	1073	1175	1280
220	90.5	97.3			112			80.7	557	875	960	1073
210	46.7	52.2			26.3			53.2	403	661	735	875
200								12.4	262	492	562	691
190									173	362	437	540
180									123	251	344	427
170									95.0	189	268	342
160									76.9	149	215	281
150									69.3	125	176	236
140									65.7	111	158	198
130									62.2	104	150	175
120									54.1	95.8	137	162
110									12.4		40.2	83.8



ELECTRON DENSITY

[illegible] 60 W [illegible] OCT 1959

TIME	[illegible]	[illegible]	[illegible]	[illegible]	0400	0500	0600	[illegible]	[illegible]	[illegible]	1000	1100
QUAL												
HMIN	218	205	207	204	204	262	237	117	110	109	110	110
HMAX	304	283	294	294	421	433	353	241	265	290	298	302
SHMAX	310	287	175	141	304	238	174	611	901	1365	1738	1958
KM												
440						219						
430					214	219						
420					214	217						
410					213	214						
400					211	210						
390					209	203						
380					205	196						
370					201	195						
360					194	173	235					
350					188	159	233					
340					181	145	228					
330					172	126	217					
320					162	105	203					
310	616		474		151	85•7	189					2227
300	614		474		140	68•6	161				2260	2236
290	593	439	466	368	128	58•4	136	865		1737	2240	2199
280	546	439	427	367	114	47•5	111	864		1706	2161	2134
270	477	417	390	360	101	20•0	83•8	855	1500	1640	2014	2032
260	384	393	319	344	88•7		61•0	831	1493	1542	1810	1889
250	286	353	149	321	77•1		44•5	800	1438	1401	1578	1708
240	161	286	71•4	187	65•7		17•4	739	1327	1254	1341	1512
230	71•4	198	19•3	149	54•2			643	1162	1050	1096	1301
220	31•7	83•8		84•1	41•4			492	939	889	889	1096
210		12•4		40•2	18•6			335	698	735	704	875
200								226	492	596	573	679
190								161	348	477	477	551
180								118	257	362	398	439
170								93•9	203	270	335	367
160								78•3	164	214	280	310
150								68•6	135	172	232	266
140								62•9	115	143	196	229
130								56•0	106	136	175	198
120								44•9	99•8	129	161	182
110									40•2	83•8	49•6	49•6

ELECTRON DENSITY

PUERTO RICO 60 W 27 OCT 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL			S		A	S	A					
HMIN	110	110	110	110	110	110	207	198	220	249	229	209
HMAX	319	314	314	315	327	318	313	338	335	360	314	290
SHMAX	2129	2008	1946	1817	1869	1641	1023	874	579	584	508	350
KM												
360										917		
350										908		
340								1072	917	879		
330					1876			1068	914	828		
320	2048	2177	2096	1969	1870	1815	1446	1068	891	762	993	
310	2039	2174	2093	1965	1844	1808	1445	1013	840	667	991	
300	2008	2141	2064	1934	1794	1779	1425	960	770	540	965	
290	1956	2070	1996	1863	1722	1727	1380	896	679	389	910	716
280	1881	1957	1907	1773	1623	1651	1307	818	562	240	824	703
270	1794	1803	1771	1640	1507	1564	1216	716	446	119	691	665
260	1669	1636	1612	1483	1371	1446	1096	608	323	60•0	477	599
250	1524	1446	1429	1307	1198	1298	939	492	198	5•5	219	508
240	1359	1260	1257	1143	1050	1111	754	362	104		90•5	375
230	1198	1080	1065	975	875	917	573	229	53•1		12•4	198
220	1034	896	875	794	716	698	335	119				77•6
210	854	729	704	655	590	508	71•4	60•0				12•4
200	667	596	573	529	467	348		12•4				
190	524	497	469	437	375	240						
180	417	411	389	355	302	174						
170	346	351	329	298	240	137						
160	298	302	282	253	195	112						
150	259	262	240	215	161	94•5						
140	225	226	209	182	138	82•8						
130	196	197	179	160	123	77•6						
120	182	184	166	148	114	72•5						
110	40•2	49•6	83•8	71•4	12•4	12•4						

ELECTRON DENSITY

PUERTO RICO 60 W 28 OCT 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL								E	S			
HMIN	209	206	203	211	201	274	208	210	110	110	109	108
HMAX	293	290	272	314	376	361	344	276	287	268	282	301
SHMAX	285	217	136	180	220	127	169	338	1101	1162	1485	1758
KM												
380						193						
370						193	214					
360						192	214					
350						188	210	198				
340						184	201	198				
330						177	186	195				
320					251	169	168	190				
310					251	161	141	181				2063
300	565				247	149	112	168				2063
290	564	424			240	137	79•7	152		1420		2000	2039
280	549	417	310	228	124	46•5	135	784	1413		1999	1975
270	515	395	310	215	110		118	777	1380	1876	1972	1866
260	462	362	299	198	97•3		102	738	1320	1860	1907	1719
250	375	302	272	170	85•0		85•5	661	1247	1795	1814	1534
240	262	226	235	134	71•7		71•4	551	1119	1690	1683	1316
230	152	152	179	92•8	60•0		57•4	389	975	1528	1468	1096
220	67•6	71•4	112	49•6	47•3		44•2	179	814	1240	1119	889
210	12•4	26•3	49•6		27•8		7•8	12•4	643	794	794	716
200									477	508	557	596
190									335	371	427	508
180									240	292	342	435
170									179	240	286	372
160									138	195	248	320
150									119	158	212	267
140									109	140	182	223
130									103	134	172	195
120									97•8	128	163	182
110									12•4	12•4	127	143

ELECTRON DENSITY

PUERTO RICO 60 W 28 OCT 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL	A	A	A	A	A	A	A			A		
HMIN	110						220	199	197	284	237	209
HMAX	296						316	305	340	370	322	295
SHMAX	1658						884	654	476	388	392	323
KM												
370										716		
360										705		
350										673		
340									625	615		
330									618	540	794	
320							1446		595	432	793	
310							1440	1050	561	323	774	
300	2112						1403	1046	517	179	727	599
290	2103						1331	1021	465	60•0	652	597
280	2048						1228	967	406		540	579
270	1941						1096	892	346		375	545
260	1786						917	784	286		189	495
250	1601						679	661	229		83•8	417
240	1367						389	524	167		30•9	318
230	1119						161	362	117			189
220	854						12•4	189	75•6			77•6
210	643							83•8	49•6			12•4
200	532							12•4	12•4			
190	459											
180	400											
170	351											
160	292											
150	233											
140	205											
130	192											
120	183											
110	49•6											

ELECTRON DENSITY

[illegible] 21 OCT 195[illegible]

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QUAL									A	A		
HMIN		[illegible]	[illegible]	[illegible]	130	[illegible]	[illegible]			116	110	109
HMAX	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	347	324			280	279	317
SHMAX	4.	[illegible]	[illegible]	14.	[illegible]	140	[illegible]			1155	1264	1801
KM												
360					[illegible]							
350					[illegible]	179						
340					[illegible]	[illegible]	[illegible]					
330				[illegible]	[illegible]	[illegible]	[illegible]					
320		[illegible]		[illegible]	[illegible]	[illegible]	[illegible]					1907
310		[illegible]		[illegible]	[illegible]	[illegible]	[illegible]					1899
300		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]					1862
290	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]					1794
280	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	1786	1690
270		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	1764	1568
260	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			1669	1690	1411
250	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			1519	1555	1240
240	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	1383	1050
230	[illegible]	[illegible]				[illegible]				1027	1121	889
220	[illegible]	[illegible]								734	984	742
210		[illegible]								596	754	625
200		[illegible]								456	573	519
190										362	437	441
180										286	355	383
170										232	295	335
160										187	246	294
150										156	202	255
140										139	164	215
130										130	154	185
120										99.0	146	169
110											49.6	127

ELECTRON DENSITY

PUERTO RICO [illegible] 21 OCT 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QUAL												
HMIN	109	[illegible]	108	[illegible]	117		[illegible]	[illegible]	[illegible]	[illegible]	240	[illegible]
HMAX	305	[illegible]	[illegible]	[illegible]	224		[illegible]	[illegible]	[illegible]	[illegible]	337	277
SHMAX	1816	1734	1856	[illegible]	190		[illegible]	[illegible]	[illegible]	[illegible]	509	291
KM												
370								[illegible]				
360				1640				[illegible]		275		
350				[illegible]				[illegible]		[illegible]		
340			[illegible]	[illegible]	[illegible]			[illegible]	[illegible]	[illegible]	917	
330			1666	[illegible]	1874		[illegible]	[illegible]	[illegible]	848	911	
320		[illegible]	1649	[illegible]	[illegible]		[illegible]	1050	[illegible]	[illegible]	379	
310	2161	[illegible]	1614	[illegible]	[illegible]		[illegible]	917	[illegible]	790	818	
300	2155	1737	[illegible]	1411	[illegible]		1420	781	[illegible]	750	729	
290	2110	[illegible]	1490	1219	[illegible]		[illegible]	631	[illegible]	700	608	
280	2019	[illegible]	1404	1211	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	643
270	1891	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	286	637
260	1715	[illegible]	1179	1004	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	611
250	[illegible]	[illegible]	[illegible]	[illegible]	1184		[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
240	[illegible]	1080	[illegible]	814	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	477
230	[illegible]	[illegible]	[illegible]	716	[illegible]		[illegible]		[illegible]	[illegible]		[illegible]
220	834	754	[illegible]	[illegible]	[illegible]		[illegible]		[illegible]	[illegible]		[illegible]
210	[illegible]	619	[illegible]	548	[illegible]		[illegible]		[illegible]	71.4		[illegible]
200	551	[illegible]	500	469	[illegible]		[illegible]			[illegible]		
190	454	[illegible]	[illegible]	[illegible]	294							
180	383	[illegible]	[illegible]	230	236							
170	335	[illegible]	[illegible]	[illegible]	195							
160	293	270	267	[illegible]	166							
150	255	[illegible]	[illegible]	198	145							
140	219	198	201	171	[illegible]							
130	187	176	178	[illegible]	117							
120	170	166	165	139	[illegible]							
110	71.4	71.4	112	112								

AVERAGE ELECTRON DENSITY — KP BELOW 4.5

PUERTO RICO — 60 W — OCT 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
COUNT	26	26	26	26	26	26	26	17	26	22	22	24
HMIN	242	243	235	217	218	265	232	119	111	110	111	111
RATIO	6.1	6.1	6.6	6.6	4.7	4.5	4.8	5.6	4.8	4.6	4.4	4.2
NMAX	664	600	543	414	253	223	249	504	1334	1741	2035	2194
HMAX	338	338	320	298	344	395	353	275	289	295	309	315
SHMAX	373	344	284	216	202	189	186	511	1007	1360	1747	1941
SHINF	2247	2037	1815	1382	917	816	888	2779	4772	6271	7489	8131
KM												
950	51.7	47.1	39.0	26.5	20.2	23.2	20.5	49.3	81.2	109	137	152
900	66.3	60.5	50.0	33.9	25.8	29.7	26.3	68.2	104	139	176	194
850	85.0	77.5	64.1	43.5	33.1	38.1	33.8	74.5	133	178	225	249
800	109	99.3	82.2	55.8	42.4	48.7	43.2	95.6	171	229	289	319
750	139	127	105	71.5	54.2	62.2	55.3	123	219	293	370	409
700	178	162	134	91.5	69.2	79.0	70.6	157	281	375	473	523
650	226	206	171	117	87.6	99.5	89.7	201	358	479	603	667
600	286	261	217	148	111	124	113	256	456	609	765	846
550	358	326	272	187	138	152	141	324	577	770	965	1066
500	441	400	337	234	170	181	173	407	723	964	1205	1327
490	459	416	351	244	176	186	180	426	755	1005	1253	1383
480	476	432	365	255	183	191	186	445	788	1050	1306	1441
470	494	448	379	265	189	196	193	465	822	1094	1360	1499
460	512	463	393	276	196	201	200	485	856	1140	1414	1558
450	529	479	408	287	202	205	208	505	892	1186	1468	1617
440	546	494	422	298	208	208	215	527	927	1233	1523	1677
430	563	508	436	309	214	211	218	548	963	1280	1578	1736
420	578	522	449	320	220	214	224	570	999	1327	1632	1795
410	593	535	462	331	226	214	229	591	1035	1374	1685	1852
400	607	547	475	342	232	215	234	613	1071	1420	1737	1907
390	619	557	486	353	238	215	237	635	1106	1465	1787	1960
380	630	565	496	363	242	215	241	657	1140	1509	1834	2009
370	637	571	505	372	238	210	243	678	1173	1551	1877	2054
360	641	573	513	381	232	193	244	698	1204	1590	1916	2094
350	640	571	517	389	219	182	242	71	1233	1626	1950	2128
340	632	562	519	396	208	168	239	736	1259	1657	1977	2154
330	613	545	515	401	235	151	231	752	1281	1684	1997	2171
320	582	517	507	404	230	132	220	767	1300	1705	2006	2177
310	538	479	493	404	224	113	205	780	1313	1719	1999	2164
300	478	426	465	401	214	91.6	187	790	1319	1721	1973	2123
290	403	366	424	392	201	74.9	164	797	1315	1707	1921	2047
280	327	299	377	375	188	66.9	140	800	1295	1675	1841	1932
270	248	231	303	347	171	59.1	114	794	1253	1609	1725	1778
260	182	175	227	303	149	52.1	87.6	774	1191	1506	1570	1594
250	121	124	149	240	124	47.1	66.5	733	1097	1367	1385	1387
240	73.1	75.4	91.1	170	99.1	44.3	49.8	663	969	1189	1191	1170
230	36.1	40.1	51.8	104	61.1	42.5	37.7	562	8.0	988	990	967
220	14.1	16.5	22.9	51.8	34.4	41.3	14.4	435	662	796	803	793
210	2.7	4.8	7.9	21.9	15.6	41.1	6.1	316	518	610	642	646
200		.5	.1	5.7	4.1	41.5	1.9	223	397	485	520	534
190				.5	.1			157	302	389	429	450
180								113	233	315	360	384
170								89.2	184	259	304	331
160								74.8	149	215	258	287
150								67.2	126	181	219	247
140								62.3	113	156	189	213
130								55.3	106	143	170	190
120								41.6	92.0	127	146	168
110								1.5	14.7	36.4	53.3	43.7

AVERAGE ELECTRON DENSITY — KP BELOW 4.5

PUERTO RICO — 60 W — OCT 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
COUNT	25	21	22	20	22	12	19	26	26	25	26	26
HMIN	111	110	111	111	111	112	210	210	218	242	253	243
RATIO	4.0	3.8	4.0	3.8	3.9	4.1	4.6	4.7	4.7	4.9	5.6	5.7
NMAX	2167	2202	2244	2166	1997	1812	1602	1190	988	831	806	743
HMAX	325	337	332	338	335	333	340	346	352	368	359	344
SHMAX	2063	2226	2134	2179	1971	1694	1 78	924	758	611	500	451
SHINF	8176	8441	8464	8289	7605	6805	5794	4281	3545	2955	2773	2548
KM												
950	158	171	170	168	152	137	126	96.3	81.9	74.3	69.4	60.0
900	202	219	217	215	195	176	161	123	105	95.3	89.0	76.9
850	256	281	279	276	251	225	207	158	135	122	114	98.6
800	332	360	357	354	321	289	263	203	173	156	146	126
750	425	461	457	453	411	370	339	259	221	200	187	162
700	543	588	584	578	525	473	433	331	282	255	238	206
650	692	749	744	736	669	602	551	421	358	324	302	262
600	878	947	943	931	847	76.	697	532	452	407	381	331
550	110	1187	118	1167	106	956	875	666	564	506	474	414
500	1365	1464	1461	1440	1315	1185	1076	818	692	616	579	509
490	1424	1523	1521	1498	1366	1231	1119	850	718	639	601	528
480	1482	1585	1581	1556	1420	1279	1162	883	745	661	622	548
470	1540	1641	1641	1615	1474	1329	1205	915	771	683	643	568
460	1596	1701	170	1674	1528	1378	1245	947	797	704	664	588
450	1657	1760	1765	1731	1581	1427	1 1	978	823	725	684	607
440	1716	1817	182	1786	1630	1475	1334	1009	848	744	704	626
430	1775	1874	1881	1845	1688	1524	1374	1038	874	762	722	644
420	1829	1928	1938	1904	1739	1568	1413	1067	894	779	739	662
410	1883	1979	1992	1950	1787	1613	1450	1093	915	793	754	678
400	1935	2027	204	1997	183	1654	1484	1117	933	805	767	692
390	1983	207	2090	2040	187	1692	1514	11 8	949	814	776	705
380	2027	210	213	2078	1910	1726	1541	1155	96.	819	781	715
370	2068	213	2168	2110	1941	1755	156	1169	970	818	780	722
360	2102	216	217	2134	1966	1779	1577	1177	973	809	771	725
350	2128	218	2211	2148	1983	1795	1586	1178	970	788	750	720
340	2140	2177	2225	2151	1991	180	1584	1168	958	755	716	706
330	2144	2180	2216	2138	1985	1800	1568	1143	933	708	670	680
320	2134	2170	2181	2101	1957	1778	1536	1100	894	647	608	639
310	2098	2052	2113	203	1905	1735	1484	1041	839	572	533	581
300	2034	1954	2014	1945	18 7	1663	1412	965	768	486	451	505
290	1937	1839	1880	1	17	1577	1311	868	683	394	364	421
280	1800	1675	1720	1645	1504	1466	1186	757	582	303	275	335
270	1654	1524	1540	1510	1441	1331	1033	634	470	216	189	254
260	1473	1340	1344	1331	1281	1184	853	503	353	144	117	177
250	1252	114	1151	1150	1107	1019	750	374	247	87.9	65.7	114
240	1004	973	966	975	941	852	635	250	152	47.0	33.8	66.2
230	715	8.1	803	813	773	68	55	150	81.4	23.6	14.7	32.9
220	757	642	674	671	6.7	524	11	7.8	3.0	11.1	6.2	12.9
210	625	587	561	552	506	390	31	29.9	10.3	3.4	3.5	2.9
200	520	504	481	458	409	283	3	6.1	1.6	.8		.3
190	44	438	412	384	331	207		.1				
180	380	381	358	323	271	156						
170	331	334	310	276	223	123						
160	287	291	269	238	186	104						
150	248	251	232	205	158	92.3						
140	215	216	201	179	140	89.						
130	194	194	18	163	129	80.						
120	170	176	169	151	120	73.						
110	26.6	48.6	39.6	34.1	27.3	6.						

AVERAGE ELECTRON DENSITY — KP ABOVE 4.5

PUERTO RICO — 60 W — OCT 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
COUNT	5	5	5	5	5	5	5	3	3	3	2	4
HMIN	263	265	243	218	233	279	247	111	115	110	111	110
RATIO	5.3	5.8	6.5	4.2	4.0	4.6	4.8	4.4	4.6	4.7	4.2	3.9
NMAX	803	731	784	488	416	370	403	888	1747	2183	2197	2078
HMAX	375	370	330	366	394	410	369	318	315	304	311	330
SHMAX	539	462	399	452	387	275	293	753	1380	1670	1926	2043
SHINF	2805	2694	2610	1828	1562	1319	1429	3259	6309	7827	8122	7904
KM												
950	75.4	70.6	58.1	45.1	42.3	42.2	36.2	61.6	124	144	149	154
900	96.7	90.5	74.5	57.8	54.2	54.1	46.5	79.0	159	185	192	198
850	124	116	95.5	74.1	69.4	69.3	59.6	101	204	237	246	254
800	159	149	122	94.8	88.8	88.5	76.3	130	262	304	315	325
750	203	190	157	121	113	113	97.4	166	335	390	403	416
700	258	242	200	154	144	143	124	213	428	498	516	532
650	327	307	255	195	182	179	157	271	546	635	658	678
600	411	386	323	245	228	222	198	344	692	807	835	859
550	509	480	405	303	280	268	246	433	870	1018	1052	1078
540	530	500	423	315	291	278	256	453	910	1065	1101	1127
530	551	521	442	328	302	287	266	473	950	1114	1151	1177
520	573	541	461	340	313	296	277	494	992	1164	1203	1229
510	594	562	481	353	324	304	287	516	1035	1216	1256	1281
500	616	584	501	366	335	313	298	538	1079	1269	1310	1335
490	637	605	521	378	346	321	309	561	1124	1324	1366	1390
480	658	626	542	390	356	327	319	584	1170	1380	1424	1446
470	679	646	562	402	366	332	329	607	1216	1437	1482	1502
460	699	666	583	414	375	336	339	631	1262	1495	1541	1559
450	717	685	604	424	383	337	349	655	1309	1553	1600	1615
440	735	704	625	434	391	338	358	679	1355	1612	1660	1671
430	750	721	645	443	397	336	366	702	1401	1670	1719	1726
420	764	736	664	451	401	333	374	726	1446	1729	1778	1779
410	776	749	683	458	403	327	379	748	1489	1786	1835	1830
400	784	761	700	462	404	319	382	770	1531	1842	1891	1879
390	788	769	717	463	402	310	382	791	1570	1896	1944	1924
380	785	770	731	461	398	297	380	810	1606	1947	1995	1965
370	772	761	744	455	392	279	375	828	1638	1995	2041	2000
360	742	742	752	448	380	256	368	843	1665	2038	2083	2029
350	698	715	754	438	365	233	358	856	1687	2076	2118	2051
340	652	672	749	425	346	204	346	866	1701	2108	2147	2063
330	589	611	733	409	321	174	330	872	1698	2132	2169	2064
320	508	537	705	390	292	142	309	873	1672	2142	2178	2048
310	414	450	656	369	260	108	281	865	1621	2136	2166	2006
300	319	352	595	344	225	82.4	251	846	1549	2111	2130	1929
290	243	267	514	317	189	64.9	215	816	1445	2058	2065	1820
280	175	168	425	284	153	47.2	171	775	1338	1967	1966	1685
270	113	88.9	332	248	115	38.9	121	721	1210	1845	1832	1522
260	69.1	31.6	247	205	81.1	31.4	77.4	650	1078	1683	1671	1350
250	32.0	8.0	189	160	52.9	23.9	40.6	571	945	1452	1487	1181
240	9.9		120	123	31.6	18.2	27.1	489	817	1188	1278	1003
230			59.2	81.0	23.4	9.4	18.1	400	674	925	1078	850
220			25.1	54.5	12.6	2.5	13.4	315	548	726	886	717
210			2.5	27.0	9.9		9.2	243	431	558	719	607
200				7.7	7.5		2.5	187	336	440	574	513
190					2.5			143	260	354	461	439
180								113	196	288	374	375
170								92.6	156	239	307	319
160								79.0	129	201	255	271
150								72.2	112	172	215	233
140								67.6	104	153	187	204
130								59.2	98.1	145	170	185
120								44.5	75.7	132	149	169
110								6.4		29.9	41.9	56.8

AVERAGE ELECTRON DENSITY — KP ABOVE 4.5

PUERTO RICO — 60 W — OCT 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
COUNT	4	4	3	4	4	4	4	5	5	5	5	5
HMIN	111	111	112	112	112	112	222	242	225	242	254	244
RATIO	3.8	3.8	3.7	3.7	3.7	3.7	4.6	4.8	4.6	4.5	5.1	5.6
NMAX	2244	2370	2212	2306	2174	1819	1653	1472	1058	909	984	810
HMAX	344	348	353	357	349	357	364	368	373	385	377	349
SHMAX	2326	2407	2286	2376	2255	1916	1349	1099	892	759	724	519
SHINF	8657	9092	8525	8881	8388	7047	6011	5251	3877	3322	3498	2805
KM												
950	180	196	187	196	178	156	147	134	100	90.9	94.7	68.7
900	231	251	239	252	228	200	189	172	129	117	122	88.0
850	297	322	307	323	292	256	242	220	165	149	156	113
800	380	412	393	414	374	328	310	282	211	191	199	145
750	486	528	503	529	479	420	396	361	270	244	254	185
700	620	673	641	675	611	535	505	460	344	310	324	236
650	789	856	815	857	777	680	641	583	435	393	410	299
600	997	1080	1028	1082	982	857	807	733	547	492	514	376
550	1247	1349	1283	1350	1228	1069	1002	910	676	606	634	468
500	1533	1654	1572	1653	1509	1307	1219	1105	817	728	762	571
490	1593	1718	1632	1715	1568	1357	1263	1144	845	751	788	592
480	1654	1781	1693	1778	1627	1406	1307	1183	873	774	812	613
470	1714	1845	1752	1841	1686	1455	1350	1221	900	796	836	633
460	1774	1908	1811	1902	1745	1503	1392	1258	925	817	859	654
450	1833	1969	1869	1962	1802	1550	1433	1293	950	836	880	673
440	1891	2029	1925	2020	1858	1595	1471	1327	972	854	899	692
430	1946	2086	1978	2076	1913	1638	1506	1358	992	869	917	710
420	1999	2140	2028	2127	1964	1677	1539	1385	1010	881	931	726
410	2048	2190	2073	2174	2011	1713	1567	1409	1024	890	941	740
400	2093	2234	2114	2215	2054	1745	1591	1428	1035	892	945	753
390	2133	2272	2148	2250	2092	1771	1609	1440	1041	889	941	763
380	2166	2303	2175	2277	2123	1791	1619	1442	1038	880	932	769
370	2192	2325	2194	2295	2147	1804	1617	1430	1026	862	914	766
360	2209	2334	2203	2303	2163	1805	1602	1405	1002	834	890	753
350	2213	2326	2190	2292	2165	1792	1573	1359	965	796	858	731
340	2196	2295	2150	2249	2150	1759	1530	1291	914	745	813	700
330	2155	2236	2081	2174	2111	1709	1466	1207	852	684	755	660
320	2085	2149	1982	2066	2045	1639	1382	1102	781	609	681	611
310	1992	2028	1858	1930	1954	1550	1274	957	698	524	595	551
300	1888	1874	1712	1770	1842	1446	1144	810	606	431	499	486
290	1752	1704	1543	1590	1712	1329	991	671	505	329	388	414
280	1596	1530	1377	1403	1570	1196	820	544	406	231	263	349
270	1437	1357	1195	1222	1408	1066	644	416	316	154	135	286
260	1276	1187	1026	1044	1236	930	462	288	229	96.1	54.8	237
250	1111	1032	880	885	1070	791	291	173	150	51.1	20.5	183
240	959	876	754	748	905	667	170	76.7	83.2	33.4	.6	128
230	808	751	646	633	744	555	91.2	20.8	47.1	17.3		80.1
220	688	641	560	540	600	456	40.6	5.3	19.7	3.9		26.0
210	589	550	485	464	473	369	15.0		9.5			2.5
200	504	477	421	401	372	294	1.4		2.5			
190	433	414	368	344	302	230						
180	375	361	320	299	248	182						
170	329	315	280	256	210	148						
160	288	272	239	222	181	123						
150	250	233	208	194	158	106						
140	216	204	185	172	140	95.8						
130	191	186	172	160	130	88.5						
120	174	171	157	134	113	75.7						
110	30.3	21.0	37.3	28.0	10.1	13.3						

ELECTRON DENSITY TABULATIONS--ERRATUM

An unusual failure of the electronic computer used in averaging the hourly electron density profiles, occurred in processing the data published for Puerto Rico, June 1959, in the September 1959 F series, Part A, No. 181. These errors, which give large discontinuities in the profiles, render a number of the quiet and disturbed mean profiles useless; the individual hourly profiles were not affected. A corrected tabulation of the mean profiles is given in this issue on the following two pages.

AVERAGE ELECTRON DENSITY — KP BELOW 4.5

PUERTO RICO — 60 W — JUNE 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
COUNT	27	29	28	28	28	27	25	21	19	20	17	15
HMIN	264	249	246	259	258	251	241	111	110	109	108	108
NMAX	1406	1232	990	912	860	775	788	922	1133	1249	1373	1482
HMAX	371	354	367	377	370	366	353	311	335	345	363	368
SHMAX	901	808	718	662	586	552	567	857	1339	1565	1854	1992
SHINF	4868	4283	3511	3234	3012	2737	2789	3458	4533	5088	5728	6173
KM												
950	128	103	88.8	85.8	78.3	68.9	65.9	62.8	86.7	101	121	136
900	164	132	114	110	101	88.3	84.5	80.5	111	130	155	175
850	210	169	146	141	129	113	108	103	143	167	199	224
800	269	217	187	181	165	145	139	132	183	214	255	287
750	343	278	239	231	211	185	178	170	234	273	326	367
700	437	354	305	294	268	236	226	217	299	349	415	468
650	555	450	387	373	340	300	288	276	380	443	527	594
600	698	567	486	468	427	377	363	351	481	560	664	746
550	866	708	604	579	530	468	452	442	603	700	826	926
500	1052	866	734	701	642	569	552	550	745	860	1007	1123
490	1090	899	760	725	664	590	573	574	774	893	1044	1163
480	1127	932	786	749	687	610	594	597	805	927	1082	1203
470	1163	964	812	772	708	630	614	622	835	961	1118	1241
460	1199	996	837	794	729	649	634	646	865	994	1154	1279
450	1233	1028	861	815	749	668	654	671	896	1027	1188	1314
440	1265	1058	883	835	768	686	673	696	925	1059	1221	1348
430	1294	1087	904	852	785	702	691	721	954	1090	1252	1378
420	1321	1113	923	867	800	717	708	745	982	1119	1280	1406
410	1344	1138	940	879	812	730	723	769	1009	1146	1305	1429
400	1362	1159	953	887	822	740	737	792	1033	1171	1327	1448
390	1374	1177	962	889	827	747	748	814	1056	1192	1344	1461
380	1378	1190	966	884	825	749	756	835	1076	1210	1356	1468
370	1368	1195	962	872	816	746	760	854	1093	1224	1363	1468
360	1339	1192	950	849	797	737	759	871	1106	1233	1362	1457
350	1289	1180	924	813	767	720	754	886	1115	1236	1353	1434
340	1215	1153	884	763	725	694	741	897	1119	1231	1334	1398
330	1118	1110	829	700	669	659	720	905	1118	1218	1303	1349
320	991	1048	762	624	603	612	690	908	1109	1195	1262	1288
310	835	965	678	540	526	553	645	905	1092	1163	1209	1214
300	653	858	582	447	442	483	586	895	1066	1120	1145	1133
290	465	722	475	347	355	403	511	877	1030	1065	1077	1045
280	290	570	362	252	272	316	419	846	984	1001	1003	957
270	164	415	262	164	188	227	315	801	928	928	922	867
260	85.3	256	179	96.4	127	136	217	743	861	853	839	782
250	42.4	128	106	39.6	84.4	63.2	128	672	786	775	757	702
240	20.5	50.5	54.8	11.8	54.9	20.2	79.1	589	702	697	677	631
230	5.7	18.7	25.9	3.1	26.8	6.8	58.1	501	615	622	605	572
220	1.4	4.2	8.3	.4	6.4	3.2	35.7	411	532	552	542	524
210			1.4			.7	22.1	334	456	488	492	484
200			.1				14.3	269	390	431	449	449
190							9.9	219	334	382	411	417
180							7.5	179	287	340	376	387
170							6.1	147	245	301	341	357
160							5.3	124	209	262	304	324
150							4.7	107	179	225	267	291
140							4.2	97.1	158	195	231	253
130							3.9	90.9	144	173	202	222
120							2.5	80.0	130	161	183	201
110								17.4	45.3	68.1	116	103

AVERAGE ELECTRON DENSITY — KP BELOW 4.5

PUERTO RICO — 60 W — JUNE 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
COUNT	18	20	20	18	18	17	10	19	23	25	25	28
HMIN	109	109	109	109	109	110	115	259	271	280	287	285
NMAX	1626	1741	1723	1756	1626	1548	1414	1342	1363	1431	1384	1404
HMAX	380	382	380	375	373	371	368	400	419	413	412	401
SHMAX	2167	2276	2205	2172	1971	1826	1586	1220	1203	1116	1044	992
SHINF	6753	7186	7065	7125	6558	6193	5575	5004	5048	5153	4948	4953
KM												
950	155	167	166	164	150	141	128	141	158	161	156	148
900	198	215	213	211	193	181	164	181	203	207	199	190
850	254	275	273	270	247	232	211	232	259	265	256	244
800	326	352	349	346	316	297	270	296	332	339	327	311
750	416	450	446	442	404	380	345	378	423	432	416	398
700	530	573	567	563	515	484	439	481	536	549	528	505
650	671	726	719	713	653	614	557	607	675	692	666	638
600	843	911	902	897	822	773	702	759	838	861	829	796
550	1043	1128	1115	1112	1020	960	872	932	1020	1050	1011	977
540	1086	1174	1161	1158	1062	1001	909	968	1056	1089	1048	1014
530	1129	1221	1206	1205	1106	1042	946	1004	1093	1128	1085	1052
520	1173	1268	1253	1252	1149	1083	984	1041	1129	1166	1122	1089
510	1217	1315	1299	1300	1193	1125	1022	1076	1164	1203	1158	1127
500	1261	1363	1345	1347	1238	1167	1060	1112	1197	1240	1193	1163
490	1305	1409	1391	1395	1282	1209	1099	1146	1229	1274	1226	1198
480	1347	1455	1436	1441	1325	1251	1137	1179	1258	1306	1257	1232
470	1389	1500	1479	1487	1368	1292	1174	1210	1285	1336	1285	1264
460	1429	1543	1521	1531	1409	1331	1211	1239	1308	1363	1311	1293
450	1466	1583	1560	1573	1448	1369	1246	1265	1327	1385	1332	1320
440	1501	1620	1596	1612	1485	1405	1279	1288	1341	1403	1350	1342
430	1533	1654	1628	1648	1519	1438	1309	1306	1350	1416	1361	1359
420	1560	1682	1656	1679	1550	1468	1337	1320	1351	1421	1364	1369
410	1583	1706	1677	1705	1576	1494	1361	1328	1341	1415	1357	1372
400	1600	1723	1693	1726	1596	1515	1381	1330	1318	1391	1338	1364
390	1610	1734	1701	1740	1611	1531	1396	1321	1278	1348	1302	1342
380	1613	1735	1701	1746	1618	1540	1406	1301	1223	1283	1244	1304
370	1605	1724	1690	1740	1616	1541	1408	1265	1153	1198	1161	1247
360	1584	1698	1664	1721	1601	1531	1400	1213	1062	1091	1056	1164
350	1549	1655	1623	1685	1571	1507	1379	1145	959	967	929	1058
340	1498	1592	1565	1632	1522	1465	1344	1066	844	823	784	930
330	1434	1514	1491	1559	1457	1408	1295	975	714	665	623	779
320	1358	1421	1401	1470	1375	1338	1233	871	578	500	456	616
310	1270	1319	1299	1366	1279	1254	1159	752	432	338	298	442
300	1176	1207	1187	1251	1171	1155	1073	623	295	194	165	277
290	1072	1092	1069	1130	1054	1049	974	476	181	96.6	75.5	147
280	968	975	950	1004	933	936	872	329	89.0	27.7	28.8	52.9
270	868	862	834	878	815	818	764	188	36.1	8.1	6.6	10.0
260	774	759	732	760	705	704	652	92.4	12.6	2.7		
250	688	670	643	659	611	599	544	33.5	4.1	1.7		
240	617	599	570	576	537	512	446	10.3		1.2		
230	558	542	515	513	478	443	366	1.3		.4		
220	512	501	474	466	432	389	303					
210	474	469	442	430	397	348	255					
200	443	443	417	402	366	314	216					
190	415	419	394	377	339	282	185					
180	388	394	371	352	312	252	159					
170	360	362	347	326	283	222	136					
160	330	332	318	297	255	192	118					
150	294	297	283	263	224	167	102					
140	255	259	247	229	194	147	92.8					
130	227	229	220	204	175	136	86.5					
120	203	206	202	190	163	126	71.1					
110	106	72.0	91.0	93.5	66.1	38.8	2.4					

AVERAGE ELECTRON DENSITY — KP ABOVE 4.5

PUERTO RICO — 60 W — JUNE 1959

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
COUNT	1	1	1	1	1	3	2	1	4	2	3	1
KP	6	5	6	6	6			6				5
DATE	24	24	29	29	29			29				30
HMIN	260	259	268	355	327	276	240	110	109	108	108	109
NMAX	1697	1640	1027	834	814	574	583	375	702	604	706	1191
HMAX	402	399	390	465	429	403	336	415	355	348	344	353
SHMAX	1426	1370	854	586	579	478	412	716	996	899	1084	1572
SHINF	6213	5996	3751	2938	2875	2097	2055	1773	2975	2602	3075	4931
KM												
950	180	172	103	121	98.9	63.8	44.6	42.5	56.2	49.1	5701	99.2
900	231	220	132	155	127	81.6	57.2	54.5	72.2	63.0	7302	127
850	296	282	169	198	162	105	73.4	69.8	92.5	80.7	9308	163
800	379	361	216	253	207	134	94.1	89.3	118	103	120	209
750	484	461	276	321	264	171	121	114	152	133	154	267
700	615	586	351	405	335	216	154	144	193	169	197	341
650	777	740	445	504	421	272	196	182	246	215	250	434
600	970	926	557	615	521	337	248	227	311	272	316	548
590	1013	966	582	638	543	350	260	236	325	284	330	573
580	1056	1008	608	660	565	365	272	246	340	298	346	599
570	1101	1051	634	683	587	379	285	256	356	311	362	627
560	1146	1094	661	705	609	394	298	266	372	326	378	655
550	1191	1138	688	726	631	408	311	277	388	340	395	684
540	1237	1183	715	746	653	423	325	287	405	355	413	714
530	1284	1227	743	765	675	437	339	297	422	370	430	744
520	1330	1272	771	783	696	451	354	307	440	386	449	775
510	1376	1316	799	798	717	465	369	317	458	402	467	807
500	1421	1360	827	812	736	478	384	326	476	418	486	839
490	1464	1403	854	822	754	490	400	336	495	434	505	872
480	1506	1444	881	829	770	502	416	344	514	451	524	904
470	1546	1483	907	833	784	512	431	352	532	467	543	937
460	1582	1519	931	832	796	521	448	359	551	484	562	969
450	1615	1552	953	815	806	528	463	365	568	500	581	1000
440	1644	1580	974	779	812	533	479	370	586	515	600	1031
430	1667	1605	991	727	814	535	494	373	603	531	617	1060
420	1684	1623	1006	665	808	536	509	375	619	545	634	1088
410	1694	1635	1017	582	790	534	522	375	634	559	650	1113
400	1697	1640	1025	497	758	529	536	373	647	571	664	1136
390	1682	1631	1027	398	716	520	548	370	659	582	677	1155
380	1644	1602	1021	298	655	507	558	365	670	591	687	1171
370	1585	1552	1004	189	580	490	567	357	678	598	696	1183
360	1505	1481	976	71.4	487	469	574	349	685	602	701	1189
350	1411	1389	936		389	438	579	341	689	604	704	1190
340	1283	1278	885		240	397	581	331	691	602	703	1181
330	1127	1143	826		60.0	346	579	317	690	595	700	1161
320	939	990	729			297	570	301	686	582	692	1127
310	735	794	619			247	553	282	676	563	679	1085
300	557	590	492			207	527	264	663	538	663	1030
290	348	348	348			166	492	248	644	510	644	960
280	161	161	161			118	444	233	622	480	618	889
270	71.4	71.4	44.9			68.2	386	219	594	449	590	810
260	3.1	12.4				24.1	308	209	563	420	559	735
250							181	200	530	392	524	665
240							6.2	195	495	370	490	603
230								192	460	352	457	554
220								188	423	338	424	515
210								184	382	326	396	477
200								180	343	317	371	446
190								172	303	308	350	411
180								163	264	299	332	384
170								150	229	280	310	359
160								137	198	252	279	329
150								125	173	221	245	298
140								114	155	197	217	251
130								105	143	178	196	217
120								93.9	134	166	181	200
110								12.4	44.1	91.7	115	112

AVERAGE ELECTRON DENSITY — KP ABOVE 4.5

PUERTO RICO — 60 W — JUNE 1959

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
COUNT	2	3	1	0	0	0	0	2	2	3	3	1
KP			5									6
DATE			29									23
HMIN	108	112	109					251	298	319	276	268
NMAX	1378	1612	716					1453	1626	1544	1841	2032
HMAX	414	403	355					448	456	440	398	374
SHMAX	2222	2283	1138					1644	1478	1135	1335	1273
SHINF	6108	6831	3157					5741	6064	5490	6529	7004
KM												
950	154	174	60.2					193	228	197	190	188
900	197	223	77.2					248	292	252	243	241
850	252	286	99.0					317	374	323	312	309
800	323	365	127					404	477	412	399	395
750	411	466	162					514	605	524	509	505
700	522	592	207					649	762	663	647	644
650	658	747	263					811	948	831	818	816
600	819	931	332					998	1157	1026	1023	1027
590	854	972	348					1036	1200	1067	1068	1074
580	890	1013	364					1075	1242	1109	1114	1122
570	926	1055	380					1115	1284	1151	1161	1172
560	962	1097	397					1154	1325	1192	1209	1223
550	999	1140	415					1192	1366	1234	1258	1275
540	1036	1184	433					1230	1404	1275	1307	1329
530	1073	1227	451					1265	1440	1314	1357	1383
520	1109	1270	470					1300	1473	1353	1407	1438
510	1145	1313	489					1332	1503	1389	1456	1493
500	1180	1355	509					1360	1529	1423	1505	1548
490	1212	1395	528					1386	1551	1453	1552	1604
480	1244	1433	548					1408	1565	1480	1598	1658
470	1272	1468	567					1424	1570	1503	1642	1712
460	1298	1501	586					1435	1566	1519	1683	1764
450	1320	1530	605					1438	1550	1527	1720	1813
440	1337	1554	623					1431	1526	1524	1753	1860
430	1350	1574	641					1416	1493	1510	1780	1903
420	1359	1586	657					1391	1447	1477	1802	1941
410	1363	1591	672					1351	1381	1418	1816	1974
400	1361	1588	685					1303	1290	1335	1818	2001
390	1354	1575	697					1239	1187	1226	1800	2019
380	1338	1550	706					1166	1062	1085	1763	2030
370	1315	1516	712					1087	925	921	1705	2028
360	1282	1470	716					1000	782	744	1622	1985
350	1241	1410	716					903	645	559	1504	1895
340	1197	1332	710					805	518	370	1356	1769
330	1137	1247	700					707	405	182	1171	1578
320	1073	1155	685					605	276	71.4	941	1341
310	1001	1058	662					508	181	8.7	711	1050
300	925	955	636					413	89.5		463	716
290	846	850	604					315	41.9		254	417
280	766	757	570					242	6.2		84.1	143
270	691	673	534					168			23.8	26.3
260	625	606	502					120				
250	564	552	474					76.0				
240	520	513	446					35.7				
230	488	482	425					6.2				
220	465	459	408									
210	446	439	393									
200	426	421	383									
190	405	405	375									
180	382	384	367									
170	355	354	353									
160	313	315	332									
150	257	270	294									
140	221	238	260									
130	198	217	237									
120	187	143	223									
110	170	126	112									

TABLES OF IONOSPHERIC DATA

August 1959 -- September 1959

Table 1

Fairbanks, Alaska (64.9°N, 147.8°W) August 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.6)					4.1	(2.55)
01		(4.7)					4.7	(2.58)
02		(4.7)					4.6	(2.58)
03		(4.8)					4.5	(2.55)
04		(5.5)					4.0	(2.70)
05		(6.3)					4.4	(2.65)
06		(6.0)					3.5	(2.55)
07		6.0					2.9	2.55
00		6.7						2.50
09		6.2						2.55
10		6.8						2.50
11		6.0						2.45
12		6.0						2.42
13		5.8						2.50
14		6.5						2.55
15		6.0						2.60
16		6.45						2.60
17		6.5						2.75
18		6.2						2.75
19		5.8						2.90
20		5.6						2.85
21		(5.45)					3.0	(2.80)
22		(4.6)					2.8	(2.70)
23		(4.7)					3.4	(2.58)

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 2

Fairbanks, Alaska (64.9°N, 147.8°W) July 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.7)					3.5	(2.60)
01		(4.85)					4.0	(2.60)
02		(5.0)					4.3	(2.55)
03		(4.6)					3.2	(2.55)
04		(5.5)					4.3	(2.60)
05		(5.8)					4.0	(2.60)
06		(5.0)					2.5	(2.50)
07		(5.7)						(2.50)
08		(5.3)						(2.50)
09		5.5						2.55
10		5.9						2.52
11		(6.1)					(4.0)	(2.50)
12		(5.9)						(2.50)
13		6.0						(2.55)
14		5.25						2.55
15		(5.8)						2.55
16		5.5						2.60
17		5.35						2.65
18		5.3						2.62
19		(5.1)						2.80
20		5.2						2.00
21		5.1						2.80
22		(5.1)					1.8	(2.72)
23		(5.25)					3.0	(2.70)

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 3

Adak, Alaska (51.9°N, 176.6°W) July 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.8	290		---	----	2.6	2.55
01		5.3	305		---	----	1.1	2.45
02		5.15	320		---	----	1.3	2.50
03	---	4.75	345		---	----	1.5	2.45
04	440	5.1	310	3.1	105	1.85	2.0	2.45
05	425	5.7	270	3.8	107	(2.35)	2.7	2.45
06	440	6.2	245	4.1	101	2.80	3.3	2.45
07	440	6.4	<245	4.5	100	3.15	3.8	2.50
00	440	6.6	(230)	4.7	101	3.40	4.4	2.50
09	475	6.4	(220)	4.9	99	3.55	4.3	2.45
10	445	6.6	(220)	5.0	99	3.60	4.5	2.50
11	460	6.45	215	5.1	99	(3.75)	4.3	2.50
12	520	6.2	210	5.1	99	3.80	4.1	2.55
13	510	6.2	210	5.1	99	(3.75)	4.0	2.45
14	485	6.2	210	5.1	99	3.70	4.0	2.50
15	490	6.25	220	4.9	99	3.55	3.7	2.60
16	460	6.1	220	4.8	101	3.40	3.4	2.60
17	(500)	6.3	240	4.7	101	3.00	3.7	2.70
18	(390)	6.4	(250)	---	105	2.75	3.7	2.80
19		6.3	<285		119	(2.30)	4.2	2.80
20		6.7	280		119	----	3.9	2.80
21		7.8	280		---	----	3.8	2.75
22		6.8	285		---	----	3.2	2.65
23		6.3	290		---	----	3.8	2.65

Time: 180.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 4

Ft. Monmouth, New Jersey (40.4°N, 74.1°W) July 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.65	<300					2.65
01		6.35	300					2.62
02		5.8	300					2.60
03		5.2	(300)					2.65
04		4.8	(310)					2.65
05	---	5.0	(280)		---	----		2.80
06	(470)	5.5	250	4.2	109	2.80		2.85
07	425	5.8	230	4.6	109	3.10	3.4	2.75
08	480	5.9	220	4.9	107	3.50	3.7	2.68
09	435	6.2	(220)	5.2	109	----	4.9	2.60
10	470	6.4	210	5.4	105	----	>4.1	2.60
11	480	6.6	<210	5.4	106	----	4.2	2.58
12	470	6.8	200	5.4	106	----	4.2	2.55
13	500	6.75	210	5.5	105	----	4.1	2.55
14	465	7.1	<230	5.4	105	----	4.3	2.55
15	430	7.2	(230)	5.3	109	----	3.9	2.60
16	390	7.5	(230)	5.2	109	----	4.7	2.65
17	360	7.9	230	4.8	109	3.20		2.70
18	320	7.8	(250)	---	(111)	----		2.75
19		7.95	275		---	----		2.75
20		7.9	270					2.70
21		7.85	270					2.68
22		7.2	280					2.65
23		6.95	(300)					2.65

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 5

Grand Bahama I. (26.6°N, 78.2°W) July 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.2	<300				3.5	2.65
01		7.25	(290)				3.0	2.72
02		6.9	280				3.0	2.68
03		6.55	300				3.0	2.65
04		6.5	295				(3.8)	2.70
05		6.0	285				(4.0)	2.70
06		6.5	265		121	2.20	3.0	2.90
07	---	7.15	<250	---	111	2.90	3.5	2.85
08	(300)	8.0	(240)	(4.8)	109	(3.35)	5.0	2.70
09	380	8.8	<220	5.3	109	3.70	4.4	2.70
10	385	9.2	(215)	5.5	109	3.95	4.6	2.65
11	380	9.1	<210	5.5	109	(4.00)	4.5	2.60
12	300	9.75	<220	5.7	109	(4.10)	4.3	2.60
13	375	9.5	<230	5.8	109	(4.10)	4.5	2.62
14	400	9.4	(230)	5.6	109	4.00	4.3	2.60
15	370	9.5	230	5.5	109	3.90	>4.3	2.65
16	370	9.15	230	5.3	111	3.60	3.9	2.65
17	370	9.0	235	4.7	111	3.20	3.7	2.70
10	---	8.85	(260)	---	113	2.60	3.4	2.00
19		8.65	270		<145	----	3.0	2.80
20		8.3	(265)				3.4	2.75
21		8.0	(275)				3.3	2.70
22		7.5	290				3.1	2.70
23		7.3	(300)				3.1	2.68

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 6

Maui, Hawaii (20.8°N, 156.5°W) July 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.5	310				3.1	2.65
01		7.85	300				3.0	2.70
02		7.7	295				2.0	2.70
03		7.1	285				2.5	2.70
04		6.8	290				2.2	2.75
05		6.3	290				1.8	2.70
06		6.0	270		111	(1.80)	2.2	2.80
07	(510)	7.0	240	---	109	(2.70)	4.0	3.00
08	405	0.1	225	5.2	105	3.25	4.5	2.60
09	(630)	8.7	220	5.2	105	3.65	4.8	2.40
10	490	9.2	210	5.8	105	3.88	4.5	2.25
11	445	10.0	210	5.9	107	(4.00)	4.5	2.35
12	420	10.95	220	5.9	107	4.10	4.6	2.50
13	390	11.35	220	5.9	107	(4.15)	>4.4	2.60
14	380	11.4	215	5.8	107	4.10	4.4	2.65
15	380	11.4	220	5.7	107	4.00	4.3	2.65
16	360	11.8	<235	5.4	109	3.70	4.5	2.75
17	320	12.0	240	5.1	109	3.30	4.3	2.85
18	290	11.8	(260)		115	2.62	4.3	2.90
19		11.1	265		---	----	4.1	2.90
20		10.3	270				4.1	2.80
21		9.3	280				3.7	2.70
22		8.8	295				3.0	2.65
23		8.5	315				3.2	2.60

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 7

Godhavn, Greenland (69.3°N, 53.5°W) June 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.3)			<125	(1.95)		(2.70)
01		(5.05)		---	<117	(1.95)		(2.70)
02		(5.1)		---	<112	(2.00)		(2.62)
03		(4.95)		(3.3)	109	(2.10)		(2.70)
04		(5.3)		(3.6)	(107)	(2.40)		----
05		(4.9)		(3.9)	105	(2.60)		(2.60)
06		(4.9)		(4.0)	103	(2.80)		----
07		<4.4		(4.2)	103	(3.05)		G
08		<4.5		(4.5)	103	3.20		G
09		---		4.6	101	(3.35)		----
10		(5.7)		(4.8)	101	(3.40)	4.2	2.48
11		(6.5)		(4.9)	101	(3.50)		(2.60)
12		(6.1)		4.9	101	(3.50)	5.2	(2.38)
13		(6.35)		(4.8)	101	3.50	5.4	(2.55)
14		(6.3)		4.7	101	3.40		(2.40)
15		(6.05)		(4.8)	101	3.40	5.4	(2.30)
16		(5.7)		4.7	101	(3.30)	5.4	(2.32)
17		(5.65)		(4.6)	103	(3.20)	4.4	(2.60)
18		(5.65)		(4.5)	103	(3.00)	4.8	(2.60)
19		(5.7)		(4.2)	103	(2.85)	4.6	(2.55)
20		(5.4)		(3.9)	105	(2.55)	3.6	(2.65)
21		(5.5)		(3.7)	(107)	2.40	2.7	(2.60)
22		(4.9)		---	(109)	(2.25)		(2.65)
23		(5.15)			<112	(2.05)		(2.75)

Time: 45.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 16.2 seconds.

Table 8

Reykjavik, Iceland (64.1°N, 21.8°W) June 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>4.6	395				3.5	(2.50)
01		(4.9)	<400				3.8	(2.50)
02	---	(4.8)	(370)		---	----	3.8	(2.60)
03	---	5.4	345		---	----	4.1	2.50
04	(410)	5.6	(310)	---	---	----	3.8	2.60
05	(430)	5.7	250	---	119	----		2.58
06	(470)	5.8	(260)	4.3	117	----		2.65
07	435	5.95	240	4.5	114	(3.05)		2.65
08	440	6.2	240	4.7	109	>3.20		2.60
09	470	6.3	230	(5.0)	108	(3.42)		2.60
10	<500	6.1	235	5.0	109	>3.30		2.58
11	470	6.5	230	5.1	109	(3.60)		2.52
12	490	6.4	220	5.0	109	(3.65)		2.55
13	470	6.7	230	5.3	109	>3.45		2.50
14	440	6.75	230	5.2	110	>3.52		2.55
15	440	6.9	230	5.2	109	>3.35		2.58
16	435	6.6	240	5.0	109	(3.30)		2.60
17	425	6.6	260	4.9	113	(3.40)		2.60
18	430	6.3	<265	(4.8)	(113)	3.55		2.60
19	430	5.95	290	(4.5)	115	(3.35)	3.4	2.62
20	<440	(5.7)	<310	>4.2	<120	>2.70		(2.65)
21	420	5.4	<330	---	---	----	3.5	2.60
22	(460)	(5.4)	(350)	---	---	----	3.8	(2.60)
23		5.5	350				3.4	(2.55)

Time: 15.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 16.2 seconds.

Table 9

Anchorage, Alaska (61.2°N, 149.9°W) June 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.3					2.4	2.70
01		5.0						2.60
02		(5.1)			---	----		(2.50)
03		5.7			<133	1.82		2.52
04		5.8		(3.6)	115	2.30	2.5	2.50
05		6.0		3.9	108	2.60	2.8	2.50
06		6.25		4.3	109	2.90	3.0	2.45
07		6.55		4.5	105	3.20		2.45
08		6.6		4.6	105	3.40		2.45
09		6.15		4.8	105	3.50	3.6	2.40
10		6.1		4.9	104	(3.60)	3.9	2.40
11		6.0		5.0	103	(3.70)	3.8	2.38
12		6.1		5.0	102	(3.70)	3.9	2.35
13		6.1		5.0	101	(3.70)	3.8	2.40
14		6.0		5.0	101	(3.60)		2.45
15		6.1		5.0	101	3.50		2.50
16		6.0		4.9	105	3.40		2.50
17		6.1		4.8	105	3.20		2.60
18		6.0		4.3	107	2.90	3.4	2.62
19		6.1		---	110	2.62	3.3	2.75
20		6.1			121	2.28	2.8	2.75
21		6.2			122	(1.80)	2.6	2.80
22		6.0			---	----	2.8	2.75
23		5.8						2.70

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 10

Narsarssuak, Greenland (61.2°N, 45.4°W) June 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.95)			121	----	4.4	(2.60)
01		(4.9)			125	(2.00)	3.2	(2.60)
02		(4.8)			115	(2.30)	2.6	(2.60)
03		4.85			108	(2.50)	3.0	2.62
04		4.95		---	105	(3.00)	3.8	2.65
05		5.2		4.0	109	3.00	3.9	2.60
06		<5.55		4.5	107	3.00	3.9	2.50
07		5.6		4.6	103	3.50		2.45
08		5.6		4.8	101	3.50	3.6	2.45
09		5.8		5.0	101	3.70		2.55
10		6.0		5.0	101	3.70	3.9	2.50
11		6.3		5.3	99	3.80		2.42
12		6.8		5.3	99	3.80		2.55
13		6.75		5.3	99	3.70		2.50
14		6.7		5.2	101	3.70		2.50
15		6.8		5.2	101	3.60		2.55
16		6.5		4.9	101	3.40		2.50
17		6.2		4.8	103	3.40		2.55
18		6.2		4.5	107	(3.20)	3.6	2.55
19		5.75		4.2	109	(3.10)	3.4	2.60
20		5.55		3.6	111	(2.90)	3.4	2.65
21		(5.6)			113	(2.70)	3.4	(2.65)
22		(5.2)			115	(2.25)	4.3	(2.65)
23		(4.9)			129	(1.65)	4.8	(2.65)

Time: 45.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 11

Ft. Monmouth, New Jersey (40.4°N, 74.1°W) June 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.7	(295)				2.6	2.70
01		6.4	<300				2.9	2.60
02		6.0	<300				3.0	2.65
03		5.5	<300				2.6	2.62
04		5.0	(300)					2.68
05		5.6	270		(125)	2.20	2.4	2.75
06	(450)	6.0	(250)	(4.2)	115	2.80	3.3	2.72
07	440	6.5	240	4.7	109	3.28	3.6	2.78
08	435	6.75	<235	5.0	109	3.50	4.0	2.65
09	460	6.7	(220)	5.2	105	3.80	4.4	2.65
10	445	7.1	210	5.4	106	4.00	4.8	2.60
11	470	>7.0	(210)	5.6	107	4.00	4.4	2.55
12	460	7.2	(215)	5.7	107	(4.10)	4.2	2.58
13	470	7.3	220	5.5	109	4.02	4.5	2.50
14	470	7.4	(230)	5.6	109	4.00	4.3	2.55
15	440	7.1	230	5.4	111	3.85	4.3	2.55
16	410	7.2	230	5.2	111	3.50		2.58
17	370	7.45	(240)	4.8	111	3.20	3.7	2.70
18	(355)	7.5	(265)	---	<119	2.78	3.5	2.70
19		7.5	(280)		<125	2.10	3.6	2.75
20		7.65	<275				3.4	2.70
21		7.8	<280				3.2	2.68
22		7.4	<290				3.4	(2.70)
23		7.0	<295				3.0	2.65

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 12

White Sands, New Mexico (32.3°N, 106.5°W) June 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.75	<315				3.8	2.55
01		6.7	<310				3.4	2.60
02		6.45	300				3.4	2.62
03		6.2	<310					2.60
04		5.9	300					2.55
05		5.9	285		117	----	1.9	2.65
06	(440)	6.9	250	---	113	2.70	2.8	2.80
07	420	7.6	235	4.6	109	3.10	3.5	2.70
08	430	8.35	225	5.0	105	(3.50)	4.2	2.60
09	400	8.2	(220)	5.2	105	(3.75)	4.6	2.50
10	445	8.75	210	5.4	105	3.95	4.5	2.45
11	415	9.5	210	5.8	105	(4.00)	4.6	2.50
12	405	9.7	(215)	5.8	108	----	4.6	2.50
13	415	9.3	220	5.7	107	----	4.8	2.50
14	390	9.7	(215)	5.6	109	4.02	4.6	2.55
15	390	8.95	225	5.4	109	3.85	4.1	2.55
16	380	8.75	230	5.2	109	3.60	4.2	2.60
17	360	8.4	(245)	---	109	3.22	4.0	2.65
18	---	8.35	<260		115	(2.68)	3.5	2.75
19		8.15	270		---	----	3.5	2.80
20		7.8	250				2.9	2.80
21		7.2	270				3.1	2.65
22		6.8	(290)				3.4	2.60
23		6.7	<315				3.0	2.55

Time: 105.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 13

Grand Bahama I. (26.6°N, 78.2°W) June 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.05	285				2.8	2.70
01		8.0	280				3.0	2.70
02		7.4	280				3.1	2.70
03		7.25	280				3.1	2.70
04		7.0	270				(3.1)	2.70
05		6.9	280				(3.2)	2.75
06		7.3	250		119	2.32	2.9	2.90
07	---	8.0	235	---	107	3.00	3.9	2.90
08	(350)	8.7	230	5.5	103	3.40	4.4	2.70
09	350	9.5	210	5.6	101	3.70	4.5	2.65
10	100	10.2	210	5.8	103	3.98	5.0	2.55
11	390	10.15	<215	5.8	103	4.00	5.2	2.55
12	380	10.25	220	5.8	103	4.05	5.0	2.60
13	385	10.3	210	5.8	105	4.05	5.0	2.60
14	380	10.3	(220)	5.9	105	4.00	4.5	2.60
15	300	10.05	(225)	5.6	<104	3.88	4.4	2.60
16	370	9.8	230	5.5	105	3.65	4.0	2.60
17	(370)	9.25	(215)	5.0	107	3.25	3.0	2.65
18	---	9.1	<265		111	2.70	3.8	2.70
19		9.05	270		---	----	3.5	2.75
20		8.6	<260				3.4	2.70
21		8.25	280				3.8	2.60
22		8.4	265				2.9	2.65
23		8.25	290				3.0	2.62

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 14

Okinawa I. (26.3°N, 127.8°E) June 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		10.5	310					2.60
01		10.5	295				2.0	2.70
02		9.5	270					2.75
03		8.75	<265				2.4	2.75
04		7.9	250				2.1	2.75
05		7.4	270					2.68
06		7.85	250		---	----		2.85
07		8.65	235	---	111	(4.00)	3.6	2.95
08	---	8.7	(230)	---	109	3.58	4.3	2.90
09	---	8.9	(230)	---	109	(4.00)	5.0	2.70
10	(415)	9.2	(220)	---	107	----	5.5	2.50
11	<450	10.0	(225)	6.2	107	----	6.0	2.45
12	(415)	10.5	(220)	6.4	107	----	5.3	2.50
13	405	11.15	(235)	(6.2)	107	----	6.2	2.50
14	410	11.7	<250	6.0	107	----	6.4	2.50
15	390	12.1	(245)	5.8	107	----	6.2	2.55
16	365	12.55	<245	---	109	----	6.6	2.65
17	340	12.2	<240	---	(109)	----	5.8	2.65
18	420	12.05	(250)	---	111	----	5.8	2.70
19		11.65	(270)				4.4	2.65
20		10.45	<300				4.6	2.52
21		10.1	(320)				3.8	2.40
22		10.2	335				3.6	2.45
23		10.25	330				3.0	2.50

Time: 135.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 15

Huancayo, Peru (12.0°S, 75.3°W) June 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.2	225					3.00
01		8.0	220					3.10
02		7.6	225					3.15
03		6.2	225					3.22
04		5.5	225					3.20
05		4.6	230					3.20
06		4.6	255		---	E		3.00
07		8.1	255		111	2.40	5.5	3.00
08		10.2	230		105	(3.10)	7.0	2.90
09		10.9	215		103	(3.55)	7.8	2.62
10		11.05	210		---	(3.80)	8.0	2.42
11	---	11.0	200		---	(4.00)	8.8	2.35
12	---	10.7	200		---	(4.00)	9.0	2.30
13	---	10.7	200		---	(4.00)	9.0	2.25
14	---	10.5	200		---	(3.80)	7.6	2.25
15	---	10.3	210		---	(3.55)	7.3	2.25
16	---	10.25	230		---	(3.10)	7.0	2.25
17		9.9	260		109	(2.48)	5.6	2.30
18		9.3	300		---	----		2.35
19		8.75	310					2.30
20		8.7	310					2.35
21		8.25	280					2.50
22		8.1	235					2.70
23		8.3	230					2.90

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 16

Lycksele, Sweden (64.6°N, 18.8°E) April 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		5.8	345				2.6	2.4
01		5.6	345		---	----	2.4	2.4
02		5.4	350		---	----	2.2	2.4
03		5.1	340		140	1.00	2.2	2.4
04	---	5.2	300	----	125	1.45	2.4	2.5
05	(390)	5.8	275	3.35	120	2.00	2.1	2.6
06	(365)	6.1	255	4.20	115	2.30	2.3	2.6
07	380	6.4	250	4.70	110	2.70		2.6
08	440	7.1	240	4.80	110	3.00		2.6
09	440	7.6	235	5.00	105	3.20		2.55
10	370	8.1	235	5.25	105	3.45		2.6
11	400	8.2	230	5.30	105	3.50		2.6
12	400	8.6	230	5.40	105	3.50		2.5
13	380	8.5	235	5.30	105	3.40		2.6
14	390	8.5	230	5.20	105	3.30		2.6
15	400	8.6	235	5.10	110	3.20		2.6
16	400	8.8	240	4.70	110	3.00		2.6
17	---	8.8	250	----	110	2.50	2.6	2.7
18	---	7.6	255		120	2.15	2.4	2.7
19		7.4	260		130	1.70	2.2	2.7
20		7.0	265		135	1.30	2.2	2.6
21		6.9	280		---	----	2.2	2.6
22		6.3	310				2.3	2.5
23		6.4	295				2.3	2.5

Time: 15.0°E.
Sweep: 0.33 Mc to 20.0 Mc in 6 minutes, automatic operation.
Occasionally, 1.4 Mc to 16.0 Mc in 6 minutes, automatic operation.

Table 17

Upsala, Sweden (59.8°N, 17.6°E) April 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		6.0	335				2.5	2.3
01		5.8	320		---	----	2.7	2.4
02		5.3	320		---	----	2.6	2.3
03		5.0	320		---	0.70	2.6	2.4
04		5.0	305	---	120	1.10	2.8	2.5
05	---	5.5	280	---	110	1.70	2.7	2.6
06	400	6.2	255	4.3	110	2.30	2.8	2.8
07	450	6.8	245	4.7	110	2.70		2.7
08	400	7.4	240	5.0	110	3.10		2.6
09	380	8.2	235	5.3	110	3.25		2.6
10	380	8.7	240	5.5	110	3.40		2.6
11	385	9.2	235	5.7	110	3.50		2.6
12	360	9.5	235	5.8	110	3.50		2.65
13	370	9.5	240	5.7	110	3.50		2.6
14	370	9.6	240	5.7	110	3.45		2.7
15	380	9.4	240	5.5	110	3.30		2.7
16	390	9.4	240	5.2	110	3.10		2.7
17	---	9.7	245	4.7	110	2.65		2.7
18		9.0	255		115	2.20	2.6	2.7
19		8.4	260		115	1.45	2.7	2.7
20		7.9	265		120	1.10	2.2	2.6
21		7.3	265		---	----	2.2	2.5
22		6.6	290				1.8	2.4
23		6.2	320				2.4	2.4

Time: 15.0°E.
Sweep: 0.3 Mc to 20.0 Mc in 3 minutes, automatic operation.
Occasionally, 1.4 Mc to 17.0 Mc in 6 minutes, automatic operation.

Table 18

Budapest, Hungary (47.4°N, 19.2°E) April 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		>6.0	345					
01		6.0	330					
02		>5.8	320					
03		5.8	315					
04	---	>5.9	295	---				
05	---	>6.3	260	---	130	2.4	3.0	
06	(325)	>7.3	250	4.3	125	3.0	3.4	
07	385	9.0	240	4.9	120	3.3		
08	440	10.2	240	5.2	120	3.6		
09	420	11.2	240	5.8	120	3.7		
10	375	>11.5	235	6.0	115	3.7		
11	375	11.5	250	6.2	120	3.8		
12	370	11.4	250	6.2	120	3.7		
13	350	11.4	250	6.2	120	>3.6		
14	(355)	11.0	250	(5.5)	120	3.4		
15	(340)	10.5	255	(5.0)	125	3.2		
16	---	9.6	260	---	130	2.8	3.4	
17		(8.0)	270		---	---		
18		>7.0	265					
19		>6.3	280					
20		(6.1)	290					
21		>5.8	320					
22		(6.0)	345					
23		>6.0	345					

Time: 0.0°.
Sweep: 1.0 Mc to 20.0 Mc in 35 seconds.

Table 19

Brisbane, Australia (27.5°S, 152.9°E) April 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.7	270					2.70
01		7.6	265				2.0	2.70
02		7.5	260					2.80
03		7.0	250				1.7	2.75
04		6.3	250					2.60
05		6.0	260					2.70
06		7.0	260			<1.70		2.85
07		10.9	230			2.50		3.15
08		12.8	230			3.10	3.3	3.15
09		13.9	230			3.50	3.7	3.15
10		13.8	225			3.80	4.0	2.95
11		13.8	220			3.90		2.85
12		13.4	220			3.90		2.80
13		13.8	225			3.95		2.75
14		13.5	230			3.80	3.8	2.75
15		12.8	240			3.50	3.8	2.80
16		12.3	240			3.00	3.5	2.80
17		12.0	240			2.40	2.0	2.85
18		11.2	240			<1.70	2.0	2.85
19		9.6	250					2.80
20		>9.0	250					2.80
21		8.9	250					2.80
22		8.5	250					2.80
23		8.0	260					2.75

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

Table 20

Kiruna, Sweden (67.8°N, 20.3°E) March 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		5.8	350				4.0	2.4
01		5.7	350				2.8	2.4
02		5.8	335				2.1	2.4
03		5.4	330		---	---	3.0	2.4
04		5.4	325		---	---		2.4
05		5.6	285		---	(1.4)		2.6
06		6.0	265		---	1.8		2.8
07		7.0	250		120	2.2		2.8
08		7.9	250		120	2.6		2.8
09	---	8.7	245	---	115	2.8		2.8
10	---	9.4	240	---	110	2.9		2.7
11	---	9.8	240	---	110	3.0		2.7
12	---	10.4	245	---	115	3.0		2.7
13	---	10.6	240	---	110	3.0		2.7
14	---	9.8	245	---	120	2.9		2.8
15		9.9	245		115	2.8		2.75
16		9.0	250		120	2.4		2.8
17		8.6	255		125	2.0	2.8	2.8
18		7.1	270		---	1.5	2.4	2.8
19		6.4	290		---	---	2.2	2.7
20		6.4	280				2.8	2.7
21		6.0	300				2.4	2.6
22		6.0	335				3.3	2.55
23		6.0	380				3.0	2.4

Time: 15.0°E.
Sweep: 0.8 Mc to 14.0 Mc in 30 seconds.

Table 21

Sodankyla, Finland (67.4°N, 26.6°E) March 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		---	355				3.4	----
01		---	340				3.6	----
02		---	335				2.6	----
03		(5.1)	330				2.6	(2.45)
04		---	320				3.0	----
05		(5.0)	310		---	----	2.4	(2.60)
06		(5.3)	200		---	E	2.3	(2.75)
07		(6.0)	260		140	1.90	2.6	(2.85)
08		7.3	250		120	2.35	3.9	2.90
09		8.8	250		115	2.65	3.9	2.90
10		9.4	240	---	115	3.00		2.85
11		9.8	250	---	115	3.20	4.0	2.85
12		10.8	235	---	120	3.15		2.80
13		11.0	245	---	115	3.00	4.0	2.80
14		11.2	240	---	115	2.95	4.0	2.85
15		11.2	235		115	2.90	4.0	2.85
16		11.0	240		120	2.70	3.9	2.90
17		10.1	240		125	2.35	4.0	2.90
18		9.5	250		155	1.90	3.2	2.90
19		10.3	255		---	E	3.0	2.95
20		(9.6)	265		---	----	3.0	(2.90)
21		---	270		---	E	2.9	----
22		---	290				3.0	----
23		---	320				2.6	----

Time: 30.0°E.
Sweep: 1.4 Mc to 22.0 Mc in 8 minutes, automatic operation.

Table 22

Lulea, Sweden (65.6°N, 22.1°E) March 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(6.0)	330				2.6	(2.4)
01		(5.6)	330					(2.4)
02		(5.5)	320				1.5	2.4
03		(5.2)	330					2.4
04		(5.3)	300		---	---		2.5
05		(5.6)	275		---	1.5		(2.6)
06		6.1	260		130	1.9		2.7
07		7.5	250		125	2.3		3.0
08	---	8.2	250	---	120	2.8		2.9
09	---	9.1	240	---	120	2.9		2.9
10	---	9.9	240	---	120	3.2		2.8
11	---	10.4	235	---	120	3.2		2.8
12	---	10.6	240	---	120	3.2		2.8
13	---	10.9	240	---	120	3.1		2.75
14	---	11.0	240		120	3.0		2.8
15	---	10.9	240		120	2.8		2.8
16	---	10.5	235		120	2.4		2.8
17		9.8	240		130	2.0		2.9
18		8.7	250		---	1.5		2.9
19		8.3	240		---	1.8		2.9
20		7.6	245		---	---		2.8
21		7.0	270		---	---		2.6
22		(6.8)	285					2.55
23		(6.1)	310					(2.4)

Time: 15.0°E.
Sweep: 0.65 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 23

Lycksele, Sweden (64.6°N, 18.0°E) March 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		(5.5)	320				2.2	(2.4)
01		5.4	305				2.2	2.4
02		5.3	320				2.2	2.4
03		5.0	320		---	----	2.3	2.45
04		4.8	305		---	E	2.1	2.5
05		5.0	280		---	E		2.6
06	---	5.5	260	----	140	1.40	2.2	2.7
07	---	7.2	250	----	130	2.10	2.2	2.8
08	---	8.3	245	----	120	2.50		2.8
09	(290)	9.1	240	4.40	120	2.70		2.8
10	(350)	9.5	230	4.90	110	2.95		2.8
11	350	9.8	235	5.30	110	3.05	3.0	2.8
12	325	10.2	235	4.60	110	3.10		2.8
13	350	10.5	235	5.50	110	3.05		2.8
14	(320)	10.5	235	5.45	115	2.90		2.8
15	---	10.8	235	(5.00)	115	2.70		2.9
16	---	10.0	240	----	120	2.40	2.6	2.8
17		9.5	245		130	1.90	2.1	2.85
18		8.7	250		140	1.35	2.2	2.8
19		8.2	240		---	E	2.2	2.8
20		7.6	245		---	----	2.2	2.7
21		(6.4)	255		---	----	2.3	2.6
22		6.4	285				2.4	2.6
23		(6.1)	290				2.2	2.6

Time: 15.0°E.
Sweep: 1.4 Mc to 16.0 Mc in 6 minutes, automatic operation.
Occasionally, 0.3 Mc to 20.0 Mc in 3 minutes, automatic operation.

Table 24

Nurmijarvi, Finland (60.5°N, 24.6°E) March 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.5						2.60
01		6.0						2.55
02		5.8						2.60
03		5.3						2.60
04		(4.9)						(2.50)
05		(4.8)						(2.65)
06		(5.3)						(2.70)
07		6.4				---		2.95
08		7.6				---		2.95
09		8.6				---		2.95
10		10.0		---		---		2.90
11		10.5		---		---		2.90
12		11.2		---		---		2.90
13		11.4		---		---		2.80
14		11.7		---				2.80
15		11.2		---				2.85
16		11.5						2.90
17		11.5						3.00
18		10.5						2.90
19		10.0						2.95
20		8.6						2.90
21		7.8						2.85
22		(6.3)						(2.60)
23		(6.4)						(2.70)

Time: 30.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 1 minute.

Table 25

Upsala, Sweden (59.8°N, 17.6°E) March 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		6.1	310				2.6	2.4
01		5.5	305				2.6	2.4
02		5.6	310				2.6	2.4
03		5.0	310				2.7	2.4
04		4.9	310		---	----	2.6	2.45
05		4.8	290		---	0.60	2.7	2.5
06	---	5.6	275	----	120	1.35	2.8	2.7
07	---	7.0	255	----	115	2.10	2.5	2.8
00	---	8.1	245	----	115	2.55	2.6	2.8
09	300	9.2	240	4.50	115	3.00	3.2	2.8
10	570	10.0	240	4.70	115	3.20	3.4	2.8
11	340	10.9	240	5.40	115	3.25	3.5	2.8
12	345	11.3	240	5.10	110	3.25	3.3	2.8
13	330	11.6	240	5.20	115	3.25		2.7
14	320	11.8	240	4.90	115	3.20		2.7
15	300	11.7	240	4.95	110	3.00		2.8
16	---	11.3	240	----	115	2.60		2.8
17	---	11.0	240	----	115	2.10	2.6	2.0
10		10.0	240		115	1.35	2.5	2.0
19		9.3	240		---	E	2.6	2.0
20		8.3	240		---	----	2.5	2.7
21		7.3	250				2.5	2.6
22		6.6	260				2.5	2.5
23		6.3	290				2.7	2.5

Time: 15.0°E.
Sweep: 0.3 Mc to 20.0 Mc in 3 minutes, automatic operation.
Occasionally, 1.4 Mc to 17.0 Mc in 6 minutes, automatic operation.

Table 26

Winnipeg, Canada (49.9°N, 97.4°W) March 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		5.9	280					2.8
01		5.6	290				2.2	(2.7)
02		5.2	300					(2.6)
03		5.0	300				2.8	---
04		5.0	300					(2.6)
05		4.6	300					(2.6)
06		4.8	290		---	---		---
07		5.8	260		115	2.0		(3.0)
08		7.0	240		100	2.5		3.1
09	---	8.0	220	---	100	3.0		3.0
10	---	9.0	210	---	100	3.3		2.9
11	---	10.0	210	---	100	3.5		2.9
12	---	10.3	210	---	100	3.6		2.8
13	(440)	10.2	210	---	100	3.6		2.7
14	---	10.7	210	---	100	3.6		2.7
15	---	10.0	220	---	100	3.4		(2.7)
16	---	11.0	220	---	100	3.2		(2.8)
17	---	10.8	230	---	100	2.8		(2.9)
18		10.7	230		110	2.2		---
19		10.2	220		---	---		---
20		9.2	220					(2.9)
21		7.7	240					(2.9)
22		7.1	240					2.9
23		6.2	250					2.9

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 27

Ottawa, Canada (45.4°N, 75.9°W) March 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		6.5	280					---
01		6.2	290					---
02		6.0	290					---
03		5.8	300					---
04		5.2	300					---
05		5.2	300					---
06		5.5	280		---	1.7		---
07		7.2	250		120	2.4		(3.0)
00		9.2	240		110	3.0		(3.0)
09	---	10.8	240	---	110	3.4		2.9
10	---	12.0	230	5.8	110	3.7		2.0
11	(300)	12.3	230	5.0	110	3.8		(2.8)
12	---	12.5	230	---	110	3.0		---
13	---	12.8	230	5.0	110	3.8		---
14	---	12.4	230	---	110	3.7		(2.7)
15	(340)	12.2	240	4.8	110	3.5		(2.7)
16	---	12.0	240	---	110	3.1		---
17	---	11.8	250	---	120	2.7		---
10		11.1	250		---	1.8		
19		10.2	240					
20		9.2	250					---
21		8.1	250					---
22		7.8	270					---
23		7.1	270					

Time: 75.0°W.
Sweep: 1.0 Mc to 20.0 Mc in 16 seconds.

Table 28

Wakkanai, Japan (45.4°N, 141.7°E) March 1959

Time	h'F2	fnF2	h'F	foF1	h'E	fnE	foEs	(M3000)F2
00		(7.2)	290					(2.60)
01		7.2	290					2.60
02		6.8	275					2.65
03		6.8	290					2.60
04		6.5	280					2.60
05		6.3	290			----		2.65
06	---	8.3	245	---		2.30		2.90
07	---	11.1	235	---		2.60		3.00
00		12.5	230			3.10		3.00
09		12.8	230			3.45		3.00
10		13.3	230			3.60		2.90
11		(13.4)	225			3.65		(2.90)
12		13.3	230			3.70		2.80
13		(13.2)	230			3.60		2.80
14		12.8	235			3.55		2.85
15		12.8	240			3.40		2.85
16		12.3	245			2.90		2.05
17		12.0	240			2.30		2.85
10		11.1	230					2.85
19		9.4	240					2.80
20		8.6	250					2.80
21		8.3	270					2.75
22		(7.8)	275					(2.75)
23		(7.4)	290					(2.65)

Time: 135.0°E.
Sweep: 1.0 Mc to 20.7 Mc in 1 minute.

Table 29

Monte Capellino, Italy (44.6°N, 9.0°E) March 1959

Time	h'F2	fnF2	h'F	fnF1	h'E	fnE	foEs	(M3000)F2
00		8.0	285					2.29
01		8.0	300					2.27
02		8.0	290					2.36
03		7.7	280					2.32
04		7.2	290					2.30
05		6.9	300					2.32
06		6.8	275					2.38
07		9.0	255			1.8		2.58
08		11.2	240			2.7		2.65
09		12.9	235			3.2		2.66
10		13.7	230			3.5	3.5	2.65
11		14.4	230			3.6	3.7	2.62
12		14.4	230			3.8		2.62
13		14.5	230			3.8		2.57
14		14.3	235			3.7		2.50
15		13.7	230			3.6		2.50
16		13.5	240			3.4		2.50
17		13.4	250			2.8		2.52
10		12.7	255			2.1	2.4	2.57
19		11.4	245				1.4	2.60
20		9.9	250					2.45
21		9.0	250					2.47
22		8.6	265					2.33
23		8.5	280					2.35

Time: 15.0°E.
Sweep: 1.0 Mc to 20.0 Mc in 5 minutes, automatic operation.

Table 30

Tokyo, Japan (35.7°N, 139.5°E) March 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(8.6)	285					2.60
01		(8.2)	295					(2.65)
02		7.8	265					2.70
03		7.2	260					2.65
04		6.6	290					2.50
05		6.4	300					2.60
06		8.2	255			----		2.85
07		(11.1)	235			(2.80)		(3.00)
00		12.6	230			3.25		2.95
09		13.3	230			(3.55)		2.90
10		13.7	230			(3.80)		2.80
11		14.4	235			(3.90)		2.75
12	---	14.4	245			(4.00)		2.70
13	---	14.4	245			4.00		2.70
14		14.2	240			(3.80)		2.60
15		14.0	245			(3.60)		2.65
16		13.4	250			3.25		2.70
17		12.9	250			----		2.75
18		12.2	250					2.75
19		(10.8)	250					(2.70)
20		(9.6)	255					2.70
21		(9.2)	260					(2.70)
22		(9.0)	275					(2.70)
23		8.8	295					2.65

Time: 135.0°E.
Sweep: 1.0 Mc to 20.0 Mc in 20 seconds.

Table 31

Ibadan, Nigeria (7.4°N, 3.9°E) March 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>9.3	260					2.70
01		10.0	250					(2.70)
02		9.9	245					2.90
03		9.2	235					(3.15)
04		8.2	215					3.20
05		6.5	210					3.30
06		7.0	250			1.85		3.10
07		(10.7)	245			2.95		3.05
08		12.9	235			3.50	7.0	2.80
09		>13.8	220			(3.90)	7.0	<2.45
10		>13.7	210			(4.15)	7.0	2.30
11		12.8	210			(4.30)	7.0	2.25
12		12.7	205			(4.30)	7.0	2.20
13		13.0	205			(4.20)	7.0	2.15
14		13.2	210			(4.10)	7.0	2.20
15		13.3	215			(3.80)	7.0	2.15
16		(13.4)	240			3.40	7.0	(2.10)
17		>12.8	255			(2.75)	3.8	<2.10
18		>11.4	305			1.65	2.8	<2.05
19		(9.0)	455					(1.85)
20		8.8	460					(2.05)
21		8.9	380					(2.25)
22		9.2	330					(2.30)
23		>9.2	285					<2.70

Time: 0.0°.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 32

Bogota, Colombia (4.5°N, 74.2°W) March 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		13.1	230					3.15
01		10.6	210				2.0	3.22
02		8.1	205				2.2	3.00
03		7.1	225				2.1	2.98
04		5.5	230				2.2	2.90
05		4.8	260				2.4	2.80
06		6.0	280		<156	(1.70)	2.8	2.85
07		10.1	240		115	2.70		3.00
08		12.7	230		109	3.40		2.90
09		13.9	220		105	3.80		2.85
10		14.5	220		109	4.10		2.75
11		15.2	210		106	4.25		2.65
12		15.6	210	---	107	4.35		2.60
13	---	15.9	210	---	105	4.30	4.4	2.55
14	(395)	15.6	220	---	105	4.10		2.55
15	(390)	15.45	(220)	---	105	3.85	4.2	2.55
16	---	15.0	235		109	3.45	3.8	2.55
17		14.75	250		<113	2.85	3.3	2.55
18		(14.3)	270		(143)	1.98	3.0	(2.62)
19		(15.5)	295				3.1	2.65
20		(16.9)	275				3.0	(2.70)
21		17.2	225				2.4	2.85
22		15.2	215				1.8	2.90
23		14.6	225				1.8	3.00

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 33

Bunia, Belgian Congo (1.5°N, 30.2°E) March 1959

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	12.0					1.6	2.68
01	240	>11.3					1.6	2.78
02	220	10.2					1.5	2.89
03	220	7.9					1.6	3.05
04	240	6.0			---	---	2.0	2.86
05	255	10.0	255	---	120	2.6	3.3	2.90
06	---	11.6	240	---	120	3.3	3.8	2.66
07	---	12.9	230	---	110	3.8		2.39
08	---	13.7	240	---	110	4.0		2.16
09	---	14.0	250	---	110	4.1		2.10
10	---	14.3	250	---	110	4.1		2.07
11	---	>14.3	250	---	110	4.1		<2.06
12	---	14.2	250	---	110	4.0		<2.06
13	(455)	14.1	240	---	110	3.8		2.04
14	490	>14.4	250	---	115	3.4		(2.06)
15	(485)	>14.4	260	---	120	2.9		(2.07)
16	---	14.3	300	---	---	---	2.6	(2.06)
17	400	(14.1)						(1.91)
18	380	----						----
19	300	----						----
20	240	----					2.0	----
21	230	----						----
22	220	----						----
23	250	12.1						2.56

Time: 0.0°.
Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Table 34

Singapore, British Malaya (1.3°N, 103.8°E) March 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		11.9	220				<1.1	2.65
01		11.1	250				<1.1	2.75
02		10.8	250				<1.0	2.80
03		10.0	250				<1.0	3.00
04		9.3	240				<1.1	3.10
05		7.6	225				<1.1	3.15
06		6.7	250		---	----	1.3	2.90
07		10.0	255		125	2.70	2.8	3.00
08		12.0	250		120	3.40		2.70
09		13.0	235		110	3.80		2.45
10		13.3	225		110	4.10		2.25
11		13.6	220		110	(4.25)		2.10
12		13.6	220		110	(4.40)		2.10
13		13.4	220		110	(4.30)		2.10
14		13.8	225		110	4.20		2.15
15		14.0	230		110	(3.95)		2.15
16		14.3	245		110	(3.60)		2.20
17		14.3	255		115	2.95		2.20
18		14.2	295		---	1.90		2.15
19		(13.7)	400				<1.6	2.10
20		(13.7)	395				<1.5	(2.20)
21		(14.3)	310				<1.6	(2.40)
22		(13.6)	250				<1.3	----
23		13.4	225				<1.2	2.70

Time: 105.0°E.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 35

Elisabethville, Belgian Congo (11.6°S, 27.5°E) March 1959

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	230	6.8						2.62
01	260	6.4						2.64
02	250	6.0					1.6	2.77
03	250	5.0					1.6	2.87
04	260	5.0			---	---	1.6	2.73
05	255	9.1	250	---	120	2.4		2.91
06	250	11.1	245	---	110	3.1		2.87
07	260	11.6	240	---	110	3.6		2.62
08	280	12.4	235	---	110	4.0		2.53
09	340	13.0	250	---	110	4.0		2.45
10	360	13.6	250	---	110	4.0		2.33
11	380	14.1	250	---	110	4.0		2.31
12	380	14.0	250	---	110	4.0		2.31
13	380	13.9	245	---	110	3.8		2.30
14	365	13.5	250	---	115	3.6	4.0	2.29
15	350	13.3	260	---	120	3.0	3.8	2.32
16	285	13.3	280	---	---	---	3.0	2.45
17	280	13.0					2.0	2.54
18	275	(12.8)						<2.61
19	250	12.7						2.57
20	240	12.6						2.64
21	240	11.8						<2.65
22	240	10.3						2.69
23	230	9.0						2.80

Time: 0.0°.
Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Table 36

Brisbane, Australia (27.5°S, 152.9°E) March 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.3	290					2.70
01		8.4	280					2.70
02		7.9	260					2.70
03		7.4	260					2.60
04		7.1	270					2.60
05		7.0	280					2.60
06		8.0	250			<2.00		2.85
07		>9.9	240			2.70	2.9	3.05
08		11.9	240			3.30	3.5	2.95
09		12.6	225			3.60	4.0	2.90
10		12.8	220			3.80		2.80
11		13.0	220			(3.90)	4.0	2.75
12		12.9	220			(4.00)		2.70
13		12.7	220			4.00		2.70
14		12.2	230			3.85		2.65
15		12.0	230			3.70		2.70
16		11.7	240			3.30		2.75
17		11.0	250			2.70	2.9	2.75
18		10.8	250			1.80	>1.9	2.75
19		>9.1	250					2.70
20		>9.0	270					2.60
21		8.6	280					2.60
22		8.8	280					2.65
23		8.6	290					2.70

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

Table 37

Hobart, Tasmania (42.9°S, 147.2°E) March 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>5.9	290					----
01		>5.5	280					(2.45)
02		>5.5	290					----
03		(5.5)	300					(2.45)
04		>4.5	300					(2.50)
05		>4.2	280					(2.50)
06		>4.3	280					2.60
07		>6.0	250			2.45		(2.80)
08		7.0	240			3.05		3.00
09		8.1	230			3.45		2.95
10		(9.6)	240			3.60	3.7	2.85
11		>10.4	230			3.65	4.0	2.80
12		10.8	230			3.80	4.0	2.75
13		(10.6)	220			3.80		2.70
14		10.7	230			3.80		2.70
15		>10.0	230			3.65		2.65
16		>9.6	240			3.35		2.65
17		>9.5	240			2.90		(2.65)
18		>9.0	250			2.30		(2.75)
19		9.0	250					(2.75)
20		7.5	250					(2.65)
21		>6.0	260					----
22		>6.0	280					----
23		>6.0	300					----

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

Table 38

[illegible] February 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		6.0	260		---	---		(2.5)
01		6.0	260		---	---		(2.65)
02		6.2	250		---	---		(2.7)
03		5.7	260		---	---		2.6
04		5.2	260		---	---		2.6
05		5.0	270		---	---		2.7
06		4.[illegible]	280		---	---		(2.[illegible])
07		4.[illegible]	260		110	1.4		2.6
08		5.[illegible]	270		110	1.6		(2.6)
09		6.2	260		115	1.6		(2.6)
10		7.0	250		110	1.7		2.7
11		7.0	250		110	1.7		2.7
12		7.2	260		100	1.9		(2.9)
13		7.0	250		110	1.9		2.7
14		7.[illegible]	250		110	1.9		(2.7)
15		7.0	270		110	1.9		(2.7)
16		(6.3)	260		110	1.7		(2.6)
17		7.2	260		---	1.[illegible]		2.7
18		7.0	250		---	1.2		(2.6)
19		6.6	260		---	1.1		(2.[illegible])
20		(6.1)	260		---	---		----
21		5.7	260		---	---		(2.45)
22		5.7	260		---	---		----
23		6.0	260		---	---		(2.7)

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 39

Lulea, Sweden (65.6°N, 22.1°E) February 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.1)	335				2.9	(2.5)
01		(5.2)	310				1.8	(2.55)
02		(4.8)	315					(2.6)
03		(5.2)	310					(2.6)
04		(4.9)	300					(2.7)
05		(5.0)	295					(2.7)
06		(4.8)	<295					(2.75)
07		(5.5)	260		---	(1.8)		(2.85)
08		7.0	260		---	2.1		2.9
09		8.5	255		---	2.6		3.0
10		9.2	250		145	<2.6		3.0
11		11.0	<250		125	2.7		3.0
12	---	12.3	245	---	130	2.6		2.9
13		12.8	245		140	2.7		2.9
14		11.7	230		140	2.5		2.9
15		11.2	240		150	2.2		3.0
16		9.0	<240		---	2.0		3.0
17		(5.7)	<250				2.8	(2.9)
18		(5.2)	290					2.8
19		(5.0)	270				2.1	(2.8)
20		(5.2)	260				2.6	(2.75)
21		(5.4)	315				2.0	(2.6)
22		(4.5)	335				2.8	(2.6)
23		(5.1)	325				2.4	(2.5)

Time: 15.0°E.
Sweep: 0.65 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 40

Lycksele, Sweden (64.6°N, 18.8°E) February 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		5.0	315				2.6	2.6
01		(5.2)	320				3.0	(2.5)
02		(4.7)	315				2.4	2.6
03		4.8	310		---	----	2.2	2.6
04		4.8	310		---	----		2.6
05		(4.7)	300		---	----		2.6
06		4.8	265		---	----		2.7
07		5.2	260		---	E	1.8	2.8
08		6.4	250		---	1.75		2.9
09	---	8.0	250	---	120	2.15	2.3	3.0
10	---	9.5	240	---	120	2.40		3.0
11	---	10.4	240	---	120	2.60		3.0
12	---	11.6	240	---	115	2.60		3.0
13	---	11.5	235		120	2.45		3.0
14		11.0	240		125	2.30		3.0
15		10.8	240		130	2.05	2.4	3.0
16		8.4	240		130	1.70		3.0
17		5.5	240		---	E	2.5	2.9
18		5.1	250		---	E		2.9
19		4.8	275		---	----	2.5	2.8
20		4.6	250				3.0	2.7
21		4.8	275				2.5	2.6
22		(4.8)	315				3.0	(2.5)
23		4.8	320				2.8	2.6

Time: 15.0°E.
Sweep: 1.4 Mc to 16.0 Mc in 6 minutes, automatic operation.
Occasionally, 0.3 Mc to 20.0 Mc in 3 minutes, automatic operation.

Table 41

Baker Lake, Canada (64.3°N, 96.0°W) February 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		(5.7)	260		---	---	4.0	
01		(5.4)	260		---	---	4.8	
02		(5.2)	260		---	---	4.4	
03		(5.0)	280		---	---	4.5	
04		(4.6)	290		---	---	4.0	
05		(4.0)	320		---	---	4.5	
06		(4.2)	300		115	2.1	3.8	
07		(4.2)	290		135	1.9	4.0	
08		5.0	280		120	2.0	4.0	---
09	---	5.4	270	---	110	2.2		
10	---	6.0	260	---	110	2.4		---
11	---	6.6	260	---	120	2.8		---
12	---	7.8	260	4.4	110	2.9		(2.8)
13	---	10.5	260	---	120	2.9		(2.8)
14	---	10.7	250	4.0	120	2.8		(2.85)
15	---	9.7	260	---	120	2.5		---
16	---	(7.8)	260	---	120	2.3		---
17		(7.2)	270		120	2.0		
18		(6.6)	260		---	1.7	2.4	
19		(6.0)	280		120	2.0	4.0	
20		(5.6)	280		135	1.6	4.5	
21		(6.0)	270		---	1.6	3.7	
22		(5.6)	270		---	---	5.6	
23		(5.8)	260		---	---	6.4	

Time: 90.0°W.
Sweep: 1.0 Mc to 16.0 Mc in 16 seconds.

Table 42

Churchill, Canada (58.8°N, 94.2°W) February 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		5.3	300		---	2.1	4.6	
01		5.2	300		---	---	5.2	
02		5.0	320		140	1.8	4.4	
03		4.7	330		125	2.0	3.9	
04		4.5	320		---	---	4.3	
05		4.5	340		125	2.4	4.0	
06		(4.8)	330		120	2.5	4.4	
07		(5.0)	330		120	2.2	3.8	
08	---	6.0	290	---	---	2.2	4.2	
09	---	7.0	270	---	120	2.6	4.0	---
10	---	7.6	250	---	125	2.8	4.3	---
11	---	8.5	270	---	115	3.1		---
12	---	9.5	260	---	120	3.0		---
13	---	11.4	250	---	120	3.0		(2.9)
14	---	12.0	250	---	120	3.0		---
15	---	11.4	250	---	120	2.7		---
16		9.8	260		120	2.4		---
17		9.0	280		120	2.0	2.0	---
18		7.0	270		130	1.6	3.8	---
19		6.0	280		130	1.8	3.5	
20		5.4	300		125	2.5	4.3	
21		6.1	300		125	2.3	4.3	
22		5.7	300		130	1.8	4.0	
23		5.0	280		---	1.6	5.5	---

Time: 90.0°W.
Sweep: 1.0 Mc to 17.0 Mc in 16 seconds.

Table 43

Inverness, Scotland (57.4°N, 4.2°W) February 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.1	320				<1.4	(2.40)
01		(4.4)	320				<1.4	2.50
02		(3.9)	325				<1.4	2.40
03		(4.2)	305				<1.3	<2.45
04		>4.0	300				(1.3)	2.45
05		4.4	295				<1.4	2.50
06		4.0	270				<1.5	2.45
07		4.6	270		---	----	<1.6	2.65
00		6.7	250		115	1.90		2.90
09		0.9	245		115	2.30		3.00
10		10.0	245		115	2.65		2.95
11		11.3	240		110	2.90		2.90
12		12.4	245		115	3.00		2.90
13		12.3	240		115	3.00		2.85
14		12.4	235		120	2.90		2.85
15		12.5	240		120	2.70		2.90
16		10.9	235		125	2.30		2.90
17		10.2	225		140	1.95		2.85
10		8.9	215				<1.6	2.90
19		7.0	235				<1.6	(2.75)
20		5.5	250				<1.6	2.60
21		(5.0)	260				<1.6	2.60
22		4.4	290				<1.6	2.50
23		>4.7	300				<1.6	2.45

Time: 0.0°.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 44

De Bilt, Holland (52.1°N, 5.2°E) February 1959

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	4.8					2.2	2.50
01	320	4.6					2.4	2.50
02	325	4.4					2.4	2.50
03	310	4.2					2.0	2.60
04	305	3.7					2.3	2.65
05	300	3.5					2.1	2.70
06	295	3.8						2.70
07	240	6.0			---	1.8	2.9	3.05
00	225	9.0	---	---	115	2.3	3.1	3.20
09	225	11.2	---	---	110	2.7	3.5	3.15
10	225	12.0	(225)	---	110	3.1	3.2	3.05
11	225	12.8	220	4.2	105	3.2	3.0	3.05
12	225	13.0	220	4.4	100	3.2	3.5	3.00
13	220	12.6	215	4.2	105	3.2	3.4	3.00
14	230	12.5	225	4.4	110	3.0	3.2	2.95
15	225	12.2	(225)	---	110	2.7		3.00
16	220	11.4			125	2.3	2.5	3.05
17	220	10.5			---	1.8	2.4	3.05
18	215	>8.5						3.00
19	225	7.2						3.00
20	240	6.0						2.85
21	250	5.8						2.75
22	280	5.2						2.70
23	295	5.0						2.60

Time: 0.0°.
Sweep: 1.4 Mc to 16.0 Mc in 40 seconds.

Table 45

Ottawa, Canada (45.4°N, 75.9°W) February 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		5.6	290					---
01		5.2	300					
02		5.2	300					
03		5.1	300					---
04		4.9	290					---
05		4.6	280					
06		4.4	280					
07		5.5	270		---	1.7		---
08		0.2	240		110	2.5		---
09	---	10.2	230	---	110	3.0		---
10	---	11.6	230	---	110	3.3		---
11	---	12.6	230	---	115	3.5		---
12	---	12.9	230	---	110	3.6		---
13	---	12.9	230	---	110	3.5		---
14	---	13.0	230	---	115	3.3		---
15		13.2	240		110	3.1		---
16		13.0	240		110	2.0		
17		12.6	230		130	2.1		
18		11.7	230		---	---		
19		9.8	230					
20		8.8	240					---
21		7.4	250					---
22		6.5	260					---
23		6.0	270					

Time: 75.0°W.
Sweep: 1.0 Mc to 20.0 Mc in 16 seconds.

Table 46

Wakkanai, Japan (45.4°N, 141.7°E) February 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.4	300					2.70
01		5.3	300					2.60
02		5.3	305					2.65
03		5.1	290					2.70
04		5.0	265					2.70
05		4.9	295					2.65
06		5.0	275					2.85
07		0.1	240			2.10		3.05
08		11.0	230			2.65		3.10
09		12.8	225			3.00		3.10
10		13.3	230			3.40		3.05
11		(13.5)	235			3.50		3.05
12		(13.3)	230			3.55		2.95
13		12.8	230			3.45		2.90
14		12.3	235			3.25		2.90
15		12.0	240			2.90		2.90
16		11.4	235			2.35		2.85
17		10.6	235			----		2.90
18		9.4	240					2.95
19		7.9	225					2.90
20		6.6	250					2.80
21		6.2	270					2.80
22		5.9	290					2.75
23		5.7	300					2.70

Time: 135.0°E.
Sweep: 1.0 Mc to 20.7 Mc in 1 minute.

Table 47

Monte Capellino, Italy (44.6°N, 9.0°E) February 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.6	275					2.36
01		6.6	275					2.33
02		6.6	285					2.32
03		6.4	290					2.28
04		6.0	280					2.36
05		5.8	275					2.36
06		5.2	275					2.36
07		5.8	265					2.44
00		10.8	230			1.9		2.65
09		13.5	225			2.7		2.72
10		14.6	225			3.2		2.70
11		15.4	225			3.4		2.68
12		15.1	225			3.6		2.69
13		14.8	230			3.6		2.60
14		14.5	225			3.4		2.61
15		14.4	235			3.2		2.58
16		13.9	235			3.0		2.62
17		13.2	240			2.3	2.7	2.60
10		11.3	230				1.0	2.62
19		10.0	230				1.6	2.53
20		9.0	230					2.56
21		8.0	245					2.44
22		7.5	255					2.40
23		6.9	265					2.42

Time: 15.0°E.
Sweep: 1.0 Mc to 20.0 Mc in 5 minutes, automatic operation.

Table 48

Tokyo, Japan (35.7°N, 139.5°E) February 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.3	290					2.70
01		5.9	300					2.65
02		5.5	285					2.55
03		5.4	300					2.65
04		5.0	295					2.60
05		4.9	300					2.60
06		5.3	260					2.70
07		9.2	240			2.35		3.15
00		11.6	230			3.00		3.10
09		13.4	230			3.30		3.05
10		13.6	230			3.55		2.95
11		14.2	230			3.70	3.8	2.85
12	---	14.4	230			(3.80)		2.80
13	---	14.1	230			3.75	3.8	2.75
14		13.4	230			3.65		2.70
15		12.8	240			3.30		2.70
16		12.6	245			(2.90)		2.75
17		11.8	240					2.80
10		(10.8)	240					(2.80)
19		9.6	245					2.85
20		8.3	245					2.80
21		(7.4)	260					2.65
22		7.0	280					2.60
23		6.5	290					2.65

Time: 135.0°E.
Sweep: 1.0 Mc to 20.0 Mc in 20 seconds.

Table 49

Yamagawa, Japan (31.2°N, 130.6°E) February 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.3	250					2.80
01		7.1	250					2.75
02		6.4	250					2.80
03		6.0	250					2.85
04		5.5	230					2.90
05		4.6	250					2.70
06		4.4	260					2.75
07		6.7	250			----		3.00
08		10.6	230			2.55		3.30
09		12.8	225			3.15		3.20
10		13.8	225			3.50	3.7	3.10
11		13.9	225			3.70	4.0	3.00
12		14.5	220			3.80	4.4	2.90
13		14.6	225			3.90	4.1	2.85
14		14.1	220			3.80	4.0	2.80
15		14.0	225			3.60	3.7	2.75
16		13.8	230			3.25	3.2	2.80
17		13.5	240			2.60		2.85
18		13.1	235			----	1.6	2.90
19		12.4	230				2.4	2.90
20		11.2	240					2.85
21		(10.3)	220				2.0	(2.80)
22		9.0	245				2.2	2.80
23		(8.7)	250					(2.80)

Time: 145.0°E.
Sweep: 1.0 Mc to 20.0 Mc in 1 minute.

Table 50

Macau (22.2°N, 113.6°E) February 1959

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	335	15.0						2.50
01	330	(15.0)						(2.60)
02	330	14.0						2.60
03	300	13.0						2.40
04	300	(7.5)						(2.05)
05	330	6.0						2.05
06	400	5.9						2.05
07	410	7.8						2.05
08	370	12.0						2.35
09	350	13.5	---	---	---	---		2.40
10	370	14.2	375	---	---	---		2.35
11	500	14.6	370	8.8	---	---		2.30
12	570	14.8	365	9.0	---	---		2.20
13	600	15.0	365	8.5	---	---		2.15
14	600	15.0	370	8.5	---	---		2.10
15	600	15.0	370	8.2	---	---		2.10
16	590	15.0	360	8.0	---	---		2.15
17	530	15.0	365	9.0	---	---		2.15
18	480	15.0	375	---			4.0	2.20
19	400	14.9					3.0	2.25
20	400	14.8						2.25
21	360	14.8						2.50
22	300	15.0						2.60
23	320	14.8						2.55

Time: 120.0°E.
Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 51

Ibadan, Nigeria (7.4°N, 3.9°E) February 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		9.4	250				1.2	2.75
01		9.0	245					2.75
02		9.0	240					2.90
03		9.3	220					3.10
04		7.9	215					3.20
05		6.4	210					3.40
06		6.0	250			1.60		3.00
07		>10.1	245			2.70	3.9	(3.10)
08		11.8	235			3.35	7.0	2.80
09		12.8	215			3.75	8.5	2.50
10		12.8	210			(4.00)	8.8	2.30
11		12.4	200			(4.20)	8.4	2.25
12		12.6	200			(4.30)	8.6	2.20
13		12.6	200			(4.20)	7.0	2.15
14		12.6	205			4.00	7.0	2.20
15		12.6	220			3.75	7.0	2.10
16		12.6	240			3.30	7.0	(2.10)
17		(12.0)	260			2.65	3.7	(2.15)
18		>11.4	305			1.60	2.7	<2.10
19		9.6	410					1.90
20		8.8	400					2.10
21		9.7	345					(2.45)
22		8.9	300					2.50
23		9.4	250					(2.60)

Time: 0.0°.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 52

Falkland Is. (51.7°S, 57.8°W) February 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.7	330				3.0	2.30
01		8.3	340				3.1	2.30
02		7.9	345				2.2	2.30
03		7.4	345				1.9	2.30
04		7.3	350		---	1.30		2.30
05		7.6	295	---	---	1.75	2.1	2.30
06		8.7	250	---	115	2.40	3.0	2.40
07		9.2	250	---	110	2.90	3.8	2.50
08		10.0	245	5.8	105	3.30	4.5	2.50
09		11.0	245	---	105	3.50	5.1	2.70
10	395	11.4	225	5.9	100	3.70	5.1	2.55
11	---	11.6	235	---	100	3.80	5.3	2.60
12	375	12.0	235	6.3	100	3.90	5.0	2.55
13	395	12.2	240	6.6	100	3.85	4.6	2.60
14		11.6	235	---	100	3.80	4.3	2.65
15		11.6	245	---	100	3.60	4.2	2.70
16		10.7	250		105	3.40	4.9	2.70
17		10.0	250		105	3.00	4.2	2.80
18		9.8	255		110	2.50	4.8	2.90
19		9.2	260		---	1.60	3.8	2.70
20		8.6	265		---	----	3.4	2.60
21		8.7	300				3.3	2.30
22		8.8	340				3.8	2.30
23		8.8	320				3.7	2.30

Time: 60.0°W.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 53

Sodankyla, Finland (67.4°N, 26.6°E) January 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		---	345				4.0	----
01		---	330				4.0	----
02		---	330				4.0	----
03		(4.5)	320				3.5	(2.65)
04		(3.8)	330				3.2	(2.60)
05		(4.0)	300				3.5	(2.65)
06		(4.8)	270				3.5	(2.70)
07		4.4	280				3.3	2.85
08		4.3	265				3.3	2.80
09		5.4	250		---	E	3.8	2.90
10		7.9	245		---	1.60	4.0	2.95
11		10.4	240		165	2.05	4.2	3.00
12		12.4	240		155	2.10	4.0	3.05
13		12.9	230		140	2.10	4.0	3.05
14		12.4	230		160	1.90	4.0	3.05
15		11.6	225		180	1.70	3.9	3.05
16		10.6	225		---	E	4.0	3.05
17		8.6	240		---	E	3.8	3.00
18		7.9	240				3.5	3.00
19		5.2	290				3.4	2.80
20		(4.6)	300				3.9	(2.85)
21		---	320				3.7	----
22		---	340				4.0	----
23		---	330				4.0	----

Time: 30.0°E.
Sweep: 1.4 Mc to 22.0 Mc in 8 minutes, automatic operation.

Table 54

Lulea, Sweden (65.6°N, 22.1°E) January 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		---	305					---
01		(6.0)	305					(2.6)
02		(4.7)	310					(2.5)
03		(6.1)	305					(2.5)
04		(5.8)	300					(2.55)
05		(4.9)	270					(2.65)
06		(4.4)	265					(2.75)
07		4.4	265					2.7
08		5.8	255					2.8
09		8.2	250		---	---		2.85
10		10.6	250		---	---		2.9
11		12.5	245		---	---		2.8
12	---	13.5	240	---	---	---		2.8
13		13.0	240		---	---		2.7
14		12.2	235		---	---		2.9
15		11.6	225					2.9
16		10.0	225					2.85
17		(8.0)	245					(2.8)
18		5.7	250					2.8
19		5.4	255					2.8
20		4.7	270					(2.7)
21		2.9	305					(2.5)
22		(2.9)	325					---
23		---	335					---

Time: 15.0°E.
Sweep: 0.65 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 55

Lycksele, Sweden (64.6°N, 18.8°E) January 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		4.2	320		---	----	2.8	2.6
01		4.3	315		---	----	2.7	2.6
02		4.5	325		---	----	2.4	2.6
03		4.0	325		---	----	2.3	2.6
04		5.0	300		---	----	2.3	2.65
05		5.0	270		---	----	2.2	2.75
06		4.6	260		---	----	2.2	2.8
07		4.4	265		120	0.95	2.2	2.8
08		5.1	250		---	----	2.3	2.8
09		7.5	245		120	1.50	2.5	3.0
10		9.8	240		105	1.90	2.7	3.1
11		11.9	240		110	2.00	2.7	3.1
12	---	12.2	235	---	110	2.10	2.8	3.1
13		12.3	230		105	2.10	2.7	3.15
14		12.0	225		105	1.85	2.7	3.1
15		11.0	225		130	1.35	2.6	3.1
16		9.7	220		---	(1.00)	2.5	3.0
17		7.1	225		---	----	2.3	3.0
18		6.6	230		---	----	2.4	2.9
19		5.3	250		---	----	2.2	2.9
20		4.8	260		---	----	2.4	2.9
21		(4.6)	290		---	----	2.3	(2.7)
22		(4.5)	315		---	----	2.3	2.7
23		4.3	315		---	----	3.0	2.5

Time: 15.0°E.
Sweep: 0.33 Mc to 20.0 Mc in 3 minutes.

Table 56

Nurmijarvi, Finland (60.5°N, 24.6°E) January 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.0						2.70
01		3.8						2.70
02		3.2						(2.80)
03		3.0						2.60
04		2.8						2.80
05		3.0						2.75
06		3.2						2.80
07		3.2						2.80
08		4.2						2.75
09		7.3						3.00
10		10.4						3.20
11		12.5						3.10
12		13.4						3.10
13		13.6						3.10
14		13.4						3.10
15		13.0						3.10
16		12.4						3.10
17		11.0						3.10
18		9.0						3.05
19		7.2						3.00
20		5.3						2.90
21		5.0						2.80
22		4.5						2.80
23		4.0						2.70

Time: 30.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 1 minute.

Table 57

Oslo, Norway (60.0°N, 11.1°E) January 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.2	315					2.55
01		3.2	300					2.55
02		2.9	315					2.55
03		2.9	330					2.45
04		2.9	310					2.40
05		3.2	290					2.60
06		3.1	265					2.70
07		3.2	285					2.70
08		4.6	250					2.70
09		8.0	250		115	1.90		2.85
10		10.6	240		130	2.25		2.85
11		11.6	240		130	2.60		2.05
12	---	12.3	240	---	130	2.75		(2.05)
13	---	(12.2)	240	---	135	2.60		(2.05)
14	---	(13.0)	240	---	135	2.60		(2.05)
15		12.2	235		135	2.20		2.05
16		12.4	220		---	1.90		2.85
17		9.0	220					2.85
18		7.2	220					2.00
19		4.9	240					2.00
20		4.9	250					2.80
21		4.8	260					2.60
22		4.2	285					2.55
23		3.6	300					2.55

Time: 15.0°E.
Sweep: 0.7 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 58

Inverness, Scotland (57.4°N, 4.2°W) January 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.0	300				(1.2)	2.50
01		3.9	315				<1.1	2.45
02		3.8	330				<1.1	2.35
03		3.7	320				<1.1	2.40
04		3.7	300				(1.2)	2.50
05		3.6	275				<1.4	2.60
06		3.4	250				<1.6	2.65
07		3.2	260				<1.6	2.50
08		5.2	245				<1.5	2.65
09		0.0	235		115	1.90		3.00
10		11.4	230		125	2.40		3.05
11		13.2	225		120	2.70		3.10
12		13.7	225		120	2.80	<3.0	3.00
13		>14.0	230		120	(2.85)	<3.0	3.00
14		14.0	225		125	2.70		3.00
15		13.1	220		135	2.30		3.00
16		>12.0	220		125	2.00		2.95
17		(10.7)	220		---	----	<1.6	2.90
18		8.8	220				<1.6	2.90
19		7.4	235				<1.6	2.80
20		5.9	250				<1.6	2.75
21		>5.0	250				<1.6	2.60
22		4.7	275				<1.6	2.55
23		4.0	300				<1.6	2.50

Time: 0.0°.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 59

De Bilt, Holland (52.1°N, 5.2°E) January 1959

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	4.0						2.70
01	310	3.7						2.50
02	320	3.4						2.50
03	310	3.3						2.60
04	300	3.4						2.80
05	280	3.3						2.75
06	270	3.1						2.05
07	230	4.7						2.00
08	210	9.2			170	2.0	2.3	3.20
09	210	11.5	---	---	115	2.6		3.25
10	210	12.9	---	---	110	2.9		3.20
11	210	13.5	(210)	4.9	110	3.1		3.20
12	210	13.5	(210)	---	110	3.1		3.05
13	210	13.4	---	---	110	3.0		3.05
14	210	13.2	---	---	110	2.8		3.10
15	210	12.3	---	---	115	2.4		3.10
16	210	11.5	---	---	---	1.7		3.10
17	205	9.4						3.00
18	210	7.9						3.05
19	220	6.3						2.95
20	240	5.7						2.85
21	260	4.7						2.80
22	280	4.6						2.70
23	295	4.3						2.70

Time: 0.0.
Sweep: 1.4 Mc to 16.0 Mc in 40 seconds.

Table 60

Ottawa, Canada (45.4°N, 75.9°W) January 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		5.5	270					---
01		5.0	280					---
02		5.0	280					---
03		4.9	270					---
04		4.8	270					---
05		4.4	270					
06		4.2	270					---
07		4.5	250					
00		7.0	240		120	2.2		---
09		11.0	230		115	2.8		
10		12.8	230		115	3.2		---
11		13.5	230		110	3.4		---
12		13.8	230		110	3.5		---
13		13.5	230		110	3.5		---
14		13.2	240		110	3.3		---
15		13.4	240		110	3.0		---
16		13.0	230		120	2.5		---
17		12.5	230		---	1.8		
18		11.2	230					
19		9.5	230					---
20		8.2	240					---
21		7.4	250					---
22		6.5	250					---
23		5.9	260					---

Time: 75.0°W.
Sweep: 1.0 Mc to 20.0 Mc in 16 seconds.

Table 61

Wakkanai, Japan (45.4°N, 141.7°E) January 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.1	320					2.70
01		3.9	315				2.5	2.70
02		3.8	300				3.0	2.70
03		3.6	295					2.65
04		3.6	290					2.70
05		3.6	285					2.70
06		3.6	270					2.85
07		6.4	245			----	3.0	3.05
08		10.8	235			2.50	3.0	3.10
09		13.2	235			2.95		3.10
10		13.8	235			3.20		3.15
11		13.8	230			3.50		3.05
12		12.8	230			3.50		2.95
13		12.5	230			3.30		2.90
14		11.8	235			3.00		2.90
15		11.2	230			2.65		2.90
16		10.4	235			2.20		2.90
17		9.5	230					2.95
18		8.0	230					3.00
19		6.4	225					3.00
20		5.3	260				2.9	2.85
21		4.9	290					2.80
22		4.5	295					2.75
23		4.3	300					2.75

Time: 135.0°E.
Sweep: 1.0 Mc to 20.7 Mc in 1 minute.

Table 62

Akita, Japan (39.7°N, 140.1°E) January 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.6	290					2.70
01		4.5	295				2.4	2.65
02		4.2	295				2.2	2.65
03		4.0	300					2.60
04		4.0	300					2.60
05		3.9	300					2.60
06		4.0	270					2.85
07		7.0	245			[illegible]		3.10
08		11.2	240			2.55		3.20
09	---	13.7	245			3.10	3.6	3.10
10	---	14.5	245			3.50		3.10
11	---	14.2	240			3.60		2.95
12	---	13.2	240			3.60		2.85
13	---	12.3	240			3.55		2.80
14	---	12.2	245			3.30		2.80
15		11.4	245			2.90		2.85
16		10.8	245			2.30		2.90
17		10.2	245				3.6	2.90
18		8.8	240				3.4	3.00
19		7.3	220				3.1	3.10
20		5.7	240					2.85
21		5.3	260					2.75
22		5.2	280				2.1	2.75
23		5.0	275				2.5	2.75

Time: 135.0°E.
Sweep: 1.0 Mc to 20.0 Mc in 20 seconds.

Table 63

Tokyo, Japan (35.7°N, 139.5°E) January 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.0	295					2.75
01		4.9	300					2.70
02		4.4	300					2.70
03		3.9	305					2.60
04		3.8	345					2.45
05		3.8	350					2.50
06		4.0	300					2.70
07		7.8	250					3.05
08		11.5	240			2.80		3.05
09		13.5	245			(3.25)	3.4	3.00
10	---	14.4	245			3.50	3.6	2.95
11		14.2	240			3.70		2.85
12		13.4	245			3.80		2.70
13		13.0	240			3.75		2.70
14		12.7	245			(3.50)		2.65
15		12.0	250			3.15		2.70
16		11.3	250					2.75
17		10.9	250					2.80
18		9.7	245					2.90
19		(8.3)	245					(2.90)
20		6.9	250					2.85
21		6.3	280					2.70
22		6.2	290					2.70
23		5.4	275					2.75

Time: 135.0°E.
Sweep: 1.0 Mc to 20.0 Mc in 20 seconds.

Table 64

Yamagawa, Japan (31.2°N, 130.6°E) January 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.7	245					2.90
01		5.7	250					2.80
02		5.1	250					2.95
03		4.5	250				1.4	2.80
04		4.0	250					2.75
05		3.7	315					2.60
06		3.7	300					2.65
07		5.9	255					2.90
08		10.5	230			2.95		3.30
09		12.8	230			3.05		3.20
10		14.0	230			3.40	4.4	3.00
11		14.2	225			3.70	4.4	2.90
12		13.6	225			3.90	4.2	2.85
13		14.0	227			3.90	4.2	2.75
14		13.6	225			3.90	4.0	2.70
15		13.5	240			3.50	4.5	2.75
16		13.1	240			3.05	4.5	2.75
17		12.5	240			2.40	4.1	2.85
18		12.0	230				4.0	2.95
19		11.0	230				3.2	2.95
20		10.0	225				2.8	3.00
21		(8.9)	220				2.7	(2.90)
22		(8.2)	240				2.6	(2.80)
23		7.8	250				2.4	2.90

Time: 135.0°E.
Sweep: 1.0 Mc to 20.0 Mc in 1 minute.

Table 65

Ibadan, Nigeria (7.4°N, 3.9°E) January 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.8	265					2.70
01		8.8	265				1.4	2.70
02		8.9	255				1.3	2.80
03		8.9	245				1.4	2.90
04		8.6	225				1.2	3.10
05		6.7	215					3.20
06		6.6	250		130	1.65		2.90
07		(9.8)	245		115	2.80	5.5	(3.00)
08		11.6	235		105	3.45	6.9	2.70
09		12.2	220		105	3.90	8.9	2.30
10		12.2	220		105	(4.10)	11.3	2.20
11		11.8	210		105	(4.30)	11.2	2.10
12		11.9	210		105	(4.40)	11.3	2.05
13		11.4	210		105	(4.30)	11.2	2.05
14		11.4	220		105	4.10	11.1	2.00
15		11.6	230		105	3.80	8.8	2.05
16		(11.7)	245		105	3.40	8.5	2.05
17		(11.3)	270		115	2.65	3.8	(2.05)
18		>10.2	320		---	1.55	3.2	(2.00)
19		9.0	425		---	----		2.00
20		9.0	420					(2.25)
21		8.9	370					<2.45
22		8.8	320					2.55
23		9.0	270					<2.60

Time: 0.0°.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 66

Watheroo, W. Australia (30.3°S, 115.9°E) January 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.9	(275)				3.6	<2.90
01		6.7	<290				3.4	2.70
02		>6.5	<305				3.3	(2.60)
03		6.5	<300				2.1	(2.70)
04		>6.0	<300				1.9	<2.75
05		(5.8)	300				3.0	----
06	---	6.5	270	---		2.20		2.90
07	---	6.4	250	4.5		3.00	3.5	2.80
08	(400)	7.0	240	5.7		3.50	4.0	2.50
09	485	7.2	250	5.8		3.80	4.0	(2.50)
10	400	7.4	250	6.2		4.00		(2.40)
11	430	7.5	(250)	6.4		4.00	4.4	(2.60)
12	435	7.5	(255)	6.4		4.10	5.2	(2.60)
13	430	>7.8	<260	6.2		(4.30)	4.4	(2.45)
14	440	7.7	<260	6.3		4.10	4.4	(2.40)
15	425	8.2	<260	6.2		4.00	4.3	<2.65
16	445	7.5	(250)	6.0		3.85	4.3	2.60
17	430	7.7	(245)	5.6		3.50	4.0	(2.65)
18	---	7.0	250	---		2.90	4.3	(2.60)
19		(7.0)	(280)			----	2.1	(2.60)
20		(7.0)	(295)					(2.80)
21		>7.0	<300					(2.70)
22		(7.0)	<300				2.3	(2.70)
23		6.9	<300				>3.6	<2.80

Time: 120.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 45 seconds.

Table 67

Christchurch, New Zealand (43.6°S, 172.8°E) January 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(8.3)	300				3.0	(2.40)
01		(7.3)	300				3.3	(2.35)
02		(6.7)	300				3.4	(2.30)
03		6.4	320				2.3	(2.30)
04		5.9	300		---	---	<1.8	2.35
05		5.6	300		110	1.4	2.5	2.50
06	---	6.2	260	---	105	2.5	2.7	2.60
07	---	7.1	250	---	105	3.0	3.6	2.65
08	400	8.1	250	5.4	100	3.5	4.5	2.60
09	380	(8.4)	230	5.6	100	3.8	4.4	2.60
10	410	8.2	230	6.0	100	4.0	4.9	2.55
11	420	8.9	230	6.0	100	4.2	4.5	2.50
12	450	8.5	230	6.2	100	4.3	4.5	2.50
13	450	8.4	220	6.2	100	4.3	5.0	2.45
14	450	8.3	240	6.0	100	4.2	4.6	2.50
15	450	8.2	230	6.0	100	4.0	4.2	2.50
16	450	8.2	240	5.8	100	4.0		2.50
17	420	8.2	240	5.5	105	3.6	3.8	2.55
18	390	8.0	250	5.0	105	3.2	3.9	2.55
19		7.7	260		120	2.7	3.5	2.55
20		(7.7)	300		---	---	3.2	(2.40)
21		(8.4)	300				3.5	(2.40)
22		---	300				3.5	----
23		(8.3)	300				3.2	(2.70)

Time: 180.0°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 68

Falkland Is. (51.7°S, 57.8°W) January 1959

Time	h'F2	foF2	h'F	foF1	h'E	fnE	foEs	(M3000)F2
00		9.6	340				3.1	2.20
01		9.4	310				3.1	2.30
02		9.0	315				2.7	2.30
03		8.8	345		---	----	2.3	2.30
04	---	9.3	310	---	---	1.75	3.0	2.20
05	455	9.9	260	4.2	115	2.40	3.1	2.20
06	450	10.7	255	4.8	110	2.95	3.6	2.20
07	460	10.9	250	5.3	105	3.40	4.3	2.20
08	450	10.8	245	5.9	105	3.70	5.4	2.20
09	450	11.1	240	5.9	100	3.90	5.8	2.20
10	435	11.5	240	6.2	100	4.00	5.6	2.35
11	415	11.6	235	6.2	100	4.10	5.8	2.35
12	400	11.7	230	6.3	100	4.10	5.9	2.35
13	410	11.1	240	6.3	100	4.10	4.9	2.35
14	415	10.2	230	6.1	100	4.05	4.6	2.40
15	415	9.4	240	5.9	100	3.90	4.8	2.50
16	400	8.9	250	5.8	100	3.70	5.0	2.50
17	400	8.6	250	---	105	3.40	5.8	2.55
18		8.3	255		110	2.90	5.8	2.55
19		8.1	275		110	2.30	5.0	2.50
20		8.0	300		---	1.50	4.2	2.40
21		8.7	340		---	----	3.6	2.20
22		9.1	345		---	----	3.7	2.20
23		9.4	350				3.1	2.20

Time: 60.0°W.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 69

Cape Hallett (72.3°S, 170.3°E) January 1959

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	(480)	(5.1)	285	---	104	2.3	2.4	(2.30)
01	(490)	(4.8)	275	(3.5)	103	2.3	<2.5	(2.40)
02	(470)	5.2	280	(3.5)	105	2.4	2.8	2.45
03	(595)	(5.0)	280	3.8	105	2.5	3.2	(2.50)
04	620	5.0	270	3.8	103	2.7	<3.0	2.25
05	660	5.5	255	4.3	102	3.0	3.3	2.25
06	525	5.8	250	4.6	101	3.2		2.35
07	475	(6.2)	250	4.7	101	3.5		2.40
08	475	6.4	235	4.8	101	3.5		2.30
09	470	6.8	230	5.0	101	3.6		2.35
10	480	6.7	225	5.0	101	3.6		2.35
11	530	6.7	220	5.0	101	3.6	4.4	2.30
12	530	6.5	215	5.0	101	3.7	3.8	2.25
13	520	6.6	220	5.1	101	3.6	<4.0	2.30
14	530	6.2	220	5.1	101	3.6	4.6	2.30
15	495	6.2	220	5.0	101	3.6	5.5	2.35
16	505	6.3	235	4.8	101	3.5	5.0	2.35
17	480	6.4	235	4.6	101	3.3	4.4	2.30
18	470	6.6	245	4.5	102	3.1		2.35
19	470	6.2	250	4.2	103	2.9		2.35
20	450	6.4	260	4.0	105	2.6		2.40
21	435	6.0	270	3.7	105	2.4		2.40
22	(440)	5.5	285	(3.4)	105	2.3		2.40
23	(565)	(5.0)	285	3.4	103	2.2		2.30

Time: 165.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 70

Chiclayo, Peru (6.8°S, 79.8°W) December 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(10.0)	310				4.4	(2.45)
01		9.05	295				4.6	2.58
02		8.8	280				4.4	2.70
03		8.3	255				4.0	2.85
04		7.6	240				3.9	3.00
05		6.7	240				4.0	3.05
06		7.6	265		<159	1.85	2.8	2.80
07		11.4	260		121	2.75	3.7	2.80
08		13.5	245		119	3.40	3.9	2.75
09		14.1	235		119	3.85	4.0	2.60
10	---	14.5	230		119	4.00		2.35
11	---	14.6	225	---	119	----		2.15
12	---	14.2	(230)	(7.2)	119	----		2.10
13	---	>14.0	(225)	6.7	119	----		2.05
14	(530)	>13.8	(230)	6.6	119	----	>4.0	2.00
15	---	13.3	(230)	(6.0)	119	----	3.8	2.10
16	---	12.85	<250	---	121	3.60	4.0	2.15
17	---	12.9	265		121	3.15	4.2	2.15
18		13.0	285		(125)	2.40	3.7	2.20
19		12.6	315				2.1	2.25
20		>12.0	370					2.20
21		>12.0	(350)				1.8	(2.20)
22		(11.9)	(335)				2.4	(2.28)
23		11.1	(325)				3.3	(2.30)

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 71

Natal, Brazil (5.3°S, 35.1°W) November 1958

Time	h'F2	fnF2	h'F	foF1	h'E	fnE	foEs	(M3000)F2
00		(10.2)	270				3.0	(2.80)
01		(8.95)	260				3.2	(2.70)
02		(8.55)	260				3.2	(2.85)
03		>8.0	260				3.4	(2.85)
04		8.4	240				3.6	2.85
05		8.0	230				3.9	3.00
06		8.6	255		<145	1.75	4.1	2.95
07		11.4	250		113	2.85	4.0	2.82
08		12.9	235		109	3.40	5.8	2.65
09		13.6	220		107	3.85	7.8	2.48
10		13.9	215		107	4.02	8.9	2.30
11		13.8	205		105	(4.25)	9.0	2.25
12		13.6	205	---	105	(4.25)	9.0	2.20
13	---	13.45	205	---	105	4.20	8.8	2.18
14		13.7	205	(6.6)	107	(4.10)	9.0	2.15
15		13.7	215	---	107	(3.85)	9.0	2.15
16		13.6	230		109	(3.50)	8.5	2.10
17		(13.1)	255		111	(3.00)	6.0	(2.05)
18		(12.2)	290		---	(2.02)	4.5	(2.00)
19		(9.6)	420					(1.95)
20		----	(460)					----
21		----	(430)					----
22		----	(355)					----
23		----	295					----

Time: 30.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 32.4 seconds.

Table 72

Little America (78.2°S, 162.2°W) September 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(6.1)	305		---	----	2.3	(2.50)
01		(6.15)	300		129	----	2.5	(2.50)
02		(5.3)	320		---	----	2.5	(2.50)
03		(6.0)	300		---	----	2.3	(2.60)
04		(5.4)	295		108	----	2.8	(2.75)
05		(6.3)	280		<115	----	2.3	(2.90)
06		6.85	270		(115)	(2.15)	2.2	2.95
07		8.0	270		111	(2.10)		2.90
08	---	10.5	255	---	(117)	(2.20)		2.90
09	---	10.0	260	---	(119)	2.25		2.80
10	---	(8.3)	260	---	(115)	(2.40)		2.90
11	---	(7.75)	260	---	115	2.50		(2.90)
12	---	(8.0)	260	---	(115)	(2.65)		(2.95)
13	---	(7.9)	260	---	(115)	(2.70)		(2.95)
14	---	(7.5)	255	---	(115)	(2.50)		(2.90)
15	---	(8.5)	255	---	<119	(2.40)		(2.75)
16	---	(8.0)	255	---	115	(2.10)	2.5	2.60
17	---	(10.0)	265	---	115	---	2.6	2.65
18		(9.7)	280		---	---	2.3	(2.60)
19		(9.2)	280		---	---	1.6	(2.60)
20		(9.2)	260		---	---		(2.60)
21		(9.75)	<270		---	---		(2.60)
22		(6.5)	280		---	---		(2.55)
23		(6.5)	300		---	---		(2.48)

Time: 165.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

USCOMM-NBS-8L

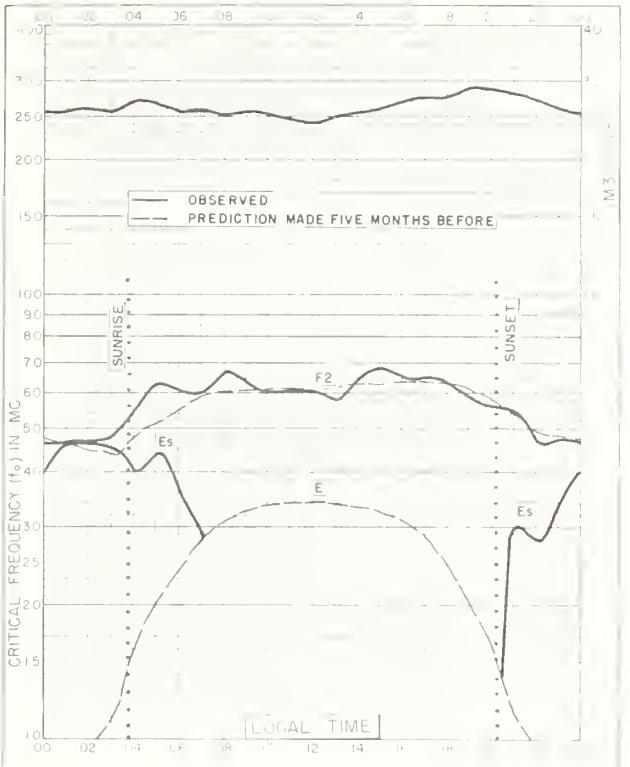


Fig. 1. FAIRBANKS, ALASKA
64.9°N, 147.8°W AUGUST 1959

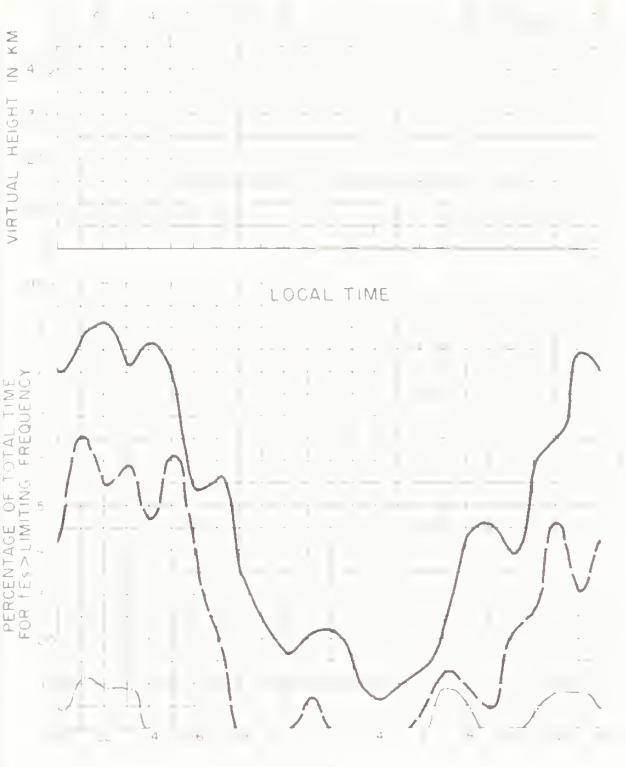


Fig. 2. FAIRBANKS, ALASKA AUGUST 1959

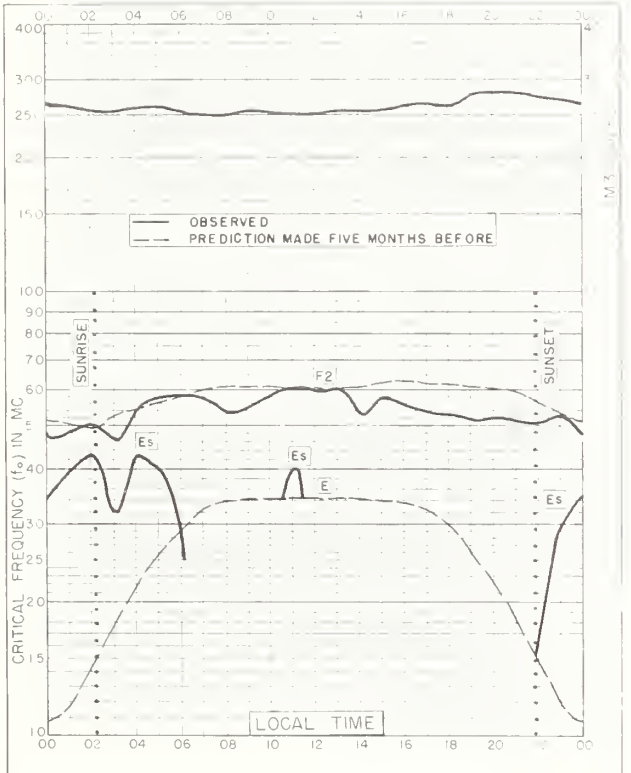


Fig. 3. FAIRBANKS, ALASKA
64.9°N, 147.8°W JULY 1959

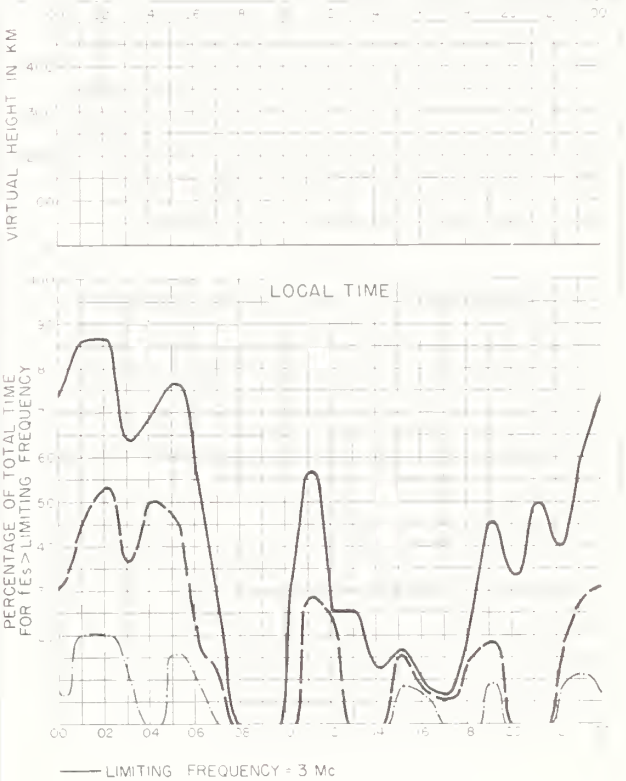


Fig. 4. FAIRBANKS, ALASKA JULY 1959

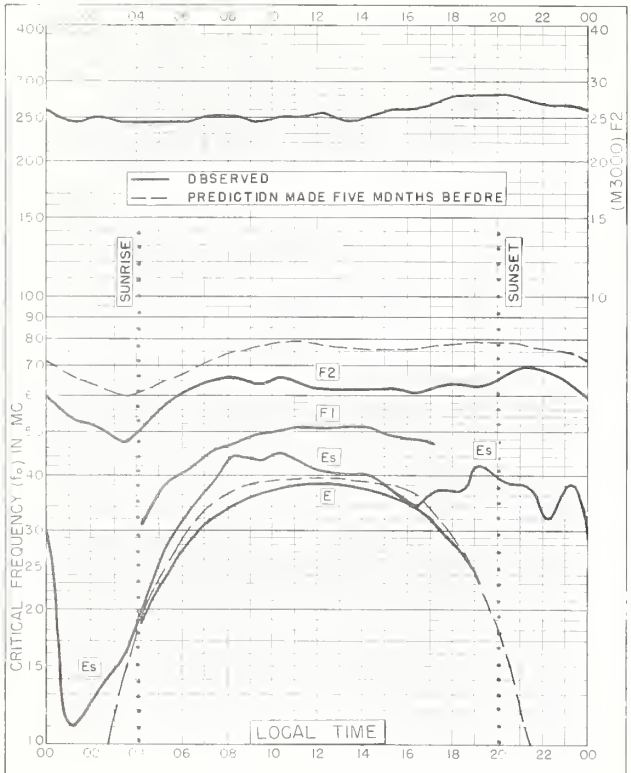


Fig. 5. ADAK, ALASKA
51.9°N , 176.6°W JULY 1959

NBS 503

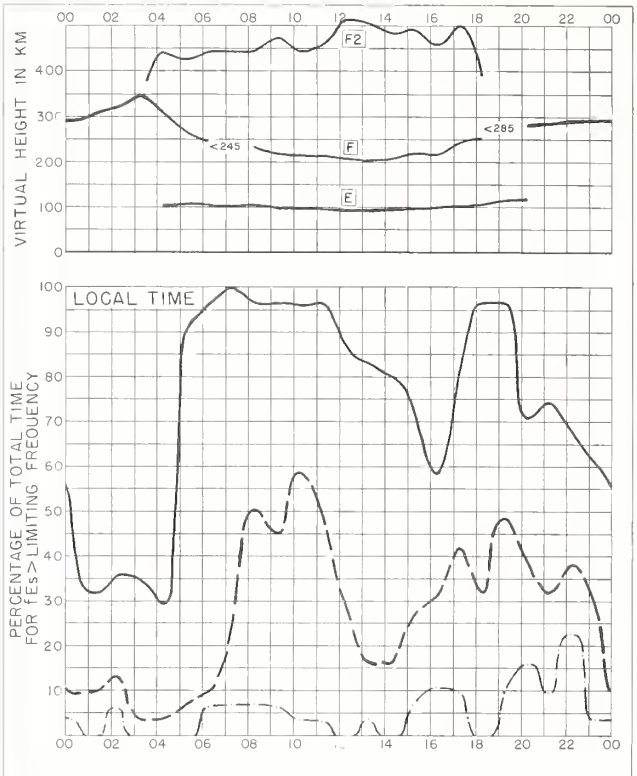


Fig. 6. ADAK, ALASKA JULY 1959

NBS 490

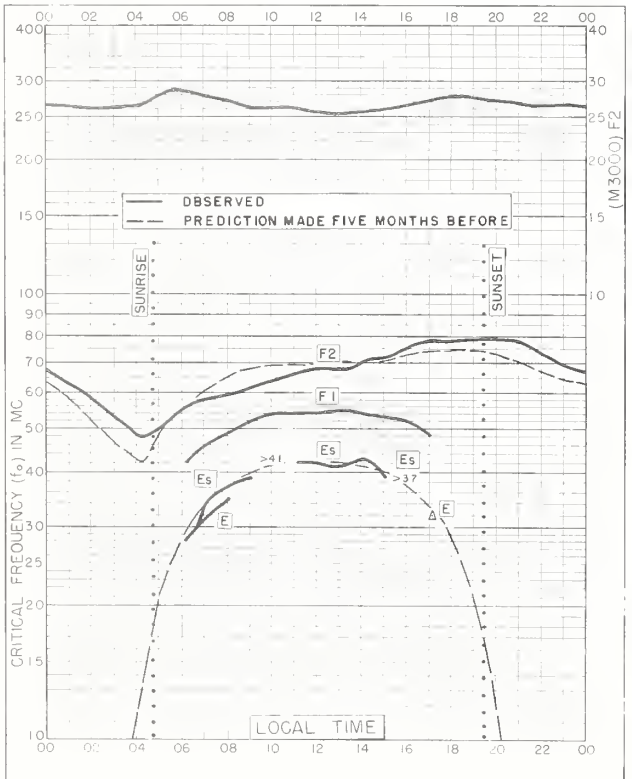


Fig. 7. FT MONMOUTH, NEW JERSEY
40.4°N, 74.1°W JULY 1959

NBS 503

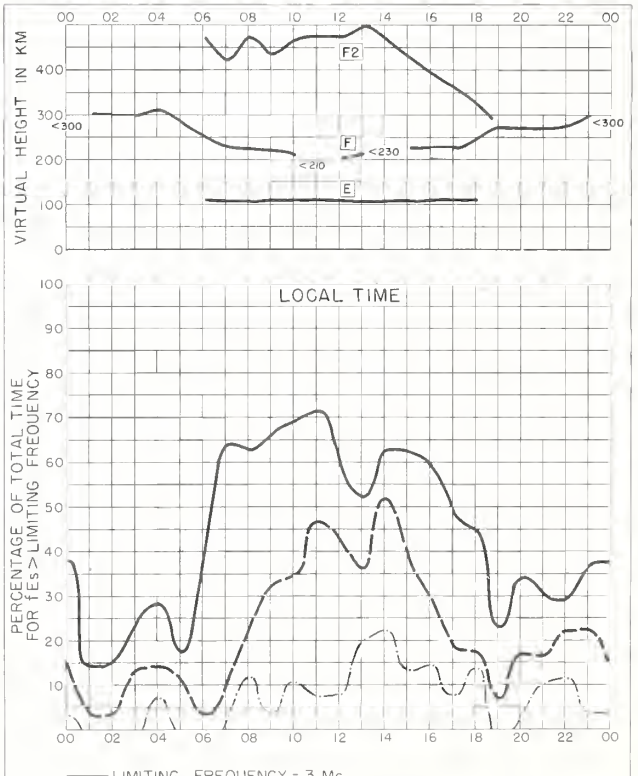


Fig. 8. FT. MONMOUTH, NEW JERSEY JULY 1959

NBS 490

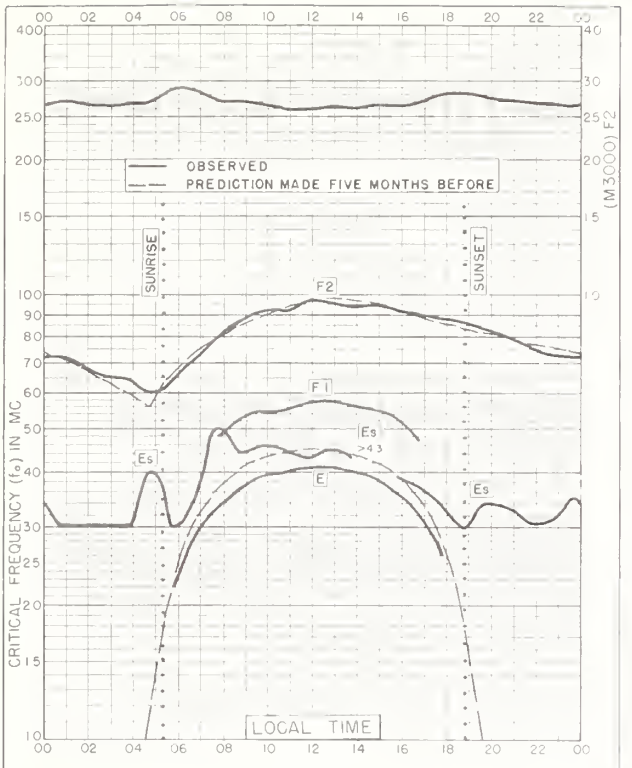


Fig. 9. GRAND BAHAMA I.
26.6°N, 78.2°W JULY 1959

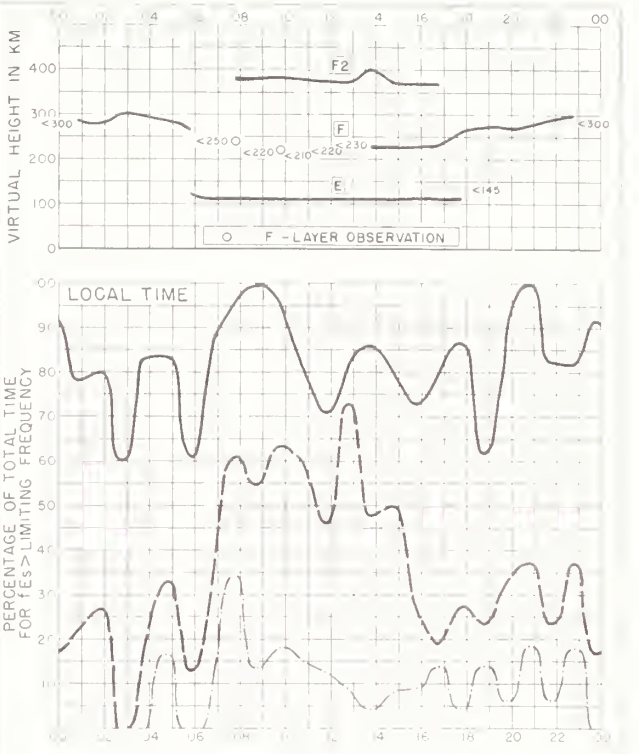


Fig. 10. GRAND BAHAMA I JULY 1959

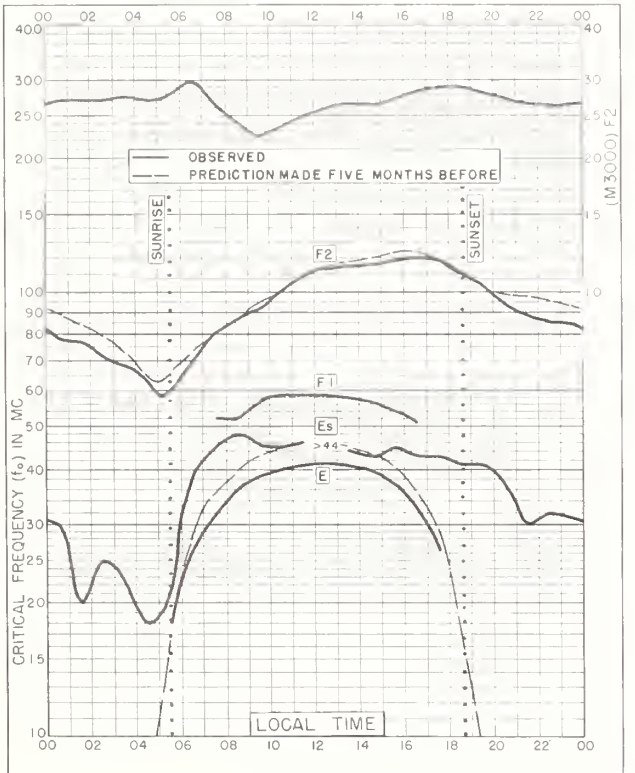


Fig. 11. MAUI, HAWAII
20.8°N, 156.5°W JULY 1959

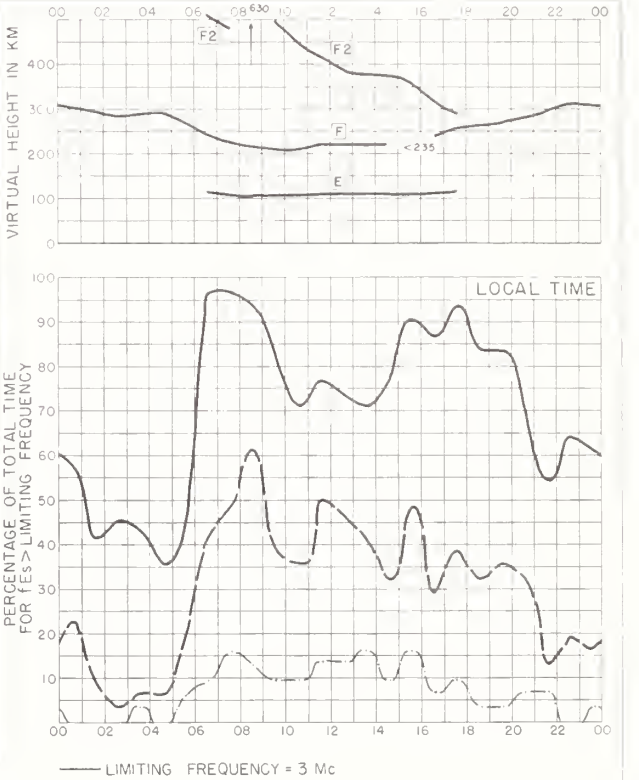


Fig. 12. MAUI, HAWAII JULY 1959

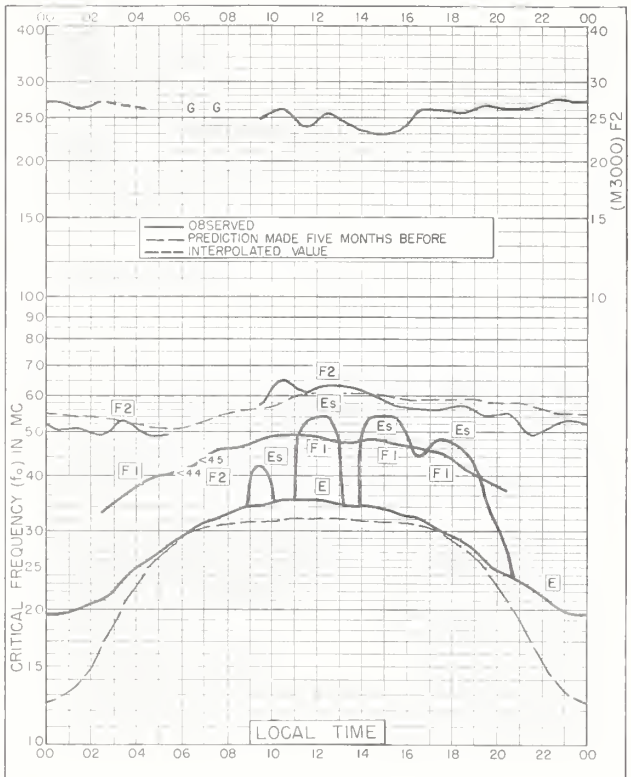


Fig. 13. GODHAVN, GREENLAND
69.3°N , 53.5°W JUNE 1959

NBS 503

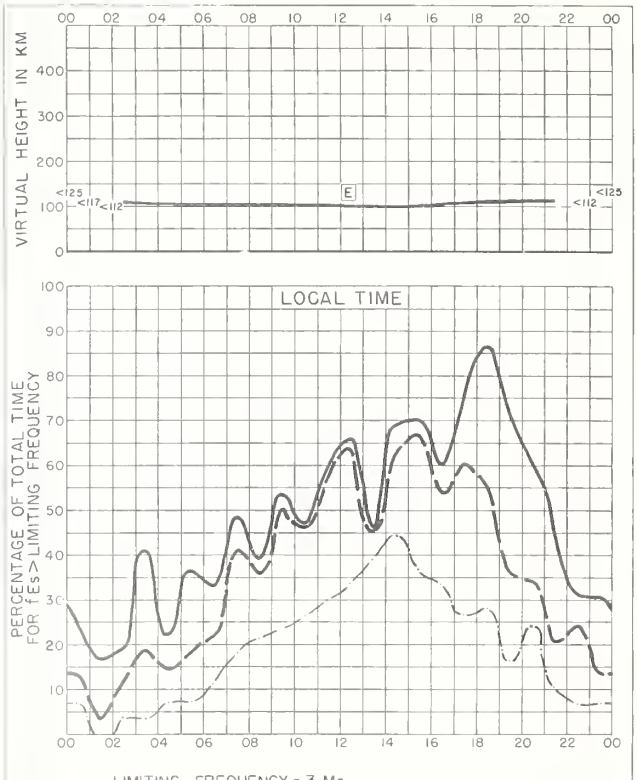


Fig. 14. GODHAVN, GREENLAND JUNE 1959

NBS 490

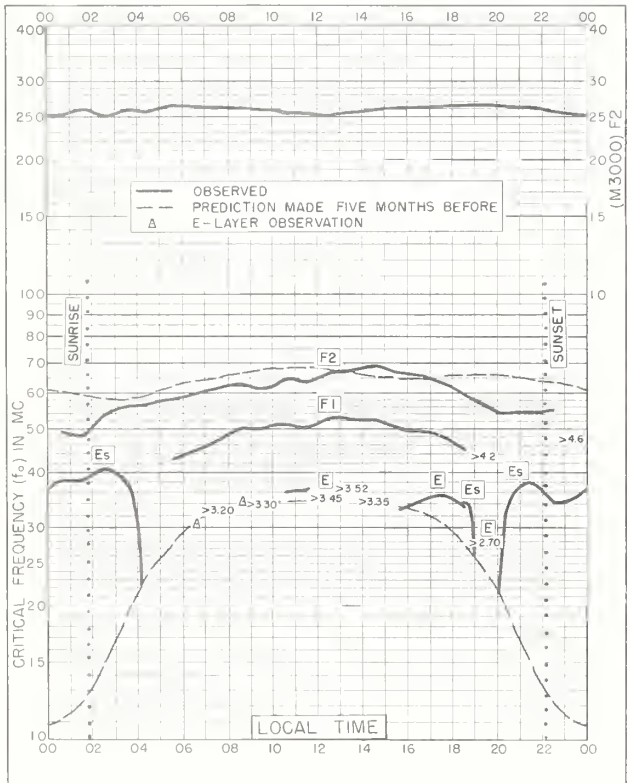


Fig. 15. REYKJAVIK, ICELAND
64.1°N, 21.8°W JUNE 1959

NBS 503

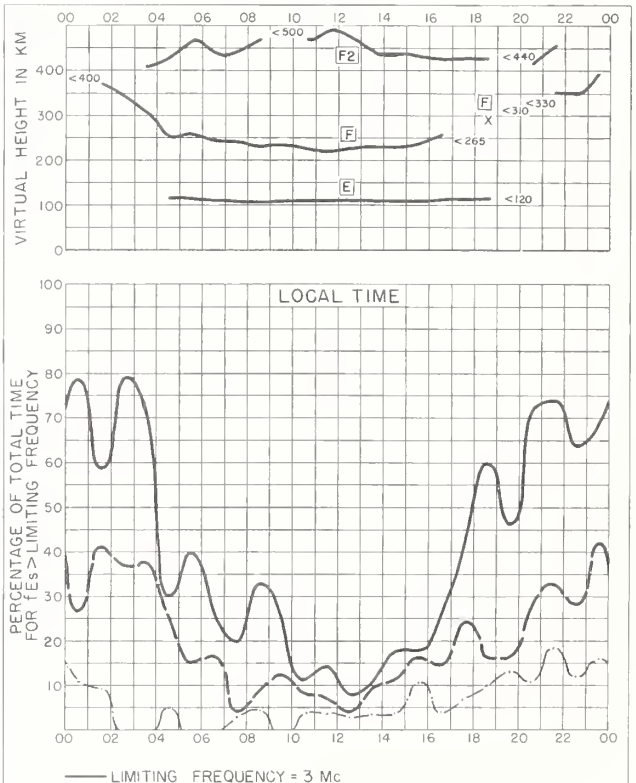


Fig. 16. REYKJAVIK, ICELAND JUNE 1959

NBS 490

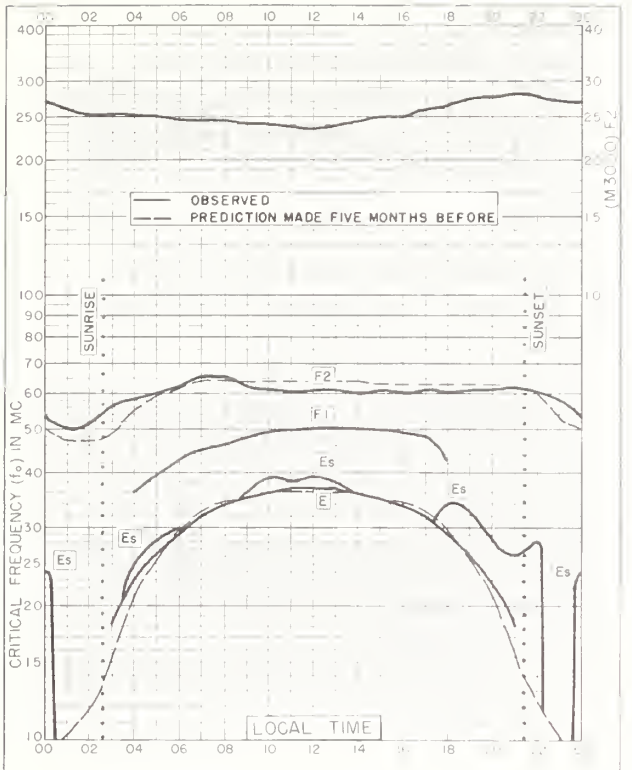


Fig. 17. ANCHORAGE, ALASKA
61.2°N, 149.9°W JUNE 1959

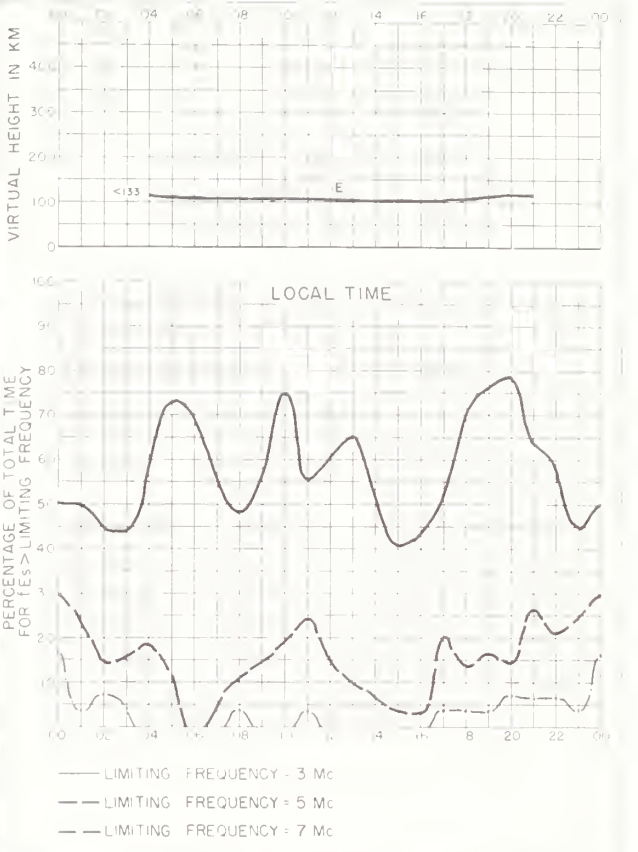


Fig. 18. ANCHORAGE, ALASKA JUNE 1959

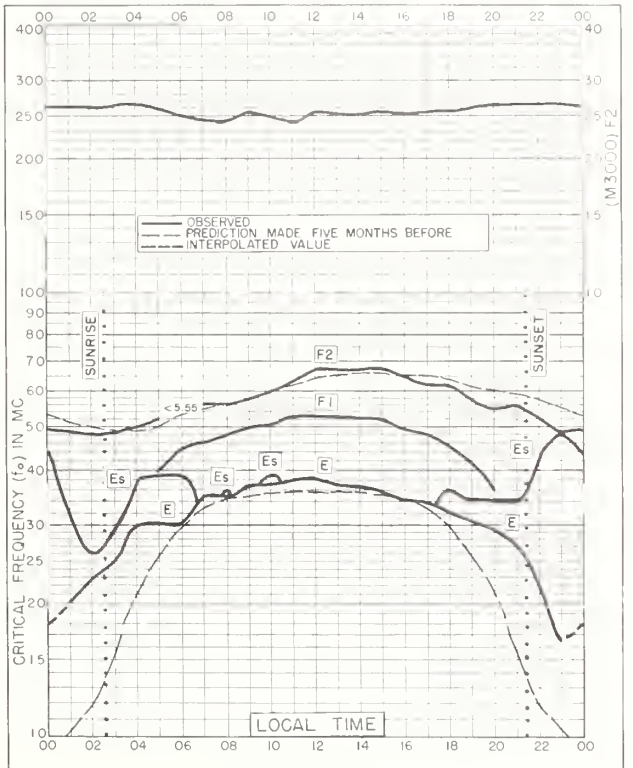


Fig. 19. NARSARSSUAK, GREENLAND
61.2°N, 45.4°W JUNE 1959

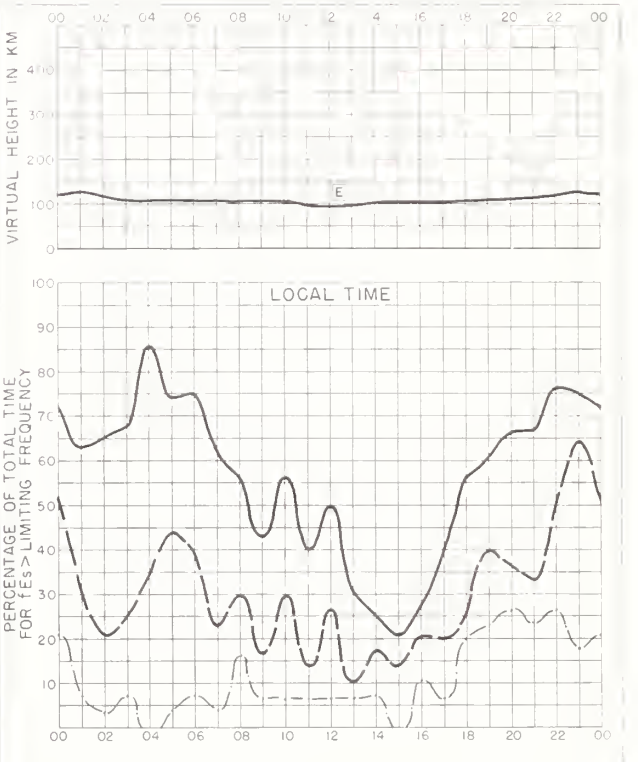


Fig. 20. NARSARSSUAK, GREENLAND JUNE 1959

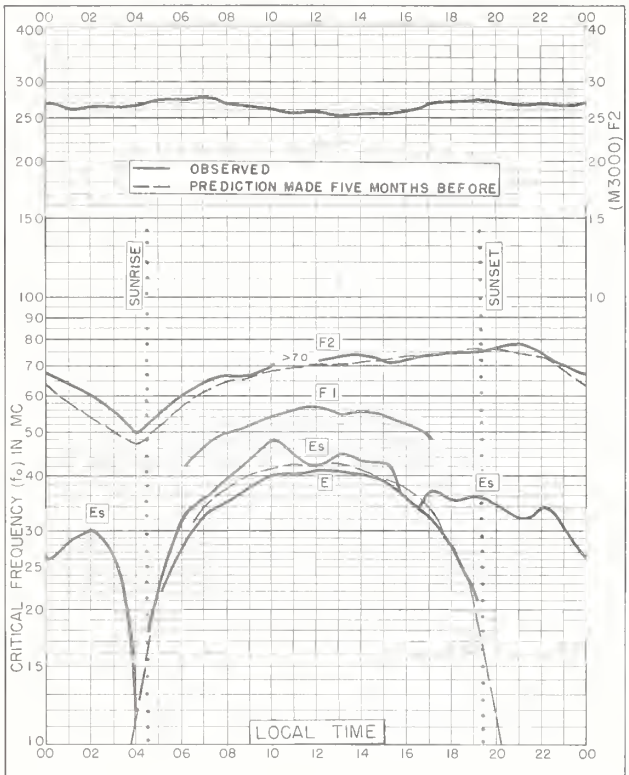
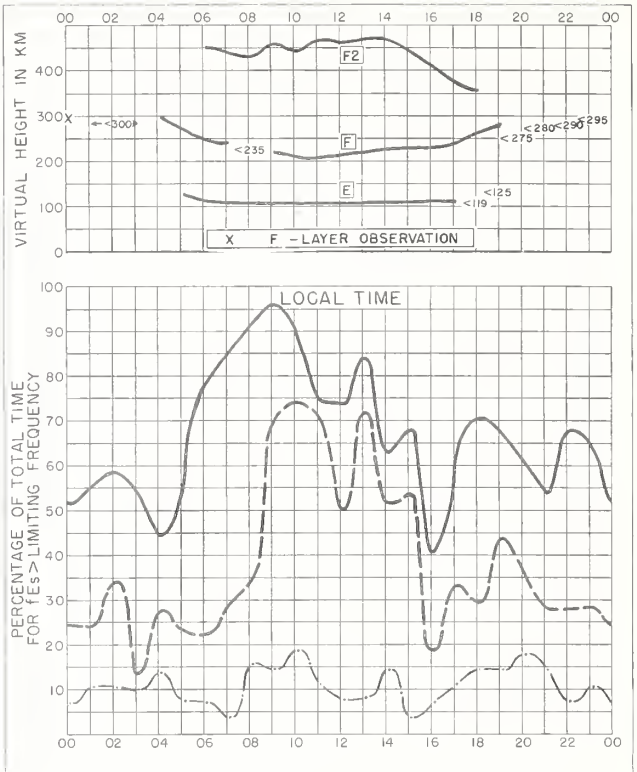


Fig. 21. FT. MONTMOUTH, NEW JERSEY
40.4°N, 74.1°W JUNE 1959

NBS 503



JUNE 1959

Fig. 22. FT. MONTMOUTH, NEW JERSEY

NBS 490

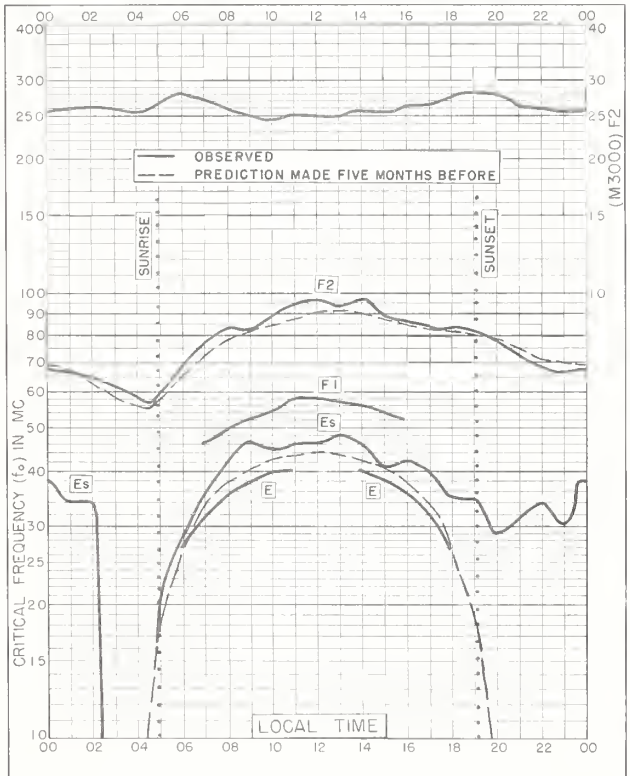
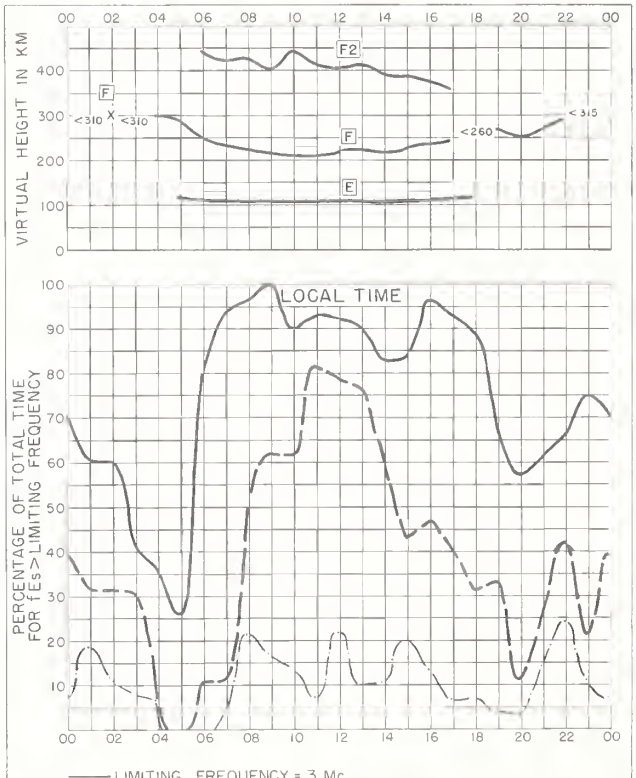


Fig. 23. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W JUNE 1959

NBS 503



JUNE 1959

Fig. 24. WHITE SANDS, NEW MEXICO

NBS 490

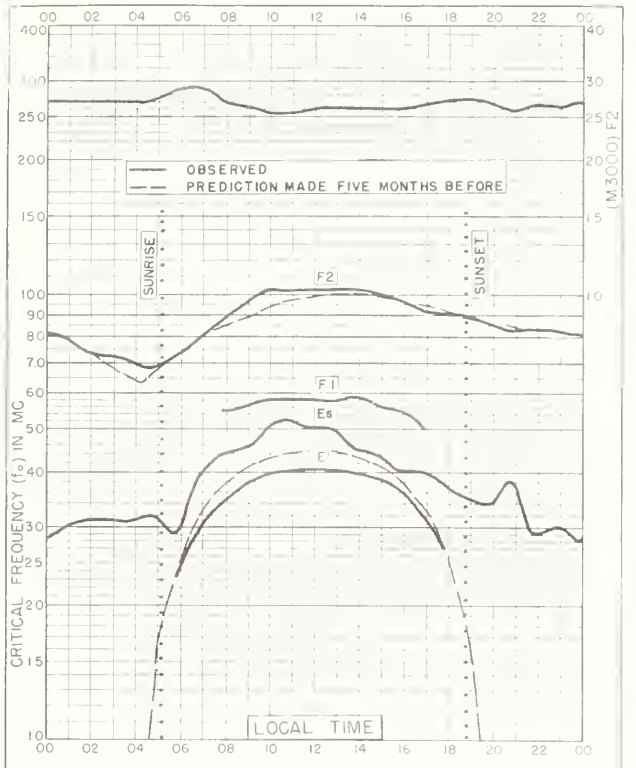


Fig. 25. GRAND BAHAMA I.
26.6°N, 78.2°W JUNE 1959

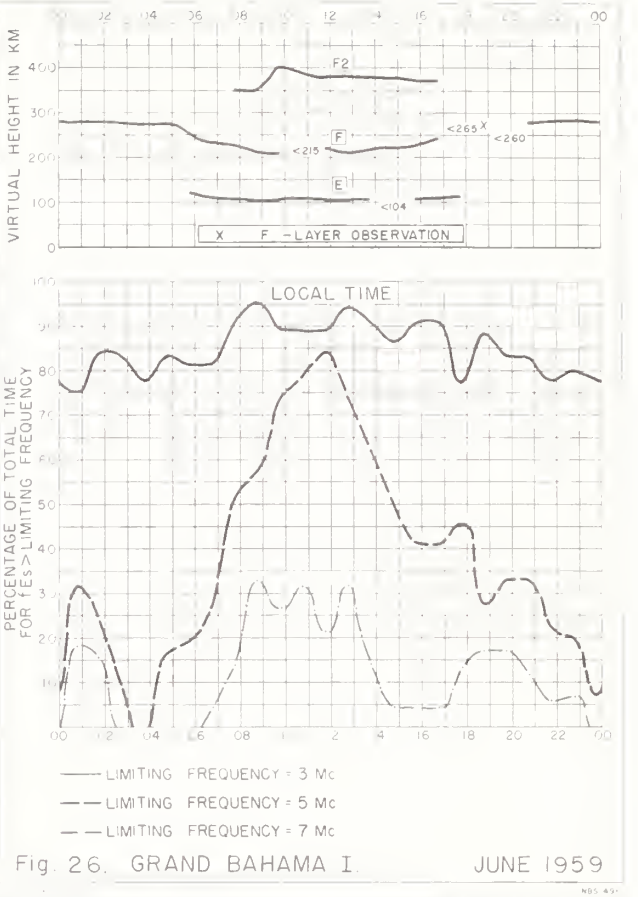


Fig. 26. GRAND BAHAMA I. JUNE 1959

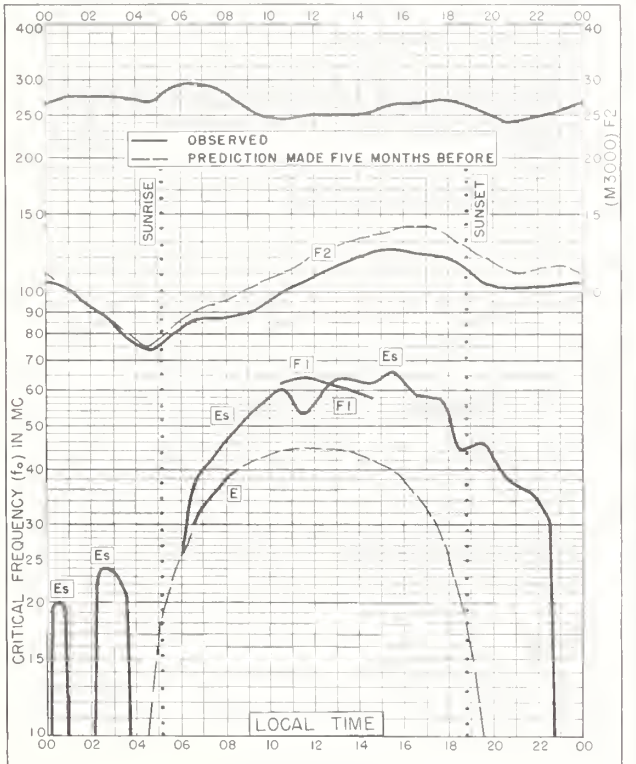


Fig. 27. OKINAWA I.
26.3°N, 127.8°E JUNE 1959

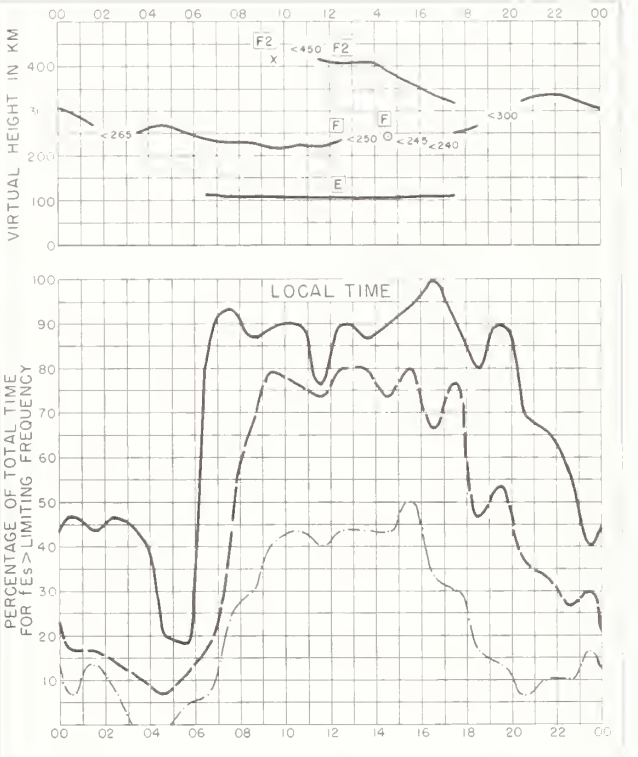


Fig. 28. OKINAWA I. JUNE 1959

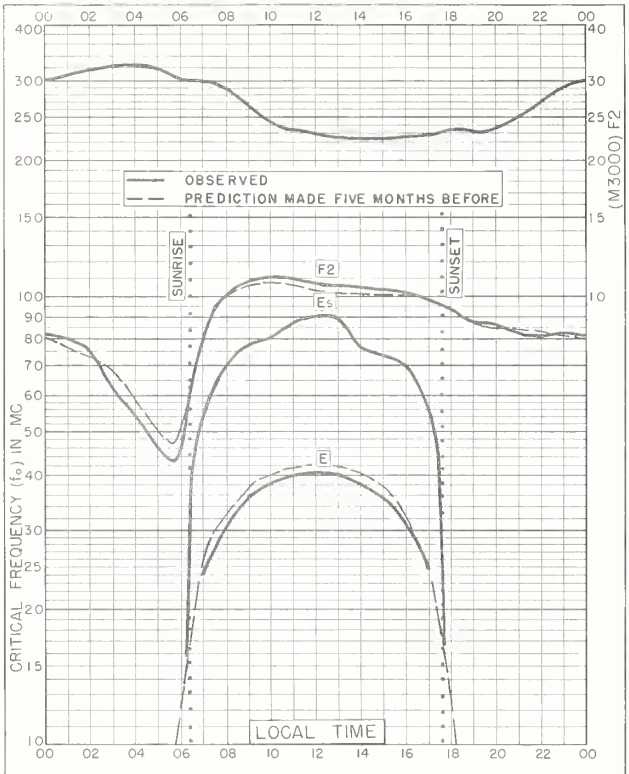


Fig. 29. HUANCAYO, PERU
12.0°S, 75.3°W JUNE 1959

NBS 503

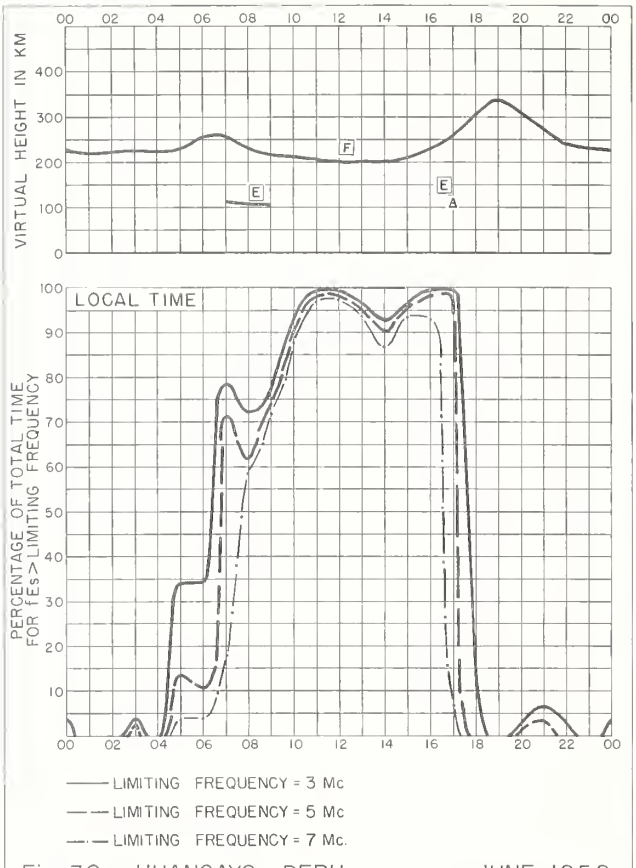


Fig. 30. HUANCAYO, PERU JUNE 1959

NBS 490

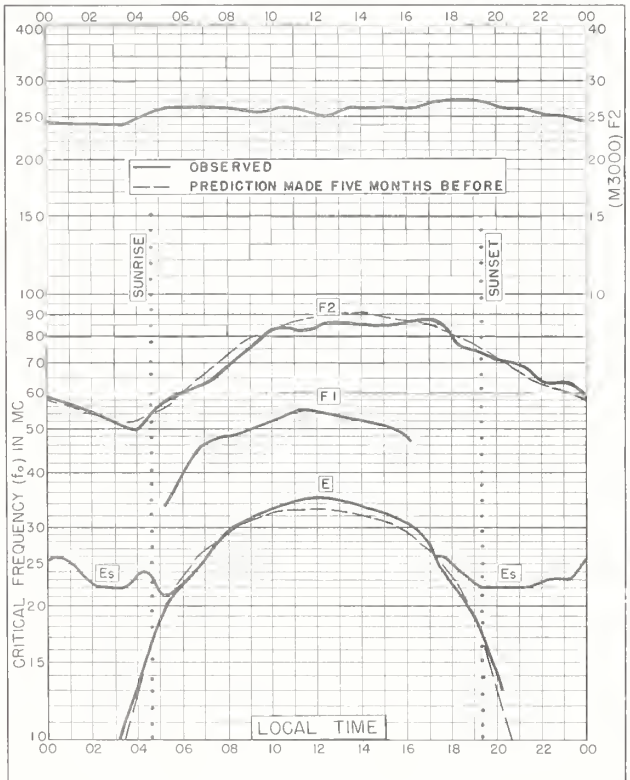


Fig. 31. LYCKSELE, SWEDEN
64.6°N, 18.8°E APRIL 1959

NBS 503

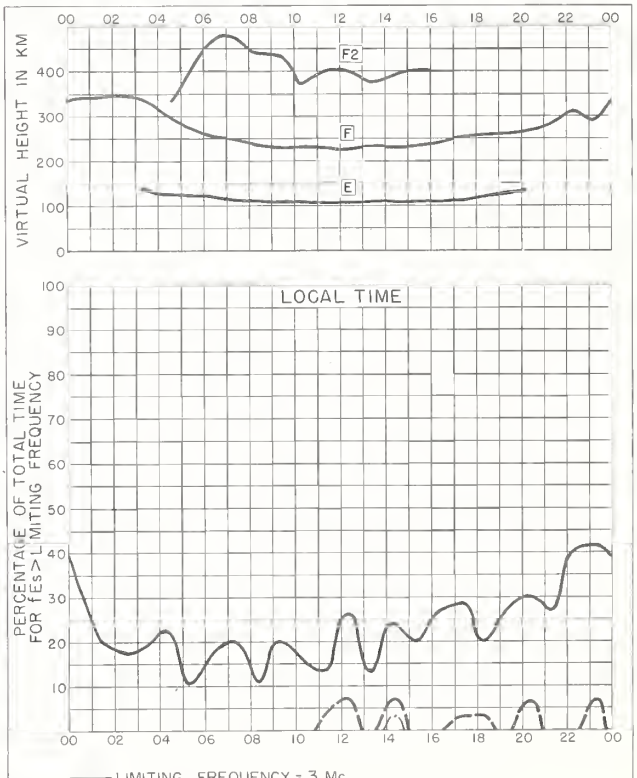


Fig. 32. LYCKSELE, SWEDEN APRIL 1959

NBS 490

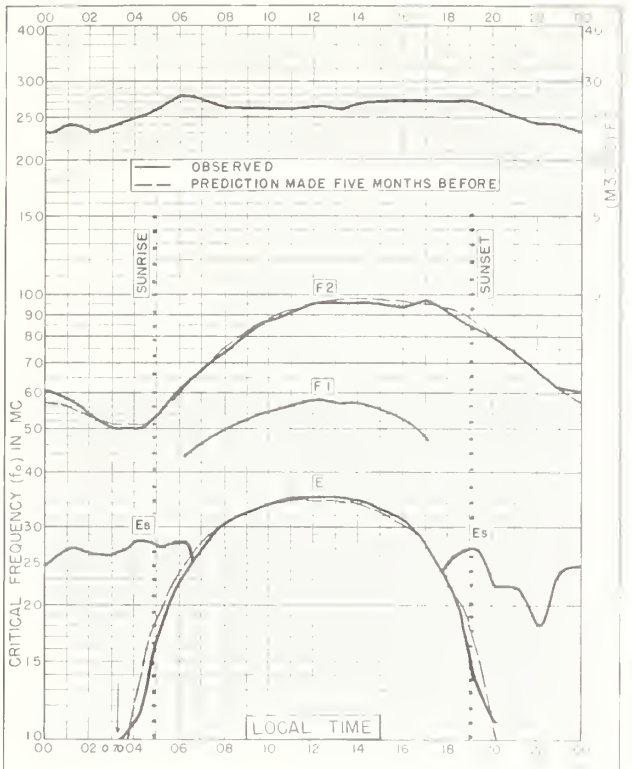


Fig. 33. UPSALA, SWEDEN
59.8°N, 17.6°E APRIL 1959

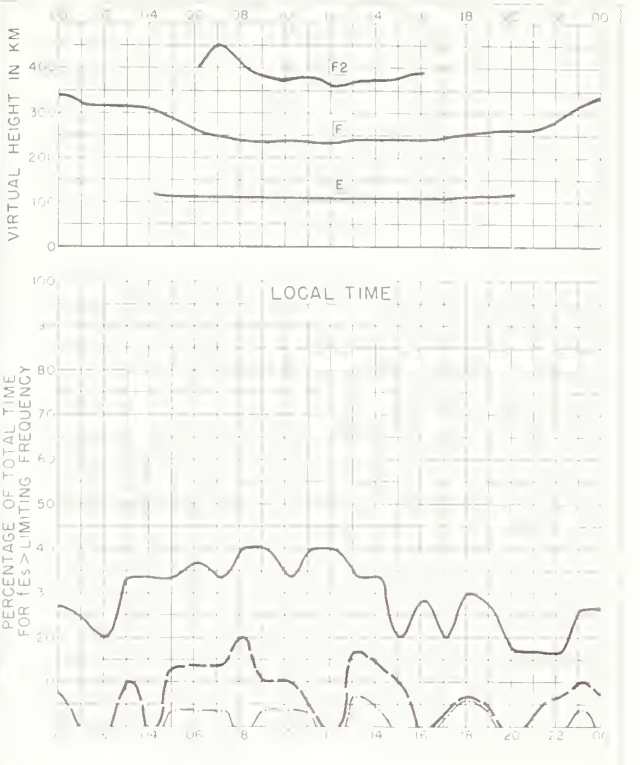


Fig. 34. UPSALA, SWEDEN APRIL 1959

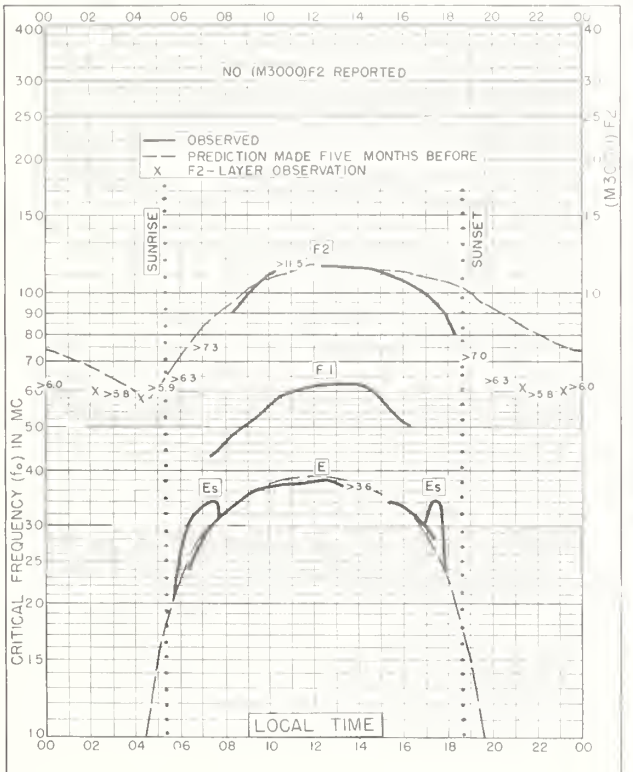


Fig. 35. BUDAPEST, HUNGARY
47.4°N, 19.2°E APRIL 1959

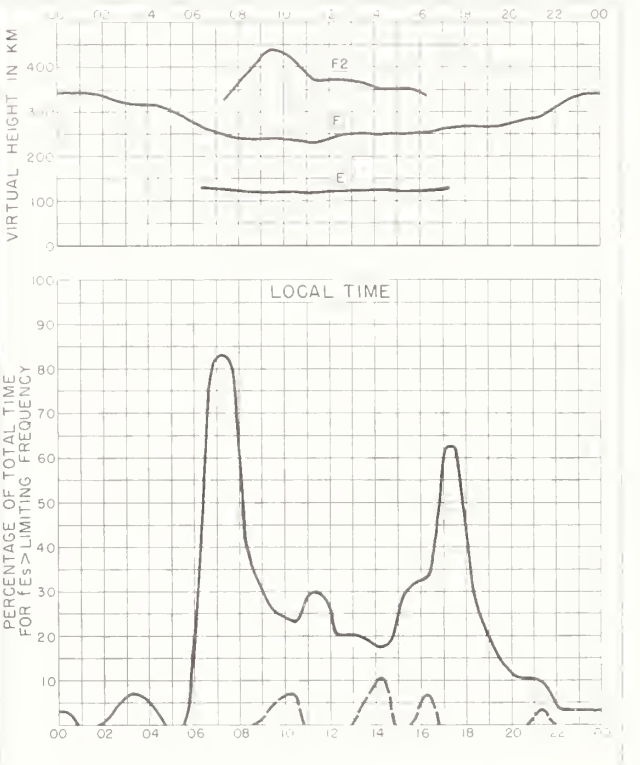


Fig. 36. BUDAPEST, HUNGARY APRIL 1959

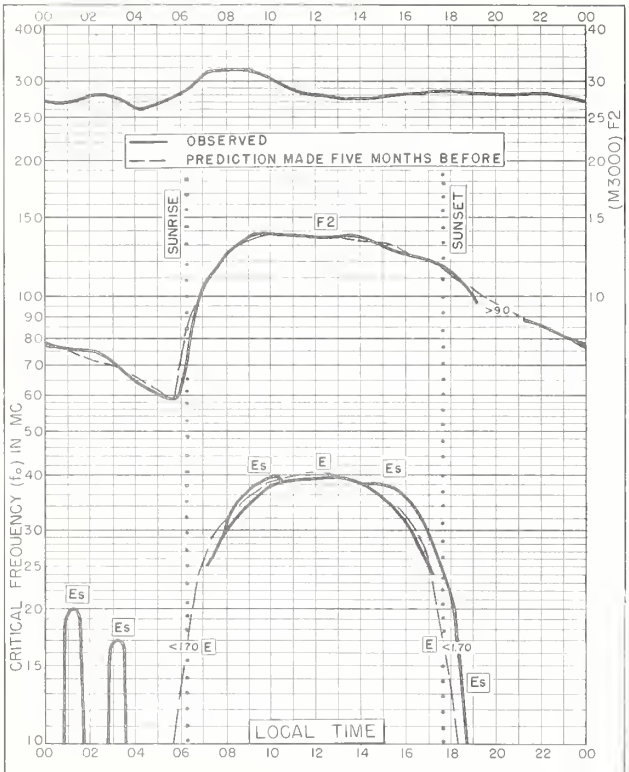


Fig. 37. BRISBANE, AUSTRALIA
27.5°S, 152.9°E APRIL 1959

NBS 503

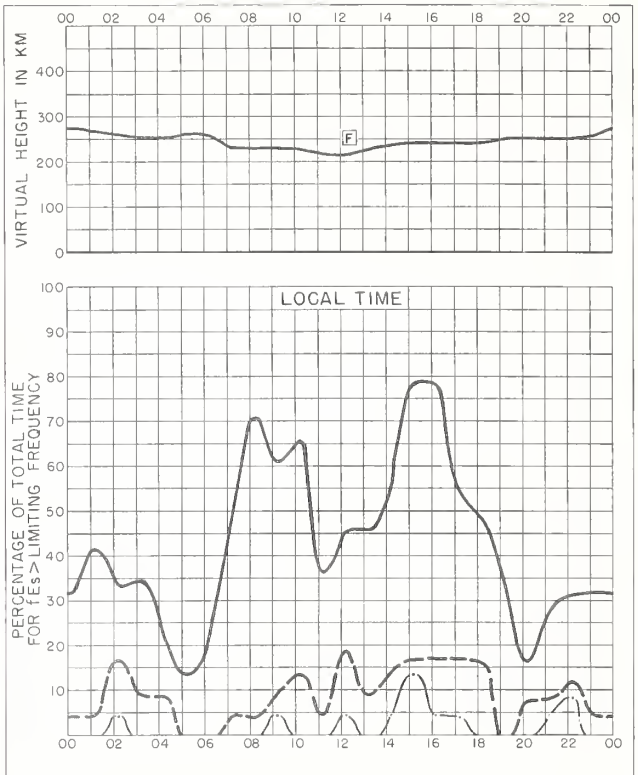


Fig. 38. BRISBANE, AUSTRALIA APRIL 1959

NBS 490

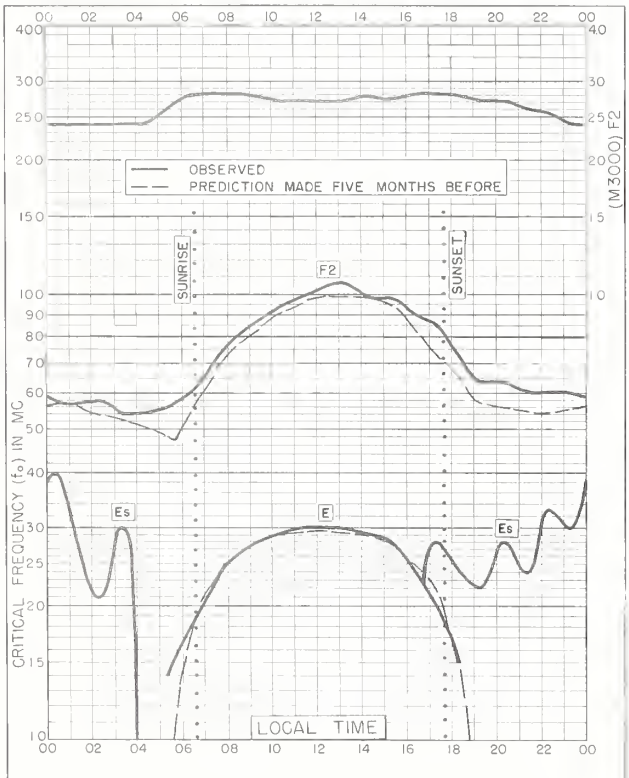


Fig. 39. KIRUNA, SWEDEN
67.8°N, 20.3°E MARCH 1959

NBS 503

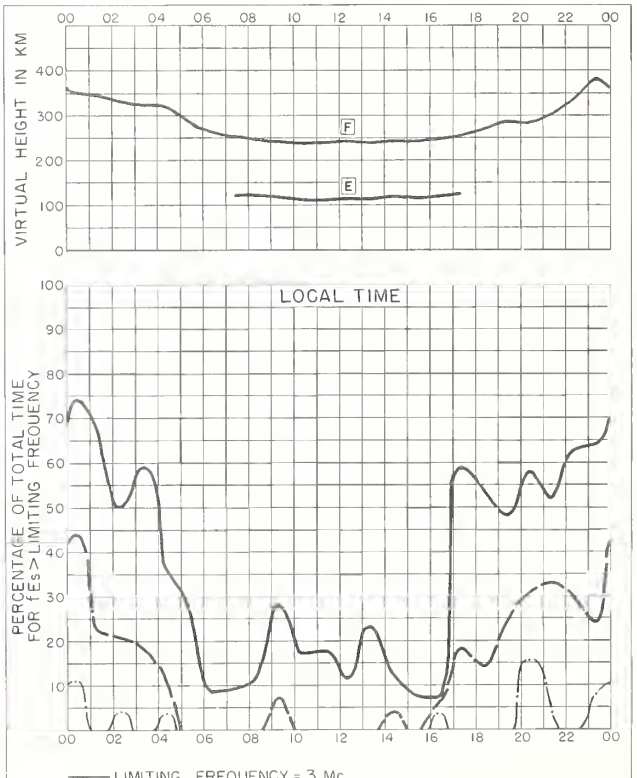


Fig. 40. KIRUNA, SWEDEN MARCH 1959

NBS 490

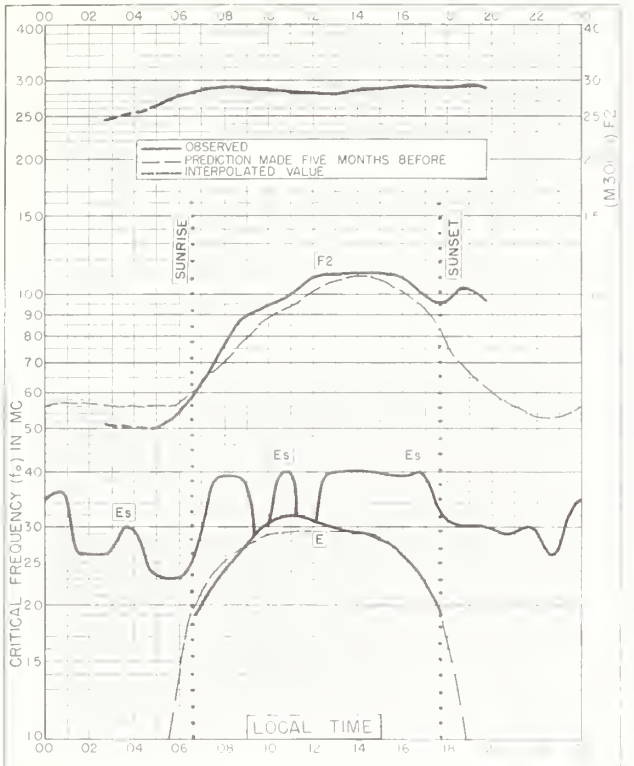


Fig. 41. SODANKYLA, FINLAND
67.4°N, 26.6°E MARCH 1959

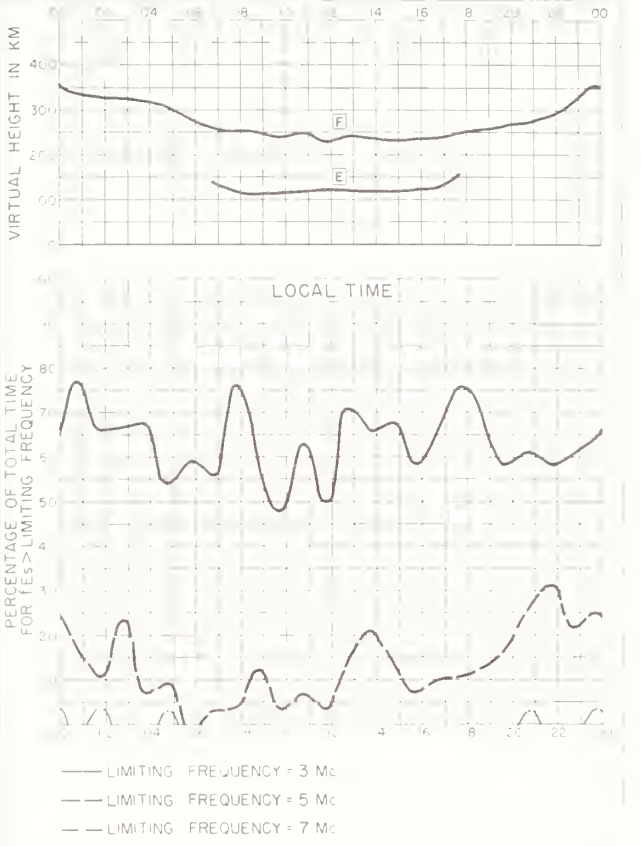


Fig. 42. SODANKYLA, FINLAND MARCH 1959

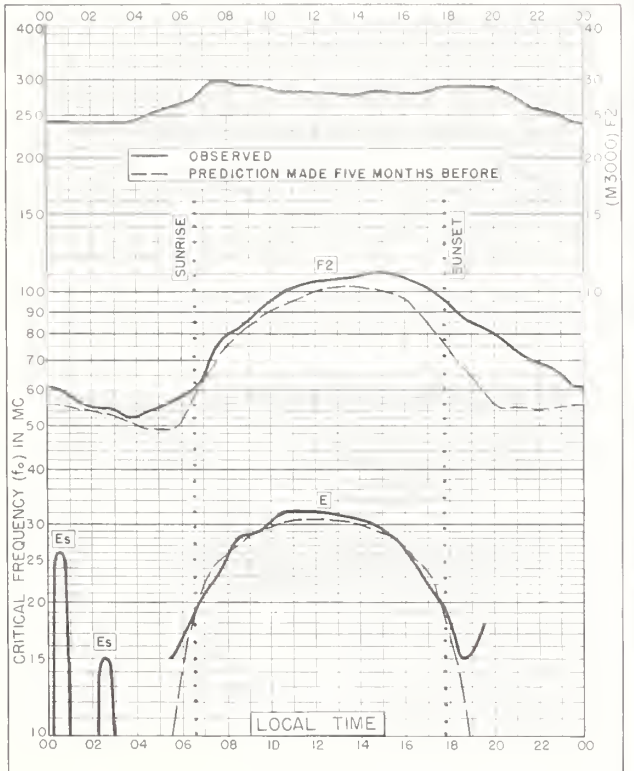


Fig. 43. LULEA, SWEDEN
65.6°N, 22.1°E MARCH 1959

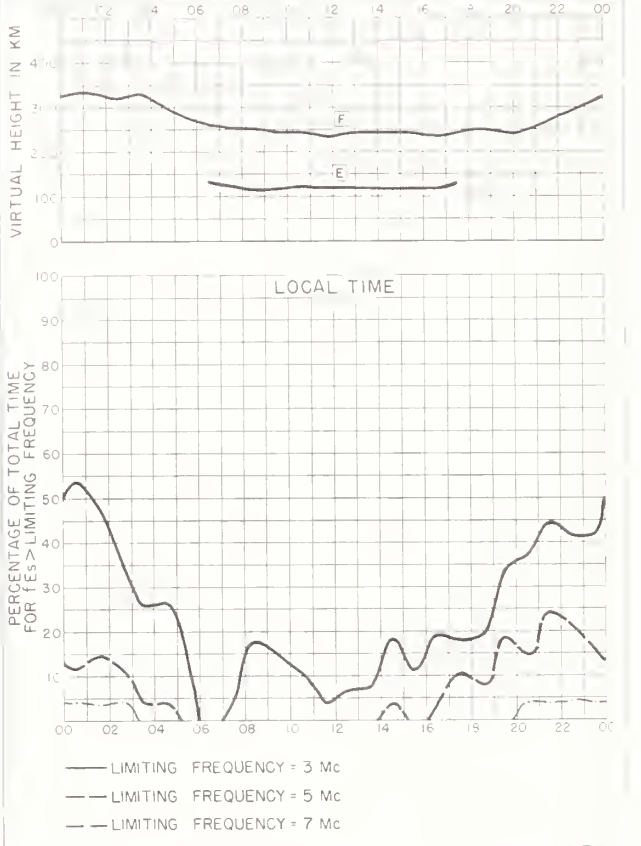


Fig. 44. LULEA, SWEDEN MARCH 1959

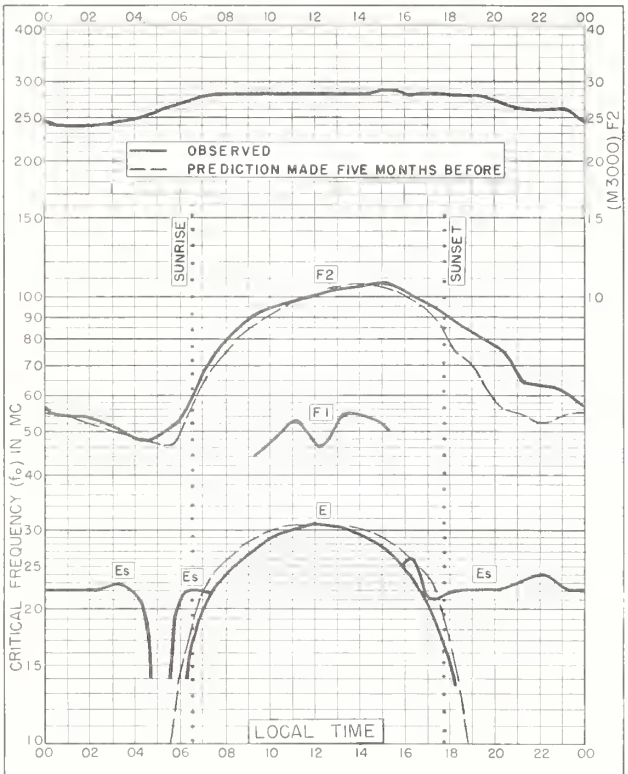


Fig. 45. LYCKSELE, SWEDEN
64.6°N, 18.8°E MARCH 1959

NBS 503

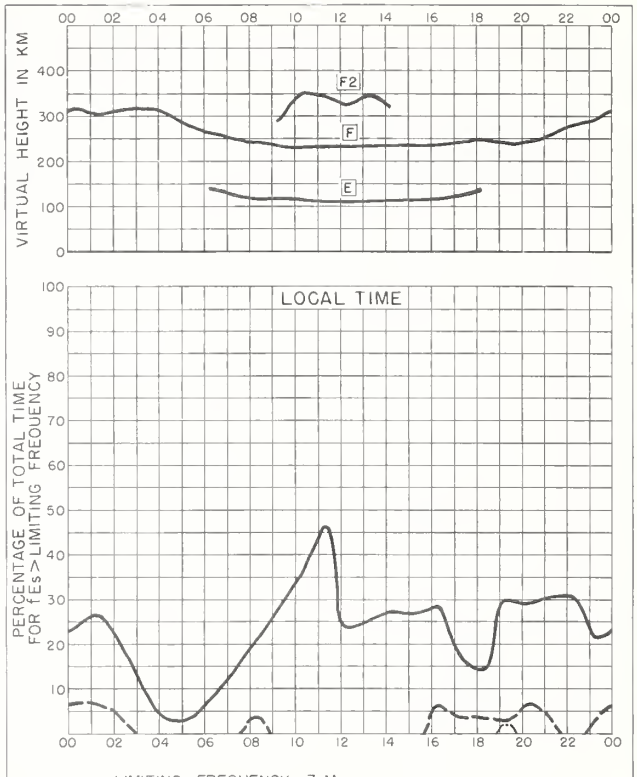


Fig. 46. LYCKSELE, SWEDEN MARCH 1959

NBS 490

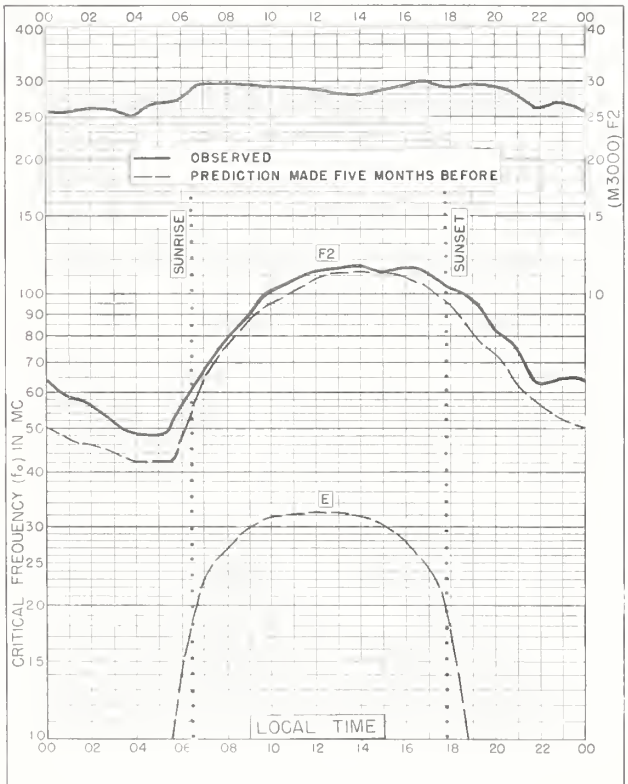


Fig. 47. NURMIJARVI, FINLAND
60.5°N, 24.6°E MARCH 1959

NBS 503

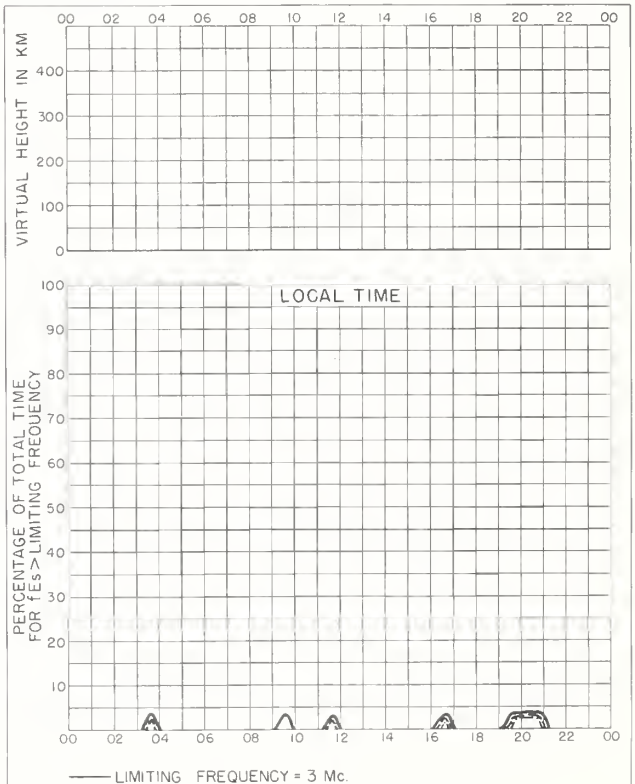


Fig. 48. NURMIJARVI, FINLAND MARCH 1959

NBS 490

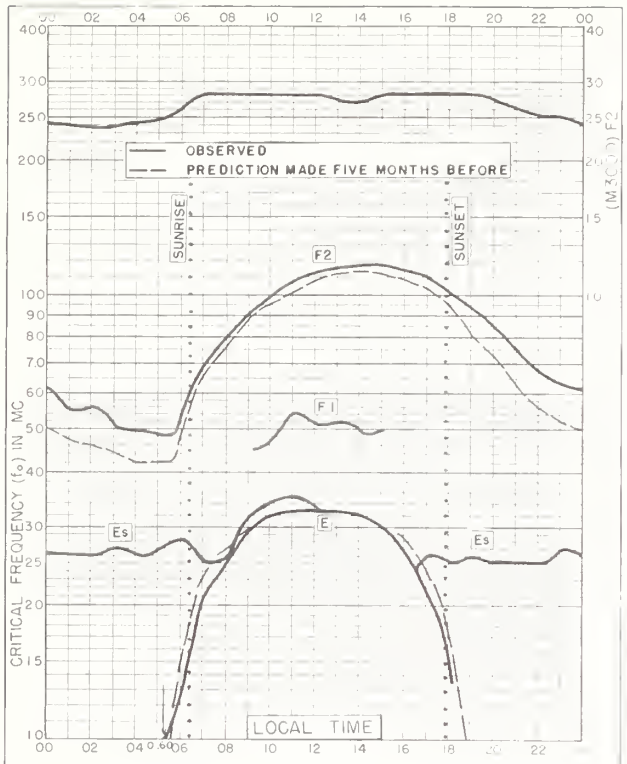


Fig. 49. UPSALA, SWEDEN
59.8°N, 17.6°E MARCH 1959

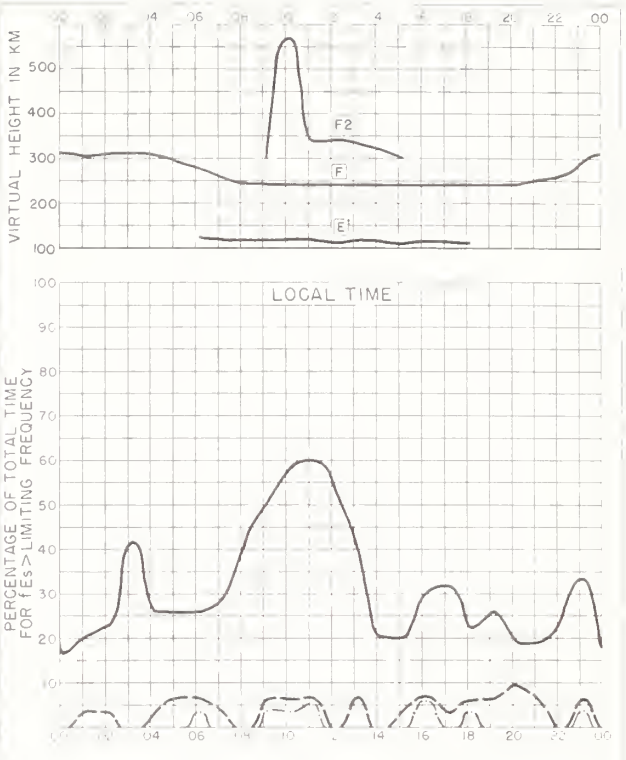


Fig. 50. UPSALA, SWEDEN MARCH 1959

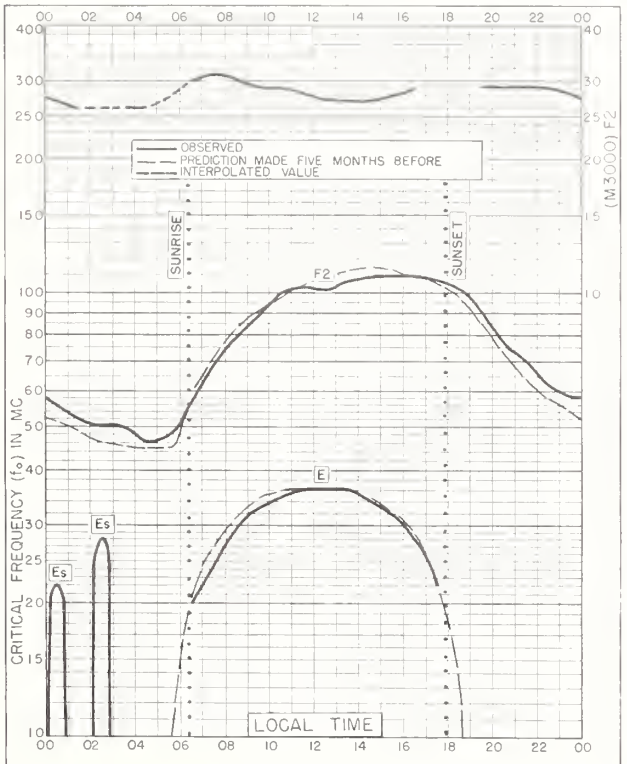


Fig. 51. WINNIPEG, CANADA
49.9°N, 97.4°W MARCH 1959

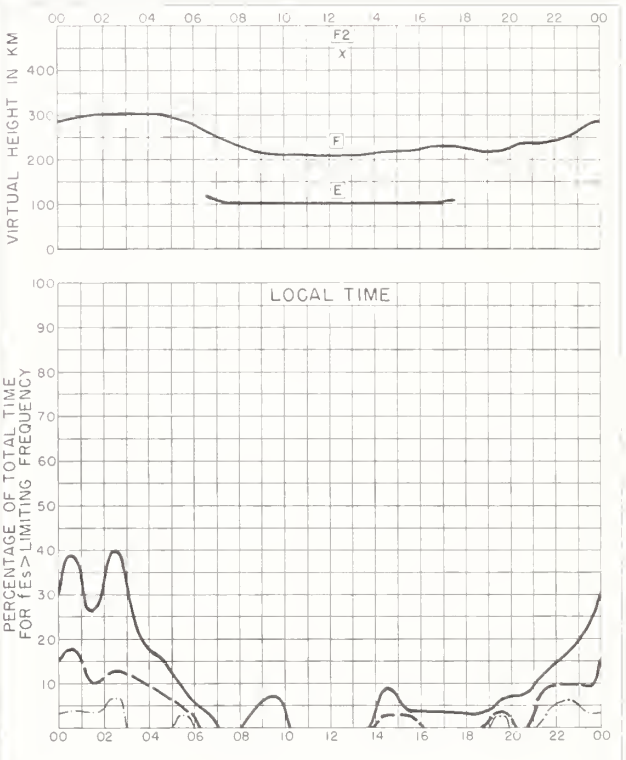


Fig. 52. WINNIPEG, CANADA MARCH 1959

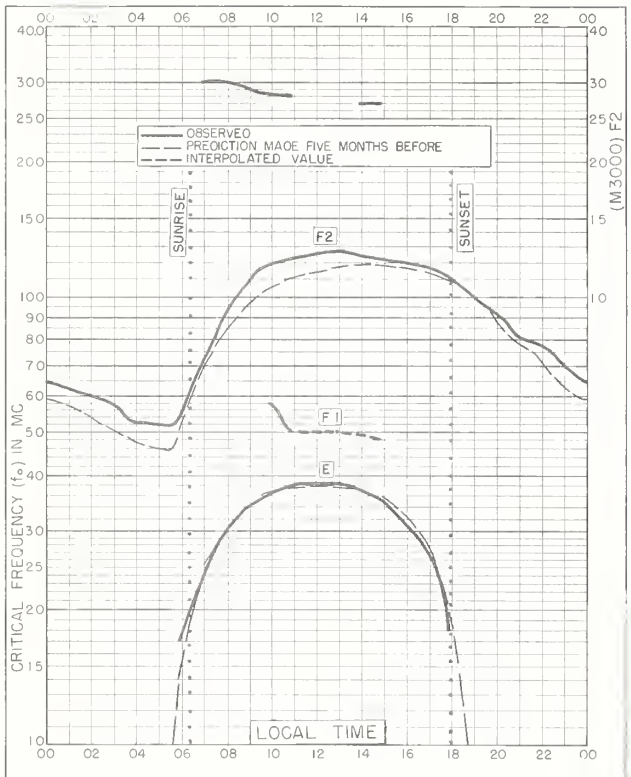


Fig. 53. OTTAWA, CANADA
45.4°N, 75.9°W MARCH 1959

NBS 503

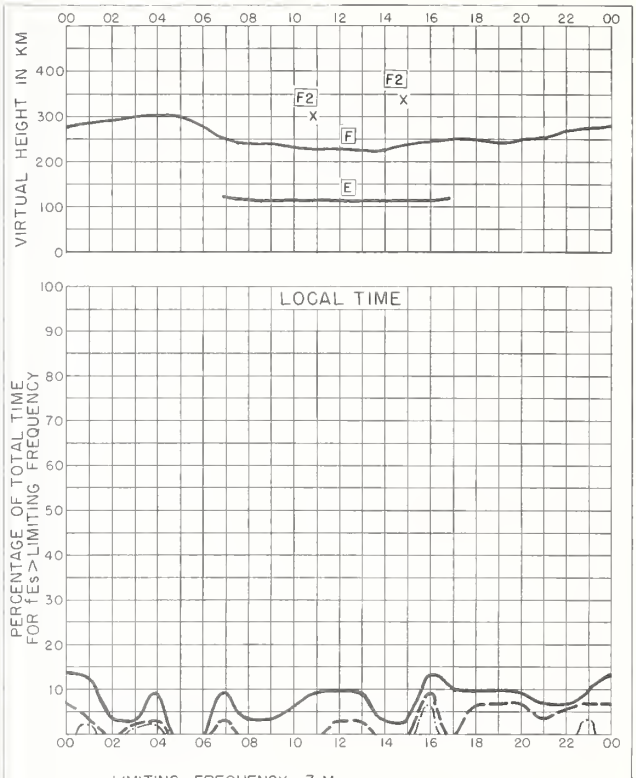


Fig. 54. OTTAWA, CANADA MARCH 1959

NBS 490

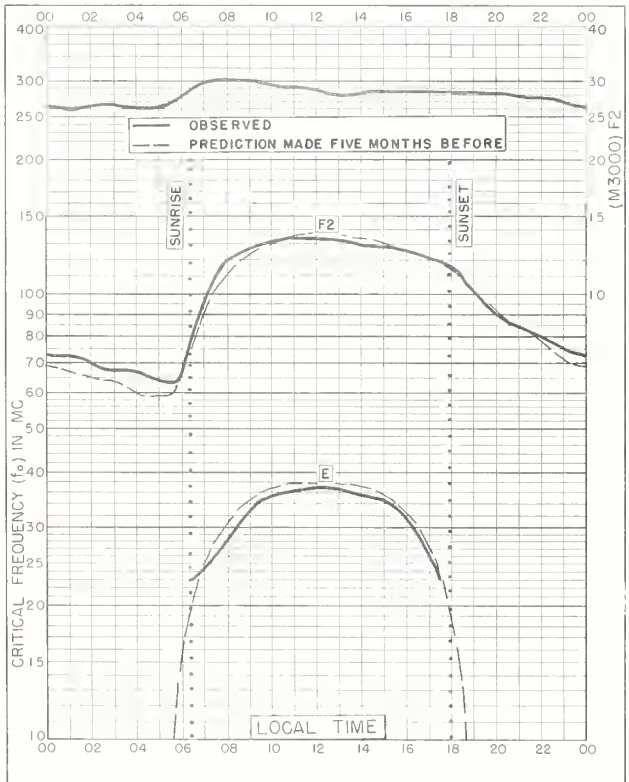


Fig. 55. WAKKANAI, JAPAN
45.4°N, 141.7°E MARCH 1959

NBS 503

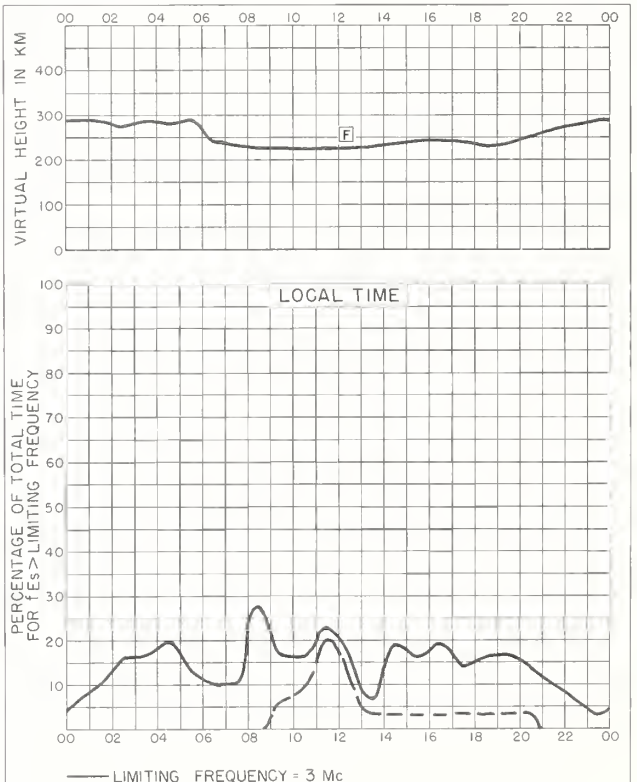


Fig. 56. WAKKANAI, JAPAN MARCH 1959

NBS 490

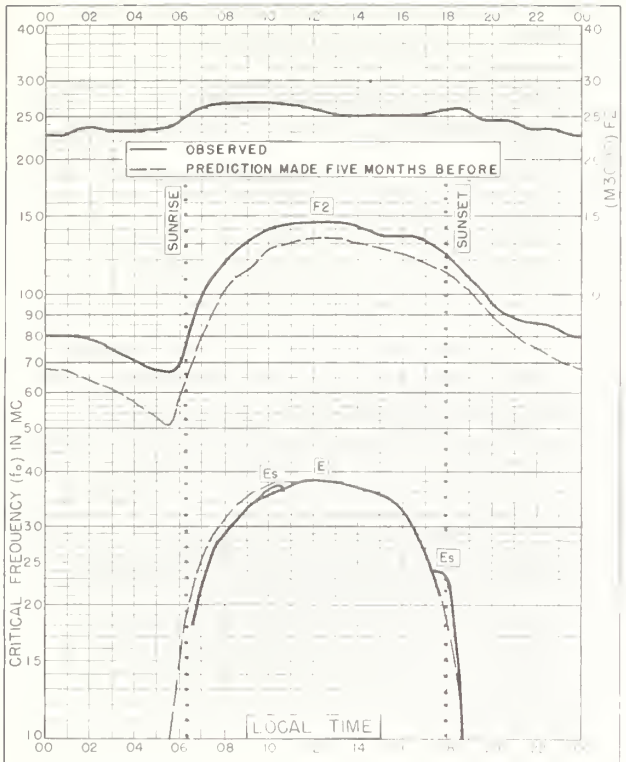


Fig. 57. MONTE CAPELLINO, ITALY
44.6°N, 9.0°E MARCH 1959

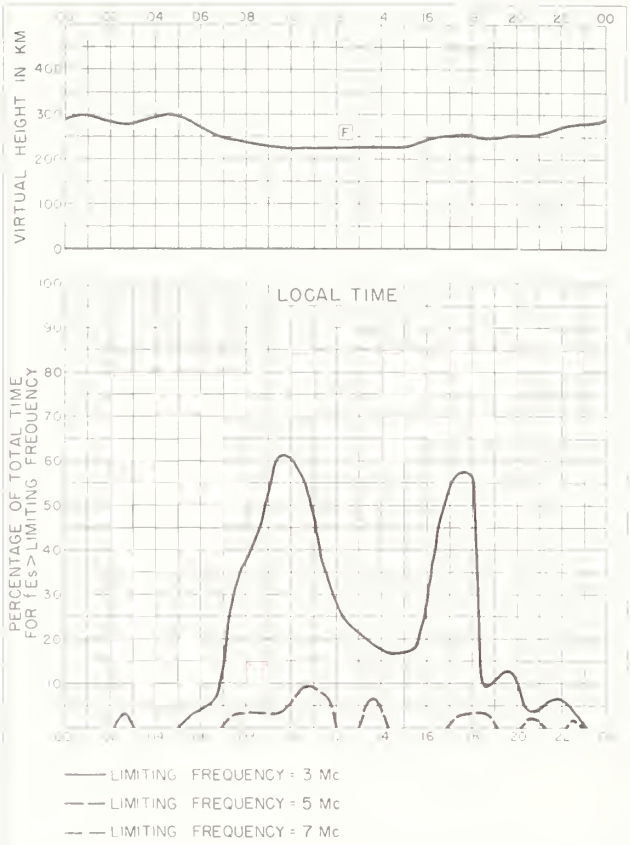


Fig. 58. MONTE CAPELLINO, ITALY MARCH 1959

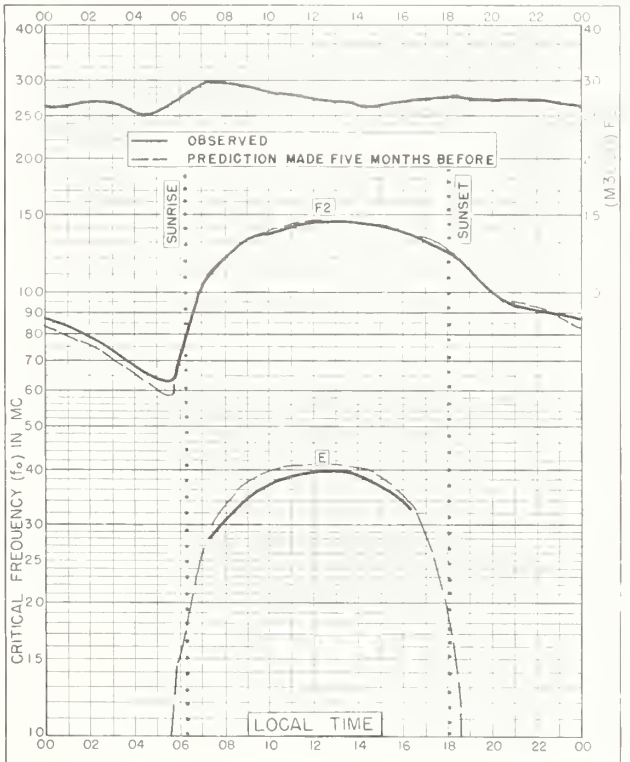


Fig. 59. TOKYO, JAPAN
35.7°N, 139.5°E MARCH 1959

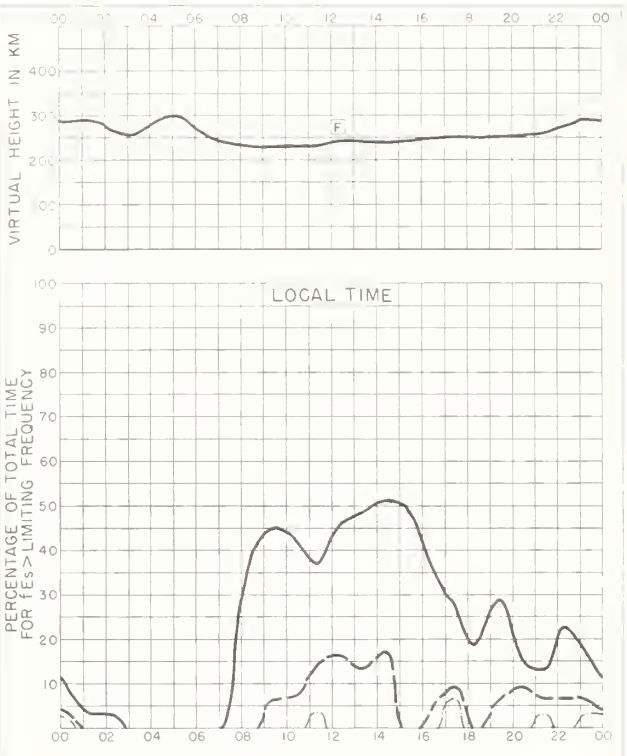


Fig. 60. TOKYO, JAPAN MARCH 1959

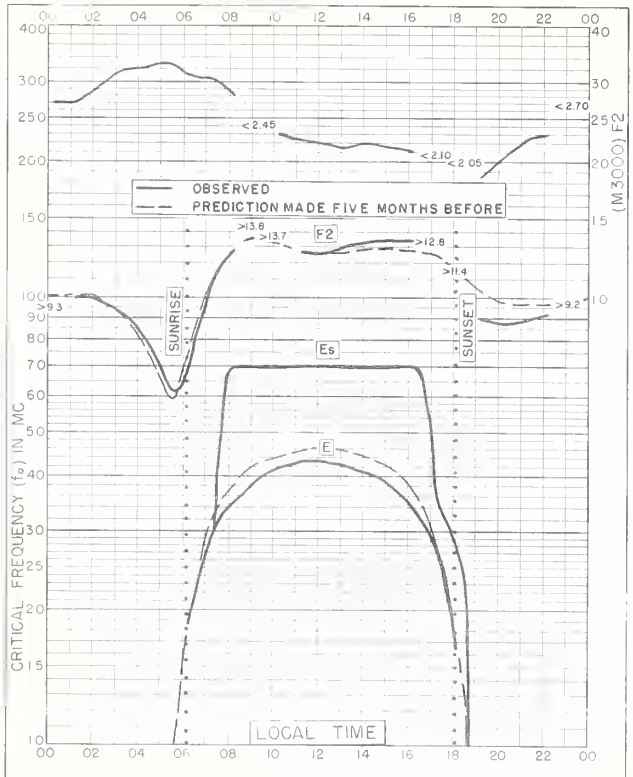


Fig. 61. IBADAN, NIGERIA
7.4°N , 3.9°E MARCH 1959

NBS 503

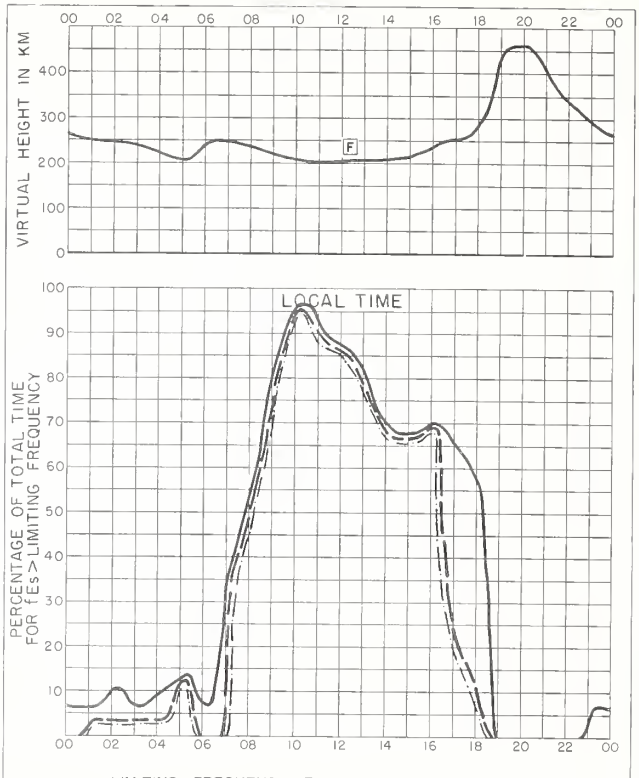


Fig. 62. IBADAN, NIGERIA MARCH 1959

NBS 490

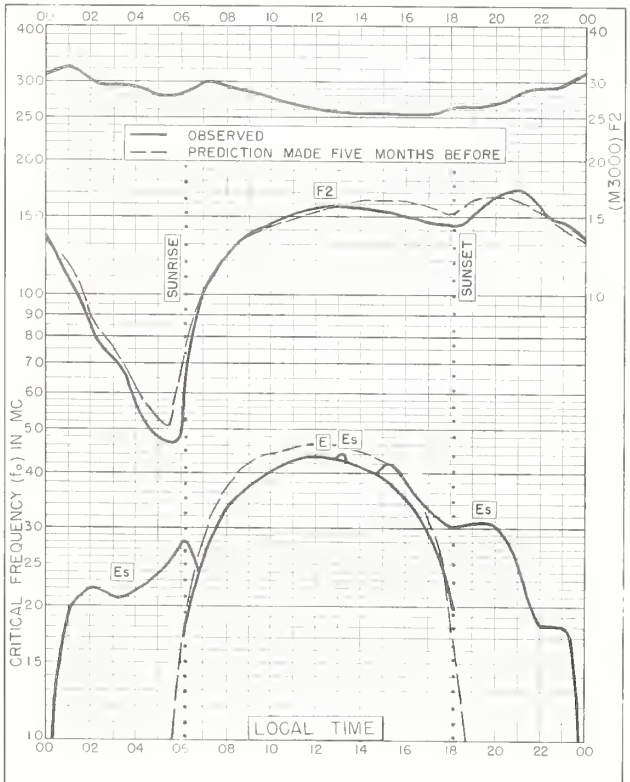


Fig. 63. BOGOTA , COLOMBIA
4.5°N, 74.2°W MARCH 1959

NBS 503

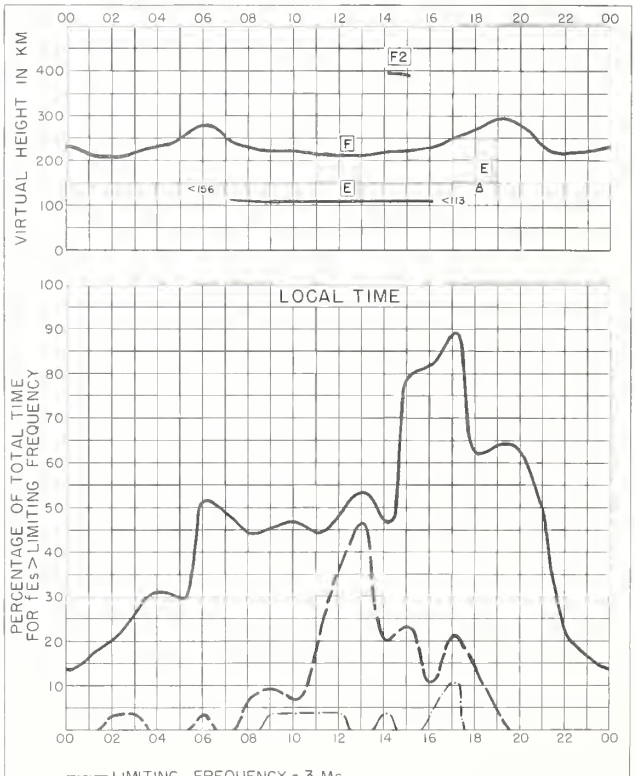


Fig. 64. BOGOTA , COLOMBIA MARCH 1959

NBS 490

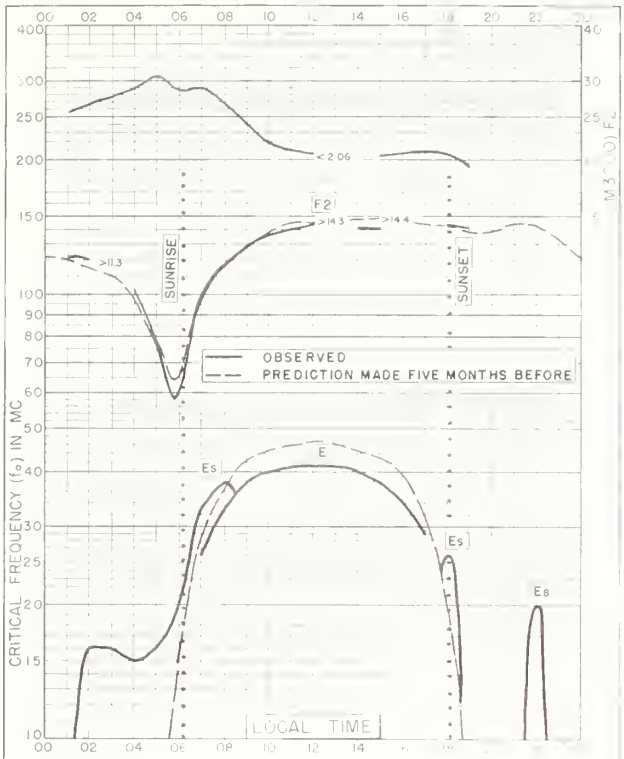


Fig. 65. BUNIA, BELGIAN CONGO
1.5°N , 30.2°E MARCH 1959

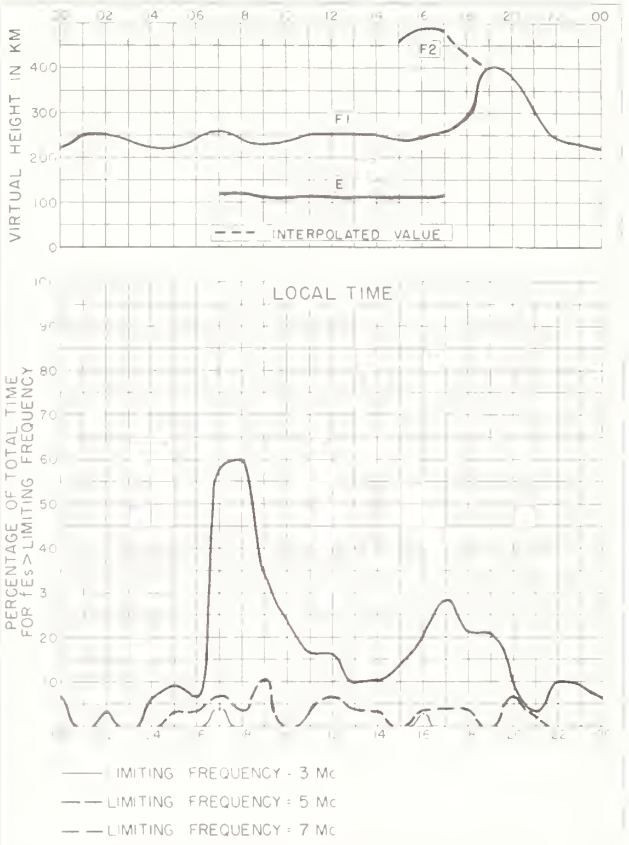


Fig. 66. BUNIA, BELGIAN CONGO MARCH 1959

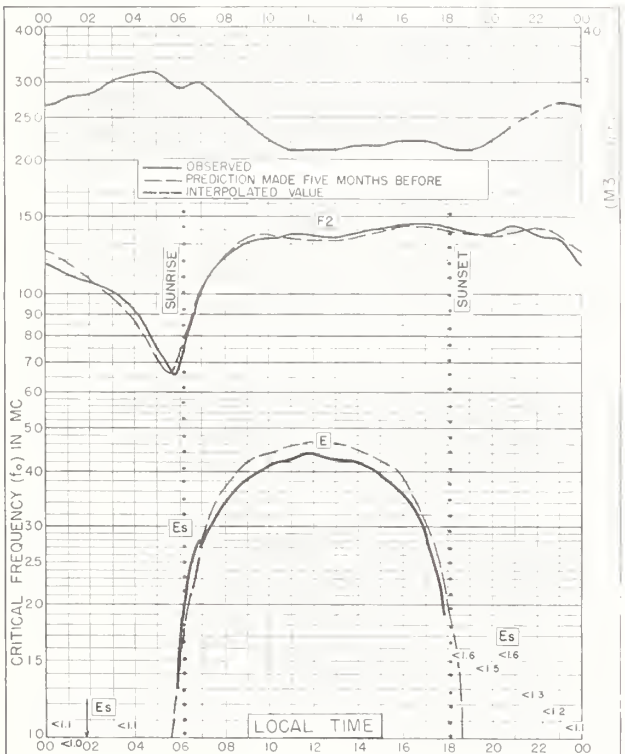


Fig. 67. SINGAPORE, BRITISH MALAYA
1.3°N , 103.8°E MARCH 1959

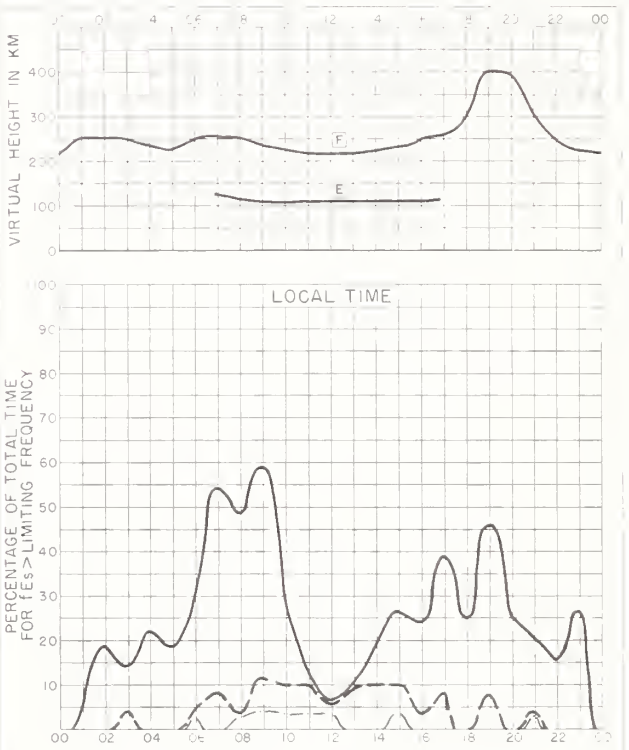


Fig. 68. SINGAPORE, BRITISH MALAYA MARCH 1959

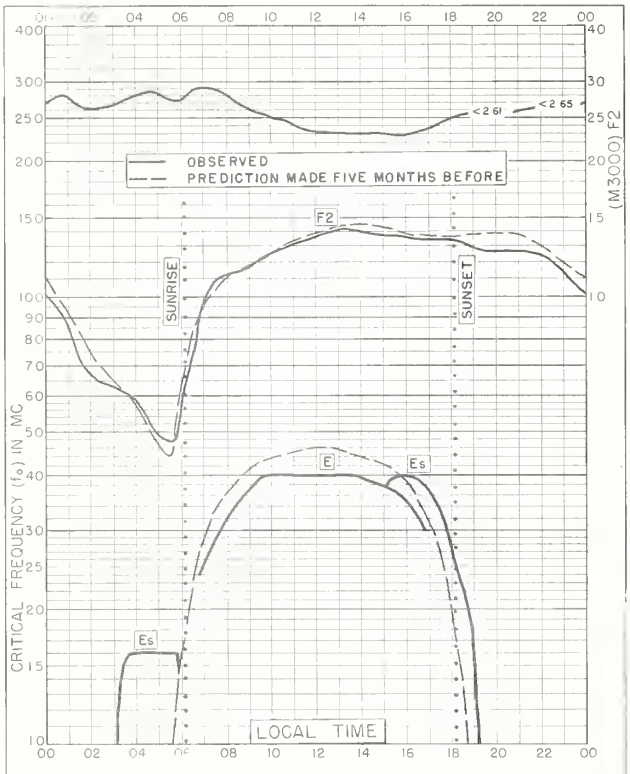


Fig. 69. ELISABETHVILLE, BELGIAN CONGO
11.6°S, 27.5°E MARCH 1959

NBS 503

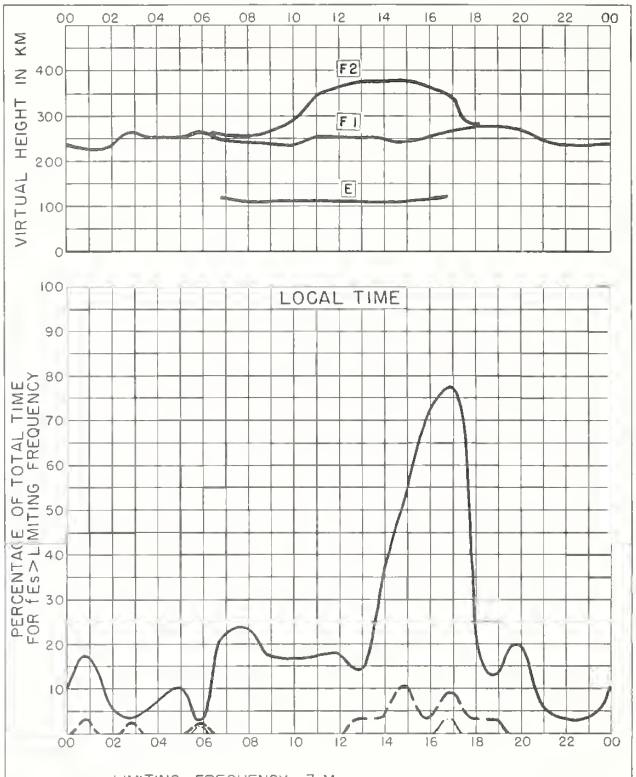


Fig. 70. ELISABETHVILLE, BELGIAN CONGO MARCH 1959

NBS 490

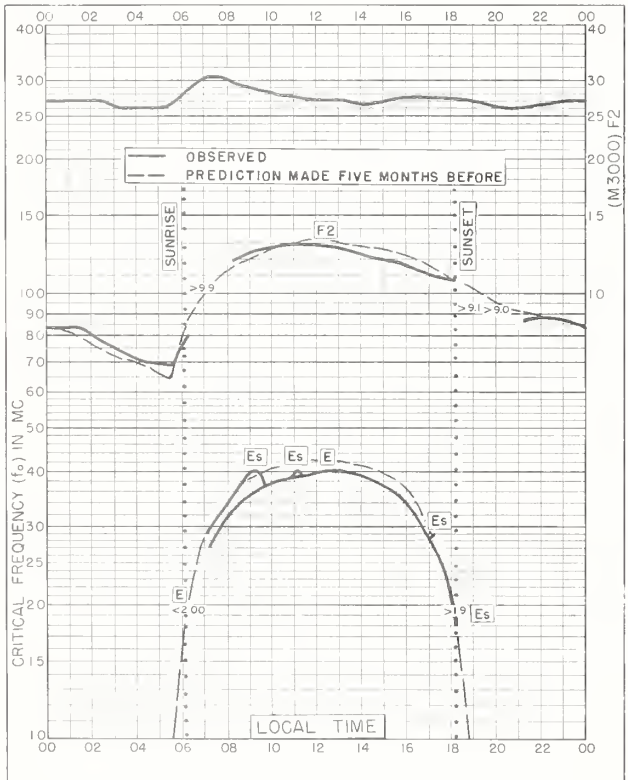


Fig. 71. BRISBANE, AUSTRALIA
27.5°S, 152.9°E MARCH 1959

NBS 503

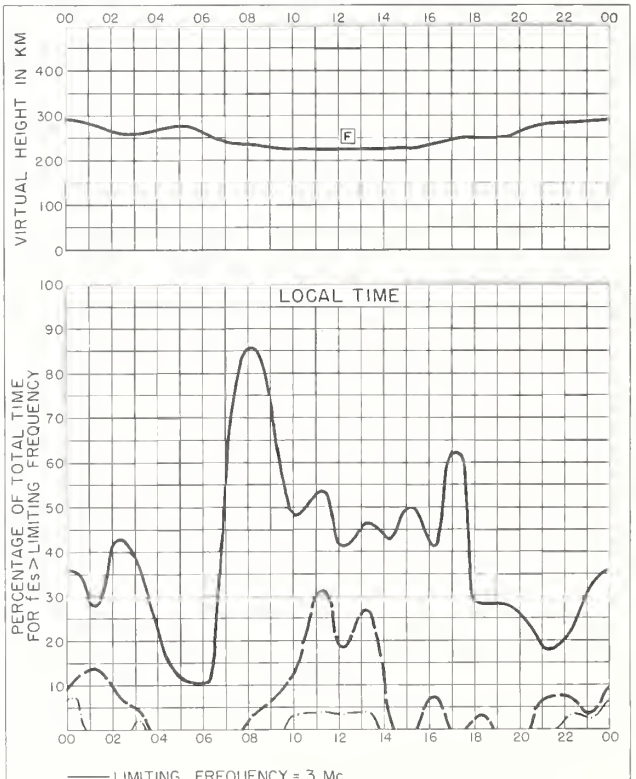


Fig. 72. BRISBANE, AUSTRALIA MARCH 1959

NBS 490

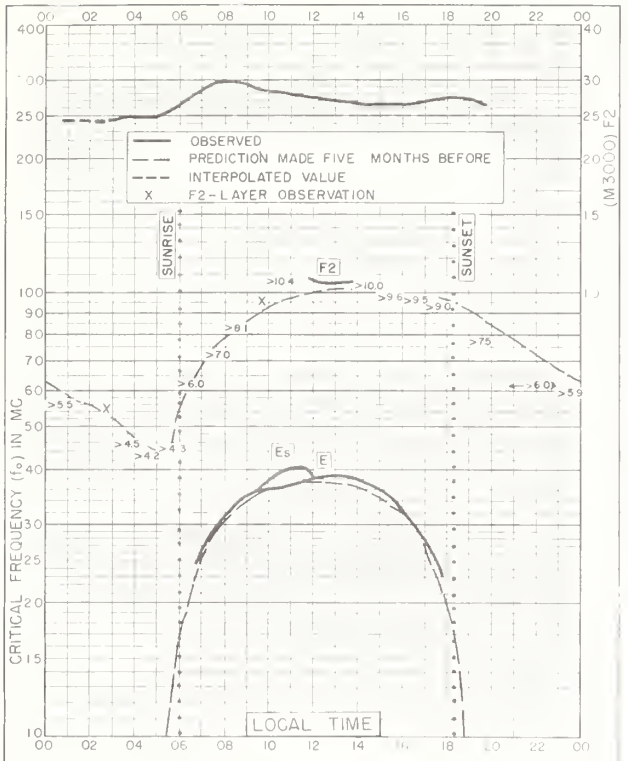


Fig. 73. HOBART, TASMANIA
42.9°S, 147.2°E MARCH 1959

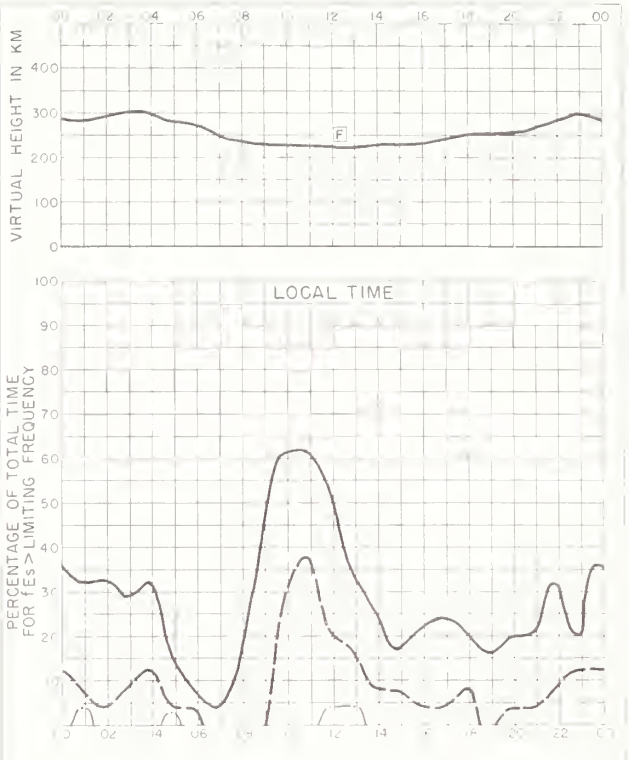


Fig. 74. HOBART, TASMANIA MARCH 1959

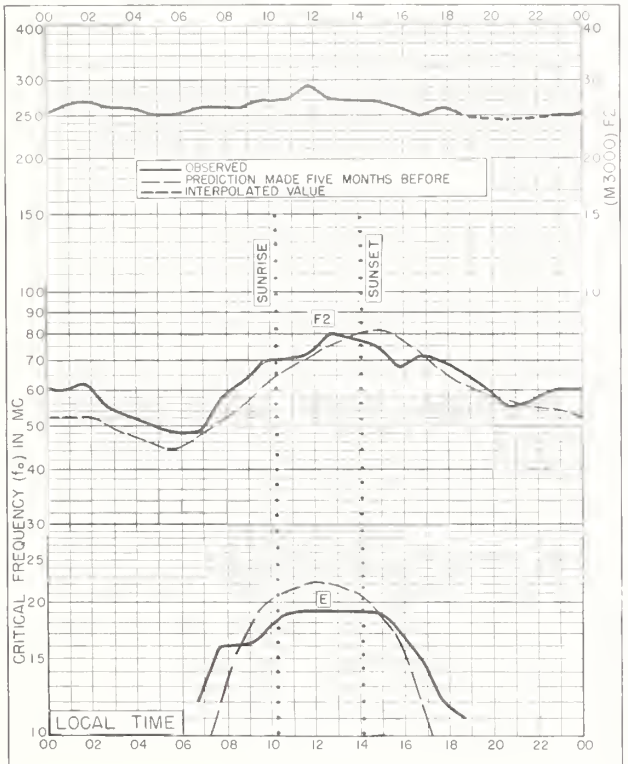


Fig. 75. RESOLUTE BAY, CANADA
74.7°N, 94.9°W FEBRUARY 1959

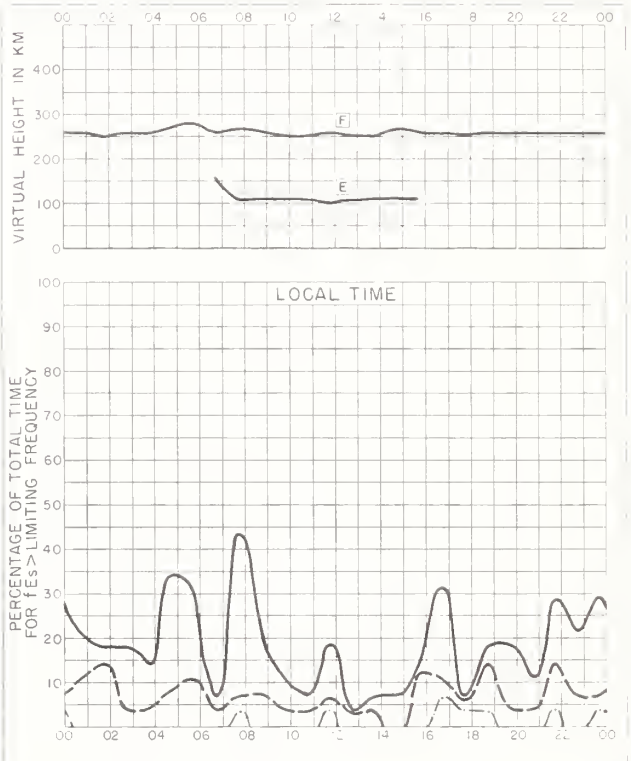


Fig. 76. RESOLUTE BAY, CANADA FEBRUARY 1959

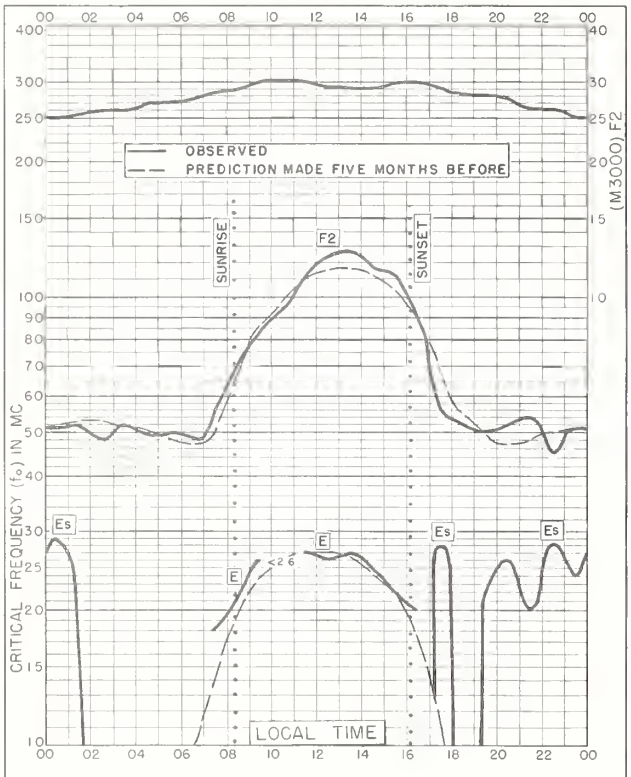


Fig. 77. LULEA, SWEDEN
65.6°N, 22.1°E FEBRUARY 1959

NBS 503

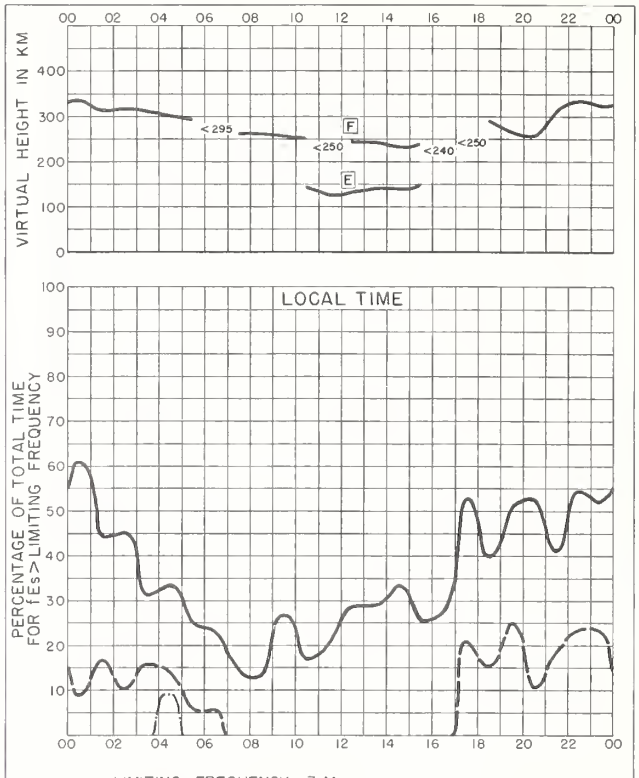


Fig. 78. LULEA, SWEDEN FEBRUARY 1959

NBS 490

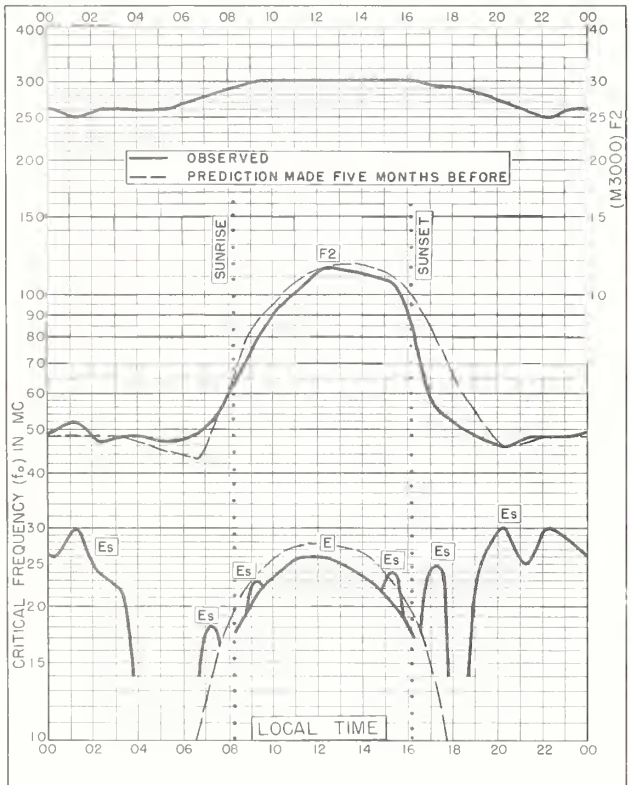


Fig. 79. LYCKSELE, SWEDEN
64.6°N, 18.8°E FEBRUARY 1959

NBS 503

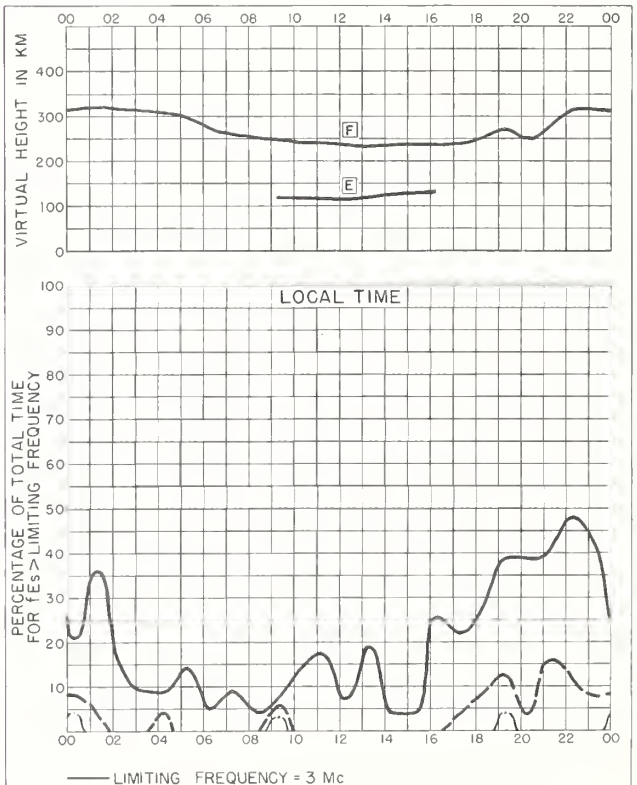


Fig. 80. LYCKSELE, SWEDEN FEBRUARY 1959

NBS 490

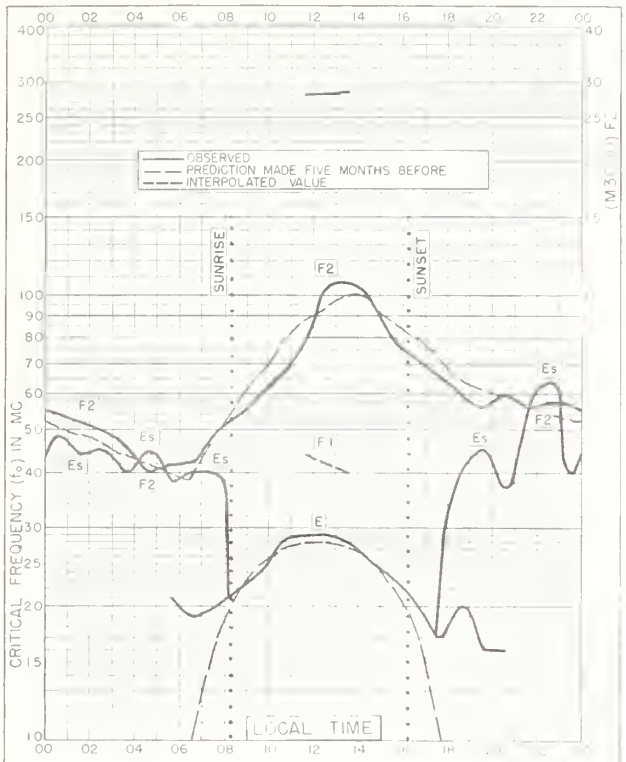


Fig. 81. BAKER LAKE, CANADA
64.3°N, 96.0°W FEBRUARY 1959

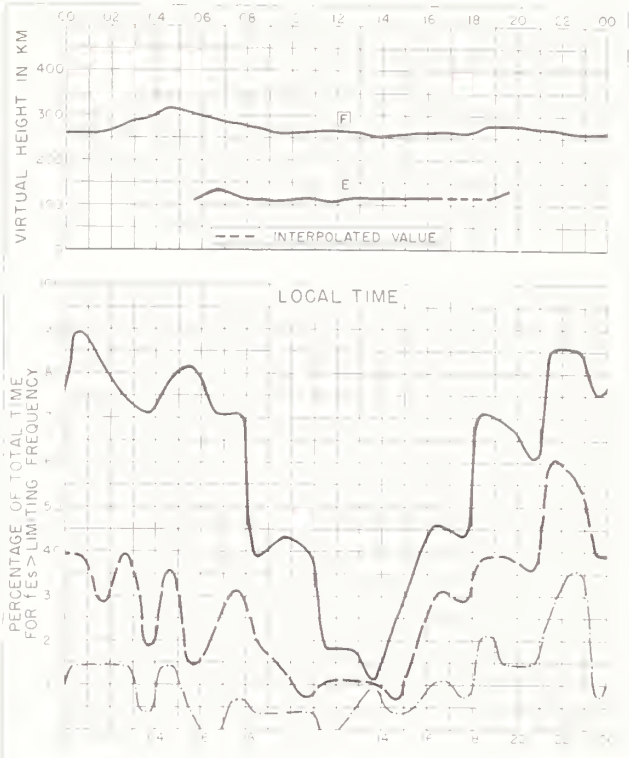


Fig. 82. BAKER LAKE, CANADA FEBRUARY 1959

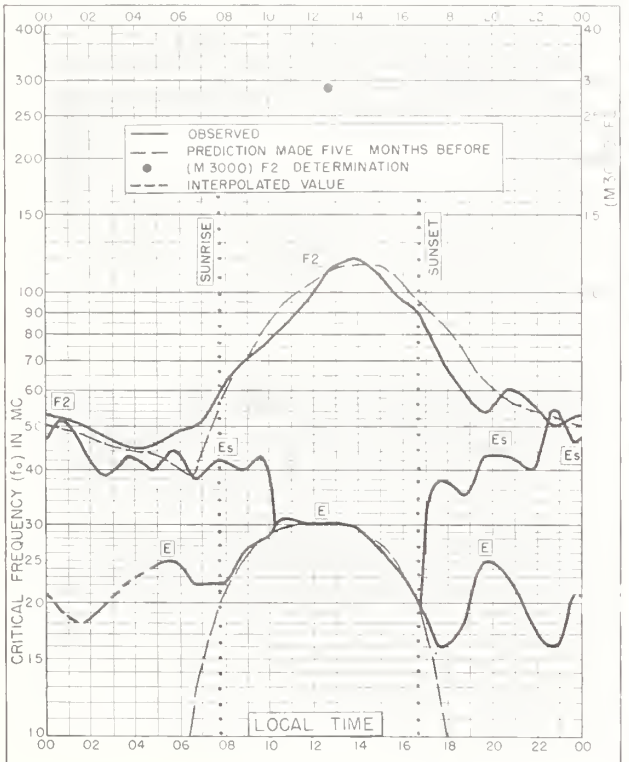


Fig. 83. CHURCHILL, CANADA
58.8°N, 94.2°W FEBRUARY 1959

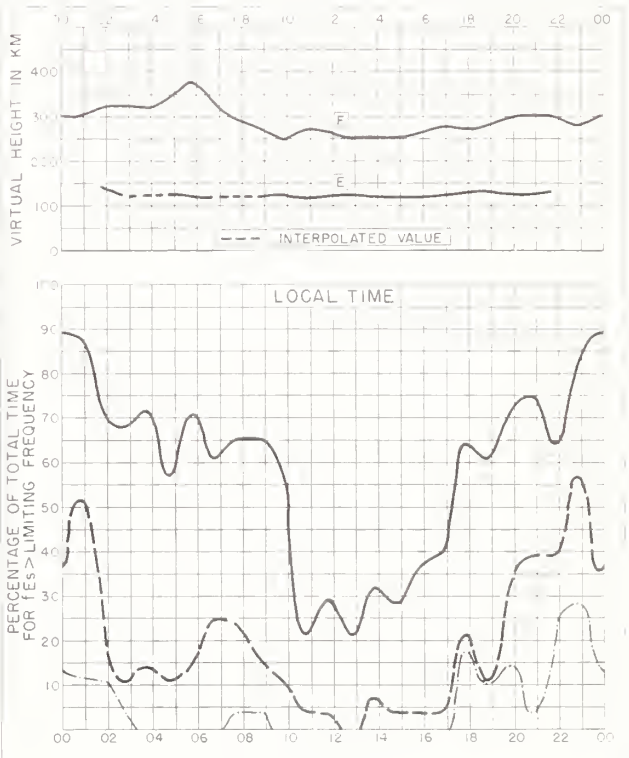


Fig. 84. CHURCHILL, CANADA FEBRUARY 1959

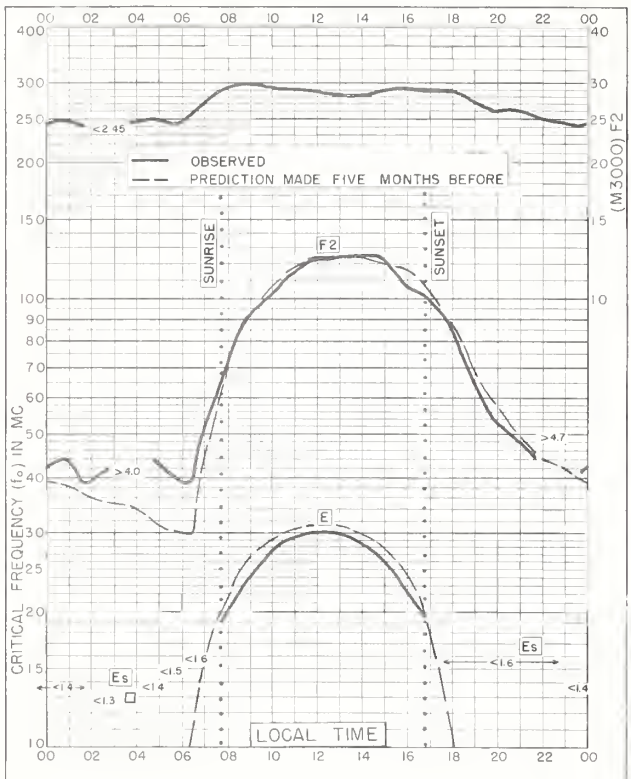


Fig. 85. INVERNESS, SCOTLAND
57.4°N, 4.2°W FEBRUARY 1959

NBS 503

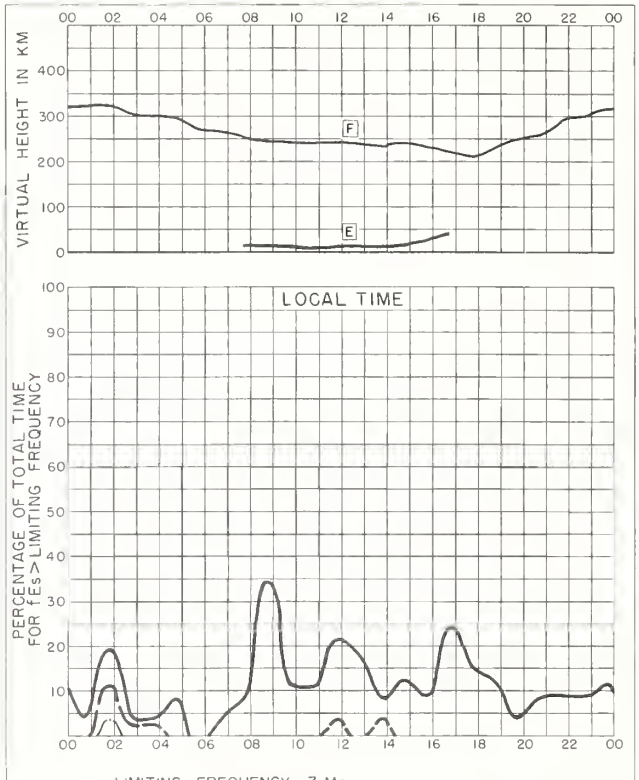


Fig. 86. INVERNESS, SCOTLAND FEBRUARY 1959

NBS 490

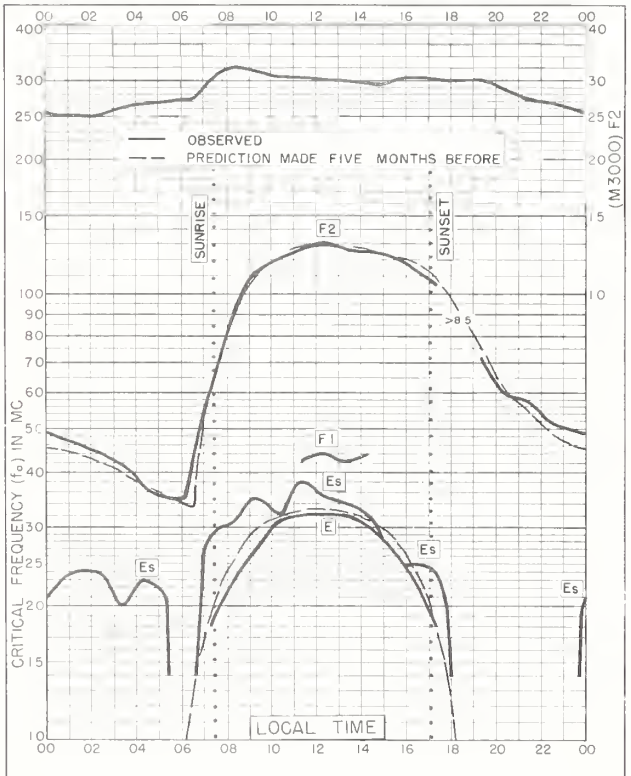


Fig. 87. De BILT, HOLLAND
52.1°N, 5.2°E FEBRUARY 1959

NBS 503

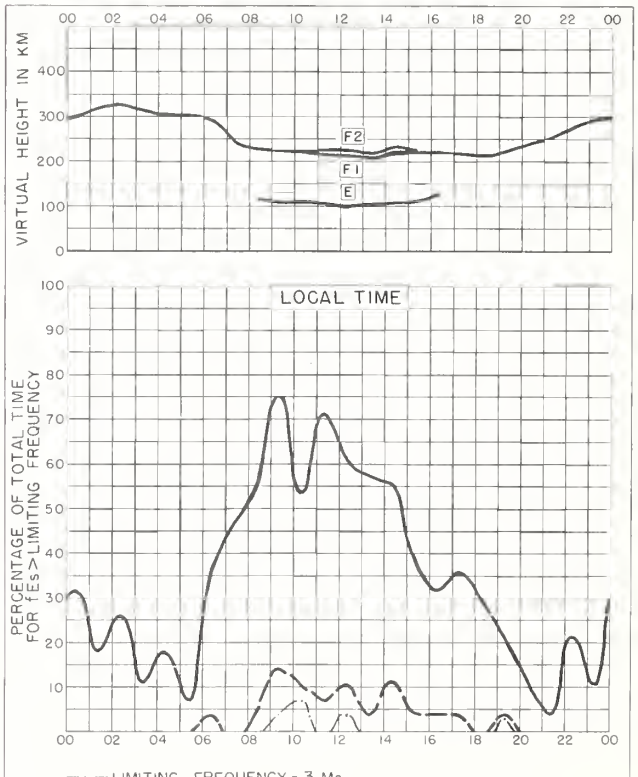


Fig. 88. De BILT, HOLLAND FEBRUARY 1959

NBS 490

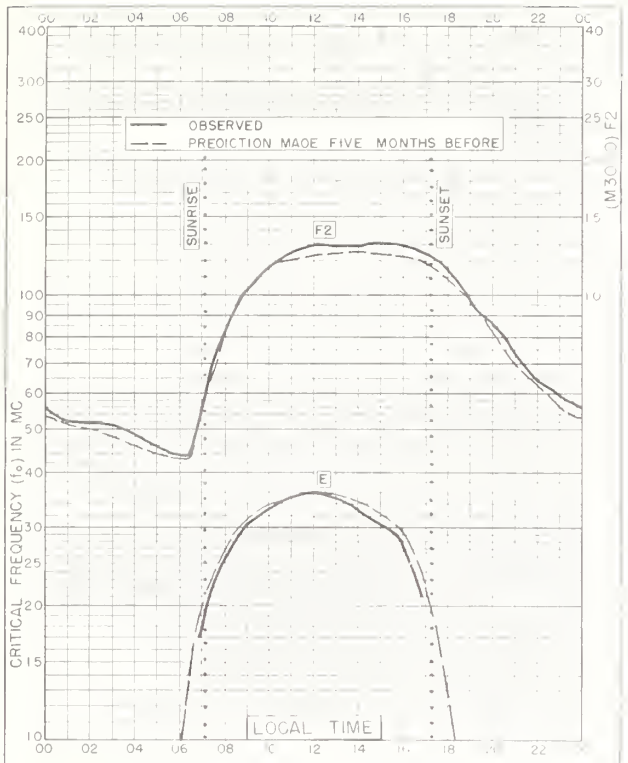


Fig. 89. OTTAWA, CANADA
45.4°N, 75.9°W FEBRUARY 1959

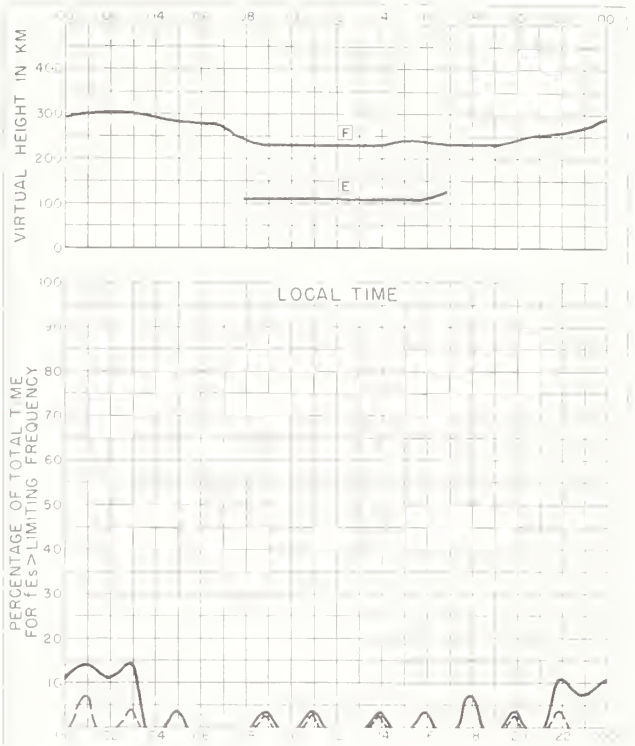


Fig. 90. OTTAWA, CANADA FEBRUARY 1959

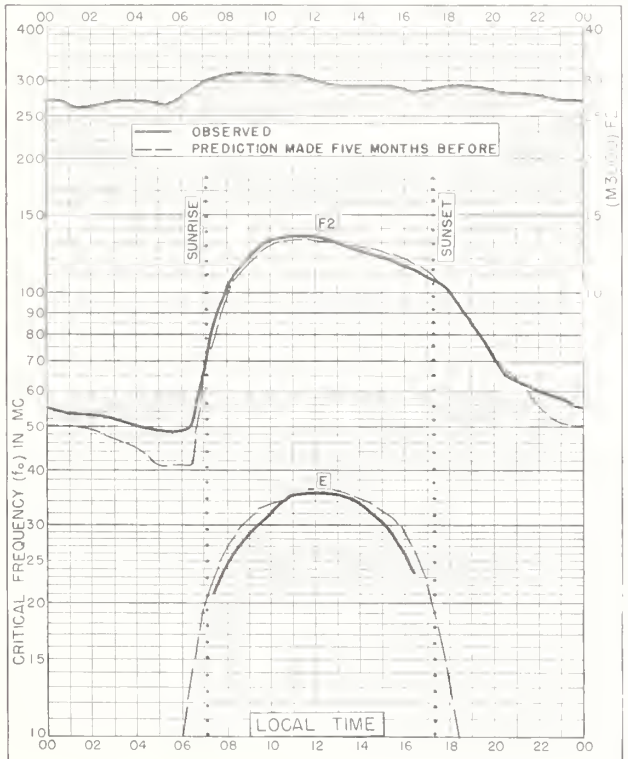


Fig. 91. WAKKANAI, JAPAN
45.4°N, 141.7°E FEBRUARY 1959

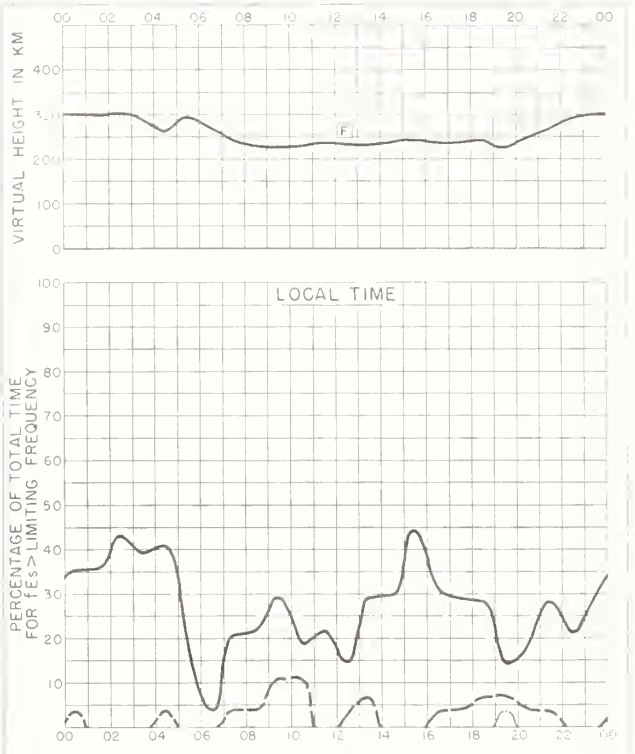


Fig. 92. WAKKANAI, JAPAN FEBRUARY 1959

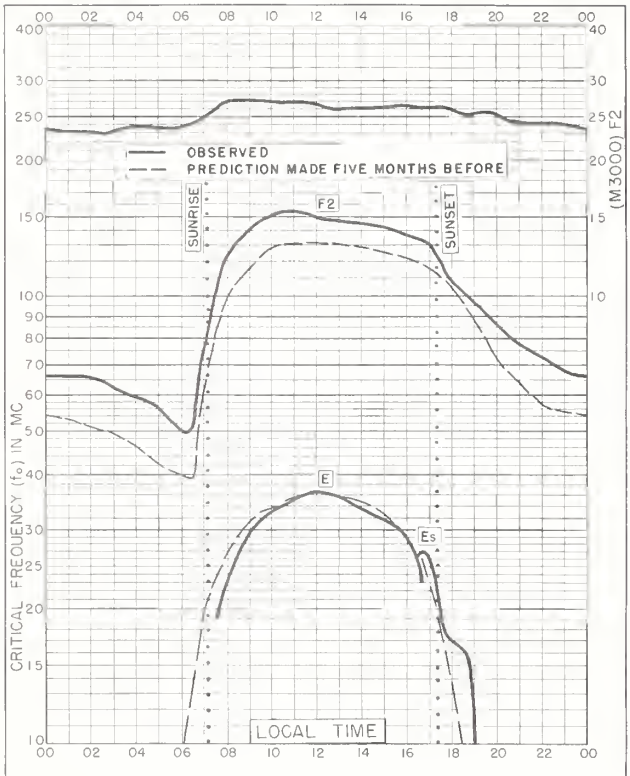
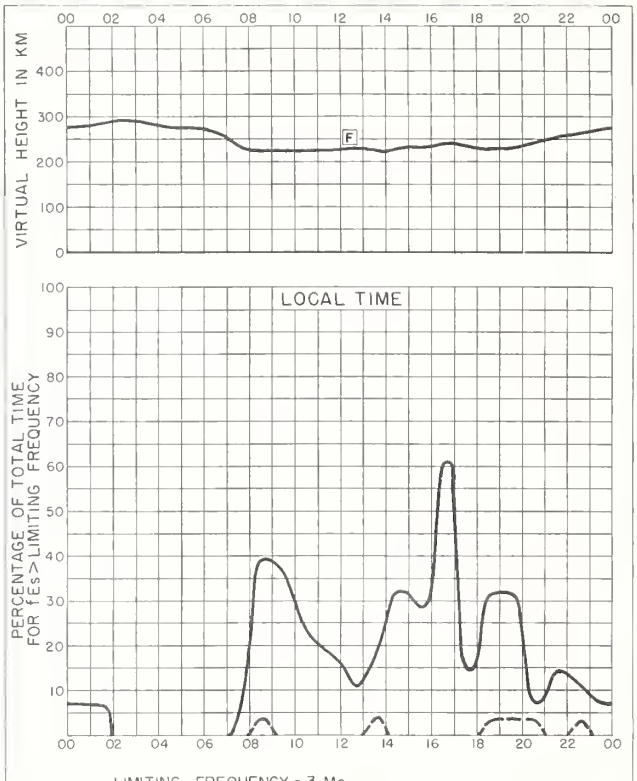


Fig. 93. MONTE CAPELLINO, ITALY
44.6°N, 9.0°E FEBRUARY 1959

NBS 503



FEBRUARY 1959

Fig. 94. MONTE CAPELLINO, ITALY

NBS 490

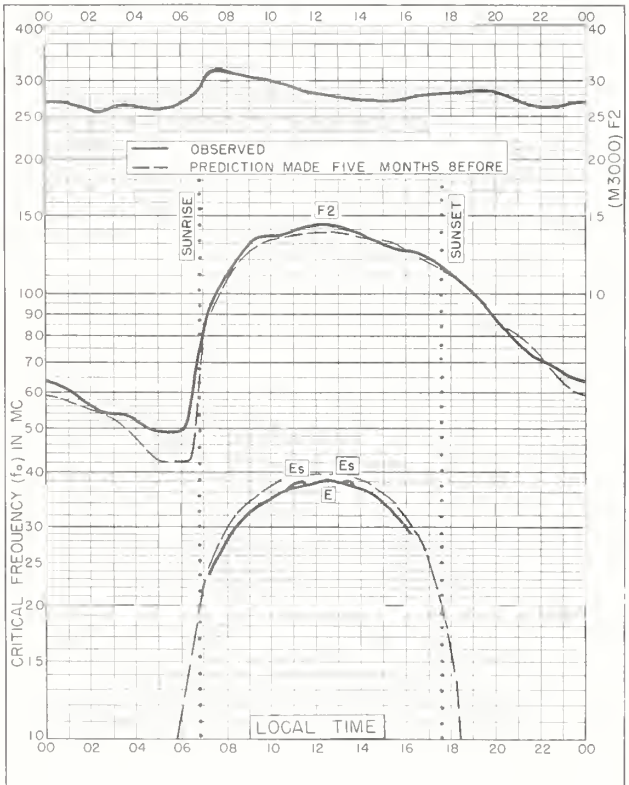


Fig. 95. TOKYO, JAPAN
35.7°N, 139.5°E FEBRUARY 1959

NBS 503

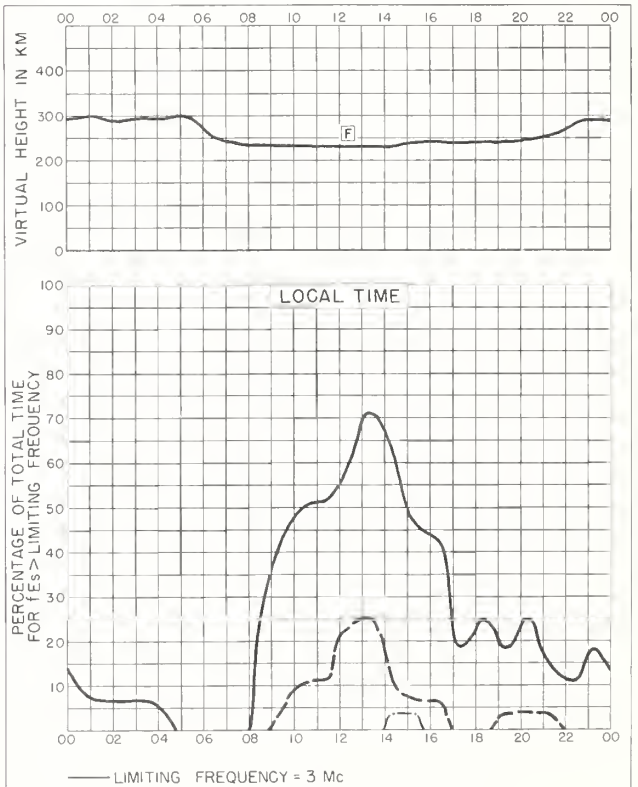


Fig. 96. TOKYO, JAPAN FEBRUARY 1959

NBS 490

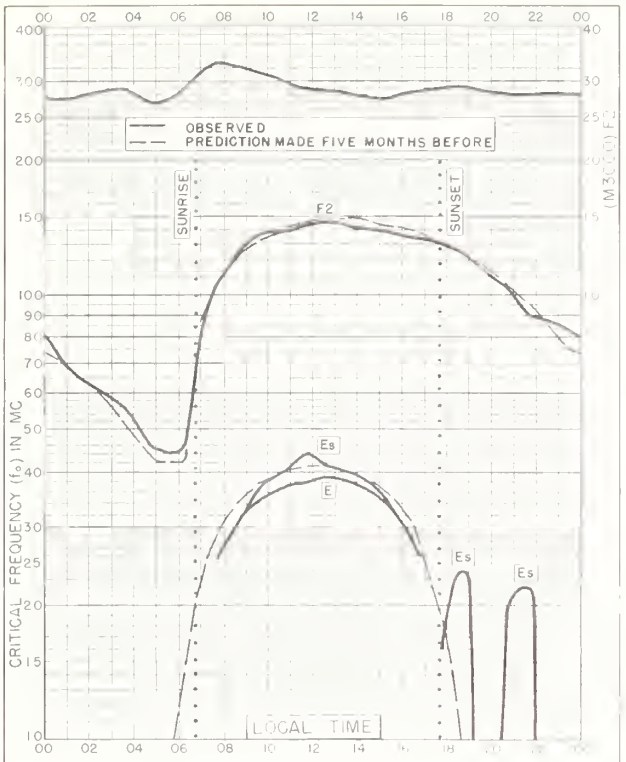


Fig. 97. YAMAGAWA, JAPAN
31.2°N, 130.6°E FEBRUARY 1959

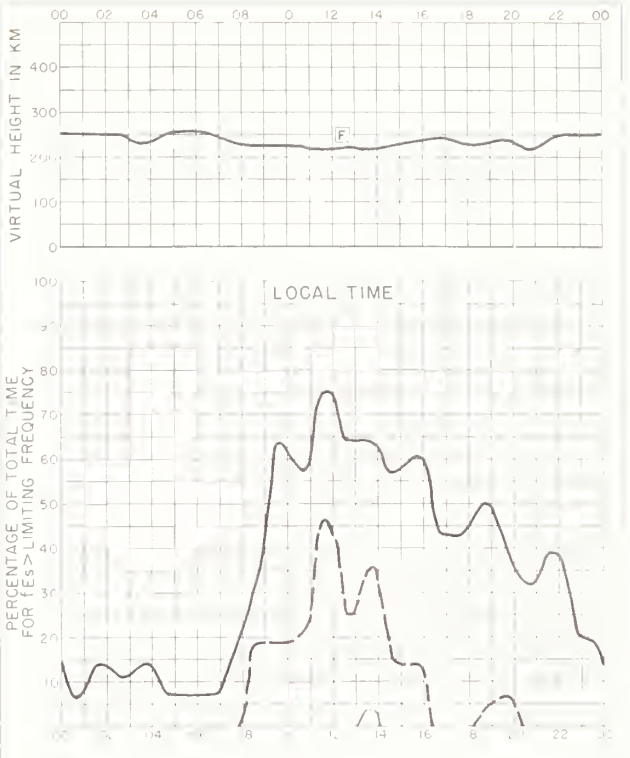


Fig 98. YAMAGAWA, JAPAN FEBRUARY 1959

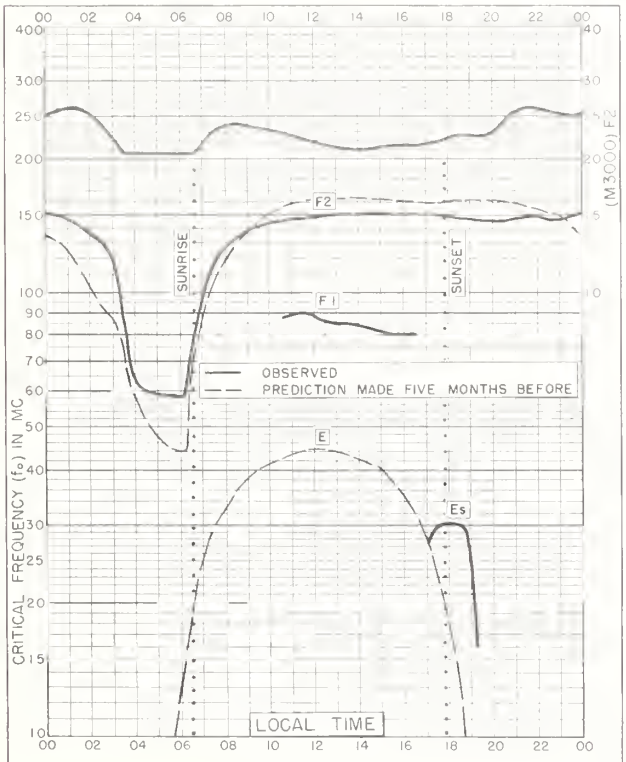


Fig. 99. MACAU
22.2°N, 113.6°E FEBRUARY 1959

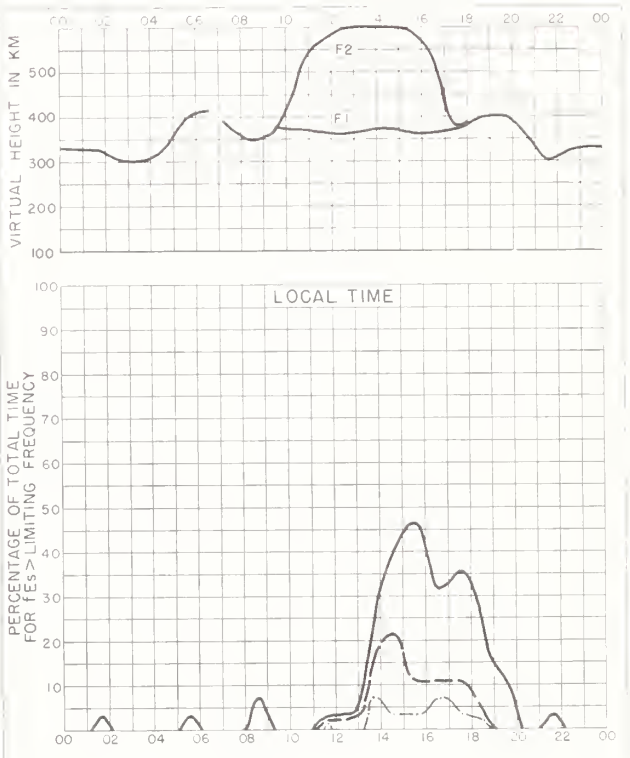


Fig. 100. MACAU FEBRUARY 1959

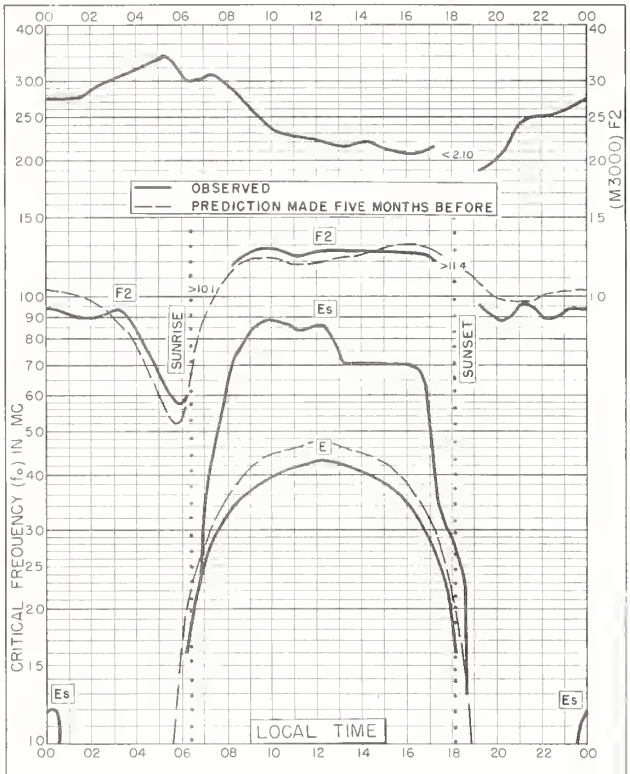


Fig. 101. IBADAN, NIGERIA
7.4°N, 3.9°E FEBRUARY 1959

NBS 503

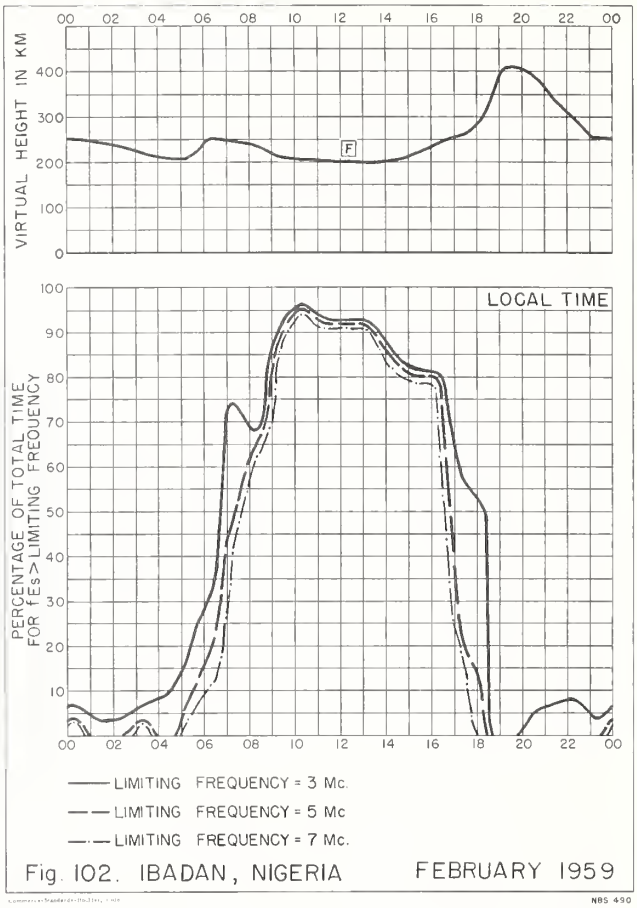


Fig. 102. IBADAN, NIGERIA FEBRUARY 1959

NBS 490

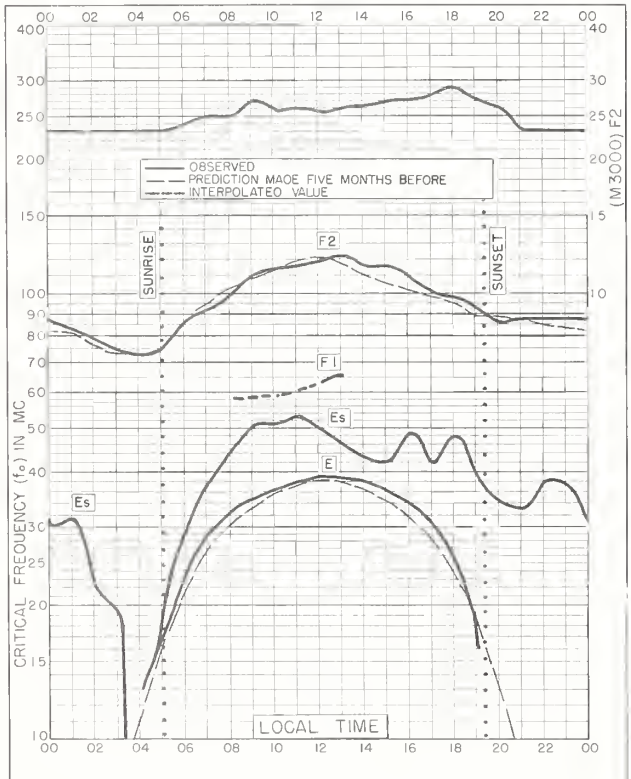


Fig 103. FALKLAND IS.
51.7°S, 57.8°W FEBRUARY 1959

NBS 503

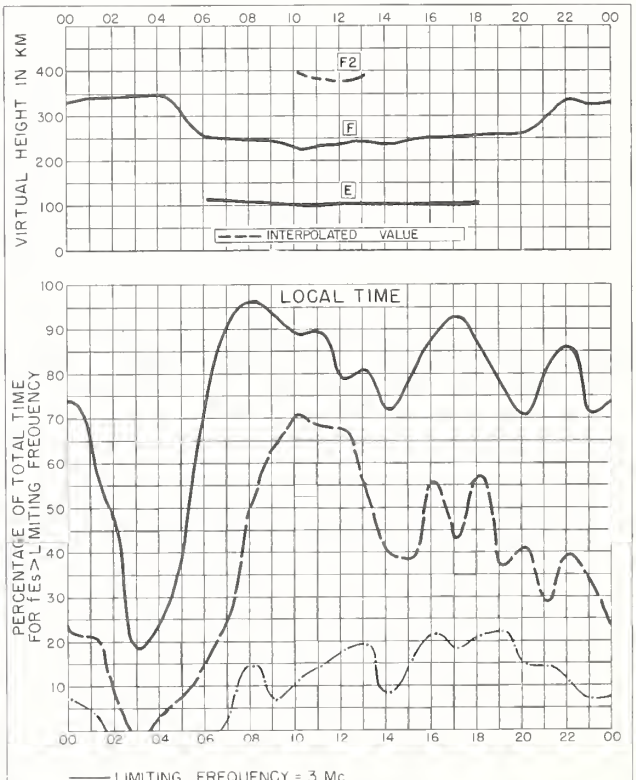


Fig 104. FALKLAND IS. FEBRUARY 1959

NBS 490

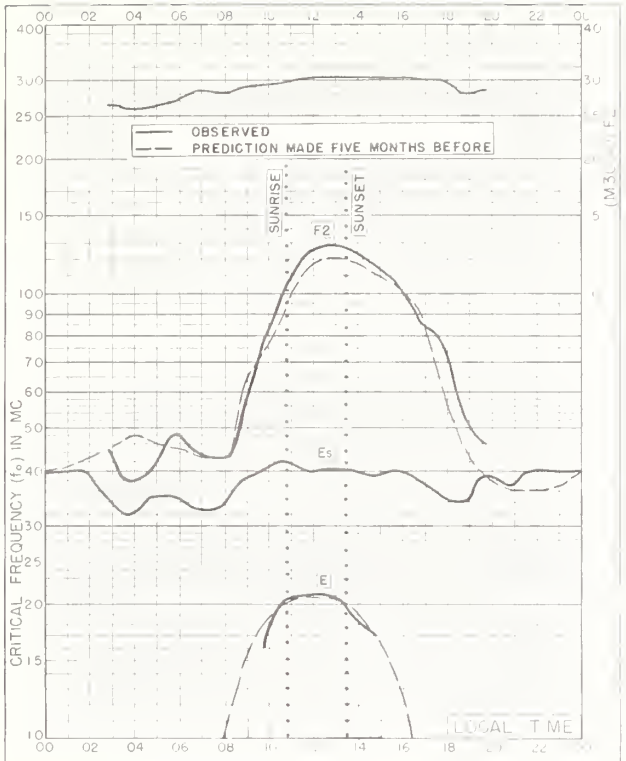


Fig. 105. SODANKYLA, FINLAND
67.4°N , 26.6°E JANUARY 1959

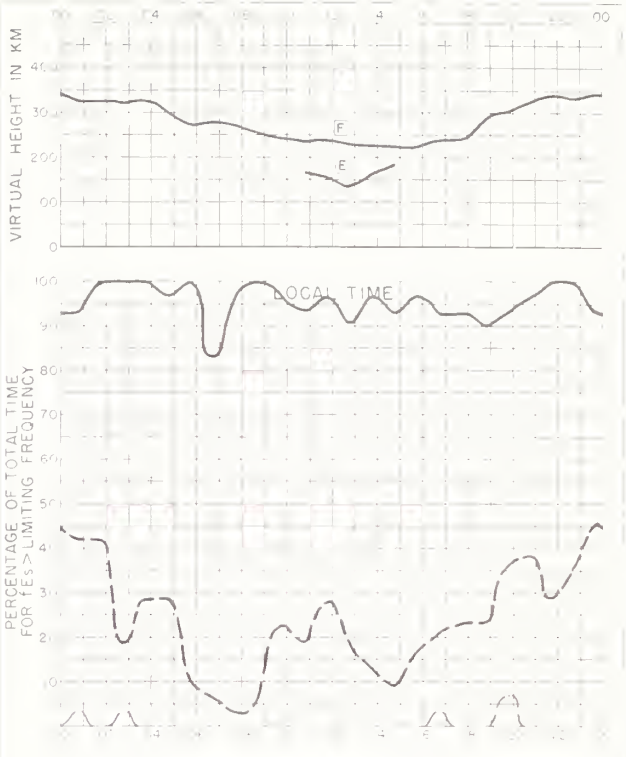


Fig. 106. SODANKYLA, FINLAND JANUARY 1959

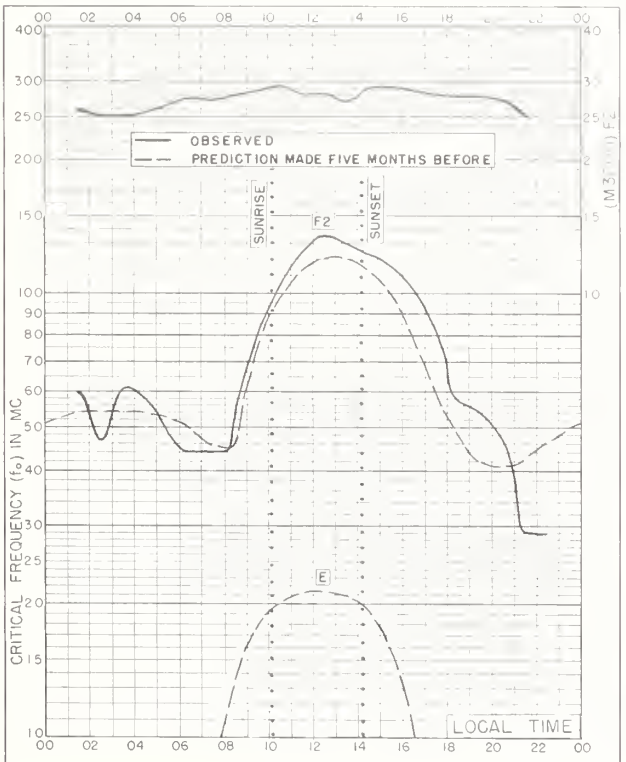


Fig. 107. LULEA, SWEDEN
65.6°N , 22.1°E JANUARY 1959

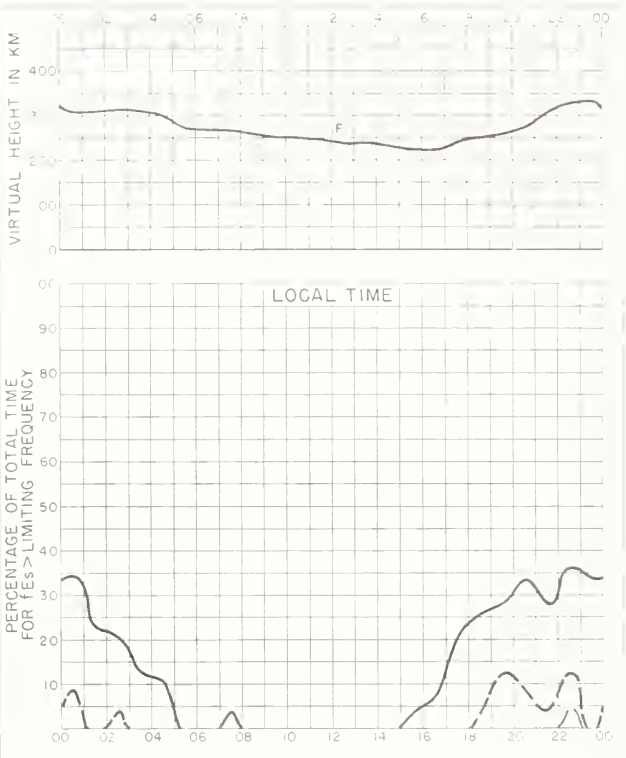


Fig. 108. LULEA, SWEDEN JANUARY 1959

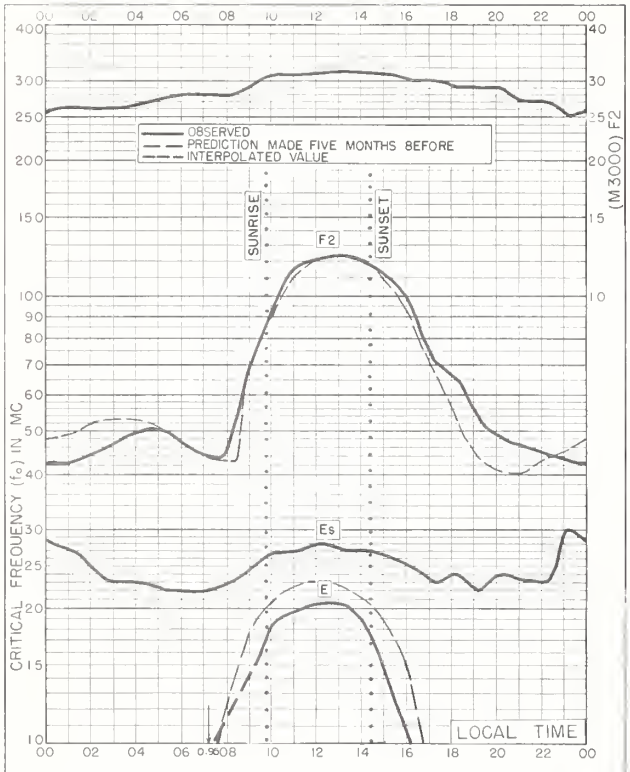


Fig. 109. LYCKSELE, SWEDEN
64.6°N, 18.8°E JANUARY 1959

NBS 503

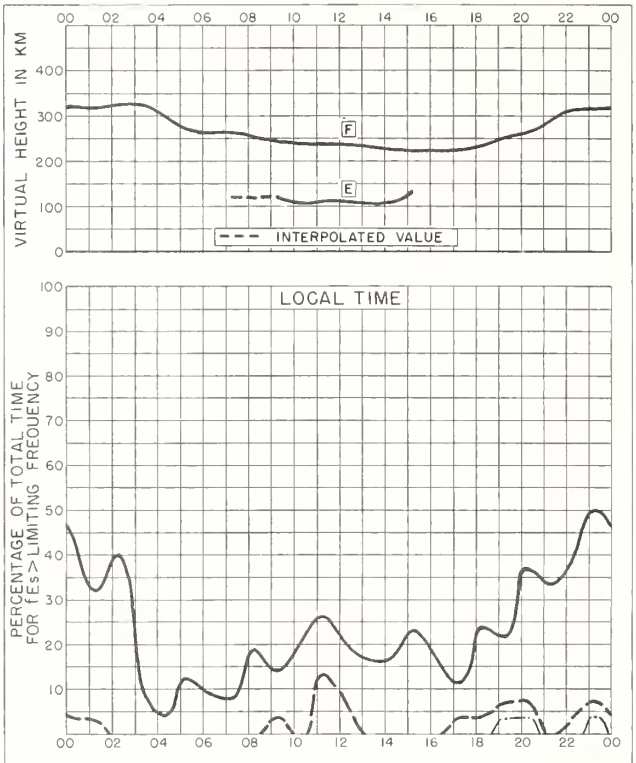


Fig. 110. LYCKSELE, SWEDEN JANUARY 1959

NBS 490

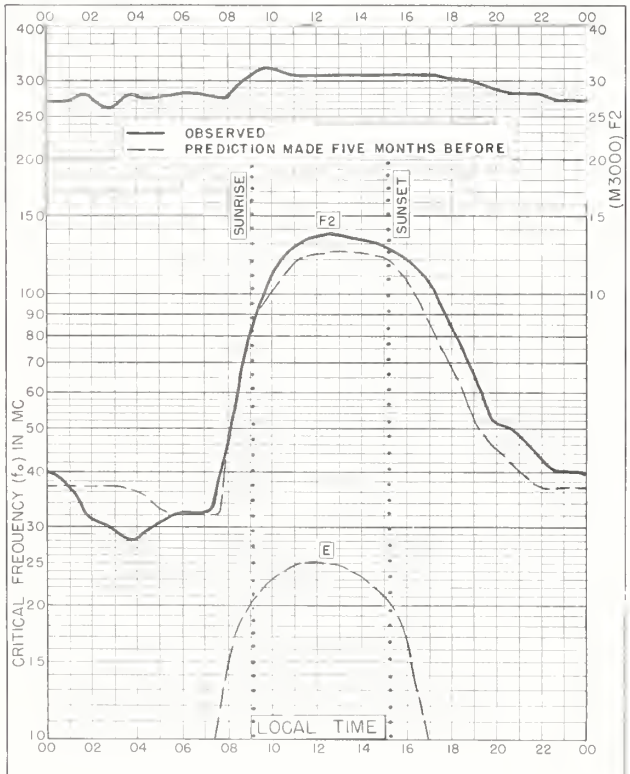


Fig. 111. NURMIJARVI, FINLAND
60.5°N, 24.6°E JANUARY 1959

NBS 503

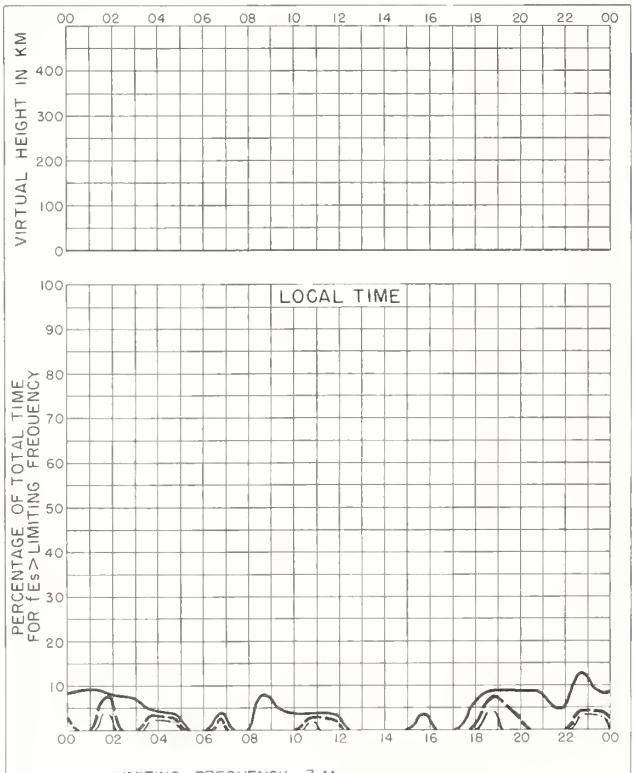


Fig. 112. NURMIJARVI, FINLAND JANUARY 1959

NBS 490

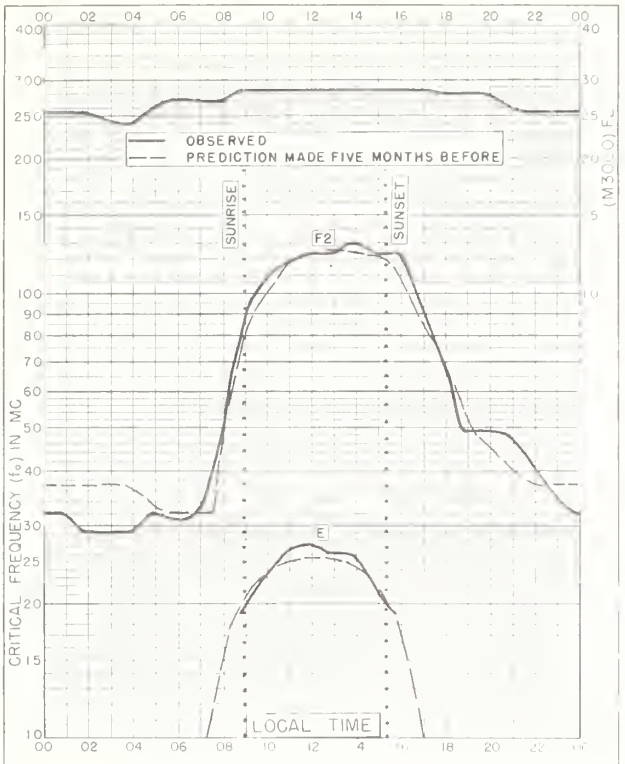


Fig. 113. OSLO, NORWAY
60.0°N, 11.1°E JANUARY 1959

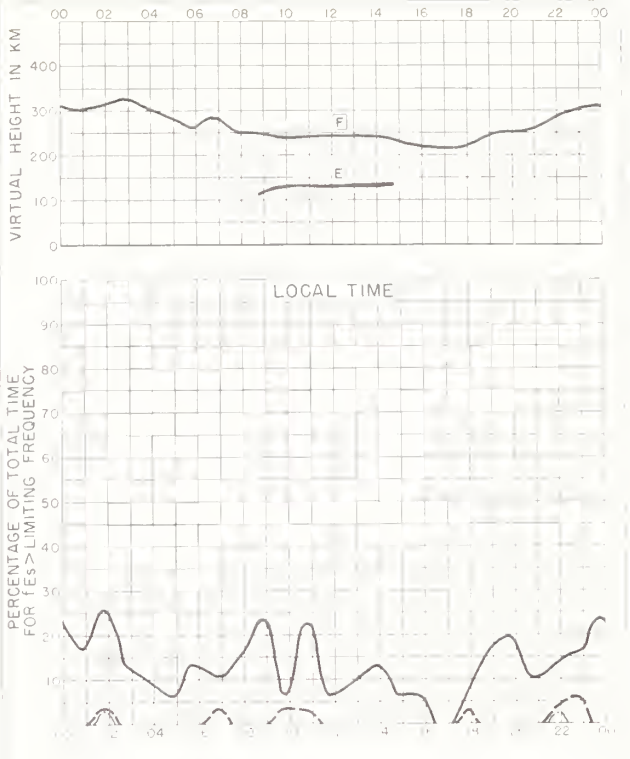


Fig. 114. OSLO, NORWAY JANUARY 1959

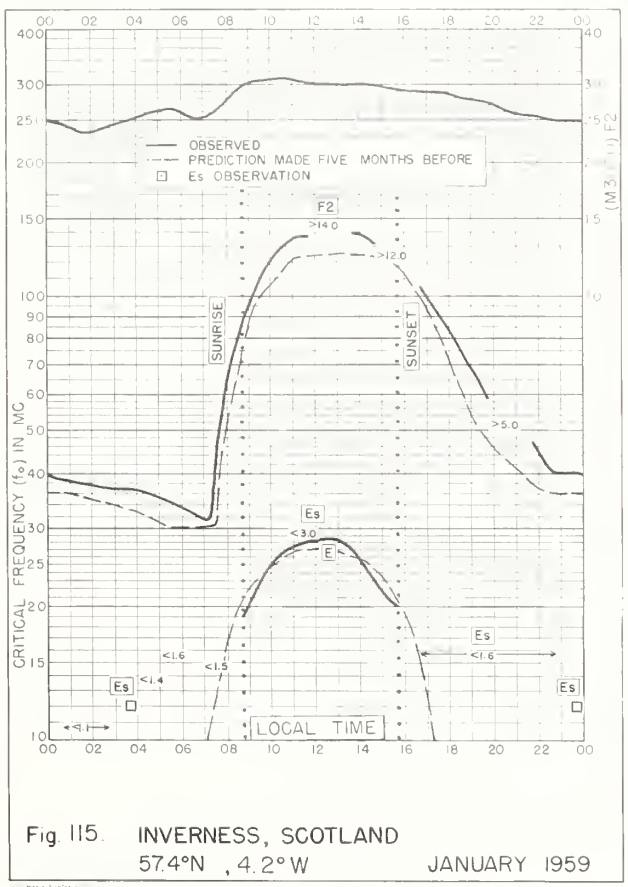


Fig. 115. INVERNESS, SCOTLAND
57.4°N, 4.2°W JANUARY 1959

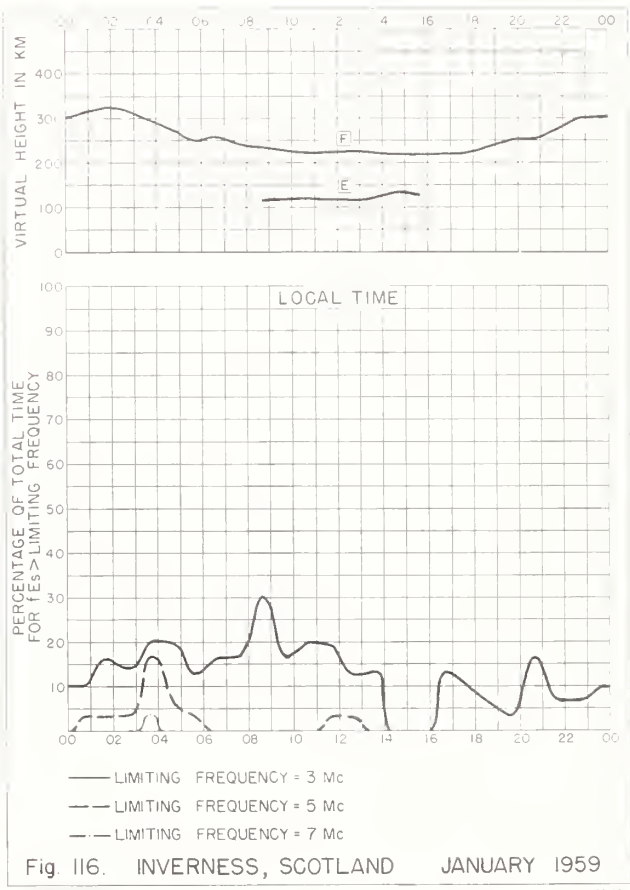


Fig. 116. INVERNESS, SCOTLAND JANUARY 1959

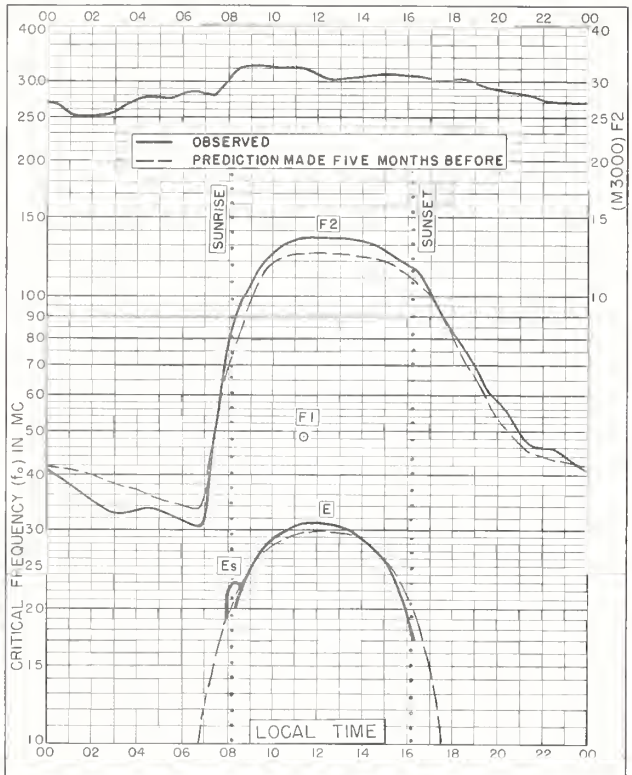


Fig. 117. De BILT, HOLLAND
52.1°N , 5.2°E JANUARY 1959

NBS 503

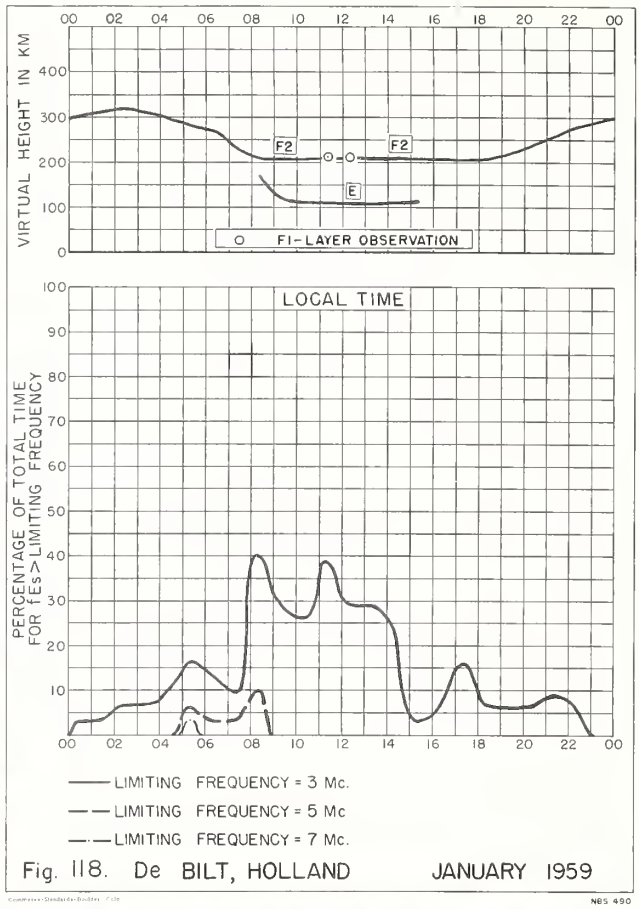


Fig. 118. De BILT, HOLLAND JANUARY 1959

NBS 490

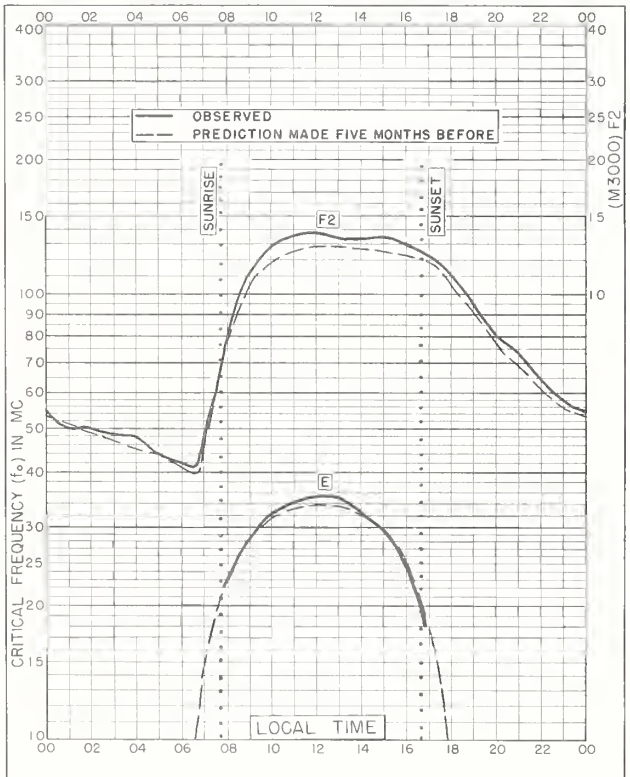


Fig. 119. OTTAWA, CANADA
45.4°N , 75.9° W JANUARY 1959

NBS 503

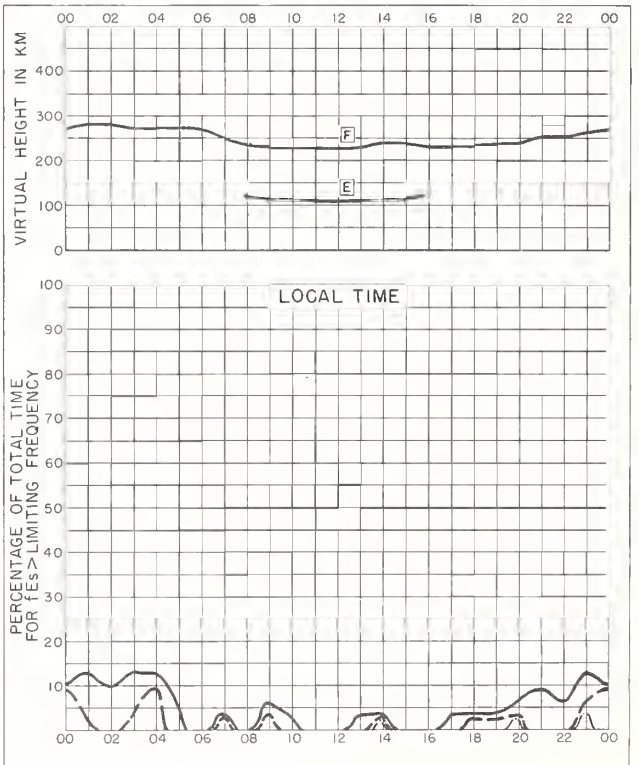


Fig. 120. OTTAWA, CANADA JANUARY 1959

NBS 490

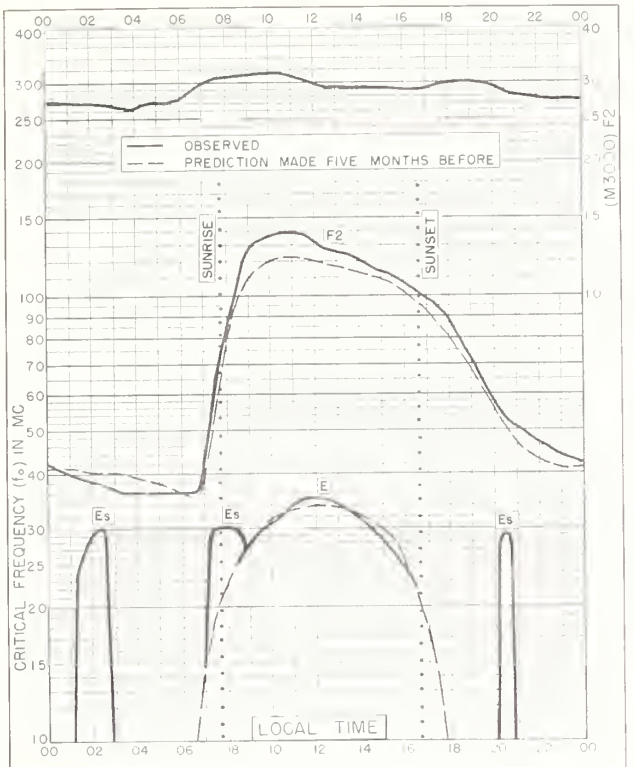


Fig. 121. WAKKANAI, JAPAN
45.4°N, 141.7°E JANUARY 1959

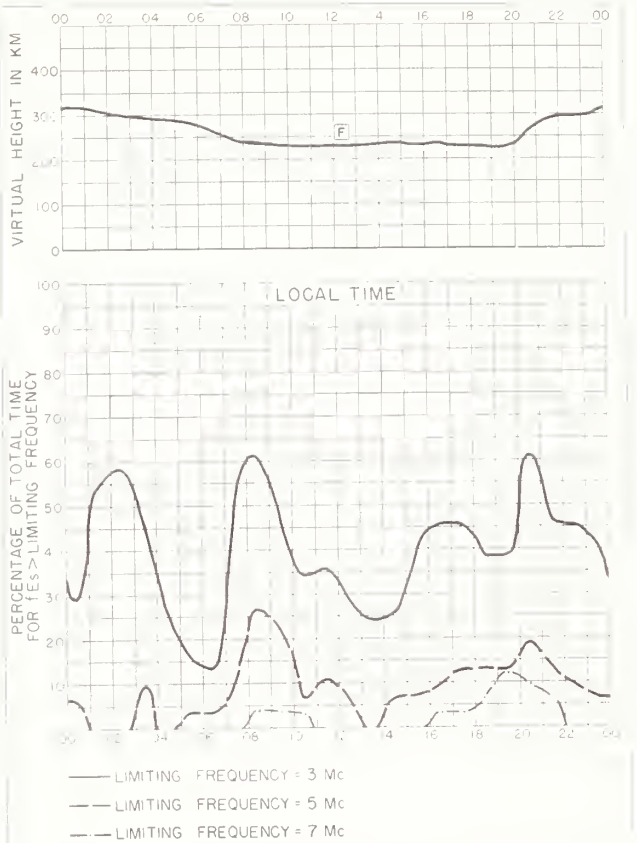


Fig. 122. WAKKANAI, JAPAN JANUARY 1959

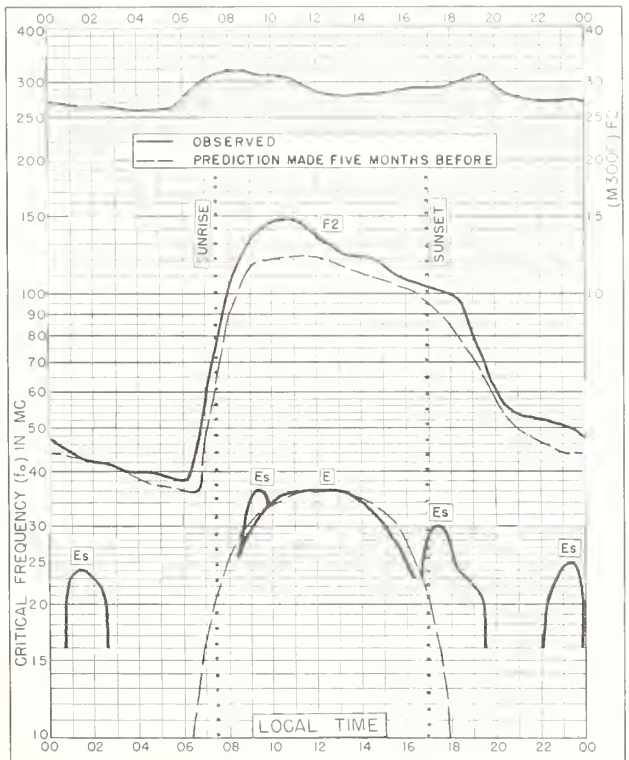


Fig. 123. AKITA, JAPAN
39.7°N, 140.1°E JANUARY 1959

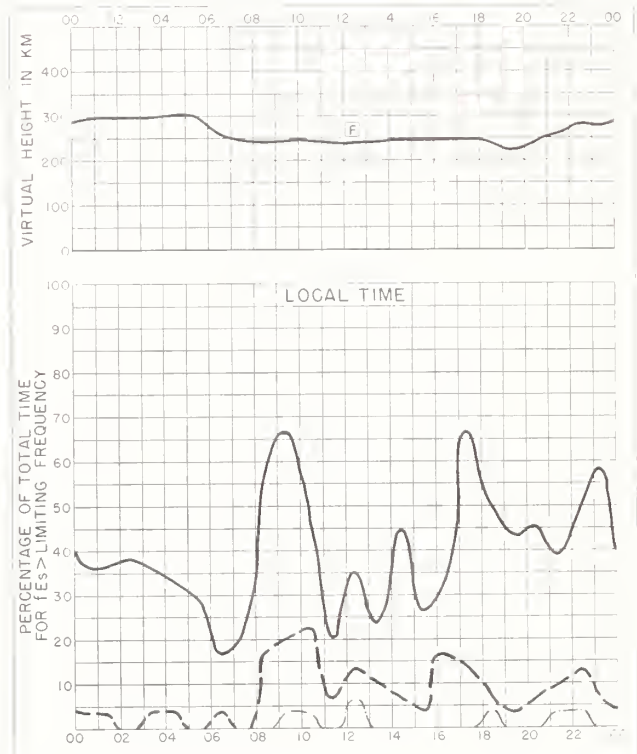


Fig. 124. AKITA, JAPAN JANUARY 1959

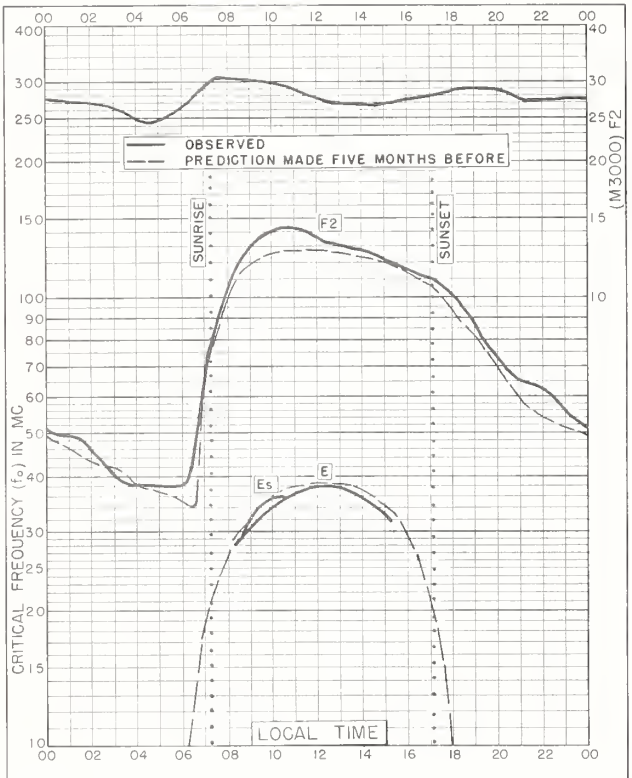


Fig. 125. TOKYO, JAPAN
35.7°N, 139.5°E JANUARY 1959

NBS 503

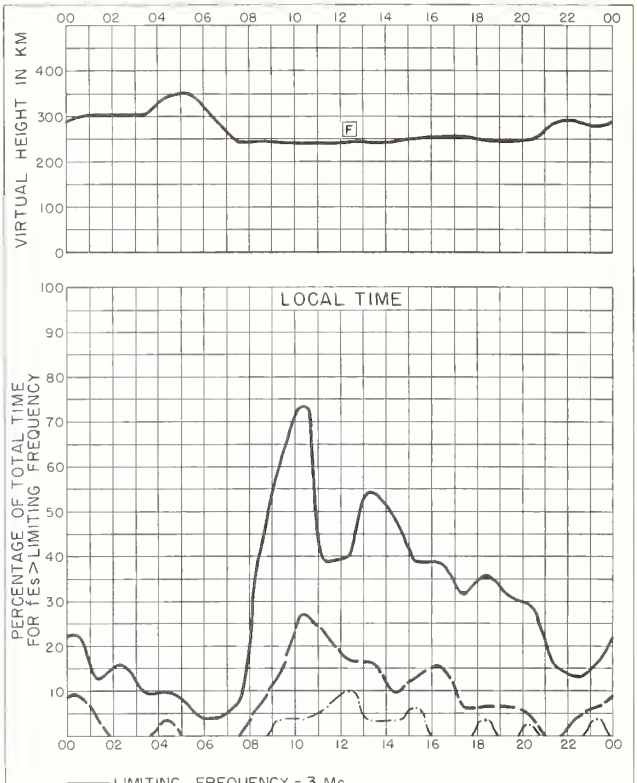


Fig. 126. TOKYO, JAPAN JANUARY 1959

NBS 490

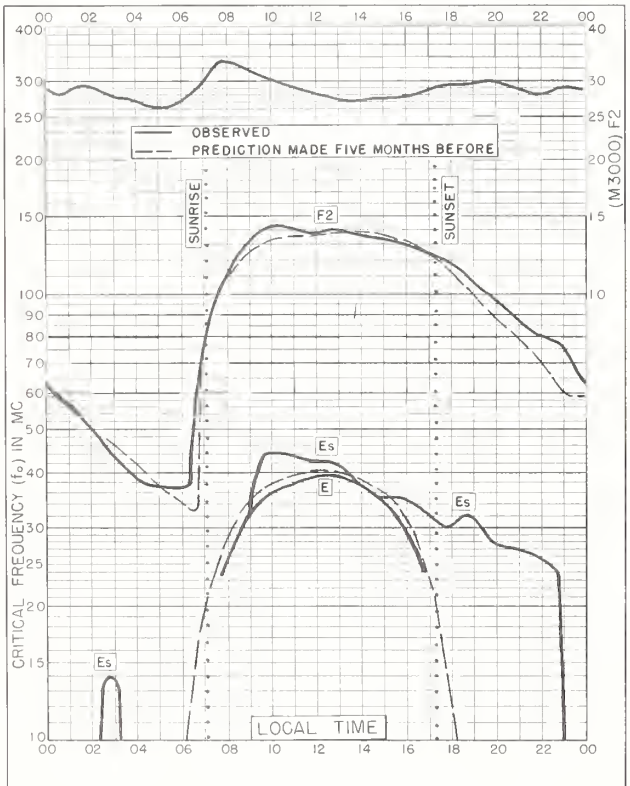


Fig. 127. YAMAGAWA, JAPAN
31.2°N, 130.6°E JANUARY 1959

NBS 503

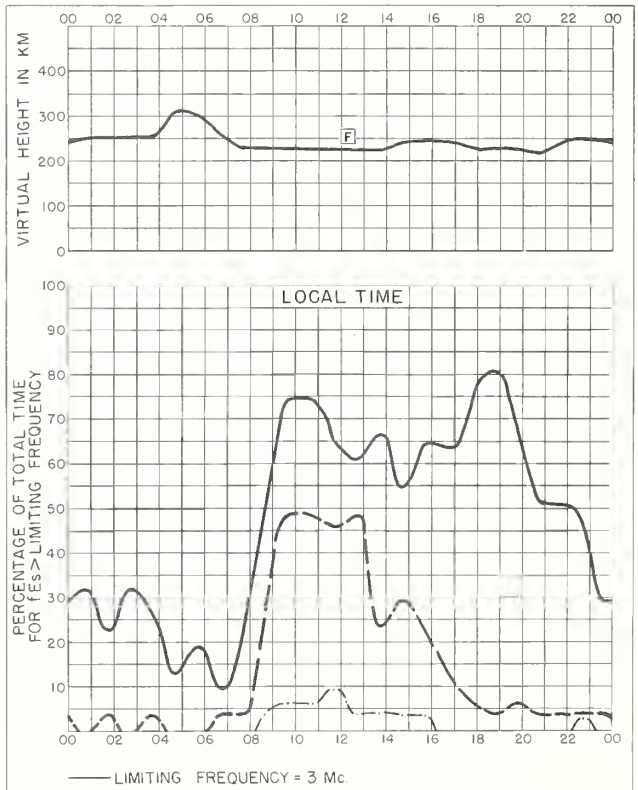


Fig. 128. YAMAGAWA, JAPAN JANUARY 1959

NBS 490

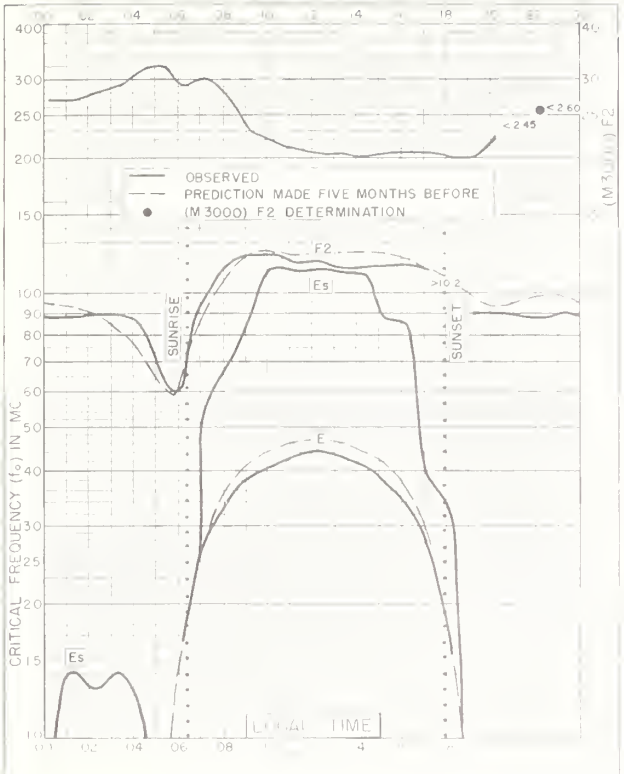


Fig. 129. IBADAN, NIGERIA
7.4°N, 3.9°E JANUARY 19

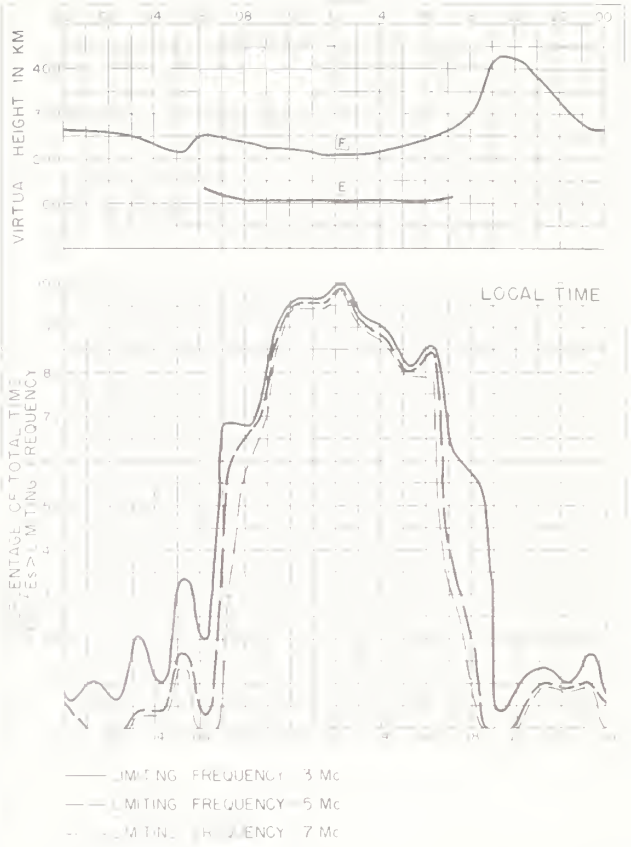


Fig. 130 IBADAN, NIGERIA JANUARY 1959

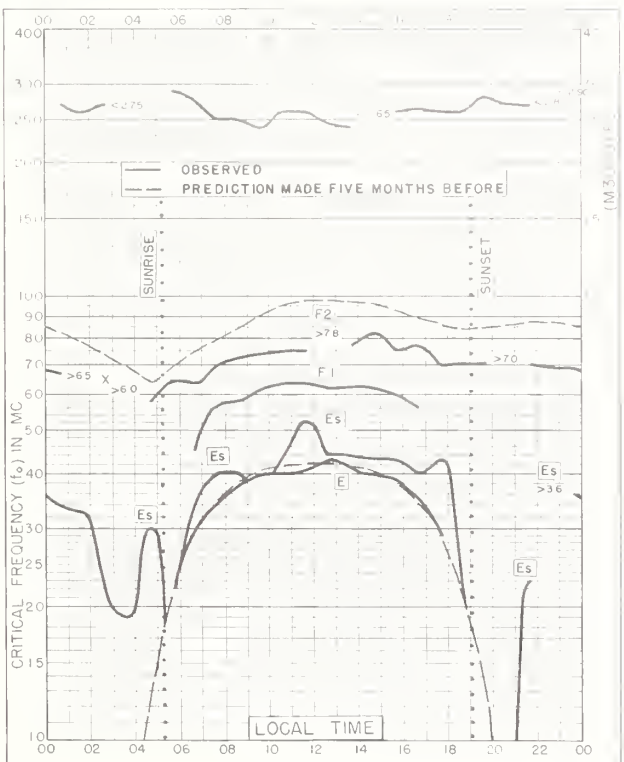


Fig. 131. WATHEROO, W. AUSTRALIA
30.3°S, 115.9°E JANUARY 1959

NBS 503

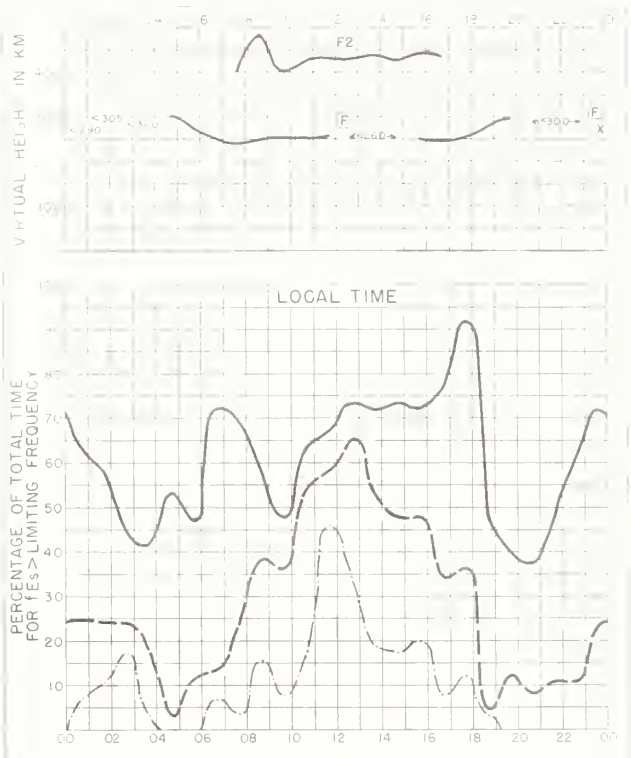


Fig. 132. WATHEROO, W. AUSTRALIA JANUARY 1959

NBS 4

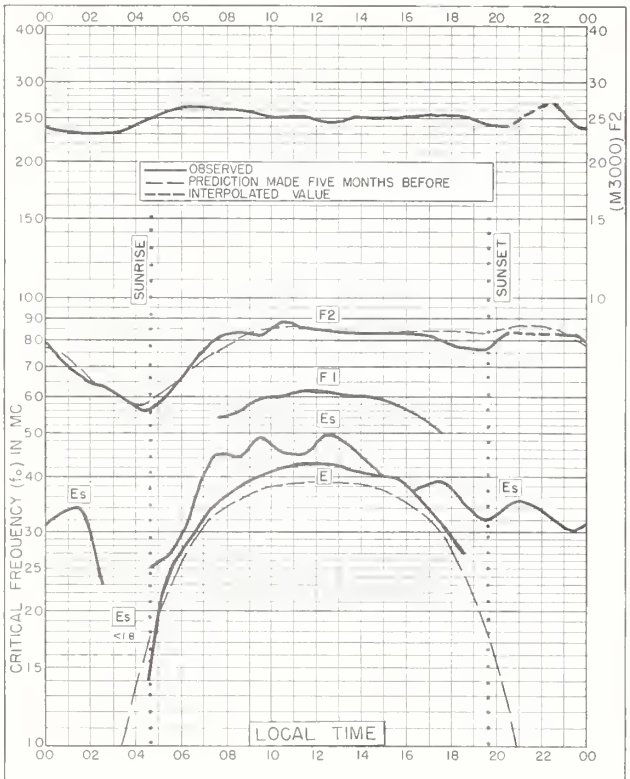


Fig. 133. CHRISTCHURCH, NEW ZEALAND
43.6°S, 172.8°E JANUARY 1959

NBS 503

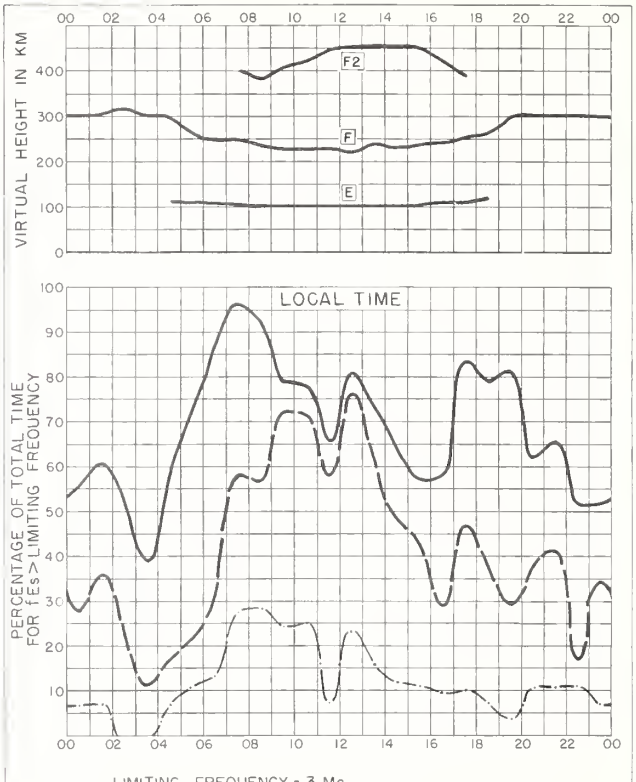


Fig. 134. CHRISTCHURCH, NEW ZEALAND JANUARY 1959

NBS 490

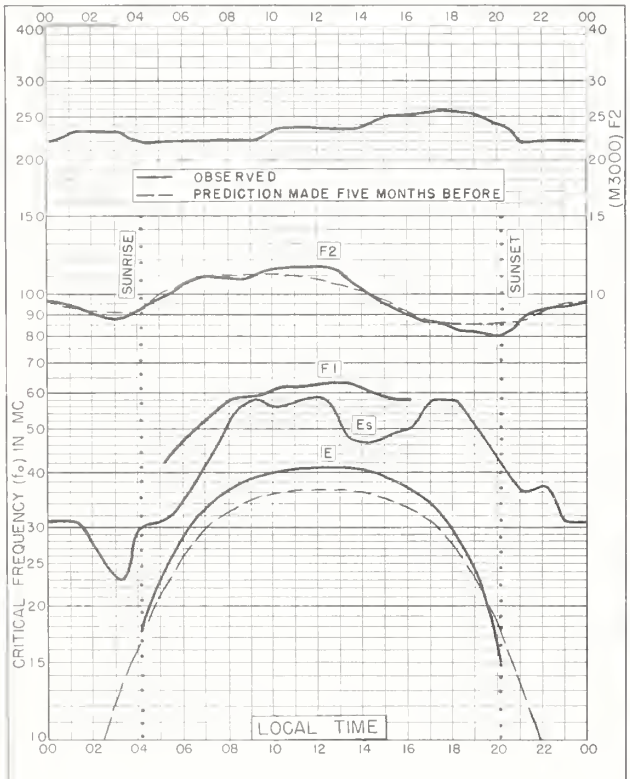


Fig 135. FALKLAND IS.
51.7°S, 57.8°W JANUARY 1959

NBS 503

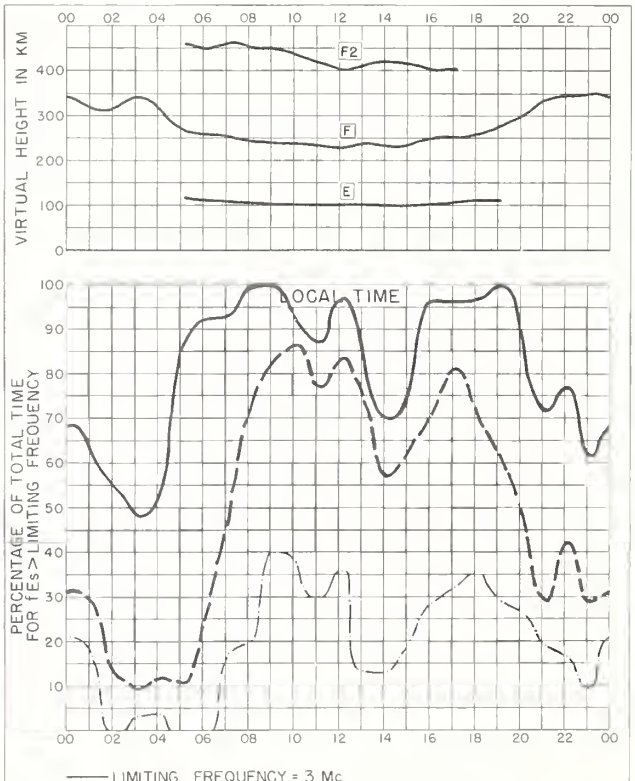


Fig. 136. FALKLAND IS. JANUARY 1959

NBS 490

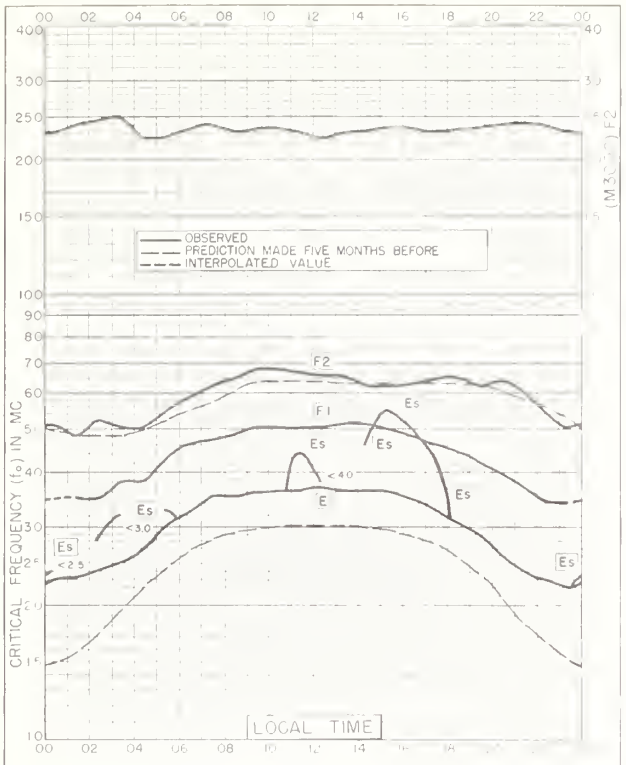


Fig. 137. CAPE HALLETT
72.3°S, 170.3°E JANUARY 1959

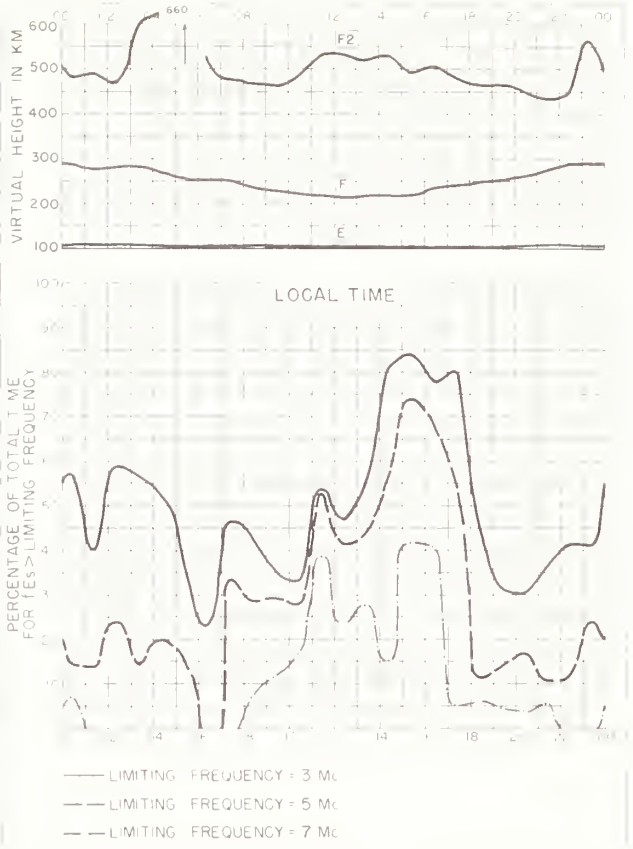


Fig. 138. CAPE HALLETT JANUARY 1959

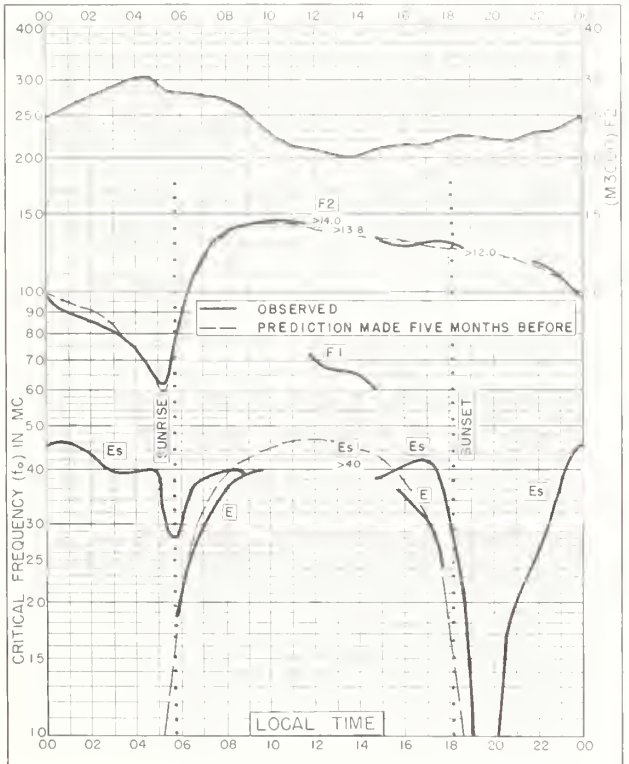


Fig. 139. CHICLAYO, PERU
6.8°S, 79.8°W DECEMBER 1958

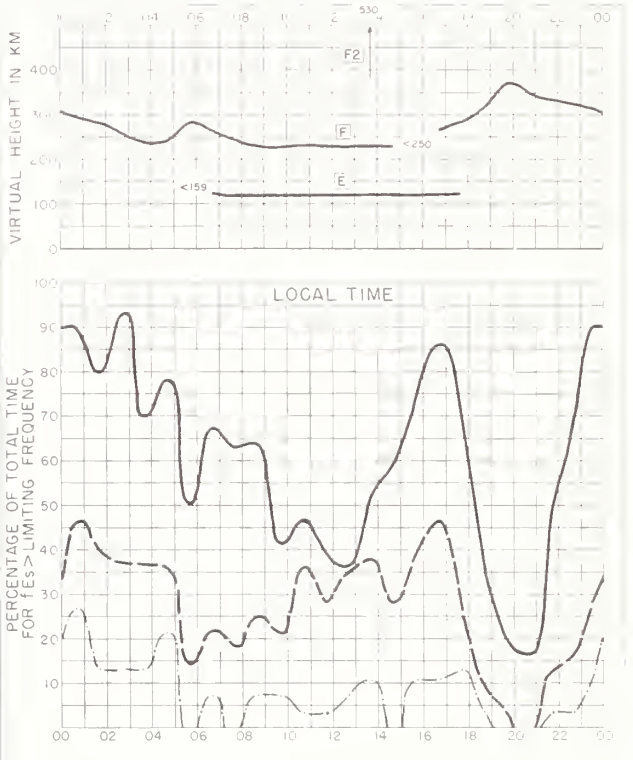


Fig. 140. CHICLAYO, PERU DECEMBER 1958

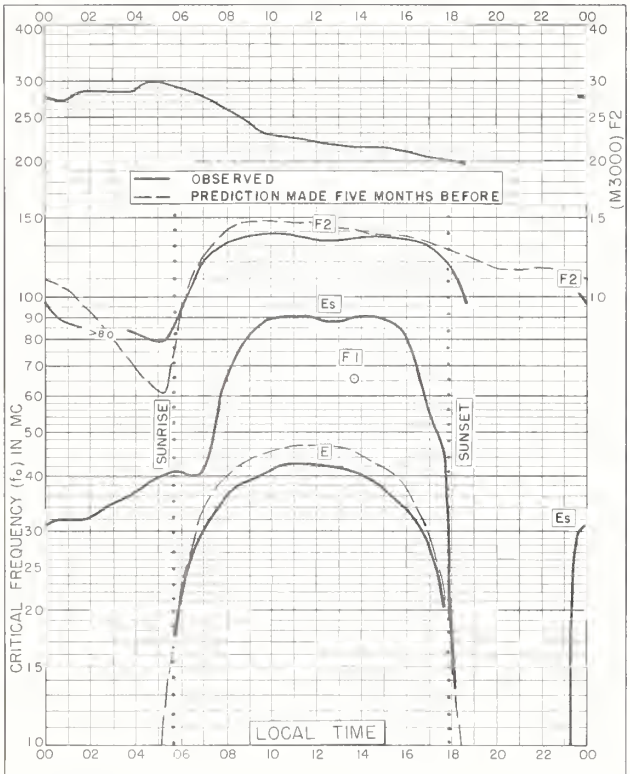


Fig. 141. NATAL, BRAZIL
53°S , 35.1°W NOVEMBER 1958

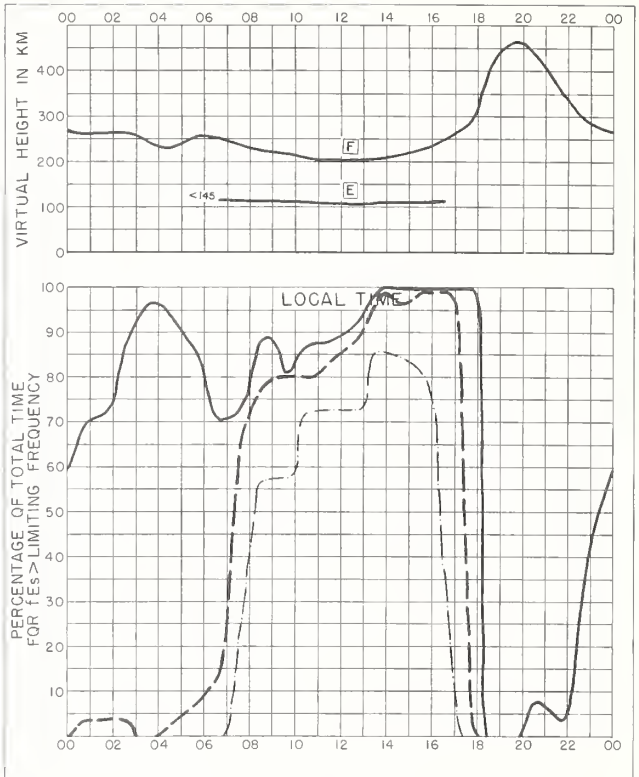


Fig. 142. NATAL, BRAZIL NOVEMBER 1958

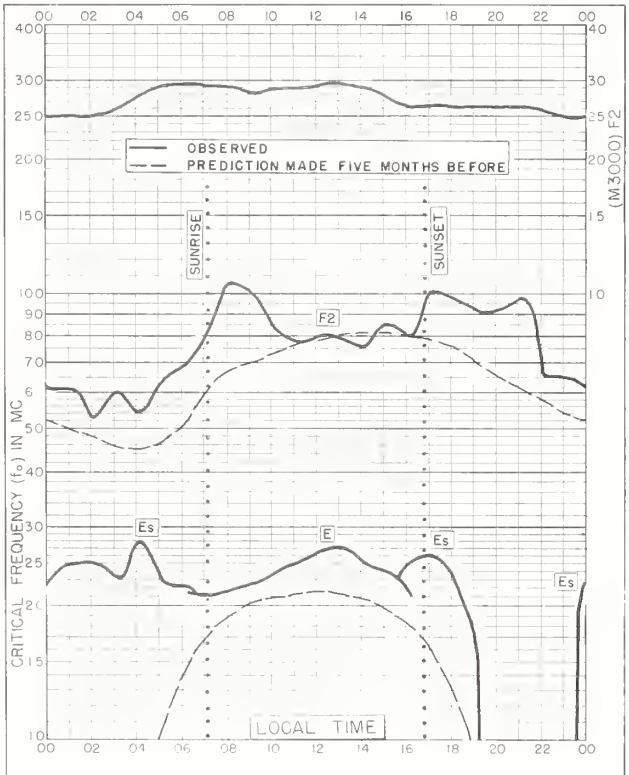


Fig. 143. LITTLE AMERICA
78.2°S , 162.2°W SEPTEMBER 1958

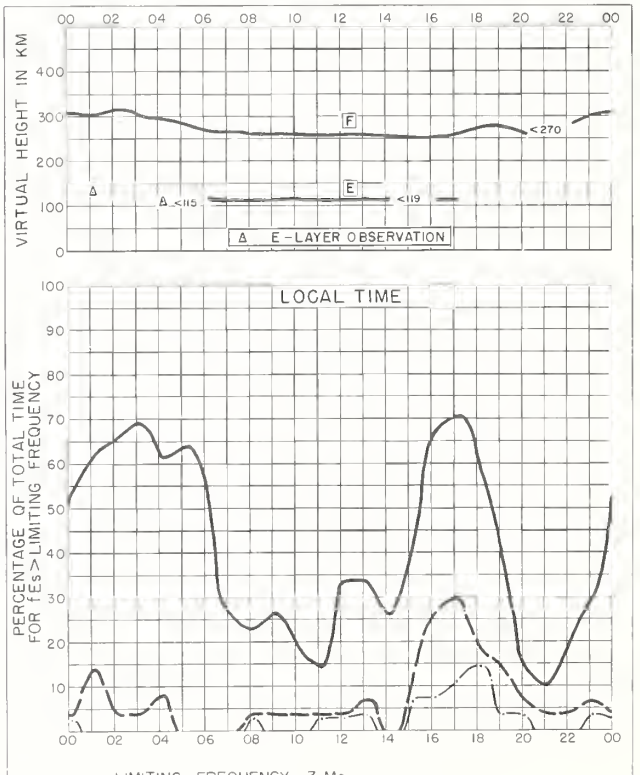


Fig. 144. LITTLE AMERICA SEPTEMBER 1958

Index of Tables and Graphs of Ionospheric Data

in CRPL-F185 (Part A)

	Table page	Figure page
Adak, Alaska		
July 1959.	1	14
Akita, Japan		
January 1959	11	43
Anchorage, Alaska		
June 1959.	2	17
Baker Lake, Canada		
February 1959.	7	33
Bogota, Colombia		
March 1959	6	28
Brisbane, Australia		
April 1959	4	22
March 1959	6	30
Budapest, Hungary		
April 1959	3	21
Bunia, Belgian Congo		
March 1959	6	29
Cape Hallett		
January 1959	12	47
Chiclayo, Peru		
December 1958.	12	47
Christchurch, New Zealand		
January 1959	12	46
Churchill, Canada		
February 1959.	7	33
De Bilt, Holland		
February 1959.	8	34
January 1959	10	42
Elisabethville, Belgian Congo		
March 1959	6	30
Fairbanks, Alaska		
August 1959.	1	13
July 1959.	1	13
Falkland Is.		
February 1959.	9	38
January 1959	12	46
Ft. Monmouth, New Jersey		
July 1959.	1	14
June 1959.	2	18
Godhavn, Greenland		
June 1959.	2	16
Grand Bahama I.		
July 1959.	1	15
June 1959.	3	19
Hobart, Tasmania		
March 1959	7	31

Index (CRPL-F185 (Part A), continued)

	Table page	Figure page
Huancayo, Peru		
June 1959.	3	20
Ibadan, Nigeria		
March 1959	6	28
February 1959.	9	38
January 1959	11	45
Inverness, Scotland		
February 1959.	8	34
January 1959	10	41
Kiruna, Sweden		
March 1959	4	22
Little America		
September 1958	12	48
Lulea, Sweden		
March 1959	4	23
February 1959.	7	32
January 1959	9	39
Lycksele, Sweden		
April 1959	3	20
March 1959	4	24
February 1959.	7	32
January 1959	10	40
Macau		
February 1959.	9	37
Maui, Hawaii		
July 1959.	1	15
Monte Capellino, Italy		
March 1959	5	27
February 1959.	8	36
Narsarssuak, Greenland		
June 1959.	2	17
Natal, Brazil		
November 1958.	12	48
Nurmijarvi, Finland		
March 1959	4	24
January 1959	10	40
Okinawa I.		
June 1959.	3	19
Oslo, Norway		
January 1959	10	41
Ottawa, Canada		
March 1959	5	26
February 1959.	8	35
January 1959	10	42
Resolute Bay, Canada		
February 1959.	7	31
Reykjavik, Iceland		
June 1959.	2	16

Index (CRPL-F185 (Part A), concluded)

	Table page	Figure page
Singapore, British Malaya		
March 1959	6	29
Sodankyla, Finland		
March 1959	4	23
January 1959	9	39
Tokyo, Japan		
March 1959	5	27
February 1959	8	36
January 1959	11	44
Upsala, Sweden		
April 1959	3	21
March 1959	5	25
Wakkanai, Japan		
March 1959	5	26
February 1959	8	35
January 1959	11	43
Watheroo, W. Australia		
January 1959	11	45
White Sands, New Mexico		
June 1959	2	18
Winnipeg, Canada		
March 1959	5	25
Yamagawa, Japan		
February 1959	9	37
January 1959	11	44

CRPL Reports

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

Daily:

Radio disturbance forecasts, every half hour from broadcast stations WWV and WWVH of the National Bureau of Standards.

Telephoned and telegraphed reports of ionospheric, solar, geomagnetic, and radio propagation data.

Semiweekly:

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

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

Semimonthly:

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

Monthly:

CRPL—D Basic Radio Propagation Predictions—Three months in advance. (Dept. of the Army, TB 11—499–, monthly supplements to TM 11–499; Dept. of the Air Force, TO 31–3–28 series). On sale by Superintendent of Documents.* Members of the Armed Forces should address cognizant military office.

CRPL—F. (Part A). Ionospheric Data.
(Part B). Solar-Geophysical Data.
Limited distribution. These publications are in general disseminated only to those individuals or scientific organizations which collaborate in the exchange of ionospheric, solar, geomagnetic, or other radio propagation data.

Catalog of Data:

A catalog of records and data on file at the U. S. IGY World Data Center A for Airglow and Ionosphere, Boulder Laboratories, National Bureau of Standards, which includes a fee schedule to cover the cost of supplying copies, is available upon request.

The publications listed above may be obtained without charge from the Central Radio Propagation Laboratory, National Bureau of Standards, Boulder Laboratories, Boulder, Colorado, unless otherwise indicated. Please note that the F series is not generally available.

Circulars of the National Bureau of Standards pertaining to Radio Sky Wave Transmission:

NBS Circular 462. Ionospheric Radio Propagation. $1.25.
NBS Circular 465. Instructions for the Use of Basic Radio Propagation Predictions. 30 cents.
NBS Circular 557. Worldwide Radio Noise Levels Expected in the Frequency Band 10 Kilocycles to 100 Megacycles. 30 cents.
NBS Circular 582. Worldwide Occurrence of Sporadic *E*. $3.25.

These Circulars are on sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Members of the Armed Forces should address the respective military office having cognizance of radio wave propagation.

* For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D. C. Price 15 cents (single copy). Subscription price: $1.50 a year; 50 cents additional for foreign mailing.