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CRPL-F201 PART A

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PART A
IONOSPHERIC DATA

ISSUED
MAY 1961

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

IONOSPHERIC DATA

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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 numerical 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 CRPL-F188, Part A, issued April 1960, the count is given for foF2 in the tables of medians. It is regretted that space limitations prevent including detailed counts for other characteristics.

To indicate further in a general manner the relative reliability of the data, for the F2 layer, h'F or foEs, if the count is from five to nine, or, for all layers, if more than half of the data used to compute the medians are doubtful (either doubtful or interpolated), the median is enclosed in parentheses. Medians are computed for less than five values for foF2 only.

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.

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

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.

The latest available information follows concerning the smoothed observed Zürich numbers beginning with the minimum of April 1954. Final numbers are listed through June 1960.

Smoothed Observed Sunspot Number

WORLD-WIDE SOURCES OF IONOSPHERIC DATA

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

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

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

Belgian Royal Meteorological Institute:
Dourbes, Belgium

Escola Politecnica, University of Sao Paulo:
Sao Paulo, Brazil

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

Defence Research Board, Canada:
Churchill, Canada
Ottawa, Canada
Resolute Bay, Canada
St. John's, Newfoundland
Winnipeg, Canada

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

The Finnish Academy of Sciences and Letters:
Sodankyla, Finland

French National Center for Geophysical Studies:
Garchy, France

French National Center for Telecommunications Studies:

Bangui, French Equatorial Africa
Dakar, French West Africa
Djibouti, French Somaliland
Poitiers, France
Rabat, Morocco
Tahiti, Society Is.
Tamanrasset, French West Africa
Tananarive, Madagascar

The Royal Netherlands Meteorological Institute:

De Bilt, Holland
Paramaribo, Surinam

Central Institute of Meteorology, Budapest, Hungary:

Budapest, Hungary

National Institute of Geophysics, City University, Rome, Italy:

Rome, Italy

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

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

General Directorate of Telecommunications, Mexico:

El Cerillo, Mexico

Norwegian Defence Research Establishment, Kjeller per Lillestrom,

Norway:

Tromso, Norway

Institute of Terrestrial Magnetism, Ionosphere and Radio Propagation,

Moscow, U.S.S.R.:

Moscow
Murmansk

South African Council for Scientific and Industrial Research:

Capetown, Union of South Africa

Research Institute of National Defence, Stockholm, Sweden:

Kiruna, Sweden
Lycksele, Sweden
Upsala, Sweden

Royal Board of Swedish Telegraphs, Radio Department, Stockholm,

Sweden:

Lulea, Sweden

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

United States Army Signal Corps:
Thule, Greenland
White Sands, New Mexico

National Bureau of Standards (Central Radio Propagation Laboratory):
Fairbanks (College), Alaska (Geophysical Institute of the
University of Alaska)
Huancayo, Peru (Instituto Geofisico de Huancayo)
Talara, Peru (Instituto Geofisico de Huancayo)
Washington, D. C.

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 several stations associated with CRPL. For the present, the hourly profile data from one CRPL station, Puerto Rico, are appearing in the monthly CRPL-F Reports, Part A. 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 by Dr. H. H. Howe for a CDC-1604 computer.

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

<u>Quantity</u>	<u>Units</u>	<u>Remarks</u>
Electron Density (N)	$\times 10^3 = \text{electrons/cm}^3$	Body of table; given at each 10 km of height.
NMAX	$\times 10^3 = \text{electrons/cm}^3$	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.
KP		The standard Kp magnetic index, to one digit.
HMIN	Kilometers	The height of zero or very low electron density, obtained by linear extrapolation of the electron density vs. height curve.
SCAT	Kilometers	One half of the half-thickness of the parabola best fitting the upper portion of the F region profile. Approximates the scale height near the level HMAX.
HMAX	Kilometers	The height of maximum electron density, determined by fitting a parabola to the upper portion of the profile.
SHMAX	$\times 10^{10} = \text{electrons/cm}^2 \text{ column.}$	Obtained by integration of the profile between the limits HMIN and HMAX.

Tabulations of the average electron densities each hour, at each 10 km level, for the quiet ionosphere, are also given. These averages include the profiles obtained when the magnetic character figure Kp is 4+ or less. The number of profiles entering the average for each hour is given by CNT. The other parameters of the layer, HMIN, SCAT, HMAX, SHMAX, and the mean value of Kp are given for each hour.

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 average estimated integrated electron densities to infinity, SHINF (same units as SHMAX); this is an approximation to the total electron content in a column of the ionosphere.

*See Wright, J. W. "A Model of the F-Region Above HMAX F2" J.Geophys.Res. V.65, pp. 185-191.

ELECTRON DENSITY											1 JAN 1961	
RAMEY AFB, PUERTO RICO	60 W										1 JAN 1961	
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O+KP	3	3	3	3	F3	2	2	1	1	A1	A1	A1
HWMIN	237	202	217	229	277	268	269	228	111	110		
SCAT	43.6	51.4	38.0	49.0	52.9	53.0	60.2	38.9	44.6	39.1		
HMAXF	321	293	282	320	391	375	381	306	272	270		
SHMAX	253	305	147	134	140	157	201	242	799	1087		
KM												
400												
390												
380												
370												
360												
350												
340												
330	446											
320	446											
310	439											
300	420	500										
290	389	500	310	193	45.9	79.9	96.7					
280	346	492	310	179	12.4	52.2	62.8	423	1215			
270	291	475	302	159		12.4	12.4	373	1215	1727		
260	215	449	283	133				305	1192	1700		
250	115	415	255	95.9				207	1139	1612		
240	38.7	356	211	54.7				99.5	1058	1481		
230		257	144	5.3				25.6	928	1281		
220		138	54.5						732	1043		
210		61.3							544	765		
200									386	533		
190									267	380		
180									200	289		
170									158	232		
160									127	190		
150									106	157		
140									92.8	136		
130									82.6	123		
120									74.8	114		
110										12.6		

ELECTRON DENSITY											
RAMEY AFB. PUERTO RICO											
60 W 2 JAN 1961											
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000
O+KP	0	A0	1	A1	1	2	2	2	1	1	1
HMIN	239	212	205	214	239	257	268	228	111	110	110
SCAT	40.8	30.1	42.8	33.7	43.1	54.6	46.6	38.9	32.7	34.2	49.1
HMAXF	323	280	277	274	314	364	362	304	252	250	262
SHIMAX	184	159	148	93	89	115	126	208	565	852	989
KM											
370						156	198				
360						156	198				
350						154	195				
340						149	187				
330	338					141	174				
320	337					161	131	158			
310	329					160	119	136	417		
300	310					156	103	110	416		
290	280	389				148	85.5	83.5	404		
280	244	389	282	219	135	66.3	55.9	38			
270	192	377	280	218	120	48.2	12.4	24			
260	125	344	271	209	97.2	12.4			276	1050	
250	65.7	290	254	151	66.1				190	1040	1514
240	12.4	209	232	165	12.4				1016	1482	1274
230		109	195	119					95.6	935	1387
220	51.5	135	51.3						795	1246	1108
210			51.0						596	981	947
200									417	696	761
190									285	476	547
180									211	339	403
170									163	265	316
160									131	220	270
150									109	188	231
140									95.9	164	194
130									90.5	146	165
120									85.0	124	152
110									49.6	714	143

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W

3 JAN 1961

ELECTRON DENSITY

60

JAN. 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q,FO	2	2	F2	2	F2	1	1	1	1	1	1	1
HMIN	260	255	227	201	256	255	237	110	108	107	106	105
SCAT	52.8	40.7	46.0	38.5	61.0	53.0	39.3	35.1	41.6	47.6	42.6	40.5
HMAXF	375	334	313	276	371	367	302	257	261	257	260	258
SHMAX	215	164	189	163	137	131	179	162	1015	956	905	895
KM												
380	298				170							
370	297				170	179						
360	291				168	178						
350	280				165	175						
340	264	310			158	168						
330	212	309			149	157						
320	216	301	323		138	144						
310	186	283	322		127	128	38.2					
300	154	257	316		112	108	38.2					
290	118	219	301		94.4	85.8	37.3					
280	75.4	166	281	329	74.6	65.3	352					
270	12.4	97.0	252	327	53.2	47.7	323	1612		1240		
260		46.0	214	315	22.9	20.3	271	1143	1611	1341	1240	
250			157	294			178	1130	1583	955	1334	1221
240			85.8	262			44.7	1070	1506	1300	1165	
230			32.2	206				968	1399	1235	1083	
220				132				791	1209	1150	1083	
210				62.7				562	919	1007	791	
200								356	652	815	634	
190								232	442	618	507	
180								165	325	446	414	
170								124	262	334	345	
160								97.5	219	274	300	
150								84.2	183	228	263	
140								80.2	156	187	227	
130								76.4	138	162	190	
120								72.6	126	149	177	
110								12.4	89.8	119	137	

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

69 M

4 JAN 1961

ELECTRON DENSITY

60

JAN. 1961

	TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q+P		1	1	A1	A1	A1	A1	A1	1	1	1	1	1
MIN	259	218	218	295	248	228	207	107	110	109	109	109	109
SCAT	43 ⁶	43 ²	40 ⁰	54 ⁷	51 ¹	42 ⁶	47 ⁵	29 ¹	41 ²	42 ⁷	53 ⁶	53 ⁶	53 ⁶
HMAX	347	305	293	402	343	310	302	246	256	270	273	273	273
SHMAX	181	224	122	136	119	82	208	466	657	872	899	899	899
KM													
410													
400													
390													
380													
370													
360													
350	310												
340	308												
330	298												
320	279												
310	253	410											
300	218	409	240	21 ⁷	149	141	135	335					
290	173	398	240		133	135	135	330					
280	124	375	234		111	125	125	317					
270	70 ²	345	220		80 ³	112	297						
260	12 ⁴	296	202		52 ⁴	93 ⁶	271					1143	1038
250	216	173			12 ⁴	72 ⁷	233	875	998	1079	989		
240	121	122				50 ⁴	182	865	964	1003	939		
230	63 ¹	64 ²				12 ⁴	123	807	903	898	874		
220	12 ⁴	12 ⁴					67 ⁴	698	805	778	786		
210								19 ⁴	516	662	654	660	
200									500	500	555	577	
190									288	311	229	477	
180									216	279	352	395	
170									171	223	300	333	
160									140	182	260	290	
150									120	148	222	250	
140									106	126	183	197	
130									93 ⁸	115	157	164	
120									67 ⁸	112	144	150	
110									44 ²	12 ⁶	76 ¹	113	

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W 5 JAN 1961

ELECTRON DENSITY

60 W 5 JAN 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q_XP	F0	0	F1	F1	A1	1	1	F1	1	1	81	0
HMIN	227	230	239	279	259	219	228	213	117	109		
SCAT	43.1	47.3	34.7	50.8	50.4	56.3	45.8	36.5	37.7	39.5		
I4MAX	336	323	380	359	321	310	279	254	246			
SHMAX	218	240	209	266	258	261	256	400	747	705		
KM												
390												
380												
370												
360												
350												
340	342		403		326	376						
330	340	389	403	292	357	362						
320	327	388	391	254	334	362	446					
310	307	384	362	211	299	358	446					
300	279	365	318	156	254	346	411					
290	246	339	265	86.1	202	315	424					
280	209	306	205	12.4	137	314	397	917				
270	170	260	136		72.3	289	361	904				
260	126	209	87.3		12.4	256	308	857	1215			
250	78.4	136	51.0			215	233	777	1211	1004		
240	49.0	67.1	6.6			166	127	631	1172	998		
230	12.4	3.2				102	28.3	414	1090	961		
220						12.4		84.6	966	893		
210									805	790		
200									612	664		
190									432	546		
180									317	444		
170									245	368		
160									197	311		
150									162	268		
140									140	240		
130									130	187		
120									111	168		
110										65.5		

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
OKP	0	A0	A2	A2	A2	A2	A2	1	A1	1	3	
HMIN	109	108					209	227	237	211	229	
SCAT	55.3	43.6					45.3	52.7	38.9	48.4	48.4	
HMAXF	289	282					292	331	313	294	326	
SHMAX	981	1113					338	281	280	225	171	
KM												
340										403		
330										403		
320										399	565	
310										387	564	
300										577	366	550
290	1004	1446					576	341	516	381	226	
280	998	1446					566	309	466	374	204	
270	975	1419					542	26.8	388	358	175	
260	932	1355					503	217	272	336	139	
250	878	1258					450	158	141	304	96.0	
240	810	1111					381	97.4	40.7	255	58.2	
230	731	941					295	36.8	182	185	4.9	
220	643	764										84.4
210	560	600								43.1		

ELECTRON DENSITY

RAMEY AF8, PUERTO RICO

60 W 6 JAN 1961

ELECTRON DENSITY

60 W 6 JAN 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q+KP	F3	3	2	2	2	3	3	3	2	2	2	1
HMIN	269	229	230	239	289	238	238	222	115	110	107	109
SCAT	44.4	54.2	44.3	46.8	50.0	44.9	41.3	34.3	45.5	32.3	33.3	42.4
IMAX	355	334	321	338	387	341	324	293	266	249	262	267
HMAX	180	273	206	244	175	197	147	164	579	672	1026	1116
KM												
390												262
380												261
370												255
360		310										243
350		309										226
340		302	389		382	205	310					310
330		286	348	355	379	177	306	262				
320		264	382	355	367	143	294	262				
310		232	370	349	346	107	272	255				
300		191	351	334	318	66.6	245	240	362			
290		137	347	312	281	124.4	211	218	361			
280		70.1	293	279	236		172	188	348			
270		12.4	248	231	181		131	147	320	875		1446
260		195	169	120		91.0	103	217	872		1514	1445
250		132	102	68.3		55.0	63.1	210	849	1215	1483	1359
240		68.4	53.6	12.4		12.4	12.4	128	804	1194	1408	1280
230		12.4							59.6	730	1112	1144
220										644	986	1140
210										522	782	920
200										379	560	681
190										245	386	493
180										169	281	374
170										124	220	303
160										97.8	181	260
150										83.4	151	227
140										78.7	129	191
130										74.1	120	156
120										63.0	112	137
110										12.4	117	90.0

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q_KP	1	1	A0	0	0	1	1	1	3	3	3	3
HMIN	109	109	108	108	110	110	222	192	199	257	249	221
SCAT	74.4	71.0	59.4	60.6	59.6	57.2	32.3	38.0	67.0	364.1	58.5	39.4
HMAXF	304	318	323	310	311	307	284	255	340	330	354	314
SHMAX	1393	1479	1535	1360	1268	1224	675	406	289	151	280	175
KM												
360												382
350												381
340												376
330			1542							310		365
320		1341	1541	1380	1341					303	305	349
310	1316	1337	1524	1380	1341	1433				294	287	329
300	1315	1319	1486	1371	1329	1428				282	256	300
290	1304	1288	1423	1342	1298	1401	1669			266	217	263
280	1282	1244	1347	1283	1248	1353	1661			247	168	212
270	1248	1187	1250	1219	1177	1279	1586			225	112	147
260	1201	1122	1115	1141	1093	1190	1438	906	200	38.7	78.4	170
250	1152	1027	978	1045	984	1076	1186	902	172		12.4	127
240	1079	918	843	936	864	931	764	869	146			81.9
230	978	806	715	826	735	763	234	810	120			
220	859	692	608	716	607	598						46.8
210	722	589	521	605	492	453				509	65.1	
200	586	505	446	500	393	333				241	12.4	
190	475	438	381	406	319	246						
180	392	378	326	327	265	194						
170	335	321	279	268	225	159						
160	294	287	236	241	192	135						
150	263	257	198	188	167	116						
140	227	220	163	159	143	102						
130	160	156	143	143	125	91.2						
120	110	103	124	124	114	81.2						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO		60 W												7 JAN 1961														
TIME		0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100			
O*P	3	3	1	1	1	F1	1	1	2	2	2	2	1	O*P	A1	A1	A1	A1	A3	A3	3	4	4	F4	F4			
HMIN	259	239	208	209	227	248	213	200	108	108	106	106	108	HMIN	106	106	108	108	199	218	248	277	283					
SCAT	44.5	38.8	31.6	48.2	45.1	50.6	32.4	47.4	35.3	34.8	28.7	50.8		SCAT	63.6	54.3	47.7		38.1	59.3	41.5	48.1	52.7					
HMAXF	352	324	284	311	338	362	289	292	251	268	239	253		HMAXF	323	287	269		267	345	351	394	410					
SHMAX	218	248	218	265	203	272	163	208	403	884	805	724		SHMAX	1849	1374	837		212	195	188	249	254					
KM														KM														
370														370														
360	362													360														
350	361													350														
340	355													340														
330	339	477												330														
320	313	475												320														
310	279	461												310														
300	236	431												300														
290	184	387	500	398	221	196	362	335						290														
280	125	322	498	374	186	138	354	330						280														
270	68.2	235	474	343	146	91.2	328	318	1542					270														
260	12.4	140	426	301	106	55.4	287	297	679	1523	917			260														
250	68.3	352	243	75.5	12.4	227	271	679	1443	917				250														
240	12.4	256	170	49.0	155	235	662	1315	1669	903				240														
230	134	104	12.4	81.8	189	616	1092	1624	871					230														
220	63.1	55.6		44.2	132	54.5	816	1484	818					220														
210	12.4	4.9		70.7	447	548	1226	756						210														
200				3.2	332	371	807	674						200														
190				234	279	506	572							190														
180				170	223	350	452							180														
170				130	180	288	348							170														
160				105	145	247	295							160														
150				88.6	122	214	251							150														
140				81.3	111	182	204							140														
130				77.3	105	156	168							130														
120				73.4	100	138	152							120														
110				48.6	80.9	121	123							110														

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO		60 W												7 JAN 1961														
TIME		1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	TIME		1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
O*P	4	F4	F4	4	F4	F3	F3	3	3	A3	3	3	4	O*P	A4	A4	A4	A4	A4	A3	3	2	2	2	2	4		
HMIN	281	239	210	240	290	222	228	109	110	110	110	110	110	HMIN	107	109	109	109	109	109	209	197	200	231	262	249		
SCAT	40.9	47.8	38.5	48.1	45.3	38.5	37.5	34.6	48.5	46.6				SCAT	63.2	56.2	49.4	33.9	42.6	63.1	47.7	45.6						
HMAXF	372	327	280	338	379	317	308	256	278	271				HMAXF	313	308	303	268	296	380	367	348						
SHMAX	221	320	221	156	173	528	157	536	1286	1097				SHMAX	1342	1469	902	417	202	285	251	258						
KM														KM														
380	389													380														
370	389													370														
360	380													360														
350	360													350														
340	328													340														
330	286	540		238	203									330														
320	233	537		231	168	960								320														
310	173	524		219	127	952	310							310														
300	168	497		201	74.1	911	306							300														
290	57.6	461	477	180	1*2	836	292							290														
280	409	477	151				267							280														
270	333	468	118				230							270														
260	225	44.3	80.8				477							260														
250	98.2	403	49.1				305							250														
240	12.4	344	*.3				156	64.8	909	1493	1368	250	965	1202														
230							62*2							230														
220							64.7							220														
210							3.7							210														
200							34.9							200														
190							24.6							190														
180							181							180														
170							142							170														
160							116							160														
150							97.2							150														
140							90.6							140														
130							84.1							130														
120							67.2							120														
110							12.4							110														

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO		60 W												7 JAN 1961											
TIME		0000	0100	0200	0300	0400	0500	06																	

ELECTRON DENSITY												ELECTRON DENSITY													
RAMEY AFB, PUERTO RICO												RAMEY AFB, PUERTO RICO													
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q,KP	4	F4	F5	5	5	5	5	5	4	4	4	4	Q,KP	A4	A4	A4	A4	A4	A5	A5	A2	A2	2	0	
HMIN	221	279	232	199	247	228	218	238	219	108	107	107	HMIN	199	212	217	226	261	269						
SCAT	36.9	53.7	39.7	35.4	50.5	56.7	46.1	43.6	34.0	48.6	39.9	53.1	SCAT	46.3	39.0	52.4	45.2	43.8	51.1						
HMAXF	305	391	306	263	344	340	304	333	273	284	259	291	HMAXF	292	288	315	345	348	366						
SHMAX	215	289	291	163	114	166	132	187	431	1029	1041	1411	SHMAX	580	339	229	195	184	216						
KM													KM												
400	389												370												329
390	389												360												328
380	385												350												321
370	374												340												308
360	356												330												288
350	331												320												264
340	301												310												231
330	266												300												187
320	227												290												129
310	417	185	573	151	201	229	289						280												70.9
300	415	136	570	139	191	229	266						270												51.4
290	399	84.7	550	123	176	223	234						1612												12.4
280	366	12.4	510	102	158	211	197	1096	1326	1593	1593	1593	260												5.7
270	320	454	362	57.5	135	156	153	1093	1302	1542	1542	1542	250												4.6
260	260	383	361	57.3	109	172	110	1054	1250	1654	1653	1653	230												3.6
250	194	271	350	19.6	81.9	139	62.3	967	1168	1631	1360	1360	220												2.3
240	113	101	323	52.9	96.8	12.4	823	1062	1556	1233	210	210	158												1.1
230	55.2	101	284	12.4	57.1	8.4	523	920	1427	1091	200	200	12.4												0.7
220			228		12.4	49.0							757	1249	947										0.4
210			142										593	974	803										0.1
200			12.4										458	699	664										0.0
190													354	495	537										0.0
180													280	357	428										0.0
170													232	289	334										0.0
160													194	242	269										0.0
150													163	207	223										0.0
140													136	179	189										0.0
130													116	153	157										0.0
120													105	137	139										0.0
110													86.7	117	127										0.0

ELECTRON DENSITY												ELECTRON DENSITY														
RAMEY AFB, PUERTO RICO												RAMEY AFB, PUERTO RICO														
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
Q,KP	0	F0	1	1	1	2	F2	2	2	2	2	1	Q,KP	1	1	1	1	1	A1	1	1	0	A0	0	1	
HMIN	238	218	215	213	217	229	217	200	219	109	107	108	HMIN	107	109	106	109	110	208	201	206	269	250	251	251	
SCAT	37.4	35.0	37.5	44.7	56.2	59.5	46.7	40.7	43.7	38.0	39.8	52.7	SCAT	51.9	55.1	53.1	48.2	45.4	38.8	45.2	47.9	49.0	50.4	44.0	44.0	
HMAXF	318	288	285	294	337	343	300	284	283	263	259	269	HMAXF	297	305	297	284	281	283	279	297	357	343	340	340	
SHMAX	196	211	172	155	149	155	119	166	333	720	907	896	SHMAX	1182	1536	1427	1151	872	305	393	192	156	182	144	144	
KM													KM													
350													360												251	
340													350												240	
330													340												244	
320	389												330												237	
310	385												320												227	
300	367		274	169	172	198							310	1712											211	
299	334	477	362	273	156	159	196	310	670				300	1328	1708	1654									190	
280	289	470	360	267	139	144	190	309	669				290	1323	1679	1647	1446	1143	1050	302	131	202	162		162	
270	228	444	346	253	120	124	178	301	655	1143	1096		280	1294	1621	1613	1444	1143	1048	716	294	73.5	166	130	130	
260	149	401	320	235	100	99.8	163	284	624	1141	1446	1088	270	1240	1534	1547	1417	1125	1020	709	279	12.4	123	94.8	94.8	
250	76.9	326	282	208	80.4	72.0	144	258	579	1108	1429	1061	260	1157	1427	1452	1358	1079	958	685	259	67.0	59.0	59.0	59.0	
240	21.7	201	225	170	61.2	48.1	116	221	497	1033	1366	1014	250	1057	1281	1330	1266	1009	856	642	231	2.6		2.6	2.6	
230	85.7	132	119	44.7	7.0	75.2	167	365	923	1254	948		240	931	1107	1187	1144	906	701	584	196				196	
220	23.0	47.1	59.6	12.4	38.7	106	87.9	762	1105	857			230	789	922	1017	1003	781	456	491	154				154	
200													210	548	599	655	681	523	34.9	156	44.3				44.3	
190													324	418	482				200	460	486	520	535	418		
180													249	317	381				190	394	408	414	334	321		
170													198	263	316				189	343	351	344	333	271		
160													160	226	270				170	302	307	297	276	224		
150													133	191	229				160	267	270	260	236	185		
140													111	157	186				150	236	238	228	204	151		
130													96.0	130	151											

ELECTRON DENSITY

RAMEY AFB. PUERTO RICO

60 W 11 JAN 1961

1 JAN 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q+KP	1	A1	1	A1	1	0	0	0	0	0	A0	A0
HMIN	228	239	219	219	249	229	228	201	200	108	108	
SCAT	45.5	39.7	38.3	40.0	44.1	46.9	42.7	45.0	42.4	40.7	39.2	
HMAXF	328	309	294	296	332	316	313	285	269	246	254	
SHMAX	180	162	155	170	117	122	125	214	344	591	846	

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W 11 JAN 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q_RPK	A0	A0	A0	0	0	A0	A0	0	0	0	0	2
HMIN	106			109	106	109	210	185	201	227	218	201
SCAT	39.8			44.2	37.9	41.7	30.5	37.1	45.7	46.4	42.4	51.5
HMAXF	240			274	262	272	264	247	280	332	304	286
SHMAX	630			859	787	717	390	215	115	139	113	103

340								214
330								213
320								210
310								201
300								187
290								198
280								170
270								193
260								160
250								156
240								157
230								151
220								149
210								147
200								146
190								145
180								144
170								143
160								142
150								140
140								139
130								138
120								137
110								136
917								
917	1096	1215	1038	1080	1065	1040	1015	990
917	1002	1215	1038	1080	1065	1040	1015	990
917	1067	1215	1018	1065	1040	1015	990	965
917	1010	1187	966	934	477	171	664	640
917	930	1116	888	889	472	163	464	84+4
902	827	1005	787	701	452	141	12+4	53+8
857	709	851	659	355	418	106		12+4
786	585	642	530	12+4	358	65+2		94+8
682	474	475	404		257			
555	389	373	299		106			
439	321	295	218					
349	273	244	166					
296	237	208	135					
260	206	178	114					
229	179	156	97+0					
197	156	137	84+6					
160	138	122	77+5					
145	116	110	64+6					

ELECTRON DENSITY

RAMEY AFB. PUERTO RICO

60 W 12 JAN 1961

2 JAN 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q,KP	2	2	2	2	2	1	1	1	1	1	1	A1
HMIN	227	231	209	200	200	207	219	198	108	107	107	
SCAT	56.3	36.4	37.6	26.5	45.0	56.3	33.7	40.0	35.1	37.3	33.4	
HMAXF	346	298	285	254	274	303	276	277	239	260	239	
SHMAX	138	91	110	93	104	102	93	108	350	708	655	

350	174
340	174
330	171
320	166
310	158
300	150
290	155
280	159
270	165
260	174
250	173
240	171
230	170
220	170
210	170
200	170
190	170
180	170
170	170
160	170
150	170
140	170
130	170
120	170
110	170

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W 12 JAN 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
O+KP	A1	1	2	A2	A2	A2	A2	2	A2	2	2	1
HMIN		109	107	108		209	200	208		228	278	
SCAT		49.8	44.1	44.8		38.4	43.4	48.6		48.5	54.0	
HMAXF		275	285	288		278	267	297		328	385	
SHMAX		722	912	1027		579	297	145		150	169	

390			235
380			234
370			230
360			222
350			209
340			193
330			229
320			174
310			228
300			149
290			222
280			222
270	1096	1341	192
270	794	1093	57+0
270	791	1066	174
260	775	1008	12+4
250	741	927	110
240	691	820	129
230	632	708	102
220	566	592	963
210	499	491	471
200	433	411	375
190	374	354	315
180	327	316	275
170	291	286	249
160	262	259	226
150	236	231	197
140	201	198	164
130	165	172	143
120	151	150	132

ELECTRON DENSITY												ELECTRON DENSITY													
RAMEY AFB, PUERTO RICO												RAMEY AFB, PUERTO RICO													
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
0+KP	F1	F1	F3	F3	3	A3	A3	A3	53	3	A3	2	0+KP	2	A2	A2	A2	A2	2	2	1	1	1	1	1
HMIN	259	224	209	242	218				107		104		HMIN	104					211	201	201	204	204	199	
SCAT	43.7	36.7	32.7	48.4	41.6				38.9		40.5		SCAT	51.6					44.1	34.5	50.3	50.0	35.0	56.5	
HMAXF	342	295	281	344	301				246		271		HMAXF	281					298	267	292	286	272	293	
SHMAX	214	165	169	165	124				630		861		SHMAX	1122					740	444	426	211	106	80	
KM													KM												
150		375		246									150		300										
340		375		245									340		290	1341									
330		368		240									330		280	1341									
320		349		228									320		270	1325									
310		323		213	226								310		260	1305									
300		288	355	1193	224								300		250	1217									
290		240	354	389	169	220							290		240	1135									
280		183	341	389	141	208							280		230	1096									
270		105	316	378	112	193							270		220	1096									
260		12.4	277	349	80.5	169							260		210	1076									
250		213	303	46.5	137				1050		1020		250		200	563									
240		117	226	96.5					1043		935		240		190	435									
230		49.0	128	59.7					1004		827		230		180	362									
220		66.2		12.4					932		712		220		170	314									
210		12.4							812		595		210		160	278									
200									622		491		200		150	246									
190									424		412		190		140	216									
180									312		354		180		130	186									
170									240		311		170		120	160									
160									193		277		160		110	146									
150									160		248		150		100	162									
140									134		219		140		80	190									
130									116		190		130		60	162									
120									106		162		120		50	134									
110									97.6		144		110		30	106									
ELECTRON DENSITY												ELECTRON DENSITY													
RAMEY AFB, PUERTO RICO												RAMEY AFB, PUERTO RICO													
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
0+KP	1	F1	F0	0	0	1	F1	1	50	0	0	1	0+KP	1	A1	1	1	1	A3	A3	3	3	3	3	F2
HMIN	279	278	227	311	202	309	207	207	111	107	109	108	HMIN	109	110	108	106	109	202	238	220	199	238		
SCAT	44.5	43.3	37.9	33.4	49.1	55.2	49.2	38.5	34.9	35.8	38.3	42.9	SCAT	47.0	51.9	51.9	38.0		36.4	48.0	43.9	34.6	39.4	60.7	
HMAXF	368	365	297	275	285	315	304	279	245	253	243	248	HMAXF	280	282	283	277		272	278	325	300	269	361	
SHMAX	107	139	136	155	134	131	95	132	365	618	524	589	SHMAX	817	899	861	759		670	253	190	179	101	181	
KM													KM												
370		179	240										370												
360		178	239										360												
350		172	233										350												
340		161	220										340												
330		146	201										330												
320		127	176						179	143			320												
310		103	142						176	143			310												
300		75.2	101	280					176	143			300												
290		49.3	62.0	278	219	170	140						290		1050	993									
280		6.8	12.4	266	362	218	161	135	262				280		960	1049	993	1096		1050	432	230	356	125	
270				246	360	214	149	126	259				270		950	1036	979	1087		1049	428	189	318	198	103
260				216	343	205	135	114	246				260		918	1003	943	1042		1022	416	146	258	196	78.4
250				171	313	190	117	99.0	225	634	1048	834	250		861	951	891	960		957	393	105	178	187	53.3
240				104	262	173	96.1	82.0	195	631	1016	833	240		789	879	827	840		847	363	60.9	93.4	172	12.4
230				40.6	183	150	71.9	63.4	154	606	944	811	230		695	785	746	689		660	321	12.4	12.4	151	
220				76.2	120	47.6	45.4	103	556	822	759	747	220		594	676	646	538		370	262			122	
210				72.2	7.0	12.4	38.7	474	638	681	671		210		496	561	541	418		125	184			86.8	
200					370	456	565	564					200		417	445	441	332		361	354	277		12.4	
190					271	322	430	439					190		360	319	305	296		270	255	211		219	
180					194	251	311	341					180		286	258	243	226		270	226	185		217	
170					145	207	246	281					170		286	258	243	226		270	217	199		150	
160					114	173	202	245					160		230	217	199	160		270	217	199		150	
150					94.9	146	168	213					150		230	217	199	160		270	217	199		150	
140					81.8	126	139	178					140		196	190	171	135		270	217	199		140	
130					70.8	113	124	143					130		152	167	145	116		270	217	199		130	
120					54.6	94.8	115	133					120		135	151	134	106		270	217	199		120	
110					75.8	49.0	106						110		65.5	12.4	78.2	97.5							

ELECTRON OENSITY

RAMEY AFB, PUERTO RICO

60 W

15 JAN 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O*KP	F2	F2	F4	4	F4	F3	F3	3	3	3	3	2
HMIN	217	202	270	223	202	109	109	107	107	106		
SCAT	34.4	44.5	50.0	34.8	42.3	30.8	28.7	35.0	48.5			
HMAXF	287	285	358	293	278	257	257	252	242			
SHMAX	162	141	124	111	169	391	596	726	585			
KM												
360			193									
350			192									
340			187									
330			178									
320			164									
310			147									
300			127	240								
290	362	240	101	240								
280	35.8	239	67.2	231	310							
270	34.1	233	2.0	213	307							
260	307	221	185	296	716	1131	1303					
250	260	202	145	275	706	1112	1302	794				
240	189	177	50.2	248	660	1023	1266	793				
230	88.0	148	48.1	210	576	869	1178	781				
220	33.6	113	161	451	670	1028	751					
210	65.8	6.8	93.6	330	470	749	703					
200			234	333	476	642						
190			174	260	334	565						
180			133	211	274	461						
170			104	171	238	323						
160			83.5	135	205	257						
150			73.1	110	172	220						
140			67.5	96.5	142	182						
130			62.7	90.9	125	152						
120			56.8	85.3	118	136						
110			45.2	65.0	103	116						

ELECTRON OENSITY

RAMEY AFB, PUERTO RICO

60 W

15 JAN 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
O*KP	2	A2	A1	1	S1	6	6	6	3	3	3	4
HMIN	107		105	108	107	207	200	228	249	212	188	
SCAT	47.4		39.8	45.2	41.3	32.5	30.1	56.9	44.9	36.6	67.8	
HMAXF	285		242	271	265	269	248	363	340	281	292	
SHMAX	903		527	566	581	385	233	231	202	145	118	
KM												
360			370									
350			360									
340			350									
330			340									
320			330									
310			320									
300			310									
290			199	268								
280			170	229	304	143						
270			138	180	304	142						
260			107	126	297	140						
250			79.7	74.5	278	135						
240			75.4	64.4	87.8	63.9	67.9	58.7	12.4	250	130	
230			75.4	59.9	72.8	77.4	66.7	42.1	206	122		
220			73.8	54.2	74.6	54.7	61.9	8.8	150	114		
210			63.8	47.7	62.6	19.9	53.2		78.0	104		
200			63.6	41.0	44.4	44.7	27.8					
190			56.7	35.4	33.3	12.4						
180			45.0	31.4	23.4							
170			35.9	28.0	17.4							
160			29.4	24.5	14.2							
150			24.9	20.2	12.0							
140			21.2	16.3	10.4							
130			18.0	12.5	9.0	2						
120			15.5	10.9	8.6							
110			13.9	10.2	7.4	7						
100			12.7	6.9	4.5	7						

ELECTRON OENSITY

RAMEY AFB, PUERTO RICO

60 W

16 JAN 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O*KP	4	F4	F4	4	F4	F1	1	1	50	0	0	0
HMIN	238	263	267	299	202	228	208	106	107	105		
SCAT	71.6	34.1	39.5	37.3	41.8	54.6	36.8	37.6	35.6	46.4		
HMAXF	372	336	342	474	280	325	286	267	257	260		
SHMAX	136	112	104	107	114	89	130	634	770	917		
KM												
380	143		208									
370	143		208									
360	142		201									
350	140		203	185								
340	136	240	203	165								
330	131	238	194	137								
320	124	227	184	107								
310	117	204	167	73.1								
300	108	173	145	12.4								
290	97.0	133	112		198	114	262					
280	84.6	85.7	69.3		196	105	261					
270	71.8	44.2	20.3		188	95.1	250	960				
260	58.5				174	82.6	230	951	1215	1328		
250	44.1				156	67.5	202	907	1202	1314		
240	8.1				131	48.9	158	831	1143	1269		
230					102	12.4	106	726	1037	1194		
220					72.5	59.2	600	885	1095			
210					44.6	12.4	666	715	906			
200					352	54.3	665	210	507	608		
190					270	409	453	200	448	468		
180					218	319	346	190	393	379		
170					179	262	287	180	345	325		
160					146	225	251	170	304	287		
150					116	186	219	160	268	257		
140					97.2	158	183	150	240	236		
130					92.8	137	150	140	219	222		
120					88.4	120	135	130	171	190		
110					84.0	97.4	118	120	141	152		

ELFCTRON OENSITY

RAMEY AFB, PUERTO RICO

60 W

16 JAN 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
O*KP	0	0	A3	3	A3	S2	2	S2	3	3	3	2
HMIN	107	107	109	200	195	208	213	207	279			
SCAT	84.7	47.9	41.7	38.3	39.1	24.6	44.6	43.8	36.0	48.9		
HMAXF	318	276	253	271	260	232	302	298	293	389		
SHMAX	1099	973	601	562	380	108	122	115	103	162		
KM												
390												
380												
370												
360												
350												
340												
330												
320			875									
310			873									
300			865									
290			851									
280			831	1240								
270			804	1235								
260			772	1205								
250			735	1148								
240			688	1067								
230			632	947								
220			570	715								
210			507	608								
200			499	499								
190			396	396								
180												

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W 17 JAN 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
0*KP	2	2	2	2	2	2	2	2	2	2	2	1
HMIN	278	241	199	200	227	240	243	208	109	109	109	107
SCAT	40.7	42.0	26.3	24.3	46.8	51.4	39.6	34.8	32.9	34.9	35.8	29.5
HMAXF	371	325	250	242	321	332	324	268	254	256	248	240
SHMAX	140	184	90	49	110	131	117	127	374	561	753	547
KM	380	240	370	240	360	235	350	223	340	203	330	198
	330	176	329	174	198	219	320	174	196	218	300	906
	320	146	327	172	190	212	270	165	179	199	280	906
	300	82.9	297	155	165	178	260	849	1096	834	260	960
	290	53.9	270	155	165	178	250	786	1091	834	250	849
	280	12.4	232	142	148	151	280	701	1047	818	240	198
	270	184	129	123	127	119	280	540	606	961	230	116
	260	129	99.8	97.6	78.0	294	643	917	537	509	818	240
	250	63.5	262	161	73.3	59.0	42.5	278	641	910	1341	220
	240	254	160	48.5	4.1	254	614	866	1325	906	210	521
	230	225	151	12.4	207	555	787	1258	882	200	489	373
	220	179	129	135	476	666	1149	803	190	446	332	331
	210	104	90.1	28.3	371	509	944	682	180	395	303	278
	200	12.4	275	372	652	532	170	345	282	244	244	202
	190	206	287	402	414	160	301	268	212	213	219	157
	180	155	237	290	350	150	265	250	179	185	185	127
	170	118	202	243	307	140	232	226	161	159	157	103
	160	93.9	167	216	269	130	199	202	154	141	134	84.7
	150	81.6	137	192	234	120	164	169	147	132	120	77.2
	140	75.2	112	167	197	110	143	138	121	55.6	65.5	66.7
	130	68.8	95.4	144	161	120	62.5	89.0	122	138	124	55.6
	120	62.5	89.0	122	138	110	12.4	55.6	65.5	106	12.4	55.6

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W 17 JAN 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
0*KP	1	1	1	1	1	1	1	1	2	2	3	2
HMIN	165	104	107	109	109	109	109	106	222	195	200	208
SCAT	44.5	42.1	34.8	40.7	39.7	53.2	25.7	28.4	37.9	60.3	33.5	54.7
HMAXF	227	280	255	251	240	267	278	249	261	342	269	317
SHMAX	410	780	671	572	428	488	325	248	93	150	104	103
KM	350	340	330	320	310	300	290	280	270	260	250	240
	330	320	310	300	290	280	270	260	250	240	230	220
	310	300	290	280	270	260	250	240	230	220	210	200
	290	280	270	260	250	240	230	220	210	200	190	180
	280	270	260	250	240	230	220	210	200	190	180	170
	270	260	250	240	230	220	210	200	190	180	170	160
	260	250	240	230	220	210	200	190	180	170	160	150
	250	240	230	220	210	200	190	180	170	160	150	140
	240	230	220	210	200	190	180	170	160	150	140	130
	230	220	210	200	190	180	170	160	150	140	130	120
	220	210	200	190	180	170	160	150	140	130	120	110
	210	200	190	180	170	160	150	140	130	120	110	100
	200	190	180	170	160	150	140	130	120	110	100	90
	190	180	170	160	150	140	130	120	110	100	90	80
	180	170	160	150	140	130	120	110	100	90	80	70
	170	160	150	140	130	120	110	100	90	80	70	60
	160	150	140	130	120	110	100	90	80	70	60	50
	150	140	130	120	110	100	90	80	70	60	50	40
	140	130	120	110	100	90	80	70	60	50	40	30
	130	120	110	100	90	80	70	60	50	40	30	20
	120	110	100	90	80	70	60	50	40	30	20	10
	110	100	90	80	70	60	50	40	30	20	10	0

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W 18 JAN 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
0*KP	2	2	3	3	F3	F3	S3	3	S5	5	5	3
HMIN	278	241	199	200	218	201	261	218	210	108	108	109
SCAT	38.4	45.4	42.6	46.1	53.6	56.4	60.4	57.4	33.5	27.4	32.6	32.7
HMAXF	355	334	327	346	318	290	360	331	284	244	247	243
SHMAX	93	135	121	124	138	77	78	149	280	587	690	599
KM	360	179	198	104	104	104	104	104	104	104	104	104
	350	178	197	197	101	193	101	193	101	193	101	193
	340	172	219	197	101	193	101	193	101	193	101	193
	330	160	218	214	192	98.0	193	98.0	193	98.0	193	98.0
	320	142	214	212	182	198	92.2	192	92.2	192	92.2	192
	310	117	204	205	167	197	86.1	187	86.1	187	86.1	187
	300	87.0	188	191	148	193	112	78.6	179	75.4	75.4	75.4
	290	55.1	168	172	124	184	112	69.9	169	64.3	64.3	64.3
	280	12.4	142	148	95.8	172	111	58.7	156	61.6	61.6	61.6
	270	111	117	67.2	156	108	43.6	139	616	118	565	565
	260	78.6	82.7	40.4	138	103	118	565	100	1240	1240	1050
	250	47.4	46.3	117	97.3	93.6	470	1240	1240	1240	1240	1050
	240	1.1	88.2	89.7	70.1	312	1234	1224	1048	210	548	548
	230	56.0	81.4	49.3	181	1161	1151	1009	200	505	462	514
	220	12.4	69.9	12.4	81.5	1006	1019	924	190	450	393	385
	210	50.1	50.1	4.4	755	821	821	755	180	385	334	305
	200	484	571	578	484	571	578	484	170	313	292	280
	190	303	384	399	303	384	399	303	160	252	227	219
	180	229	286	304	150	217	237	196	150	210	193	187
	170	150	246	261	140	168	212	166	140	187	177	177
	160	158	217	236	130	134	177	154	166	166	166	167
	150	128	189	196	120	121	149	145	141	141	101	101
	140	111	158	157	111	158	157	111	106	131	140	140
	130	106	131	128	99.8	120	128	99.8	106	84.9	84.9	84.9
	120	79.1	106	84.9	79.1	106	84.9	79.1	106	84.9	84.9	84.9
	110	106	106	106	106	106	106	106	106	106	106	106

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W 18 JAN 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
0*KP	3	3	4	4	4	4	A3	A3	3	4	F4	F2
HMIN	107	109	110	108	109	109	109	109	229	192	208	239
SCAT	39.8	54.0	37.4	48.0	51.7	51.7	43.5	40.3	38.5	46.4	46.4	46.4
HMAXF	227	269	248	247	255	255	312	264	268	327	327	327
SHMAX	384	686	575	488	414	414	483	300	302	182	182	182
KM	330	320	310	300	290	280	270	260	250	240	230	220
	320	310	300	290	280	270	260	250	240	230	220	210
	310	300	290	280	270	260	250	240	230	220	210	200
	300	290	280	270	260	250	240	230	220	210	200	190
	290	280	270	260	250	240	230	220	210	200	190	180
	280	270	260	250	240	230	22					

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W 19 JAN 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O*KP	F2	2	2	2	F2	1	1	1	3	3	3	4
HMIN	267	219	210	200	205	211	220	205	110	105	106	109
SCAT	40.8	31.0	43.9	40.6	72.7	53.8	43.4	42.2	39.8	48.0	37.7	28.9
HMAXF	353	278	277	266	354	318	313	297	270	279	257	234
SHMAX	185	176	149	162	127	144	119	178	459	1004	1007	777
KM	360	329			127				380			
350	328			127				370				417
340	320			126				360				414
330	300			123				350				402
320	272			120	198	198		340				381
310	236			115	197	198		330				353
300	195			108	193	194	310	320				318
290	144			99.7	185	184	308	310				335
280	85.4	446	286	90.7	173	169	298	1393	300			218
270	32.2	438	284	329	81.7	158	150	278	679	1380	290	328
260	407	275	327	73.0	140	124	251	669	1335	1756	280	317
250	354	259	316	64.1	120	94.1	215	635	1257	1740	270	315
240	265	238	295	55.2	96.3	64.8	166	580	1161	1664	260	310
230	130	206	267	46.6	69.6	42.2	115	511	1013	1530	250	293
220	12.4	147	220	35.0	43.7	68.6	422	803	1327	1564	240	293
210	12.4	140	12.4			33.1	324	596	1009	1373	230	293
200			12.4				251	415	619	1050	220	293
190							196	304	369	588	210	293
180							155	245	288	347	200	293
170							124	207	247	282	190	293
160							101	177	217	252	180	293
150							82.0	148	190	233	170	293
140							69.9	124	163	191	160	293
130							63.8	104	136	156	150	293
120							56.7	92.5	119	134	140	293
110							12.4	84.9	99.8	55.6	130	293

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W 19 JAN 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
O*KP	4	4	A6	6	6	A5	A5	A5	A5	A6	A6	A6
HMIN	107	109		107	110		107	110	115	214	268	
SCAT	49.5	47.5		53.7	40.2	40.4		59.0	50.8			
HMAXF	238	269		290	284	259		314	379			
SHMAX	508	672		742	865	589		222	287			
KM	380											
370	370											
360	360											
350	350											
340	340											
330	330											
320	320											
310	299	303	410									
310	286	279	408									
308	269	251	398									
301	251	216	378									
298	298	331										
297	297	320										
290	290											
280	280											
270	270											
260	260											
250	250											
240	240											
230	230											
220	220											
210	210											
200	200											
190	190											
180	180											
170	170											
160	160											
150	150											
140	140											
130	130											
120	120											
110	110											

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W 20 JAN 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O*KP	6	6	5	5	F5	F4	S4	4	4	4	A4	A5
HMIN	238	225	207	267	247	203	216	208	209	107	108	108
SCAT	42.7	38.6	69.8	41.6	41.1	34.8	80.5	35.5	34.9	44.3	42.4	37.0
HMAXF	329	297	329	372	331	278	371	287	271	264	264	272
SHMAX	254	232	205	150	114	98	150	142	282	703	888	806
KM	380			240			139					
370				240			139					
360				235			139					
350				223			137					
340				203	203		134					
330	446	235	178	203			130					
320	441	234	174	200			125					
310	42.4	230	170	188			119					
300	394	47.7	175	191.8	173		112					
290	353	473	216	66.9	152		104	286				
280	295	454	205	47.0	127	203	94.9	283	679			
270	223	421	193	128.4	98.2	200	84.8	269	679	1096	1240	1049
260	137	369	178	64.3	188	74.3	242	663	1093	1238		975
250	66.8	294	159	19.9	169	63.2	206	618	1055	1210		897
240	12.4	174	134		142	52.2	163	544	969	1151		797
230	54.3	101		106	41.5	116	417	845	1060			681
220	69.0			69.9	12.4	62.7	168	690	935			563
210	19.9			42.2		12.4	12.4	541	774			452
200							409	597				370
190							321	452				190
180							264	338				180
170							224	278				170
160							191	240				160
150							162	210				150
140							139	181				139
130							120	157				120
120							106	138				106
110							91.4	113				91.4

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W 20 JAN 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
O*KP	4	4	A4	2	2	2	2	2	2	2	2	4
HMIN	108	110		209	200	218	238	204	199			
SCAT	42.4	37.0		36.3	64.1	55.9	51.7	48.1	36.1			
HMAXF	272	267		272	312	333	352	316	266			
SHMAX	806	673		331	259	225	239	270	184			
KM	360											
350	350											
340	340											
330	330											
320	320											
310	299	303	410									
310	286	279	408									
308	269	251	398									
301	251	216	378									
298	298	331										
297	297	320										
290	290											
280	280											
270	270											
260	260											
250	250											
240	240											
230	230											
220	220											
210	210					</td						

ELECTRON DENSITY

ELECTRON DENSITY

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO				60 W				22 JAN 1961				
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O+KP	2	A2	A4	A4	F4	F4	A4	F4	4	A4	A4	A4
HMIN	214	208					237	203	110			
SCAT	32.5	33.3					63.4	53.4	40.5			
HMAXF	292	273					381	315	246			
SHMAX	155	156					231	279	377			
KM												
390								257				
380								257				
370								255				
360								250				
350								242				
340								229				
330								215				
320								197	389			
310								177	388			
300	335							154	382			
290	335							131	368			
280	323	362						108	346			
270	296	361						85.1	320			
260	253	348						62.9	287			
250	197	319						45.1	248	608		
240	132	274						12.4	201	604		
230	71.8	203							14.2	53		
220	38.8	106							83.7	54.4		
210		25.6							44.2	485		
200										396		
190										285		
180										199		
170										146		
160										111		
150										92.1		
140										80.8		
130										73.8		
120										59.5		
110										12.4		

ELECTRON DENSITY

ELECTRON DENSITY

RAMÉY AFB, PUERTO RICO

60 W 23 JAN 1961

23 JAN 1961

ELECTRON DENSITY

60 W 23 JAN 1961

23 JAN 1961

RAMEY AFB, PUERTO RICO

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
Q*KP	A2	A2	A1	A1	1	A1	A1	1	3	S3	F3	F3	
HMIN	107		107		215	200	199	257	258	245			
SCAT	42 \pm 3		53 \pm 1		39.7	26.9	51.4	52 \pm 0	54 \pm 2	40 \pm 6			
HMAXF	273		264		279	249	277	358	377	330			
SHMAX	869		620		459	173	111	99	184	160			
KM													
380											240		
370											239		
360											143	234	
350											143	225	
340											139	211	286
330											133	193	286
320											124	173	281
310											112	149	268
300											98 \pm 8	125	245
290											82 \pm 8	101	215
280	1143					1004					179	64 \pm 5	74 \pm 7
270	1141					735					178	45 \pm 9	50 \pm 3
260	1116					734					174	12 \pm 4	12 \pm 4
250	1054					722					872	508	166
240	968					694					727	494	155
230	842					658					482	446	144
220	688					608					128	361	126
210	545					536					216	98 \pm 2	
200	439					451					12 \pm 4	12 \pm 4	
190	368					369							
180	323					305							
170	294					258							
160	269					223							
150	243					194							
140	220					168							
130	166					145							
120	139					128							
110	128					69 \pm 7							

ELECTRON DENSITY

RAMÉY AFB, PUERTO RICO

60 W

24 JAN 1961

ELECTRON DENSITY

60-11 34 JAN 1962

34 JAN 1967

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q_KP	F3	F3	4	F4	F4	F3	F3	3	S3	3	3	3
HMIN	235	221	200	201	251	268	213	219	209	108	109	109
SCAT	46.3	36.8	31.4	56.6	55.8	50.6	52.4	36.7	30.5	32.0	46.0	38.2
HMAX	325	288	249	301	361	362	327	293	270	262	270	253
SHMAX	207	181	126	116	164	107	174	176	267	623	938	730
KM												
370							219	161				
360							219	161				
350							216	159				
340							211	153				
330	335						201	145	240			
320	334						189	133	239			
310	326						161	175	119	234		
300	310						161	153	161	224	362	
290	283	389					159	129	79.5	209	361	
280	253	384					155	100	55.0	180	350	
270	219	365					149	73.9	12.4*	168	325	679
260	175	330					139	47.5	14.3	288	662	1048
250	117	284	335	128			115	236	610	1012	1263	1094
240	52.4	213	328	116			82.9	16.7	517	923	1184	1065
230	101	304	97.8				56.0	85.5	380	785	1076	995
220				266	75.8		31.0	12.4*	164	615	899	744
210				191	49.7				12.4*	462	685	744
200				12.4*						349	485	586
190										276	485	450
180										228	286	354
170										186	249	301
160										152	215	264
150										126	180	228
140										110	152	189
130										104	138	161
120										96.8	127	149
110										75.1	78.9	78.9

RAMEY AFB - PUERTO RICO

	TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
D+KP	3	A3	A4	4	4	A3	A3	A3	4	F4	F4	F4	F6
HMIN	110	109	109	109	109	208	201	200	200				219
SCAT	67.8	46.5	48.7	39.0		35.9	39.2	57.6	51.8				45.0
HMAXF	313	276		288	272	26.8	272	335	394				324
SHMAX	1086	967		948	758	382	205	228	200				197
KM													
400													274
390													273
380													269
370													257
360													241
350													221
340													274
330													199
320	960												273
310	960												173
300	951												310
290	931												265
280	909	1240				114.5				230	474.3		
270	862	1235				113.9	109.6			417	510	7.1	236
260	811	1203				110.4	109.5			875	417	184	202
250	747	1143				104.6	107.0			865	448	162	160
240	678	1054				96.9	100.6			819	384	136	116
230	603	935				86.1	91.1			743	349	112	76.8
220	530	794				60.3	62.9			627	296	87.0	48.1
210	468	623				47.7	48.3			429	221	61.8	7.1
200	416	476				38.7	37.7			105	102	41.4	
190	376	382				32.7	30.1						
180	345	324				28.6	25.4						
170	316	287				25.5	21.8						
160	285	260				22.8	18.9						
150	253	235				20.1	16.2						
140	204	206				17.6	13.8						
130	159	166				15.7	12.3						
120	148	151				14.3	11.5						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W 25 JAN 1961

25 JAN 1961

TIME 0000 0100 0200 0300 0400 0500 0600 0700 0800 0900 1000 1100

$\eta \times K$	4	4	A3	3	3	F4	A4	4	A4	A4	A4	A2
HM1N	218	198	198	238	218	215		200				
SCAT	48.9	43.6	41.4	43.8	46.4	56.9		35.9				
HMAXF	323	288	283	320	320	343		287				
SUMWAX	172	204	182	137	139	173		162				

KM	172	204	182	157	199	175	182
350						219	
340						219	
330	257				214	216	
320	257			240	214	210	
310	253			237	211	201	
300	243			228	204	187	
290	227	362	335	212	190	171	323
280	207	359	335	191	172	151	321
270	183	347	327	163	151	129	307
260	153	326	303	125	125	103	286
250	129	296	282	85	97.9	79.7	238
240	82.5	256	243	22.3	72.1	58.8	180
230	51.2	183	190		50.0	43.6	121
220	12.4	113	118		12.4	15.7	76.8
210		6.05	6.24	7			46.8
200		12.4	12.4				1.5

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W 25 JAN 1961

25 JAN 1961

TIME 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300

Q+KP	2	A2	A2	A2	A2	A2	A2	A2	A2	A2	2	2
HMIN	106					207	200		211	228	199	
SCAT	56.7					43.6	32.7		68.1	48.5	64.1	
HMAXF	303					279	251		344	328	317	
SHMAX	11.03					6.02	2.56		3.20	14.2	21.7	

SHM	1101		688	255	238	147	113
KM							
350					262		
340					262		
330					260	224	
320					255	223	138
310	1096				246	215	135
300	1095				235	204	133
290	1082				222	189	129
280	1052				205	169	128
270	1006				186	144	116
260	940				164	113	104
250	858				146	82.8	98.9
240	764				114	53.1	86.8
230	665				8.86	12.4	72.5
220	569				583	515	5
210	488				46.8		41.7
200	420				101	351	4.5
190	375				12.4		
180	341						
170	316						
160	294						
150	272						
140	245						
130	208						
120	163						
110	146						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W 26 JAN 1961

26 JAN 1961

TIME 0000 0100 0200 0300 0400 0500 0600 0700 0800 0900 1000 1100

Q+KP	2	2	F2	2	2	3	3	3	4	S4	4	3
HMIN	266	266	239	218	254	235	199	219	210	108	109	109
SCAT5	50.3	40.3	29.4	39.8	49.1	43.1	37.6	43.5	45.6	41.5	36.8	46.1
IMAXF	359	334	300	287	341	327	265	291	278	267	256	255
HMXX	112	112	115	131	125	144	102	131	282	684	826	667

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W

26 JAN 1961

TIME 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W

27 JAN 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
OAKP	2	2	3	F3	F3	F2	F2	2	2	A2	A2	2
HMIN	237	219	219	219	259	248	199	199	109	109	106	105
SCAT	62.0	44.5	32.4	53.4	7	44.2	58.3	41.5	46.3	31.9	35.5	43.1
HMAXF	364	307	283	323	346	365	281	287	233	248	251	
SHMAX	183	173	149	185	162	242	153	209	300	648	718	KM
	370	219					310					
	360	219					309					
	350	216					274	305				
	340	210					273	296				
	330	202					257	265	281			
	320	191					256	248	262			
	310	178	298				253	227	239			
	300	161	296				245	199	213			
	290	140	287	355	230	163	182	280	355			
	280	116	270	354	212	120	147	280	353			
	270	91.4	247	342	192	77.9	107	275	343			
	260	68.6	215	312	169	12.4	63.4	262	325			
	250	47.9	170	266	143	12.4	12.4	242	301	1004		
	240	12.4	114	194	111			211	264	573	1050	1004
	230		66.4	90.5	70.9			173	208	572	1037	989
	220							120	138	549	889	877
	210							64.9	75.7	500	736	777
	200							12.4	12.4	417	547	631
	190							306	407	483	190	190
	180							200	330	376	180	180
	170							138	281	311	170	170
	160							107	240	277	150	150
	150							86.9	206	253	140	140
	140							78.7	181	227	130	130
	130							72.5	156	185	120	120
	120							63.1	136	157	110	110
	110							12.4	73.0	139		

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W

27 JAN 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
OAKP	2	2	2	2	2	2	2	2	2	2	2	2
HMIN	106	109	107	107	107	107	106	213	184	209	223	261
SCAT	48.2	39.2	41.0	46.6	52.1	45.1	31.6	42.6	37.7	43.0	46.4	50.3
HMAXF	268	252	266	282	289	276	266	287	328	300	358	
SHMAX	783	762	780	701	757	781	487	371	211	195	155	145
	360											
	350											
	340											
	330											
	320											
	310											
	308											
	297											
	277											
	240											
	219											
	218											
	212											
	310											
	202											
	187											
	169											
	147											
	119											
	834	1004										
	417	249	237									
	215	49.0										
	229	86.8										
	196											
	142	196										
	363	363										
	251	67.2										
	143											
	111											
	78.4											
	77.4											
	49.4											
	211											

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W

28 JAN 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
OAKP	2	F2	2	2	2	2	2	3	3	3	3	3
HMIN	227	224	199	199	238	248	246	244	109	111	106	105
SCAT	37.0	50.9	32.3	60.4	67.0	50.8	40.6	41.5	30.2	34.7	36.6	41.8
HMAXF	319	313	255	304	357	352	349	315	238	244	246	248
SHMAX	120	213	113	121	139	125	120	193	436	555	663	665
	360	161	179									
	350	160	179	198								
	340	158	177	196								
	330	154	171	187								
	320	219	335	148	162	172	382					
	310	215	335	156	141	148	151	381				
	300	204	330	156	132	132	126	370				
	290	183	318	154	122	113	100	348				
	280	156	299	150	110	92.6	77.4	317				
	270	125	275	144	91.6	71.5	57.3	270				
	260	95.0	244	286	136	71.6	49.3	42.4	190			
	250	66.7	201	284	127	51.0	12.4	12.4	68.4	96.0	1084	917
	240	45.6	136	270	115	12.4			86.5	957	1076	908
	230	12.4	60.8	244	98.3				85.0	91.1	1029	872
	220		201	78.6					78.8	848	94.7	810
	210		106	96.1					67.9	718	803	723
	200		12.4	12.4					106	649	610	614
	190								355	391	440	496
	180								180	491	522	441
	170								234	290	326	399
	160								171	233	274	329
	150								135	194	241	285
	150								111	160	201	250
	140								140	241	246	230
	130								130	203	211	201
	120								120	172	178	164
	110								110	150	156	143

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W

28 JAN 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
OAKP	3	A3	4	4	4	A2	2	2	3	3	3	F3
HMIN	105	105	106	108	109	109	209	199	203	199	207	251
SCAT	39.5	53.1	49.1	48.0	58.6	45.5	52.8	33.9	49.1	45.0	39.9	
HMAXF	258	252	260	291	292	286	286	286	316	271	293	298
SHMAX	718	677	680	864	924	944	605	297	244	144	135	
	350											
	340											
	330											
	320											
	310											
	308											
	297											
	275											
	240											
	236											
	224											
	203											
	197											
	177											
	144											
	124											
	102											
	99.0											
	88.0											
	84.0											
	78.0											
	72.0											
	60.0											

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W 29 JAN 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O*P	3	F3	2	2	F2	2	A2	A2	3	3	A3	A2
HMIN	234	249	210	200		298	304	229	110	109		
SCAT	51.9	50.3	35.5	23.4		47.4	48.9	31.0	26.9	34.4		
HMAXF	330	345	287	240		305	397	303	247	261		
SHMAX	176	195	184	89		141	141	157	488	733		
KM												
400						219	219					
390						218	218					
380						214	212					
370						204	202					
360						188	186					
350		298				163	167					
340		297				146	147					
330	262	291				118	116					
320	260	218				87.6	81.6					
310	254	243				56.9	41.8	362				
300	241	239				12.4	360					
290	224	208	389				345					
280	204	170	385				311					
270	176	120	365				256	1215				
260	141	68.5	332				184	1215				
250	96.4	124.4	280				107	1096	1185			
240	47.9						57.3	1075	1103			
230							4.9	983	968			
220		56.2	258					782	773			
210		172						507	566			
200		12.4						309	411			
190								216	328			
180								166	273			
170								131	230			
160								107	193			
150								90.7	163			
140								81.0	139			
130								74.9	123			
120								66.3	114			
110								12.4	80.1			

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W 29 JAN 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
O*P	2	2	2	2	A2	2	A2	2	A1	A1	1	3
HMIN	109	108	106	105	109	109	210	208	217	209	224	213
SCAT	42.1	51.7	47.9	53.8								
HMAXF	255	275	272	296								
SHMAX	797	870	855	923								
KM												
320												280
310												279
300												262
290												261
280												255
270												243
260												220
250												227
240												208
230												181
220												180
210												174
200												174
190												174
180												174
170												174
160												174
150												174
140												174
130												174
120												174
110												174

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W 30 JAN 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O*P	3	3	1	1	1	2	2	2	0	0	0	0
HMIN	217	228	240	208	269	268	232	250	109	107	106	109
SCAT	49.8	424.8	454.8	354.0	44.7	46.1	50.5	35.6	31.8	32.0	33.2	32.9
HMAXF	306	308	322	274	356	353	333	306	247	238	248	235
SHMAX	163	107	122	91	119	129	161	155	457	542	695	538
KM												
360						198	214					
350						198	213					
340						192	210	240				
330						208	182	201	240			
320						167	187	236				
310	257	193	205			147	169	228	362			
300	256	192	196			121	144	215	359			
290	250	185	183			92.0	113	200	343			
280	239	173	165	198	62.8	79.8	177	313				
270	224	176	141	198	12.4	25.6	146	269				
260	203	134	108	191			109	186				
250	175	102	67.8	175			72.0	12.4	875	1215		
240	138	63.6	1.2	153			864	960	1198	917		
230	88.3	12.4	120				811	944	1128	911		
220	36.8	76.4					715	878	1002	866		
210		23.7						553	774	780	780	
200								373	637	570	646	
190									254	472	402	484
180									150	270	269	241
170									140	231	236	201
160									130	191	196	168
150									120	169	172	153
140									110	138	141	122
130										114	83.9	83.6
120												
110												

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
O*P	0	0	0	0	0	1	1	1	2	2	F2	F2
HMIN	107	107	108	106	105	107	105	105	203	208	220	238
SCAT	42.0	54.0	45.1	51.5	42.2	42.3	38.3	46.1	58.4	48.8		38.9
HMAXF	249	250	275	281	267	266	262	278	303	308		314
SHMAX	635	581	755	738	662	682	354	280	296	155		131
KM												
320												251
310												250
300												243
290												225
280												201
270												171
260												131
250												82.5
240												23.7
230												
220												
210												
200												
190												
180												
170												
160												
150												
140												
130												
120												
110												

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O*P	3	3	1	1	1	2	2	2	0	0	0	0
HMIN	217	228	240	208	269	268	232	250	109	107	106	109
SCAT	49.8	424.8	454.8	354.0	44.7	46.1	50.5	35.6	31.8	32.0	33.2	32.9
HMAXF	306	308	322	274	356	353	333	306	247	238		

JAN 1961

RAMEY AFB, PUERTO RICO

60 W

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
COUNT	28	29	25	27	24	28	27	29	27	25	24	23	COUNT	23	21	15	23	19	10	24	26	28	28	26	29	
KP	2.3	2.2	2.3	2.0	2.0	1.9	2.0	1.8	1.9	1.7	1.6	1.4	KP	1.6	1.6	1.4	1.7	1.5	1.1	1.7	1.8	2.1	2.1	1.8	2.1	
HMIN	242	233	218	219	241	237	232	216	143	109	108	108	HMIN	107	108	107	108	108	108	108	108	108	108	108	108	
RATIO	5.6	6.4	7.0	6.6	5.3	5.0	6.4	6.5	5.6	5.6	5.6	5.0	RATIO	4.3	4.3	4.3	4.3	4.4	4.4	4.5	4.9	7.2	6.7	5.5	5.6	5.3
SCAT	46.4	41.7	37.4	40.7	50.8	50.1	49.1	40.9	35.5	37.3	39.0	42.9	SCAT	52.5	49.8	53.0	49.2	48.5	45.2	38.5	42.6	49.9	46.7	47.1	49.9	49.9
NMAX	282	340	306	266	237	205	327	804	1179	1336	1126	1049	NMAX	1017	1125	1126	1049	988	1027	1038	578	342	312	284	258	258
HMAXF	338	314	289	297	340	336	327	296	260	259	255	257	HMAXF	276	278	285	280	278	276	278	274	309	328	320	320	320
SHMAX	172	185	146	140	138	155	131	173	423	728	833	809	SHMAX	908	963	1003	884	802	742	488	300	219	191	178	169	169
SHINF	966	1145	1009	890	718	822	710	1095	2691	4054	4600	3985	SHINF	3777	4135	4180	3844	3589	3639	3416	1930	1185	1071	978	896	896
KM	950	21.6	23.5	18.5	16.9	16.7	18.3	15.2	20.6	42.1	61.6	68.3	KM	950	59.1	66.0	68.6	61.4	57.6	58.8	59.9	32.4	22.8	22.8	20.6	20.0
900	27.8	30.1	23.8	21.7	21.4	23.5	19.5	26.4	54.0	79.1	87.7	75.3	900	75.8	84.8	88.1	78.8	74.0	75.5	76.8	41.6	29.3	29.2	26.4	25.7	
850	35.6	38.6	30.5	27.8	27.4	30.2	24.0	30.5	33.9	69.3	101	113	96.6	850	97.3	109	113	101	94.9	96.9	98.6	53.4	37.6	37.5	33.9	33.0
800	45.6	49.5	39.1	35.7	35.0	38.7	31.5	43.0	43.5	88.9	130	144	124	800	125	140	145	130	122	124	126	6.8	4.8	4.2	4.2	
750	58.4	63.4	50.1	45.7	44.9	49.5	41.0	55.7	114	167	185	159	750	160	179	186	166	156	159	162	87.9	61.7	61.5	55.6	54.0	
700	74.6	81.1	64.1	58.4	57.3	63.2	52.4	71.2	146	214	237	203	700	229	238	213	200	204	207	112	78.9	78.5	71.0	69.0	69.0	
650	94.9	103	81.9	74.5	72.8	80.4	66.4	91.0	187	273	303	260	650	262	292	303	272	255	261	265	14.4	101	100	90.5	87.8	
600	120	131	104	94.7	91.9	102	84.4	116	238	349	387	332	600	333	372	386	346	325	332	338	128	127	115	111	111	
550	151	165	132	120	115	149	141	157	131	183	381	559	500	529	591	611	550	516	528	537	201	197	178	171	139	
500	186	205	165	149	141	157	131	183	381	559	621	532	492	422	422	471	488	438	411	421	428	232	161	159	144	
450	223	249	204	183	168	188	157	225	475	696	775	663	450	654	731	752	680	639	655	665	362	245	245	238	215	
440	231	258	212	190	173	194	163	234	496	726	808	691	440	681	760	782	708	665	682	693	377	254	246	222	211	
430	238	267	220	197	178	200	168	243	516	757	843	720	430	708	790	812	736	691	709	721	392	263	254	230	218	
420	245	276	228	204	182	206	173	251	538	788	878	750	420	735	821	842	765	718	737	749	407	272	262	237	224	
410	251	285	236	211	187	211	178	260	559	820	913	780	410	762	851	872	793	745	765	775	423	281	270	24.3	22.9	
400	257	293	245	218	190	216	182	269	581	943	910	810	400	790	881	902	821	771	792	805	438	290	290	277	250	
390	263	301	253	224	194	221	186	277	603	884	986	841	390	816	911	931	849	798	820	833	454	298	284	256	239	
380	267	308	260	230	196	225	190	286	624	916	1022	871	380	843	940	960	877	823	847	860	469	306	290	261	243	
370	271	314	268	236	217	227	193	293	646	948	1091	901	370	868	968	987	903	849	874	887	894	313	294	265	245	
360	274	320	275	242	197	229	195	301	667	979	1094	931	360	893	995	1012	928	873	899	912	948	319	298	268	247	
350	274	324	281	246	195	230	195	307	688	1009	1129	960	350	916	1020	1035	952	895	923	937	512	325	301	270	246	
340	272	327	287	250	191	228	195	313	708	1038	1162	987	340	937	1043	1057	974	916	946	959	525	329	302	270	244	
330	266	328	292	252	184	223	193	318	726	1066	1165	1014	330	956	1064	1075	994	935	966	980	537	332	300	268	239	
320	256	326	296	253	174	215	189	322	744	1092	1125	1112	320	972	1082	1090	1011	951	984	997	547	333	305	268	231	
310	241	319	298	251	162	205	182	324	759	1115	1252	1060	310	986	1096	1099	1025	964	999	1012	556	330	286	254	219	
300	221	307	298	245	145	189	172	324	773	1135	1277	1079	300	995	1104	1103	1034	973	1011	1023	562	325	271	242	202	
290	195	290	295	238	124	169	161	319	784	1152	1298	1095	290	998	1106	1099	1039	976	1017	1027	565	316	251	227	182	
280	162	264	287	229	106	146	147	307	793	1165	1314	1106	280	994	1100	1085	1035	972	1016	1023	565	302	224	206	156	
270	130	232	271	215	88.7	118	128	285	796	1172	1325	1112	270	981	1082	1059	1017	956	1006	1002	559	282	191	182	130	
260	97.9	191	246	196	71.4	90.7	107	250	788	1169	1328	1108	260	954	1047	1016	982	926	977	954	545	256	153	151	103	
250	69.3	147	212	172	52.8	64.7	84.5	199	765	1145	1316	1091	250	913	991	956	928	875	922	867	518	222	113	121	139	
240	41.1	96.2	164	140	37.5	42.9	60.3	144	716	1086	1274	1055	240	857	911	876	855	800	842	767	473	181	76.4	93.5	51.7	
230	17.9	52.5	111	104	27.7	26.5	38.2	95.3	625	983	1189	994	230	784	811	782	765	708	738	526	411	132	42.4	66.0	35.5	
220	6.4	21.0	62.2	66.5	18.2	14.3	18.3	53.8	481	835	1056	901	220	699	699	678	662	605	612	302	327	83.1	20.5	38.5	22.0	
210	2.0	6.7	24.0	32.1	10.7	5.9	6.6	22.9	346	653	855	774	210	607	587	569	555	501	480	96.3	209	36.0	5.8	14.8	12.1	
200	•4	2.0	1.9	1.6	•9	1.0	1.0	1.0	243	483	628	627	200	516	490	472	456	410	360	7.1	68.3	1.9	•5	3.4	•5	
190	125	272	331	381	180	180	180	180	173	354	441	483	190	439	414	394	375	336	314	278	211	110	111	111	110	
180	170	220	272	315	180	180	180	180	125	331	381	381	180	374	376	336	314	278	211	234	170	170	170	170		
160	150	246	224	203	154	197	236	136	160	286	256	234	150	246	246	224	203	169	116	116	116	116	116	116		
140	140	21.1	96.2	129	166	199	199	140	140	219	216	195	140	140	140	140	140	144	144	144	144	144	144	144		
130	130	21.0	6.6	115	144	166	166	130	130	130	182	174	130	120	120	120	120	125	125	125	125	125	125	125		
120	120	21.0	6.7	24.0	32.1	10.7	5.9	6.6	22.9	346	653	855	774	210	607	587	569	555	501	480	96.3	209	36.0	5.8	14.8	12.1
110	110	2.0	6.4	2.0	1.9	1.6	•9	1.0	1.0	243	483	628	627	200	516	490	472	456	410	360	7.1	68.3	1.9			

TABLES OF IONOSPHERIC DATA

OCTOBER 1960 - SEPTEMBER 1954

Table 1

Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs (MHz)	October 1960	
								F2	F2
00	(4.05)	12	275				2.6	(2.80)	
01	(3.55)	10	282				1.8	(2.60)	
02	(3.55)	12	270				2.6	(2.70)	
03	(3.55)	16	269				2.2	(2.60)	
04	(3.15)	8	255				---	---	
05	(3.6)	8	<271	---	---	---	2.9	(2.85)	
06	(4.0)	11	268	---	112	1.82	2.0	(2.90)	
07	(4.3)	19	256	---	119	1.75	(2.98)		
08	(4.6)	19	260	---	112	1.82	2.0	(2.90)	
09	(5.0)	23	254	---	111	1.90	2.1	(3.00)	
10	(5.45)	24	258	---	110	2.00	2.0	(2.95)	
11	(5.5)	23	256	---	109	2.05	2.2	(2.85)	
12	(5.8)	22	248	---	107	2.02	2.2	(3.00)	
13	(5.85)	22	247	---	108	2.10	2.4	(2.90)	
14	(5.5)	25	254	---	110	1.80	2.4	(2.98)	
15	(5.7)	21	255	---	103	---	3.3	(2.95)	
16	(5.7)	18	257	---	---	---	3.8	(2.95)	
17	(5.55)	18	248	---	---	---	3.6	(2.85)	
18	(5.3)	16	253	---	---	---	4.1	(2.80)	
19	(5.2)	17	250	---	---	---	3.0	(2.80)	
20	(4.65)	16	267	---	---	---	2.4	(2.70)	
21	(4.2)	12	255	---	---	---	2.7	(2.70)	
22	(4.0)	13	276	---	---	---	2.0	(2.65)	
23	(3.8)	13	265	---	---	---	3.4	(2.68)	

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 3

Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs (MHz)	October 1960	
								F2	F2
00	---	0	---				4.0		
01	(4.0)	2	---				4.3		
02	(4.0)	1	(310)	---	---	---	3.8		
03	(4.0)	5	(295)	---	---	---	3.9		
04	(4.0)	6	295	---	---	---	2.9		
05	(3.9)	11	280	---	---	1.7	---		
06	4.4	17	265	---	---	1.2	(2.70)		
07	5.3	15	255	---	---	1.8	2.90		
08	(245)	6.5	16 (250)	---	---	---	2.90		
09	(240)	8.0	17	---	---	---	2.90		
10	245	8.0	22	---	---	2.3	2.90		
11	245	8.1	25 (250)	---	125	2.50	2.95		
12	240	7.6	25 (250)	---	---	2.55	3.00		
13	240	6.8	24 (260)	---	---	2.40	3.05		
14	245	7.1	21	---	---	2.25	3.05		
15	(240)	6.1	21	245	---	2.6	2.95		
16	5.8	16	245	---	---	3.2	(2.90)		
17	(4.5)	11	245	110	---	3.8	2.90		
18	(4.2)	8	(250)	---	---	4.2	---		
19	(4.7)	7	---			4.5			
20	(3.8)	3	(285)			4.5			
21	(4.0)	3	(260)			4.8			
22	(4.0)	1	---			4.0			
23	(4.4)	4	---			3.7			

Time: 15.0°E.

Sweep: 0.7 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 5

Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs (MHz)	October 1960	
								F2	F2
00	---	0	350				(3.8)		
01	(5.0)	2	350				(3.6)		
02	(4.0)	2	355				(3.5)		
03	(4.0)	3	325				(3.4)		
04	(3.7)	1	315				(3.3)		
05	(3.3)	2	290				(3.0)		
06	(3.9)	4	280	---	E	(2.8)	---		
07	5.0	12	285	---	E	(3.2)	2.95		
08	6.3	12	260	---	---	1.80	(3.4)	3.00	
09	7.0	21	270	---	---	---	(3.3)	2.95	
10	7.6	20	250	---	135	2.60	(3.5)	3.00	
11	7.6	25	250	---	130	2.65	(3.3)	2.95	
12	8.5	24	240	---	125	2.70	(3.6)	3.00	
13	9.3	15	240	---	130	2.50	(3.7)	3.00	
14	9.7	13	250	---	130	2.50	(3.7)	2.95	
15	9.0	21	260	---	135	2.30	(3.3)	3.00	
16	9.2	13	240	---	165	2.00	(3.5)	3.05	
17	(7.9)	9	260	---	---	(3.3)	(3.00)		
18	(7.2)	6	255	---	E	(3.3)	(2.95)		
19	(6.5)	5	260	---	---	(3.8)	(2.95)		
20	(5.9)	5	305	---	---	(3.7)	(2.75)		
21	(6.4)	4	330	---	---	4.1	----		
22	(5.4)	2	330	---	---	3.8	----		
23	(5.2)	2	360	---	---	4.2	----		

Time: 30.0°E.

Sweep: 1.4 Mc to 22.0 Mc in 8 minutes, automatic operation.

Table 2

Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs (MHz)	October 1960	
								F2	F2
00								4.6	285
01								5.2	280
02								(5.4)	300
03								5.3	295
04								5.4	285
05								(5.5)	290
06								(5.6)	280
07								(5.4)	280
08								5.6	280
09								5.8	280
10								6.0	260
11								5.9	280
12								6.0	260
13								6.0	260
14								6.0	300
15								6.2	300
16								6.6	260
17								6.8	260
18								7.0	260
19								7.2	240
20								6.9	270
21								7.2	245
22								7.4	240
23								6.5	290

Time: 90.0°W.

Sweep: 1.5 Mc to 20.0 Mc in 15 seconds.

Table 4

Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs (MHz)	October 1960	
								F2	F2
00								4.8	----
01								5.0	----
02								4.0	4.4
03								(3.4)	3.4
04								(3.5)	3.2
05								3.2	2.8
06								3.6	2.8
07								5.0	19
08								6.1	250
09								6.3	22
10								6.9	27
11								7.2	24
12								7.4	24
13								6.0	240
14								7.0	26
15								7.0	24
16								6.0	21
17								5.4	14
18								4.6	16
19								3.6	11
20								4.3	325
21								(5.0)	7
22								(5.0)	340
23								(4.4)	7

Time: 15.0°E.

Sweep: 0.8 Mc to 15.0 Mc in 30 seconds.

Table 6

Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs (MHz)	October 1960	
								F2	F2
00								3.	

Table 7

Lycksele, Sweden (64.6° N, 18.8° E)

October 1960

Time	h'F2	f0F2-Count	h'F	foF1	h'E	foE	f0Es	(M3000)F2
00	(4.3)	19	320	---	E	3.2	2.4	
01	4.1	21	350	---	E	2.8	2.4	
02	4.2	21	300	---	E	3.0	2.5	
03	3.8	17	305	---	E	2.8	2.5	
04	3.8	18	290	---	E	2.3	2.55	
05	3.5	22	260	---	E	2.2	2.6	
06	3.9	23	260	130	1.05	2.2	2.7	
07	4.9	25	255	100	1.80	2.6	2.9	
08	5.8	24	240	100	2.10	3.3	2.95	
09	6.9	22	240	100	2.30	3.2	2.95	
10	7.7	25	235	100	2.50	3.2	3.0	
11	8.7	25	235	100	2.60	3.2	2.9	
12	8.9	24	230	110	2.70	3.4	3.0	
13	8.0	27	230	105	2.50	3.0	3.0	
14	7.5	29	240	100	2.35	2.7	3.0	
15	8.2	25	240	100	2.10	2.7	3.0	
16	7.0	25	245	---	1.70	3.2	3.0	
17	5.9	22	240	---	---	3.1	3.0	
18	5.8	17	240	---	E	3.4	2.8	
19	(4.7)	17	255	---	E	3.0	2.85	
20	(4.2)	15	260	---	E	3.5	(2.7)	
21	3.9	17	285	---	E	3.2	2.6	
22	(4.2)	19	290	---	E	3.2	2.6	
23	4.0	15	310	---	E	2.8	2.4	

Time: 15.0°E.

Sweep: 0.33 Mc to 20.0 Mc in 3 minutes.

Occasionally, 1.4 Mc to 16.0 Mc in 6 minutes, automatic operation.

Table 9

Upsala, Sweden (59.8° N, 17.6° E)

October 1960

Time	h'F2	f0F2-Count	h'F	foF1	h'E	foE	f0Es	(M3000)F2
00	(3.9)	20	330	---	E	2.2	(2.5)	
01	(3.6)	20	310	---	E	2.5	(2.5)	
02	(3.1)	21	305	---	E	2.8	(2.5)	
03	(2.9)	18	310	---	E	2.3	(2.6)	
04	3.0	18	305	---	E	2.3	(2.6)	
05	(2.9)	24	290	---	E	2.2	(2.6)	
06	3.5	29	280	---	115	1.35	2.3	2.75
07	5.0	29	255	---	(110)	1.90	2.6	3.0
08	6.0	31	245	3.5	<10	2.20	2.5	3.1
09	6.6	30	240	3.9	(110)	2.45	2.5	3.0
10	(390)	6.9	28	240	4.2	(105)	2.60	2.9
11	(350)	8.0	27	230	4.3	<110	2.70	3.0
12	9.3	28	230	---	<110	2.70	3.0	
13	9.7	28	240	---	(110)	2.70	3.0	
14	9.0	28	240	---	(105)	2.50	3.0	
15	8.8	27	235	---	(105)	2.20	2.2	3.1
16	7.9	27	235	---	<110	1.90	2.0	3.1
17	8.1	23	240	125	1.40	2.5	3.0	
18	7.3	21	240	---	E	2.6	2.9	
19	6.2	20	245	---	E	2.2	2.9	
20	5.0	19	275	---	E	2.4	2.9	
21	4.7	15	300	---	E	2.2	2.8	
22	4.2	16	315	---	E	2.2	2.65	
23	(3.8)	22	320	---	E	2.3	(2.6)	

Time: 15.0°E.

Sweep: 0.33 Mc to 20.0 Mc in 3 minutes.

Occasionally, 1.4 Mc to 17.0 Mc in 6 minutes, automatic operation.

Table 11

Inverness, Scotland (57.4° N, 4.2° W)

October 1960

Time	h'F2	f0F2-Count	h'F	foF1	h'E	foE	f0Es	(M3000)F2
00	(3.1)	30	340	---	---	<1.3	2.50	
01	(3.0)	28	320	---	---	<1.1	2.50	
02	(2.8)	27	320	---	---	1.3	(2.60)	
03	>2.6	25	320	---	---	<1.2	2.55	
04	2.7	27	300	---	---	<1.5	2.65	
05	>2.4	30	300	---	---	<1.6	2.65	
06	>2.8	29	280	---	---	<1.3	2.70	
07	4.4	30	260	---	1.85	2.80		
08	5.4	30	250	---	120	2.30	3.00	
09	6.5	29	250	---	120	2.60	3.00	
10	(560)	7.2	30	240	---	120	2.70	
11	8.2	29	240	4.2	120	2.90	3.00	
12	8.0	29	240	---	120	2.95	2.95	
13	9.0	29	240	---	120	2.90	3.00	
14	8.2	28	240	---	120	2.85	2.95	
15	8.4	26	250	---	120	2.65	2.95	
16	8.0	24	250	---	120	2.35	2.95	
17	7.4	28	250	---	---	2.10	2.95	
18	(7.4)	26	250	---	---	<1.7	(2.90)	
19	(4.4)	28	250	---	---	<1.6	2.90	
20	(4.2)	25	260	---	---	<1.6	2.90	
21	(3.5)	26	290	---	---	<1.6	2.70	
22	(3.2)	28	320	---	---	<1.6	2.60	
23	(3.5)	23	330	---	---	<1.6	(2.50)	

Time: 0.0°.

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

Table 8

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

October 1960

Time	h'F2	f0F2-Count	h'F	foF1	h'E	foE	f0Es	(M3000)F2
00			(3.9)	3				
01			(4.1)	2				
02			(4.2)	3				
03			(3.2)	2				
04			(3.8)	3				
05			(2.8)	5				
06			(3.2)	7				
07			4.0	10				
08			5.3	20				
09			6.0	20				
10			6.7	23				
11			8.3	24				
12			9.4	25				
13			9.8	28				
14			9.8	24				
15			8.8	19				
16			9.8	21				
17			8.3	13				
18			(7.9)	8				
19			(7.3)	5				
20			(5.2)	4				
21			(6.6)	2				
22			(3.5)	4				
23			(5.9)	1				

Time: 30.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 1 minute.

Table 10

Churchill, Canada (58.8° N, 94.2° W)

October 1960

Time	h'F2	f0F2-Count	h'F	foF1	h'E	foE	f0Es	(M3000)F2
00			4.1	25	300			5.1
01			4.2	25	295			4.1
02			3.8	24	300			4.2
03			4.0	24	315			4.2
04			4.0	23	310			2.6
05			4.2	16	(350)			3.9
06			4.1	16	(330)			3.8
07			4.1	20	300			3.0
08			5.1	25	290			3.10
09			G	6.0	24	265	3.7	110
10			(420)	6.4	26	265	4.2	110
11			400	7.2	29	240	(4.2)	110
12			370	7.9	27	250	(4.1)	105
13			340	8.9	29	245	4.2	110
14			310	9.0	30	250	4.1	110
15			(430)	8.4	30	260	4.0	110
16			6.6	29	270			2.90
17			5.8	30	290			3.0
18			5.1	31	300			(2.90)
19			4.9	31	310			3.5
20			4.5	29	315			3.8
21			4.5	27	300			4.0
22			4.2	22	285			6.0
23			4.4	27	275			5.6

Time: 90.0°W.

Sweep: 1.0 Mc to 17.0 Mc in 16 seconds.

Table 12

Oe Bilt, Holland (52.1° N, 5.2° E)

October 1960

Time	h'F2	f0F2-Count	h'F	foF1	h'E	foE	f0Es	(M3000)F2
00			4.2	30	310			2.4
01			4.0	30	305			2.2
02			3.8	29	310			2.4
03			3.5	29	320			2.70
04			3.0	27	(300)			2.3
05			2.9	29	295			2.80
06			---	4.1	30	270	---	1.6
07			5.8	29	240	3.6	120	2.1
08			260	6.6	31	220	4.1	105
09			260	7.1	31	215	4.1	100
10			250	9.2	31	215	4.4	100
11			230	9.1	31	205	4.4	100
12			235	10.0	31	210	4.4	100
13			250	10.3	31	215	4.1	100
14			(230)	9.8	31	220	---	2.9
15			(230)	9.6	31	220	---	2.5
16			---	8.8	31	220	120	2.0
17			8.3	31	215			2.3
18			7.1	31	2			

Table 13

Winnipeg, Canada (49.9° N, 97.4° W)								October 1960	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	3.5	12	300					(2,75)	
01	3.2	14	330					(2,70)	
02	3.0	14	<320					(2,60)	
03	3.0	15	310					2,60	
04	3.4	14	330					(2,80)	
05	3.1	14	300					---	
06	2.9	15	(320)					(2,75)	
07	4.8	17	270					3.00	
08	6.0	18	250					2,35	
09	---	7.0	17	235				3,10	
10	---	7.9	17	220				2,70	
11	---	7.8	19	220				3,10	
12	(370)	8.3	20	220	4.6	110	3,25	2,90	
13	(320)	9.0	21	225				3,30	
14	(330)	9.5	19	235				2,85	
15	---	9.8	20	240				2,90	
16	---	10.0	19	250				2,90	
17	9.4	21	250					3.00	
18	9.0	21	240					2,95	
19	7.2	22	240					2,90	
20	6.4	20	250					2,95	
21	5.6	19	260					2,95	
22	4.5	17	270					2,90	
23	4.0	16	260					(2,80)	

Time: 90.0°W.

Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 15

Sotterns, Switzerland (46.6° N, 6.7° E)								October 1960	
Time	h'F2	foF2-Count	h'F1	foF1	h'E	foE	foEs	(M3000)F2	
00	310	4.4	25					2.7	
01	320	4.4	27					2.7	
02	300	4.3	26					2.7	
03	300	4.2	25					2.8	
04	300	4.1	25					2.8	
05	260	4.0	24					2.9	
06	280	3.4	23					2.9	
07	240	5.0	25					3.1	
08	240	7.6	25					3.3	
09	240	8.5	23					3.3	
10	240	8.6	25					3.3	
11	250	9.6	23					3.35	
12	240	9.6	24					3.25	
13	240	9.6	24					3.3	
14	240	9.2	26					3.4	
15	240	9.3	27					3.3	
16	240	9.2	26					3.3	
17	230	9.0	26					3.4	
18	230	8.3	25					3.2	
19	230	7.6	22					3.2	
20	230	6.4	18					3.1	
21	260	5.4	24					2.9	
22	290	5.2	18					2.9	
23	290	4.5	21					2.8	

Time: 15.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 17

Wakkanai, Japan (45.4° N, 141.7° E)								October 1960	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		4.7	29	310				2.65	
01		4.6	29	305				2.70	
02		4.2	28	310				2.65	
03		4.2	29	310				2.65	
04		4.0	29	320				2.65	
05		4.0	31	310				2.70	
06		5.8	31	250				3.05	
07	---	7.8	29	240				3.10	
08	---	9.8	29	240				3.15	
09	(370)	10.6	28	240				3.15	
10	---	10.9	28	230				3.15	
11	---	11.4	28	230				3.20	
12	---	11.8	28	235				3.20	
13	---	10.8	29	240				3.05	
14	10.4	30	240					3.05	
15	10.2	30	240					3.10	
16	9.7	29	240					3.10	
17	8.3	31	225					3.05	
18	7.0	30	245					3.00	
19	6.4	30	260					2.95	
20	5.8	31	260					2.90	
21	5.3	30	270					2.80	
22	5.0	30	290					2.75	
23	4.8	29	300					2.65	

Time: 135.0°E.

Sweep: 1.0 Mc to 20.7 Mc in 1 minute.

Table 18

St. John's, Newfoundland (47.6° N, 52.7° W)								October 1960	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00			3.9	20	300				2.65
01			3.9	24	290				2.70
02			3.4	22	295				2.65
03			3.5	20	295				2.70
04			3.3	21	290				2.65
05			3.2	22	300				2.70
06			4.9	25	250				3.00
07			7.2	25	235				3.05
08			8.6	26	230				3.10
09			8.9	28	220				3.05
10			9.1	28	210				2.95
11			10.0	27	220				2.90
12			10.2	27	220				2.90
13			10.3	27	230				2.85
14			10.8	26	235				2.80
15			10.3	26	240				2.90
16			9.8	27	240				2.90
17			9.2	25	230				2.85
18			8.1	22	240				2.85
19			6.9	16	240				2.70
20			5.2	18	280				2.50
21			4.8	20	300				2.60
22			4.4	20	300				2.60
23			4.6	17	305				2.60

Time: 60.0°W.

Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 16

Ottawa, Canada (45.4° N, 75.9° W)								October 1960	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00			4.1	28	300				---
01			4.0	24	300				---
02			3.8	24	300				---
03			4.0	22	290				---
04			3.6	24	300				---
05			3.3	23	300				---
06			3.8	23	280				---
07			5.9	28	255				1.5
08			7.4	28	235				1.5
09			(260)	8.1	29	230			3.20
10			280	8.8	30	210			3.20
11			(330)	9.3	30	210			3.10
12			300	9.9	29	210			3.00
13			290	10.1	29	220			3.00
14			(290)	10.1	31	240			3.00
15			10.5	31	240				3.00
16			10.4	30	250				3.00
17			10.0	30	240				(3.05)
18			8.3	30	240				(3.05)
19			7.4	28	250				---
20			6.3	27	250				---
21			5.7	26	300				(2.90)
22			4.7	26	300				(2.85)
23			4.8	24	300				(2.90)

Time: 75.0°W.

Sweep: 1.0 Mc to 20.0 Mc in 16 seconds.

Table 18

Rome, Italy (41.8° N, 12.5° E)								October 1960	
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00			(5.0)	21	320				(2.60)
01			(5.1)	23	320				(2.50)
02			(5.0)	26	310				(2.60)
03			(4.8)	26	310				(2.60)
04			(4.7)	26	300				(2.75)
05			4.1	22	270				(2.75)
06			4.2	26	260				2.80
07			(6.7)	17					

Table 19

Akita, Japan (39° 7' N, 140° 1' E)							October 1960	
Time	h°F2	f0F2-Count	h°F	f0f1	h'E	f0E	f0Es	(M3000) F2
00		4.9	31	300			1.8	2,70
01		4.6	30	290				2,70
02		4.5	30	295				2,65
03		4.5	30	295				2,65
04		4.3	30	295			1.8	2,60
05		4.3	30	300				2,65
06	---	6.2	31	245	---	1.80	2.0	3.15
07	---	9.1	31	245	---	2.50	3.1	3.25
08	(250)	10.8	31	245	---	2.95	3.5	3.25
09	245	11.6	30	240	---	3.20	3.9	3.15
10	250	12.3	30	230	---	3.40	(4.0)	3.15
11	250	12.0	30	225	---	3.45	4.0	3.05
12	250	12.3	31	235	---	3.50	4.0	3.05
13	250	11.8	31	245	---	3.45	3.7	3.00
14	(250)	11.3	31	245	---	3.20	(3.6)	3.10
15	---	11.4	31	245	---	2.95		3.10
16		10.6	31	245	---	2.40	2.6	3.20
17		9.2	31	240	---	2.4		3.20
18		7.6	31	240	---		2.1	3.05
19		6.8	31	245	---		2.3	2.95
20		6.3	31	250	---		(2.4)	3.00
21		5.7	31	255	---		(2.3)	2.95
22		5.1	31	270	---			2.80
23		4.9	31	290	---			2.70

Time: 135.0°E.
Sweep: 1.6 Mc to 20.0 Mc in 20 seconds.

Table 21

Time	h^*F2	foF2-Count	h^*F	foF1	h^*E	foE	foEs (M3000)F2	October 1960
00		4.9	30	300				2.65
01		4.6	30	295				2.70
02		4.4	30	<300				2.65
03		4.4	30	290				2.60
04		4.2	30	300				2.65
05		4.2	30	310				2.60
06	---	6.6	30	250		(1.90)		3.00
07	---	9.4	30	235	---	(2.50)	2.5	3.20
08	(280)	11.0	30	230	---	3.00	3.5	3.15
09	250	11.6	30	230	---	3.20	3.6	3.10
10	250	12.2	31	225	---	3.40	3.8	3.00
11	255	12.8	30	220	---	(3.50)	3.9	3.00
12	260	12.4	30	230	---	3.55	3.8	2.90
13	260	12.4	31	230	---	3.35	3.8	2.95
14	260	12.2	31	240	---	3.25	3.7	3.00
15	(250)	11.7	31	245	---	2.95	3.1	3.05
16	---	10.9	31	245	---	2.50	3.2	3.05
17	---	10.0	31	230	---	2.5		3.10
18		8.2	31	230			2.4	3.00
19		6.7	31	250			2.0	2.90
20		6.4	30	250				2.90
21		6.0	30	255				2.90
22		5.1	30	280				2.70
23		4.9	30	300				2.65

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

Table 23

Yamagawa, Japan (31°20' N, 130°6' E)				October 1960			
Time	h°F2	foF2-Count	h°F	foF1	h°E	foE	foEs (ME000)F2
00		5.8	28	280			2,80
01		5.2	28	280			2,80
02		4.5	30	290			2,80
03		4.5	29	280			2,80
04		4.3	28	270			2,70
05		4.3	27	300			2,70
06		4.6	26	280			2,85
07	---	8.2	27	240	---	2.15	3,30
08	---	10.2	29	235	---	2.80	3.1
09	---	11.3	28	235	---	3.20	3.6
10	---	12.0	28	230	---	3.40	4.0
11	---	13.0	28	225	---	3.50	4.0
12	---	13.3	27	220	---	3.70	3.8
13	---	14.0	26	230	---	3.65	3.8
14	---	14.1	23	240	---	3.50	3.8
15	---	13.2	23	245	---	3.30	3.8
16	---	12.8	28	250	---	2.95	3.3
17	---	12.4	30	245	---	2.25	2.9
18	(11,1)	31	230				2.5
19	(9,6)	29	230				2.4
20	(8,2)	27	245				2.3
21		7.9	25	250			2.2
22		6.4	26	250			2.70
23		6.0	28	285			2.75

Time: 135.0°E.
Sweep: 1.0 Mc to 20.0 Mc in 30 seconds.

Table 2C

Time	h°F2	f0f2-Count	h°F	f0f1	h°E	f0E	f0Es	(M3000)F2	October 1960
00	5.1	29	270						2,85
01	4.75	28	280						2,85
02	4.5	29	200						2,80
03	4.0	29	280						2,85
04	(3.7)	29	280						(2,90)
05	(3.55)	28	280						(3,00)
06	(3.8)	31	270		123	(1.70)			(3,00)
07	---	6.6	31	240	---	121	2.08		3,25
08	(245)	8.1	31	235	---	113	2.70		3,30
09	260	9.2	31	225	---	109	3.00		3,15
10	265	9.5	31	210	---	109	3.20		3,05
11	270	10.2	31	215	---	109	3.30		3,00
12	285	10.6	31	220	---	109	3.30		2,95
13	275	10.8	31	230	---	109	3.30		2,95
14	(290)	10.5	31	230	---	109	3.15		2,90
15	250	10.5	31	235	---	111	3.00		3,00
16	(240)	10.7	31	235	---	119	2.65		3,05
17	---	10.0	31	235	---	129	1.95		3,05
18	8.9	31	225						3,05
19	7.4	30	235						2,98
20	6.6	29	250						2,95
21	5.85	28	260						2,85
22	5.6	29	270						2,80
23	5.4	29	270						2,80

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

Table 22

White Sands, New Mexico (32°30' N., 106°50' W.)							October 1960
Time	h°F2	foF2-Count	h°F	foF1	h°E	foE	foEs (M3000)F2
00		4.4	28 (307)				2,65
01		4.3	29 305				2,65
02		4.4	29 305				2,65
03		4.2	31 300				2,75
04		4.2	29 288				2,70
05		3.95	30 <300				2,70
06	---	4.75	30 279	---	120	---	2,88
07	---	7.5	31 242	---	120	2,30	3,25
08	---	9.2	31 230	---	115	2,80	2.8
09	(270)	9.9	31 218	---	110	3,20	3,10
10	(286)	10.7	31 210	---	113	3,40	3,00
11	279	11.2	30 215	---	112	(3,55)	2,95
12	(290)	11.6	31 220	---	113	3,60	2,90
13	(284)	11.8	31 225	---	112	3,50	2,90
14	(262)	11.7	31 235	---	110	3,40	2,92
15	---	11.4	31 240	---	115	3,10	2,98
16		11.0	31 240	---	119	2,80	2.9
17		10.4	31 235	---	130	2,20	2.4
18		9.0	31 220	---	---	---	2.1
19		6.7	31 226				2,95
20		5.6	31 250				3,00
21		4.45	30 (265)				2,85
22		4.3	29 (280)				2,80
23		4.3	28 290				2,70

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

Table 24

El Cerrillo, Mexico (19.3° N, 99.5° W)							October 1960	
Time	h°F2	f0F2-Count	h°F	f0F1	h°E	f0E	f0Es	(M3000)F2
00	5.0	27	260					3.00
01	4.8	27	280					2.80
02	4.9	27	280					2.90
03	4.5	27	270					2.90
04	4.2	27	250					2.90
05	3.8	27	260					2.90
06	3.9	27	290					2.80
07	7.0	27	240		126	1.90		3.30
08	9.2	27	230		103	2.70		3.30
09	10.8	27	215		105	3.20		3.20
10	12.0	27	215		105	3.60		3.10
11	(12.0)	27	205		105	3.80		(2.95)
12	(13.0)	27	215		107	3.85		(2.80)
13	(13.0)	25	215		104	3.90		(2.80)
14	(13.5)	26	225		110	3.80	3.8	(2.80)
15	(13.0)	27	240		107	3.60	4.0	(2.80)
16	(13.0)	28	240		109	3.20	3.9	(2.90)
17	(12.0)	28	240		109	2.70	3.9	3.10
18	11.0	28	220	---	---	3.3		3.10
19	10.0	28	230				3.0	
20	8.0	27	220				1.9	3.10
21	5.8	27	245					2.90
22	5.6	27	270					3.00
23	5.6	27	250					3.00

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 18 seconds.

Table 25

Singapore, British Malaya (1.3° N, 103.8° E)								October 1960	
Time	h°F2	foF2-Count	h°F	foF1	h°E	foE	foEs	(M3000)F2	
00	10.3	26	225	---	---	---	---	2.90	
01	9.7	27	250	130	---	2.90			
02	8.7	28	250	125	---	3.00			
03	8.1	28	240	---	---	3.10			
04	7.1	27	230	---	---	3.25			
05	4.4	25	230	---	---	3.30			
06	6.7	27	260	---	125	3.15			
07	9.8	29	245	---	120	2.65	3.0	3.20	
08	11.2	27	235	---	115	3.20	3.5	2.85	
09	11.7	26	220	---	110	3.60	4.0	2.50	
10	12.2	25	215	---	110	(3.80)	4.0	2.25	
11	12.2	24	210	---	110	3.95	2.05		
12	310	12.0	29	215	---	110	(4.00)	2.05	
13	555	12.1	27	205	---	110	(4.00)	2.20	
14	12.7	28	210	---	110	3.75	2.30		
15	12.9	27	225	---	110	3.40	2.40		
16	13.6	25	245	---	110	3.00	2.45		
17	13.6	26	260	---	120	2.30	2.40		
18	13.4	26	295	---	110	---	1.7	2.35	
19	13.2	27	350	---	110	---	---	2.30	
20	13.6	22	315	---	110	---	---	2.40	
21	>13.7	24	265	---	110	---	---	(2.70)	
22	13.2	21	230	---	110	---	---	3.00	
23	11.2	23	225	---	110	---	---	3.05	

Time: 105.0°E.

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

Table 27

Huancayo, Peru (12.0° S, 75.3° W)								October 1960	
Time	h°F2	foF2-Count	h°F	foF1	h°E	foE	foEs	(M3000)F2	
00	9.8	15	230	---	---	---	---	3.02	
01	8.6	17	230	---	---	---	---	3.10	
02	7.05	20	240	---	---	---	---	3.10	
03	6.65	24	235	---	---	---	---	3.15	
04	5.95	22	235	---	---	---	---	3.20	
05	4.8	21	235	---	---	---	---	3.25	
06	7.5	27	260	<137	2.00	---	---	3.20	
07	10.8	29	240	121	2.80	3.15			
08	12.5	29	225	117	(3.35)	7.1	2.95		
09	13.3	29	220	113	(3.75)	7.3	2.60		
10	13.5	28	210	---	(4.00)	7.5	2.40		
11	12.7	28	205	---	(4.00)	7.6	2.32		
12	12.15	28	200	---	(4.05)	7.6	2.35		
13	12.0	28	200	---	(4.00)	7.6	2.35		
14	12.0	27	200	---	(3.90)	7.4	2.30		
15	12.0	27	200	---	(3.50)	7.4	2.30		
16	12.0	26	235	---	(3.12)	7.3	2.30		
17	11.7	27	255	120	(2.55)	5.9	2.30		
18	11.3	29	280	<160	1.55	2.38			
19	10.7	28	335	---	---	2.25			
20	10.8	17	310	---	---	2.48			
21	10.6	14	270	---	---	2.68			
22	11.0	13	245	---	---	2.85			
23	10.7	13	240	---	---	3.05			

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 29

Brisbane, Australia (27.5° S, 152.9° E)								October 1960	
Time	h°F2	foF2-Count	h°F	foF1	h°E	foE	foEs	(M3000)F2	
00	(7.8)	22	270	---	---	---	---	2.70	
01	(7.4)	24	260	---	---	---	---	2.80	
02	7.0	22	260	---	---	---	---	2.65	
03	6.3	23	280	---	---	---	---	2.65	
04	(5.9)	24	290	---	---	---	---	2.65	
05	>6.1	22	280	<1.60	---	2.75			
06	7.8	26	250	---	2.20	3.05			
07	>8.4	26	240	---	2.80	3.0	2.90		
08	>8.5	25	230	---	3.25	3.6	2.95		
09	>9.0	24	220	4.8	>3.45	4.0	2.90		
10	>9.7	22	220	5.0	3.70	3.8	2.80		
11	(10.6)	23	210	4.9	>3.70	3.9	2.80		
12	(10.8)	26	210	5.0	3.80	3.8	2.85		
13	(11.0)	22	220	4.6	3.80	2.80			
14	(9.9)	23	220	4.5	3.70	2.85			
15	>8.5	18	230	---	3.40	2.75			
16	(9.0)	17	240	---	3.00	(2.80)			
17	(8.6)	22	250	---	(2.30)	2.85			
18	(8.7)	23	250	<1.70	3.0	2.80			
19	8.7	27	260	1.8	2.80				
20	>8.5	26	280	---	2.70				
21	8.6	26	280	---	2.70				
22	8.5	27	290	---	2.70				
23	(8.2)	24	290	---	2.75				

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 26

Talara, Peru (4.6° S, 81.3° W)								October 1960	
Time	h°F2	foF2-Count	h°F	foF1	h°E	foE	foEs	(M3000)F2	
00			11.4	23	<230			3.4	3.05
01			>9.5	25	230			3.5	3.20
02			6.2	27	230			2.6	3.15
03			7.0	24	235				3.10
04			6.25	24	245				3.10
05			5.3	23	250				3.15
06			5.8	27	<270			1.9	3.00
07			9.4	28	250	125	2.50		3.10
08			11.55	30	235	119	3.12		2.90
09			13.3	31	225	115	3.50		2.70
10			13.7	31	215	115	3.80		2.50
11			13.6	31	210	115	3.95		2.40
12			13.8	31	210	115	4.00		2.30
13			13.5	31	205	115	3.95		2.35
14			>13.5	30	<205	113	3.75		2.35
15			>13.2	29	215	111	3.50	3.6	2.40
16			13.2	29	(225)	113	3.20	3.6	2.40
17			13.0	29	<250	116	2.75	2.9	2.38
18			(12.2)	29	270	<163	2.00		2.45
19			>12.0	31	320				2.55
20			(12.0)	25	330				(2.55)
21			12.6	15	270				(2.80)
22			>12.0	18	230			1.8	---
23			(11.6)	19	220			2.9	3.02

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 28

Townsville, Australia (19.3° S, 146.7° E)								October 1960	
Time	h°F2	foF2-Count	h°F	foF1	h°E	foE	foEs	(M3000)F2	
00			>7.0	5	265				
01			>6.7	8	250				
02			>6.0	11	260				
03			>6.0	15	280				
04			>6.0	15	300				(2.80)
05			>5.5	17	<300				(2.75)
06			(6.8)	7	260				
07			(10.9)	13	230	2.70	3.2		
08			11.0	24	220	3.15	3.6		
09			11.2	23	210	3.45	3.9		3.05
10			11.2	23	210	3.55	4.1		2.90
11			12.0	25	210	3.75	4.3		2.90
12			12.2	25	210	3.80	4.2		2.90
13			>12.1	24	220	(3.80)	4.3		2.85
14			11.8	24	230	3.75	4.0		2.80
15			>11.4	22	230	3.60	3.8		2.90
16			11.0	17	240	3.25	3.8		(2.80)
17			>11.0	3	250	2.70	3.8		
18			6.1	2	260	1.90	2.6		
19			7.0	1	300	2.60	2.5		
20			>5.7	1	290	2.25	2.6		
21			>5.0	1	290	2.25	2.6		
22			(4.7)	1	280	2.3	2.6		

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Thule, Greenland (76.0° N, 68.0° W)								September 1960	
Time	h°F2	foF2-Count	h°F	foF1	h°E	foE	foEs	(M3000)F2	

<tbl_r cells="10" ix="3" maxcspan="1" maxrspan="1" usedcols="1

Table 31

Fairbanks, Alaska (64.9° N, 147.8° W)								September 1960			
Time	h°F2	foF2-Count	h°F	foF1	h°E	foE	foEs	(M3000)F2			
00	4.5	11			4.4	(2,80)	00	5.5	29	312	
01	(3.95)	6			4.6	---	01	5.25	30	314	2.60
02	(4.2)	10			4.6	(2,68)	02	5.05	30	311	2.60
03	(4.7)	13			4.7	(2,62)	03	5.1	29	300	2.65
04	(4.6)	9			4.0	(2,60)	04	4.95	30	<305	2.62
05	(4.7)	12			4.3	(2,72)	05	4.75	30	300	2.68
06	(5.0)	11			2.6	(2,80)	06	5.9	30	270	3.00
07	(5.45)	18				(2,80)	07	8.35	30	248	3.10
08	(5.9)	21				(2,85)	08	291	9.3	30	230
09	5.8	20					09	(295)	9.45	30	220
10	5.8	21					10	342	10.2	30	212
11	6.2	21					11	335	10.6	30	211
12	6.3	22					12	334	10.9	30	214
13	6.45	24					13	338	11.0	30	219
14	(6.75)	22					14	320	11.05	30	230
15	(6.75)	26					15	(320)	10.85	30	230
16	(6.6)	25					16	(324)	10.45	30	240
17	(6.55)	26					17	---	10.15	30	250
18	6.0	23					18		9.35	30	245
19	(5.7)	21					19		8.5	30	233
20	(5.8)	17			3.4	(2,95)	20	6.9	30	250	2.80
21	(4.3)	13			3.5		21	6.25	30	275	2.75
22	(4.2)	16			3.8	(2,88)	22	5.75	30	286	2.70
23	(4.3)	16			3.8	(2,85)	23	5.55	30	300	2.68

Time: 150.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 33

Kiruna, Sweden (67.8° N, 20.3° E)								November 1959			
Time	h°F2	foF2-Count	h°F	foF1	h°E	foE	foEs	(M3000)F2			
00	(4.4)	7	(380)			4.4	(2,6)				
01	(4.8)	6	345			4.0	---				
02	(5.2)	4	360			4.8	---				
03	(5.5)	9	310			4.2	(2,6)				
04	5.0	10	300			2.8	(2,6)				
05	5.2	10	280			2.5					
06	3.6	15	270				2.75				
07	4.0	16	270				2.8				
08	4.8	23	260	---	---	2.8					
09	6.4	23	245	---	---	3.0					
10	7.8	22	245	---	2.0	3.15					
11	8.3	24	245	---	2.0	3.05					
12	8.6	26	245	---	---	3.1					
13	8.3	27	240	---	---	3.05					
14	7.9	19	240	---	---	3.1					
15	6.7	19	240			3.0					
16	6.0	13	240			2.7					
17	4.8	14	255			4.0					
18	4.1	10	290			3.6					
19	(5.0)	9	310			4.0	(2,8)				
20	(3.7)	8	335			5.0	(2,6)				
21	(4.5)	9	360			5.0	(2,6)				
22	(3.8)	7	(340)			4.4	(2,6)				
23	(5.8)	7	(375)			5.0	(2,6)				

Time: 15.0°E.

Sweep: 0.8 Mc to 17.0 Mc in 30 seconds.

Table 35

Churchill, Canada (58.8° N, 94.2° W)								November 1959			
Time	h°F2	foF2-Count	h°F	foF1	h°E	foE	foEs	(M3000)F2			
00	(4.2)	25	300			4.6	---				
01	4.0	25	295	---	---	4.8	---				
02	(4.1)	19	300	---	---	3.7					
03	4.2	22	340	---	---	3.2					
04	4.2	19	320	---	---	3.1					
05	4.2	18	310	---	---	3.2	---				
06	(4.0)	18	350	---	---	3.7					
07	4.4	16	305	---	---	3.6	---				
08	5.0	19	300	---	2.00	3.6	---				
09	6.1	23	290	120	2.60	(3.10)					
10	7.0	25	280	120	3.00		3.00				
11	8.0	25	270	---	120	3.00		3.05			
12	9.0	27	270	---	120	3.00		2.95			
13	9.2	29	260	---	120	2.90		2.95			
14	10.3	29	260	---	120	2.60		2.90			
15	10.0	28	270	<130	2.35		2.95				
16	8.1	28	270	125	2.00		3.00				
17	6.8	20	285	---	---	3.2	(2,95)				
18	5.8	23	290	---	---	3.6	(3.00)				
19	5.0	27	300	---	---	3.6	---				
20	4.5	26	300			4.0					
21	4.5	18	300			4.8	---				
22	4.4	21	290			6.8					
23	4.1	21	300			4.8	---				

Time: 90.0°W.

Sweep: 1.0 Mc to 17.0 Mc in 16 seconds.

Table 32

White Sands, New Mexico (32.3° N, 106.5° W)								September 1960			
Time	h°F2	foF2-Count	h°F	foF1	h°E	foE	foEs	(M3000)F2			
00			5.5	29	312						2.60
01			5.25	30	314						2.60
02			5.05	30	311						2.65
03			5.1	29	300						2.65
04			4.95	30	<305						2.62
05			4.75	30	300						2.68
06			5.9	30	270						3.00
07			8.35	30	248						3.10
08			291	9.3	30	230					3.10
09			(295)	9.45	30	220					2.95
10			342	10.2	30	212					2.80
11			335	10.6	30	211					2.75
12			334	10.9	30	214					2.70
13			338	11.0	30	219					2.70
14			320	11.05	30	230					2.72
15			(320)	10.85	30	230					2.75
16			(324)	10.45	30	240					2.80
17			---	10.15	30	250					2.8
18				9.35	30	245					2.95
19				8.5	30	233					2.2
20				6.9	30	250					2.80
21				6.25	30	275					2.75
22				5.75	30	286					2.70
23				5.55	30	300					2.68

Time: 105.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 34

Uppsala, Sweden (59.8° N, 17.6° E)								November 1959			
Time	h°F2	foF2-Count	h°F	foF1	h°E	foE	foEs	(M3000)F2			
00			3.2	23	320						2.5
01			2.9	21	310						2.5
02			(2.5)	23	310						2.5
03			(2.6)	24	305						2.6
04			2.7	23	295						2.6
05			2.8	25	290						2.7
06			2.9	26	260						2.7
07			3.8	30	260						2.7
08			5.9	30	240						3.0
09			8.0	30	240						3.1
10			10.0	30	240						3.1
11			10.8	30	240						3.1
12			11.2	30	235						3.1
13			11.4	30	240						3.1
14			11.3	29	235						3.1
15			10.0	30	225						3.2
16			8.7	29	230						3.0
17			7.6	29	230						3.1
18			6.0	26	240				</		

Table 37

Resolute Bay, Canada (74.7° N, 94.9° W)							October 1959	
Time	h*F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	5.3	30	270					2.70
01	4.8	31	290			2.0		2.55
02	5.1	31	280			1.9		2.55
03	4.8	31	295			1.4		2.50
04	4.8	31	295			2.0		2.50
05	3.9	30	<300			1.7		2.50
06	4.4	30	300			1.5		2.50
07	5.7	30	290		110	1.60		2.65
08	6.0	30	290		100	1.65		2.55
09	6.2	30	270		100	1.90		2.55
10	6.1	30	280		110	2.10		2.65
11	5.8	30	285		105	2.20		2.60
12	(390)	6.2	30	275	3.8	110	2.20	2.60
13	(470)	6.6	30	275		110	2.10	2.65
14	6.4	30	270		105	2.10		2.60
15	7.0	30	275		105	1.90		2.60
16	7.0	30	275		100	1.65		2.70
17	6.6	30	270		100	1.70	1.7	2.60
18	6.6	30	270			1.45		2.55
19	6.2	30	280					2.55
20	5.4	30	280			1.8		2.55
21	5.6	30	290					2.60
22	5.0	30	280					2.55
23	5.0	30	275					2.55

Time: 90.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 39

Churchill, Canada (58.8° N, 94.2° W)							October 1959	
Time	h*F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	(4.8)	30	300				5.0	
01	4.8	28	300			5.0		
02	4.5	25	300			4.8		---
03	(4.5)	27	300			4.5		
04	4.5	22	310			4.5		
05	4.2	23	360			4.1		---
06	4.5	23	340			2.2	4.0	---
07	---	5.3	25	300	140	2.6	3.3	(3.1)
08	---	6.2	26	280	120	2.8	3.5	3.15
09	---	6.8	28	260	115	2.9		3.1
10	---	7.8	25	250	110	3.0		3.0
11	(390)	8.5	27	250	4.5	110	3.0	2.9
12	(440)	8.6	30	240	110	3.0		2.9
13	330	9.2	29	240	4.5	110	3.0	2.9
14	(360)	9.5	27	250	4.2	120	3.0	2.9
15	---	9.9	30	260	115	2.8		2.9
16	---	9.0	29	270	120	2.4		3.0
17	---	6.8	30	280	120	2.1		3.0
18	6.0	28	300		120	3.0	4.0	---
19	5.7	27	320			3.0	3.4	---
20	5.2	25	300			3.5		---
21	5.1	23	300			5.0		---
22	5.0	22	300			6.0		---
23	4.5	25	290			5.3		---

Time: 90.0°W.

Sweep: 1.0 Mc to 17.0 Mc in 16 seconds.

Table 41

Ouroues, Belgium (50.1° N, 4.6° E)							October 1959	
Time	h*F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	4.8	28	310				<1.4	2.55
01	4.8	27	300				<1.1	2.55
02	4.8	27	300				<1.2	2.60
03	4.3	26	300				<1.2	2.65
04	4.2	28	<280				<1.4	2.75
05	3.6	28	265				<1.6	2.75
06	4.6	28	250				<1.6	3.00
07	6.8	27	240				<1.60	3.25
08	---	8.4	27	235			<117	2.30
09	---	9.4	28	230			109	2.65
10	(275)	10.5	28	220			3.15	3.20
11	(285)	11.3	29	220			106	3.4
12	---	11.4	30	225			107	3.3
13	---	10.8	29	230			(108)	3.2
14	10.9	27	235				(110)	2.95
15	10.6	29	235				(113)	2.70
16	10.6	28	240				(117)	2.30
17	9.6	28	230				<1.60	2.0
18	8.3	29	230				2.2	3.05
19	7.0	28	230				1.9	3.00
20	6.3	29	240				1.8	2.95
21	5.5	28	250				<1.6	2.75
22	5.3	27	300				<1.6	2.60
23	5.2	27	300				<1.6	2.60

Time: 0.0°.

Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 38

Nurmljarvi, Finland (60.5° N, 24.6° E)							October 1959	
Time	h*F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			(4.9)		5			(2.65)
01			(4.5)		5			(2.65)
02			(4.2)		4			---
03			(3.9)		4			---
04			(3.4)		3			---
05			(3.5)		5			(2.80)
06			(3.8)		6			(2.80)
07			5.1		10			3.05
08			6.7		18			3.10
09			8.0		20			3.10
10			9.6		23			3.10
11			9.8		23			3.10
12			10.7		24			3.10
13			10.9		27			3.00
14			11.0		23			3.10
15			10.6		26			3.10
16			10.1		21			3.15
17			9.7		20			3.10
18			8.8		12			3.10
19			(8.0)		9			(3.10)
20			7.9		10			3.05
21			(5.8)		9			(2.90)
22			(5.1)		7			(2.75)
23			(5.1)		5			(2.65)

Time: 30.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 1 minute.

Table 40

Moscow, U. S. S. R. (55.5° N, 37.3° E)							October 1959	
Time	h*F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			4.3		31	305		<1.3
01			4.3		31	310		2.50
02			4.0		31	300		2.55
03			3.8		31	300		2.55
04			3.6		30	270		2.65
05			3.5		31	265		1.4
06			5.0		31	250		3.00
07			7.0		30	240		3.15
08			9.0		31	240		3.05
09			(255)		9.8	31	230	2.85
10			(275)		10.9	31	230	3.00
11			245		10.9	31	230	3.10
12			11.4		31	230		3.10
13			11.3		31	235		3.00
14			11.4		31	240		3.00
15			10.9		31	235		2.50
16			10.0		31	230		2.00
17			9.2		31	230		2.0
18			8.1		31	235		1.40
19			7.0		31	235		2.0
20			5.7		31	240		<1.4
21			5.0		31	255		<1.3
22			4.6		31	275		2.75
23			4.4		31	300		<1.3

Time: 30.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 42

Winnipeg, Canada (49.9° N, 97.4° W)							October 1959	
Time	h*F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			4.0		26	290		(2.95)
01			4.0		25	300		---
02			4.0		24	320		---
03			3.6		24	320		---
04			3.6		25	320		---
05			3.2		24	300		---
06			3.5		27	300		---
07			5.1		27	260		1.7
08			6.9		27	240		3.2
09			8.0		27	230		3.15
10			(320)		8.8	26	230	105
11			(300)		9.5	26	220	100
12			(320)		9.8	26	220	105
13			(360)		10.0	26	2	

Table 43

St. John's, Newfoundland (47.6° N, 52.7° W)							October 1959	
Time	h°F2	foF2—Count	h°F	foF1	h°E	foE	foEs	(MHz) F2
00	5.0	27	290					2.75
01	4.3	27	282					2.70
02	4.2	29	285					2.70
03	4.2	29	274					2.75
04	3.9	31	270					2.70
05	3.8	31	258					2.75
06	5.2	31	258	(134)	1.90			3.05
07	7.2	31	240		115	2.50		3.20
08	8.8	31	230	---	108	3.00		3.20
09	9.8	31	225	---	105	3.10		3.10
10	10.6	31	225	---	105	3.30		3.05
11	11.0	31	220	---	105	3.40		3.00
12	11.0	31	225		105	3.40		3.00
13	11.1	31	230		105	3.20		2.95
14	11.2	31	235		110	3.00		2.95
15	11.1	31	240		111	2.80		3.00
16	11.0	30	244		115	2.30		3.00
17	10.2	29	234	---	---	---		3.00
18	9.0	27	235					2.85
19	7.6	26	240					2.75
20	6.6	26	270					5.8
21	6.2	26	278					5.2
22	5.9	26	290					5.2
23	5.3	23	295					5.2

Time: 60.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 45

Garchy, France (47.3° N, 3.1° E)							October 1959	
Time	h°F2	foF2—Count	h°F	foF1	h°E	foE	foEs	(MHz) F2
00	5.2	14	<325					
01	5.0	12	<330					
02	4.8	12	<320					
03	(4.8)	9	<315					
04	(4.6)	9	<290					
05	(3.8)	9	(285)					
06	(4.5)	5	(250)					
07	(7.2)	8	(230)	120	----			
08	---	16	235	115	2.75			
09	(285)	10.1	16	230	110	3.10	3.4	
10	(250)	11.3	18	230	105	3.25	3.6	
11	(270)	(11.7)	18	225	105	3.35	3.7	
12	---	11.8	19	225	105	3.35	3.6	
13	(250)	11.8	18	240	105	3.30	3.4	
14	---	11.4	20	240	105	3.20	2.4	
15	---	11.5	21	245	110	2.90	3.0	
16	---	>11.0	20	245	115	2.40	2.8	
17	(9.3)	6	(250)					(2.7)
18	---	13	240					3.4
19	7.1	14	<235					
20	6.8	14	250					
21	(5.9)	14	(265)					
22	(5.7)	14	(285)					
23	5.3	13	<320					

Time: 0.0°W.

Table 47

Ibadan, Nigeria (7.4° N, 3.9° E)							October 1959	
Time	h°F2	foF2—Count	h°F	foF1	h°E	foE	foEs	(MHz) F2
00	10.4	30	250					(3.00)
01	10.2	29	245					(2.95)
02	9.5	29	240					<3.15
03	8.8	29	235					3.15
04	6.8	29	230					(3.20)
05	4.9	29	225					3.30
06	7.8	29	250	2.15				3.20
07	10.8	26	245	2.95				3.10
08	12.4	28	230	3.45	6.8			2.80
09	12.8	28	220	3.80	7.0			2.45
10	12.1	31	210	(4.00)	9.4			2.30
11	11.6	31	205	(4.10)	9.4			2.40
12	11.9	31	205	(4.10)	7.8			2.35
13	12.6	31	205	4.00	7.0			2.35
14	12.9	30	210	3.80	7.0			2.30
15	13.0	29	210	3.45	6.8			2.30
16	(12.9)	30	240	2.95	6.8			(2.25)
17	>11.8	27	275					(2.30)
18	(10.4)	26	350	(1.15)				(2.05)
19	9.2	26	410					(2.00)
20	9.4	26	390					----
21	9.5	29	330					----
22	10.2	28	290					<2.80
23	10.6	28	260					(2.75)

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

Table 44

Budapest, Hungary (47.4° N, 19.2° E)							October 1959	
Time	h°F2	foF2—Count	h°F	foF1	h°E	foE	foEs	(MHz) F2
00			5.3	29	305			
01			5.0	29	300			
02			4.8	28	300			
03			4.6	28	290			
04			4.2	31	265			
05			5.5	31	245			150
06			7.8	30	230			1.8
07			9.1	31	230			2.4
08	(290)	10.7	30	220	4.2	110	3.1	3.6
09	(240)	11.4	30	220	4.5	110	3.2	4.1
10	(240)	12.0	30	220	4.3	110	3.4	4.1
11		12.3	29	225	---	110	3.3	3.9
12		>11.9	29	225	---	110	3.3	3.5
13		11.7	29	230	---	110	3.1	
14		>11.6	28	230	---	110	2.8	3.3
15		11.4	26	230		120	2.4	3.2
16		10.4	28	225	---	---	3.2	
17		9.0	27	230	---	---	3.2	
18		7.7	28	235				3.0
19		6.6	28	235				2.5
20		5.8	28	260				
21		5.2	29	275				
22		5.2	28	305				
23		5.2	29	310				

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

Table 46

Ottawa, Canada (45.4° N, 75.9° W)							October 1959	
Time	h°F2	foF2—Count	h°F	foF1	h°E	foE	foEs	(MHz) F2
00			5.0	28	285			
01			4.6	26	290			
02			4.2	28	290			
03			4.2	28	300			
04			4.0	27	290			
05			3.9	28	290			
06			4.0	29	280			
07			6.5	29	250			120
08			7.8	29	240			2.1
09			8.9	29	230			(3.1)
10			9.9	29	220	4.7	110	3.2
11	(350)	10.2	29	210	4.8	110	3.3	3.0
12	(300)	10.8	28	220	5.0	110	3.3	(3.0)
13		11.0	28	230	5.0	110	3.3	3.0
14		11.0	29	235	---	110	3.1	(3.0)
15		11.0	29	245	---	110	3.0	(3.0)
16		10.4	28	250		115	2.6	
17		10.0	27	235		135	2.0	
18		9.3	27	230				
19		8.3	27	235				
20		7.2	27	250				(3.0)
21		6.4	27	255				(2.80)
22		5.9	26	260				(2.90)
23		5.3	29	280				

Time: 75.0°W.

Sweep: 1.0 Mc to 20.0 Mc in 16 seconds.

Table 48

Sao Paulo, Brazil (23.5° S, 46.0° W)							October 1959	
Time	h°F2	foF2—Count	h°F	foF1	h°E	foE	foEs	(MHz) F2
00			>14.0	23	240			(3.20)
01			>14.1	26	230			(3.40)
02			>13.7	26	220			3.20
03			9.8	27	230			2.80
04			8.2	24	245			2.85
05			7.2	27	240			2.80
06			8.8	26	230			3.05
07			10.0	26	230			(3.0)
08			11.1	27	230			2.80
09			11.5	24	220			2.70
10			12.4	24	(220)			2.60
11			(13.2)	24	(200)			(2.60)
12			(13.7)	24	(195)			(2.60)
13			(14.0)	22	<230			(2.60)
14			>14.0	23	(225)			2.70
15	(370)	(14.3)	24	230				
16			(14.4)	26	240			
17			(14.					

Table 49

Capetown, Union of S. Africa (34.1° S, 18.3° E)							October 1959	
Time	h°F2	foF2—Count	h°F	foF1	h'E	foE	foEs	(M3000)F2
00	5.8	31	---			<1.6	2.80	
01	5.4	31	---			<1.6	2.65	
02	5.2	31	---			<1.5	2.65	
03	5.0	31	---			<1.5	2.70	
04	4.9	31	---			<1.4	2.75	
05	4.7	31	---			<1.4	2.70	
06	5.3	30	270			<1.6	2.85	
07	8.0	29	245			2.4	3.10	
08	9.8	30	240			3.0	3.00	
09	(260)	11.0	31	235		3.4	2.90	
10	---	12.0	31	225		3.6	2.80	
11	---	12.4	31	(225)		3.9	2.75	
12	---	12.8	29	(220)		---	2.70	
13	300	13.0	29	---		---	2.70	
14	(305)	13.0	29	(230)		---	2.65	
15	---	12.8	29	240		3.7	2.65	
16	---	12.7	31	240		3.4	2.70	
17	---	12.4	30	245		3.1	2.75	
18	---	12.1	30	250		2.5	2.85	
19	11.7	30	245		(1.7)	<1.8	2.95	
20	10.4	31	230			<1.6	2.95	
21	8.7	31	225			<1.6	2.95	
22	7.4	31	240			<1.6	2.90	
23	6.6	31	---			<1.6	2.90	

Time: 30.0°E.

Sweep: 1.0 Mc to 17.0 Mc in 7 seconds.

Table 51

Canberra, Australia (35.3° S, 149.0° E)							October 1959	
Time	h°F2	foF2—Count	h°F	foF1	h'E	foE	foEs	(M3000)F2
00	>7.0	28	275				2.70	
01	>6.6	29	265				2.70	
02	6.4	29	260				(2.55)	
03	6.0	30	275				2.60	
04	5.7	30	290				2.60	
05	5.7	29	295		1.45		2.75	
06	7.0	29	255	---	2.10		3.05	
07	---	7.8	30	245	---	2.80	3.0	3.05
08	365	>8.3	30	235	(4.9)	3.20	3.00	
09	390	8.5	29	220	5.5	3.50	3.7	2.95
10	320	>8.6	29	210	(5.5)	3.65	3.9	2.85
11	320	9.5	27	210	(5.5)	3.70		2.80
12	330	9.5	27	210	5.8	3.70		2.90
13	350	9.6	27	210	5.8	3.70		2.80
14	340	9.8	30	220	5.6	3.60		2.80
15	(350)	9.5	31	230	5.4	3.50		2.75
16	---	9.5	31	240	(5.3)	3.30		2.85
17	(9.1)	31	250			2.70		2.80
18	>9.0	31	255			1.95		2.90
19	(8.4)	31	250					2.80
20	8.0	31	250				(2.80)	
21	(7.6)	31	265				(2.75)	
22	(7.3)	31	285				2.70	
23	>7.4	30	290				2.65	

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 53

Resolute Bay, Canada (74.7° N, 94.9° W)							September 1959	
Time	h°F2	foF2—Count	h°F	foF1	h'E	foE	foEs	(M3000)F2
00	5.2	29	295	---	---	1.3	2.5	
01	5.0	29	290	---	1.3	2.5	2.55	
02	4.9	29	270	---	1.5	2.5	2.5	
03	5.0	30	290	---	1.4	3.5	2.6	
04	5.0	30	290	---	1.3	3.3	2.5	
05	4.9	30	290		125	1.6	2.6	2.5
06	---	5.2	30	280	---	110	1.8	2.7
07	---	5.3	30	270	---	110	2.1	3.1
08	(460)	5.7	30	260	3.6	105	2.4	2.6
09	500	5.6	30	260	4.1	105	2.5	2.5
10	420	5.4	30	250	4.1	105	2.7	2.5
11	460	5.4	28	240	4.1	105	2.8	2.5
12	450	5.6	28	240	4.1	100	2.8	2.5
13	420	5.8	29	240	4.2	105	2.8	2.5
14	480	5.7	29	250	4.3	105	2.8	2.5
15	420	5.9	29	250	4.2	110	2.7	2.5
16	430	5.7	29	255	4.1	105	2.5	2.6
17	(510)	5.9	30	260	3.8	110	2.3	2.6
18	(500)	5.8	30	270	3.5	110	2.0	2.65
19	---	5.4	30	280	---	110	1.8	2.5
20	5.3	30	290		115	1.5	2.5	
21	5.4	30	290	---	1.4	1.4	2.5	
22	5.5	30	280	---	---	2.2	2.6	
23	5.2	29	290	---	---	1.5	2.5	

Time: 90.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 54

Table 50

Buenos Aires, Argentina (34.5° S, 58.5° W)							October 1959	
Time	h°F2	foF2—Count	h°F	foF1	h'E	foE	foEs	(M3000)F2
00			10.8	27	290			2.70
01			10.8	25	285			2.80
02			10.8	26	260			2.90
03			8.6	26	230			2.80
04			7.2	27	230			2.60
05			7.8	24	270	165	1.60	2.65
06			8.8	26	240	115	2.50	2.95
07			10.0	28	230	109		2.90
08			11.2	25	230	111		2.85
09			12.0	29	220	109		2.80
10			(12.7)	27	(220)			2.75
11			(320)	14.0	28			2.70
12			(310)	14.6	29			2.75
13			15.0	30	(260)			2.70
14			330	15.1	28			2.70
15			325	15.2	28	109		2.75
16			(300)	15.0	28	115		2.80
17			15.0	28	250	111	2.65	2.80
18			15.0	28	265	1.90		2.90
19			14.4	28	265			2.85
20			>12.2	28	270			2.70
21			>12.0	25	280			2.70
22			>12.0	28	290			2.60
23			11.2	23	290			2.65

Time: 60.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 52

Port Lockroy (64.8° S, 63.5° W)							October 1959	
Time	h°F2	foF2—Count	h°F	foF1	h'E	foE	foEs	(M3000)F2
00			8.2	18	300			2.50
01			(7.7)	21	310			2.50
02			7.5	21	315		0.8	2.45
03			7.3	23	305		1.1	2.45
04			7.1	22	300			2.50
05			7.0	27	280			2.50
06			7.4	30	255			2.70
07			7.8	29	245			2.65
08			8.0	30	235			2.90
09			8.9	29	230			2.95
10			9.3	27	230			3.30
11			9.8	25	230			3.40
12			10.1	29	220			3.00
13			10.1	28	230			3.05
14			9.9	31	225			3.10
15			9.5	31	230			3.15
16			9.3	29	235			3.10
17			9.0	29	240			2.65
18			9.0	30	245			2.25
19			8.8	26	250			2.00
20			9.0	26	260			1.50
21			8.9	24	270			2.80
22			8.8	22	275			2.70
23			8.4	22	280			2.55

Time: 60.0°W.

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

Table 54

Kiruna, Sweden (67.8° N, 20.3° E)							September 1959	
Time	h°F2	foF2—Count	h°F	foF1	h'E	foE	foEs	(M3000)F2
00			(4.9)	6	(380)			5.0
01			(4.4)	7	(360)			4.6 (2.4)
02			4.4	10	370			4.0
03			(4.0)	9	340			3.3 (2.4)
04			(5.3)	9	335			3.0 (2.6)
05			4.9	20	290			2.7
06			5.2	20	>275			2.8
07			6.0	20	250	110	2.4	

Table 55

Sodankyla, Finland (67.4° N, 26.6° E)									September 1959								
Time	h°F2	foF2-Count	h°F	foF1	h°E	foE	foEs	(M3000)F2	Time	h°F2	foF2-Count	h°F	foF1	h°E	foE	foEs	(M3000)F2
00	(6.4)	1	380			4.3	---	(2,50)	00	---	6.1	24	315	---	1.25	4.1	2.4
01	---	0	(370)			4.6	---		01	---	5.8	27	310	---	1.30	4.2	2.45
02	(5.4)	3	365			4.2	---		02	340	6.0	25	300	2.9	105	1.60	4.1
03	(5.2)	3	360	---	---	4.2	---		03	385	6.3	27	270	3.5	110	2.00	4.4
04	(4.4)	2	365	---	---	4.0	---		04	385	6.3	27	250	4.0	110	2.35	4.7
05	(4.2)	8	340	---	E	3.5	(2,50)		05	395	6.4	28	240	4.3	105	2.70	5.0
06	4.7	14	300	---	140	1.95	2.7	2.70	06	400	6.6	30	240	4.6	105	3.00	5.0
07	5.6	19	270	---	130	2.35	2.5	2.80	07	420	6.8	29	235	4.9	105	3.20	5.6
08	6.1	19	260	---	120	2.65	4.0	2.75	08	415	7.0	30	230	5.1	100	3.35	5.2
09	6.3	22	255	---	115	2.90	4.0	2.70	09	435	7.2	30	225	5.3	100	3.50	5.8
10	6.7	24	245	---	115	3.00		2.70	10	430	7.2	28	220	5.3	100	3.60	5.8
11	7.1	19	240	---	115	3.10	3.5	2.65	11	445	7.3	29	215	5.4	100	3.60	5.8
12	7.4	23	240	---	115	3.15		2.65	12	455	7.1	30	215	5.6	100	3.60	5.9
13	7.6	23	240	---	120	3.20		2.70	13	435	7.2	28	220	5.4	100	3.60	5.9
14	7.4	25	240	---	115	3.05		2.65	14	440	6.8	29	215	5.4	100	3.50	5.3
15	7.5	22	245	---	120	3.00		2.75	15	445	6.8	28	225	5.3	100	3.50	5.2
16	6.9	23	255	---	120	2.80	3.6	2.80	16	410	6.8	28	225	5.1	100	3.30	5.5
17	6.8	17	265	---	120	2.60	4.2	2.85	17	360	6.7	30	235	4.8	105	3.10	4.8
18	6.8	12	275	---	---	4.0		2.85	18	350	6.6	30	245	4.6	105	2.80	4.7
19	6.2	12	280	<170	1.90	4.2	2.75		19	325	6.6	29	250	4.2	110	2.40	4.8
20	6.0	10	295	---	E	3.6	2.80		20	350	6.7	29	270	3.6	115	2.10	4.0
21	(6.4)	6	300	---	E	4.5	(2,80)		21	---	6.6	28	290	---	110	1.60	3.6
22	(5.4)	5	300	---	---	4.1	(2,65)		22	---	6.4	28	300	---	115	1.45	3.5
23	(5.5)	5	355	---	---	4.7	(2,50)		23	---	6.0	25	310	---	110	1.20	3.1

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

Table 57

Murmansk, O.S.S.R. (69.0° N, 33.0° E)									September 1958								
Time	h°F2	foF2-Count	h°F	foF1	h°E	foE	foEs	(M3000)F2	Time	h°F2	foF2-Count	h°F	foF1	h°E	foE	foEs	(M3000)F2
00	6.0	13	(355)			<2.8		2.40	00	7.8	30	300	---		2.5	(2,35)	
01	(5.9)	15	(350)			<2.8		(2,35)	01	7.5	30	310	---		2.4	(2,40)	
02	(6.1)	13	<350			<2.4		2.40	02	7.3	30	300	---		2.2	(2,40)	
03	>5.2	11	<350			<2.5		(2,50)	03	6.8	30	300	---		2.2	2.45	
04	(6.0)	17	300	---	---	<1.8		(2,45)	04	6.5	30	285				2.50	
05	(6.2)	10	<295	---	<1.60	<2.3		(2,55)	05	6.0	30	270	---	E	1.9	2.60	
06	---	(6.8)	24	265	---	<2.55		(2,65)	06	---	(7.6)	29	250	---	1.85	2.5	2.85
07	(290)	7.5	23	250	---	<2.80		2.65	07	---	(9.0)	29	240	---	110	2.65	3.0
08	<265	8.0	26	250	---	<3.00		2.65	08	(300)	10.1	29	235	(4.8)	105	3.20	3.6
09	(405)	8.4	24	245	---	<3.00		2.60	09	315	(11.2)	30	<230	(5.6)	105	3.50	3.9
10	390	8.8	26	240	5.2	<3.20		2.60	10	350	(11.8)	30	230	(6.2)	105	3.70	4.1
11	<400	9.1	25	240	5.2	<3.20		2.60	11	360	11.6	30	230	(6.9)	105	3.80	4.2
12	(420)	9.8	26	235	5.2	119	<3.30		12	<380	11.7	30	(235)	(6.6)	105	3.80	4.0
13	<355	9.3	26	230	---	<115	<3.20		13	360	11.5	30	230	(6.5)	105	3.80	4.0
14	<280	9.0	23	240	---	<3.20		2.60	14	350	(11.4)	30	235	(6.6)	105	3.70	2.50
15	(300)	9.2	26	245	---	<3.00		2.60	15	350	11.2	30	240	(6.5)	105	3.45	2.55
16	<410	9.0	23	250	---	<3.00	<3.0	2.70	16	(365)	>11.1	30	250	(6.2)	(110)	3.20	3.8
17	---	8.2	24	<260	---	<2.70	<2.8	2.70	17	---	>11.0	30	255	---	115	2.70	3.4
18	---	7.7	23	270	---	<2.90		2.70	18	---	>10.4	30	260	---	E	3.6	---
19	---	8.8	19	260	---	---	<2.7	2.70	19	---	>9.5	30	255	---	E	3.2	---
20	7.6	18	(280)	---	---	<2.4		2.60	20	---	>8.5	30	250	---	---	2.9	(2.55)
21	7.4	14	300	---	---	<3.0		2.60	21	---	>8.0	30	265	---		2.6	(2.45)
22	6.4	14	<325	---	---	3.4		(2.55)	22	---	>8.0	29	(280)	---		2.5	(2.40)
23	(6.2)	15	(350)	---	---	3.3		(2.35)	23	7.8	30	290	---		2.4	(2.30)	

Time: 30.0°E.
Sweep: 1.0 Mc to 20.0 Mc in 30 seconds.

Table 59

Rabat, Morocco (30.9° N, 6.8° W)									September 1958									
Time	h°F2	foF2-Count	h°F	foF1	h°E	foE	foEs	(M3000)F2	Time	h°F2	foF2-Count	h°F	foF1	h°E	foE	foEs	(M3000)F2	
00	>9.0	27	<295			2.0		(2,50)	00	0	26	250	---	E	2.0	---	---	
01	>9.0	27	<295			1.9	---		01	>14.5	24	250	---	E	2.0	---	---	
02	>9.0	27	<290			1.8		(2,60)	02	>12.6	21	240	---	E	2.0		(3.20)	
03	(8.8)	27	<270			2.60			03	>9.2	24	225	---	E	2.0		(3.15)	
04	(8.4)	27	<270			2.60			04	>8.0	27	235	---	E	2.1		(2.75)	
05	7.3	27	<250			1.7			05	>7.8	27	<250	---	E	2.3		(2.85)	
06	---	7.4	28	250	---	E		2.80	06	>10.1	28	250	115	(2,20)	2.6		(3.20)	
07	---	(9.8)	28	230	---	115	2.50	3.10	07	11.6	30	235	105	(3,10)	3.6		3.25	
08	(250)	11.0	28	230	---	105	3.15	3.4	08	12.0	30	230	100	(3,65)	4.3		2.95	
09	(250)	11.2	28	225	---	105	3.50	3.00	09	---	12.6	29	220	100	(3,90)	4.7		2.70
10	---	11.3	29	215	---	100	3.80	2.80	10	---	13.7	29	215	100	4.10	4.7		2.60
11	(340)	11.8	28	230	---	105	3.90	2.60	11	(430)	14.4	30	<220	105	4.25	4.8		2.50
12	380	12.1	28	<230	---	105	---	2.55	12	440	>15.0	29	215	105	(4,25)	4.4		(2.50)
13	365	12.5	28	230	6.6	110	---	2.55	13	430	>15.5	29	225	100	(4,20)			
14	370	12.6	28	235	6.3	105	(3.95)	2.50	14	415	0	29	230	105	(4,05)			
15	370	12.4	28	240	6.4	105	3.70	2.50	15	400	0	29	240	105	3.70			
16	350	12.5	27	245	---	100	3.50	3.9	16	(395)	>15.7	30	250	105	3.20	3.4		
17	---	12.4	29	250	---	105	3.05	3.8	17	>15.5	29	265	<110	2,30	2.9		---	
18	---	(12.1)	30	<270	---	110	2.20	3.4	18	>14.6	27	300	---	E	2.2			
19	---	(10.5)	30	(250)	---	---	3.2	---	19	>15.5	28	360	---	E	2.1			
20	---	(9.5)	28	<270	---	3.2		(2.55)	20	>15.5	17	330	---	E	2.0			
21	---	>9.0	29	<300	---	3.2		(2,50)	21	>15.2	26	300	---	---	2.0			
22	---	>9.0	29	<300	---	2.2	---		22	0	18	290	---	---	2.0			

Table 61

Dakar, French W. Africa (14.7° N, 17.4° W)								September 1958	
Time	h°F2	foF2-Count	h°F	foF1	h'E	foE	foEs	(M3000)F2	
00	(16.8)	3	315					---	
01	>17.0	1	265						
02	(10.2)	3	240						
03	(13.5)	5	205						
04	8.2	11	200	---	---		(3.05)		
05	7.4	12	200	---	E	2.3	3.10		
06	6.5	17	200	---	E	2.3	3.20		
07	7.2	19	230	---	---	2.9	3.10		
08	>10.1	16	210	100	2.80		3.15		
09	12.1	15	200	95	3.50	3.5	3.05		
10	13.6	17	195	95	3.90	4.2	2.75		
11	>14.0	17	(190)	95	---	(4.4)	(2.65)		
12	>15.0	12	---	90	---	(4.3)	---		
13	>15.0	12	---	90	---	---	---		
14	>15.0	11	---	95	---	(6.4)	---		
15	(405)	14	(195)	95	---	4.6	---		
16	>15.1	14	200	95	(3.90)	4.1	---		
17	>14.5	7	210	95	3.50	4.0	---		
18	>14.0	9	225	100	2.85	3.3	---		
19	>14.0	3	260	---	---	3.8	---		
20	>14.0	4	370	---	E	3.0	---		
21	>14.0	2	385	---	---	2.3	---		
22	---	0	360	---	---	2.2	---		
23	(12.9)	1	345	---	---	2.4	---		

Time: 0.0°.

Sweep: 1.25 Mc to 20.0 Mc in 10 minutes.

Table 63

Paramaribo, Surinam (5.8° N, 55.2° W)								September 1958	
Time	h°F2	foF2-Count	h°F	foF1	h'E	foE	foEs	(M3000)F2	
00	>15.4	26	300					---	
01	(15.8)	27	270						
02	(15.4)	25	260				(2.60)		
03	(15.5)	26	255				(2.75)		
04	>13.0	27	240				2.90		
05	10.8	26	220				2.80		
06	9.5	26	240				2.80		
07	8.4	28	240				3.00		
08	6.6	27	220				2.90		
09	6.2	28	250	---	---		2.65		
10	8.8	27	250	120	2.3		2.95		
11	11.2	28	240	110	3.2		2.90		
12	>12.7	27	250	110	3.7		2.75		
13	>13.2	28	(255)	120	4.1		2.70		
14	-->13.2	28	<265	---	---		2.60		
15	400	>13.3	27	<280	(7.4)	---	(2.50)		
16	400	>13.4	27	<280	(7.4)	---	(2.45)		
17	400	(14.4)	28	<300	7.2	---	2.45		
18	400	>13.4	28	<290	(7.0)	120	---	2.50	
19	420	>13.0	26	<275	(7.3)	120	3.8	4.6	(2.40)
20	(400)	>13.0	28	250	(7.0)	110	3.2	4.4	2.40
21	(13.0)	28	270	100	2.6	3.4	2.40		
22	>13.0	27	320	---	---	3.0	2.30		
23	>14.0	25	350				2.2	2.40	

Time: 0.0°.

Sweep: 1.4 Mc to 20.0 Mc in 40 seconds.

Table 65

Tahiti, Society Is. (17.7° S, 149.3° W)								September 1958	
Time	h°F2	foF2-Count	h°F	foF1	h'E	foE	foEs	(M3000)F2	
00	13.3	17	225	---	E	2.4	3.00		
01	11.3	13	225	---	(0.90)	2.0	3.00		
02	8.6	15	240	---	(0.95)	2.6	2.70		
03	>7.8	16	260	---	(0.90)	2.2	2.65		
04	8.0	16	260	---	E	2.2	2.80		
05	7.2	20	270	---	E	2.4	2.80		
06	9.1	18	300	---	1.40	3.0	2.80		
07	13.6	18	250	115	2.90	3.0	3.05		
08	14.8	19	245	105	3.50		3.05		
09	14.4	18	240	105	3.85		2.90		
10	14.4	19	230	105	---		2.70		
11	14.0	20	250	---	105	(4.30)	2.60		
12	400	13.9	19	250	---	4.6	2.45		
13	430	14.0	19	250	7.0	105	4.8	2.45	
14	420	14.0	18	245	6.9	105	3.90	4.8	2.40
15	435	14.0	20	250	---	105	3.65	5.1	2.40
16	(435)	14.2	21	250	110	3.10	3.8	2.40	
17	(435)	14.5	19	270	125	2.80	3.6	2.40	
18	15.2	20	325	---	---	3.1	2.40		
19	0	21	365	---	E	3.1	(2.45)		
20	0	19	280	---	---	3.1	---		
21	0	19	250	---	---	3.1	(2.70)		
22	0	21	245	---	---	2.6	(2.90)		
23	0	20	230	---	---	2.7	3.00		

Time: 150.0°W.

Sweep: 1.2 Mc to 17.0 Mc in 1 minute.

Table 62

Ojibouti, French Somaliland (11.6° N, 43.2° E)								September 1958	
Time	h°F2	foF2-Count	h°F	foF1	h'E	foE	foEs	(M3000)F2	
00	(7.8)	1	275					2.2	
01	>8.4	8	250					1.9	
02	(7.2)	6	235					1.8	
03	>7.0	9	230					(3.00)	
04	(7.0)	8	230					(2.95)	
05	>6.9	14	220					2.0	
06	7.4	16	250					2.90	
07	(10.8)	6	240					(2.95)	
08	(12.7)	3	235					---	
09	(14.2)	1	225					---	
10	>12.2	1	<220					---	
11	>13.1	6	210					---	
12	(12.7)	7	(220)					---	
13	>12.4	4	(215)					---	
14	-->13.0	7	225					---	
15	-->13.2	4	230					---	
16	-->12.7	4	235					---	
17	-->12.8	5	250					---	
18	-->11.0	11	340					---	
19	-->9.4	5	450					---	
20	-->14.8	1	(375)					---	
21	-->14.0	1	(340)					---	
22	-->14.2	1	300					---	
23	-->10.5	4	260					---	

Time: 45.0°E.

Sweep: 1.25 Mc to 20.0 Mc in 10 minutes.

Table 64

Bangui, French Equatorial Africa (4.6° N, 18.6° E)								September 1958	
Time	h°F2	foF2-Count	h°F	foF1	h'E	foE	foEs	(M3000)F2	
00	>11.3	6	250						
01	>10.9	10	250					2.3	
02	>10.6	8	240					1.9	
03	>10.0	10	225					2.4	
04	>8.5	15	220					2.8	
05	>6.4	16	215					3.1	
06	>8.6	20	260					3.10	
07	11.8	23	240					2.90	
08	13.3	23	235					1.70	
09	14.0	23	225					1.60	
10	12.5	16	225					1.50	
11	12.5	8	215					1.40	
12	12.6	16	205					1.30	
13	12.2	16	200					1.20	
14	(390)	12.2	18	220				1.10	
15	-->12.0	20	230					1.00	
16	11.8	22	<230					0.90	
17	11.5	21	240					0.80	
18	11.6	20	255					0.70	
19	11.3	20	250					0.60	
20	10.7	13	250					0.50	
21	(10.9)	18	245					0.40	
22	10.8	16	235					0.30	
23	9.0	18	225					0.20	

Time: 15.0°E.

Sweep: 1.2 Mc to 17.0 Mc in 1 minute.

Tananarive, Madagascar (18.0° S, 47.5° E)								September 1958	
Time	h°F2	foF2-Count	h°F	foF1	h'E	foE	foEs	(M3000)F2	

Table 67

Time	September 1958					
	h'F2	foF2-Count	h'F	foF1	h'E	foE
						foEs (M3000)F2
00	7.1	25	300			2.50
01	6.8	23	325			2.45
02	6.6	27	(325)			2.50
03	6.3	25	<320			2.45
04	6.0	23	<300			2.50
05	5.9	24	<280			2.60
06	5.8	27	275			2.55
07	(300)	7.0	24	220		2.80
08	---	6.5	17	210		3.05
09	---	9.5	16	200	(3.7)	3.25
10	---	11.0	12	200		3.20
11	---	12.9	12	200		3.10
12	(250)	12.4	19	200		3.10
13	---	(13.0)	3	(200)		---
14	---	12.5	18	200		3.00
15	---	11.8	21	215		3.00
16	---	11.6	18	210		3.00
17	---	10.9	11	215		3.10
18	(9.8)	4	210			---
19	9.8	13	210			3.10
20	8.4	18	215			2.90
21	7.8	24	240			2.70
22	7.5	25	260			2.65
23	7.6	27	290			2.55

Time: 45.0°W.

Sweep: 1.3 Mc to 18.0 Mc in 30 seconds.

Table 69

Time	September 1957					
	h'F2	foF2-Count	h'F	foF1	h'E	foE
						foEs (M3000)F2
00	(5.6)	15	<370			3.0
01	(5.3)	15	(390)			3.2
02	(5.2)	17	(370)			3.3
03	---	5.0	14 <330			2.50
04	---	5.1	15 <300		<1.65	<2.0
05	---	5.6	12 (280)		<2.00	<2.0
06	<320	6.0	17 270		<2.20	<2.5
07	---	7.0	16 (260)		<2.60	<2.7
08	<300	7.2	17 250	---	2.90	(2.9)
09	<320	8.0	16 240	---	3.00	<3.1
10	<370	8.3	21 (240)	---	<3.20	<3.6
11	<330	8.8	23 (240)	---	(3.30)	<3.4
12	<320	9.0	22 <240	---	(3.20)	<3.3
13	<295	9.0	22 (240)	---	3.10	<3.3
14	<295	8.8	21 (240)	---	3.00	<3.2
15	<300	8.6	17 240	---	<3.00	<3.2
16	<310	8.6	15 (240)	---	(2.70)	<3.3
17	<305	7.4	16 240	---	(2.45)	<3.0
18	<300	8.0	17 250	---	<2.00	<3.2
19	---	6.3	19 <270	---	<3.1	2.80
20	6.2	16 <320		---	3.5	2.70
21	(5.6)	17 <370		---	<3.6	2.65
22	(5.5)	18 <380		---	<3.4	2.55
23	(5.7)	17 <380		---	<3.4	(2.50)

Time: 30.0°E.

Sweep: 1.0 Mc to 20.0 Mc in 30 seconds.

Table 71

Time	September 1955					
	h'F2	foF2-Count	h'F	foF1	h'E	foE
						foEs (M3000)F2
00	(2.4)	7	300			(2.7)
01	(3.0)	3	350			---
02	(2.4)	7	(325)			---
03	(2.4)	11	380			(2.8)
04	(2.4)	14	310			(2.7)
05	(2.7)	14	270	---	E	(3.1)
06	3.8	19	240	---	2.0	3.1
07	---	4.5	23 210	---	130 2.3	3.0
08	340	4.7	25 210	3.7	100 2.4	3.1
09	300	5.4	25 200	4.0	100 2.5	3.1
10	300	5.5	28 200	4.0	100 2.6	3.1
11	290	5.6	28 200	3.9	---	2.7
12	280	5.5	26 200	4.0	---	2.6
13	(275)	5.6	27 200	3.7	---	2.6
14	(255)	5.6	28 200	---	105 2.5	3.2
15	---	5.5	27 210	---	100 2.3	3.2
16	---	5.4	28 220	---	100 2.2	3.2
17	5.3	27	240	---	1.9	3.2
18	5.3	25	250	---	E	3.1
19	5.0	16	250			3.0
20	(4.4)	10	250			(3.0)
21	(4.5)	7	250			(2.9)
22	(2.4)	4	270			---
23	(2.0)	9	300			(2.7)

Time: 15.0°E.

Sweep: 1.5 Mc to 10.0 Mc in 9 minutes, automatic operation.

Table 68

Time	Tamanrasset, French W. Africa (22.8° N, 5.5° E)					
	h'F2	foF2-Count	h'F	foF1	h'E	foE
						foEs (M3000)F2
00	>14.5	17	290			2.0
01	>12.9	18	265		E	2.2
02	>12.1	20	260		E	2.0
03	>9.5	19	255		E	2.2
04	>8.3	18	250		E	3.00
05	>7.8	22	255		E	2.4
06	>9.1	23	240		115 (2,40)	3.25
07	9.5	23	240		105 3.20	3.20
08	9.9	23	225		105 (3,70)	3.00
09	10.6	24	220		105 (4.05)	2.65
10	---	11.9	23	225	(105) (4.25)	2.50
11	410	13.1	24	215	(105) (4.30)	2.55
12	405	14.0	24	220	105 4.35	2.55
13	380	>15.0	24	240	105 3.45	3.5
14	---	>15.0	24	255	110 2.75	3.2
15	435	14.9	24	215	---	2.6
16	420	>15.0	24	220	---	2.50
17	405	(15.2)	24	230	---	2.50
18	380	>15.0	24	240	105 3.85	(2.55)
19	---	>14.5	25	285	---	2.6
20	410	14.0	17	350	---	2.2
21	410	14.0	17	<350	---	2.0
22	410	14.2	16	330	---	1.9
23	410	14.4	18	315	---	2.0

Time: 0.0°.

Sweep: 1.2 Mc to 17.0 Mc in 1 minute.

*Observations taken 7 through 31 only.

Table 70

Time	Lulea, Sweden (65.6° N, 22.1° E)					
	h'F2	foF2-Count	h'F	foF1	h'E	foE
						foEs (M3000)F2
00	3.0	20	310			2.5
01	(3.0)	22	330			2.6
02	3.0	24	325			2.6
03	3.0	25	310			2.6
04	3.0	24	300			2.6
05	2.5	24	290			2.7
06	2.4	25	290			2.7
07	2.0	23	300			2.7
08	>2.9	29	275			2.7
09	4.8	28	240			2.8
10	7.0	30	230		E	2.9
11	8.0	29	230		E	2.9
12	9.0	29	225		E	2.9
13	(9.0)	29	220		E	2.9
14	7.4	30	220			2.8
15	6.9	29	225			2.8
16	5.0	21	225			2.8
17	3.5	20	240			2.8
18	2.5	23	265			2.7
19	(2.4)	18	290			2.7
20	(2.4)	19	320			2.7
21	(2.4)	16	<340			2.3
22	(3.5)	17	330			(2.6)
23	33.5	15	<315			2.0

Time: 15.0°E.

Sweep: 1.5 Mc to 10.0 Mc in 9 minutes, automatic operation.

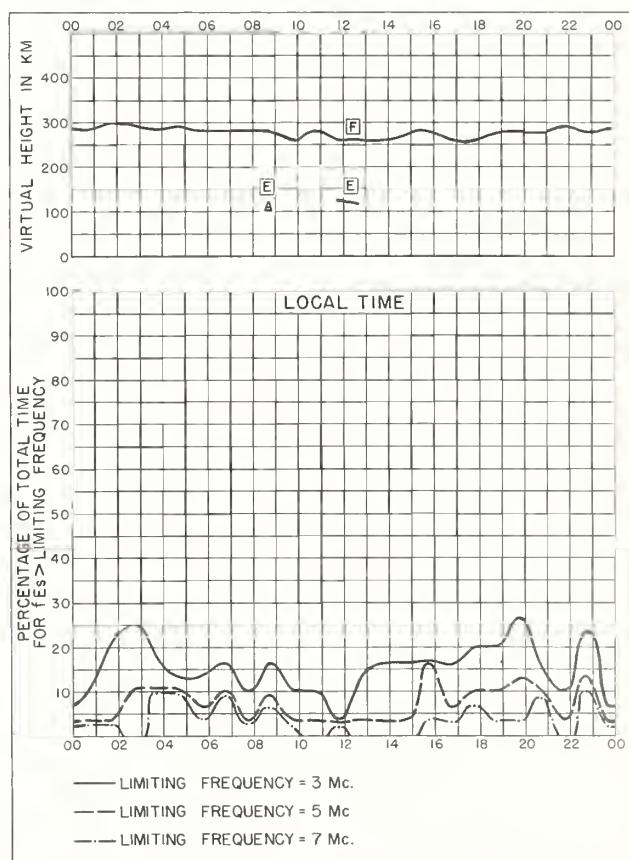
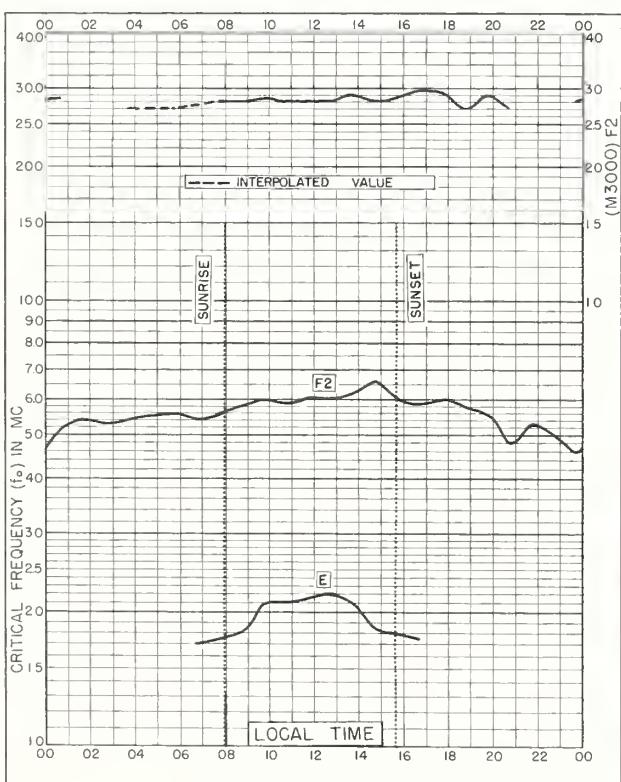
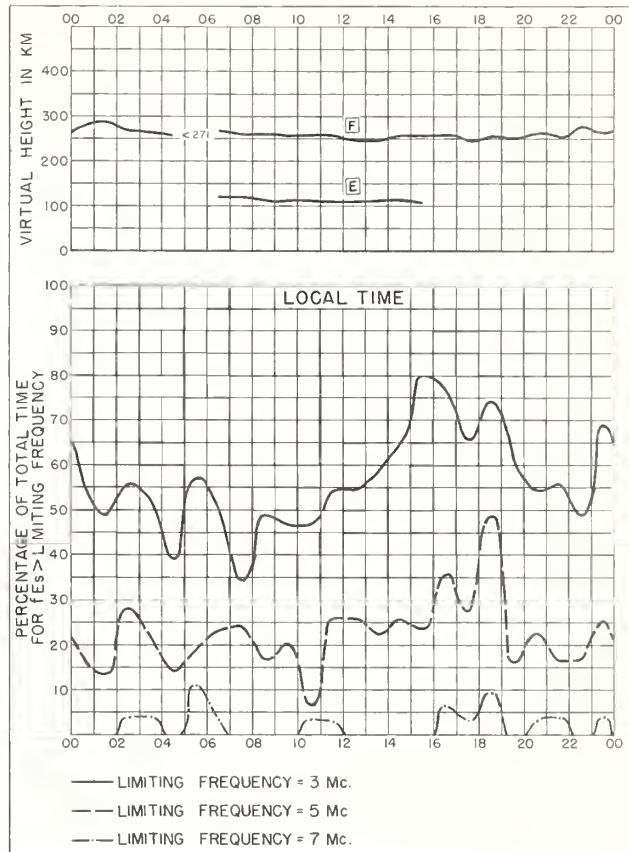
Table 72

Time	Lulea, Sweden (65.6° N, 22.1° E)					
	h'F2	foF2-Count	h'F	foF1	h'E	foE
						foEs (M3000)F2
00	(2.2)	8	---			2.4
01	(2.4)	6	---			2.1
02	2.2	11	(295)			
03	2.2	11	200	3.6	110	2.2
04	300	4.4	19	200	3.7	115
05	300	4.6	18	200	3.7	110
06	(3.3)	9	240	140	1.9	
07	4.0	14	200	3.6	110	2.2
08	3.1	19	200	3.7	115	2.5
09	3.1	19	200	3.7	110	2.5
10	3.1	19	200	3.7	110	2.5
11	3.2	19	200	3.7	110	2.5
12	3.2	19	200	3.7	110	2.5
13	3.2	19	200	3.7	110	2.5
14	4.5	15	200	---	120	2.4
15	4.3	16	240	---	140	1.9
16	3.2	17	200	3.2	---	E
17	3.2	17	200	3.2	---	E
18	3.1	18	200	3.1	---	E
19	3.0	19	200	3.0	---	E
20	3.0	19	200	3.0	---	E
21	(2.7)	7	(250)			
22	(2.4)	8	---			
23	---					

Time: 15.0°E.

Sweep: 1.5 Mc to 10.0 Mc in 9 minutes, automatic operation.

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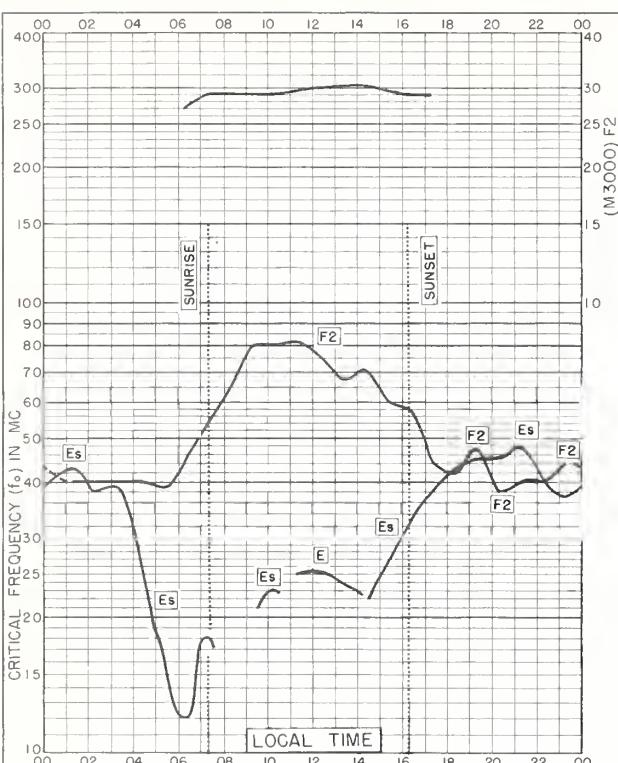


Fig. 5. TROMSO , NORWAY

69.7°N, 19.0°E

OCTOBER 1960

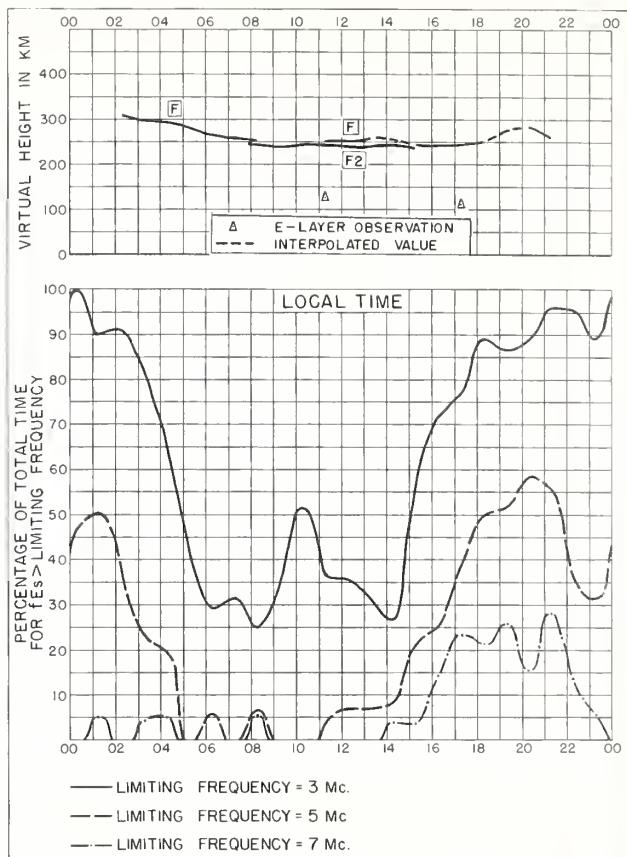


Fig. 6. TROMSO , NORWAY

OCTOBER 1960



Fig. 7. KIRUNA , SWEDEN

67.8°N, 20.3°E

OCTOBER 1960

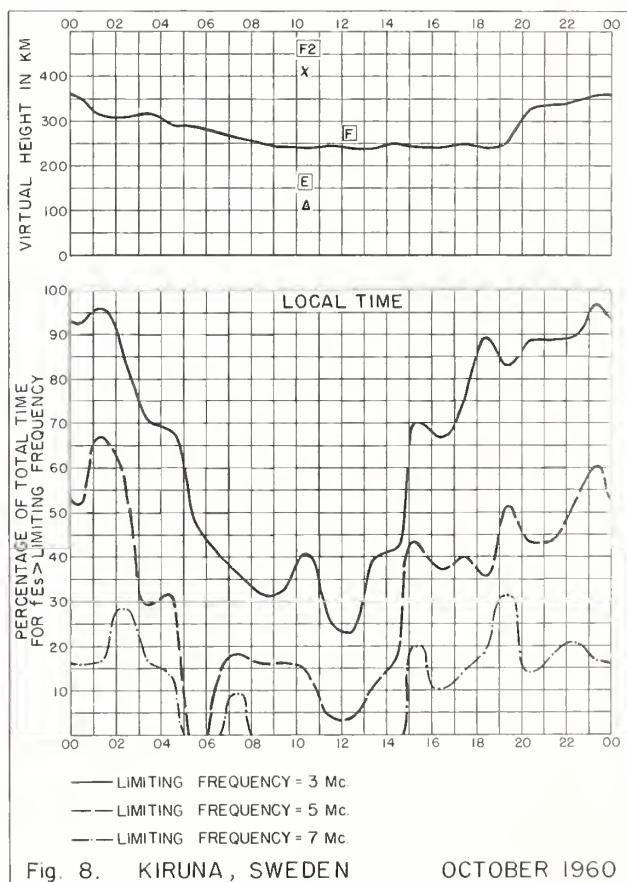


Fig. 8. KIRUNA , SWEDEN

OCTOBER 1960

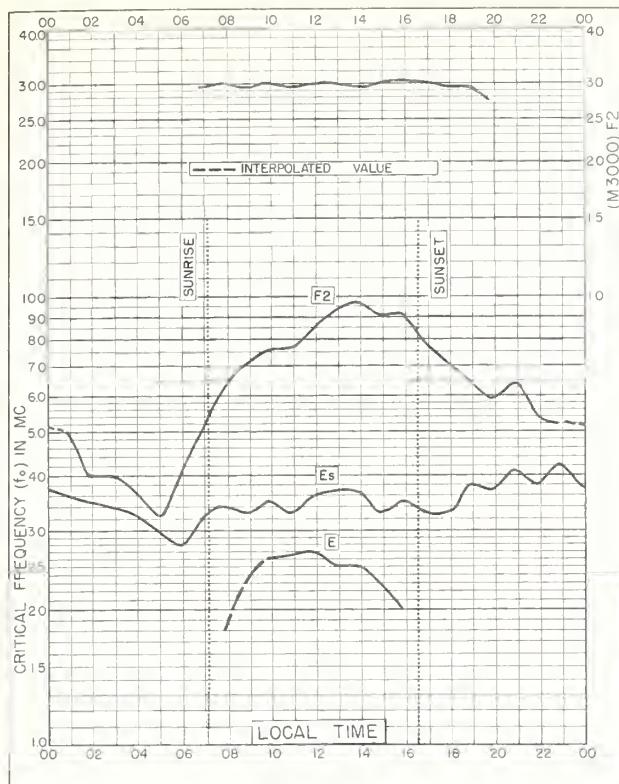


Fig. 9. SODANKYLA, FINLAND
67.4°N, 26.6°E OCTOBER 1960

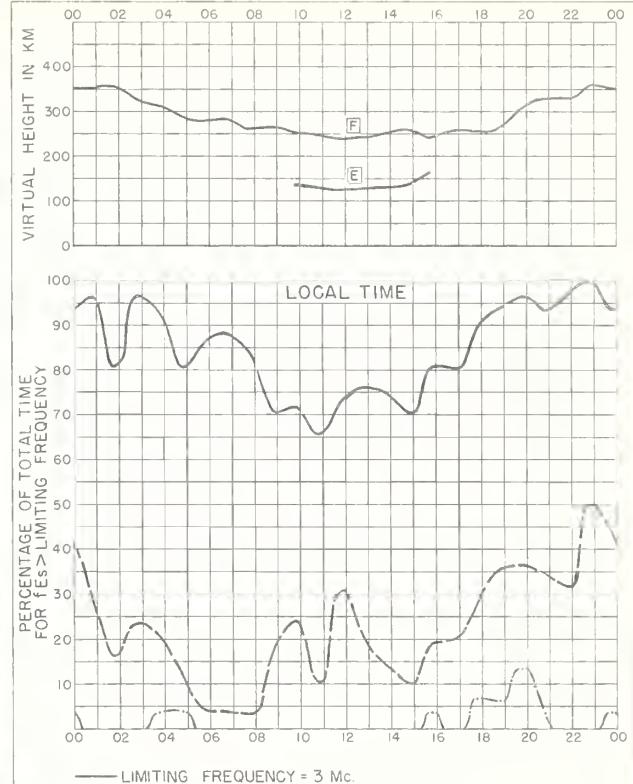


Fig. 10. SODANKYLA, FINLAND OCTOBER 1960

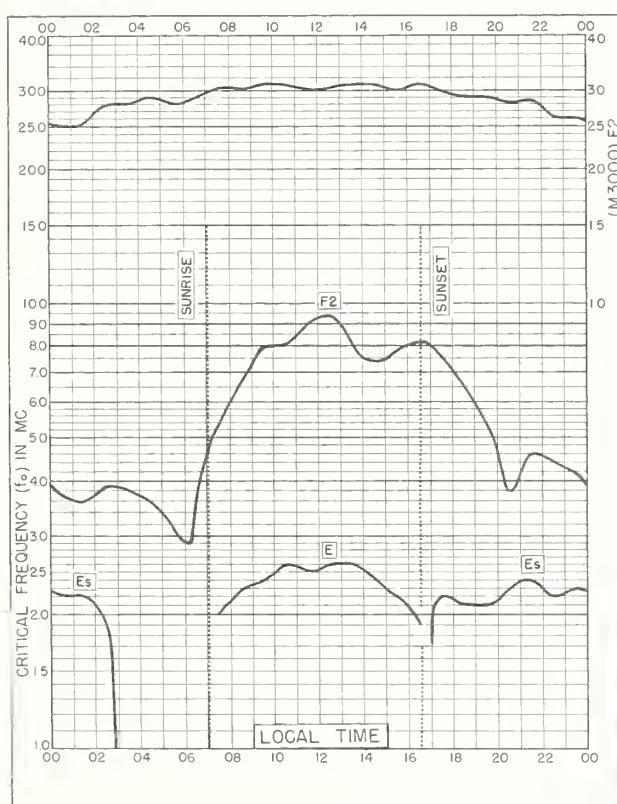


Fig. 11. LULEA, SWEDEN
65.6°N, 22.1°E OCTOBER 1960

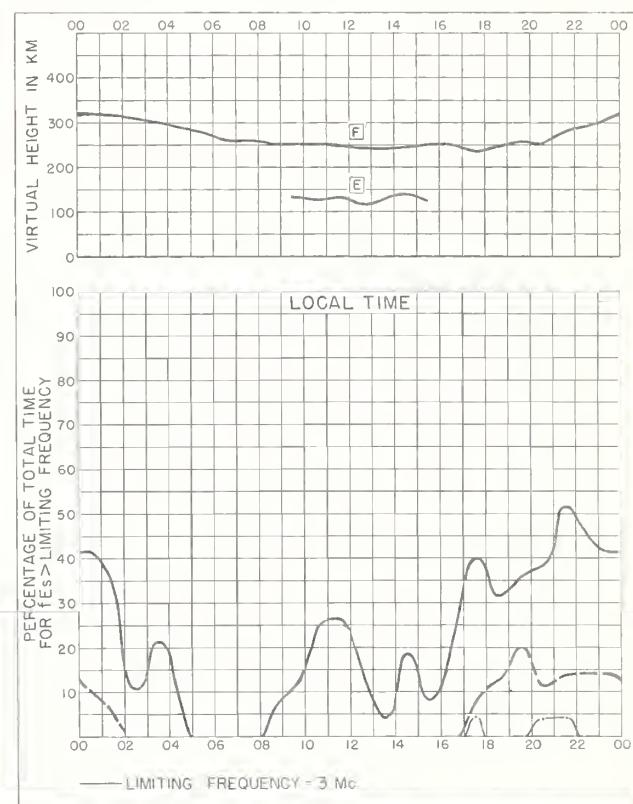


Fig. 12. LULEA, SWEDEN OCTOBER 1960

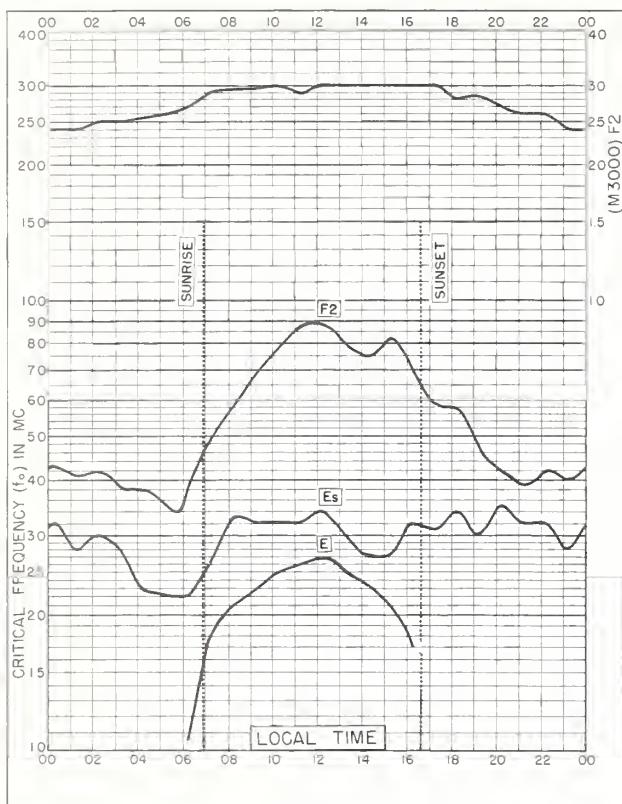


Fig. 13. LYCKSELE, SWEDEN
64.6°N, 18.8°E OCTOBER 1960

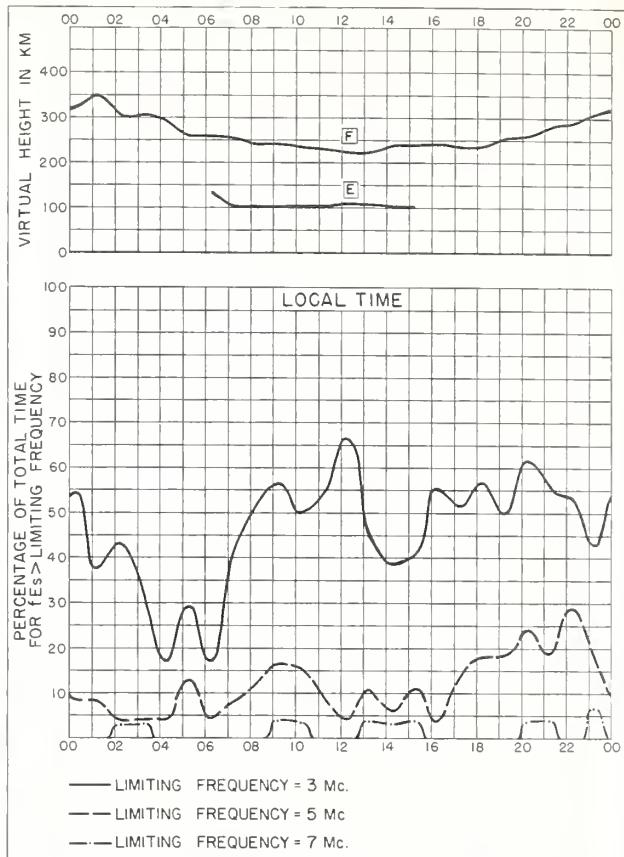


Fig. 14. LYCKSELE, SWEDEN OCTOBER 1960

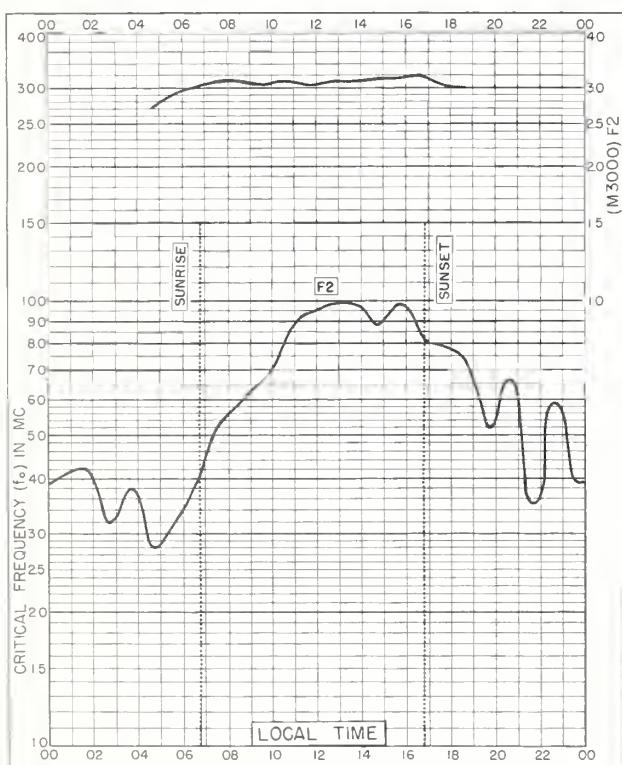


Fig. 15. NURMIJARVI, FINLAND
60.5°N, 24.6°E OCTOBER 1960

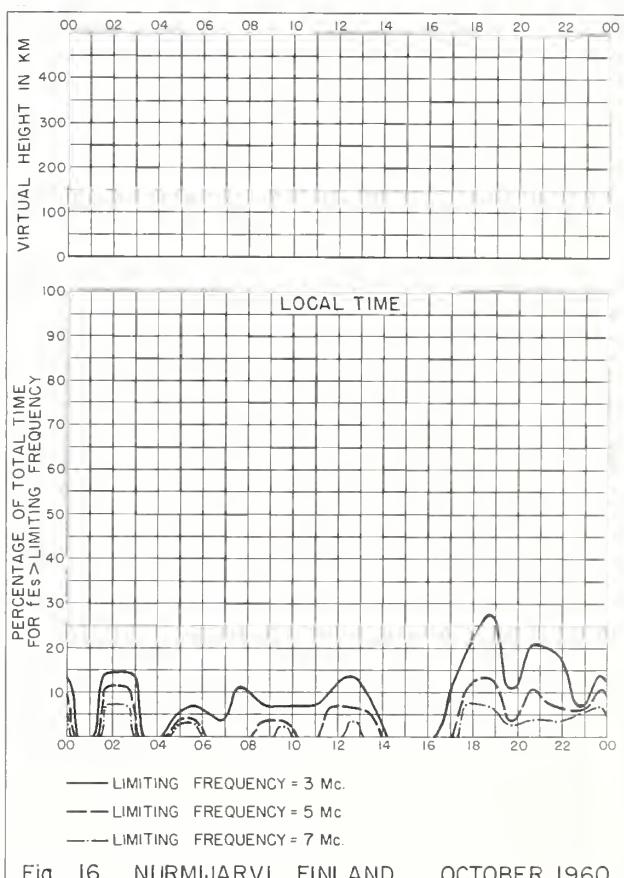


Fig. 16. NURMIJARVI, FINLAND OCTOBER 1960

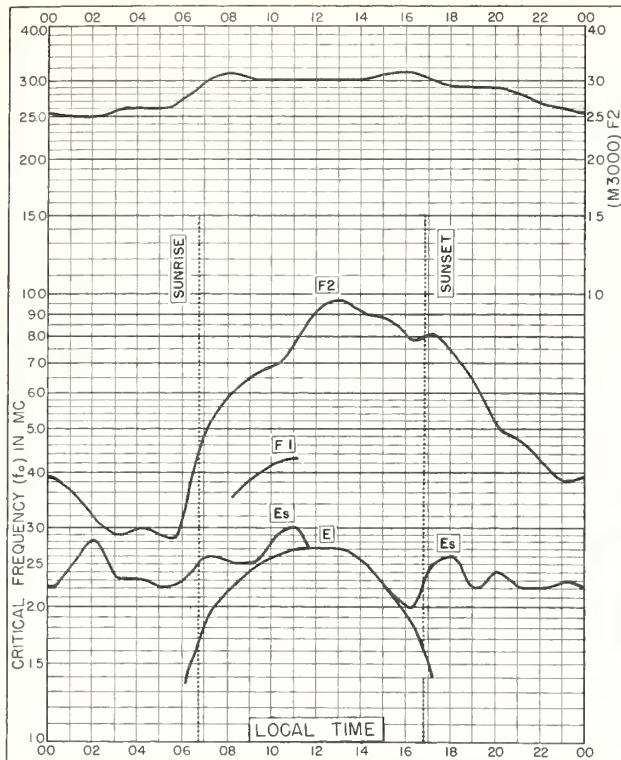


Fig. 17. UPSALA, SWEDEN
59.8°N, 17.6°E

OCTOBER 1960

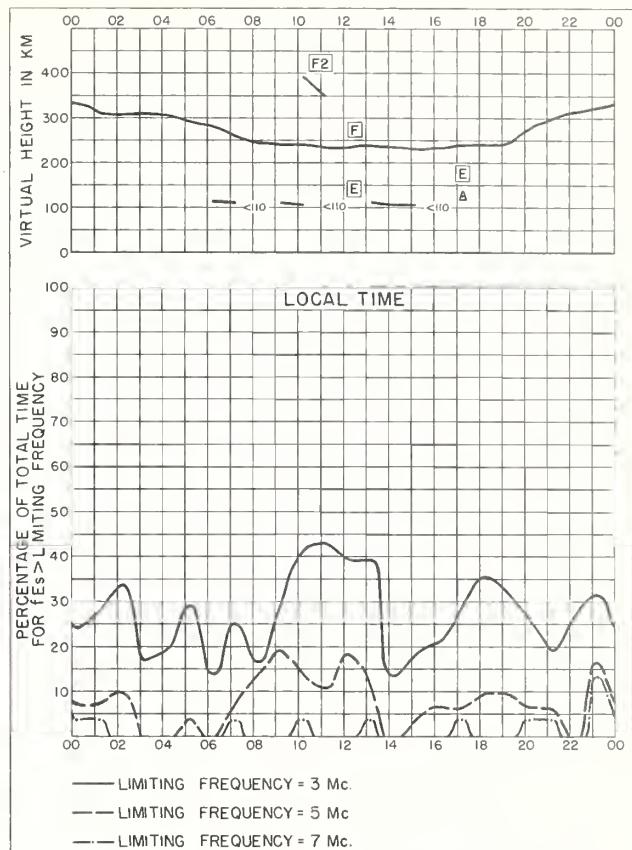


Fig. 18. UPSALA, SWEDEN OCTOBER 1960

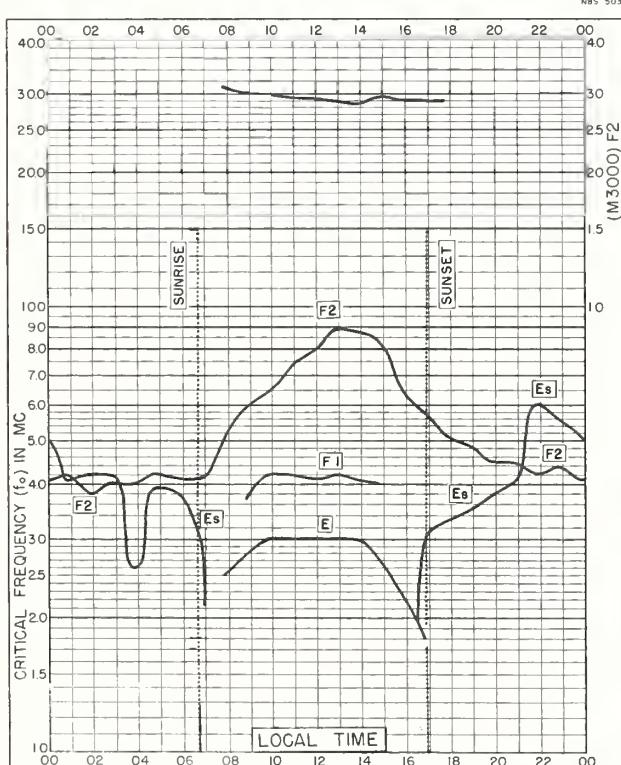


Fig. 19. CHURCHILL, CANADA
58.8°N, 94.2°W

OCTOBER 1960

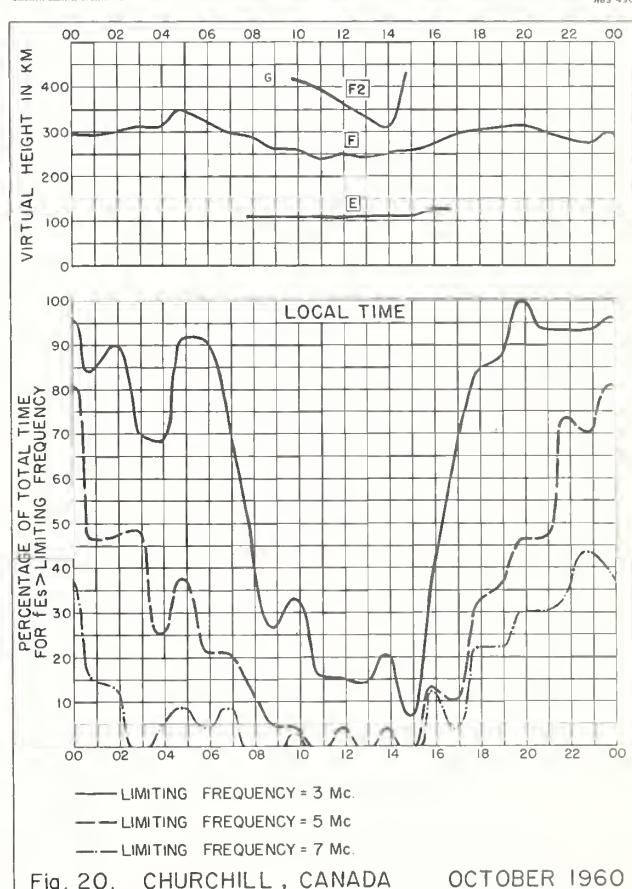
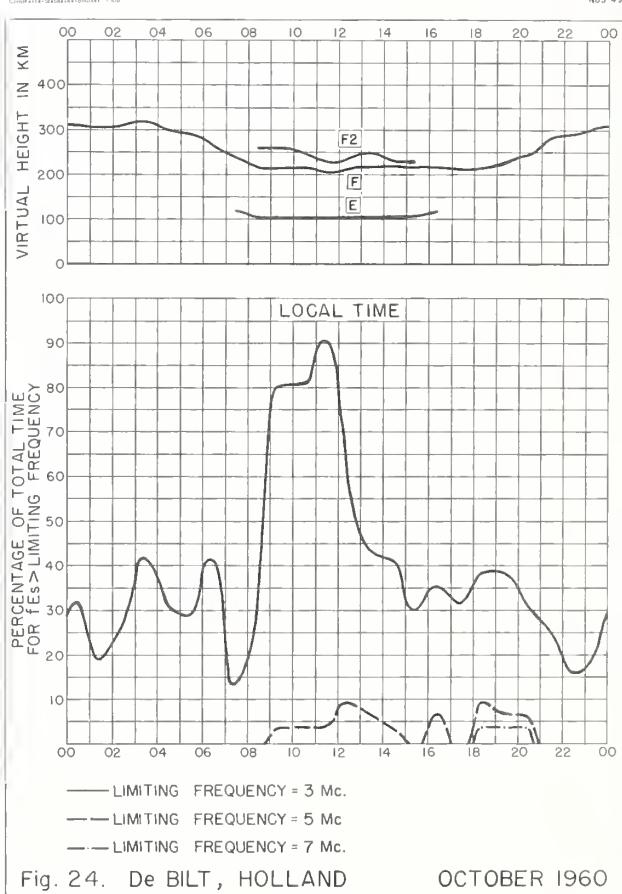
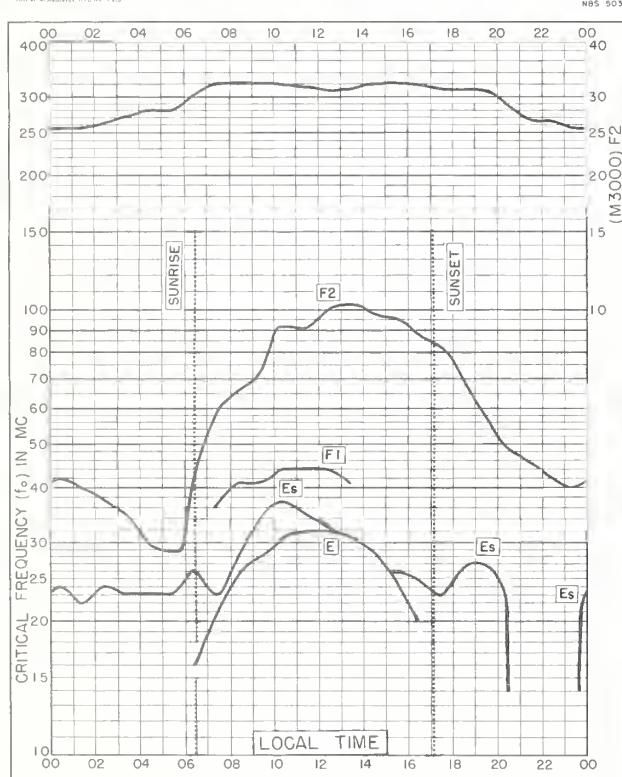
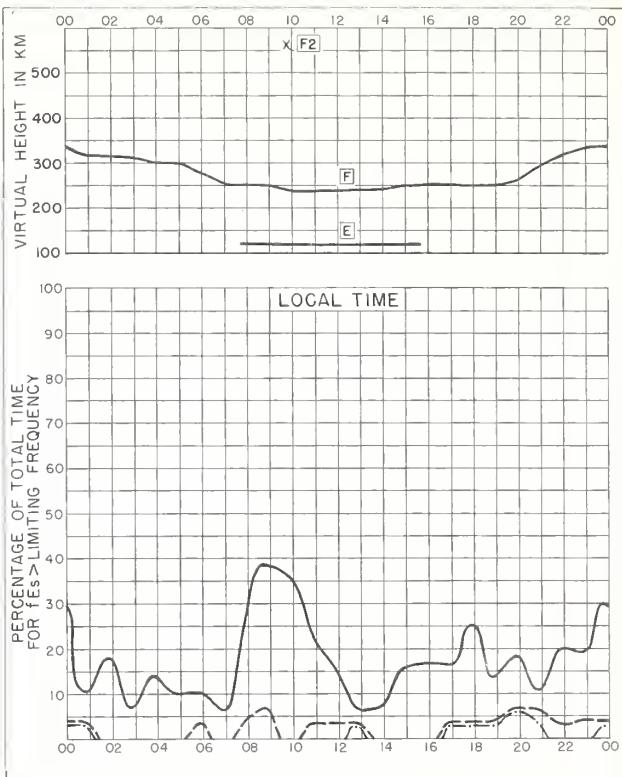
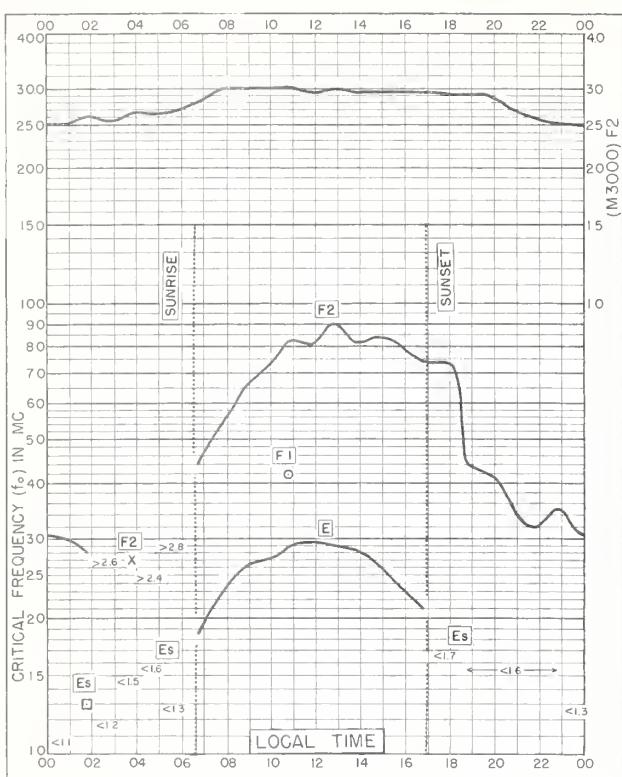


Fig. 20. CHURCHILL, CANADA OCTOBER 1960



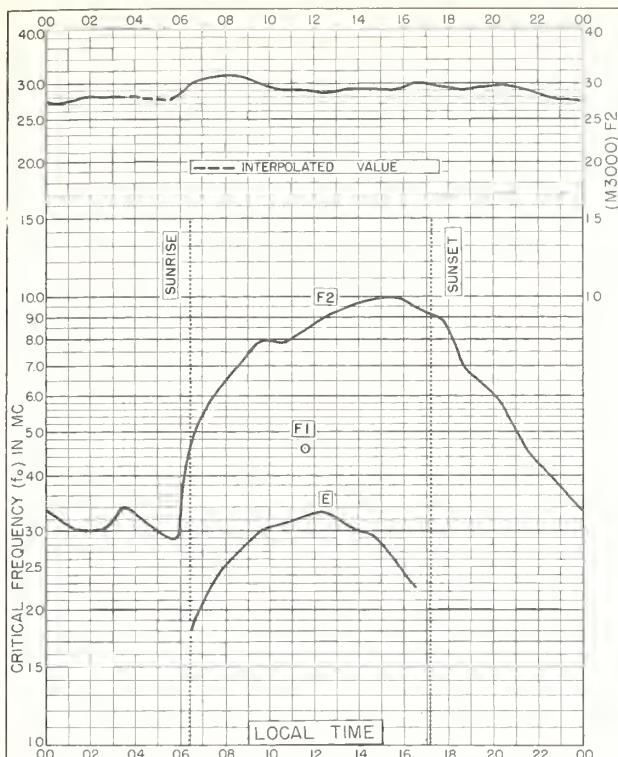


Fig. 25. WINNIPEG, CANADA
49.9°N, 97.4°W OCTOBER 1960

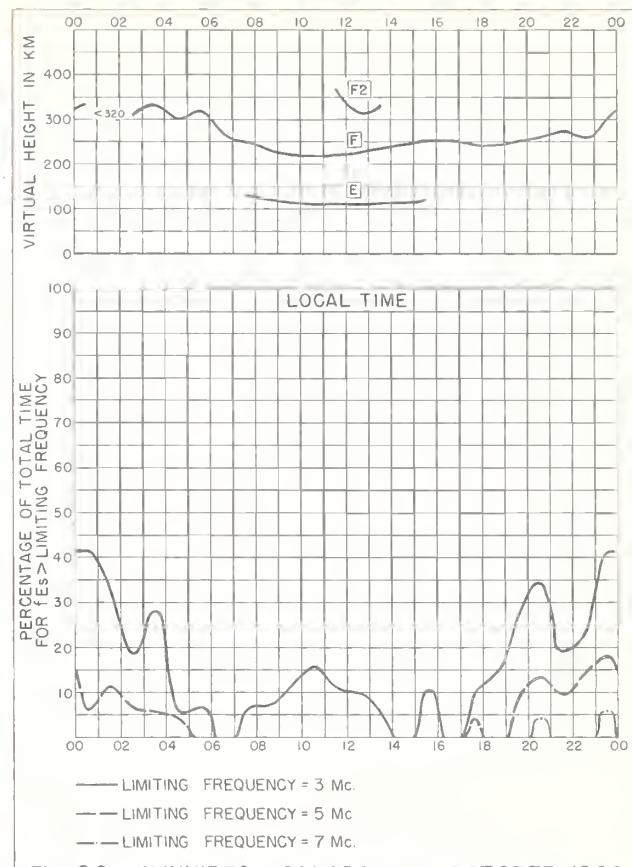


Fig. 26. WINNIPEG, CANADA OCTOBER 1960

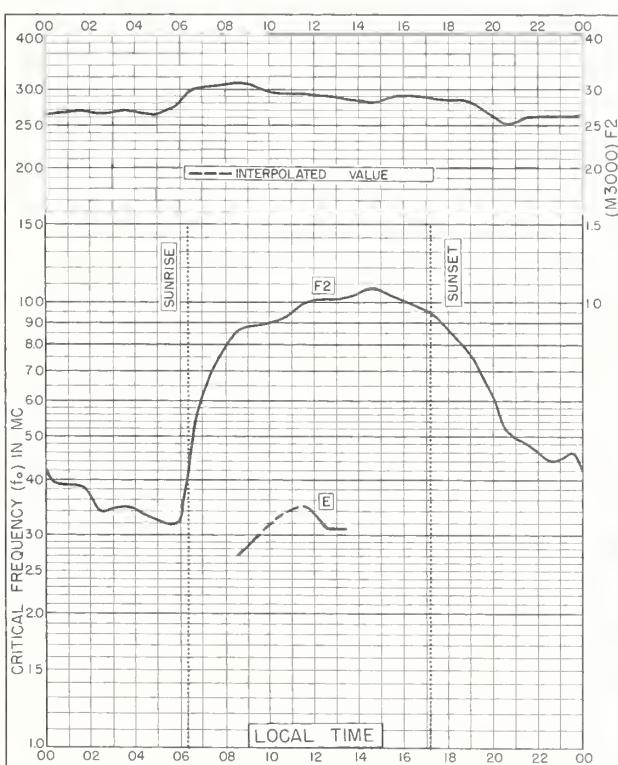
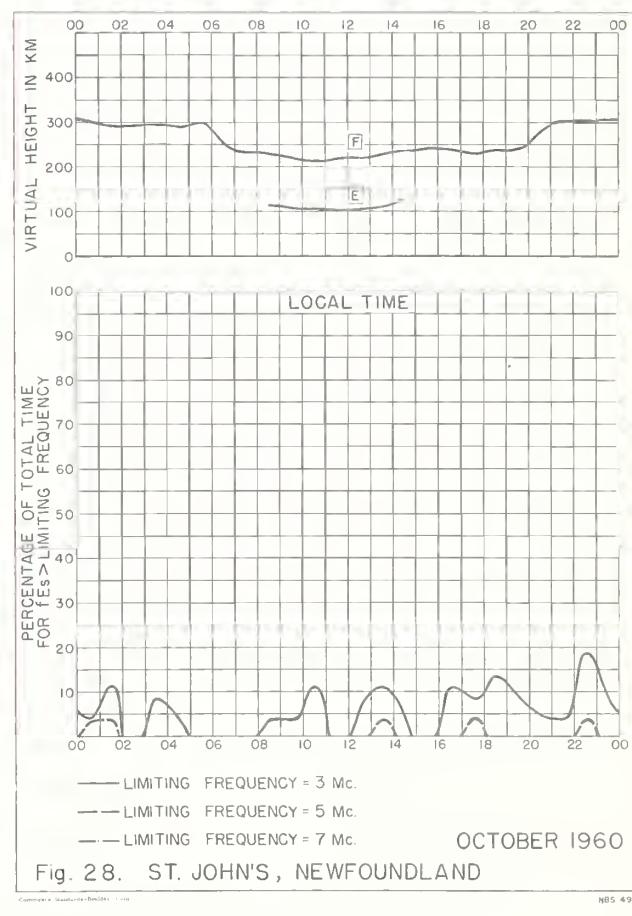


Fig. 27. ST. JOHN'S, NEWFOUNDLAND
47.6°N, 52.7°W OCTOBER 1960



OCTOBER 1960
Fig. 28. ST. JOHN'S, NEWFOUNDLAND

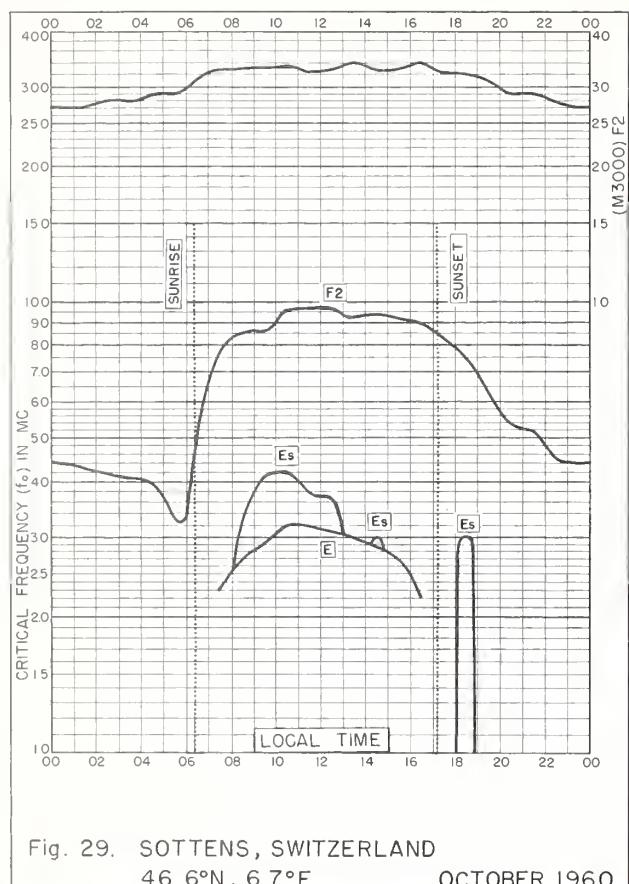


Fig. 29. SOTTENS, SWITZERLAND
46.6°N, 6.7°E OCTOBER 1960

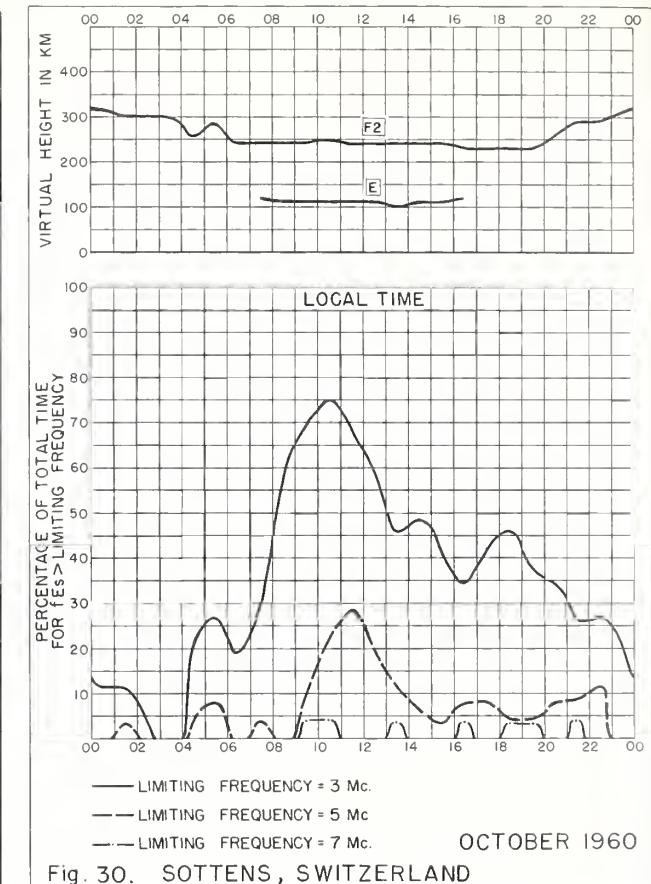


Fig. 30. SOTTENS, SWITZERLAND

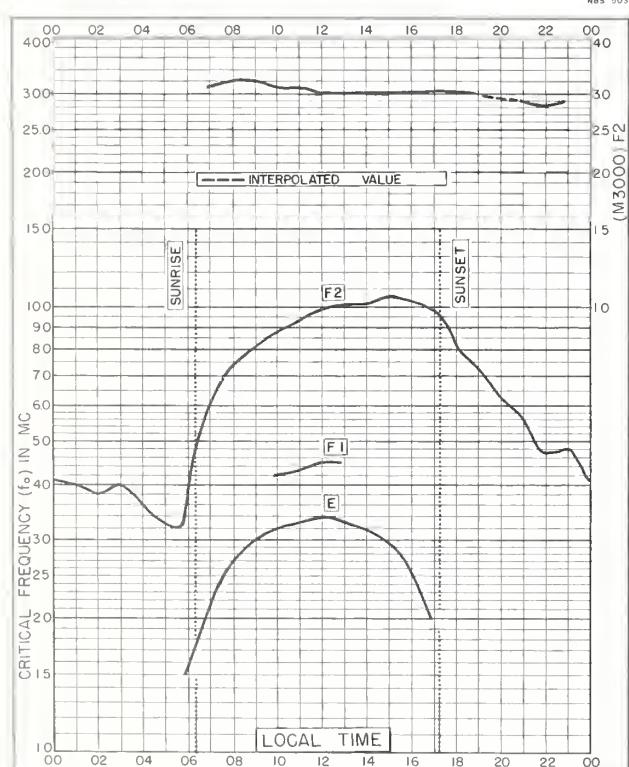


Fig. 31. OTTAWA, CANADA
45.4°N, 75.9°W OCTOBER 1960

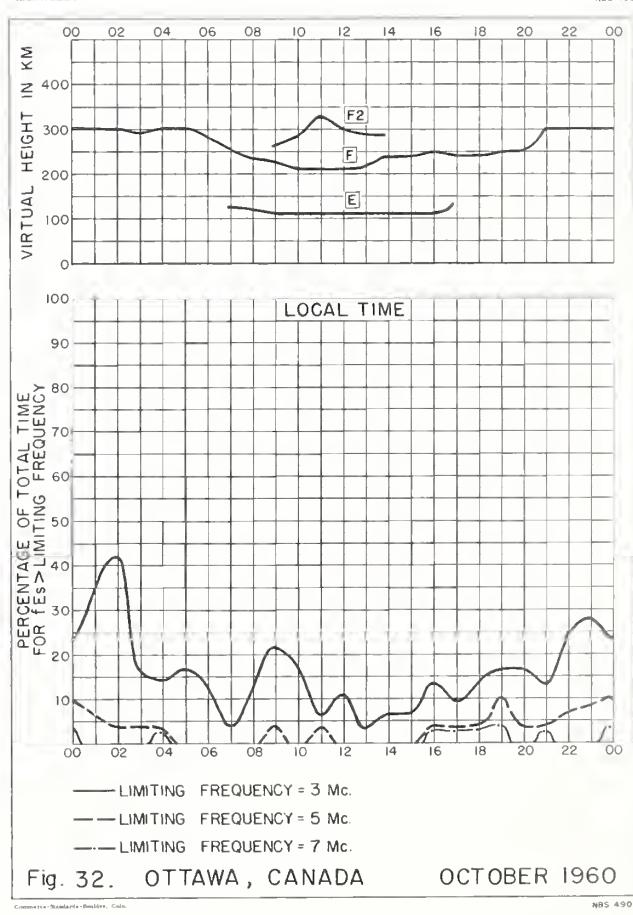
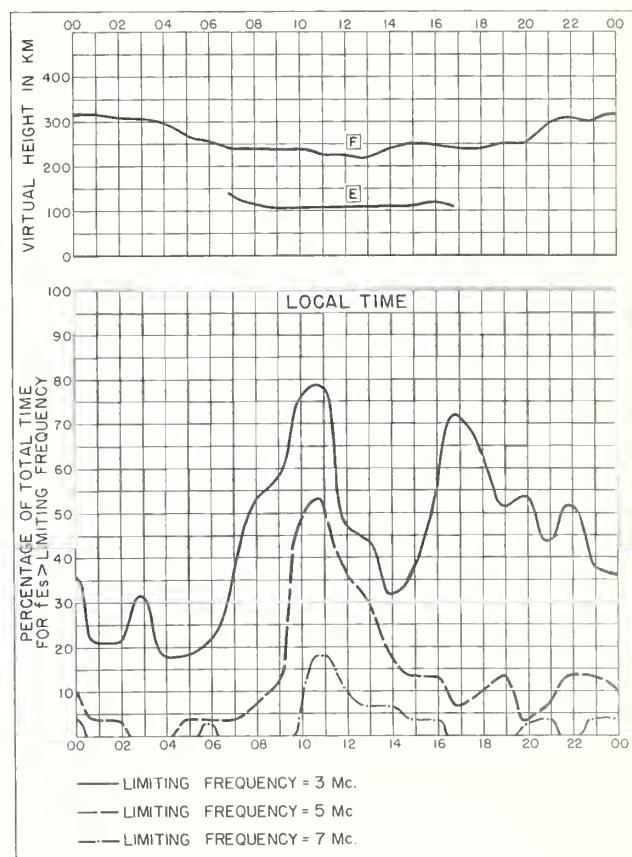
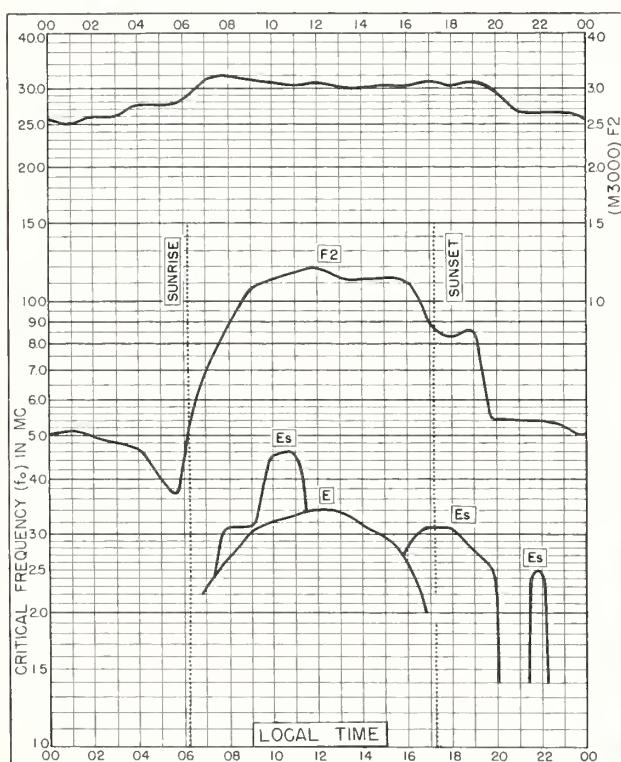
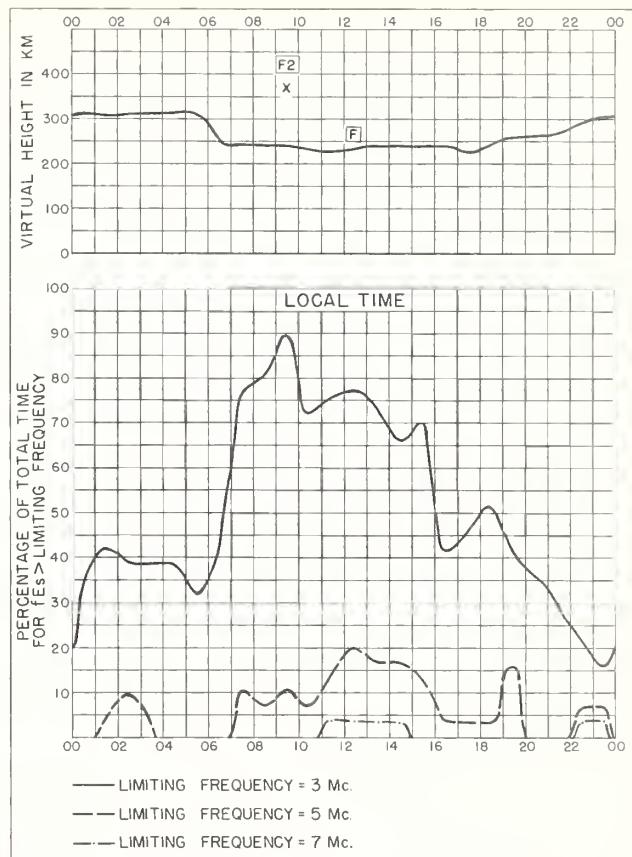
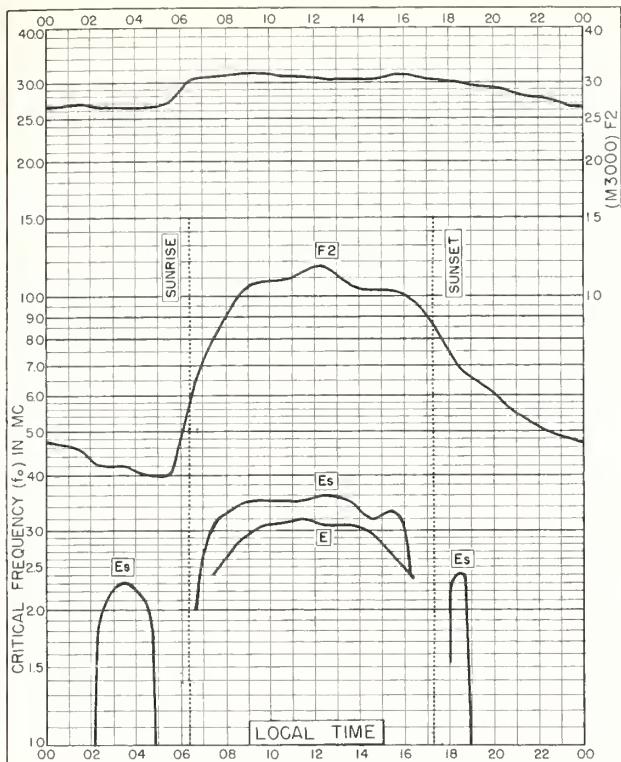


Fig. 32. OTTAWA, CANADA OCTOBER 1960



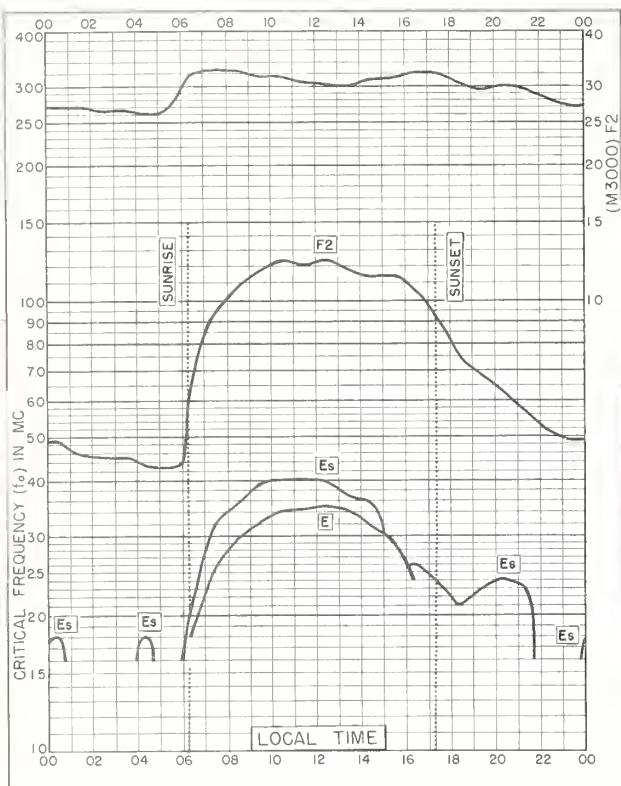


Fig. 37. AKITA, JAPAN
39.7°N, 140.1°E OCTOBER 1960

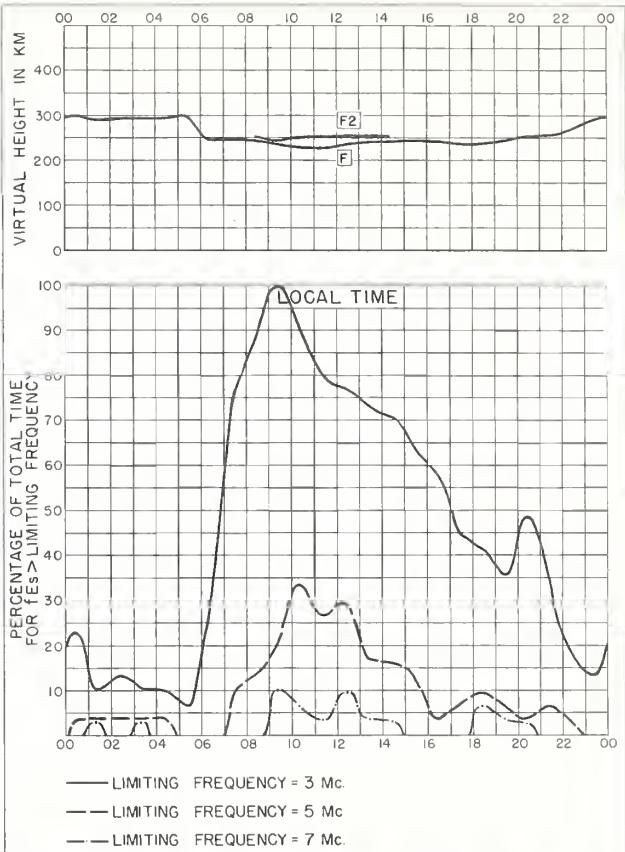


Fig. 38. AKITA, JAPAN OCTOBER 1960

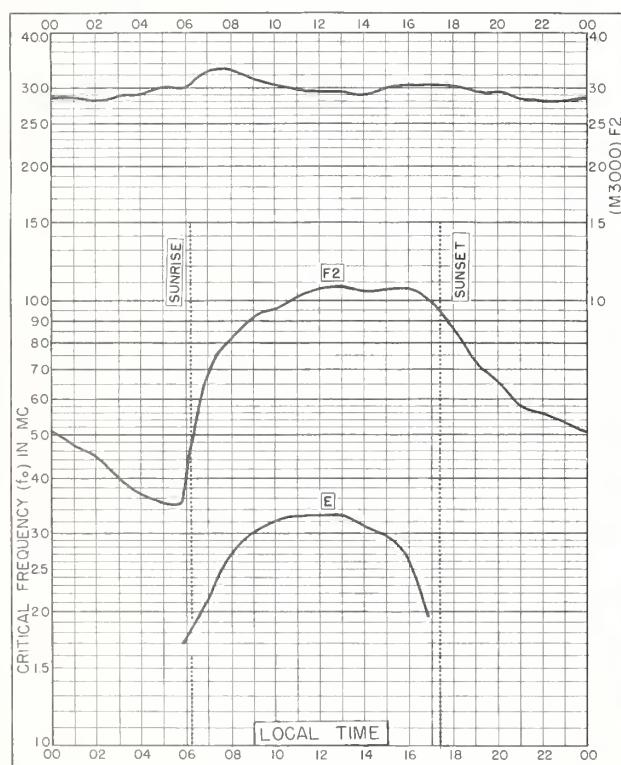


Fig. 39. WASHINGTON, D. C.
38.7°N, 77.1°W OCTOBER 1960

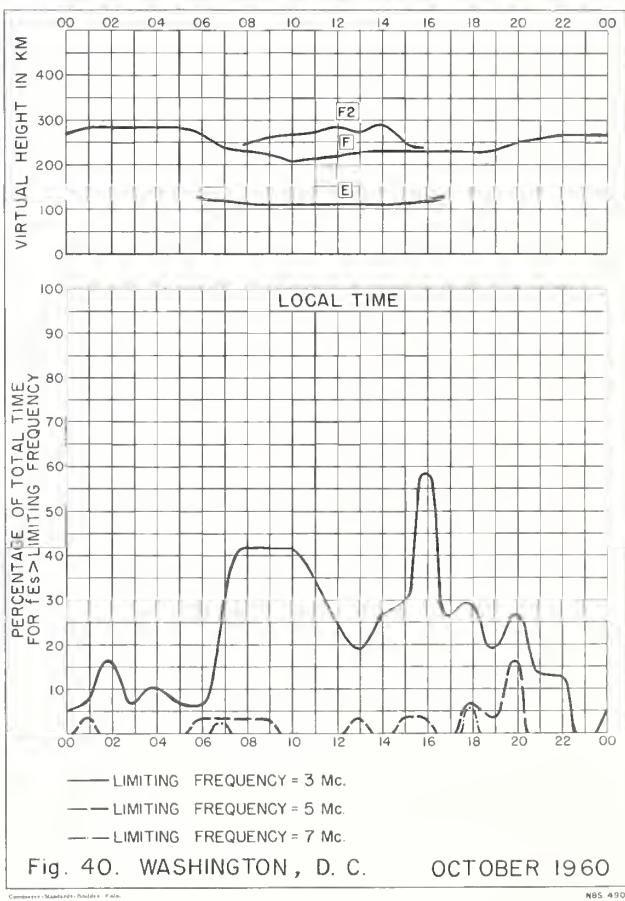


Fig. 40. WASHINGTON, D. C. OCTOBER 1960

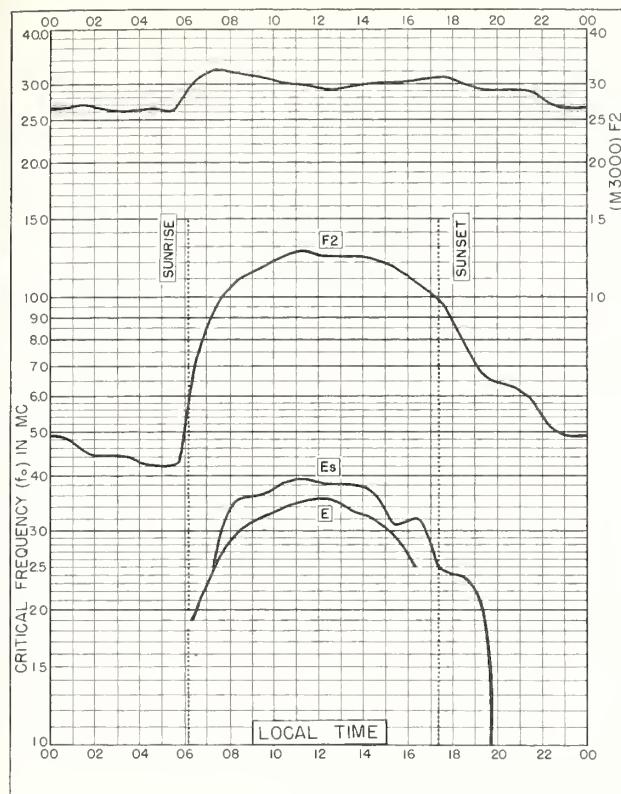


Fig. 41. TOKYO, JAPAN
35.7°N, 139.5°E OCTOBER 1960

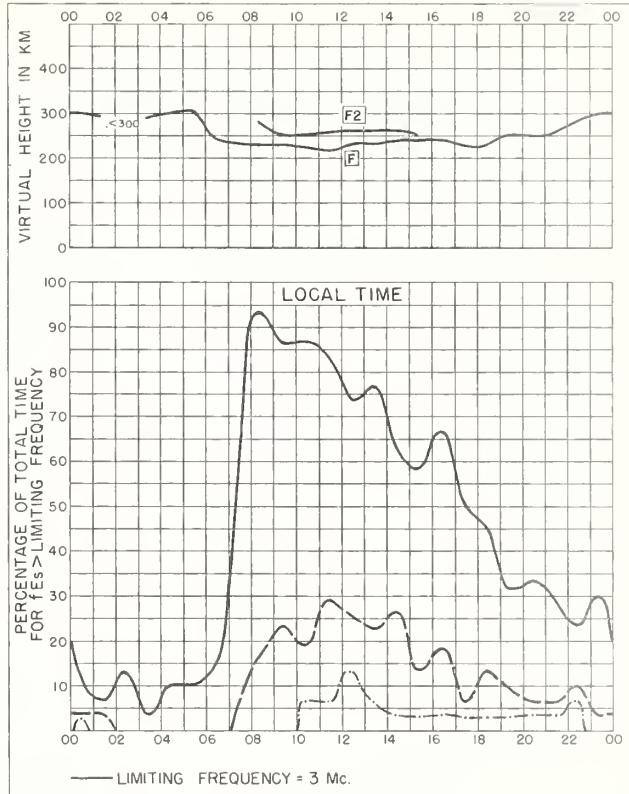


Fig. 42. TOKYO, JAPAN OCTOBER 1960

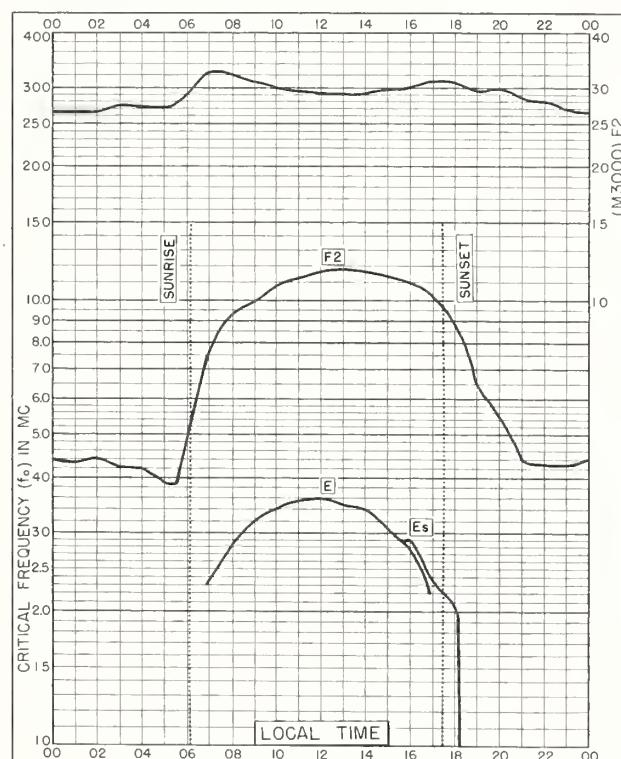


Fig. 43. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W OCTOBER 1960

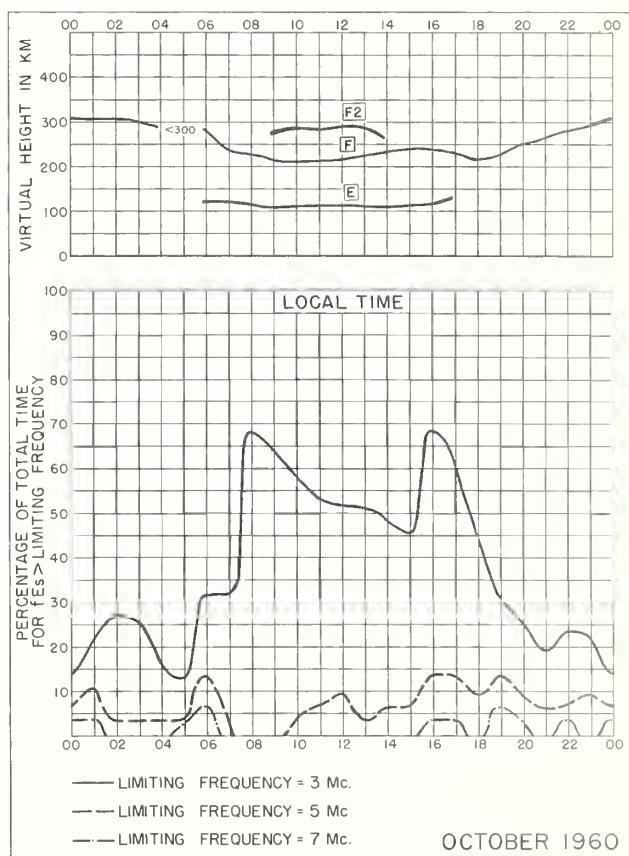
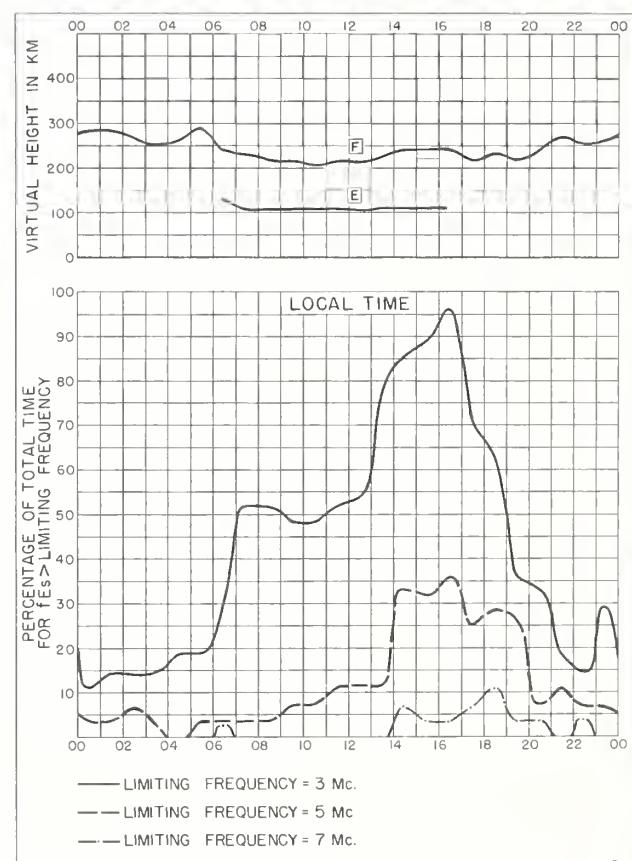
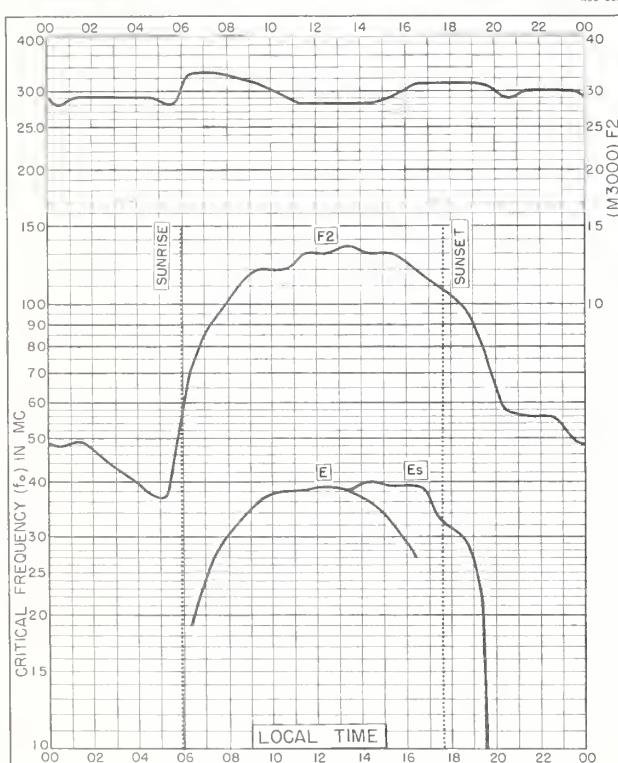
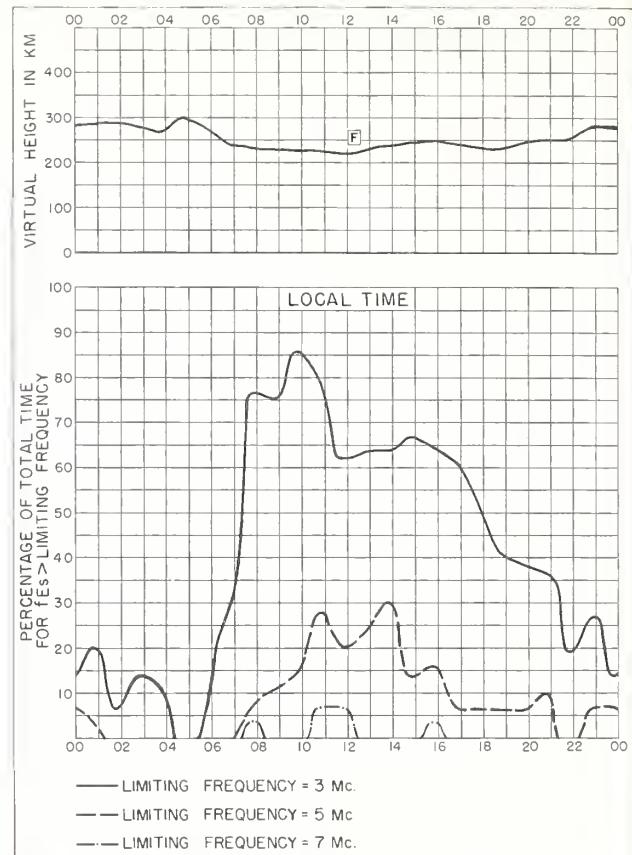
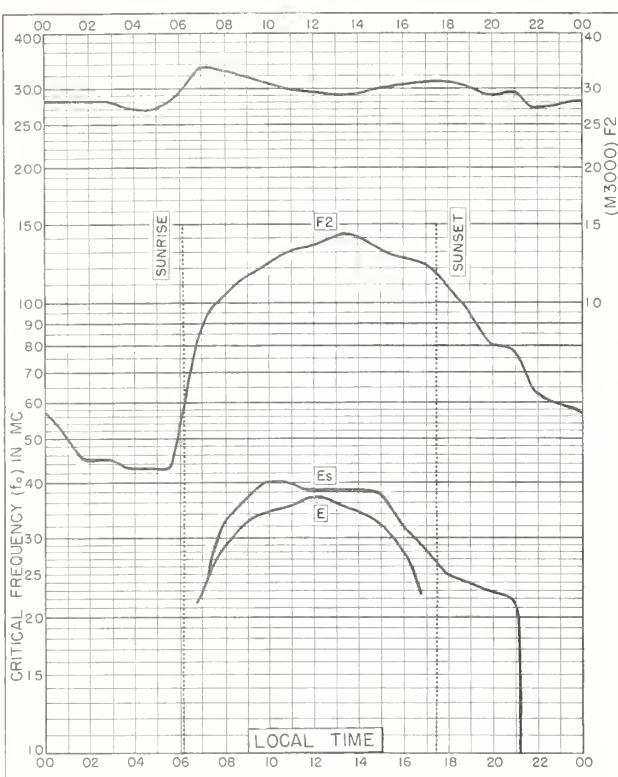


Fig. 44. WHITE SANDS, NEW MEXICO OCTOBER 1960



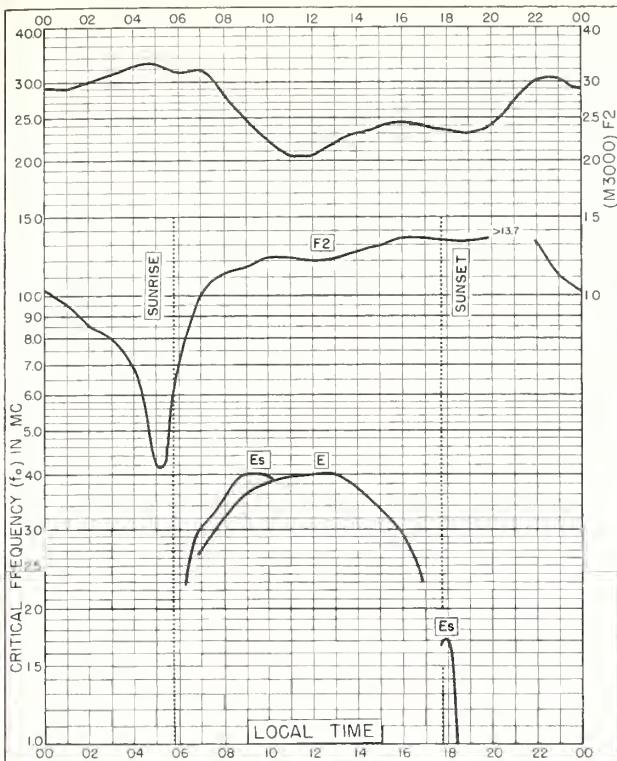
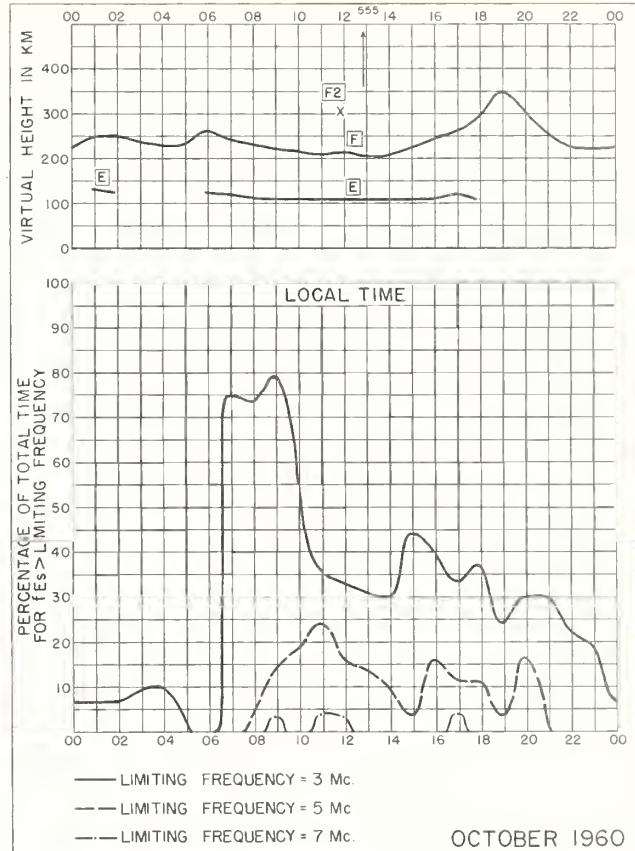


Fig. 49. SINGAPORE, BRITISH MALAYA
1.3°N, 103.8°E OCTOBER 1960



OCTOBER 1960

Fig. 50. SINGAPORE, BRITISH MALAYA

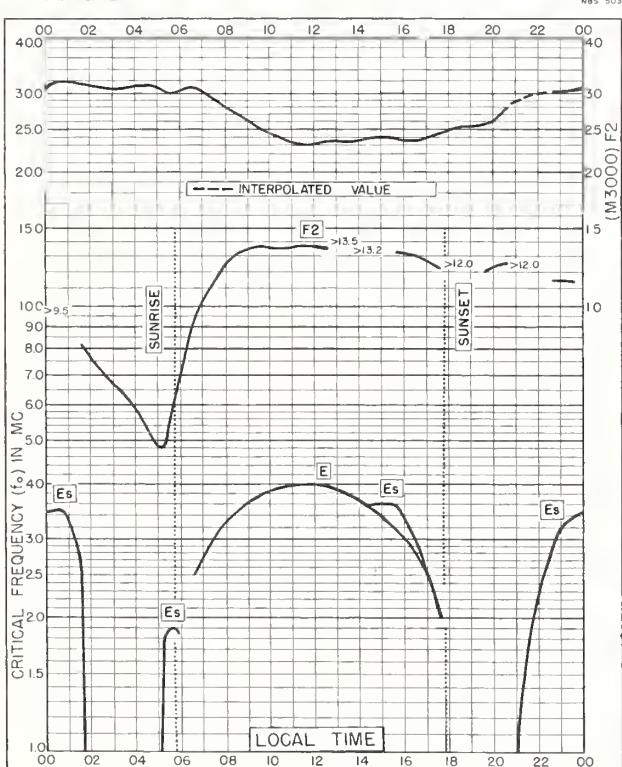
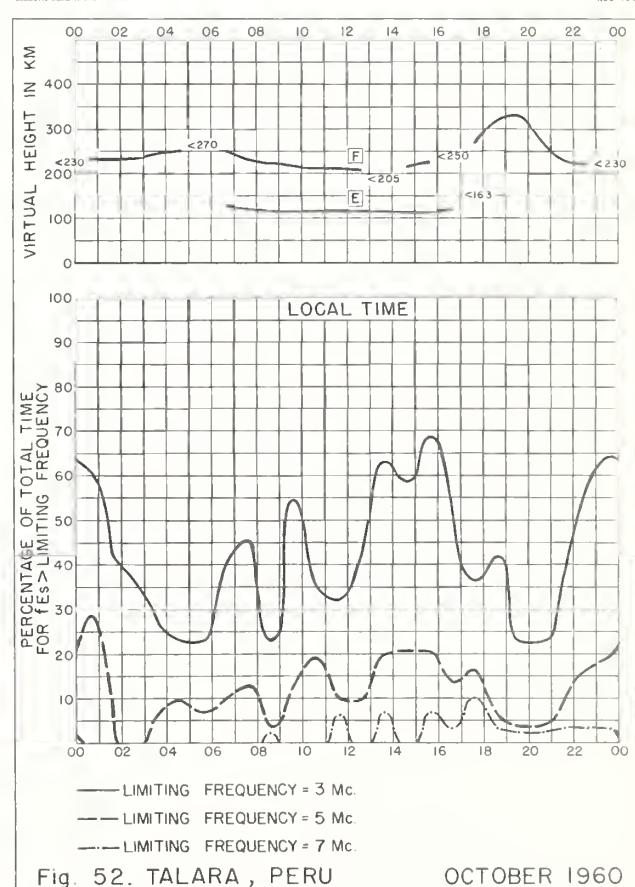


Fig. 51. TALARA, PERU
4.6°S, 81.3°W OCTOBER 1960



OCTOBER 1960

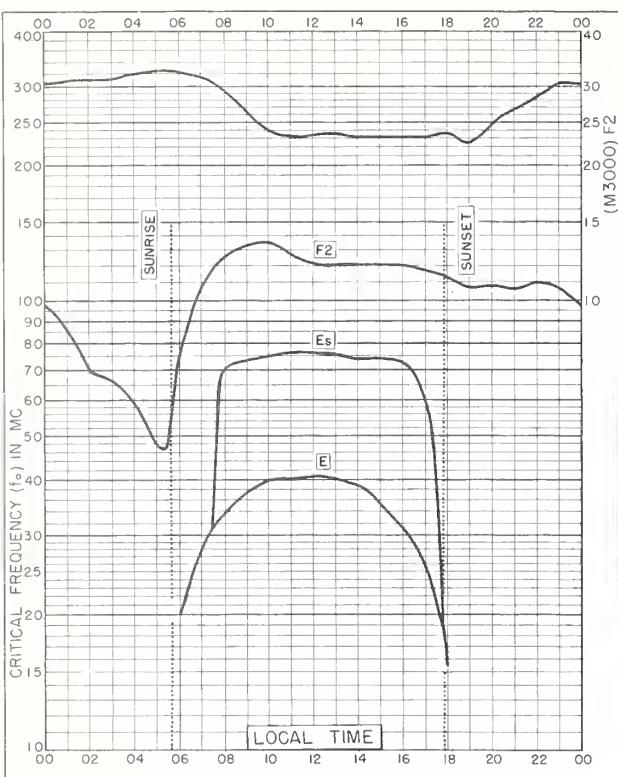


Fig. 53. HUANCAYO, PERU
 12.0°S, 75.3°W OCTOBER 1960

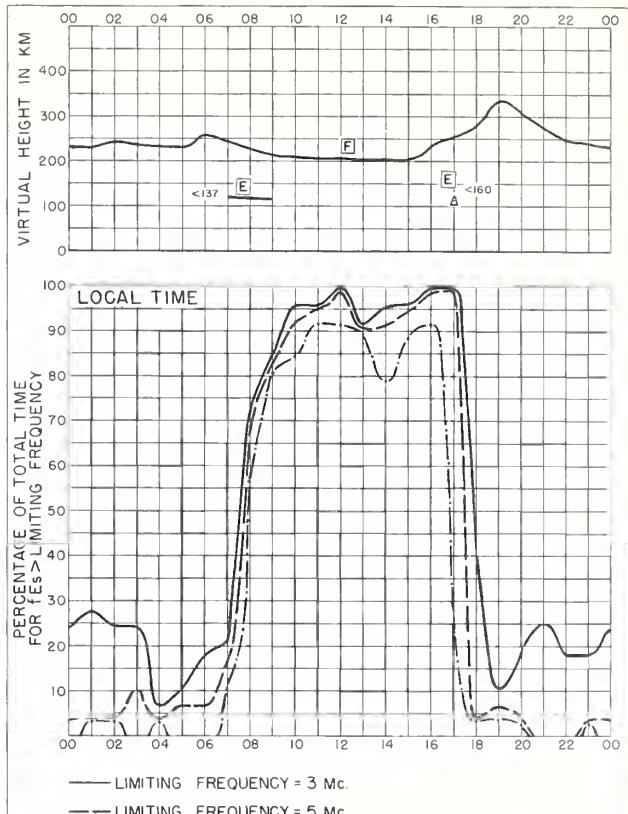


Fig. 54. HUANCAYO, PERU OCTOBER 1960

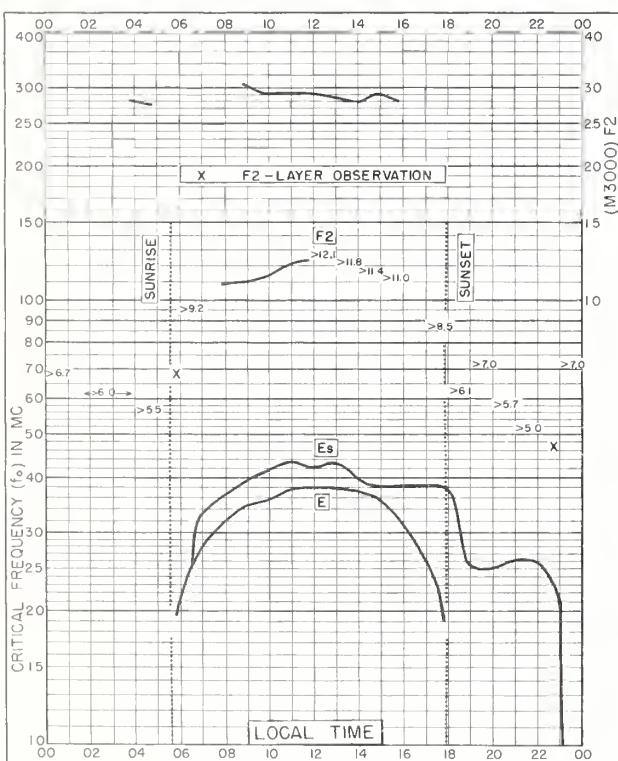


Fig. 55. TOWNSVILLE, AUSTRALIA
 19.3°S, 146.7°E OCTOBER 1960

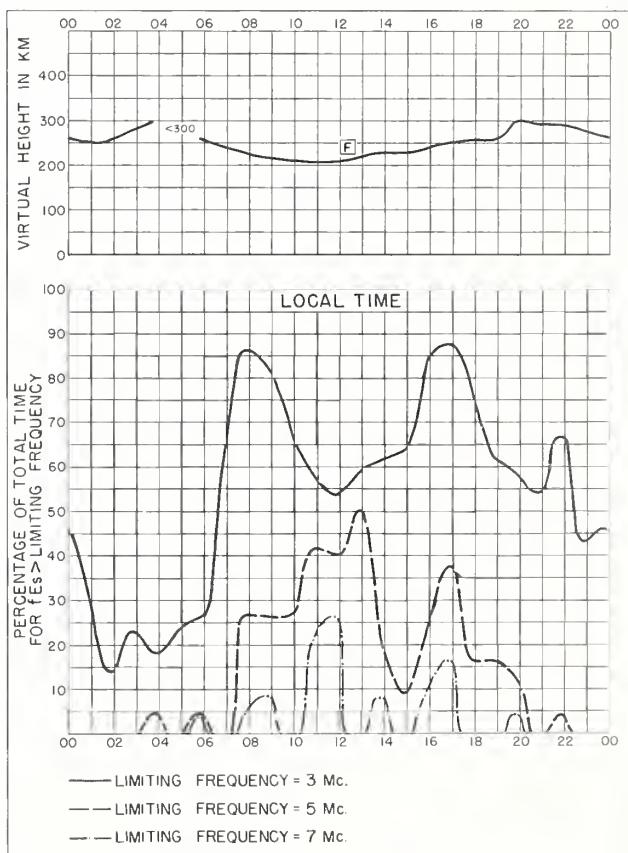


Fig. 56. TOWNSVILLE, AUSTRALIA OCTOBER 1960

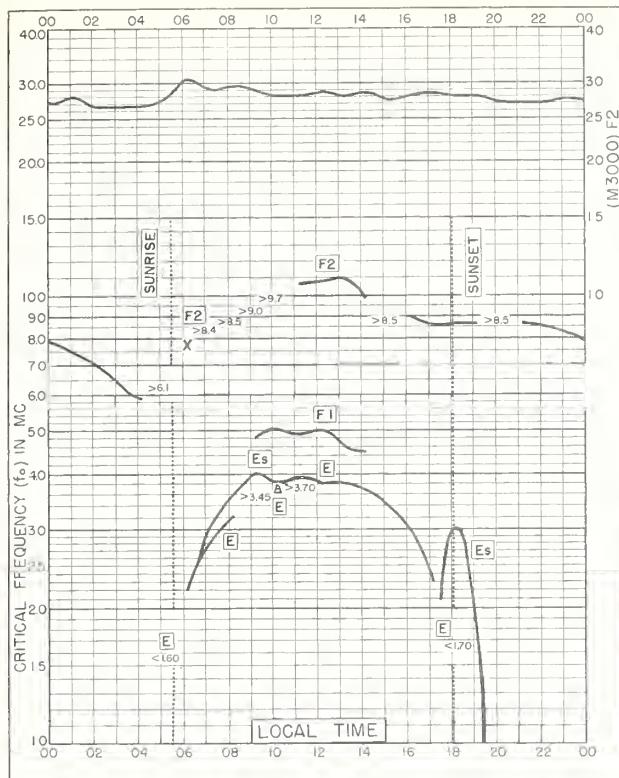


Fig. 57. BRISBANE, AUSTRALIA
27.5°S, 152.9°E OCTOBER 1960

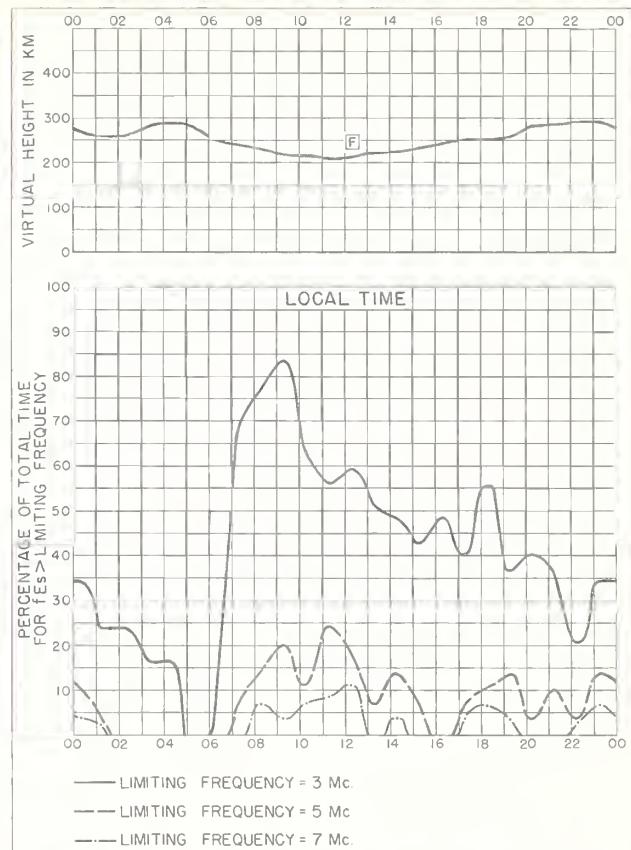


Fig. 58. BRISBANE, AUSTRALIA OCTOBER 1960

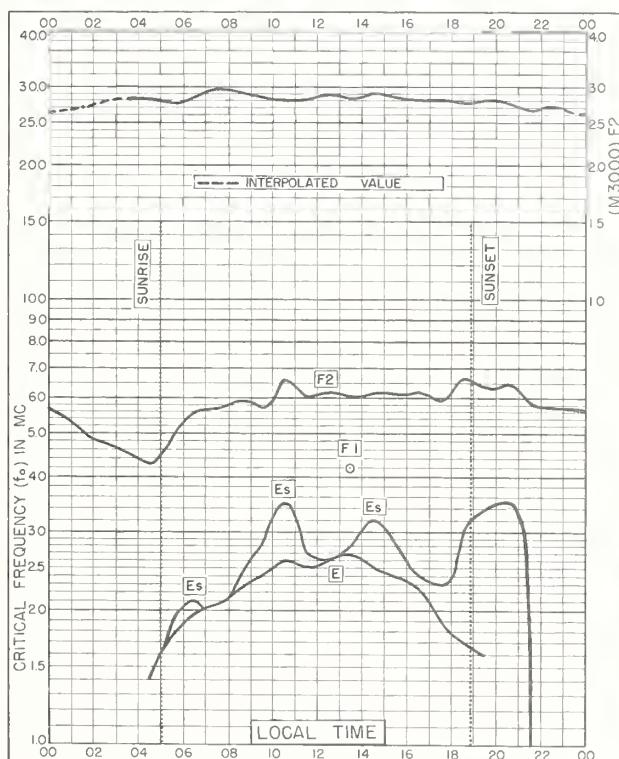


Fig. 59. THULE, GREENLAND
76.0°N, 68.0°W SEPTEMBER 1960

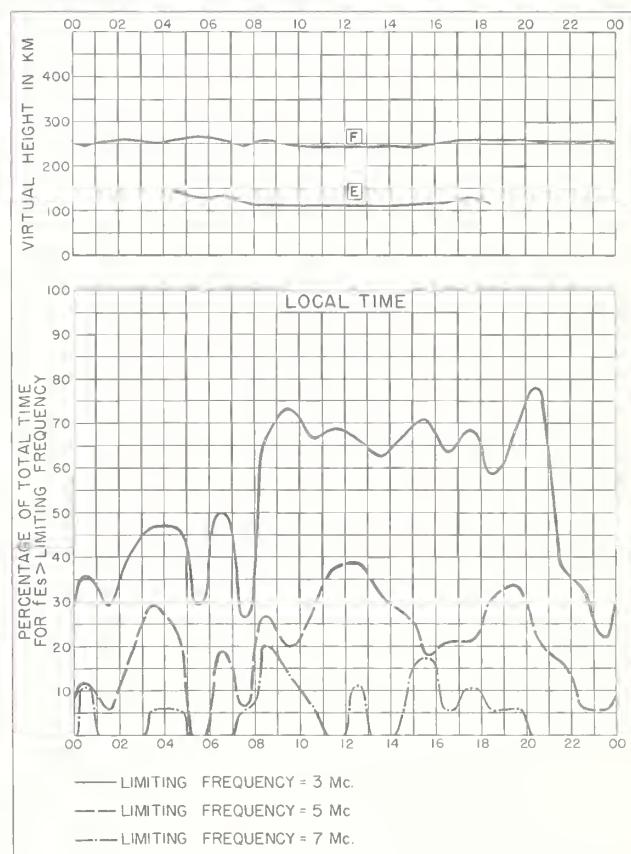


Fig. 60. THULE, GREENLAND SEPTEMBER 1960

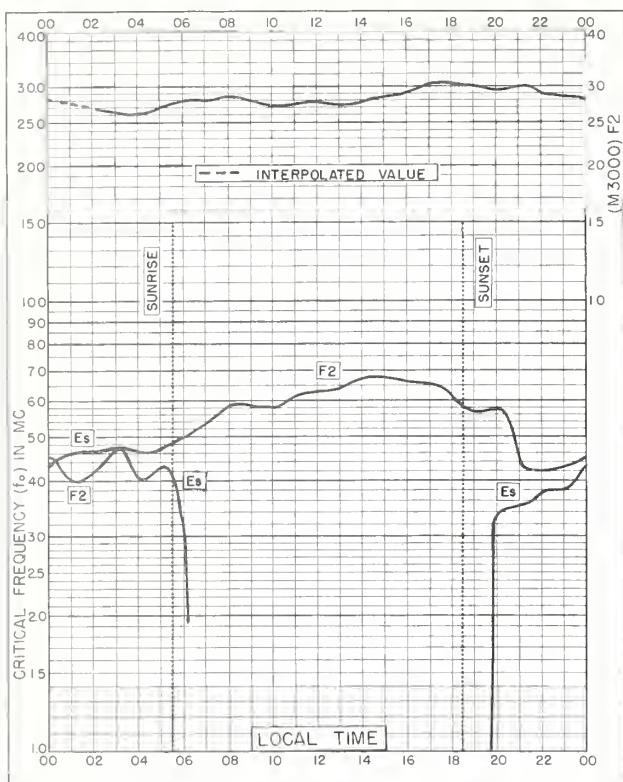


Fig. 61. FAIRBANKS, ALASKA
64.9°N, 147.8°W SEPTEMBER 1960

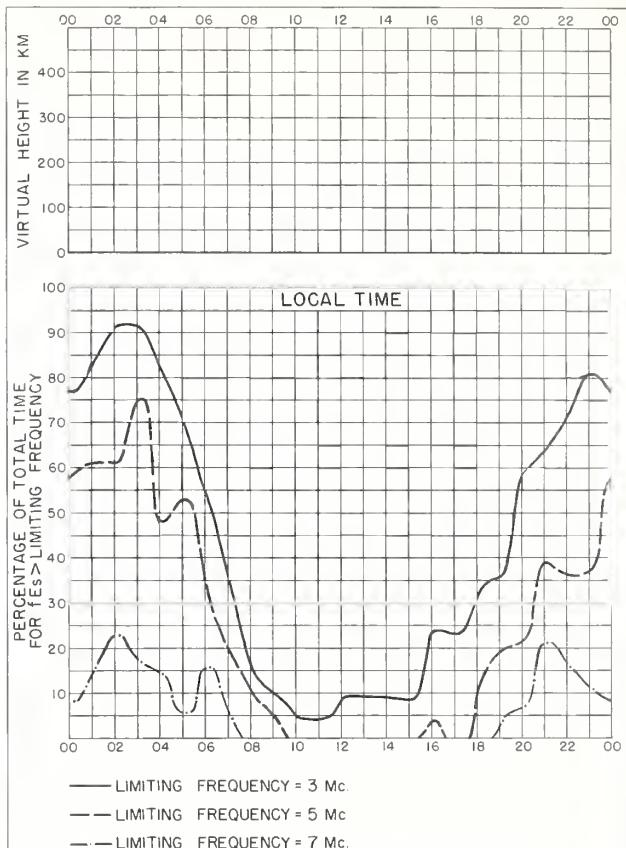


Fig. 62. FAIRBANKS, ALASKA SEPTEMBER 1960

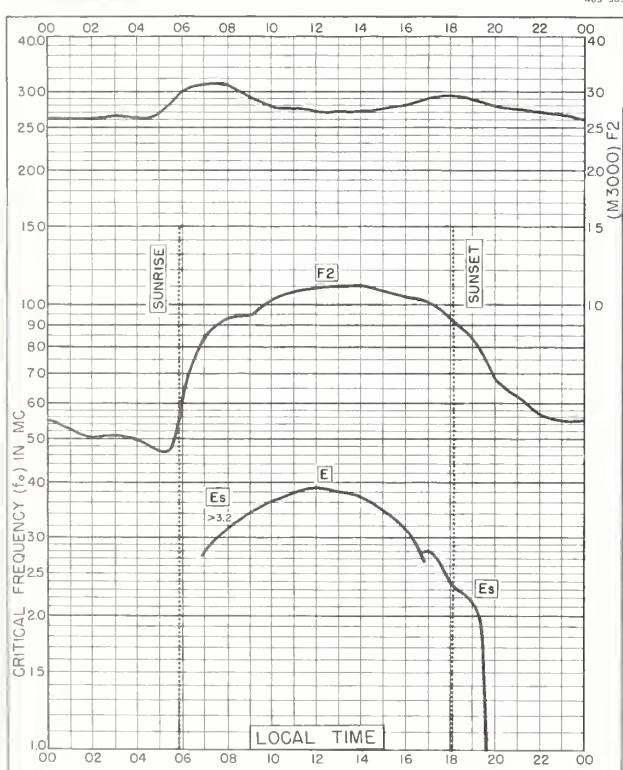


Fig. 63. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W SEPTEMBER 1960

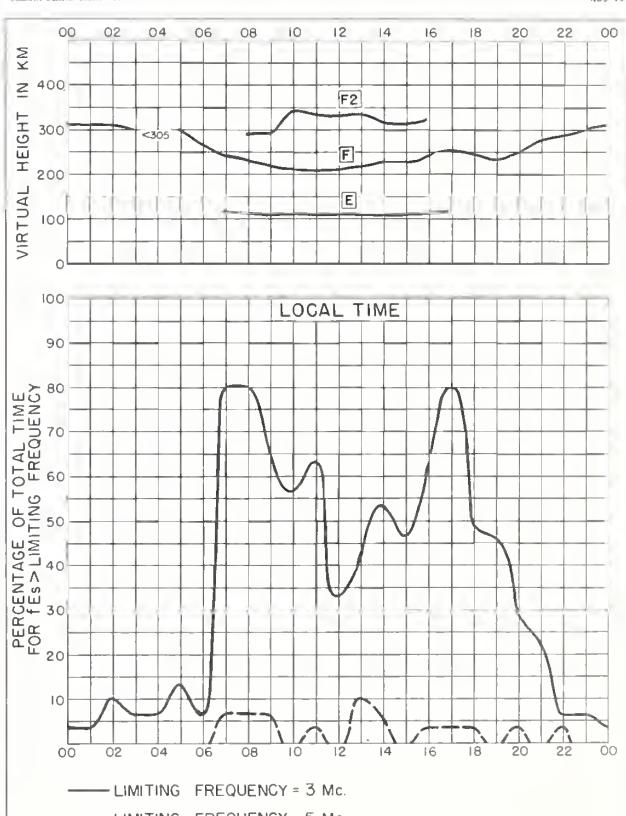


Fig. 64. WHITE SANDS, NEW MEXICO SEPTEMBER 1960

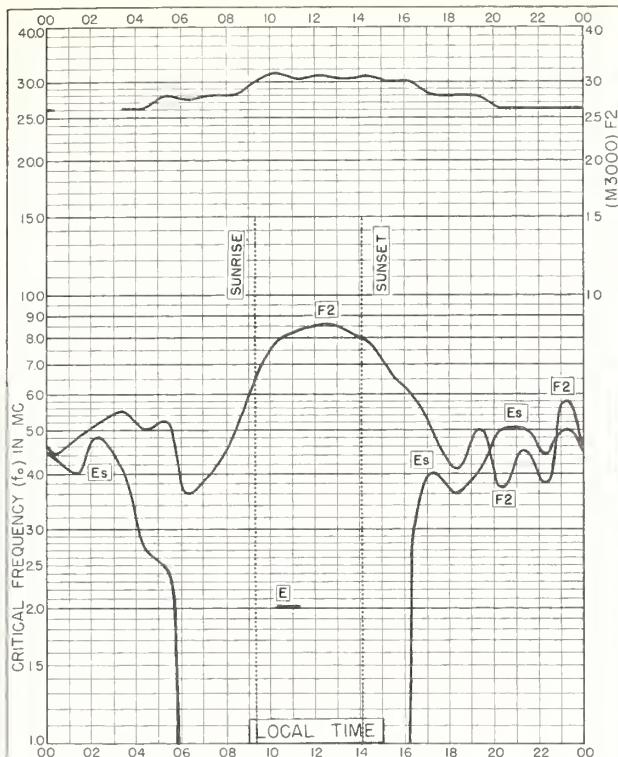


Fig. 65. KIRUNA, SWEDEN
67.8°N, 20.3°E NOVEMBER 1959

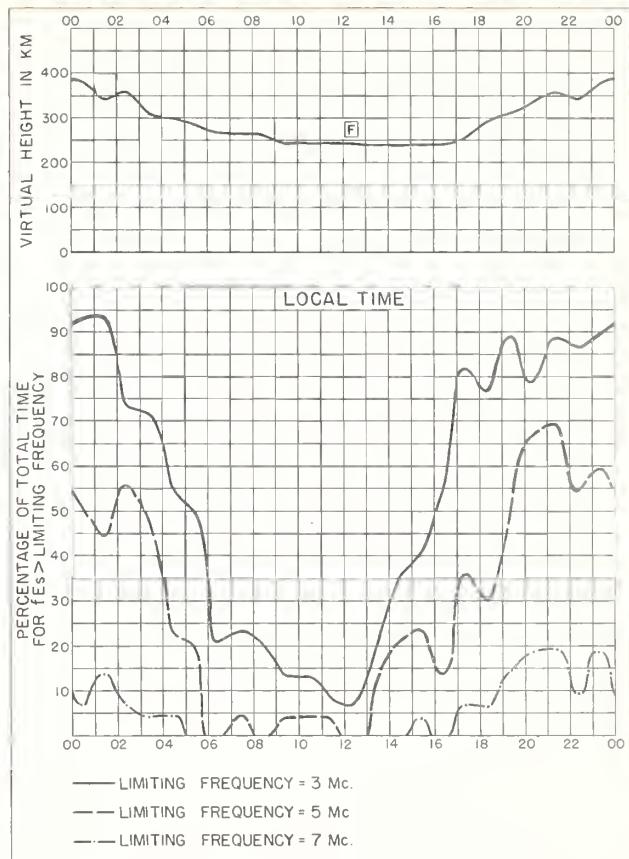


Fig. 66. KIRUNA, SWEDEN NOVEMBER 1959

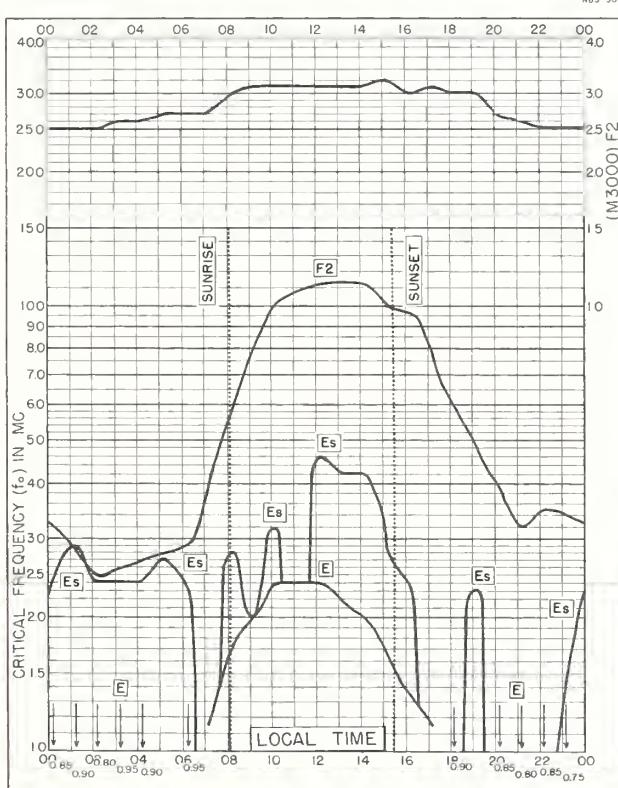


Fig. 67. UPSALA, SWEDEN
59.8°N, 17.6°E NOVEMBER 1959

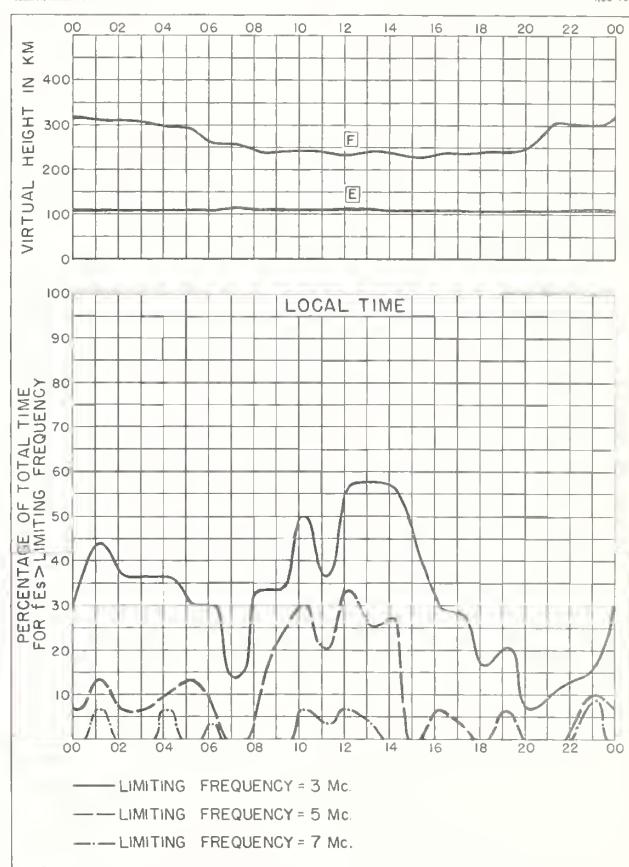
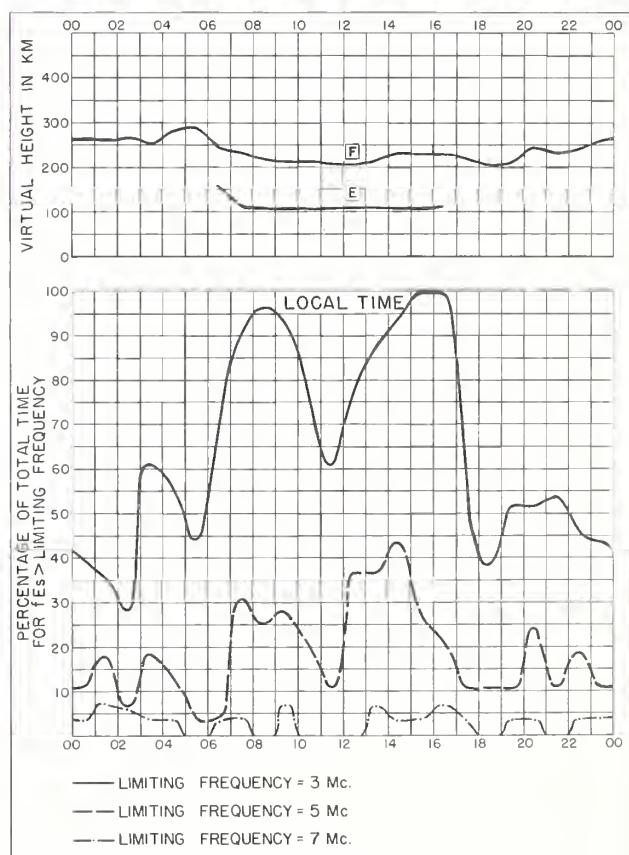
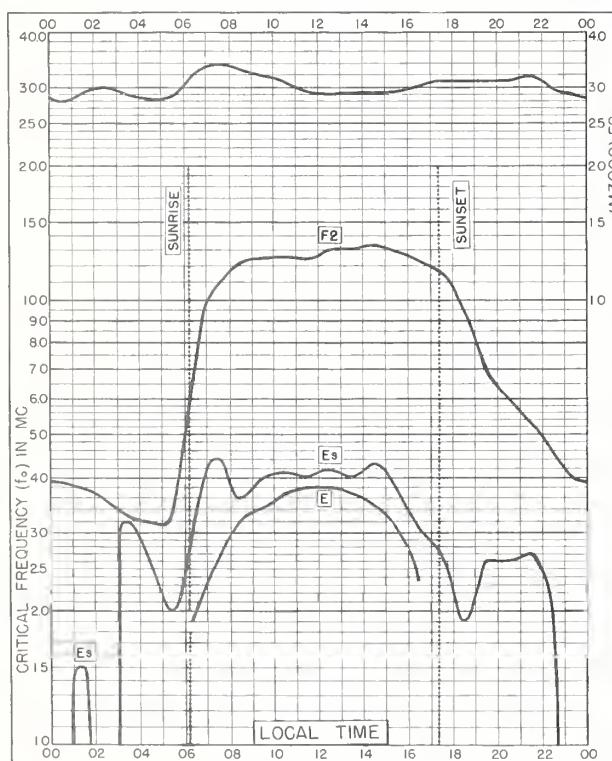
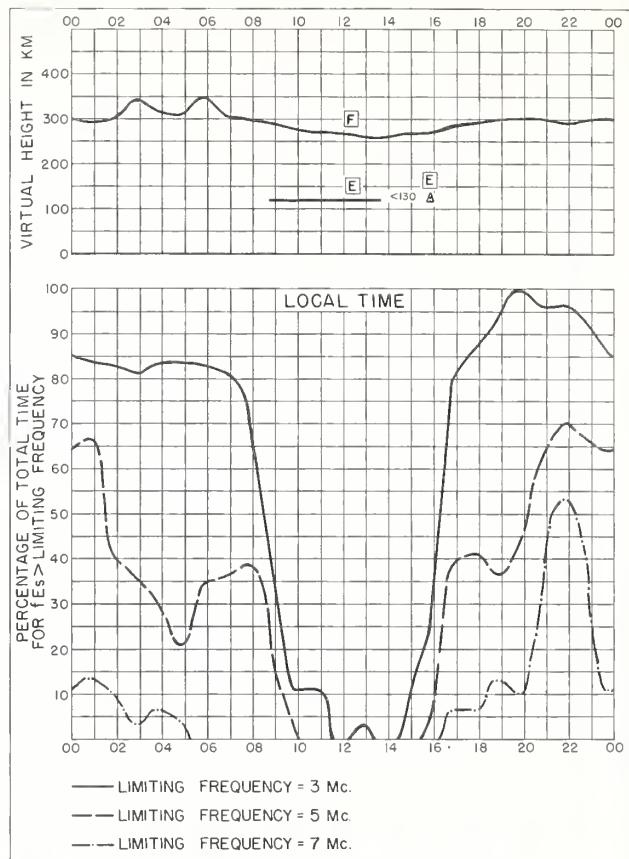
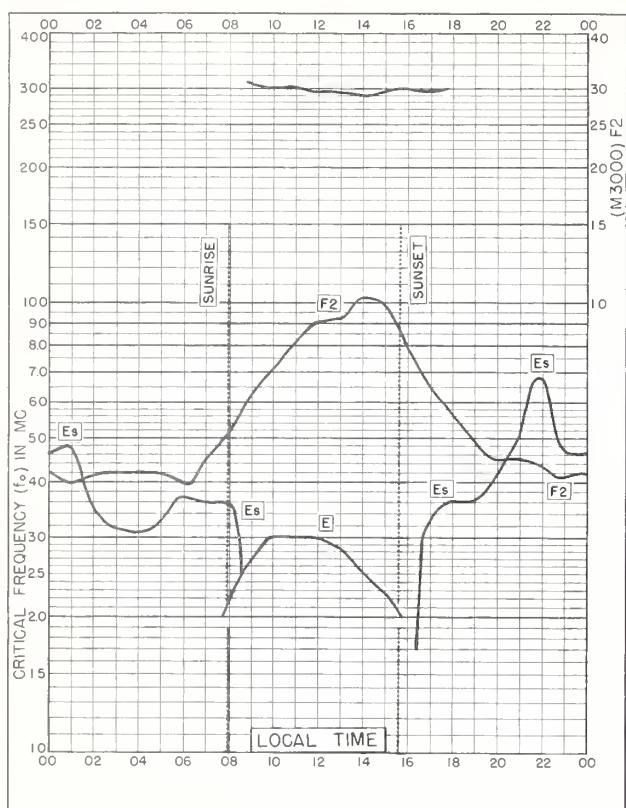


Fig. 68. UPSALA, SWEDEN NOVEMBER 1959



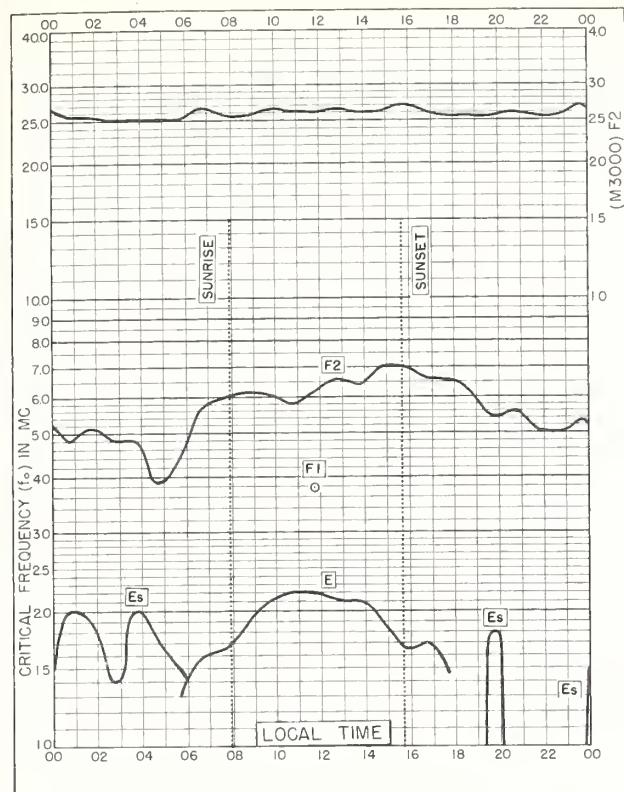


Fig. 73. RESOLUTE BAY, CANADA
 74.7°N, 94.9°W OCTOBER 1959

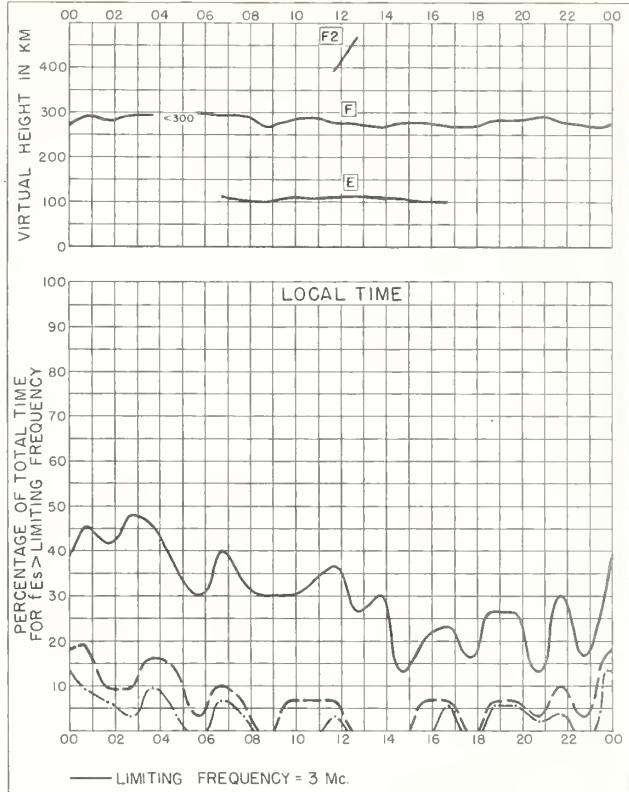


Fig. 74. RESOLUTE BAY, CANADA

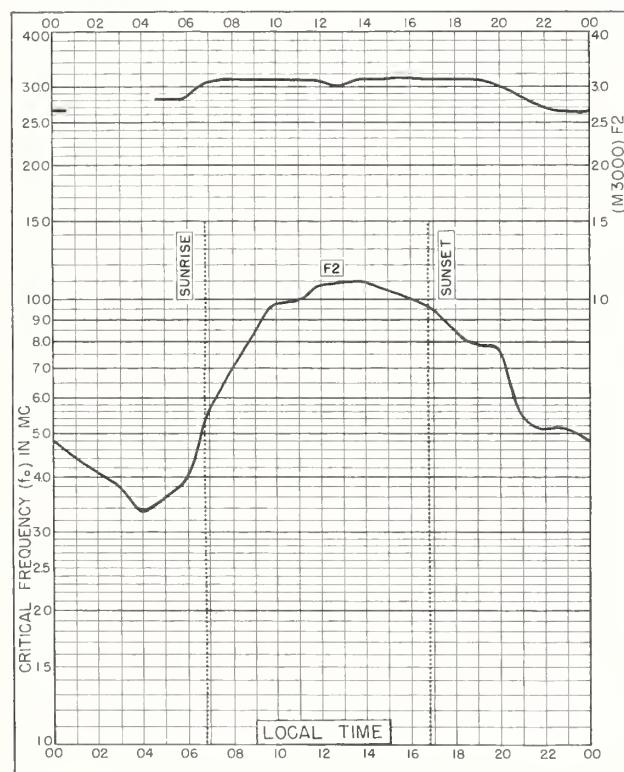


Fig. 75. NURMIJARVI, FINLAND
 60.5°N, 24.6°E OCTOBER 1959

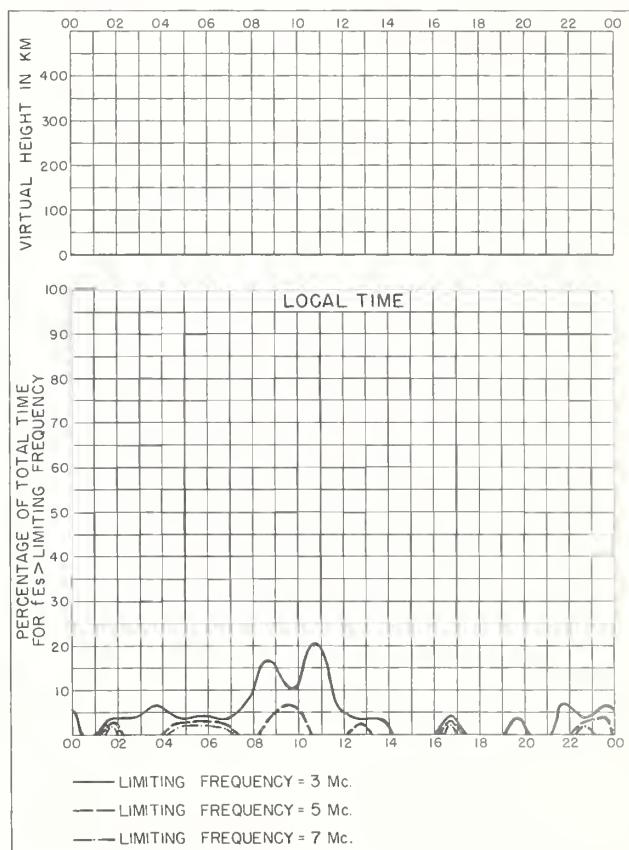
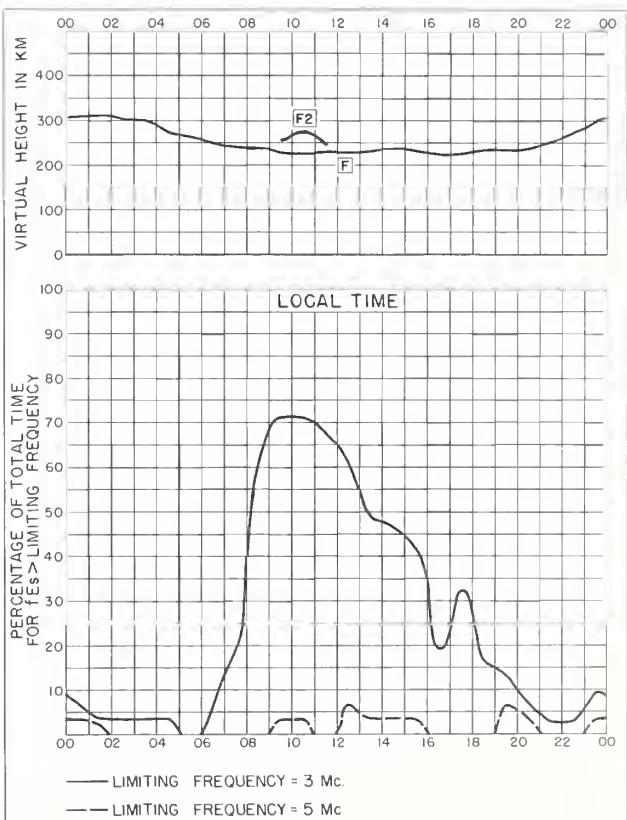
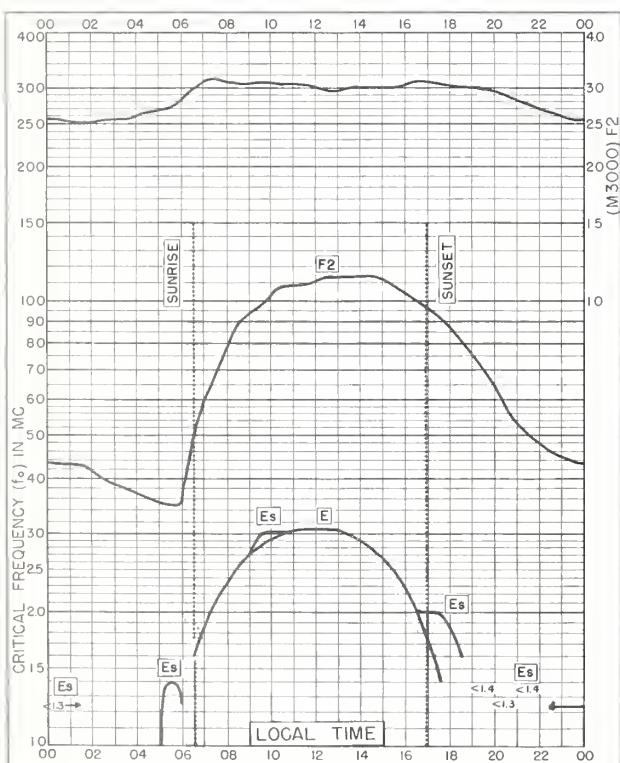
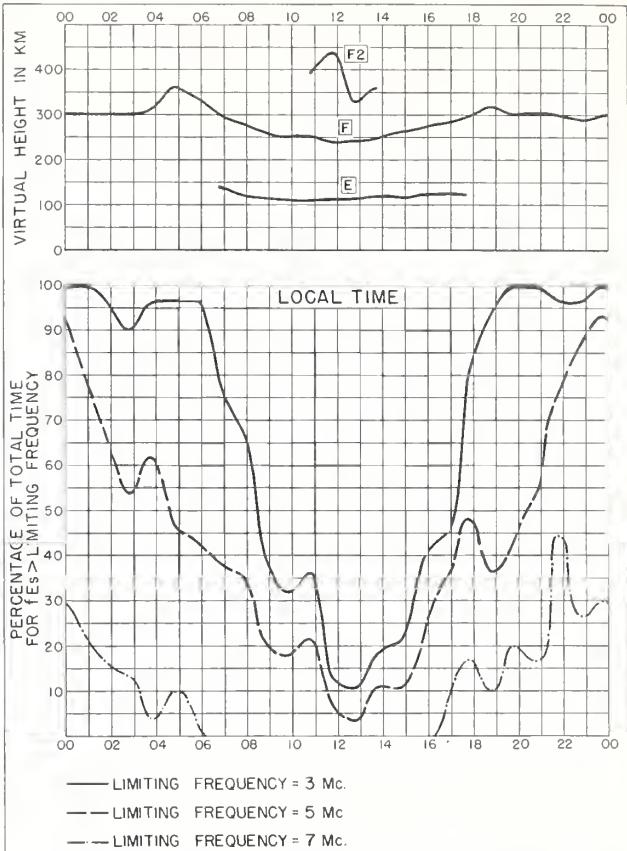
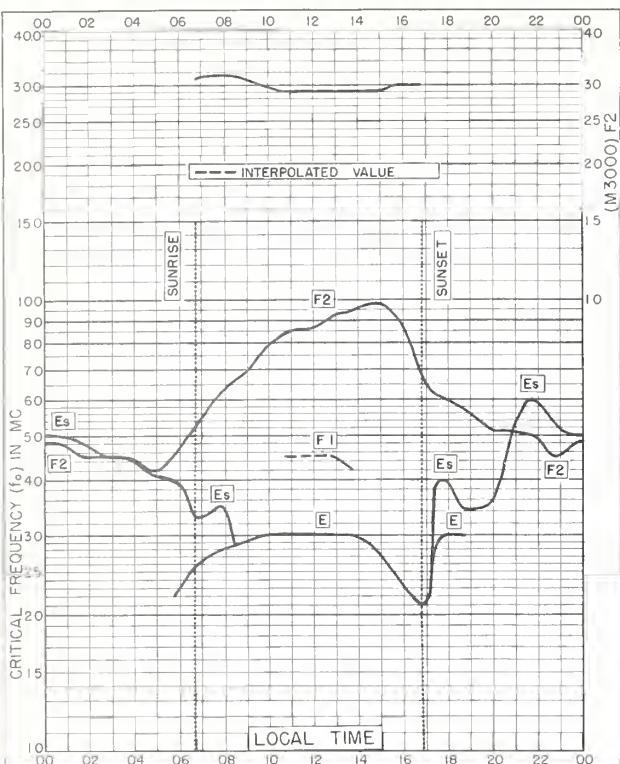


Fig. 76. NURMIJARVI, FINLAND OCTOBER 1959



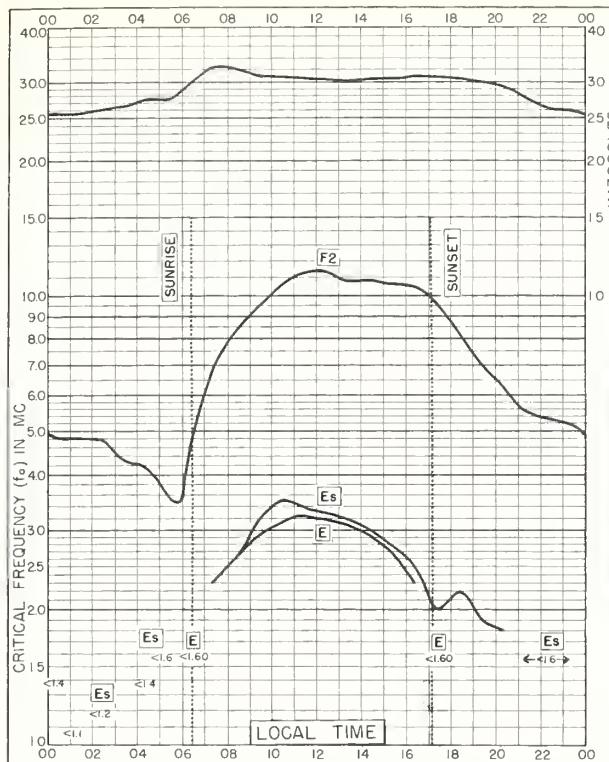


Fig. 81. DOURBES, BELGIUM
50.1°N, 4.6°E OCTOBER 1959

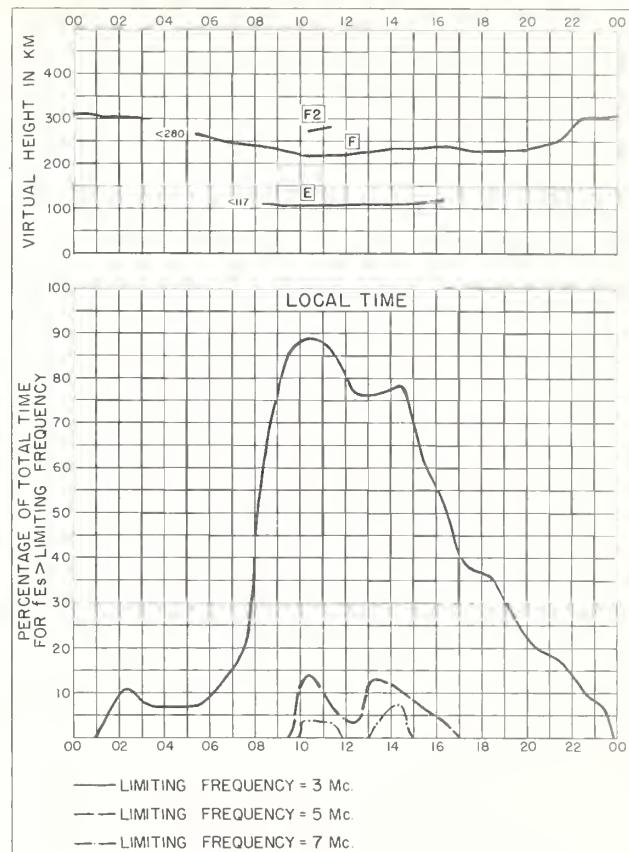


Fig. 82. DOURBES, BELGIUM OCTOBER 1959

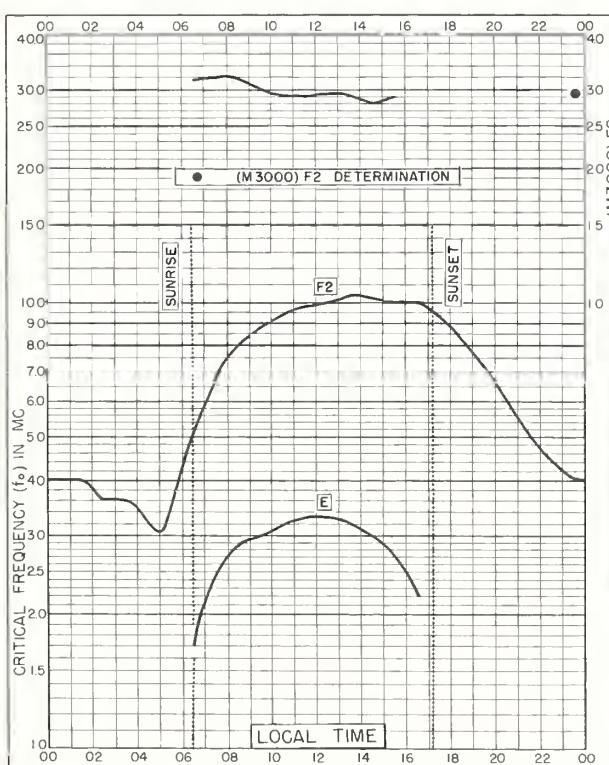


Fig. 83. WINNIPEG, CANADA
49.9°N, 97.4°W OCTOBER 1959

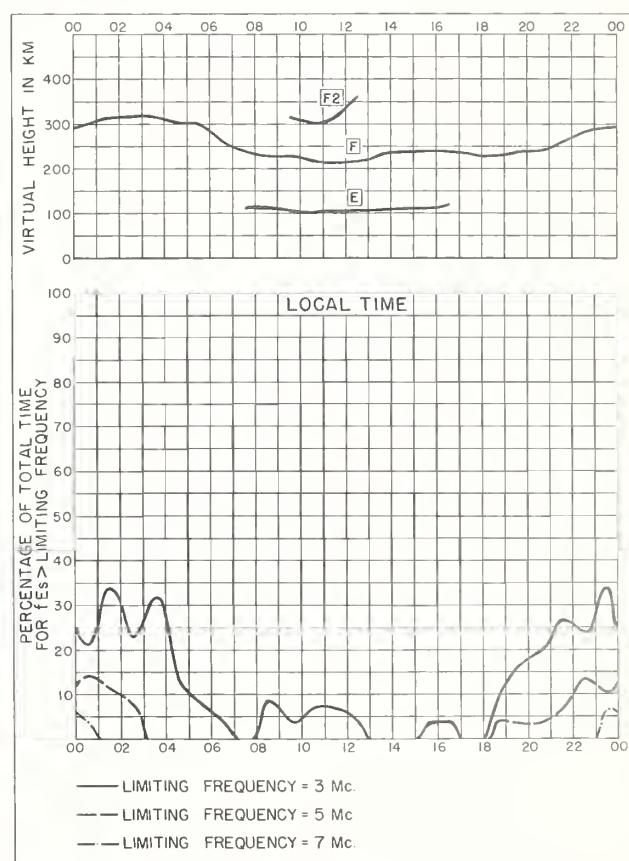


Fig. 84. WINNIPEG, CANADA OCTOBER 1959

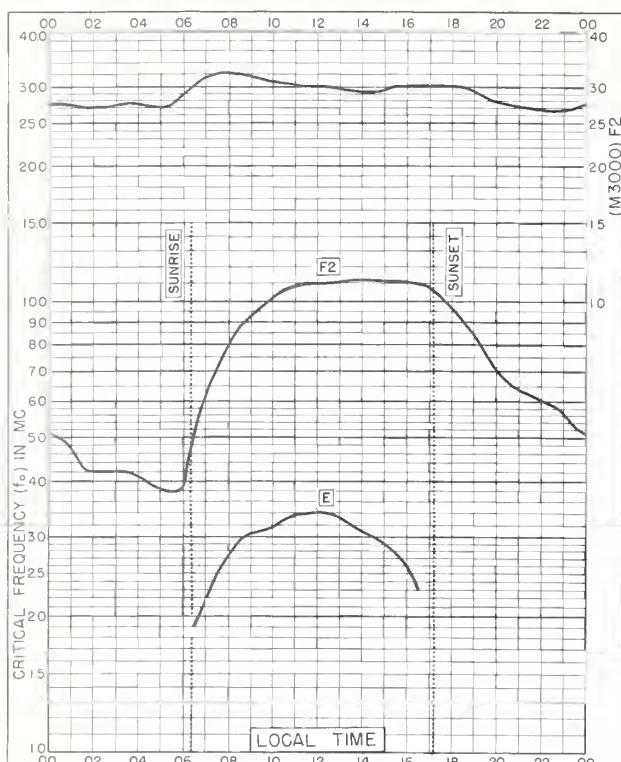
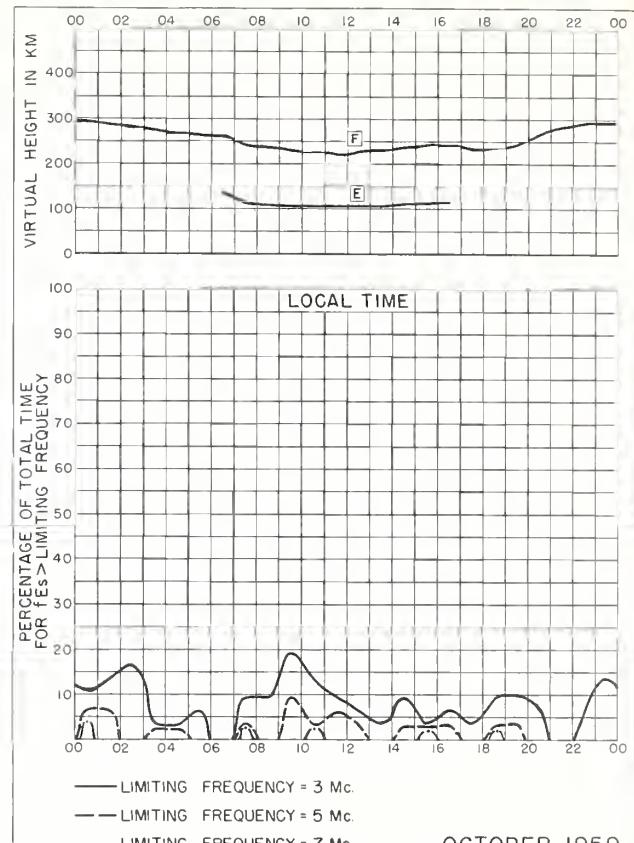


Fig. 85. ST. JOHN'S, NEWFOUNDLAND
47.6°N, 52.7°W OCTOBER 1959



OCTOBER 1959
Fig. 86. ST. JOHN'S, NEWFOUNDLAND

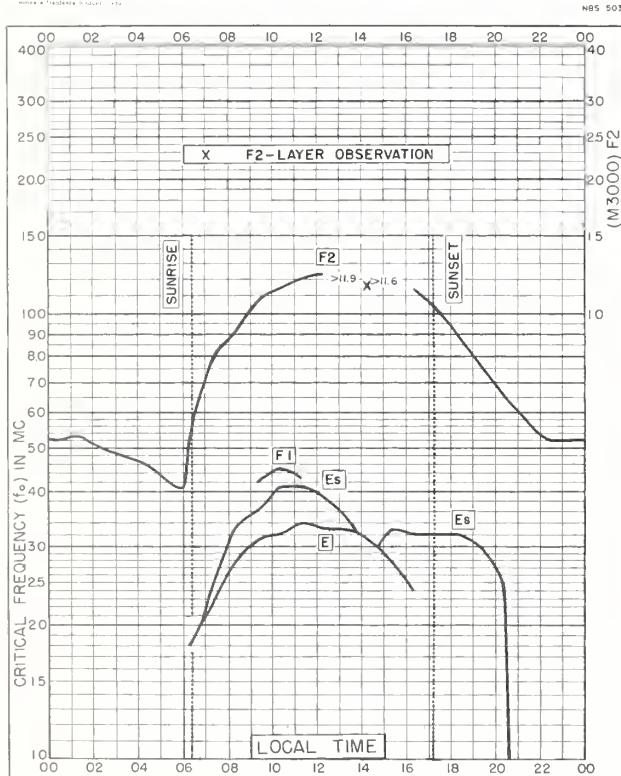
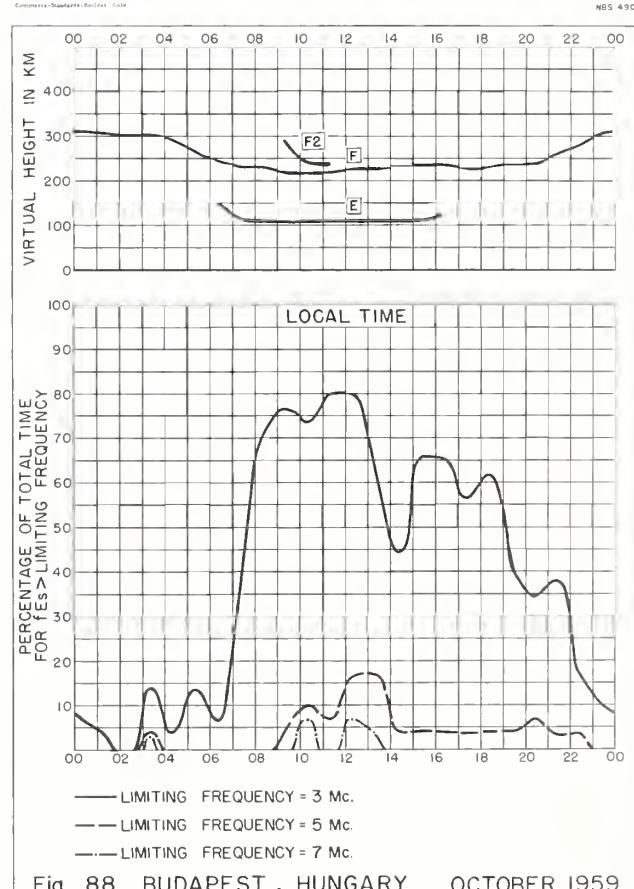
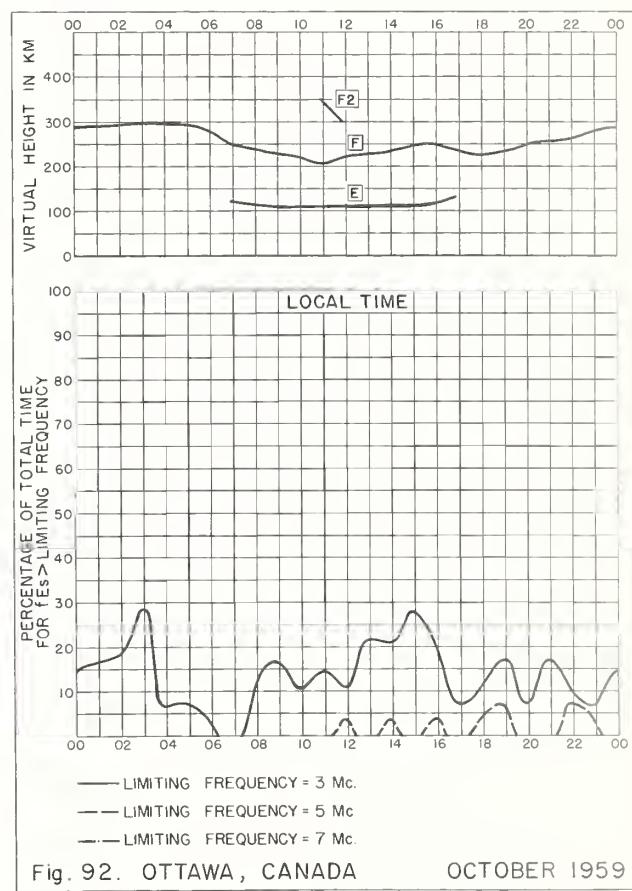
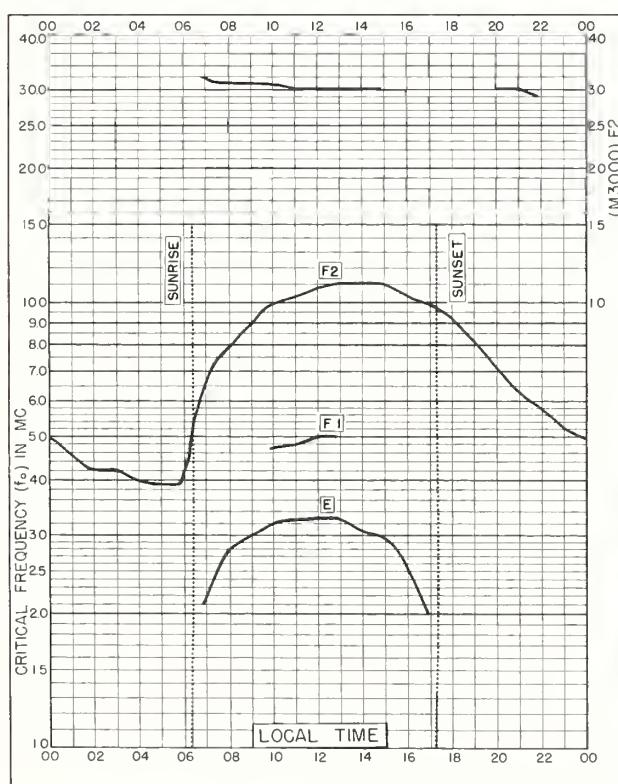
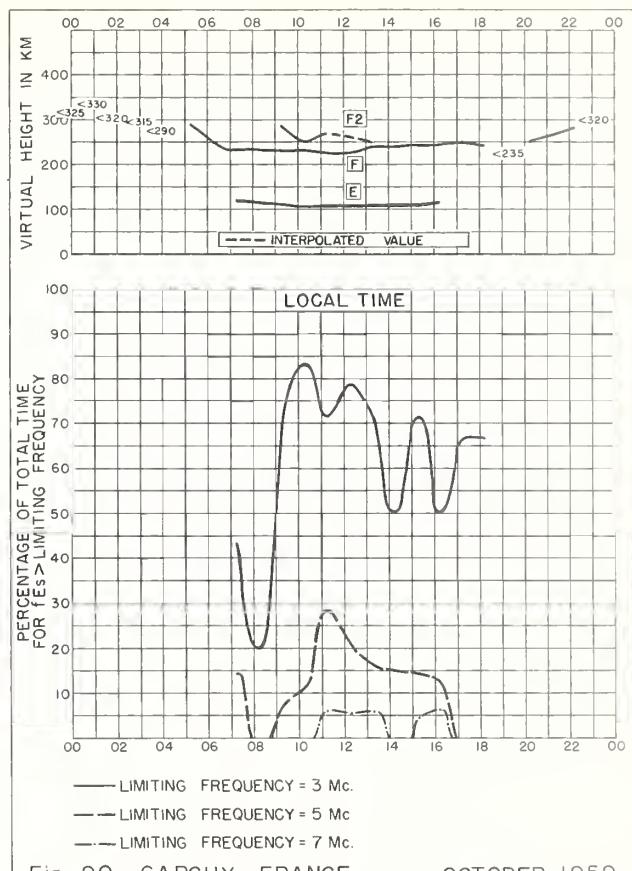
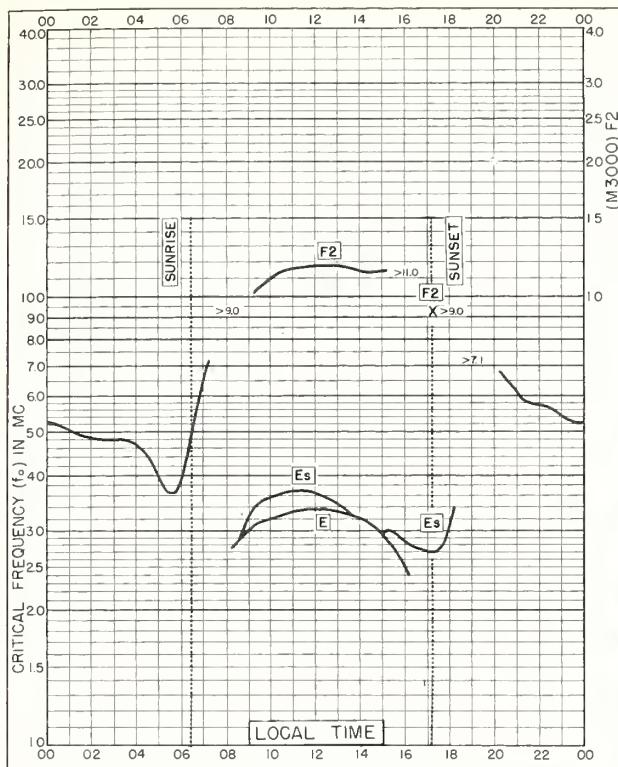


Fig. 87. BUDAPEST, HUNGARY
47.4°N, 19.2°E OCTOBER 1959



OCTOBER 1959
Fig. 88. BUDAPEST, HUNGARY



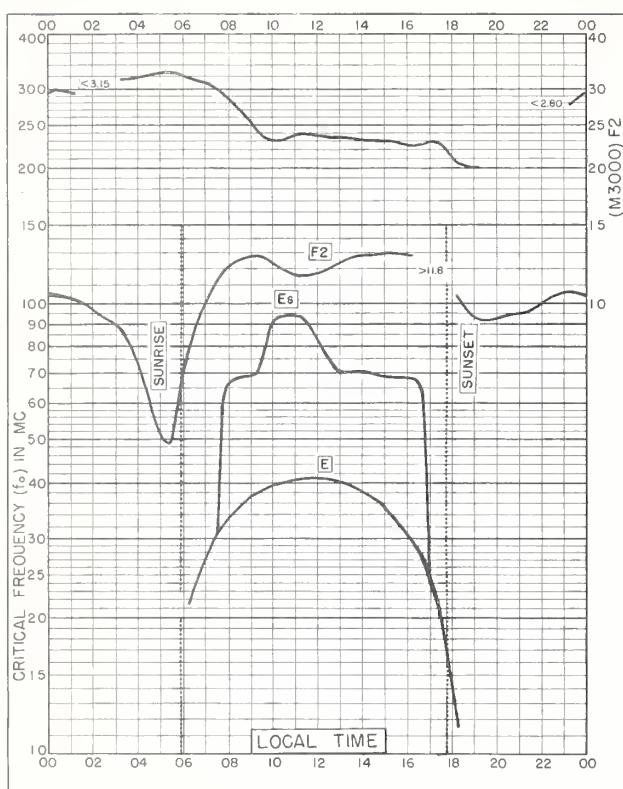


Fig. 93. IBADAN , NIGERIA
7.4°N, 3.9°E OCTOBER 1959

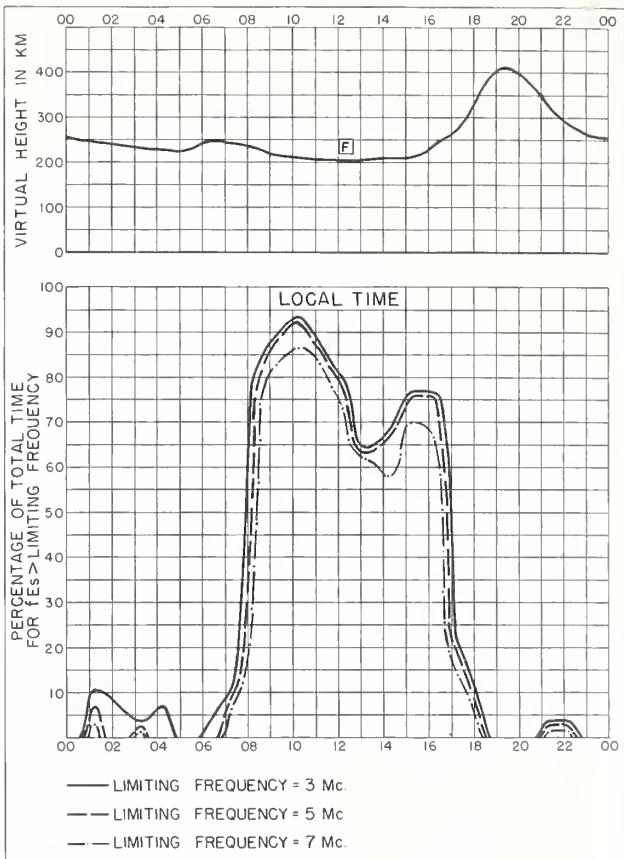


Fig. 94. IBADAN , NIGERIA OCTOBER 1959

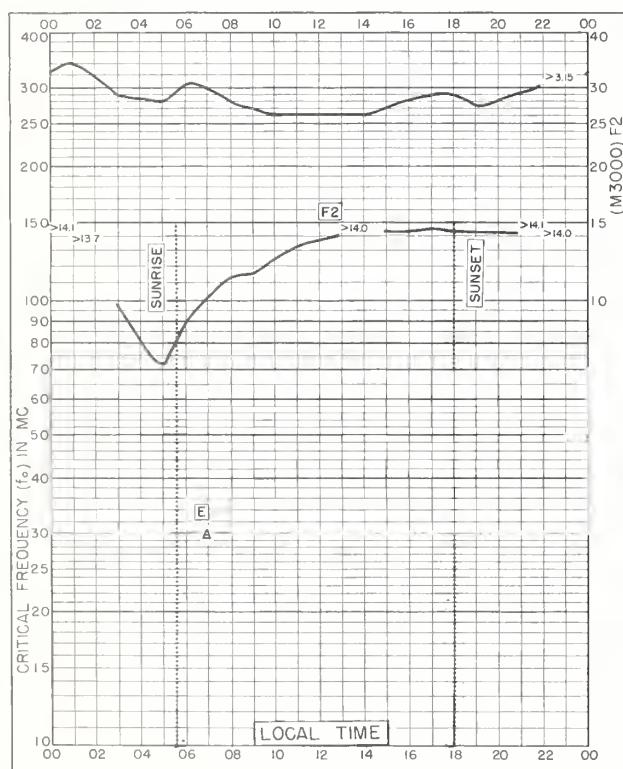


Fig. 95. SAO PAULO, BRAZIL
23.5°S, 46.5°W OCTOBER 1959

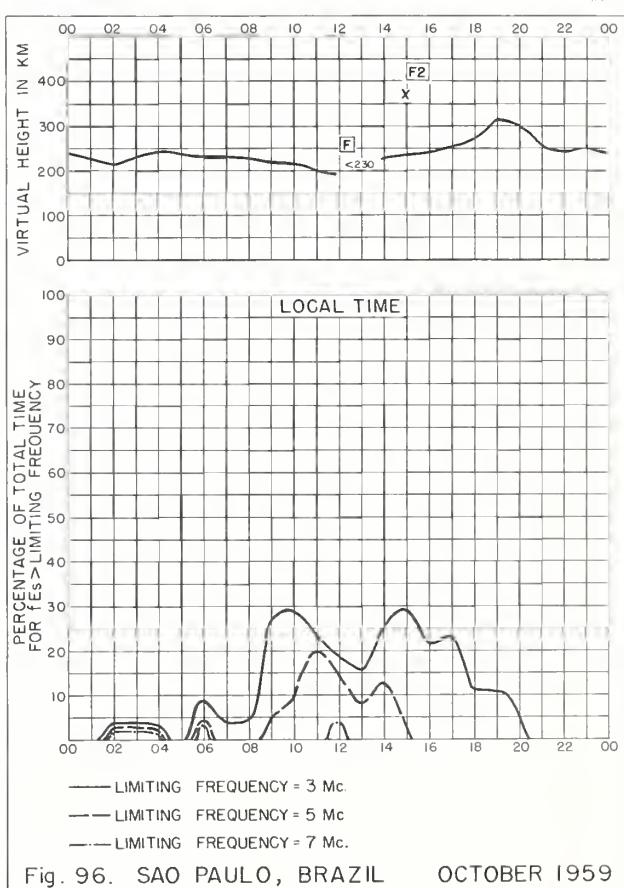
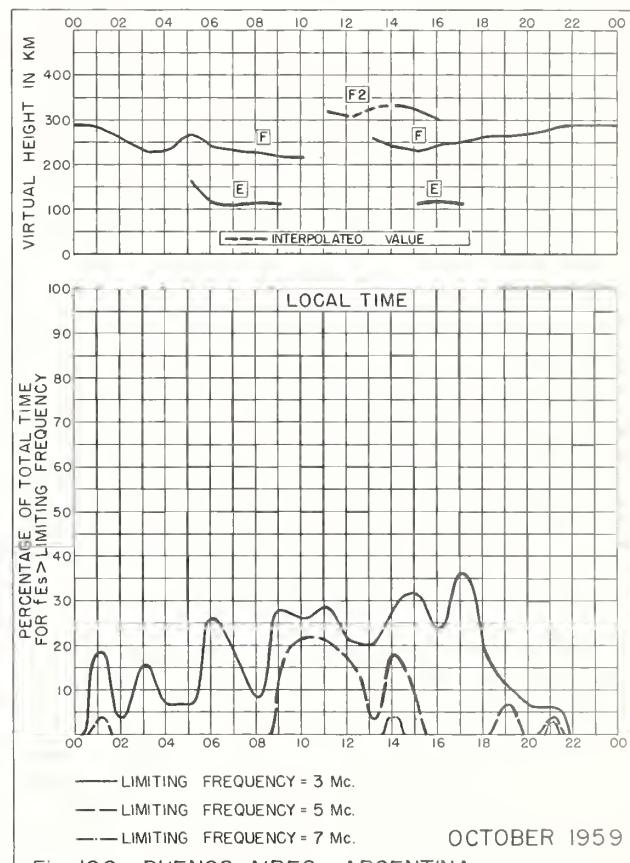
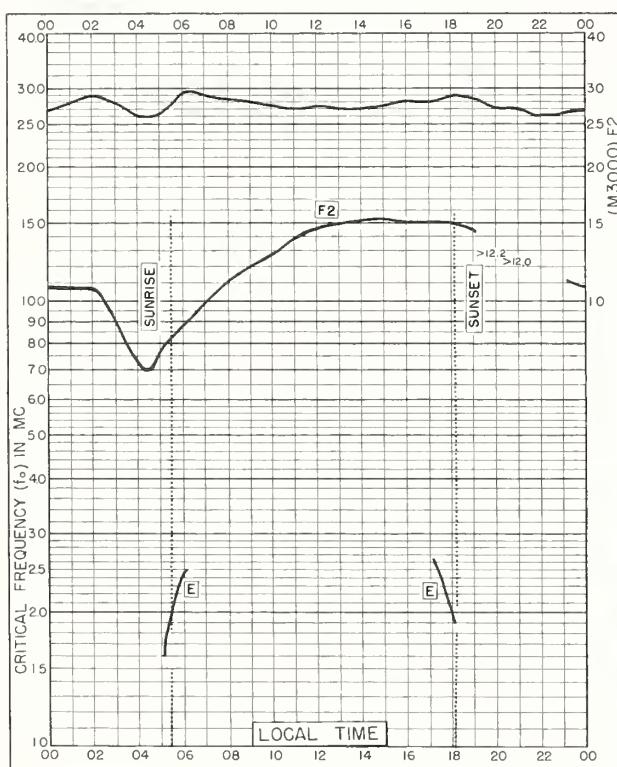
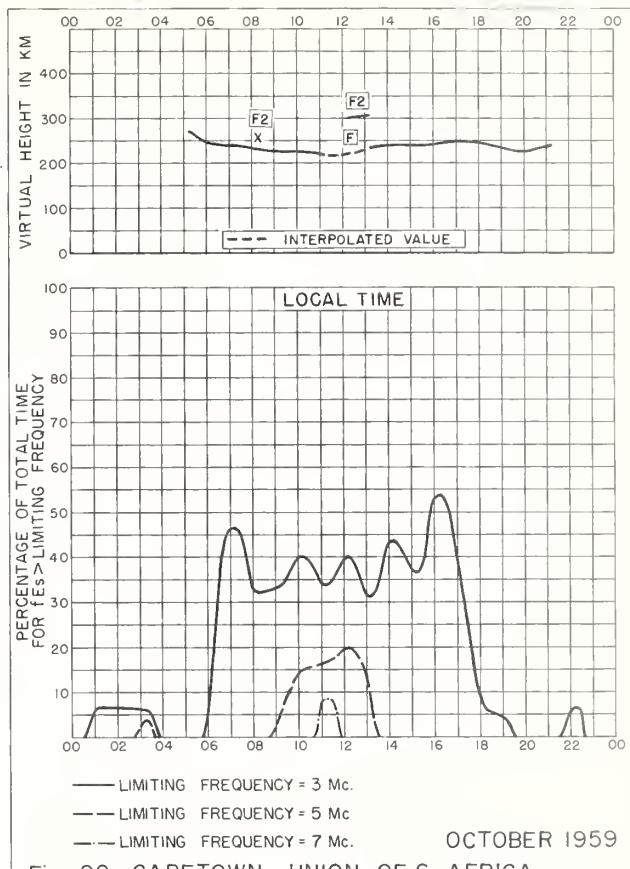
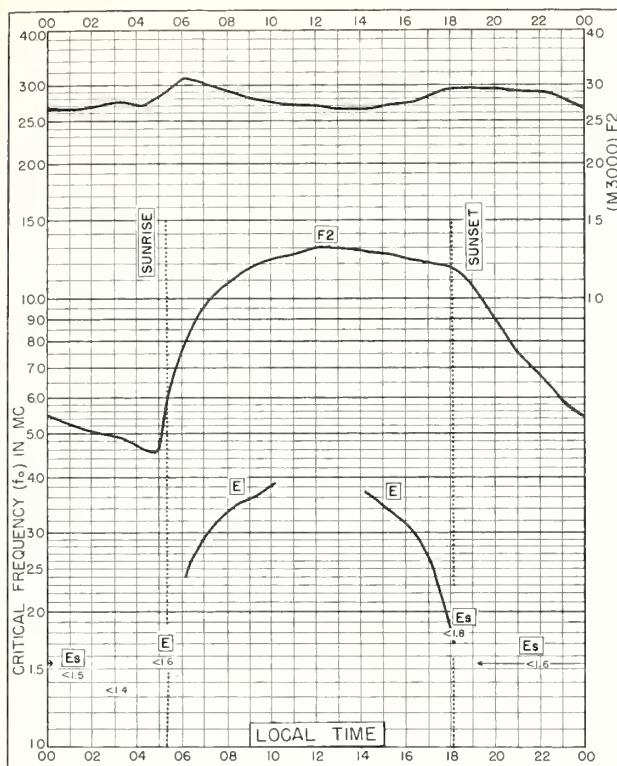


Fig. 96. SAO PAULO, BRAZIL OCTOBER 1959



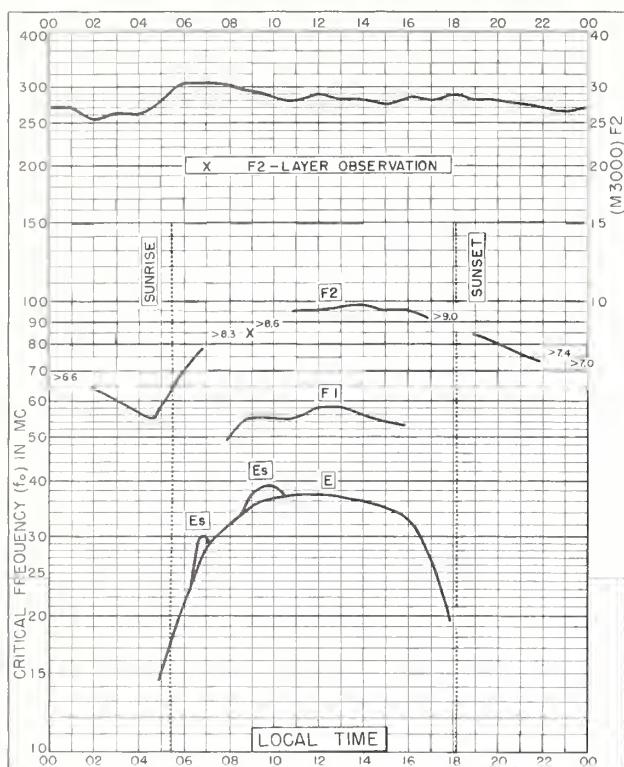


Fig. IO1. CANBERRA, AUSTRALIA
35.3°S, 149.0°E OCTOBER 1959

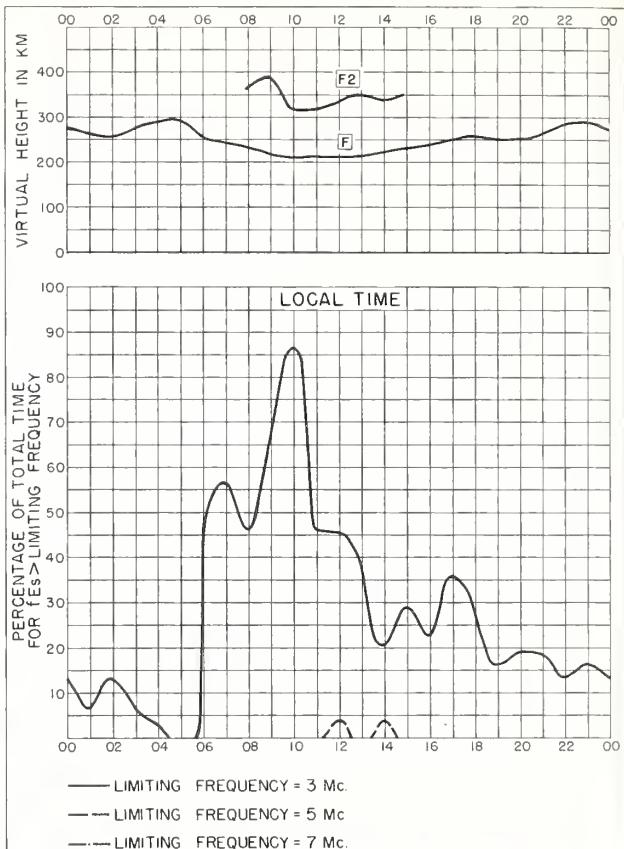


Fig. IO2. CANBERRA, AUSTRALIA OCTOBER 1959

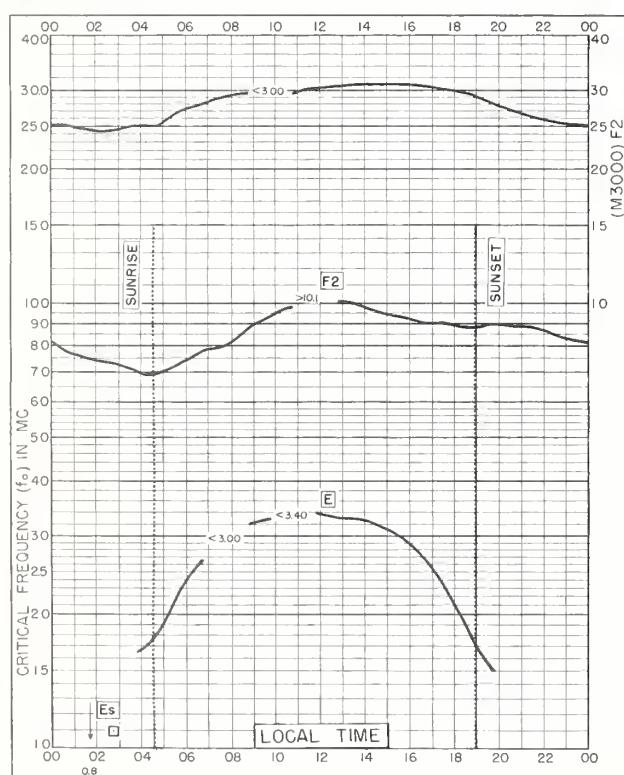


Fig. IO3. PORT LOCKROY
64.8°S, 63.5°W OCTOBER 1959

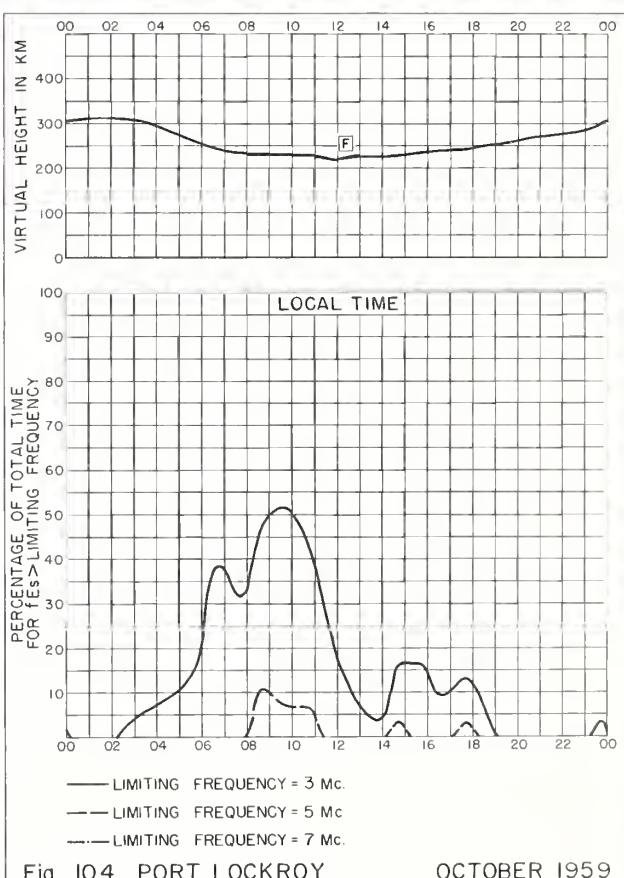
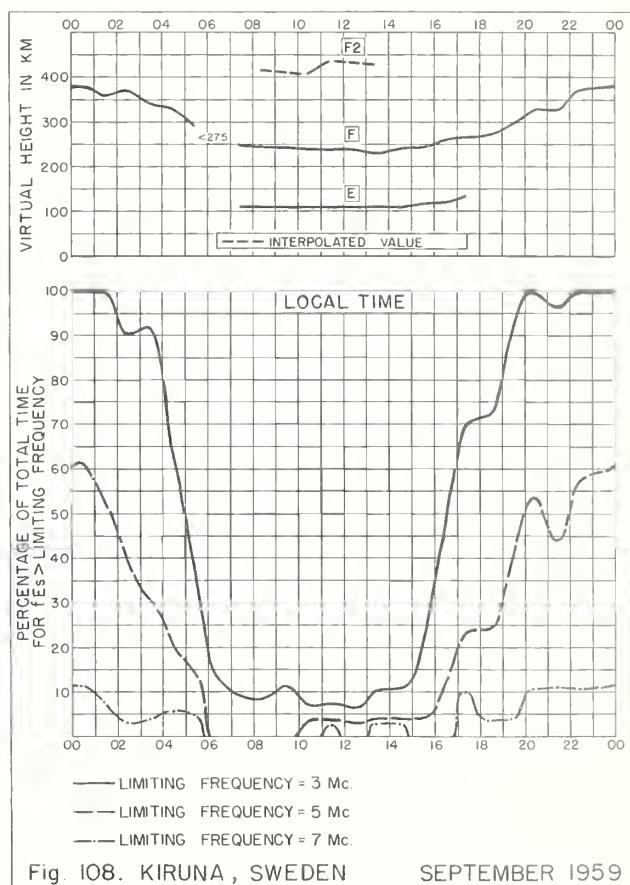
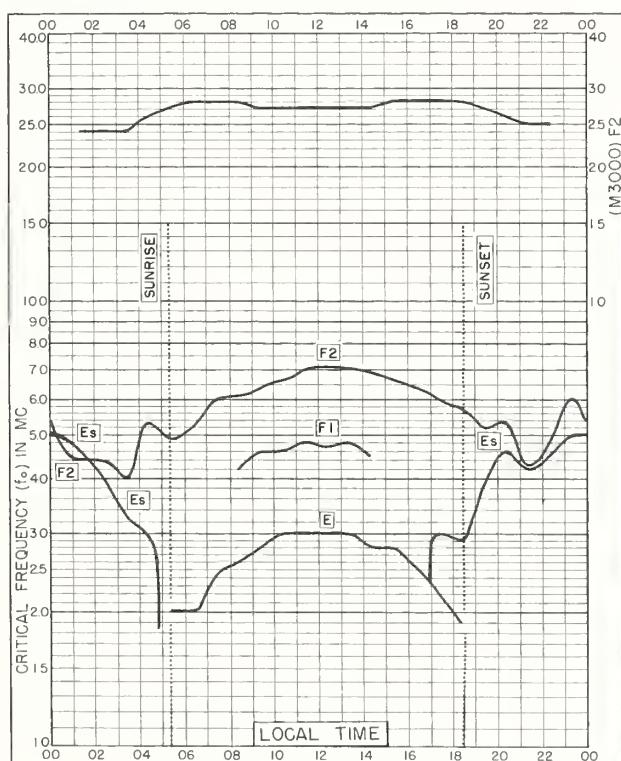
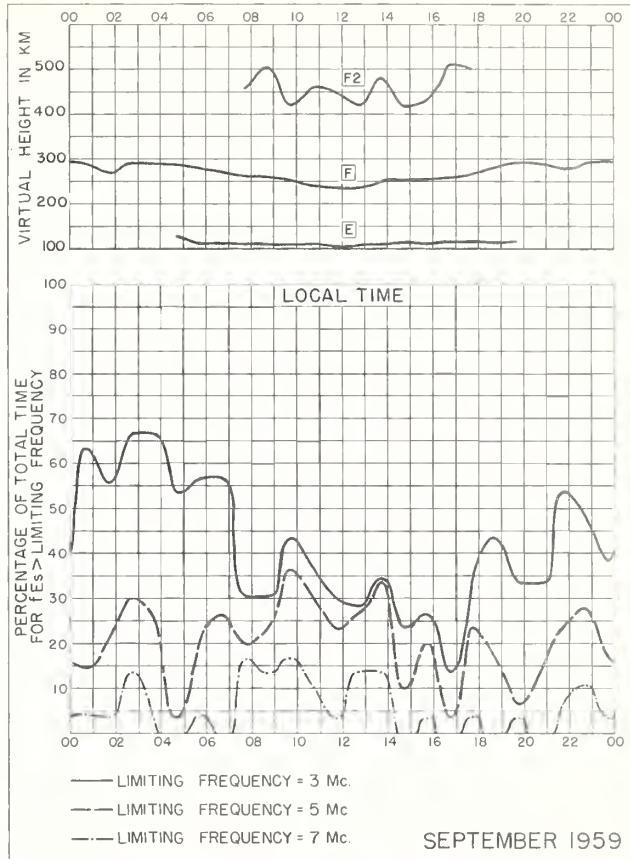
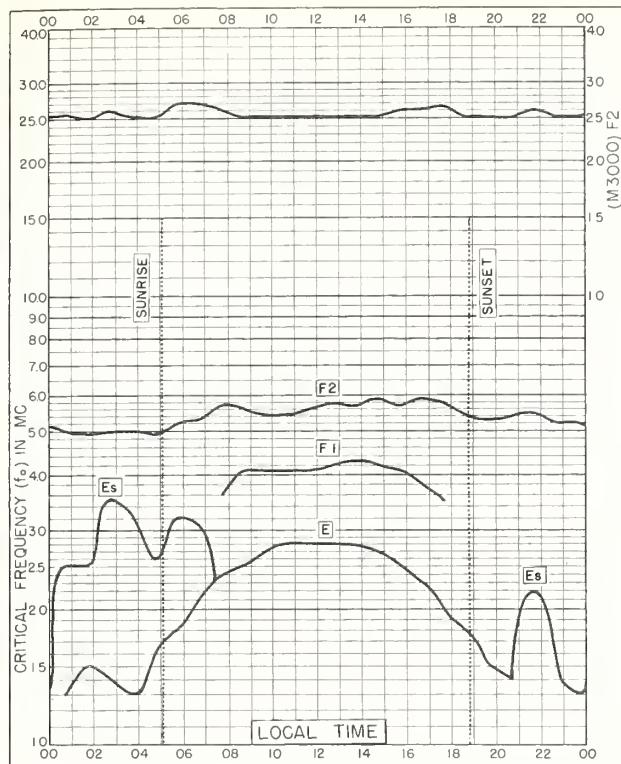
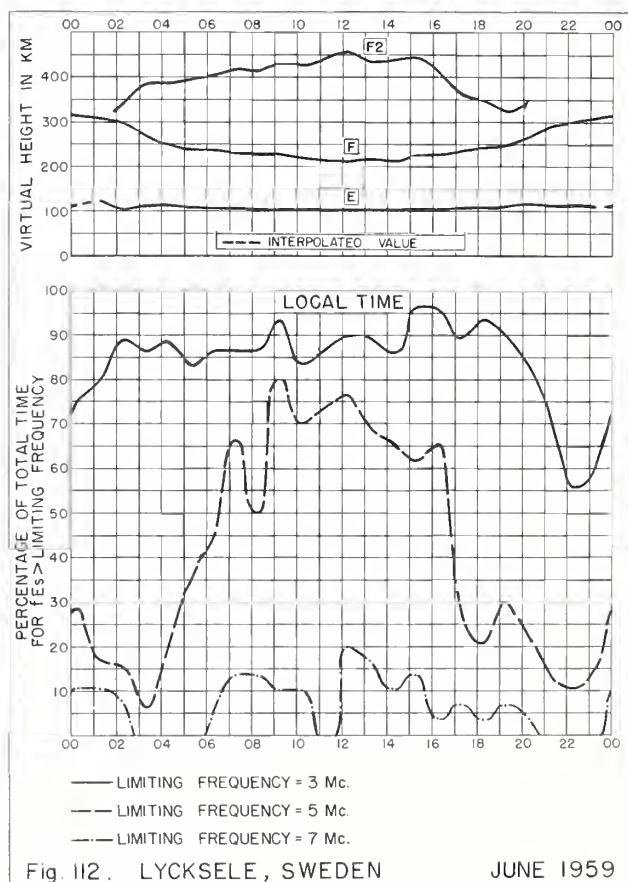
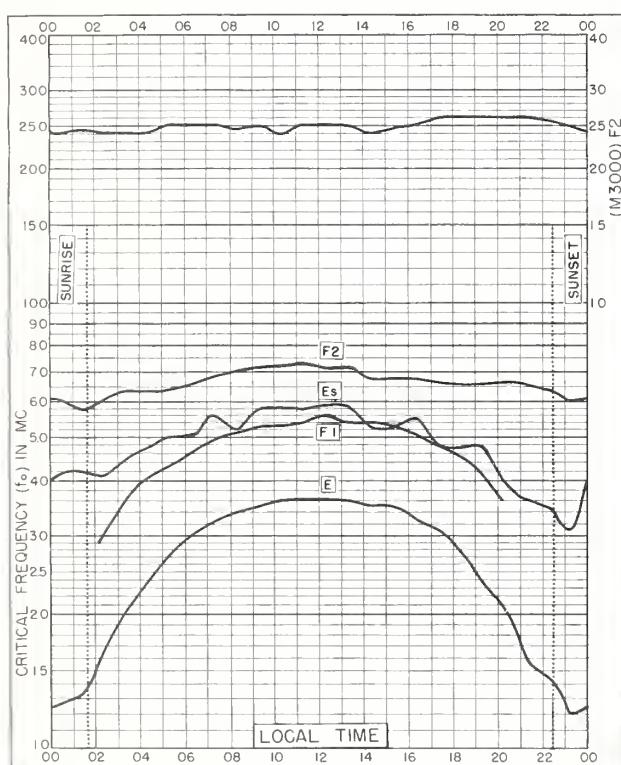
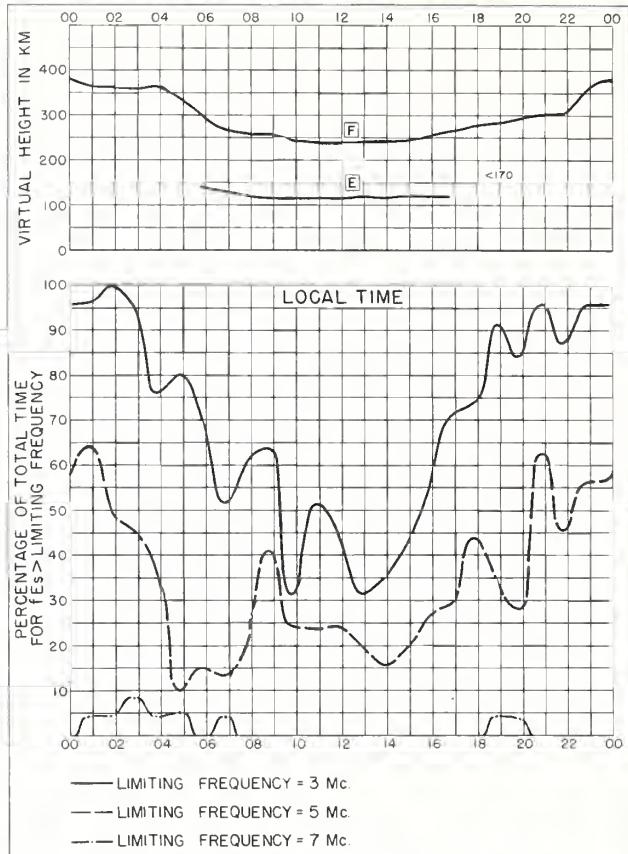
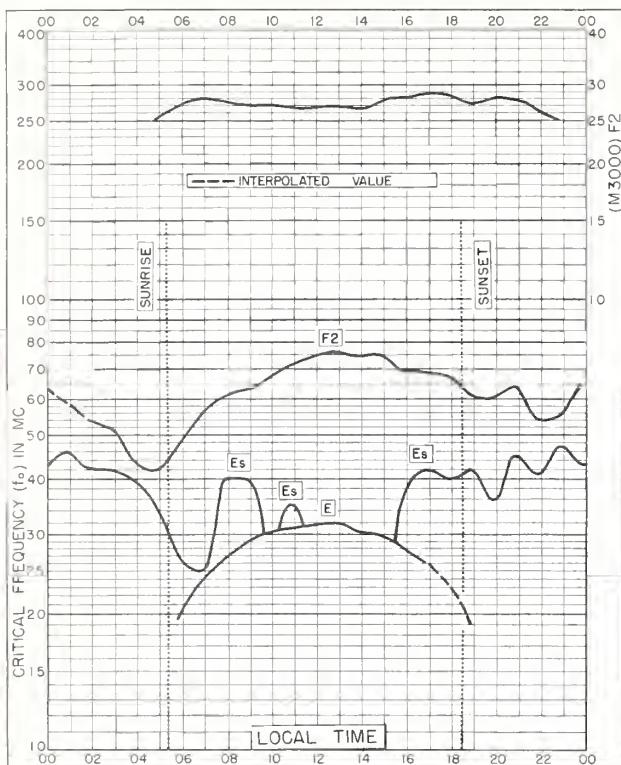
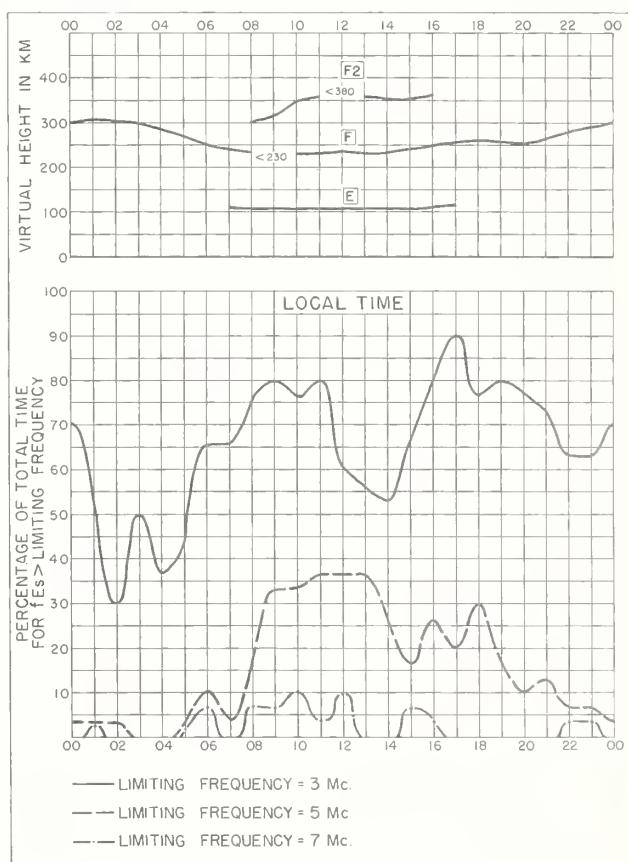
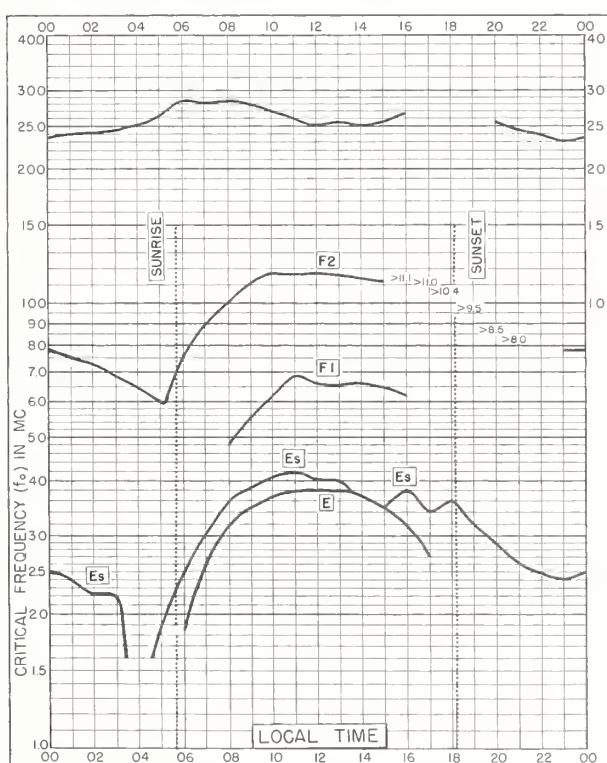
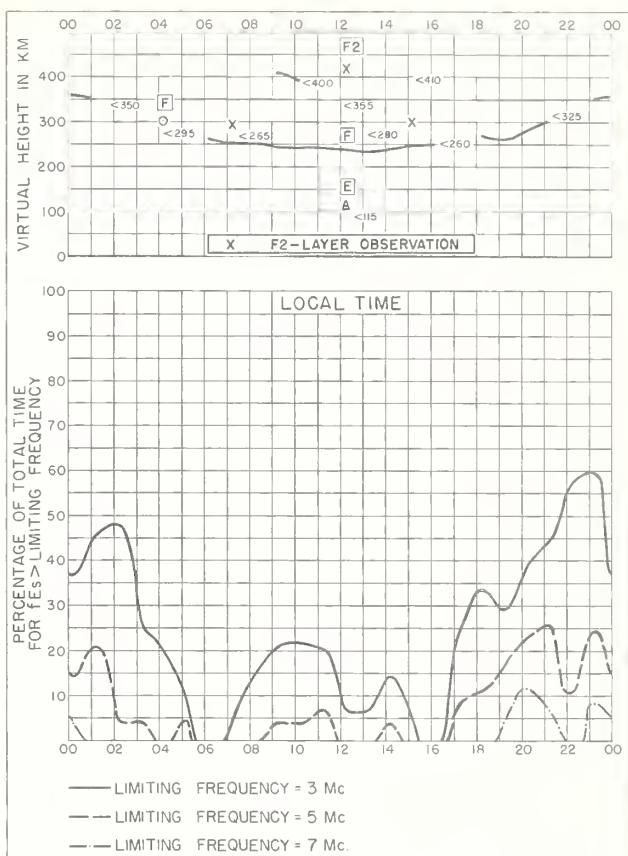
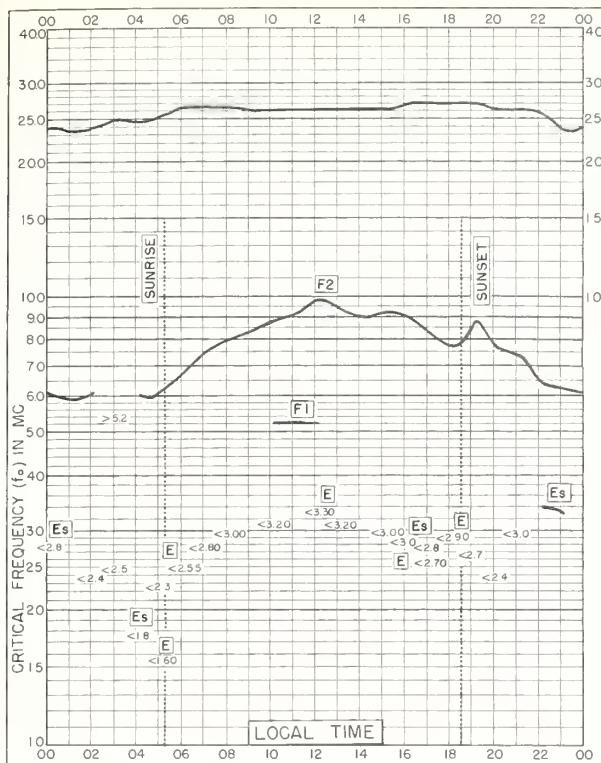


Fig. IO4. PORT LOCKROY OCTOBER 1959







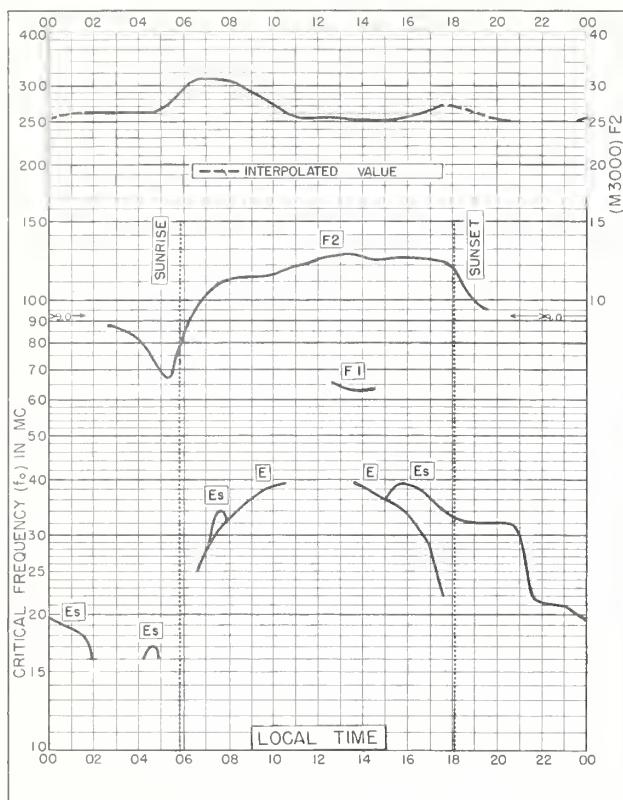


Fig. 117. RABAT, MOROCCO
30.9°N, 6.8°W SEPTEMBER 1958

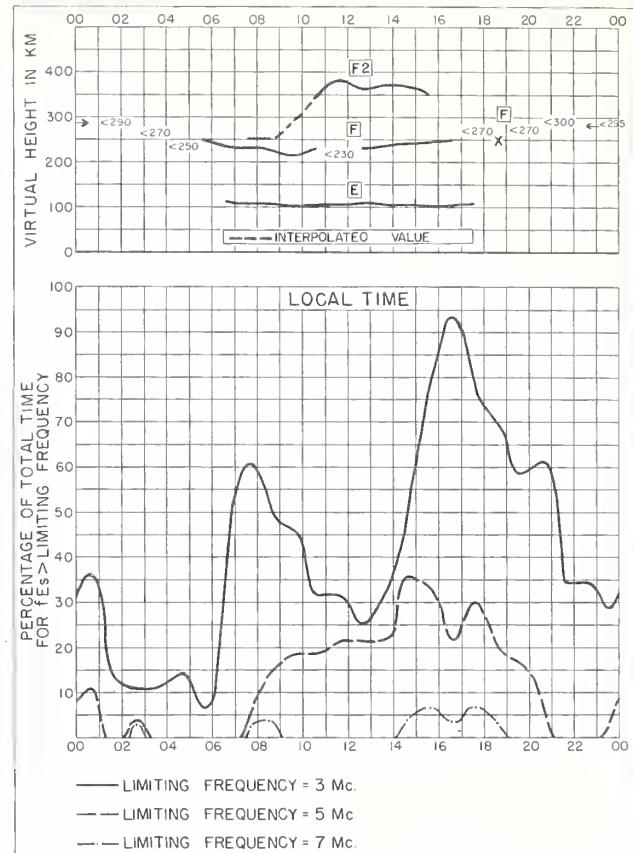


Fig. 118. RABAT, MOROCCO SEPTEMBER 1958

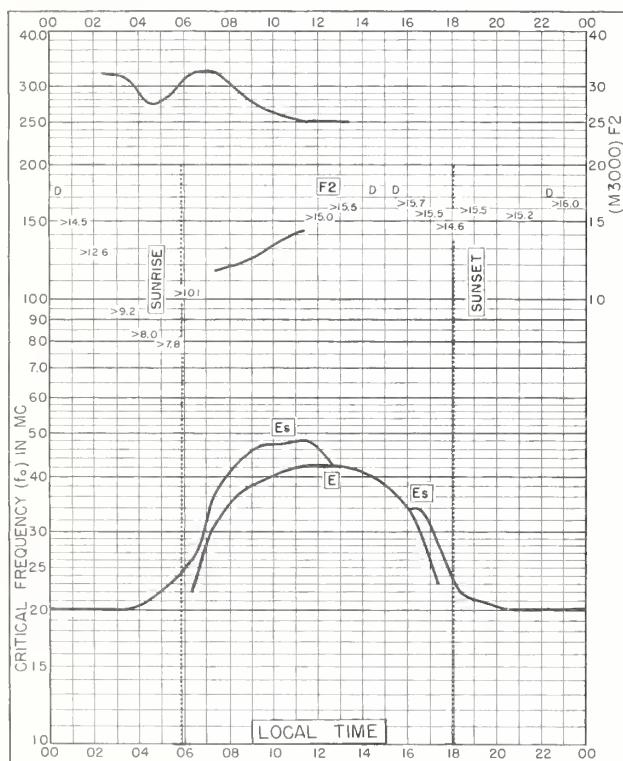


Fig. 119. TAMANRASSET, FRENCH W. AFRICA
22.8°N, 5.5°E SEPTEMBER 1958

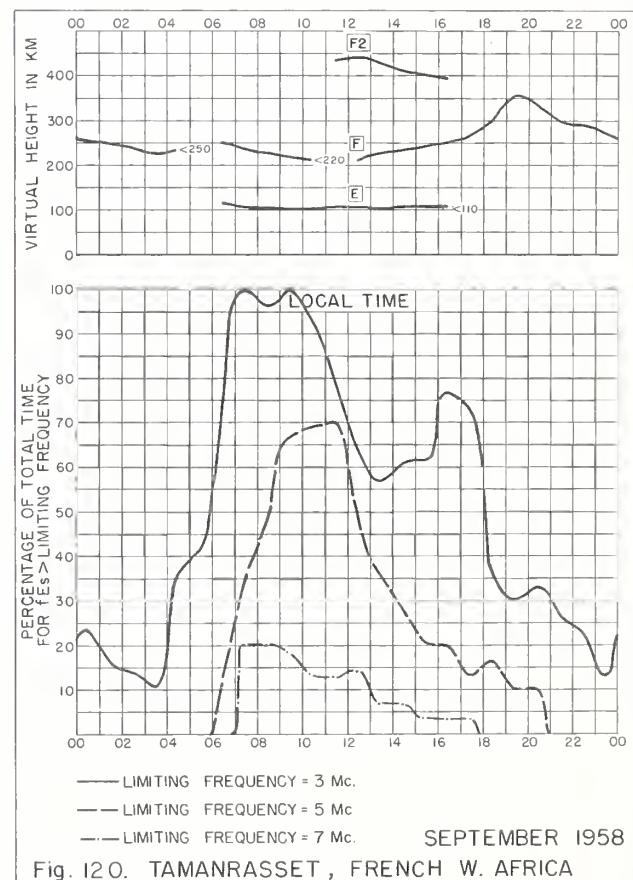
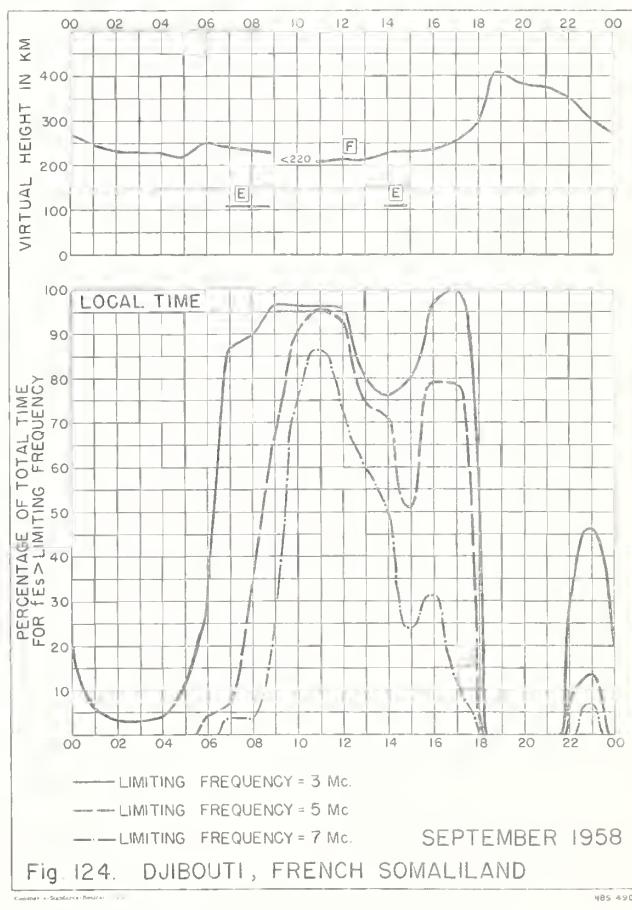
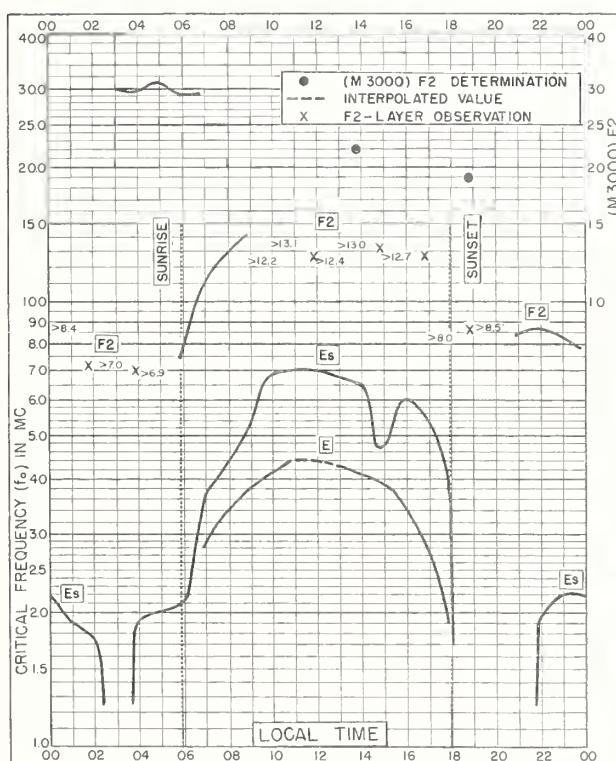
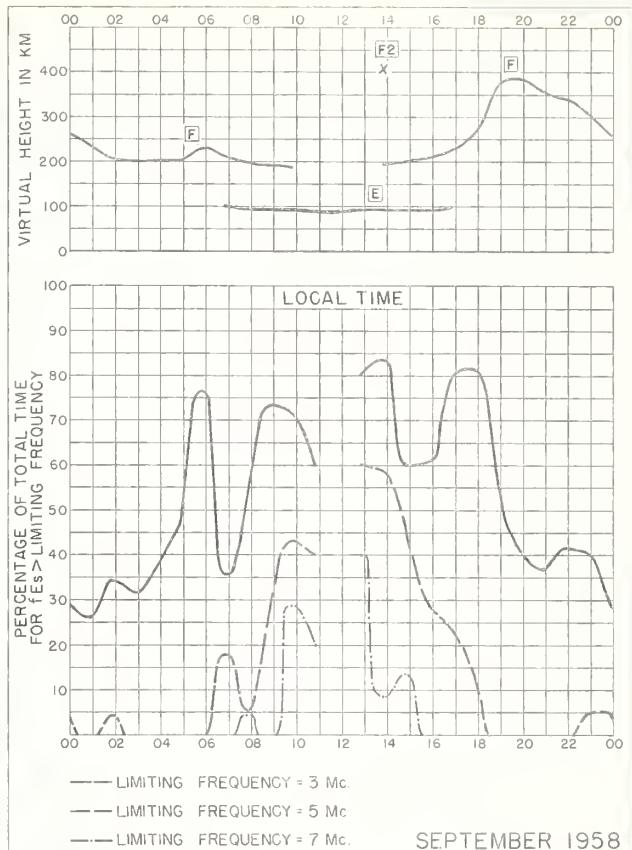
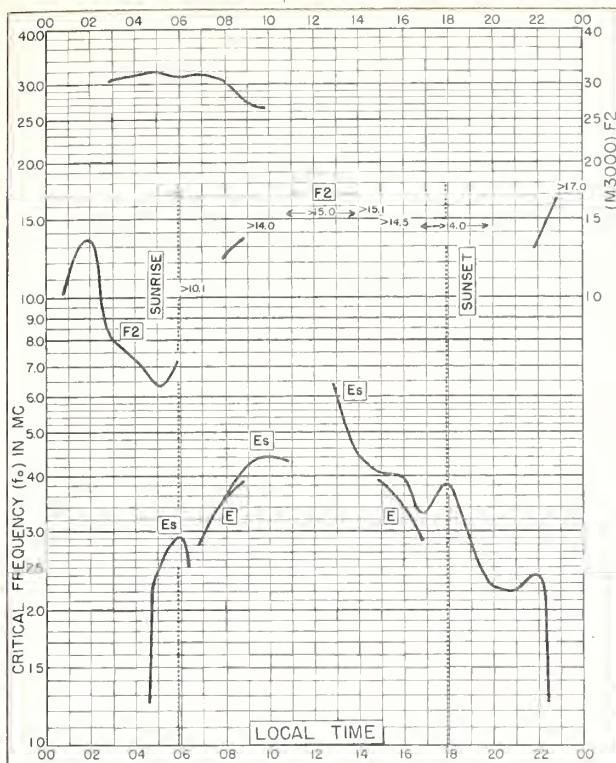
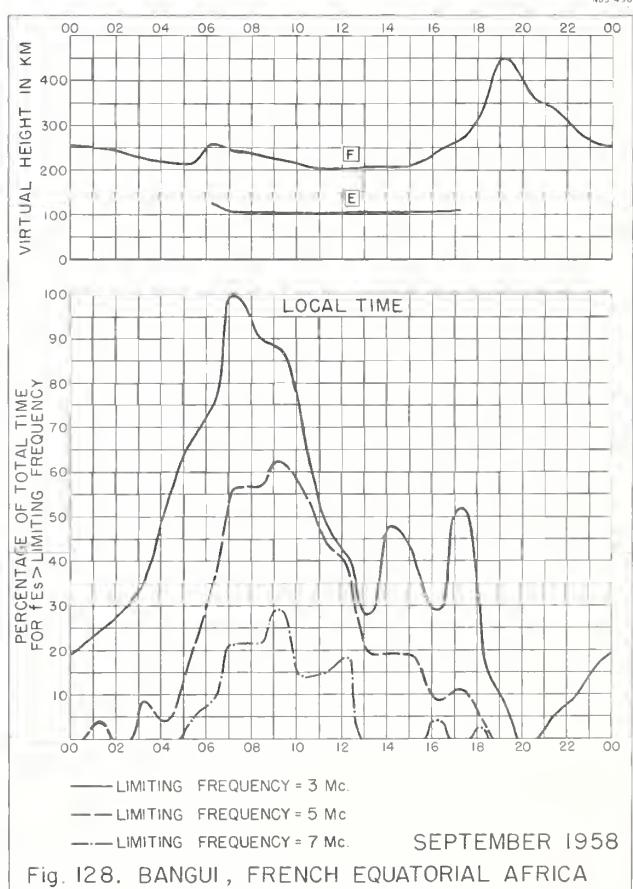
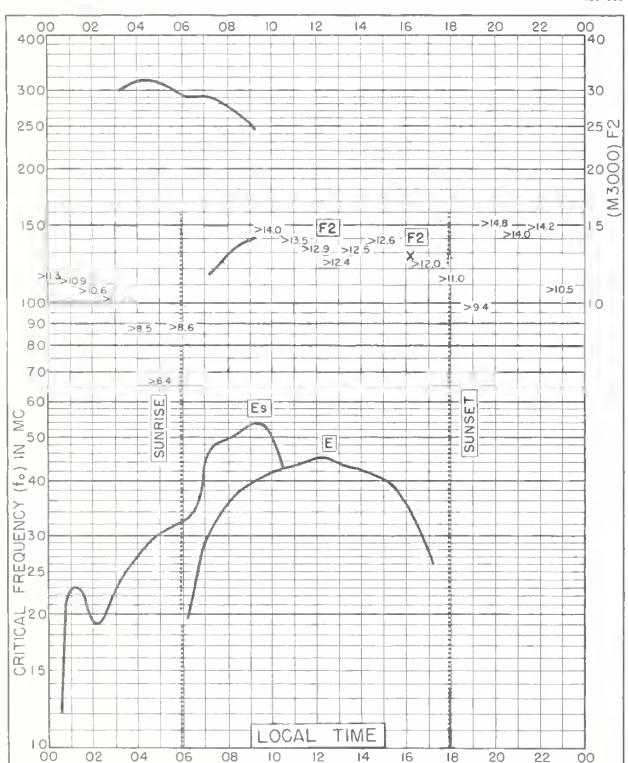
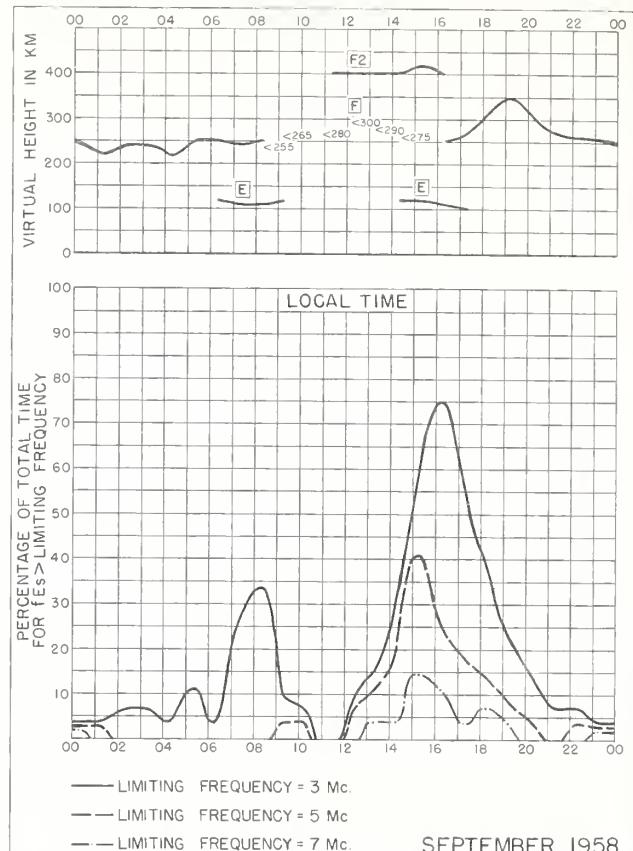
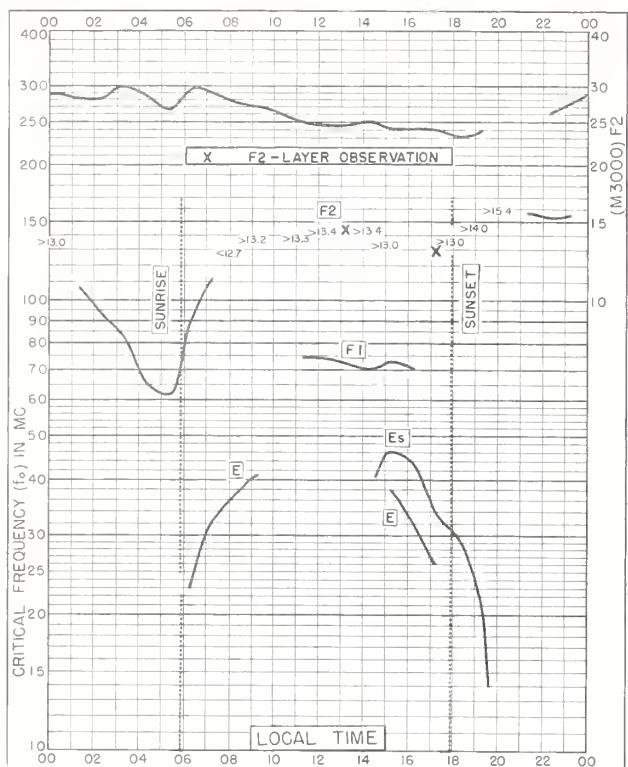


Fig. 120. TAMANRASSET, FRENCH W. AFRICA SEPTEMBER 1958





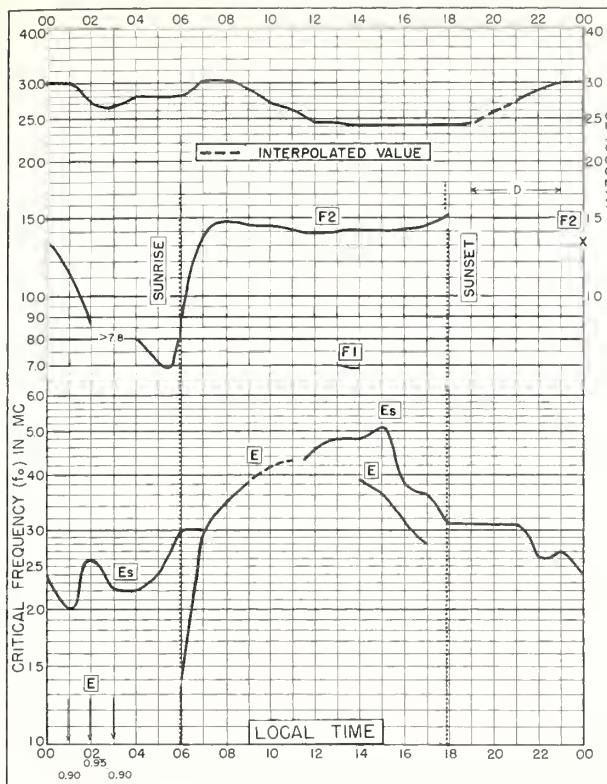


Fig. 129. TAHITI, SOCIETY IS.
17.7°S, 149.3°W SEPTEMBER 1958

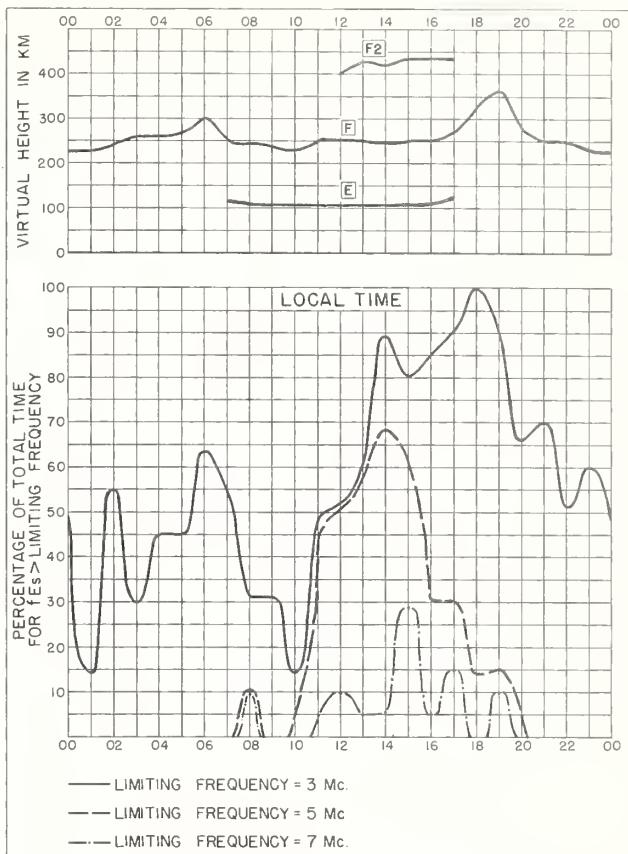


Fig. 130. TAHITI, SOCIETY IS. SEPTEMBER 1958

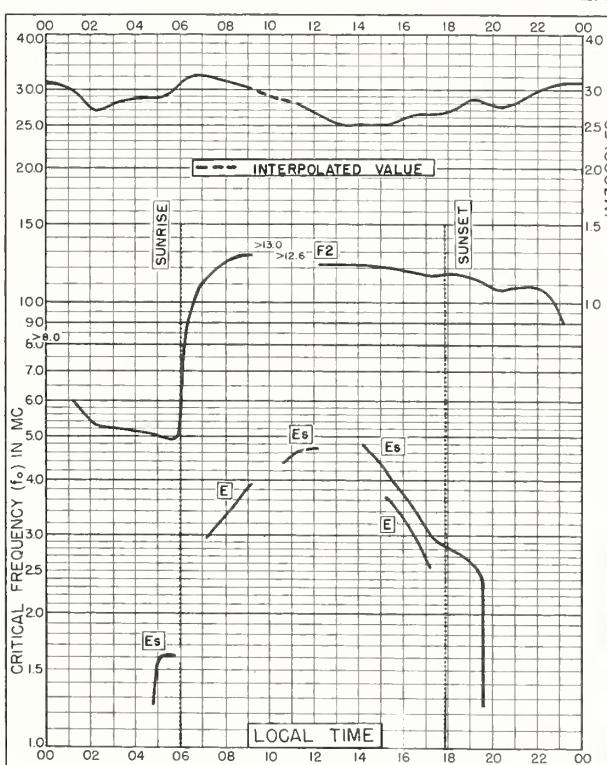


Fig. 131. TANANARIVE, MADAGASCAR
18.8°S, 47.5°E SEPTEMBER 1958

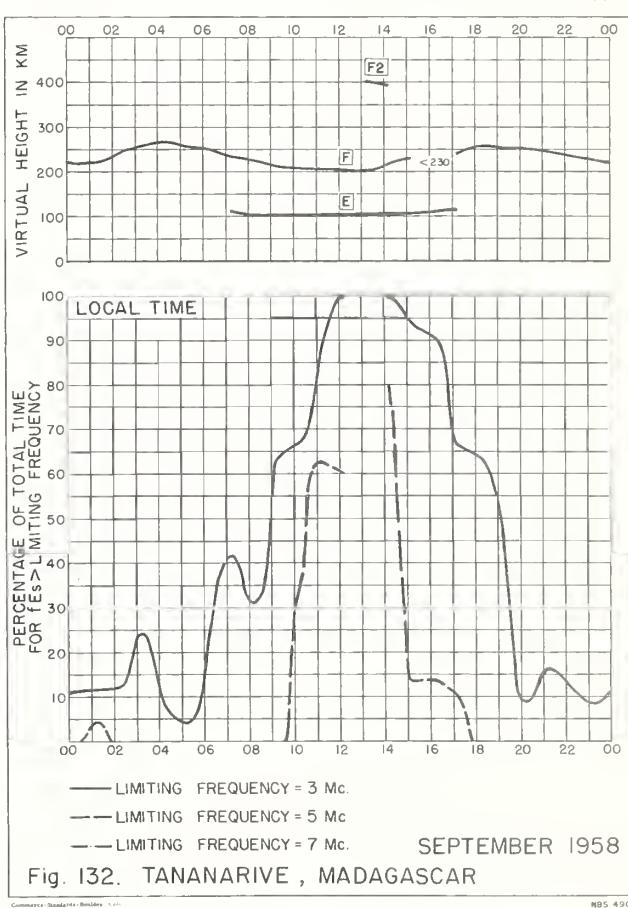
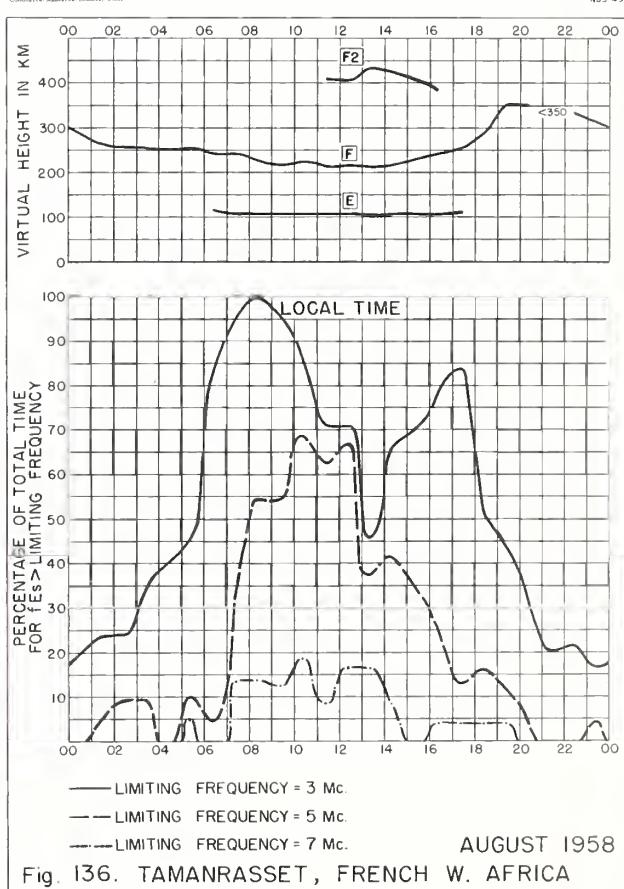
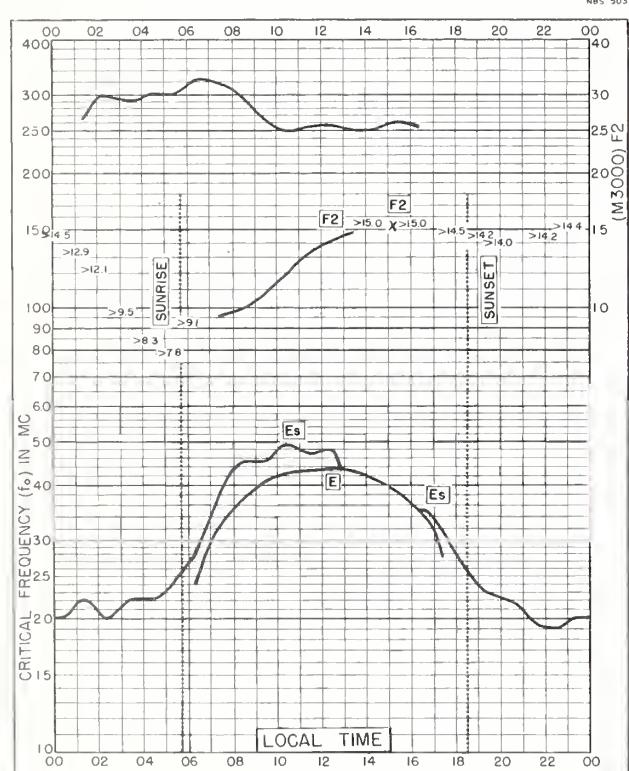
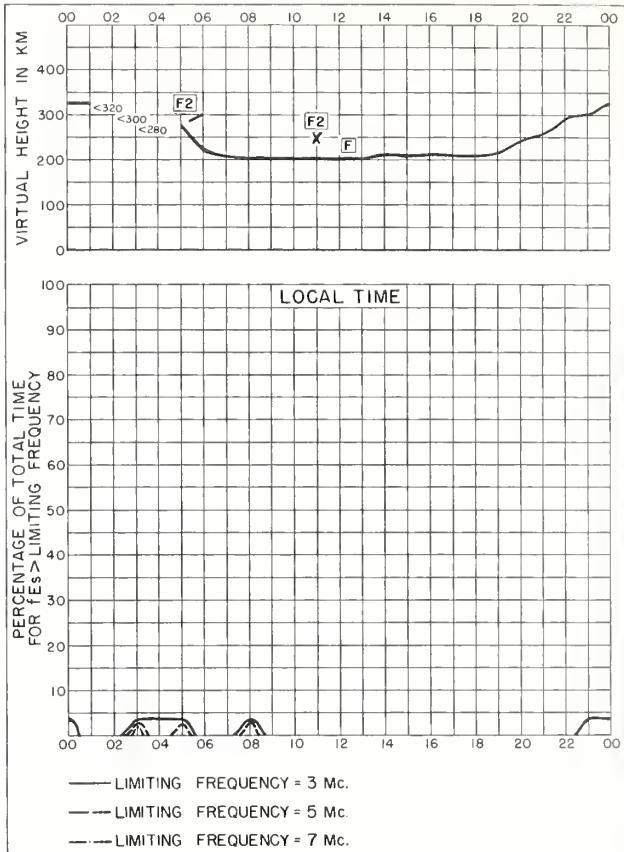
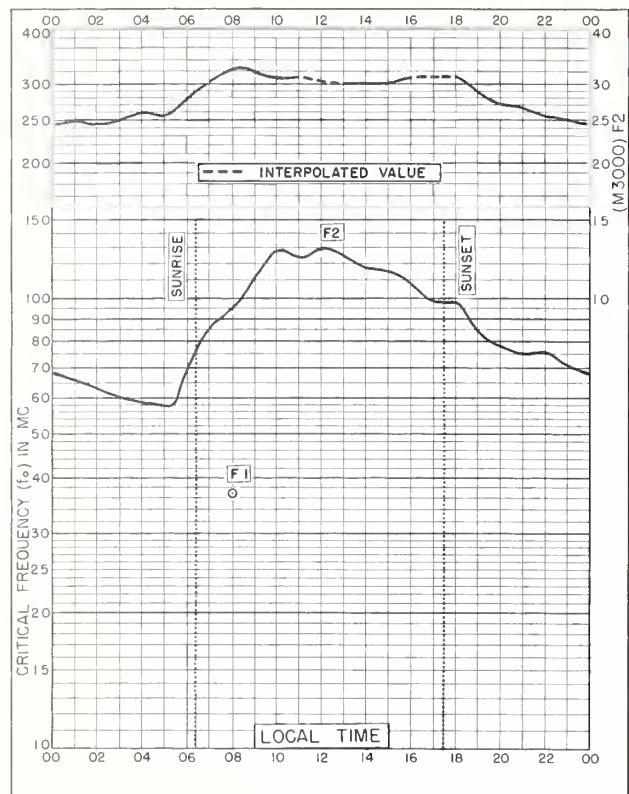


Fig. 132. TANANARIVE, MADAGASCAR SEPTEMBER 1958



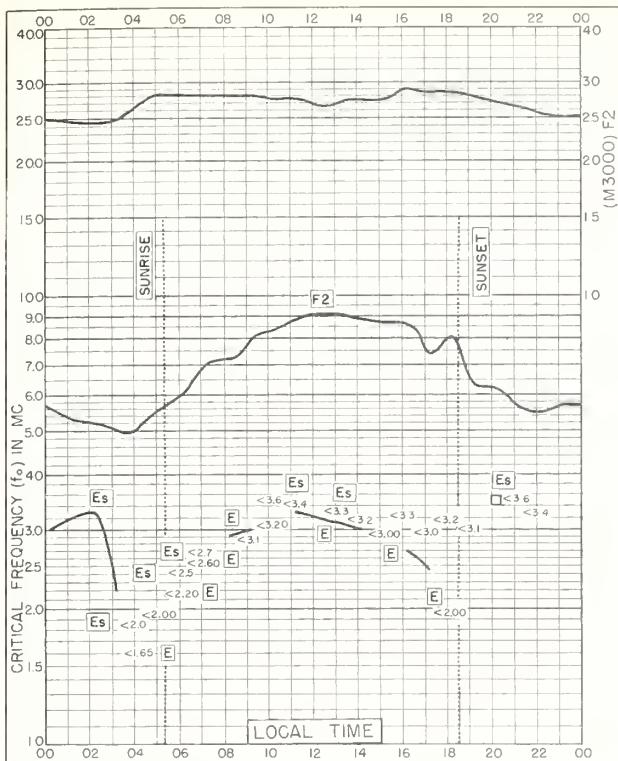


Fig. 137. MURMANSK, U.S.S.R.
69.0°N, 33.0°E SEPTEMBER 1957

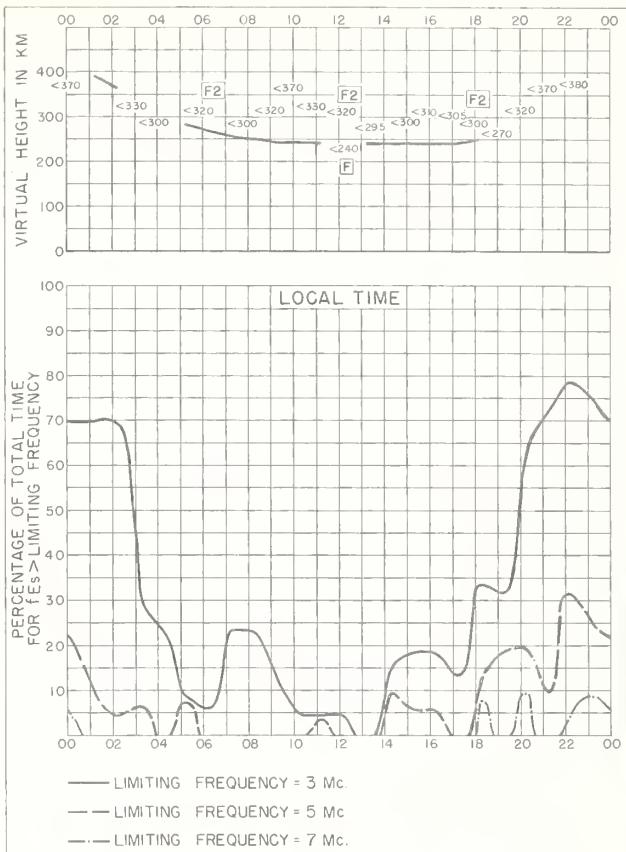


Fig. 138. MURMANSK, U.S.S.R. SEPTEMBER 1957

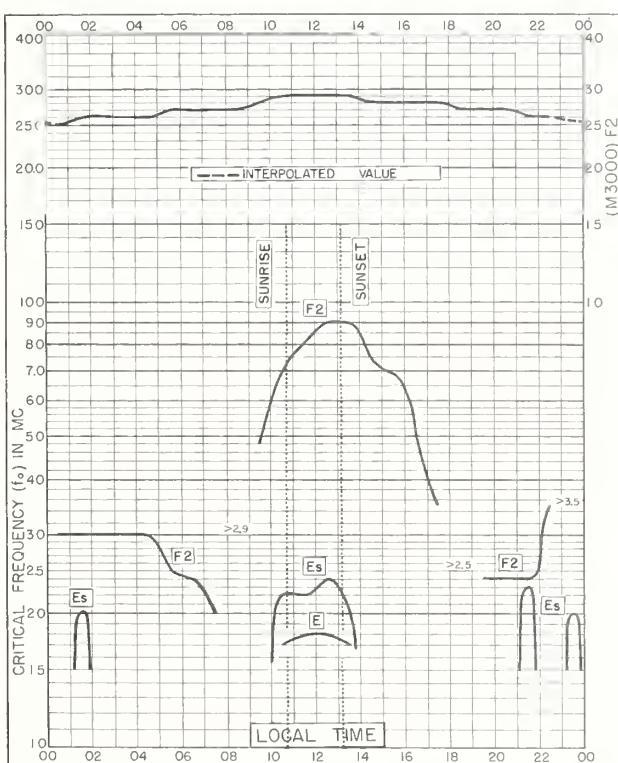


Fig. 139. LULEA, SWEDEN
65.6°N, 22.1°E DECEMBER 1955

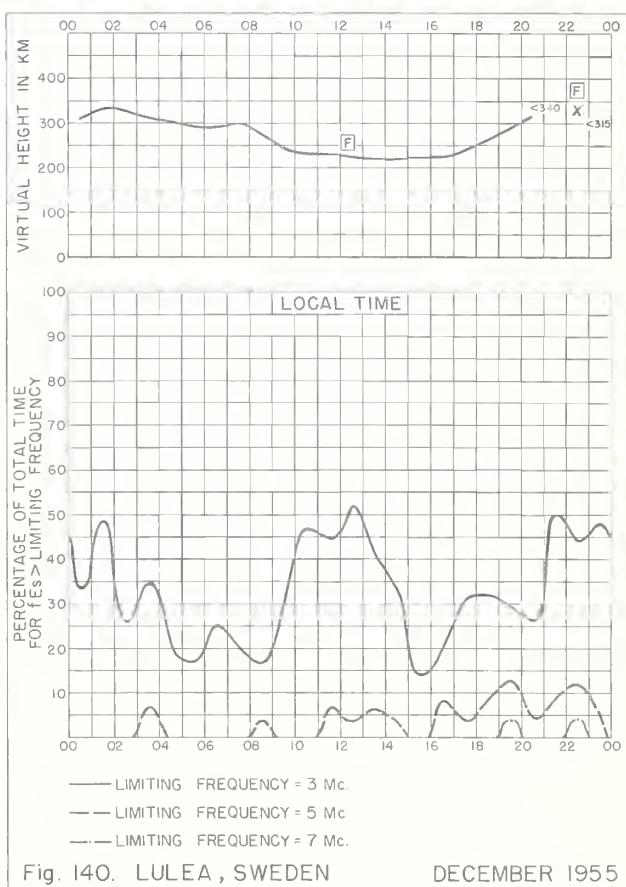


Fig. 140. LULEA, SWEDEN DECEMBER 1955

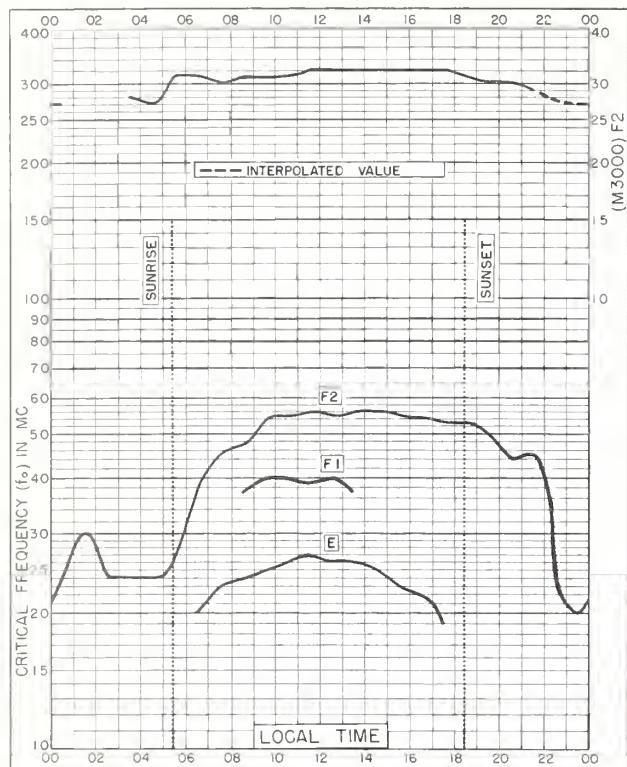


Fig. 141. LULEA, SWEDEN
65.6°N, 22.1°E SEPTEMBER 1955

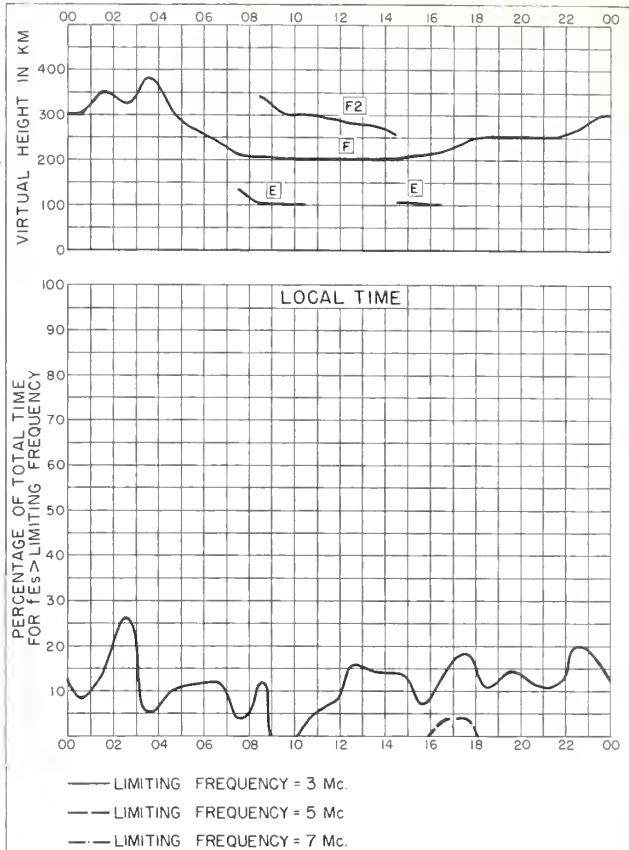


Fig. 142. LULEA, SWEDEN SEPTEMBER 1955

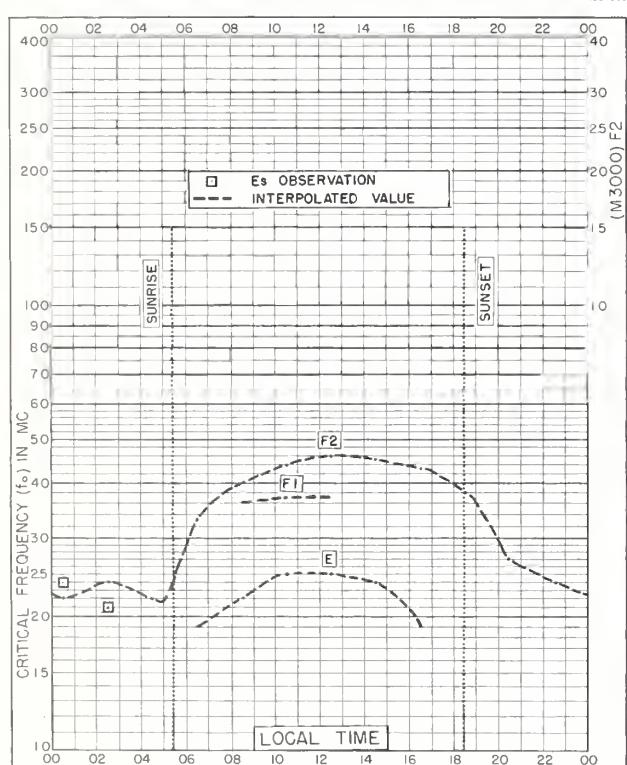


Fig. 143. LULEA, SWEDEN
65.6°N, 22.1°E SEPTEMBER 1955

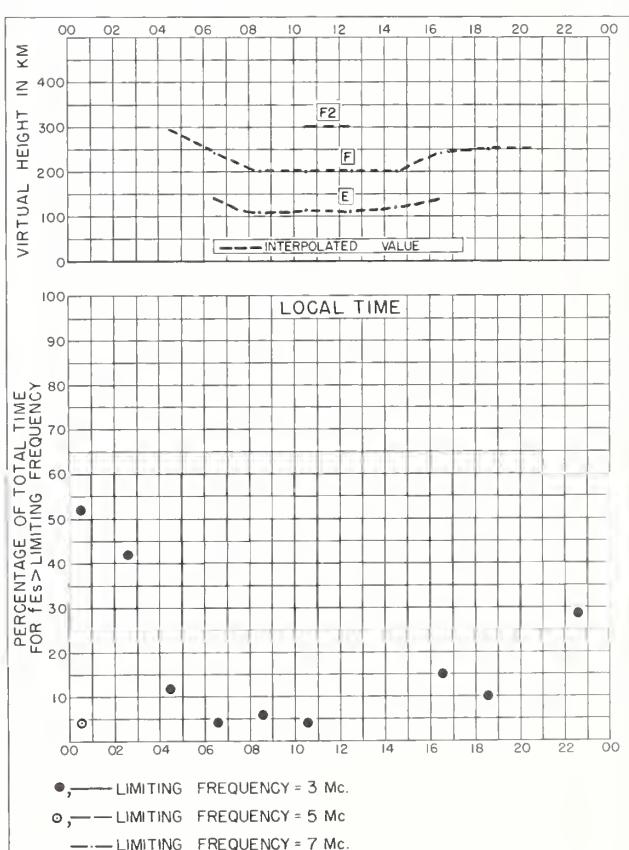


Fig. 144. LULEA, SWEDEN SEPTEMBER 1955

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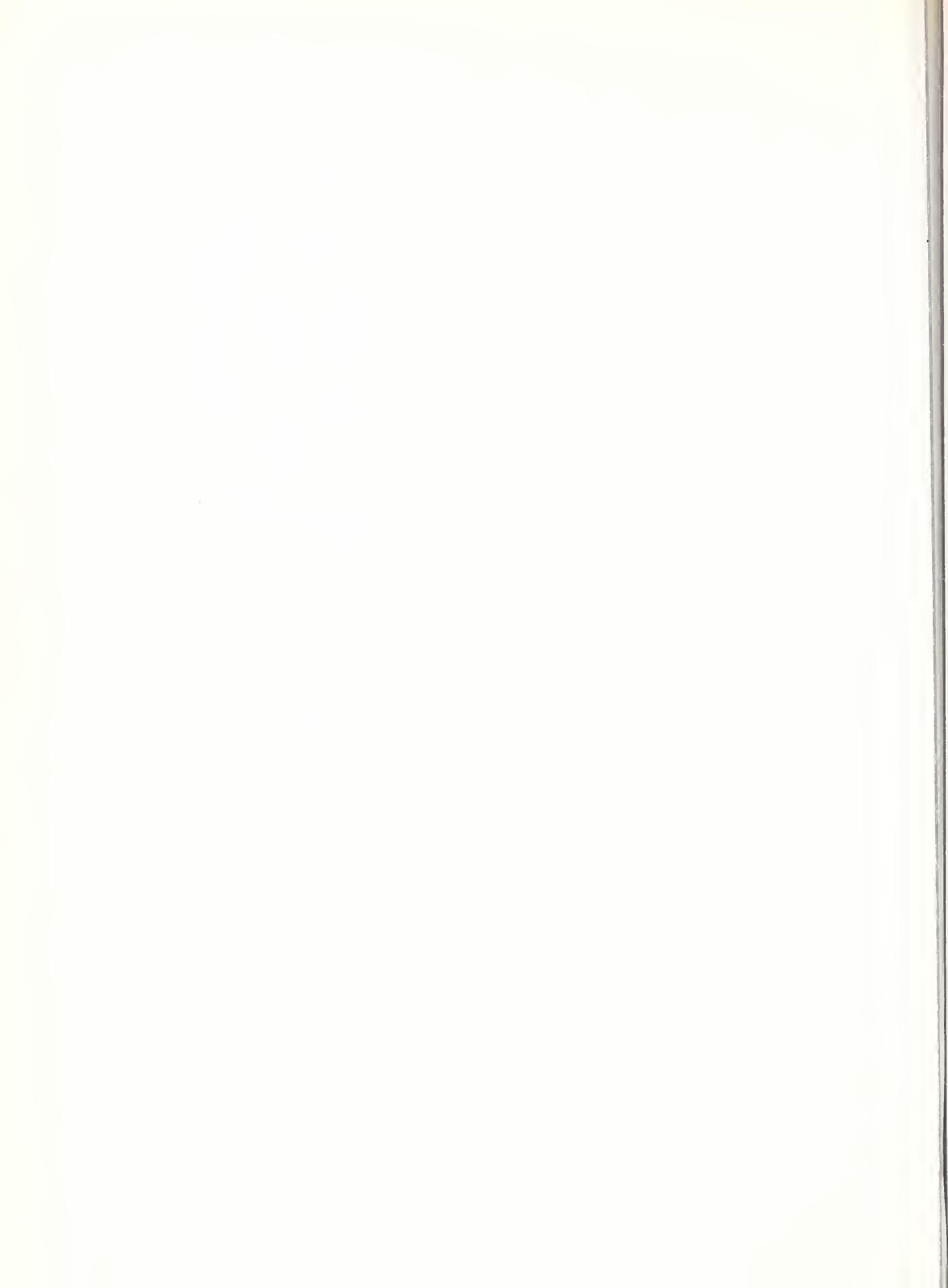
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