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PART A

IONOSPHERIC DATA

ISSUED
JULY 1961

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

CRPL-F 203
PART A

NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
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Issued
24 July 1961

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

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1954				3	4	4	5	7	8	8	9	12
1955	14	16	19	23	29	35	40	46	55	64	73	81
1956	89	98	109	119	127	137	146	150	151	156	160	164
1957	170	172	174	181	186	188	191	194	197	200	201	200
1958	199	201	201	197	191	187	185	185	184	182	181	180
1959	179	177	174	169	165	161	156	151	146	141	137	132
1960	129	125	122	120	117	114	108	102	97	93	87	83
1961												

WORLD-WIDE SOURCES OF IONOSPHERIC DATA

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

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

University of Graz:
- Graz, Austria

Belgian Royal Meteorological Institute:
- Lwiro (Central African Institute for Scientific Research)

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

British Department of Scientific and Industrial Research, Radio Research Board:
- Halley Bay
- Ibadan, Nigeria (University College of Ibadan)
- Inverness, Scotland
- Port Lockroy
- Slough, England

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 Telecommunications Studies:
- Bangui, French Equatorial Africa
- Dakar, French West Africa
- Djibouti, French Somaliland
- Kerguelen I.
- Poitiers, France
- Rabat, Morocco
- Tahiti, Society Is.
- Tamanrasset, French West Africa
- Tananarive, Madagascar

Institute for Ionospheric Research, Lindau Uber Northeim, Hannover, Germany:
- Lindau/Harz, Germany
- Tsumeb, South West Africa

The Royal Netherlands Meteorological Institute:
- Hollandia, Netherlands New Guinea
- Paramaribo, Surinam

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

Geophysical and Geodetic Institute, Genoa, Italy:
- Genoa (Monte Capellino), Italy

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

South African Council for Scientific and Industrial Research:
- Capetown, Union of South Africa
- Johannesburg, 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:
Adak, Alaska
Thule, Greenland
White Sands, New Mexico

National Bureau of Standards (Central Radio Propagation Laboratory):
Anchorage, Alaska
Boulder, Colorado
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:

Quantity	Units	Remarks
Electron Density (N)	$x10^3$ = electrons/cm^3	Body of table; given at each 10 km of height.
NMAX	$x10^3$ = electrons/cm^3	Always the highest value of N at each hour. To maintain this rule, the electron density at the next 10 km increment above HMAX is always given as exactly equal to NMAX (unless HMAX coincides with a 10 km level).
QUALification	(Alphabetic)	A standard scaling letter qualifying the observation when necessary.
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	$x10^{10}$ = electrons/cm^2 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

RAMEY AFB, PUERTO RICO 60 W 1 MAR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q*KP	3	3	2	2	2	2	52	2	3	3	3	0
HMIN	240	258	257	239	199	198	197	199	109	108	108	109
SCAT	38.0	42.8	45.1	60.4	39.8	45.4	49.3	34.1	43.2	45.9	43.3	45.2
HMAXF	328	347	343	352	269	285	288	264	257	274	281	287
SHMAX	108	127	118	188	111	77	72	146	435	676	959	1202
KM												
360				235								
350		219	198	235								
340		217	198	233								
330	198	210	194	227								
320	196	197	185	219								
310	187	178	170	207								
300	170	152	152	195								
290	148	121	129	175		127	112				1240	1555
280	119	84.6	101	150		127	111			834	1240	1545
270	88.9	52.8	66.0	120	219	124	108	335		832	1220	1498
260	59.3	12.4	19.0	86.9	216	118	102	334	608	815	1169	1409
250	41.0			61.5	206	108	94.5	322	604	776	1082	1288
240				42.3	189	97.1	84.9	295	584	720	963	1127
230				4.1	166	81.1	72.5	255	546	647	813	925
220					133	63.2	58.3	181	495	560	658	721
210					85.1	45.3	44.2	91.0	432	473	517	561
200					12.4	7.8	12.4	12.4	363	397	418	446
190									292	333	351	370
180									226	283	304	325
170									172	239	269	294
160									131	202	239	269
150									107	169	212	242
140									89.0	145	184	213
130									80.3	117	160	185
120									75.0	105	139	158
110									44.7	93.5	106	124

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 1 MAR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	[illegible]	[illegible]	[illegible]	[illegible]
Q*KP	0	0	2	2	2	A2	2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
HMIN	106	107	105	108	109	199	232	199	200	204	199	198
SCAT	38.3	41.3	36.2	34.8	57.0	47.4	34.7	34.6	38.6	37.4	34.6	37.7
HMAXF	273	265	266	252	282	294	306	296	274	297	330	294
SHMAX	1025	856	802	623	698	691	527	625	474	290	344	186
KM												
330											446	
320											449	
310							1050				432	
300						834	1044	1143		540	412	335
290					754	832	1009	1135		535	385	334
280	1446				754	815	940	1093	754	514	350	324
270	1444	1143	1143		746	777	835	1012	752	472	310	300
260	1403	1138	1136	917	726	723	682	902	729	418	265	265
250	1309	1105	1089	916	692	652	485	752	679	340	214	223
240	1169	1033	999	890	651	566	197	565	606	238	164	175
230	992	938	869	824	595	476		347	509	142	118	126
220	794	827	715	721	530	396		189	355	77.3	81.8	82.7
210	620	693	570	593	458	327		88.9	154	40.0	52.4	52.0
200	483	552	456	474	389	273		12.4	12.4		12.4	12.4
190	395	430	379	383	330	229						
180	341	353	327	333	279	192						
170	305	307	290	285	236	161						
160	279	273	261	255	203	133						
150	258	239	232	228	171	110						
140	225	204	195	200	143	97.5						
130	187	180	164	171	125	91.9						
120	170	168	152	152	115	86.5						
110	150	141	135	121	49.0	38.9						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 2 MAR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q*KP	F3	F3	3	3	3	2	2	2	0	0	0	1
HMIN	217	228	228	230	227	319	257	223	110	107	109	109
SCAT	47.7	41.1	35.4	34.2	60.7	48.8	46.3	30.4	34.7	46.3	45.3	47.4
HMAXF	324	310	302	296	345	410	344	280	252	273	291	306
SHMAX	173	141	125	90	156	114	98	158	428	704	972	1324
KM												
410						179						
400						177						
390						172						
380						162						
370						149						
360						132						
350					193	112	161					
340					193	86.2	160					
330	262				190	54.9	147					
320	262	262			185	5.3	150					
310	256	264	262		177		138					1555
300	245	258	262	198	166		124				1143	1548
290	227	246	255	197	153		106				1143	1509
280	205	225	236	188	137		83.1	417		875	1126	1432
270	177	199	209	169	118		56.1	407		874	1079	1317
260	140	162	169	143	97.4		18.5	374	716	859	1006	1176
250	100	103	118	110	73.1			318	715	822	919	1005
240	68.6	57.8	64.0	66.0	48.2			213	693	767	815	832
230	46.5	12.4	12.4	3.7	12.4			77.6	641	690	702	681
220	12.4								559	597	589	549
210									448	502	482	459
200									331	414	403	399
190									237	342	347	356
180									185	287	306	325
170									153	242	274	299
160									127	206	245	272
150									104	176	216	243
140									87.1	152	186	211
130									79.3	132	155	177
120									73.6	118	137	153
110									12.4	90.3	73.0	97.2

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 2 MAR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q*KP	1	1	1	1	S1	A2	2	2	3	F3	F3	1
HMIN	109	107	107	107	108		199	199	199	229	209	198
SCAT	49.5	48.6	52.5	40.2	44.1		37.6	40.5	31.4	39.4	47.2	44.2
HMAXF	294	288	301	273	273		287	299	264	314	313	297
SHMAX	1514	1218	1361	901	727		421	479	262	236	315	173
KM												
320										446	469	
310			1555							445	468	
300	1907		1555					834		432	459	280
290	1903	1446	1537				834	824		403	438	278
280	1866	1437	1491	1240	949		826	789		363	408	269
270	1791	1398	1414	1238	949		789	725	643	308	369	252
260	1676	1327	1318	1208	930		721	646	640	234	325	229
250	1525	1227	1184	1139	885		628	544	609	138	276	201
240	1314	1098	1021	1031	820		492	427	547	67.2	225	164
230	1036	949	345	886	724		308	282	443	12.4	158	125
220	783	797	682	712	612		164	155	281		79.5	85.2
210	601	655	540	557	500		74.7	76.7	123		12.4	53.1
200	473	521	435	441	401		12.4	12.4	12.4			12.4
190	392	424	366	365	324							
180	340	360	321	316	270							
170	307	319	288	280	234							
160	283	288	261	251	206							
150	261	261	237	221	180							
140	237	233	214	195	151							
130	209	204	188	171	129							
120	178	176	170	153	119							
110	137	144	135	130	99.7							

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 3 MAR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q,KP	1	1	1	1	1	1	S1	1	1	1	A1	1
HMIN	210	204	230	207	197	193	245	229	105	109	109	107
SCAT	43.9	27.2	47.7	27.2	60.6	82.0	74.6	42.0	34.8	48.1	48.3	52.3
HMAXF	316	267	312	255	307	345	370	306	266	270	300	307
SHMAX	159	92	87	45	100	104	88	154	462	775	1109	1373
KM												
380							93.8					
370							93.8					
360							93.3					
350						97.2	92.1					
340						97.1	89.9					
330						96.4	87.0					
320	251		143			94.9	83.1					
310	250		143		127	92.7	78.5	286			1290	1555
300	243		141		127	89.8	73.9	284			1290	1549
290	228		136		124	86.1	68.1	276			1276	1517
280	208		127		121	81.2	60.8	258		1004	1232	1456
270	182	240	116		115	75.4	51.7	234	679	1004	1161	1360
260	150	237	102	127	107	69.3	41.6	201	675	993	1067	1239
250	118	218	83.2	126	98.8	62.6	15.3	155	652	961	945	1101
240	85.9	183	60.5	117	88.0	55.9		92.7	608	905	799	926
230	58.9	133	2.6	99.5	75.6	49.2		12.4	540	830	673	750
220	40.7	80.8		73.3	61.1	42.9			448	734	557	604
210		38.8		35.0	45.0	30.0			350	615	458	485
200					12.4	12.4			271	471	384	401
190									215	368	336	347
180									172	290	301	311
170									138	242	271	287
160									108	207	243	268
150									91.7	175	213	247
140									82.6	149	180	220
130									78.3	131	143	180
120									74.0	118	132	155
110									52.5	65.5	65.5	138

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W MAR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q,KP	1	1	0	0	A0	A0	0	0	0	0	0	0
HMIN	109	109	109	106			208	205	204	233	259	237
SCAT	50.3	41.2	44.2	43.0			43.0	35.7	39.2	42.9	37.8	35.5
HMAXF	304	292	293	283			290	286	303	333	350	316
SHMAX	1427	1366	1325	1010			495	314	285	294	303	251
KM												
350											557	
340										492	548	
330										492	517	
320										481	470	508
310	1669								508	456	406	504
300	1666	1907	1786				917		507	420	327	482
290	1638	1906	1784	1341			917	643	495	372	245	441
280	1577	1869	1748	1340			904	638	464	312	164	377
270	1477	1774	1666	1312			864	610	420	240	81.1	300
260	1355	1621	1549	1248			803	556	359	157	12.4	212
250	1185	1424	1368	1139			711	476	290	86.4		119
240	997	1158	1156	1014			580	372	205	43.7		38.7
230	815	878	907	862			393	243	129			
220	659	657	685	696			179	121	70.8			
210	535	505	506	540			32.2	47.7	38.8			
200	437	410	398	421								
190	371	351	333	341								
180	327	314	296	291								
170	297	287	268	257								
160	272	264	239	226								
150	245	240	199	189								
140	214	214	172	162								
130	190	182	158	143								
120	169	169	150	135								
110	124	110	78.9	126								

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 4 MAR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q,KP	0	0	1	1	1	1	1	1	2	2	2	1
HMIN	231	209	219	199	219	198	244	198	110	106	109	106
SCAT	34.2	23.5	39.1	28.9	26.6	49.3	63.7	41.4	44.3	42.4	42.0	42.4
HMAXF	308	261	290	252	267	275	361	286	263	269	297	289
SHMAX	209	142	132	82	44	50	78	149	431	594	933	1158
KM												
370							93.8					
360							93.8					
350							93.0					
340							91.1					
330							88.1					
320							83.9					
310	446						77.8					
300	441						71.6				1143	
290	416		262				63.7	262			1136	1555
280	372		258			83.8	55.2	261			1099	1537
270	309	446	246		127	83.6	46.4	253	573	754	1026	1476
260	225	446	225	219	125	82.0	34.4	236	573	747	929	1361
250	132	421	196	218	114	78.6	12.4	212	560	718	811	1209
240	63.2	355	154	209	95.4	73.5		182	533	666	689	1034
230		240	99.9	187	66.8	66.6		143	493	599	574	831
220		107	12.4	153	12.4	59.2		101	435	521	467	637
210		12.4		93.5		48.6		60.5	365	437	387	488
200				12.4		12.4		12.4	299	358	331	388
190									240	302	295	330
180									197	261	268	294
170									163	230	242	269
160									137	202	214	246
150									117	177	188	219
140									103	152	161	184
130									88.2	121	142	162
120									74.3	105	133	152
110										90.1	90.5	143

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 4 MAR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q,KP	1	1	0	0	0	0	0	0	1	1	1	2
HMIN	105	107	106	109	108	110	219	201	221	221	201	211
SCAT	56.6	46.6	42.0	48.2	48.9	48.2	35.5	42.2	31.6	44.1	42.6	41.7
HMAXF	303	287	273	281	285	283	292	300	297	310	305	309
SHMAX	1549	1274	1084	817	757	652	377	403	270	311	274	230
KM												
310	1771							679		565	446	389
300	1770						824	679	608	558	445	384
290	1749	1654		960	875	794	823	669	600	536	432	368
280	1700	1645	1555	960	873	793	799	639	563	500	406	341
270	1623	1600	1554	948	855	779	743	590	496	450	368	304
260	1533	1515	1519	916	817	748	652	524	402	359	322	255
250	1393	1403	1440	862	763	699	516	443	285	241	267	203
240	1193	1233	1324	789	692	636	318	351	164	137	209	145
230	966	999	1150	696	611	563	127	247	70.2	58.0	147	89.8
220	751	779	903	592	524	484	12.4	140			87.6	48.6
210	565	597	673	495	438	400		64.2			48.2	
200	441	458	495	415	364	326						
190	364	366	377	352	306	267						
180	322	318	314	306	265	220						
170	295	288	283	271	233	183						
160	272	267	261	240	206	152						
150	249	249	236	211	180	125						
140	224	228	209	178	150	104						
130	197	197	183	156	127	92.9						
120	173	173	159	142	116	86.5						
110	147	153	132	55.6	89.9	12.4						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 5 MAR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q*KP	2	F2	F1	1	1	1	1	1	A1	1	1	1
HMIN	204		223	200	198	197	256	209	110	105	109	108
SCAT	38.9		33.9	20.0	55.1	54.3	55.6	48.7	40.1	47.9	41.3	48.1
HMAXF	287		300	234	291	294	346	292	267	284	286	303
SHMAX	150		135	65	88	79	53	151	436	694	933	1349
KM												
350							77.5					
340							77.3					
330							75.9					
320							73.3					
310			286				69.0					1626
300			286		127	112	63.8	251				1624
290	286		279		127	111	58.1	251		794	1203	1595
280	283		259		126	110	50.5	248		792	1196	1525
270	272		228		122	106	41.3	238	643	777	1155	1428
260	251		185		117	100	12.4	224	638	741	1074	1295
250	223		134		109	92.6		206	615	690	971	1146
240	180		76.6	262	100	84.1		181	573	628	849	958
230	126		41.8	260	89.1	72.6		141	508	558	712	773
220	75.5			230	74.5	59.2		82.4	420	483	575	597
210	40.0			163	55.7	44.7		12.4	326	411	462	469
200				12.4	12.4	12.4			249	348	376	387
190									197	297	319	333
180									157	258	281	299
170									122	222	253	274
160									98.1	190	225	251
150									87.1	162	195	225
140									81.2	139	167	197
130									77.4	124	145	168
120									73.6	115	134	151
110									12.4	96.4	101	128

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 5 MAR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q*KP	1	1	3	3	3	6	6	6	7	7	7	6
HMIN	107	104	106	108	109	109	218	201	224	248	279	253
SCAT	48.8	47.6	45.2	48.1	49.5	38.1	38.8	40.2	40.6	40.0	41.4	48.3
HMAXF	291	298	280	295	291	264	302	294	324	351	369	356
SHMAX	1303	1430	1133	1018	1012	699	451	427	389	417	508	640
KM												
370											875	
360										716	865	1004
350										716	829	1001
340										703	766	977
330									679	666	684	931
320									677	608	585	865
310							896		657	534	470	773
300	1626	1786		1215	1290		895	754	613	450	330	649
290	1626	1774	1528	1212	1290		874	752	555	346	187	499
280	1606	1723	1528	1184	1274		825	731	482	230	41.5	339
270	1551	1629	1509	1130	1230	1096	743	685	392	127		194
260	1465	1505	1452	1052	1166	1093	621	618	278	69.7		69.6
250	1345	1335	1361	945	1071	1059	462	529	156	20.7		
240	1191	1139	1230	814	919	985	248	428	81.4			
230	1004	888	1037	677	746	876	95.5	310	41.2			
220	782	680	800	551	572	722	26.9	187				
210	594	520	610	444	440	545		85.4				
200	449	414	461	365	344	397						
190	363	352	362	312	285	293						
180	314	315	312	278	248	234						
170	285	290	282	252	220	198						
160	262	269	257	226	195	172						
150	234	247	232	193	173	148						
140	206	219	206	156	149	128						
130	178	190	177	139	126	111						
120	155	164	156	131	116	99.7						
110	143	148	134	102	52.8	55.6						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 6 MAR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q*KP	6	F6	F4	F4	4	F4	F4	4	4	4	4	2
HMIN	230	202			225		242	197	109	106	109	106
SCAT	42.1	39.4			29.8		58.3	45.2	44.0	59.9	52.7	90.3
HMAXF	340	299			291		351	310	272	293	291	362
SHMAX	698	490			238		202	201	395	643	667	1040
KM												
370												679
360							262					679
350							262					676
340	1191						260					669
330	1174						254					658
320	1121						244					642
310	1039						228	310				619
300	924	875			608		210	306		643	679	594
290	775	863			608		190	295		642	679	567
280	598	819			589		166	276	540	635	672	539
270	384	750			537		139	251	540	619	653	509
260	204	665			441		106	215	530	592	619	477
250	102	561			294		65.8	172	507	558	575	441
240	54.0	424			146			129	468	517	523	403
230		251			50.1			92.8	418	470	467	365
220		120						65.9	355	420	410	333
210		55.4						45.6	278	365	361	307
200								12.4	215	315	321	288
190									170	270	290	274
180									136	232	265	262
170									110	202	242	248
160									89.8	175	217	232
150									76.2	149	189	213
140									69.3	124	160	191
130									65.7	109	140	168
120									62.1	101	129	151
110									45.5	84.8	55.6	102

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 6 MAR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q*KP	2	2	1	1	1	0	0	0	0	0	0	F0
HMIN	109	107	109	108	110	109	232	205	198	240	258	289
SCAT	62.0	64.8	49.0	51.5	45.5	60.5	35.1	40.3	43.4	55.2	52.8	46.2
HMAXF	326	323	271	263	259	287	297	286	291	334	380	370
SHMAX	751	795	504	415	358	423	199	201	143	125	136	127
KM												
380											179	
370											178	219
360											173	216
350											165	209
340										179	152	196
330	608	679								179	137	178
320	606	679								176	120	156
310	598	672								170	103	125
300	581	657					461		240	162	84.4	77.4
290	555	633				432	457	382	240	150	66.8	12.4
280	522	604	540			430	434	380	237	136	50.7	
270	484	565	540	439		423	395	367	227	118	35.4	
260	442	514	534	439	417	409	327	343	209	95.6	6.6	
250	398	452	516	432	413	392	214	308	187	62.6		
240	358	383	487	418	399	368	76.6	250	159	4.1		
230	325	328	448	395	374	336		177	123			
220	298	296	391	363	340	298		98.4	85.2			
210	281	276	334	325	297	257		44.4	52.5			
200	269	261	292	287	259	223			12.4			
190	259	253	265	258	232	194						
180	251	245	250	238	213	170						
170	243	236	237	224	195	146						
160	229	225	222	206	173	123						
150	205	209	203	180	144	101						
140	178	182	181	155	122	86.8						
130	159	160	159	140	109	80.1						
120	149	149	146	131	102	75.2						
110	73.0	92.4	68.6	79.9	12.4	46.8						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 7 MAR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q*KP	0	F0	F0	F0	F0	F1	F1	1	S1	1	1	1
HMIN	279	228	224	199	200	197	246	239	108	108	107	108
SCAT	49.8	40.9	37.5	31.7	32.7	56.7	55.6	37.6	32.8	44.5	41.6	37.4
HMAXF	360	314	302	260	251	286	363	299	244	271	279	280
SHMAX	157	144	167	137	70	54	123	142	310	561	795	883
KM												
370	257						161					
360	257						161					
350	254						158					
340	246						154					
330	233						146					
320	216	262					136					
310	192	262	335				123					
300	161	255	335				108	310				
290	117	240	327			77.5	92.2	306				
280	12.4	219	306			77.3	75.1	291		679	1050	1240
270		186	273			75.9	58.6	266		679	1037	1219
260		141	230	348	174	73.3	43.3	228		668	992	1153
250		63.9	169	340	174	69.3	12.4	169	508	639	920	1042
240		53.3	91.8	316	170	64.6		44.7	506	593	822	887
230		12.4	45.4	272	157	59.8			484	533	701	711
220				180	140	51.7			437	466	562	543
210				78.1	105	42.5			372	396	438	432
200				12.4	12.4	12.4			300	334	351	362
190									232	287	305	319
180									181	252	271	290
170									143	222	243	268
160									117	194	217	247
150									98.3	163	189	217
140									83.3	140	156	181
130									76.9	115	126	153
120									69.6	104	118	137
110									52.4	87.7	98.0	113

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 7 MAR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q*KP	1	1	2	2	2	2	2	2	2	2	2	2
HMIN	108	108	109	109	107	108	219	199	201	202	256	247
SCAT	46.2	52.2	50.4	49.5	42.8	40.8	33.7	38.9	34.5	40.3	45.4	58.3
HMAXF	287	300	282	295	288	284	282	276	275	276	356	374
SHMAX	1063	1114	997	944	866	798	518	449	276	153	127	189
KM												
380												235
370												234
360											198	231
350											197	225
340											192	214
330											182	202
320											166	185
310											146	164
300		1215		1038							123	140
290	1341	1204	1240	1035	1050	1143	1240				97.2	114
280	1332	1171	1239	1013	1041	1140	1238	896	608	298	73.1	87.8
270	1293	1115	1222	965	1005	1110	1198	890	605	296	50.5	63.8
260	1221	1038	1181	902	935	1044	1103	853	579	287	17.4	44.9
250	1122	936	1116	824	849	945	943	793	528	267		12.4
240	986	816	1025	732	751	805	694	699	448	239		
230	817	693	885	630	651	644	281	568	336	202		
220	641	577	721	535	557	490	38.9	394	190	150		
210	494	482	567	457	466	377		152	71.8	73.3		
200	393	410	433	394	384	293		12.4				
190	335	358	340	343	322	238						
180	303	321	300	302	276	204						
170	280	291	270	271	240	178						
160	259	265	246	243	211	154						
150	233	236	221	215	185	133						
140	197	210	187	182	161	113						
130	164	182	158	149	140	97.7						
120	150	155	150	135	122	90.1						
110	103	128	76.1	76.1	96.4	74.6						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 8 MAR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q*KP	2	2	1	1	1	1	S1	A1	A1	1	1	1
HMIN	258	230	229	200	200	198	257	199		110	109	106
SCAT	48.3	46.0	25.5	33.4	51.5	41.5	54.8	26.9		38.5	48.0	51.6
HMAXF	353	326	283	263	300	281	349	255		251	280	294
SHMAX	167	150	92	77	104	90	57	120		455	671	878
KM												
360	262											
350	262						83.8					
340	257						83.3					
330	247	240					81.4					
320	231	239					78.0					
310	210	233					73.3					
300	183	221			152		66.9					917
290	147	204	262		151	161	60.1				794	915
280	105	181	262		146	161	50.7				794	899
270	62.5	150	246	179	139	158	40.4				784	864
260	12.4	117	211	179	130	150	9.2	335		634	758	811
250		78.2	155	172	118	137		332		634	713	748
240		47.4	89.7	158	101	120		309		621	653	673
230		1.1	12.4	139	82.5	99.1		264		584	579	586
220				102	62.3	73.3		186		529	496	503
210				53.7	41.4	49.3		91.0		460	411	433
200						12.4		12.4		389	346	381
190										323	295	344
180										271	255	313
170										232	211	285
160										196	171	254
150										165	153	222
140										143	142	192
130										117	136	165
120										104	130	152
110										12.4	55.6	121

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 8 MAR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q*KP	1	1	1	1	1	2	2	A2	2	2	2	F3
HMIN	110	109	106	109	106	108	208	200	199	222	273	256
SCAT	48.1	54.3	50.4	43.4	48.7	44.7	38.4	38.1	41.6	58.9	49.1	53.7
HMAXF	305	301	297	284	299	290	284	270	280	353	385	373
SHMAX	1102	1246	1209	934	1017	973	660	427	240	238	210	249
KM												
390											304	
380											303	335
370											297	335
360										286	284	330
350										285	264	320
340										282	240	302
330										274	210	279
320										263	177	252
310	1240	1420								246	138	222
300	1237	1419	1446		1240					226	99.6	184
290	1210	1404	1439	1240	1230	1393	1393			203	65.0	144
280	1157	1365	1403	1237	1193	1376	1390	875	439	177	40.4	102
270	1076	1298	1339	1206	1130	1319	1350	875	433	150		62.9
260	971	1217	1240	1142	1043	1230	1251	860	414	123		26.2
250	851	1103	1127	1043	925	1117	1129	812	382	93.3		
240	724	941	969	915	779	938	910	738	339	65.4		
230	604	769	791	747	624	721	570	631	281	42.9		
220	495	606	622	578	486	513	169	493	209			
210	409	477	483	450	393	371	28.3	273	117			
200	355	383	385	362	324	281		12.4	12.4			
190	320	329	328	307	278	229						
180	297	299	294	271	245	194						
170	278	276	271	243	217	167						
160	259	253	246	217	192	143						
150	233	230	216	190	165	121						
140	196	203	178	161	139	103						
130	162	176	159	142	125	93.6						
120	149	154	151	133	117	87.6						
110	12.4	97.2	132	78.9	98.5	62.6						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 9 MAR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q,KP	3	3	3	3	3	1	1	1	3	A3	A3	A3
HMIN	264	238	239	216	198	205	226	199	109	109	109	
SCAT	41.4	33.7	34.3	35.6	35.3	55.6	54.1	38.6	36.0	50.7	38.4	
HMAXF	368	317	305	274	273	316	329	274	246	278	274	
SHMAX	199	165	170	165	107	93	85	189	375	657	759	
KM												
370	335											
360	332											
350	319											
340	296											
330	264						119					
320	222	348				123	118					
310	171	344	389			123	116					
300	121	323	387			120	111					
290	82.0	289	371			116	103					
280	54.5	241	339	389	219	110	94.9	382		794	1096	
270	26.8	180	290	388	218	101	84.4	381		789	1093	
260		113	210	375	211	90.6	71.2	369		768	1060	
250		61.2	107	346	195	78.7	56.0	344	608	733	988	
240		12.4	12.4	304	170	66.2	42.0	308	604	683	879	
230				220	138	53.6	12.4	248	578	615	725	
220				73.3	101	42.0		167	527	522	558	
210					61.3	15.4		83.5	457	422	431	
200					12.4			12.4	366	343	348	
190									278	283	295	
180									210	239	261	
170									158	203	230	
160									125	172	192	
150									106	145	164	
140									94.9	130	149	
130									89.2	121	139	
120									82.8	114	132	
110									41.3	49.0	99.6	

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 9 MAR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q,KP	3	3	S3	A3	A3	4	4	4	4	4	4	5
HMIN	106	109	109	109	109	111	199	199	200	198	265	289
SCAT	50.9	62.1	55.0	49.0	46.2	48.6	31.3	36.0	45.3	43.8	41.5	40.7
HMAXF	300	301	301	304	303	296	274	280	281	328	374	379
SHMAX	1184	1305	1248	1075	1017	1046	575	479	325	288	277	270
KM												
380											446	477
370											445	471
360											433	452
350											406	417
340											367	369
330										417	321	308
320										414	269	241
310		1500	1446	1240	1215					400	210	165
300	1341	1500	1446	1238	1214	1420				373	153	90.2
290	1329	1484	1431	1216	1191	1415		1004	573	338	101	12.4
280	1290	1437	1392	1167	1138	1383	1341	1004	573	294	62.6	
270	1225	1363	1326	1092	1058	1319	1337	985	554	249	36.7	
260	1140	1263	1233	993	951	1233	1279	925	542	203		
250	1018	1140	1134	876	828	1107	1153	829	504	161		
240	877	982	982	754	700	962	952	681	454	123		
230	733	810	802	631	581	764	705	501	380	89.6		
220	598	647	626	522	478	543	375	262	286	63.2		
210	486	516	483	431	396	375	126	97.7	136	43.7		
200	407	415	371	360	333	275	12.4	12.4		8.4		
190	353	352	312	306	288	214						
180	316	312	279	263	251	177						
170	288	286	252	227	218	147						
160	265	265	221	193	187	116						
150	240	241	187	167	159	92.6						
140	199	213	166	149	137	82.6						
130	166	179	155	138	124	78.4						
120	153	156	147	130	115	74.1						
110	144	116	78.9	63.9	55.6							

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 10 MAR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q,KP	5	5	6	6	6	E7	E7	7	5	5	5	3
HMIN	250	237	233	209	179			229	109	109	109	107
SCAT	41.7	41.6	39.5	30.3	25.4			42.3	34.0	32.8	58.9	43.5
HMAXF	347	332	325	272	223			304	266	275	274	280
SHMAX	288	256	270	211	87			167	399	671	567	888
KM												
350	508											
340	505	446										
330	488	446	492									
320	454	437	490									
310	409	413	473					310				
300	349	378	440					309				
290	267	330	394					302				1119
280	175	269	332	540				286		1050	582	1119
270	97.2	199	257	540				260	608	1042	581	1104
260	52.3	126	176	519				227	602	990	574	1057
250		65.2	89.6	473				187	572	890	555	984
240		19.9	44.4	386				128	514	762	534	883
230				249	280			12.4	439	600	502	760
220				95.6	279				360	466	462	629
210				12.4	261				289	364	417	510
200					225				236	298	367	413
190					136				193	253	321	346
180					12.4				157	216	283	303
170									128	185	250	271
160									104	151	223	243
150									84.8	120	196	217
140									71.5	99.8	174	190
130									66.9	92.6	143	164
120									62.3	87.2	126	149
110									12.4	63.0	49.0	102

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 10 MAR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q,KP	3	A3	A2	A2	2	1	1	1	S1	1	1	A1
HMIN	109	109		108	109	108	200	200		269	298	277
SCAT	43.0	46.1		56.4	48.8	44.5	28.0	46.2		49.1	57.2	49.2
HMAXF	288	280		317	287	270	247	281		382	414	383
SHMAX	902	761		1148	1065	843	234	179		153	201	179
KM												
420											262	
410											262	
400											259	
390										219	251	262
380										219	240	262
370										215	224	258
360										208	205	248
350										194	181	232
340										177	152	213
330										156	121	186
320				1215						132	88.1	157
310				1210						106	54.6	126
300				1184						79.6	12.4	88.5
290	1096			1138	1446			304		57.7		55.1
280	1086	917		1071	1440	1240		304		41.2		18.1
270	1046	906		983	1405	1240		299		4.9		
260	975	874		875	1339	1223		288				
250	883	819		751	1238	1175	716	268				
240	769	745		624	1121	1098	704	243				
230	644	647		511	928	983	649	210				
220	533	533		425	689	835	542	166				
210	443	437		365	474	661	238	109				
200	375	363		324	340	477	12.4	12.4				
190	329	315		293	273	319						
180	298	282		266	236	216						
170	272	255		240	206	170						
160	245	226		211	176	139						
150	216	198		181	149	116						
140	186	174		163	133	102						
130	161	159		154	123	94.1						
120	150	150		146	116	88.7						
110	58.9	90.5		79.9	62.8	77.8						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 11 MAR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q,KP	A1	1	2	2	2	2	E2	2	2	2	2	2
HMIN	248	246	259	210	200	198		198	109	109	107	108
SCAT	53.3	43.7	39.8	44.5	33.6	64.3		42.1	36.0	42.1	45.1	52.9
HMAXF	365	349	339	301	254	316		280	243	259	264	293
SHMAX	208	171	153	224	104	100		155	294	489	549	816
KM												
370	286											
360	285											
350	280	274										
340	270	271	286									
330	255	260	282									
320	237	242	270			119						
310	210	217	248	389		119						
300	177	188	218	389		117						834
290	139	154	179	383		114		286				833
280	99.8	114	130	366		109		286				822
270	69.0	77.8	79.8	343		103		282			643	795
260	46.0	50.5	12.4	309	257	95.9		269		643	641	751
250	7.8	17.4		249	256	87.0		249	446	635	627	696
240				173	246	76.8		223	446	609	595	632
230				106	226	64.9		182	433	565	548	557
220				54.3	196	51.6		122	400	502	491	487
210					128	37.7		65.3	354	426	429	424
200					12.4	6.1		12.4	297	349	372	372
190									239	291	325	333
180									194	250	288	303
170									161	218	259	277
160									133	190	232	253
150									110	164	205	229
140									94.9	140	174	199
130									85.7	120	146	166
120									75.5	104	133	150
110									38.9	72.7	99.3	104

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 11 MAR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q,KP	2	2	A2	2	A2	A1	1	1	3	3	3	1
HMIN	108	108	109	108		109	199	200	209	227	280	278
SCAT	50.5	50.6	51.3	36.2		44.0	36.1	41.9	44.4	40.2	42.7	40.5
HMAXF	295	293	299	287		284	278	285	306	319	369	372
SHMAX	958	974	992	828		769	461	362	257	190	195	191
KM												
380												335
370											335	335
360											332	328
350											319	311
340											297	283
330											266	245
320										335	226	200
310									417	331	179	150
300	1050	1084	1096						416	317	126	94.7
290	1047	1083	1087	1096		1050		643	404	292	70.4	55.7
280	1025	1067	1059	1085		1047	1004	641	382	257	2.6	12.4
270	981	1026	1007	1030		1023	992	623	349	215		
260	921	968	936	938		969	941	586	308	167		
250	839	892	853	835		892	854	532	259	118		
240	744	793	752	713		781	709	462	200	66.4		
230	639	683	637	587		654	483	374	140	19.9		
220	534	571	524	477		520	233	268	78.0			
210	441	468	427	388		401	92.2	140	12.4			
200	371	390	357	324		302	12.4	12.4				
190	327	338	313	284		238						
180	297	305	285	257		198						
170	275	280	262	236		170						
160	254	258	237	213		142						
150	232	234	205	181		119						
140	204	207	176	155		103						
130	171	180	158	141		93.8						
120	153	167	149	133		88.2						
110	117	98.4	65.5	89.4		72.0						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 12 MAR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q,KP	1	1	1	1	A1	A2	2	2	2	2	2	1
HMIN	258	219	201	199		193	237	208	107	108	108	109
SCAT	41.6	34.9	23.5	37.9		68.2	50.8	32.6	41.2	44.6	41.0	47.0
HMAXF	357	292	244	265		312	322	266	250	264	277	279
SHMAX	211	191	129	78		69	58	116	357	531	706	819
KM												
360	355											
350	352											
340	339											
330	316						90.4					
320	283					80.6	90.3					
310	241					80.6	89.1					
300	194	417				80.0	86.0					
290	140	417				78.6	80.9					
280	89.3	404				76.2	75.0				917	1004
270	53.7	374		161		73.0	67.5	286		679	911	996
260	12.4	329		160		68.1	56.9	284	500	678	879	965
250		251	446	155		62.3	43.5	269	500	662	816	911
240		154	442	144		56.0	12.4	244	492	628	733	836
230		71.5	404	129		49.5		201	469	579	633	742
220		12.4	324	107		43.2		117	431	514	520	628
210			137	74.4		30.6		26.9	382	443	416	505
200				12.4		12.4			323	369	339	398
190									264	299	292	330
180									213	245	259	288
170									171	208	232	257
160									139	177	203	226
150									118	148	172	196
140									101	130	151	173
130									85.2	121	139	158
120									76.4	115	132	149
110									60.9	78.1	79.9	97.2

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 12 MAR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q,KP	1	A1	A1	A1	1	2	2	2	3	3	3	E2
HMIN	105			109	107	110	211	200	198	258	208	247
SCAT	41.5			41.2	41.0	32.2	35.2	44.2	53.0	45.1	49.3	39.6
HMAXF	280			284	277	267	278	282	326	361	359	339
SHMAX	777			962	836	632	431	403	342	274	394	271
KM												
370										439		
360										439	508	
350										433	503	
340										415	489	477
330									446	385	460	470
320									445	348	424	449
310									436	302	383	410
300									419	246	339	361
290	939			1341				716	392	177	289	305
280	939			1338	1191		1004	716	360	102	235	238
270	924			1301	1183	1050	992	703	322	57.0	183	167
260	879			1221	1141	1038	939	672	278	12.4	139	90.2
250	812			1107	1063	976	847	625	232		104	35.0
240	728			953	950	870	597	552	184		76.5	
230	627			768	796	727	430	454	135		55.9	
220	524			579	622	566	111	328	89.7		40.0	
210	434			422	473	422		169	56.0		5.5	
200	368			333	362	314		12.4	12.4			
190	326			289	292	245						
180	297			261	247	205						
170	274			244	216	175						
160	251			220	191	151						
150	217			185	164	128						
140	184			158	138	110						
130	163			141	124	96.2						
120	153			133	117	88.8						
110	143			65.5	90.7	12.4						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 13 MAR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q*KP	2	2	3	3	3	2	2	2	C2	2	2	3
HMIN	237	221	199	199	196	258	281	208		108	109	109
SCAT	40.0	36.5	27.8	41.1	60.2	53.8	44.7	27.8		43.1	44.3	50.4
HMAXF	335	299	266	276	319	366	373	260		249	261	287
SHMAX	307	247	188	153	112	92	78	151		489	590	724
KM												
380							127					
370						127	127					
360						127	124					
350						124	118					
340	540					120	109					
330	538					113	96.4					
320	521				135	102	80.9					
310	485				134	90.8	65.0					
300	435	508			132	78.4	49.2					
290	373	500			127	64.6	29.3					824
280	298	472		286	119	50.3						820
270	211	428	477	284	111	35.9					735	801
260	117	360	471	275	101	6.5		446			735	763
250	62.6	272	436	257	90.0			433		670	723	715
240	19.9	153	373	232	78.4			395		663	689	648
230		64.8	277	196	66.3			313		638	640	567
220			177	148	53.7			144		597	576	479
210			81.2	91.8	41.8			28.3		535	496	388
200			12.4	12.4	12.4					454	414	329
190										367	348	291
180										295	301	260
170										250	267	219
160										219	239	180
150										187	213	165
140										152	186	156
130										125	153	150
120										109	130	142
110										75.5	63.9	46.8

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 13 MAR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q*KP	3	3	A2	A2	A2	A2	2	2	4	4	4	5
HMIN	109	109	107			108	216	199	219	212	243	226
SCAT	44.7	49.8	41.7			42.3	37.9	37.9	53.8	53.1	35.7	48.6
HMAXF	281	287	308			282	288	278	317	346	332	334
SHMAX	802	857	960			772	493	343	291	315	216	273
KM												
350										417		
340										416	417	410
330										408	417	409
320									417	392	406	402
310			1072						415	369	378	385
300			1063						406	339	334	360
290	949	960	1018			1096	1050		390	301	277	327
280	949	956	950			1095	1038	679	367	255	213	285
270	934	934	865			1074	989	672	337	202	147	234
260	893	890	763			1020	905	642	298	150	84.2	178
250	831	830	657			939	781	587	249	110	44.3	117
240	751	754	560			821	598	513	194	78.6		66.5
230	656	662	478			677	242	407	128	54.7		26.8
220	556	565	414			534	52.8	278	44.7	33.3		
210	460	473	364			410		135				
200	382	394	329			310		12.4				
190	331	338	304			242						
180	299	301	283			198						
170	274	274	260			165						
160	249	250	232			137						
150	221	224	202			116						
140	189	193	177			102						
130	172	175	160			93.4						
120	161	164	149			87.6						
110	110	55.6	113			58.7						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 14 MAR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q*KP	A5	A5	4	4	4	4	S4	4	S3	3	3	4
HMIN	238	250	217	200	210	208	250	199	109	109	109	106
SCAT	35.8	50.3	36.3	28.2	38.0	33.1	66.4	37.8	46.9	36.0	41.4	45.8
HMAXF	322	383	298	248	291	267	373	270	275	269	273	284
SHMAX	207	236	233	100	125	53	90	182	574	651	797	942
KM												
390		310										
380		310					104					
370		305					104					
360		294					103					
350		275					101					
340		251					98.0					
330	417	223					92.6					
320	417	193					86.8					
310	406	162					80.0					
300	377	132	477		240		72.1					
290	334	103	471		240		63.4					1096
280	275	77.0	447		235		54.0		754		1050	1093
270	200	55.9	405		221	123	44.0	382	752	928	1048	1069
260	118	38.2	344		199	122	24.8	375	734	911	1022	1015
250	61.8	1.4	252	286	169	115		356	698	855	963	939
240	12.4		156	280	130	103		328	647	781	879	850
230			83.4	256	86.6	86.6		272	577	682	776	748
220			33.6	217	49.8	57.4		194	489	567	659	644
210				140		12.4		89.8	384	461	534	544
200				12.4				12.4	297	371	423	458
190									235	305	347	388
180									192	259	296	334
170									158	220	262	293
160									132	188	233	261
150									111	157	204	235
140									96.4	130	169	204
130									89.3	115	142	170
120									79.7	104	131	151
110									52.1	55.6	55.6	111

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 14 MAR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q*KP	4	4	4	4	4	A2	A2	A2	2	2	2	F4
HMIN	108	111	108	110	109			199	199	196	249	199
SCAT	36.2	45.2	43.8	54.2	35.1			34.7	34.3	51.9	53.8	41.8
HMAXF	280	287	296	304	279			273	264	337	361	337
SHMAX	905	956	967	1172	774			334	148	222	240	212
KM												
370											335	
360											335	
350											332	
340										280	323	304
330										279	307	302
320										272	287	291
310				1341						260	262	270
300			1143	1339						242	226	242
290	1252	1191	1137	1318						221	183	210
280	1252	1184	1104	1275	1143			745		196	133	175
270	1217	1149	1038	1207	1122			744	335	168	83.8	143
260	1140	1083	950	1127	1054			721	334	141	50.2	116
250	1038	992	846	999	943			663	322	116	6.8	93.9
240	895	870	733	836	806			580	295	93.0		75.0
230	726	712	622	676	653			446	254	71.9		59.0
220	585	577	514	539	506			244	195	55.2		46.4
210	469	471	429	433	395			104	104	41.5		28.5
200	385	389	363	354	318			12.4	12.4	12.4		1.7
190	333	336	315	304	267							
180	299	300	281	271	230							
170	271	271	253	243	199							
160	242	245	226	220	170							
150	207	217	196	196	147							
140	185	189	170	171	132							
130	172	172	156	154	123							
120	162	158	147	140	116							
110	115		79.9	12.4	71.4							

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 15 MAR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q*KP	F4	F4	3	F3	F3	4	F4	4	S5	A5	5	3
HMIN	238	243	249		214	199	278	198	109	109	110	109
SCAT	47.0	43.8	38.3		44.2	43.6	49.0	36.9	41.8	54.4	46.8	37.1
HMAXF	335	332	316		289	272	362	282	274	306	294	270
SHMAX	211	170	157		121	88	88	159	451	886	1184	1110
KM												
370							143					
360							143					
350							141					
340	335	286					136					
330	334	286					127					
320	327	280	335				115					
310	312	268	334				100			940		
300	287	247	322				82.6			947	1528	
290	258	220	298		219		59.6	310		929	1526	
280	223	185	266		216	161	12.4	310	608	892	1496	
270	176	146	210		208	161		301	606	842	1428	1786
260	118	103	111		194	158		281	590	781	1331	1755
250	62.7	51.9	12.4		176	150		252	554	706	1198	1659
240	12.4				151	139		207	503	620	1020	1502
230					114	124		149	439	532	812	1270
220					55.0	104		97.7	368	448	636	1005
210						71.1		55.6	298	373	490	721
200						12.4		12.4	240	314	381	479
190									195	267	316	358
180									157	232	278	304
170									128	201	251	270
160									107	174	227	237
150									92.4	147	202	195
140									82.5	120	172	167
130									77.9	107	145	154
120									73.3	101	126	145
110									47.1	46.8	12.4	49.0

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 15 MAR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q*KP	3	3	S3	S3	3	A5	A5	A5	A5	A5	F5	3
HMIN	108	108	109	109	109					247	307	251
SCAT	60.8	49.1	57.2	41.7	48.4					44.6	45.4	41.7
HMAXF	296	287	310	269	291					337	397	343
SHMAX	1189	1119	1366	815	932					253	303	287
KM												
400											508	
390											505	
380											490	
370											460	
360											422	
350											372	508
340										417	307	507
330										414	219	495
320										402	121	467
310			1446							377	40.6	426
300	1240		1435		1096					343		371
290	1237	1354	1402		1096					301		296
280	1217	1347	1347		1082					254		211
270	1182	1298	1269	1096	1045					202		120
260	1128	1243	1170	1083	982					115		56.6
250	1061	1154	1046	1036	903					38.7		
240	970	1040	896	959	805							
230	861	890	745	862	699							
220	742	724	612	742	581							
210	622	573	502	608	470							
200	506	464	417	483	384							
190	412	379	357	379	323							
180	346	327	317	306	278							
170	302	293	287	261	243							
160	271	267	263	232	216							
150	239	242	240	207	190							
140	204	213	213	183	164							
130	176	181	183	162	143							
120	165	166	166	149	133							
110	79.9	91.9	78.0	65.5	76.1							

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 16 MAR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q*KP	3	3	5	5	S5	3	3	3	S3	3	3	3
HMIN	230	224	211	201		288	247	214	109	110	110	109
SCAT	40.9	41.4	27.5	33.1		63.6	48.7	33.4	31.2	37.8	49.3	43.8
HMAXF	318	310	269	264		393	336	270	235	245	283	289
SHMAX	277	256	163	142		89	80	159	362	463	759	919
KM												
400						112						
390						112						
380						110						
370						108						
360						104						
350						98.7						
340						91.8	127					
330						84.8	127					
320	508					75.2	124					
310	502	469				63.9	118					
300	482	462				49.3	109					
290	447	441				12.4	98.5				875	1096
280	396	408					85.6				874	1085
270	327	360	446	335			68.5	389			860	1045
260	237	295	434	334			48.5	381			826	973
250	127	206	391	320			12.4	355		679	776	887
240	62.1	110	320	292				316	716	676	707	784
230	4.1	49.0	207	246				240	712	653	622	677
220			79.2	170				116	677	605	530	568
210				73.2					604	535	444	473
200									491	448	375	394
190									338	367	324	339
180									213	303	287	303
170									151	253	255	273
160									114	212	224	244
150									92.2	178	190	213
140									82.2	149	158	182
130									77.5	125	140	160
120									72.8	112	131	148
110									12.4	12.4	12.4	55.6

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 16 MAR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q*KP	3	3	S1	1	1	1	1	1	2	2	2	2
HMIN	108	110	108	108	108	109	216	200	217	262	236	224
SCAT	48.0	37.6	43.6	44.9	49.2	40.4	34.0	40.6	42.2	45.8	38.5	40.1
HMAXF	305	271	271	274	280	268	287	272	300	362	325	335
SHMAX	1313	1099	978	782	792	648	407	374	248	263	210	275
KM												
370										417		
360										417		
350										410		
340										393		446
330										367	389	445
320										330	387	430
310	1528									282	374	401
300	1524								446	226	345	359
290	1491				960		917		440	167	306	309
280	1423	1669	1341	960	960		908	754	422	110	257	255
270	1335	1668	1341	958	950	960	859	754	390	56.0	197	200
260	1199	1634	1320	935	920	950	773	737	346		128	148
250	1036	1537	1264	886	871	909	646	698	289		70.9	97.6
240	871	1384	1171	817	800	841	463	638	218		27.5	62.7
230	712	1166	1045	728	710	741	206	534	133			35.0
220	575	917	863	629	607	614	53.6	387	40.7			
210	478	686	684	532	499	478		172				
200	408	511	518	446	403	354		12.4				
190	357	399	403	375	330	264						
180	319	333	329	315	275	208						
170	291	295	285	269	234	172						
160	267	269	257	232	203	145						
150	242	245	229	201	175	123						
140	211	219	200	176	143	110						
130	178	189	172	152	125	104						
120	164	167	154	137	117	98.9						
110	98.4	40.2	128	117	87.5	43.8						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 17 MAR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q*KP	F2	F2	A5	5	F5	4	4	4	3	3	3	2
HMIN	247	218	209	195	197	288	215	199	108	109	109	110
SCAT	38.9	45.7	42.3	38.6	44.7	47.7	64.6	40.5	47.5	38.2	47.7	51.6
HMAXF	329	323	291	257	277	376	350	284	281	268	289	307
SHMAX	227	261	252	114	64	79	128	182	661	737	1009	1354
KM												
380						127						
370						127						
360						124						
350						118	143					
340						109	142					
330	446	417				96.9	140					
320	441	417				83.1	136					
310	420	409				66.4	130					1555
300	385	392	477			46.3	122					1549
290	334	365	477			7.6	113	335	875		1215	1515
280	262	326	469		112		102	335	875		1204	1451
270	155	277	448		111		88.4	326	863	1096	1167	1356
260	76.9	217	416	240	108		74.3	306	832	1084	1101	1232
250	30.0	145	366	238	102		60.3	279	780	1035	1011	1087
240		90.3	287	228	92.1		48.8	237	711	951	898	912
230		54.4	171	211	80.9		36.8	181	617	830	765	744
220		12.4	77.1	187	66.6		12.4	120	507	679	640	595
210			12.4	147	48.5			65.1	391	528	528	476
200				83.7	12.4			12.4	296	395	433	397
190									233	310	361	345
180									191	261	309	309
170									155	226	270	281
160									124	195	235	256
150									104	165	201	229
140									88.8	133	168	198
130									79.3	112	142	162
120									72.4	104	130	146
110									54.3	83.9	49.0	12.4

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 17 MAR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q*KP	2	2	1	1	1	A1	1	1	A2	2	2	F1
HMIN	109	109	109	109	110	109	199	199	232	277	278	280
SCAT	39.1	45.8	44.1	46.5	44.1	39.6	43.4	40.8	51.8	53.2	40.0	41.9
HMAXF	298	295	295	283	286	280	295	281	330	399	384	362
SHMAX	1347	1478	1439	1142	886	694	489	381	305	287	296	302
KM												
400										389		
390										386	500	
380										377	499	
370										360	484	548
360										337	453	548
350										307	408	536
340									446	269	353	509
330									446	225	289	468
320									442	176	217	414
310									429	126	142	343
300	1907	1907	1907				834		407	83.7	89.6	248
290	1886	1900	1901	1500	1143	1004	831	716	378	52.7	53.5	117
280	1804	1853	1854	1499	1137	1004	808	715	340	17.5	12.4	
270	1463	1757	1753	1472	1104	987	762	698	297			
260	1453	1618	1607	1404	1042	936	696	658	246			
250	1187	1439	1418	1312	950	856	612	599	184			
240	929	1218	1181	1180	837	757	502	509	82.1			
230	695	974	936	1011	707	642	359	390				
220	526	754	713	809	573	515	200	249				
210	423	575	549	630	456	398	89.5	127				
200	361	460	436	479	369	295	12.4	12.4				
190	326	385	366	371	306	214						
180	301	334	322	307	261	152						
170	279	300	291	267	226	123						
160	256	271	268	240	199	110						
150	226	243	243	217	160	101						
140	191	215	209	189	135	94.9						
130	162	184	177	161	122	90.9						
120	150	166	161	147	113	86.9						
110	68.6	84.9	65.5	62.0	12.4	63.9						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 18 MAR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q*KP	F1	1	1	A1	S1	S0	S0	0	3	3	3	4
HMIN	228	202	199	199	215	194	196	199	109	109	109	108
SCAT	34.4	29.4	26.4	31.4	51.8	71.0	51.0	34.5	39.9	46.4	48.9	57.3
HMAXF	318	269	264	255	313	330	282	263	252	266	297	310
SHMAX	271	186	117	58	64	91	53	125	382	540	895	1206
KM												
330						97.2						
320	565				93.8	96.8						
310	557				93.7	95.4						1215
300	523				92.4	93.0					1004	1206
290	469				89.3	89.6	83.8				999	1178
280	380				84.5	85.3	83.8				975	1131
270	259	477	310		76.6	79.3	82.7	286		634	926	1065
260	160	466	308	143	68.0	72.7	79.9	285	532	631	860	986
250	97.4	428	289	143	58.3	65.0	75.6	276	532	615	773	894
240	57.4	362	246	136	48.2	57.1	69.1	254	521	581	671	792
230	12.4	245	184	121	36.8	49.4	60.7	222	492	536	567	674
220		115	113	98.9	12.4	42.5	51.5	171	449	482	471	561
210		56.0	58.6	69.6		28.4	41.7	89.5	391	424	388	466
200			4.5	12.4		10.6	12.4	12.4	330	367	334	397
190									274	318	301	347
180									226	277	275	311
170									186	243	252	285
160									155	212	228	264
150									131	184	202	242
140									116	160	175	214
130									97.2	141	158	187
120									80.1	120	147	168
110									12.4	84.9	78.9	129

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 18 MAR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q*KP	4	4	S4	4	4	3	3	3	2	2	2	5
HMIN	109	108	109	109	109	109	207	200	198	311	226	228
SCAT	46.5	47.0	48.5	52.3	52.5	42.0	45.4	35.1	48.5	41.3	40.7	41.2
HMAXF	313	311	323	320	319	279	295	272	297	396	352	327
SHMAX	1281	1366	1529	1675	1443	1036	631	336	172	161	204	210
KM												
400										286		
390										284		
380										275		
370										257		
360										231	310	
350										198	310	
340										160	303	
330			1756							112	286	362
320	1446	1555	1754	1907	1669					59.6	258	359
310	1445	1555	1725	1889	1655						225	346
300	1419	1533	1656	1837	1612		1096		262		189	322
290	1360	1475	1551	1746	1537		1092		261		153	288
280	1262	1379	1412	1627	1444	1555	1064	716	254		121	243
270	1137	1257	1233	1470	1302	1537	1010	716	242		93.7	189
260	994	1094	1047	1291	1152	1474	929	695	224		71.6	133
250	847	938	853	1093	977	1361	811	645	200		55.2	82.5
240	703	790	691	893	788	1213	660	568	172		41.5	51.3
230	582	646	558	708	609	1030	463	465	140		12.4	12.4
220	487	533	459	546	474	790	203	316	103			
210	414	448	394	436	375	563	45.4	156	59.1			
200	364	388	351	364	308	388		12.4	12.4			
190	331	347	322	318	266	284						
180	307	318	299	286	236	224						
170	288	296	278	262	210	189						
160	270	276	258	238	183	163						
150	249	255	234	214	154	139						
140	224	226	197	192	132	120						
130	194	195	167	170	122	107						
120	172	173	153	150	115	94.9						
110	124	141	110	78.9	84.0	49.0						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 19 MAR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q.KP	5	5	6	A6	6	4	S4	4	5	5	5	5
HMIN	225	208	221	197	293	227	218	118	109	109	109	108
SCAT	33.7	28.8	38.7	55.6	43.5	46.6	81.7	44.2	56.1	70.3	60.9	48.6
HMAXF	305	281	309	315	380	317	368	268	282	342	336	309
SHMAX	180	129	142	153	116	79	103	316	503	1172	1527	1635
KM												
380					198							
370					196		97.2					
360					188		97.0					
350					175		96.1			960		
340					157		94.4			960	1446	
330					133		92.1			953	1442	
320				198	104	127	89.0			936	1420	
310	382		262	198	71.7	126	85.1			908	1378	2000
300	380		259	195	41.7	123	80.0			871	1312	1981
290	363	310	246	188		117	74.6		540	825	1228	1920
280	328	310	225	178		107	68.6		540	775	1133	1821
270	278	299	196	164		94.8	61.8	446	534	722	1024	1679
260	212	268	156	148		79.5	54.6	442	520	667	905	1474
250	134	221	115	129		61.9	47.3	427	496	608	784	1222
240	74.0	157	71.8	109		45.0	40.0	399	465	548	671	990
230	35.0	96.0	44.5	88.3		12.4	21.6	362	425	487	574	778
220		56.0		66.8			3.2	306	380	427	490	610
210		12.4		47.0				248	333	374	419	487
200				12.4				193	287	329	366	407
190								150	244	290	324	354
180								116	208	256	292	317
170								92.4	175	227	265	289
160								76.2	145	201	239	262
150								67.2	121	175	215	234
140								60.9	104	148	192	206
130								46.9	93.5	127	169	177
120								12.4	86.9	118	151	157
110									61.4	87.7	84.4	138

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 19 MAR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q.KP	5	5	4	4	A4	4	4	4	4	4	S4	3
HMIN	109	109	108	108	107	108	199	200	219	255	269	267
SCAT	56.4	41.6	61.6	60.2	53.3	42.8	41.2	48.2	58.9	51.8	42.5	46.2
HMAXF	315	304	319	326	293	282	293	299	367	375	354	369
SHMAX	1700	1659	1877	1663	1347	934	562	355	356	305	248	287
KM												
380										417		
370									417	416		446
360									416	408	446	442
350									409	392	446	428
340									396	368	435	403
330				1756					375	337	411	368
320	1907		2016	1752					350	297	376	322
310	1902	2260	2005	1727					320	252	328	270
300	1872	2256	1967	1677	1654		1004	540	285	207	260	213
290	1811	2199	1903	1599	1653	1240	1003	535	246	156	181	144
280	1718	2072	1818	1505	1629	1239	980	519	206	104	90.3	82.3
270	1601	1887	1711	1381	1576	1216	926	490	166	65.5	12.4	31.0
260	1448	1656	1550	1228	1491	1160	845	452	127	32.2		
250	1245	1392	1332	1023	1383	1066	726	399	91.5			
240	979	1067	1129	832	1244	953	581	339	63.3			
230	780	787	899	674	1057	826	415	265	42.8			
220	605	594	685	540	842	691	242	190	3.9			
210	484	465	520	435	641	559	113	116				
200	404	389	411	364	472	442	12.4	12.4				
190	353	345	345	315	350	348						
180	317	314	306	279	282	274						
170	291	290	280	250	245	219						
160	267	268	256	224	218	182						
150	241	246	228	199	193	155						
140	209	219	195	168	168	133						
130	179	189	165	143	144	115						
120	169	171	152	134	130	103						
110	127	105	126	112	82.6	71.7						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 20 MAR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q.KP	3	A3	3	S3	S3	S4	S4	4	4	4	4	3
HMIN	247	219	220		218	227		205	107	109	108	107
SCAT	38.5	27.5	29.8		74.6	48.4		33.9	36.8	48.7	51.9	56.3
HMAXF	333	265	270		366	320		278	264	289	296	305
SHMAX	250	166	98		128	72		186	466	777	975	1262
KM												
370					127							
360					127							
350					125							
340	477				123							
330	476				119							
320	463				115	112						
310	433				108	110						1341
300	389				100	107					1050	1338
290	329				91.9	101				917	1046	1316
280	248		262		83.3	92.0		417		909	1025	1273
270	162	508	262		73.6	81.4		411	679	882	980	1207
260	82.3	504	255		63.6	68.4		388	677	835	920	1130
250	31.0	472	232		53.5	54.1		349	655	770	844	1014
240		410	198		44.3	40.7		279	608	685	758	879
230		262	135		28.3	9.2		179	537	586	668	739
220		43.8	12.4		5.6			94.1	449	492	573	612
210								44.4	363	405	489	503
200									290	335	414	417
190									237	286	355	363
180									194	248	308	325
170									161	214	273	299
160									134	179	241	274
150									111	150	208	242
140									97.9	132	175	207
130									92.4	123	154	176
120									87.4	116	138	155
110									64.4	65.5	118	138

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 20 MAR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q.KP	3	3	4	4	4	2	2	2	3	3	3	3
HMIN	105	107	104	109	110	108	218	200	198	229	267	243
SCAT	60.2	50.7	41.7	42.4	42.9	54.8	42.5	47.2	41.0	50.8	46.4	38.6
HMAXF	320	303	289	292	285	289	306	311	313	339	372	354
SHMAX	1545	1427	1173	1219	982	949	529	492	371	316	288	232
KM												
380											446	
370											446	
360											438	389
350											420	388
340										446	391	376
330	1528									443	353	350
320	1528							754	608	431	303	312
310	1517	1669					960	754	607	409	243	265
300	1484	1668		1612			955	744	593	379	183	213
290	1428	1643	1555	1610	1290	1131	926	716	560	343	126	166
280	1355	1586	1538	1578	1286	1123	872	669	511	301	69.9	119
270	1262	1493	1477	1491	1252	1097	787	610	444	254	20.3	82.2
260	1145	1377	1362	1370	1175	1052	667	531	358	202		55.7
250	1006	1216	1208	1215	1077	988	507	438	275	140		31.0
240	866	1013	1028	1029	948	904	326	335	202	74.5		
230	731	825	831	834	804	803	127	222	138	12.4		
220	609	657	654	655	653	690	28.3	119	90.4			
210	507	523	498	513	515	558		59.9	56.3			
200	432	432	406	412	401	416		4.1	12.4			
190	377	373	353	346	327	301						
180	338	335	319	301	281	238						
170	309	307	292	270	250	197						
160	287	282	267	242	223	167						
150	262	256	240	214	196	140						
140	228	225	208	188	167	120						
130	195	195	177	164	141	108						
120	174	174	157	146	124	99.3						
110	153	145	145	65.5	12.4	34.9						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 21 MAR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q*KP	3	3	2	2	2	2	2	2	1	1	1	3
HMIN	238	228	221	199	196	237	197	198	106	109	109	108
SCAT	42.8	39.3	30.4	29.7	55.6	59.5	58.0	37.3	40.9	38.7	36.3	44.9
HMAXF	346	316	281	255	326	345	337	283	264	267	267	285
SHMAX	247	236	163	85	120	107	116	196	565	699	799	1097
KM												
350	400					139						
340	398					139	135					
330	385				148	137	135					
320	363	446			147	133	132					
310	329	444			145	127	128					
300	284	429			138	119	120					
290	229	399	417		131	111	112	389				1433
280	176	356	417		122	99.6	101	388				1429
270	120	290	405		109	84.3	89.4	378	794	1004	1143	1396
260	77.9	211	369	219	96.2	66.3	77.6	352	792	996	1131	1324
250	49.3	119	312	217	83.3	45.9	66.5	316	772	956	1073	1221
240	12.4	62.1	219	204	70.0	12.4	56.6	256	727	883	977	1077
230		12.4	88.6	181	57.7		48.0	174	661	775	841	879
220				141	46.9		40.7	106	566	635	687	684
210				80.9	33.4		23.3	58.7	455	491	550	529
200				12.4	10.1		5.1	12.4	359	385	441	420
190									283	316	365	354
180									232	273	315	315
170									196	238	279	289
160									168	207	251	265
150									144	178	222	238
140									126	154	189	204
130									111	133	163	171
120									102	120	151	153
110									82.9	97.2	110	134

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 21 MAR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q*KP	3	3	3	3	3	1	1	1	3	3	3	4
HMIN	109	105	107	109	109	109	218	204	225	218	268	289
SCAT	49.6	60.7	50.0	50.7	43.7	47.5	44.0	39.2	52.8	47.6	43.7	39.1
HMAXF	293	316	295	290	278	287	296	295	345	341	391	373
SHMAX	1141	1427	1167	1172	851	865	488	374	427	336	298	276
KM												
400											446	
390											446	
380											440	524
370											421	523
360											390	509
350									573	477	348	477
340									572	477	300	430
330									562	470	248	362
320		1446							542	453	197	278
310		1443							509	424	148	178
300	1277	1422	1341				917	679	468	387	105	82.5
290	1276	1382	1338	1446		1096	913	676	421	340	70.7	12.4
280	1256	1321	1312	1433	1096	1090	888	654	364	290	46.8	
270	1202	1251	1259	1392	1086	1062	839	611	298	238	7.5	
260	1135	1146	1173	1320	1046	1006	767	544	233	180		
250	1039	1013	1071	1228	977	931	661	459	173	128		
240	923	857	944	1100	884	835	503	361	105	86.7		
230	794	709	798	917	767	715	216	246	45.6	54.2		
220	677	572	656	719	644	586	34.9	137		12.4		
210	566	471	535	546	525	461		54.1				
200	473	402	437	418	417	361						
190	404	357	373	345	339	290						
180	354	326	331	302	286	239						
170	319	299	300	274	249	202						
160	292	274	273	249	218	171						
150	266	246	245	224	191	146						
140	237	208	211	197	166	126						
130	205	179	178	167	145	110						
120	173	167	166	149	132	101						
110	129	144	127	76.1	84.4	49.0						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 22 MAR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q*KP	4	4	4	4	4	3	S3	3	2	2	2	A2
HMIN	251	237	199	199	199	192		219	107	109	107	108
SCAT	42.1	37.8	32.8	36.4	31.1	82.7		35.2	40.6	47.2	49.9	61.6
HMAXF	354	313	275	265	252	337		274	258	268	293	317
SHMAX	319	264	223	123	56	87		150	459	665	873	1311
KM												
360	540											
350	539											
340	525					83.8						
330	494					83.7						
320	450	540				83.0						1316
310	392	539				81.6						1311
300	320	524				79.7					949	1290
290	237	490				77.1					949	1251
280	149	438	492			73.9		362			934	1194
270	86.5	352	489	262		69.7		361		834	898	1129
260	46.8	243	464	261	143	64.3		348	643	828	845	1030
250		123	420	251	143	58.8		321	637	804	777	910
240		40.6	351	230	138	53.1		280	612	760	696	773
230			256	202	126	47.4		208	566	699	608	645
220			156	158	108	41.6		45.5	503	619	521	532
210			77.1	99.4	78.5	28.2			422	526	441	441
200			12.4	12.4	12.4	12.4			345	424	377	377
190									281	347	330	333
180									227	289	295	301
170									187	247	263	273
160									155	214	233	244
150									129	184	202	208
140									113	159	175	175
130									93.5	140	158	158
120									80.1	122	149	150
110									72.6	76.1	123	129

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 22 MAR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q*KP	2	A2	51	1	1	0	0	0	1	1	1	3
HMIN	109		108	109	109	109	209	199	228	232	228	261
SCAT	48.4		49.0	51.6	45.6	55.9	43.4	44.1	47.2	38.5	44.2	42.1
HMAXF	315		309	302	286	292	292	298	339	330	345	359
SHMAX	1304		1549	1504	1079	1076	548	470	436	343	346	298
KM												
360												508
350											540	503
340									643		538	483
330									637	608	524	449
320	1446								616	598	496	401
310	1443		1876	1876					579	567	455	336
300	1412		1860	1875		1316	1004	754	530	515	399	262
290	1351		1806	1851	1446	1315	1004	748	469	448	332	190
280	1256		1711	1791	1441	1299	984	722	400	369	256	114
270	1133		1586	1696	1404	1263	937	673	324	286	185	57.2
260	993		1407	1570	1331	1202	866	612	249	199	123	
250	849		1181	1393	1229	1130	763	534	169	113	79.6	
240	708		941	1173	1085	1022	604	442	87.3	51.6	50.0	
230	584		738	915	903	876	406	341	23.7		12.4	
220	483		570	678	692	699	167	240				
210	416		457	490	517	522	12.4	128				
200	371		387	378	400	373		12.4				
190	339		345	317	325	284						
180	314		316	281	276	229						
170	291		294	252	240	194						
160	267		270	224	209	166						
150	238		245	193	178	142						
140	201		214	169	153	122						
130	178		182	156	139	108						
120	165		165	148	130	99.3						
110	84.9		89.4	76.1	65.5	65.5						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 23 MAR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q*KP	3	3	3	3	3	2	2	2	C4	4	4	2
HMIN	249	230	240	211	241	225	217	199		107	109	105
SCAT	39.5	33.4	34.7	34.2	43.2	46.9	51.0	32.5		49.2	49.4	55.2
HMAXF	333	300	307	268	323	325	332	257		274	286	305
SHMAX	273	215	196	153	149	156	180	180		691	924	1239
KM												
340	508						251					
330	507				262	240	251					
320	494				262	239	248					
310	463	477	439		257	234	240					1328
300	419	477	435		244	223	225					1325
290	362	465	413		223	206	208				1084	1302
280	284	431	375		198	185	186			834	1080	1258
270	187	378	314	362	164	157	159			832	1056	1186
260	87.3	300	222	356	123	128	130	446		816	1006	1102
250	12.4	207	105	335	70.3	95.6	101	441		780	938	995
240		95.0		302		62.5	73.3	415		728	849	873
230				244		30.7	48.5	369		665	739	731
220				154			12.4	300		588	617	602
210								169		493	503	487
200								12.4		409	411	403
190										337	351	348
180										281	309	310
170										239	276	280
160										207	246	248
150										172	218	212
140										130	193	190
130										111	154	176
120										104	135	168
110										97.7	78.9	153

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 23 MAR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q*KP	2	2	2	2	2	1	1	1	1	1	1	2
HMIN	109	105	107	108	108	107	207	201	209	221	229	260
SCAT	49.9	52.7	61.3	42.0	50.0	49.2	40.4	44.9	51.7	60.1	53.0	39.3
HMAXF	298	302	318	296	296	301	300	304	303	345	364	366
SHMAX	1190	1287	1496	1224	1178	1147	629	663	517	436	365	278
KM												
370											477	469
360											476	466
350										540	469	450
340										539	453	415
330										532	427	370
320			1446							517	394	316
310		1393	1440			1446	1215	1084	794	493	355	256
300	1341	1393	1414	1555	1446	1446	1215	1082	793	464	309	190
290	1332	1376	1369	1548	1442	1428	1196	1058	781	427	256	133
280	1296	1330	1299	1500	1411	1380	1139	1007	755	382	202	82.1
270	1233	1254	1217	1402	1351	1304	1050	929	712	330	151	48.7
260	1144	1167	1118	1269	1263	1205	903	820	656	274	107	.7
250	1029	1056	993	1100	1145	1053	710	688	581	212	69.9	
240	894	925	862	925	1000	887	434	534	482	137	45.0	
230	747	785	743	752	822	714	149	345	355	62.5	2.5	
220	618	662	634	605	644	539	72.9	193	201			
210	510	548	541	492	500	409	20.3	81.2	41.5			
200	427	453	465	411	389	321						
190	373	389	406	355	316	262						
180	334	347	359	317	273	222						
170	306	315	323	285	238	189						
160	280	288	292	259	208	161						
150	251	262	263	233	179	137						
140	220	233	235	208	157	120						
130	197	204	206	183	141	109						
120	184	187	186	168	133	102						
110	119	162	145	126	112	86.9						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 24 MAR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q*KP	2	2	2	2	2	3	3	3	S2	2	A2	2
HMIN	245	229	239	198	198	218	204	200	109	108	107	104
SCAT	39.8	37.4	36.5	41.6	43.9	54.3	52.8	38.6	49.2	42.3	55.2	40.2
HMAXF	346	312	316	293	298	313	298	259	264	265	304	282
SHMAX	269	229	193	188	164	177	130	186	478	620	1040	1067
KM												
350	469											
340	467											
330	451											
320	420	446	389			257						
310	374	446	386			257					1096	
300	315	435	370	323	262	253	193				1094	
290	251	405	340	322	260	246	192				1079	1446
280	180	363	295	315	251	232	188				1044	1446
270	112	304	235	297	234	217	180		608	764	991	1416
260	65.8	231	164	272	210	196	169	410	607	761	924	1342
250	32.2	144	88.3	237	182	171	155	404	596	733	839	1222
240		69.8	12.4	196	149	138	136	384	572	689	738	1059
230		12.4		145	115	94.1	111	354	537	633	631	855
220				95.4	80.0	26.9	78.7	304	487	564	529	673
210				57.0	51.7		41.8	212	425	486	439	529
200				12.4	12.4			12.4	354	411	372	430
190									289	353	327	367
180									234	310	292	327
170									189	274	260	296
160									151	240	225	266
150									119	206	187	233
140									93.5	179	168	204
130									81.3	146	157	184
120									76.1	123	150	172
110									63.9	102	136	162

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 24 MAR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q*KP	2	2	1	1	1	2	2	2	2	2	2	0
HMIN	106	109	104	109	107	108	219	199	216	241	237	269
SCAT	50.7	56.7	56.5	53.6	52.3	49.7	39.7	45.3	48.0	42.2	43.7	41.6
HMAXF	290	304	311	310	300	291	286	295	340	339	359	369
SHMAX	1311	1400	1364	1387	1261	1082	572	466	470	359	379	340
KM												
370												573
360											573	567
350											567	545
340									670	608	545	503
330									663	600	507	449
320			1420						641	575	456	382
310		1528	1420	1555					603	532	397	307
300	1555	1526	1406	1543	1500	1393		754	553	475	328	222
290	1555	1505	1369	1503	1487	1393	1215	752	495	404	258	137
280	1540	1460	1307	1434	1447	1377	1209	734	427	320	194	69.8
270	1493	1388	1230	1336	1375	1330	1168	695	349	217	131	12.4
260	1412	1299	1125	1208	1289	1260	1089	643	262	123	84.2	
250	1302	1181	1005	1075	1162	1159	963	571	179	59.6	53.4	
240	1169	1038	869	912	1003	1028	773	486	110		17.5	
230	1003	862	730	741	821	875	425	382	65.5			
220	825	695	604	590	649	691	41.5	265	26.2			
210	646	554	502	473	502	509		136				
200	501	445	422	391	394	371		12.4				
190	408	379	368	337	322	288						
180	355	336	329	301	278	238						
170	322	305	298	271	244	200						
160	294	278	269	243	213	170						
150	266	251	233	215	185	143						
140	232	219	200	185	156	122						
130	204	196	180	162	141	108						
120	189	182	170	151	134	99.7						
110	162	78.9	161	113	117	61.6						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 25 MAR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q*KP	0	0	1	1	1	1	1	C1	C2	C2	C2	1
HMIN	250	226	209	199	198	218	247					108
SCAT	37.7	38.7	29.5	37.9	37.9	66.4	54.8					45.3
HMAXF	337	311	279	277	280	326	353					269
SHMAX	313	332	222	192	136	160	123					811
KM												
360							170					
350							170					
340	608						167					
330	602					193	162					
320	577	643				193	154					
310	528	643				191	146					
300	460	630				186	133					
290	365	595				179	114					
280	260	542	540	389	262	170	93.3					
270	138	462	526	386	258	161	70.8					971
260	67.2	355	481	370	245	147	48.2					961
250	3.7	217	406	342	222	129	12.4					922
240		106	298	299	190	109						867
230		42.5	171	231	151	82.7						791
220			80.2	143	102	25.6						704
210			12.4	70.8	60.4							608
200				12.4	12.4							516
190												438
180												372
170												324
160												287
150												251
140												210
130												180
120												166
110												118

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 25 MAR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q*KP	1	1	1	1	1	A1	A1	1	1	1	1	2
HMIN	109	108	108	109	109	109	201	199	200	217	228	241
SCAT	56.0	50.6	52.3	45.6	55.6	46.3	37.6	49.4	45.1	40.8	52.4	39.7
HMAXF	304	308	305	289	306	285	297	316	318	326	359	341
SHMAX	1130	1336	1405	1171	1195	920	577	651	522	385	492	345
KM												
360											670	
350											665	608
340											647	608
330										643	615	597
320								939	794	640	575	565
310	1096	1446	1555		1316			935	787	619	521	515
300	1094	1437	1551		1312		1050	911	760	576	453	448
290	1078	1401	1522	1446	1289	1228	1039	870	712	518	372	364
280	1044	1334	1464	1432	1246	1224	990	810	649	445	288	277
270	993	1228	1375	1383	1177	1196	907	735	568	361	210	181
260	924	1118	1266	1296	1095	1139	806	642	481	272	141	100
250	845	977	1120	1177	981	1055	675	534	382	180	88.3	50.4
240	756	831	961	1031	846	933	511	414	275	106	52.6	
230	667	699	799	869	701	792	337	284	178	60.7	12.4	
220	583	582	658	712	568	633	175	159	93.8	19.6		
210	508	495	543	569	464	476	72.7	78.1	5[illegible].7			
200	448	432	454	457	386	362		12.4				
190	403	388	390	381	330	284						
180	368	357	345	330	291	234						
170	338	330	311	296	258	197						
160	312	305	285	268	228	165						
150	288	278	258	243	193	140						
140	256	249	225	218	161	122						
130	210	216	191	189	143	110						
120	187	189	171	170	134	104						
110	97.2	98.4	128	110	78.9	90.8						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 26 MAR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q*KP	2	2	3	3	3	3	3	3	C2	C2	2	1
HMIN	211	225	207	199	214	197	221	209			106	108
SCAT	47.7	46.7	34.0	36.1	53.9	65.8	47.1	29.5			44.5	54.2
HMAXF	328	315	291	273	330	329	340	264			285	309
SHMAX	444	337	224	150	196	170	126	185			1096	1374
KM												
340					262		179					
330	679				262	193	177					
320	674	573			260	193	171					
310	654	572			253	189	161					1446
300	617	559	469		242	184	147					1436
290	569	533	469		225	176	129				1446	1401
280	501	499	458	310	205	166	108				1442	1342
270	415	439	424	309	180	155	88.9	508			1407	1260
260	315	354	374	299	152	141	71.1	506			1334	1146
250	210	248	301	277	121	123	56.3	481			1224	1025
240	132	123	213	245	91.1	102	44.4	428			1080	901
230	80.3	47.7	125	197	62.1	80.2	23.3	326			884	773
220	46.4		66.8	138	35.9	60.3		150			680	654
210			19.9	69.8		44.1		12.4			524	549
200				12.4		12.4					420	462
190											353	393
180											310	341
170											278	304
160											247	273
150											218	239
140											188	203
130											164	178
120											153	168
110											140	114

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 26 MAR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q*KP	1	1	1	1	1	3	B3	3	2	2	2	2
HMIN	108	109	109	109	106	106		199	197	243	247	256
SCAT	46.2	44.0	53.1	56.1	48.0	40.7		56.7	45.9	44.2	51.6	54.9
HMAXF	299	302	312	318	303	285		321	341	356	369	374
SHMAX	1378	1385	1566	1549	1269	1013		633	471	429	512	494
KM												
380												679
370											716	678
360										679	711	668
350									643	676	693	647
340									643	658	659	612
330								834	634	620	614	569
320			1786	1669				834	610	567	557	513
310		1786	1785	1660	1542			826	566	500	486	439
300	1669	1785	1762	1626	1540			806	514	418	402	351
290	1653	1754	1708	1565	1513	1446		771	454	328	309	255
280	1599	1677	1619	1475	1453	1442		726	393	223	213	160
270	1500	1551	1504	1363	1360	1400		665	329	137	127	82.9
260	1369	1382	1353	1225	1239	1312		587	262	78.1	68.4	38.8
250	1204	1159	1156	1074	1079	1181		501	201	42.5	20.3	
240	1011	929	946	893	898	1021		398	142			
230	829	720	753	731	727	839		287	99.0			
220	672	568	601	588	589	661		175	68.8			
210	544	456	484	472	471	503		88.5	46.7			
200	446	390	406	395	381	374		12.4	12.4			
190	385	348	355	343	320	289						
180	343	317	320	305	277	237						
170	312	291	292	273	246	201						
160	287	263	264	245	218	173						
150	262	228	228	213	183	149						
140	237	194	194	178	153	127						
130	204	176	176	159	140	111						
120	185	166	166	149	132	103						
110	134	115	97.2	73.0	91.9	83.8						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 27 MAR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q.KP	2	2	2	2	2	3	3	3	3	3	3	A6
HMIN	231	218	214	198	197	197	206	199	109	107	109	105
SCAT	46.2	32.2	36.0	32.9	54.6	64.2	42.5	34.2	40.2	44.7	40.8	60.6
HMAXF	341	297	292	274	320	329	300	272	256	272	281	323
SHMAX	410	306	287	163	201	191	119	214	498	766	920	1445
KM												
350	643											
340	643											
330	633					219						1420
320	609				268	218						1419
310	569				266	214						1404
300	515	670	608		258	208	198					1370
290	443	661	607		247	199	196				1119	1310
280	357	618	590	362	234	187	188	477		917	1119	1237
270	263	547	551	360	214	173	174	476		917	1098	1152
260	165	449	487	345	186	156	154	463	679	901	1036	1036
250	92.3	326	383	314	153	137	131	428	675	860	956	907
240	49.3	190	261	265	119	116	104	375	651	797	864	770
230		88.3	121	193	86.3	92.2	76.6	288	604	720	759	642
220		24.6	50.9	114	61.8	69.0	50.6	178	540	636	646	533
210				60.7	44.7	48.5	17.4	82.8	468	549	538	452
200				12.4	12.4	12.4		12.4	393	471	451	394
190									326	403	384	352
180									268	346	335	319
170									221	296	300	290
160									187	255	269	252
150									157	219	239	221
140									134	188	210	203
130									115	160	182	192
120									103	140	156	184
110									55.6	123	97.2	161

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 27 MAR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q.KP	A6	6	5	5	5	2	A2	2	4	4	4	4
HMIN		107	108	107	111	110		199	198	209	248	250
SCAT		49.8	52.5	62.8	52.3	66.2		50.3	44.3	44.1	44.0	43.1
HMAXF		319	323	348	320	332		322	320	334	362	371
SHMAX		1719	1546	1803	1647	1776		1063	688	605	480	494
KM												
380												794
370											754	794
360											754	781
350				1669							740	746
340				1662		1786				906	706	691
330			1669	1634		1785		1528		904	656	615
320		2032	1667	1585	1907	1770		1527	1050	882	584	521
310		2016	1644	1507	1891	1735		1508	1036	834	502	409
300		1960	1590	1413	1840	1680		1458	994	767	402	291
290		1858	1501	1304	1749	1598		1374	923	685	293	188
280		1722	1386	1168	1625	1504		1265	841	591	196	122
270		1546	1247	1023	1476	1390		1126	743	482	117	74.2
260		1322	1065	886	1297	1256		955	620	369	60.9	46.1
250		1063	893	764	1076	1087		747	477	259	12.4	1.5
240		859	744	661	875	915		539	325	169		
230		678	618	570	696	749		347	204	101		
220		537	515	490	547	593		197	114	54.4		
210		442	445	425	443	463		96.7	41.5	5.3		
200		384	394	376	373	356		2.4	2.4			
190		343	358	337	323	280						
180		310	329	306	283	229						
170		281	301	279	249	193						
160		249	271	253	218	164						
150		217	237	225	188	140						
140		193	204	198	161	120						
130		177	181	178	142	106						
120		168	168	166	130	101						
110		150	122	111		12.4						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 28 MAR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q.KP	4	4	4	4	4	3	53	3	C3	3	3	3
HMIN	236	227	223	199	199	204	208	199		106	109	111
SCAT	43.0	37.4	42.3	41.9	46.9	59.6	55.3	38.3		54.0	42.4	54.2
HMAXF	343	350	310	291	282	347	354	284		286	278	303
SHMAX	453	402	429	332	212	156	182	289		1133	1072	1400
KM												
360							219					
350	754	679				179	218					
340	754	668				178	215					
330	737	631				175	209					
320	699	571	794			170	198					
310	643	495	794			162	183					1555
300	566	405	782	590		150	165					1554
290	474	314	747	590	355	136	145	573		1341		1531
280	355	229	689	580	355	121	124	572		1338	1446	1482
270	232	161	615	551	349	105	103	554		1313	1434	1404
260	131	109	493	509	334	89.6	83.8	517		1266	1381	1308
250	72.7	73.2	328	447	312	74.2	68.6	460		1193	1282	1178
240	28.3	48.2	169	364	283	60.4	55.8	375		1104	1154	1028
230		12.4	58.5	266	242	48.8	45.1	246		982	989	869
220				159	191	38.0	28.7	135		831	798	703
210				74.7	126	14.7	5.4	67.8		673	614	571
200				12.4	12.4			12.4		531	486	467
190										421	402	396
180										337	347	347
170										281	304	308
160										238	268	276
150										203	236	243
140										172	207	209
130										149	176	179
120										132	151	161
110										98.4	84.9	

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 28 MAR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q.KP	3	3	2	2	2	A1	A1	1	1	1	1	1
HMIN	108	109	109	108	109			199	198	237	220	240
SCAT	63.1	51.7	56.0	53.3	57.4			49.9	50.9	45.4	38.5	37.3
HMAXF	316	308	319	322	313			309	329	353	338	354
SHMAX	1586	1515	1528	1625	1462			662	526	494	410	417
KM												
360										754		716
350										754		714
340										739	679	690
330				1786					707	704	673	636
320	1555		1555	1785	1640				701	653	644	566
310	1552	1727	1545	1764	1639			960	682	588	590	480
300	1532	1716	1510	1712	1620			953	648	506	520	385
290	1491	1673	1451	1625	1576			927	601	416	441	291
280	1428	1594	1362	1514	1502			878	542	317	355	199
270	1346	1490	1257	1365	1413			814	473	211	268	128
260	1247	1351	1124	1198	1294			737	395	125	190	79.2
250	1135	1183	985	1021	1132			646	319	65.9	124	47.4
240	997	982	850	841	957			528	241	19.9	77.7	1.1
230	848	791	722	674	773			394	169		47.4	
220	708	637	615	546	606			256	109		1.1	
210	583	515	526	455	469			126	63.3			
200	486	436	452	391	368			12.4	12.4			
190	417	382	397	345	308							
180	367	342	353	309	266							
170	331	310	316	276	232							
160	302	279	282	243	199							
150	272	248	249	212	170							
140	240	218	214	180	150							
130	205	195	182	159	139							
120	184	183	168	149	131							
110	134	76.1	119	85.0	55.6							

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 29 MAR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q.KP	1	1	1	1	1	2	2	2	2	2	2	A1
HMIN	240	217	199	198	216	237	239	207	109	109	106	109
SCAT	37.7	39.2	28.0	51.5	56.3	45.9	33.4	26.6	40.9	46.1	55.3	51.0
HMAXF	318	295	260	300	347	335	308	247	249	281	305	305
SHMAX	395	370	180	166	191	148	119	190	536	907	1351	1394
KM												
350					240							
340					239	235						
330					235	234						
320	794				226	229						
310	784				214	217	262				1446	1555
300	747	754		240	199	201	258				1444	1551
290	684	751		238	179	179	243			1096	1421	1520
280	586	727		231	155	151	215			1095	1375	1459
270	459	680	484	220	129	120	176			1079	1300	1366
260	284	603	484	202	101	86.3	128			1035	1206	1249
250	141	481	466	182	76.5	55.1	73.0	643	794	967	1095	1100
240		305	421	159	56.5	18.1	12.4	632	784	877	961	941
230		129	343	134	42.0			581	751	776	820	786
220		40.6	219	102	12.4			465	692	660	689	653
210			88.4	63.3				103	617	549	571	545
200			12.4	12.4					518	456	477	458
190									407	384	405	395
180									308	328	350	352
170									239	282	304	316
160									192	245	269	283
150									160	212	238	250
140									133	182	209	217
130									111	154	177	188
120									101	134	154	168
110									55.6	76.1	127	90.5

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 29 MAR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q.KP	1	1	2	2	2	1	A1	1	2	3	3	4
HMIN	106	107	109	109	107	110		203	199	209	245	249
SCAT	47.4	47.3	52.0	49.5	48.3	55.0		48.3	46.3	44.6	42.6	45.8
HMAXF	309	302	308	307	293	310		316	320	325	359	380
SHMAX	1523	1520	1568	1508	1264	1264		908	631	502	409	460
KM												
380												670
370												662
360											643	637
350											635	596
340											610	543
330										754	563	478
320								1341	917	752	506	399
310	1786	1846	1786	1786		1446		1336	907	733	439	314
300	1768	1845	1774	1777	1597	1435		1305	876	691	367	241
290	1712	1816	1730	1733	1596	1399		1245	821	636	284	168
280	1606	1736	1650	1650	1571	1339		1155	750	570	195	113
270	1468	1624	1539	1533	1501	1258		1039	666	493	120	75.0
260	1305	1479	1397	1380	1410	1147		892	573	406	68.6	47.6
250	1095	1303	1232	1203	1284	1024		737	470	313	33.1	7.1
240	907	1082	1033	1015	1119	877		566	355	215		
230	741	880	850	810	932	712		386	243	126		
220	603	703	682	637	736	563		217	142	65.4		
210	505	555	545	500	570	440		80.9	73.4	12.4		
200	437	456	451	425	449	347			12.4			
190	387	390	388	366	359	280						
180	351	346	343	324	301	232						
170	321	315	306	290	260	196						
160	294	291	275	258	226	167						
150	264	263	246	225	195	142						
140	227	226	214	192	171	123						
130	191	185	184	166	147	109						
120	171	169	167	152	133	101						
110	143	135	97.[illegible]	110	88.2	12.4						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 30 MAR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q.KP	4	4	4	4	4	2	2	2	S2	2	2	1
HMIN	259	257	252	205	219	201	219	219	108	109	107	107
SCAT	37.4	46.5	43.6	41.6	35.9	42.4	60.7	26.0	54.6	55.7	52.4	54.4
HMAXF	362	383	359	308	297	287	360	274	276	289	306	314
SHMAX	365	396	358	346	247	238	258	215	716	1083	1328	1479
KM												
390		573										
380		573										
370	643	563										
360	642	539	573				298					
350	626	502	567				296					
340	583	452	546				290					
330	522	394	509				278					
320	448	327	457				263					1528
310	363	258	391	573			245				1341	1525
300	271	195	319	568	508		224				1338	1501
290	188	136	246	546	502	439	199			1240	1319	1451
280	114	87.0	164	504	478	436	173	643	834	1231	1282	1369
270	59.6	54.6	94.3	451	434	422	145	640	831	1202	1228	1269
260	4.5	17.9	47.3	384	367	396	118	597	815	1154	1161	1146
250				312	281	359	88.5	509	785	1086	1071	1012
240				234	180	299	61.5	347	742	995	958	872
230				152	87.9	211	42.3	118	685	879	833	740
220				83.7	12.4	118	4.1	12.4	610	739	706	624
210				42.3		58.0			527	591	590	528
200									441	466	487	453
190									360	378	406	399
180									291	319	344	361
170									232	278	299	329
160									185	241	260	300
150									155	206	228	270
140									132	175	198	238
130									114	151	169	206
120									103	134	152	175
110									67.3	84.4	125	150

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 30 MAR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q.KP	1	1	1	1	A1	A0	A0	0	0	A0	0	1
HMIN	108	108	107	107				200	232	197	273	258
SCAT	51.8	44.6	49.5	45.1				49.1	44.3	46.9	45.3	39.8
HMAXF	318	306	310	301				299	351	341	377	361
SHMAX	1647	1694	1691	1489				662	585	517	429	391
KM												
380											679	
370											674	679
360									875		654	679
350									875	716	614	666
340									862	716	562	531
330									825	706	494	576
320	1786								765	679	408	503
310	1776	2128	2032	1907					692	633	312	413
300	1734	2117	2012	1906				960	604	577	219	313
290	1656	2056	1952	1877				952	506	508	128	210
280	1546	1933	1844	1801				924	404	432	55.5	120
270	1404	1765	1704	1675				871	303	349		63.3
260	1239	1561	1522	1506				805	206	266		12.4
250	1086	1326	1309	1303				731	116	197		
240	910	1089	1049	1069				646	54.5	142		
230	746	844	830	837				543		100		
220	610	659	651	652				423		69.3		
210	506	526	509	514				269		47.2		
200	435	443	420	416				12.4		12.4		
190	385	388	361	356								
180	349	350	325	314								
170	320	320	298	282								
160	295	292	274	254								
150	268	263	245	227								
140	236	230	212	198								
130	205	199	183	176								
120	188	185	169	164								
110	149	135	134	104								

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 31 MAR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q.KP	1	1	A1	1	1	1	1	1	2	2	2	3
HMIN	239	234	220	199	198	244	220	225	109	109	107	108
SCAT	40.6	30.5	29.9	33.7	60.5	55.3	51.8	32.6	37.6	42.9	45.4	59.3
HMAXF	333	298	270	265	316	346	339	284	260	274	281	317
SHMAX	394	279	202	145	145	113	119	211	550	772	969	1434
KM												
350						156						
340	716					156	161					
330	715					153	159					
320	697				179	147	155					1446
310	656				179	139	148					1441
300	595	698			176	129	137					1415
290	512	685			171	116	124	532			1191	1370
280	403	636	557		163	100	108	530		1004	1191	1299
270	269	549	557	329	152	81.2	90.0	508		1002	1175	1213
260	139	409	541	327	140	60.1	73.4	463	934	978	1128	1108
250	70.2	229	496	313	126	36.3	58.3	386	820	924	1053	979
240	12.4	73.9	408	284	109		45.5	233	773	847	960	842
230			257	240	90.0		25.8	58.9	701	744	850	702
220			12.4	177	70.2				607	631	727	566
210				92.1	50.2				494	512	589	469
200				12.4	12.4				380	415	472	408
190									291	347	384	366
180									231	297	326	335
170									186	254	286	307
160									153	217	253	279
150									128	187	224	251
140									109	160	195	215
130									94.7	141	171	183
120									87.1	121	152	168
110									63.2	98.3	127	98.9

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 31 MAR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q.KP	3	3	2	A2	A2	A2	A2	2	5	5	5	4
HMIN	108	108	109					199	227	239	260	247
SCAT	54.3	49.7	54.3					53.5	38.9	47.3	43.7	45.6
HMAXF	315	310	325					340	336	350	385	379
SHMAX	1688	1636	1734					856	584	584	573	561
KM												
390											865	
380											862	834
370											839	827
360										875	790	799
350								1084		875	724	751
340								1084	1004	864	643	685
330			1907					1074	998	834	552	601
320	1846	1907	1903					1045	959	782	450	504
310	1841	1907	1870					995	885	715	339	396
300	1809	1886	1805					931	789	631	236	286
290	1740	1828	1704					858	667	529	147	193
280	1657	1724	1576					771	528	423	89.0	126
270	1529	1589	1418					667	390	307	49.9	83.2
260	1355	1418	1245					544	250	180		52.7
250	1170	1206	1025					415	139	87.3		17.5
240	982	999	826					301	70.9	12.4		
230	801	793	652					201	20.3			
220	647	629	522					123				
210	526	513	434					70.5				
200	440	434	377					12.4				
190	382	383	336									
180	339	346	304									
170	309	319	275									
160	287	296	244									
150	270	270	213									
140	244	236	190									
130	208	203	175									
120	187	186	165									
110	109	131	90.5									

AVERAGE ELECTRON DENSITY KP BELOW 4.5

RAMEY AFB, PUERTO RICO 60 W MAR 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
COUNT	27	26	26	24	26	29	27	29	22	26	27	28
KP	2.1	2.1	2.2	2.1	2.3	2.2	2.2	2.3	2.2	2.3	2.3	2.0
HMIN	240	228	224	204	207	219	232	204	108	108	108	108
RATIO	5.9	6.8	7.4	7.3	5.9	5.0	5.0	7.3	5.1	4.6	4.4	4.3
SCAT	41.9	37.6	34.5	36.3	46.7	55.7	54.6	35.8	40.8	45.5	46.4	50.7
NMAX	465	457	404	299	227	154	154	395	662	857	1088	1306
HMAXF	336	310	295	275	300	323	340	275	259	271	285	298
SHMAX	265	230	184	146	134	110	111	178	462	684	905	1138
SHINF	1578	1518	1322	990	775	545	544	1292	2330	3102	3976	4823
KM												
950	35.7	30.9	25.2	17.2	14.5	11.2	12.0	22.2	34.6	47.8	65.0	82.7
900	45.8	39.7	32.4	22.1	18.6	14.4	15.4	28.5	44.5	61.3	83.5	106
850	58.7	50.9	41.6	28.4	23.9	18.4	19.8	36.5	57.1	78.7	107	136
800	75.2	65.2	53.3	36.4	30.7	23.6	25.4	46.9	73.2	101	137	175
750	96.3	83.5	68.3	46.7	39.3	30.2	32.5	60.1	93.8	129	176	224
700	123	107	87.3	59.8	50.3	38.6	41.4	76.9	120	166	225	286
650	157	136	111	76.3	64.1	49.2	52.7	98.3	154	212	288	366
600	198	173	142	97.2	81.5	62.3	66.7	125	196	270	366	465
550	248	218	179	123	103	78.2	83.5	159	249	342	464	587
500	307	271	224	155	128	96.7	103	200	314	431	582	734
490	319	282	234	161	134	101	107	209	329	450	608	766
480	332	294	244	169	140	105	111	218	344	470	634	799
470	344	306	254	176	146	109	115	228	359	491	662	833
460	357	318	264	184	151	113	119	238	375	513	690	867
450	369	330	275	191	157	117	123	248	391	535	719	902
440	382	342	286	199	163	121	127	258	408	557	748	937
430	394	354	296	207	170	125	131	269	425	580	777	972
420	405	366	307	215	176	129	135	279	443	603	807	1008
410	416	378	318	223	182	132	138	290	461	626	836	1043
400	427	389	328	231	187	136	142	301	479	649	866	1077
390	436	400	338	239	193	139	144	311	497	673	895	1111
380	444	410	348	247	198	141	147	322	515	696	923	1143
370	451	419	358	254	204	144	149	332	532	718	950	1174
360	456	427	366	261	208	145	150	342	550	740	976	1202
350	459	433	374	268	213	146	151	352	567	761	1000	1228
340	457	437	380	275	216	146	150	360	583	781	1023	1250
330	449	437	385	280	219	145	147	369	599	799	1042	1269
320	432	435	387	285	221	142	143	376	613	815	1059	1284
310	404	429	387	289	221	139	136	382	626	829	1072	1293
300	364	416	383	291	219	135	127	387	637	840	1080	1294
290	313	395	374	292	215	127	116	390	647	849	1082	1281
280	249	363	356	289	208	120	100	390	654	853	1073	1250
270	180	320	329	282	195	111	85.7	385	658	850	1045	1197
260	114	263	286	269	177	99.4	67.8	370	656	834	993	1117
250	63.5	192	228	248	152	86.4	48.4	340	644	798	917	1012
240	29.0	119	166	218	123	70.6	32.8	288	617	744	821	885
230	12.2	57.3	105	174	94.5	54.0	23.1	216	571	672	708	745
220	6.5	16.8	48.4	121	64.5	36.9	12.6	137	504	584	590	610
210	1.5	4.1	18.3	62.9	38.8	22.4	6.4	62.2	423	489	483	496
200			1.6	8.3	6.6	5.1	1.1	13.1	341	401	399	411
190								5.2	269	332	340	354
180								4.0	213	280	298	315
170								3.2	171	241	265	285
160								2.6	139	207	234	257
150								2.3	116	176	205	228
140								2.1	100	150	177	198
130								1.6	89.2	129	153	172
120								.4	81.1	115	139	156
110									46.3	78.9	90.8	106

AVERAGE ELECTRON DENSITY KP BELOW 4.5

RAMEY AFB, PUERTO RICO 60 W MAR 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
COUNT	29	27	28	28	25	23	22	29	27	28	28	27
KP	2.0	2.0	1.9	1.9	2.0	1.7	1.5	1.6	2.1	2.1	2.1	2.1
HMIN	108	108	108	108	108	109	211	200	208	231	246	249
RATIO	4.3	4.3	4.3	4.5	4.5	4.7	6.9	5.9	5.7	5.4	5.4	5.6
SCAT	49.6	49.2	49.7	47.5	48.0	47.1	38.3	43.4	44.8	46.4	45.6	43.2
NMAX	1422	1491	1510	1374	1239	1196	1002	826	586	484	471	484
HMAXF	300	297	300	294	290	288	289	295	311	341	358	354
SHMAX	1236	1253	1286	1135	1003	913	492	495	368	315	307	296
SHINF	5247	5460	5545	5012	4497	4286	3319	2824	2022	1681	1634	1662
KM												
950	91.2	94.4	97.4	86.8	76.3	72.6	60.6	52.3	40.3	37.9	40.3	41.2
900	117	121	125	111	97.9	93.2	77.8	67.1	51.7	48.6	51.6	52.8
850	150	155	160	143	126	120	99.8	86.1	66.3	62.3	66.2	67.7
800	193	199	206	183	161	153	128	110	85.0	79.9	84.8	86.7
750	247	255	264	235	207	197	164	141	109	102	108	111
700	316	327	337	300	264	251	210	181	139	131	138	141
650	403	417	430	383	337	321	268	231	177	166	176	180
600	512	530	547	487	429	409	341	294	225	210	221	227
550	647	670	691	616	543	517	432	371	283	263	276	283
500	808	838	862	770	680	648	541	464	352	324	337	346
490	844	875	900	804	710	677	565	484	367	337	350	359
480	880	912	938	839	741	706	590	505	382	350	363	372
470	917	951	978	874	772	736	615	526	398	363	375	385
460	955	990	1018	910	805	767	641	548	413	375	387	397
450	993	1030	1058	947	838	799	668	570	429	388	399	410
440	1031	1070	1099	984	871	831	695	592	445	401	411	422
430	1070	1111	1140	1021	905	863	722	614	460	413	422	433
420	1108	1151	1181	1058	938	895	749	636	476	425	432	443
410	1147	1192	1221	1095	972	928	776	658	491	436	441	453
400	1184	1231	1261	1131	1005	960	803	680	505	446	449	461
390	1221	1270	1299	1166	1037	991	830	701	519	455	455	468
380	1255	1307	1336	1200	1069	1022	856	722	532	462	460	474
370	1289	1342	1370	1233	1099	1051	881	741	543	467	462	476
360	1319	1375	1402	1263	1128	1079	904	759	554	470	459	474
350	1347	1405	1431	1290	1154	1105	926	775	562	470	449	464
340	1371	1431	1455	1314	1177	1128	946	789	568	466	432	444
330	1390	1453	1476	1334	1197	1148	963	801	571	456	405	414
320	1405	1470	1490	1350	1214	1165	978	809	568	438	370	374
310	1413	1481	1496	1358	1225	1177	989	813	559	410	326	323
300	1410	1483	1490	1356	1230	1183	996	810	542	375	275	265
290	1390	1466	1464	1340	1225	1182	994	798	515	332	222	203
280	1346	1424	1414	1305	1204	1170	975	773	481	283	167	148
270	1274	1352	1339	1242	1160	1135	929	731	437	229	118	105
260	1174	1253	1236	1152	1090	1076	848	668	383	174	80.8	69.5
250	1050	1124	1103	1036	993	987	730	585	320	123	54.2	42.2
240	907	967	951	898	872	871	558	484	249	77.1	35.1	24.5
230	756	798	789	748	733	733	331	363	176	43.2	20.2	16.1
220	617	645	635	605	591	584	141	234	107	21.4	10.4	9.7
210	503	519	507	485	468	450	42.9	115	48.8	9.4	4.3	4.9
200	418	426	414	396	374	341	3.4	9.5	5.5	1.2	.4	1.0
190	362	364	352	335	309	265						
180	324	324	313	294	265	214						
170	296	295	284	263	232	180						
160	272	270	257	235	203	152						
150	245	244	229	206	174	129						
140	214	214	199	179	149	111						
130	185	186	173	158	132	100						
120	168	169	159	145	123	93.4						
110	116	109	110	87.6	73.1	51.4						

TABLES OF IONOSPHERIC DATA

FEBRUARY 1961 - OCTOBER 1955

Table 1

Washington, D. C. (38.7° N, 77.1° W) — February 1961

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.1	28	275					3.00
01		2.9	28	285					3.00
02		3.0	28	<290					2.90
03		2.85	28	285					2.95
04		2.8	28	280					3.02
05		2.9	28	270					3.05
06		2.7	28	260					3.10
07		3.8	28	250		(145)	1.75		3.25
08	235	5.85	28	230		115	2.15		3.40
09	(240)	7.0	28	220		109	2.65		3.35
10	255	7.4	28	210	---	105	2.95		3.30
11	270	7.95	28	210	---	105	3.10		3.28
12	270	8.55	28	210	---	109	3.20		3.18
13	260	8.45	28	210	---	109	3.20		3.15
14	270	8.5	28	220	---	109	3.10		3.15
15	260	8.55	28	220	---	109	2.90		3.25
16	240	8.05	28	225		110	2.50		3.30
17	(235)	7.7	28	235		121	1.95		3.25
18		7.15	28	225		---	----		3.25
19		6.15	28	220					3.18
20		5.1	28	235					3.18
21		4.25	28	240					3.15
22		3.65	28	260					3.08
23		3.4	28	265					3.00

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

Table 2

Washington, D. C. (38.7° N, 77.1° W) — January 1961

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.0	31	300					2.90
01		2.95	30	300					2.85
02		3.2	30	285					2.90
03		3.2	29	270					3.00
04		3.2	29	275					3.05
05		3.25	30	<265					3.02
06		3.1	31	270					3.10
07		3.4	30	250					3.10
08		5.8	31	230		<130	2.00		3.40
09	245	7.3	31	225		113	2.48		3.40
10	250	8.4	31	220		113	2.85		3.30
11	250	9.2	31	220		115	3.05		3.30
12	250	9.0	30	210		111	3.10		3.25
13	255	8.9	30	220		113	3.10		3.18
14	255	9.0	30	225		113	2.95		3.20
15	250	8.9	30	230		111	2.65	2.7	3.20
16	240	8.6	31	230		119	2.35		3.25
17		7.7	31	230		<140	1.70		3.25
18		7.0	31	225					3.20
19		5.8	30	230					3.25
20		4.5	31	235					3.20
21		3.65	30	260					3.00
22		3.4	30	270					2.98
23		3.1	29	280					2.95

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

Table 3

Resolute Bay, Canada (74.7° N, 94.9° W) — December 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.8	29	285					2.80
01		3.9	29	290					(2.85)
02		4.0	31	285					2.85
03		3.7	31	285					2.90
04		3.7	30	290					(2.80)
05		3.7	31	300					(2.85)
06		4.2	30	300					(2.80)
07		5.2	29	300					(2.80)
08		5.2	26	300					(2.65)
09		5.6	26	290					(2.60)
10		6.0	28	280					(2.75)
11		6.8	29	250					(3.05)
12		6.4	29	260					2.80
13		6.3	29	250					(2.95)
14		6.7	29	250					----
15		6.4	28	255					(2.70)
16		6.0	31	270					2.80
17		6.0	31	280					(2.75)
18		5.8	30	280					(2.80)
19		5.5	29	270					----
20		5.4	30	280					2.80
21		4.6	28	280					(2.90)
22		4.5	29	280					(2.80)
23		4.0	27	280					(2.85)

Time: 90.0°W.
Sweep: 1.5 Mc to 20.0 Mc in 15 seconds.

Table 4

Tromso, Norway (69.7° N, 19.0° E) — December 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(3.4)	2	---				4.2	
01		(3.2)	2	---				4.0	----
02		(3.8)	3	---		---	----	4.7	
03		(3.8)	2	(320)				4.2	
04		(3.9)	7	(320)				3.8	----
05		3.8	11	305		---	----	3.0	(2.70)
06		3.8	12	(310)				2.3	(2.70)
07		2.8	14	(285)					2.70
08		3.2	16	(290)					2.75
09		3.9	18	260		---	----		2.80
10		5.3	21	250		---	1.50		2.90
11		5.9	23	245		---	----		3.05
12		6.0	23	245		120	1.65		3.10
13		5.4	16	245		---	1.60	1.9	3.10
14		4.1	13	270		---	----	2.5	(2.90)
15		(3.2)	10	(250)		---	----	2.7	----
16		(2.5)	9	(265)		---	----	3.0	----
17		(2.4)	4	---				3.4	----
18		(2.6)	4	---				4.6	----
19		(2.9)	11	---				3.8	----
20		(2.8)	1	---				4.4	----
21		(4.3)	1	---		---	----	3.9	
22		(4.2)	2	---		---	----	4.6	
23		(4.9)	1	---				4.4	----

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

Table 5

Kiruna, Sweden (67.8° N, 20.3° E) — December 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(3.7)	6	350				5.0	---
01		(3.3)	4	350				4.5	---
02		(3.2)	6	340				4.0	---
03		(3.2)	5	335				4.0	(2.6)
04		3.3	13	320				3.7	(2.6)
05		3.3	16	300				3.3	2.6
06		3.0	21	290				2.3	2.8
07		2.8	18	290					2.8
08		3.0	24	265					2.7
09		3.9	29	260		---	---		2.8
10		5.6	27	250		---	1.4		3.0
11		6.5	27	245		---	---		3.1
12		7.1	27	235		---	---		3.1
13		6.6	21	240					3.0
14		4.2	24	250					3.0
15		3.6	18	255					2.8
16		3.2	19	275				3.0	2.8
17		3.3	13	275				2.6	2.8
18		(2.8)	6	(270)				3.8	(2.8)
19		(3.0)	8	320				4.1	(2.8)
20		(2.8)	8	320				4.0	---
21		(3.2)	2	345				4.3	---
22		(2.6)	3	340				4.2	---
23		(3.2)	6	360				4.8	(2.7)

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

Table 6

Sodankyla, Finland (67.4° N, 26.6° E) — December 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		---	0	360				3.5	
01		---	0	350				(3.6)	
02		---	0	350				3.5	
03		---	0	340				3.2	
04		(4.0)	4	340				2.8	----
05		(3.0)	2	310				2.5	----
06		---	0	300					
07		(3.4)	2	310					----
08		(3.0)	2	300					----
09		(4.1)	6	270		---	E		----
10		5.3	17	250		---	E		2.95
11		6.3	18	250		---	---	2.8	3.10
12		7.6	17	240		---	---	(3.3)	3.10
13		7.4	15	230		---	---		3.10
14		5.9	13	230		---	---	3.1	3.05
15		(6.6)	8	250		---	E		(3.15)
16		(5.2)	2	260		---	E	2.1	----
17		(5.6)	1	280		---	---	2.8	----
18		(3.9)	5	290				2.5	----
19		(4.9)	1	290				3.7	----
20		(4.6)	1	330				3.6	----
21		(4.2)	1	320				3.6	----
22		---	0	355				4.1	
23		(3.8)	2	360				4.0	----

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

Table 7

Lulea, Sweden (65.6° N, 22.1° E) December 1960

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.2	14	325				(2.4)	2.7
01		3.6	14	330				(2.2)	2.7
02		3.7	17	320				1.0	2.7
03		3.2	18	300					2.8
04		3.4	17	300					2.8
05		3.0	20	285					2.9
06		2.9	22	280					2.8
07		2.6	19	275					2.8
08		3.4	24	260					2.9
09		4.7	23	250		---	---		3.1
10		6.4	25	240		---	---		3.1
11		8.2	23	230		---	---		3.2
12		8.0	24	240		---	---		3.2
13		6.9	23	225		---	---		3.2
14		6.0	19	240					3.2
15		5.0	19	245					3.2
16		3.8	12	250					(3.15)
17		3.2	14	250				1.7	3.0
18		2.3	13	255				(2.0)	2.95
19		2.8	16	275				(1.9)	2.9
20		3.0	12	290				(2.2)	2.9
21		2.9	14	330				(2.2)	2.8
22		2.8	13	310				(2.5)	2.8
23		3.6	14	335				(2.1)	(2.7)

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

Table 8

Fairbanks, Alaska (64.9° N, 147.8° W) December 1960

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(3.55)	4					4.7	----
01		(3.75)	4					5.0	----
02		(3.2)	1					5.0	----
03		(4.5)	1					4.8	----
04		(3.55)	4					5.5	----
05		(3.5)	9					5.0	(2.60)
06		(3.3)	8					3.2	(2.75)
07		(3.0)	9						(2.68)
08		(3.7)	12						(2.85)
09		(4.2)	18						(3.08)
10		5.4	19						3.20
11		6.15	20						3.28
12		6.7	21						3.22
13		7.0	26						3.15
14		7.2	26						3.20
15		6.75	28						3.18
16		5.9	25						3.15
17		4.3	20						3.30
18		(3.75)	18						(3.30)
19		(3.1)	15					1.9	3.02
20		(3.4)	7					2.9	(3.05)
21		(3.1)	13					3.5	(3.10)
22		(3.7)	6					3.8	(3.15)
23		(4.5)	11					4.5	(3.05)

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

Table 9

Lycksele, Sweden (64.6° N, 18.8° E) December 1960

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	fEs	(M3000)F2
00		(3.8)	25	310				3.2	(2.55)
01		(3.3)	23	305				3.0	(2.6)
02		(3.3)	26	300				3.2	(2.6)
03		(3.5)	28	300				3.0	(2.6)
04		(3.6)	27	290				3.1	(2.6)
05		(3.3)	29	275				3.0	(2.7)
06		3.1	30	280				2.3	2.7
07		2.8	30	270				2.3	2.7
08		3.3	28	250		---	(1.10)	2.7	2.7
09		4.5	30	240		105	1.40	3.0	3.0
10		5.9	31	230		---	(1.55)	3.1	3.0
11		7.8	30	230		---	----	3.0	3.1
12		8.0	30	230		---	(1.70)	3.0	3.2
13		7.1	31	225		---	(1.70)	3.0	3.2
14		6.3	29	220		---	(1.50)	2.7	3.1
15		5.1	27	230		---	1.15	2.6	3.0
16		3.5	24	230		---	----	3.0	2.8
17		2.9	22	245		---	----	2.6	2.75
18		(2.3)	21	240		---	----	3.1	(2.8)
19		(2.6)	18	260				3.1	(2.6)
20		(3.1)	23	260				3.1	(2.7)
21		(3.0)	23	300				3.0	(2.6)
22		(3.0)	20	315				3.1	(2.6)
23		(3.1)	21	310				3.2	(2.5)

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 10

Anchorage, Alaska (61.2° N, 149.9° W) December 1960

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.0)	13			---	----		(3.00)
01		(3.7)	11			---	----		(2.88)
02		(3.7)	11					3.0	(2.75)
03		(3.25)	8						(2.60)
04		3.5	10						(2.55)
05		(3.4)	6						(2.68)
06		(3.9)	7						(2.70)
07		(3.5)	9						(2.68)
08		(3.6)	11						(2.90)
09		(4.2)	18						(3.10)
10		6.15	20						3.12
11		6.9	23						3.20
12		7.6	25						3.15
13		8.6	25						3.20
14		7.8	28						3.20
15		7.6	27						3.10
16		6.85	26						3.18
17		5.3	24						3.15
18		(4.3)	16						(3.25)
19		(3.1)	11						(3.05)
20		(3.3)	10						(2.98)
21		(2.9)	6						(2.80)
22		(3.5)	7						(2.90)
23		(3.1)	7					3.0	(2.92)

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

Table 11

Nurmijarvi, Finland (60.5° N, 24.6° E) December 1960

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		---	0						
01		(2.4)	1						----
02		(2.4)	1						----
03		---	0						
04		(2.4)	1						----
05		---	0						
06		(2.6)	1						----
07		(2.5)	1						----
08		(2.4)	4						----
09		4.8	13						3.15
10		6.6	18						3.30
11		8.1	19						3.30
12		9.3	21						3.30
13		9.2	21						3.40
14		8.2	19						3.40
15		7.4	17						3.40
16		6.0	10						3.40
17		(5.6)	5						(3.20)
18		(3.5)	6						(3.20)
19		(3.2)	1						----
20		(2.4)	2						----
21		(2.9)	1						----
22		---	0						
23		---	0						

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

Table 12

Upsala, Sweden (59.8° N, 17.6° E) December 1960

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	fEs	(M3000)F2
00		(1.9)	18	310				3.0	(2.6)
01		1.8	23	305		---	----	3.1	2.6
02		1.7	25	300		---	----	3.1	2.6
03		1.9	25	290				3.0	2.6
04		2.0	27	290				2.8	2.7
05		2.1	28	255				2.5	2.7
06		2.4	26	260				2.5	2.75
07		2.2	28	260		---	----	2.4	2.7
08		3.8	30	240		<145	1.30	2.5	2.9
09		5.8	31	220		---	1.85	3.3	3.2
10		7.4	30	220		---	2.10	4.5	3.2
11		8.4	29	220		<150	2.20	4.5	3.2
.2	---	8.9	29	220	---	---	2.15	4.4	3.3
13		8.8	30	215		(140)	2.15	4.4	3.3
14		7.8	31	210		---	1.85	3.3	3.3
15		7.2	31	210		<145	1.50	3.4	3.2
16		6.2	30	210		---	----	2.5	3.1
17		4.5	28	220		---	----	2.5	3.1
18		2.7	29	230		---	----	2.5	3.0
19		2.5	27	260		---	----	2.3	2.8
20		2.0	26	275		---	----	2.5	2.8
21		2.0	20	295				2.5	2.7
22		1.9	17	325				2.5	2.6
23		(1.8)	19	310				2.5	(2.55)

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

Table 13

Churchill, Canada (58.8° N, 94.2° W) December 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.2	23	300				4.9	
01		3.8	27	325				5.0	----
02		3.7	27	310				3.9	----
03		3.3	27	310				3.0	----
04		3.8	24	(375)		---	----	3.3	----
05		3.4	21	(370)				3.2	----
06		3.6	19	(330)				3.6	
07		3.6	20	---				4.0	----
08		4.1	20	(360)				3.3	----
09	---	5.0	25	300	---	---	----		----
10	---	6.0	28	280	---	---	----		3.15
11	---	7.0	27	260	---	---	2.60		3.20
12	---	8.5	27	260	---	---	----		3.10
13	---	10.0	29	250	---	---	(2.50)		3.15
14	---	10.1	29	255	---	---	2.30		3.15
15		9.1	29	245		---	2.00		(3.10)
16		8.0	28	255		---	----	2.4	(3.10)
17		5.8	28	270				2.4	----
18		5.0	29	295				2.9	----
19		5.0	28	295				3.0	----
20		4.4	26	305				4.0	----
21		4.0	25	295				3.7	
22		4.0	23	260				5.0	
23		4.2	23	290				5.4	

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

Table 14

Adak, Alaska (51.9° N, 176.6° W) December 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		2.8	26	305					2.70
01		2.8	27	<311					2.70
02		3.0	25	316					2.70
03		3.0	23	<325					2.70
04		2.9	25	310					2.70
05		2.7	25	<323					2.70
06		2.6	25	<301					2.70
07		3.2	22	268		---	----		2.82
08		5.55	30	228		105	----	2.2	3.30
09	---	7.7	30	223	---	(110)	2.35		3.40
10	---	8.5	29	223	---	(120)	2.60		3.30
11	---	9.35	28	220	---	120	2.65		3.30
12	---	9.7	29	219	---	118	2.72		3.25
13	---	9.8	29	225		118	2.60		3.40
14		8.8	29	219		<125	2.45		3.40
15		8.2	29	215		129	2.00		3.40
16		6.4	29	207		---	----		3.40
17		4.6	28	210					3.35
18		3.1	20	225					3.40
19		2.45	22	(233)					3.30
20		2.3	24	<268					3.10
21		2.45	24	<275					3.00
22		2.7	27	275					2.90
23		2.8	27	278					2.90

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

Table 15

Winnipeg, Canada (49.9° N, 97.4° W) December 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.3	27	<300					2.85
01		3.4	26	300				2.0	(2.95)
02		3.2	24	300				2.2	(2.80)
03		3.3	22	300		---	---	2.0	(2.85)
04		3.4	21	305		---	---		(2.80)
05		3.4	21	<310					(2.85)
06		3.3	21	300					(2.80)
07		3.2	24	<300					(2.85)
08		4.0	24	275		---	---		(3.00)
09		5.6	26	230		---	2.0		3.15
10		7.8	26	240		115	2.5		3.20
11	---	9.0	26	240		---	2.7		3.25
12	---	9.8	28	240		110	2.7		3.15
13	---	9.9	28	235	---	---	2.7		3.15
14		10.3	27	245		115	2.6		3.15
15		10.4	28	235		---	2.3		3.10
16		9.9	29	230		---	2.0		3.20
17		9.0	31	225					3.20
18		7.6	28	230					3.15
19		5.8	30	235					3.10
20		4.5	29	250					3.15
21		3.9	25	270					3.00
22		3.2	26	290					(2.90)
23		3.2	26	<295					3.00

Time: 90.0°W.
Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 16

St. John's, Newfoundland (47.6° N, 52.7° W) December 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		3.2	18	310					
01		3.2	25	305					
02		3.0	29	300					
03		3.2	26	300					
04		3.0	26	300					
05		3.2	22	295					
06		3.0	21	280					
07		4.0	30	245					
08		6.9	31	220					
09		8.9	31	225		---	---		
10		10.1	31	230		---	---		
11		10.3	31	225		---	---		
12		10.3	31	230		---	---		
13		11.1	30	230					
14		10.9	30	225					
15		10.6	30	220					
16		9.2	30	220					
17		7.1	25	230					
18		6.0	22	235					
19		5.0	24	250					
20		4.2	19	270					
21		3.7	18	300					
22		3.4	18	300					
23		3.6	21	300					

Time: 60.0°W.
Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 17

Graz, Austria (47.1° N, 15.5° E) December 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	<350	>3.5	20						(3.0)
01	(350)	>3.3	23						(2.8)
02	(345)	(3.3)	24						(2.8)
03	(335)	3.4	21						2.9
04	(320)	>3.2	20						(3.0)
05	<280	>3.2	24						(3.1)
06	<300	>3.2	20						(3.2)
07	255	>3.5	24						(3.1)
08	210	(6.0)	27						(3.4)
09	220	8.7	26						(3.5)
10	220	>9.0	25						(3.4)
11	230	>9.0	23						(3.6)
12	220	>9.0	26						(3.4)
13	225	>9.0	27						(3.4)
14	220	>0.0	28						(3.6)
15	220	8.7	30						(3.5)
16	210	8.3	30						3.3
17	220	(6.0)	28						(3.3)
18	240	>5.5	26						(3.2)
19	(260)	(4.0)	25						3.1
20	(270)	>3.2	23						(3.2)
21	<320	>3.2	27						(2.9)
22	<335	(3.3)	21						(2.7)
23	<340	>3.2	22						(2.8)

Time: 15.0°E.
Sweep: 2.8 Mc to 18.0 Mc in 50 seconds.

Table 18

Sottens, Switzerland (46.6° N, 6.7° E) December 1960

Time	h'F2	foF2	Count	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.6	28						2.8
01	320	3.6	28						2.8
02	310	3.6	20						2.7
03	300	3.6	28						2.7
04	290	3.4	27						2.8
05	270	3.2	22						3.0
06	270	3.1	27						2.9
07	260	3.0	24						3.0
08	240	4.4	26			---	---		3.2
09	220	7.2	30			120	2.0		3.5
10	230	9.0	30			120	2.5		3.5
11	230	9.3	30			110	2.7		3.5
12	230	9.2	29			110	2.8		3.4
13	230	9.1	30			110	2.9		3.4
14	230	9.0	29			110	2.8		3.4
15	230	8.8	28			120	2.4		3.5
16	230	8.3	29			130	2.1		3.4
17	220	7.2	27						3.4
18	230	6.3	27						3.3
19	230	4.9	27						3.2
20	250	4.2	25						3.2
21	250	3.8	26						3.0
22	280	3.6	25						2.9
23	300	3.6	26						2.8

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

Table 19

Ottawa, Canada (45.4° N, 75.9° W) December 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.5	25	300					---
01		3.1	26	300					---
02		3.2	28	300					---
03		3.2	28	295					
04		3.2	26	280					---
05		3.0	27	280					---
06		3.0	27	285					---
07		3.4	29	270					---
08		5.6	31	240		115	2.0		3.2
09	---	7.8	31	230	---	120	2.4		3.3
10	(260)	9.9	31	230	---	130	2.9		3.2
11	(250)	10.3	31	230	---	120	3.0		3.2
12	250	10.8	31	225	---	125	3.0		3.2
13	---	11.0	31	230	---	120	3.0		3.1
14	---	10.8	31	240		125	2.8		3.2
15		11.0	31	230		120	2.4		(3.3)
16		9.7	31	225		115	2.0		(3.2)
17		9.3	31	220					(3.2)
18		7.6	30	225					3.2
19		6.0	29	230					3.2
20		5.0	30	250					3.2
21		4.5	27	255					(3.0)
22		3.6	28	290					(2.9)
23		3.3	27	300					(2.9)

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

Table 20

Wakkanai, Japan (45.4° N, 141.7° E) December 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.2	26	335					2.80
01		3.2	26	335					2.75
02		3.2	25	320					2.75
03		3.2	25	320					2.75
04		3.3	25	300					2.75
05		3.1	25	300					2.65
06		3.3	24	280					3.00
07		5.5	26	250					3.20
08		8.8	26	230				2.9	3.35
09		10.7	29	230			2.70		3.35
10		11.7	29	230			2.95		3.30
11		11.3	29	230			2.95		3.35
12		10.2	29	230			3.00		3.30
13		9.6	28	235			2.90		3.30
14		9.1	29	230			2.60		3.25
15		8.5	29	225				2.7	3.35
16		7.3	29	225					3.20
17		5.7	29	235				2.4	3.25
18		4.4	29	250					3.25
19		3.5	28	260				2.4	3.15
20		3.3	27	300					3.05
21		3.3	27	325				2.3	2.80
22		3.5	26	330					2.70
23		3.4	26	330					2.80

Time: 135.0°E.
Sweep: 1.0 Mc to 17.0 Mc in 1 minute.

Table 21

Genoa (Monte Capellino), Italy (44.6° N, 9.0° E) December 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		3.7	25	270					2.92
01		3.9	25	260					2.74
02		3.8	24	275					2.84
03		3.7	25	275					2.84
04		3.6	25	265					2.92
05		3.3	23	240					3.03
06		3.1	25	240					3.29
07		3.4	19	230					2.82
08		6.6	28	225			1.7		3.20
09		8.7	29	220			2.2		3.37
10		10.6	30	220			2.6		3.35
11		11.1	30	220			2.9		3.23
12		10.4	30	220			3.0		3.21
13		10.2	30	220			3.0		3.35
14		10.4	30	225			2.8		3.25
15		9.8	30	225			2.4	2.6	3.33
16		10.0	31	220			2.0	2.6	2.98
17		8.2	31	220				2.4	3.21
18		6.6	31	220				2.5	3.02
19		5.2	31	230				3.1	3.21
20		4.3	31	230				2.0	3.12
21		4.2	30	235				1.9	3.00
22		(3.8)	27	260					2.97
23		3.8	26	265					2.95

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

Table 22

Rome, Italy (41.8° N, 12.5° E) December 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.6	30	280				3.1	2.80
01		3.6	30	270					2.80
02		3.8	30	280					2.80
03		3.8	30	290					2.80
04		3.7	29	260					3.00
05		3.6	26	250					3.15
06		(3.5)	27	240					3.30
07		(3.9)	27	220					3.00
08		(6.7)	17	200		150	2.0		3.35
09		9.2	28	210		110	2.5		3.45
10		(10.6)	22	210		110	2.9		(3.40)
11		(10.8)	22	210		110	3.0		(3.45)
12		9.4	24	210		110	3.1		3.35
13		(9.8)	22	210		110	3.0		3.35
14		(10.4)	27	210		110	2.9		(3.30)
15		(8.4)	21	210		110	2.6		(3.40)
16		(8.3)	21	210		130	2.0	3.1	(3.40)
17		(7.4)	20	200				3.1	(3.35)
18		(5.6)	21	200				3.1	3.25
19		5.0	24	210				3.1	3.30
20		4.0	28	240				3.0	3.20
21		3.9	26	250				3.1	2.85
22		3.8	28	260					2.80
23		3.6	28	270					2.80

Time: 15.0°E.
Sweep: 1.4 Mc to 15.0 Mc in 5 minutes, automatic operation.

Table 23

Boulder, Colorado (40.0° N, 105.3° W) December 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.0	15						3.00
01		3.25	18						2.95
02		2.9	18						2.88
03		3.4	15						3.02
04		3.1	16						3.00
05		3.0	17						2.90
06		3.0	16						2.80
07		(3.9)	15						3.10
08		6.7	17						3.45
09		8.8	17						3.40
10		10.1	17						3.30
11		11.5	17						3.25
12		11.4	16						3.20
13		11.15	16						3.20
14		10.8	16						3.25
15		10.05	16						3.25
16		10.2	17						3.25
17		8.8	17						3.30
18		6.45	16						3.25
19		5.35	18						3.40
20		3.6	17					2.0	3.25
21		2.9	15					3.0	3.15
22		2.9	13						3.05
23		3.0	18						3.00

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

Table 24

Akita, Japan (39.7° N, 140.1° E) December 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.4	26	300				2.2	2.70
01		3.5	27	300				(1.9)	2.70
02		3.5	29	300					2.65
03		3.3	28	310					2.60
04		3.5	28	310				2.0	2.70
05		3.5	29	305					2.75
06		3.6	29	280				1.8	2.90
07		6.0	29	245			----	(2.5)	3.30
08		9.1	30	240			2.50	2.9	3.30
09	---	10.8	30	245			2.85		3.30
10	---	12.2	31	245	---		3.10		3.35
11	---	11.0	30	240	---		3.20		3.35
12	---	10.0	30	240	---		3.20		3.30
13	---	9.6	31	245	---		3.10		3.25
14	---	9.3	31	245			2.85		3.35
15		8.2	31	240			2.50		3.35
16		7.6	31	235				2.6	3.30
17		6.3	31	220				(2.4)	3.25
18		5.2	30	240				(2.3)	3.25
19		4.0	29	240				(2.8)	3.25
20		3.4	24	255				(2.5)	2.95
21		3.4	24	275				(2.6)	2.75
22		3.4	25	300				(2.3)	2.70
23		3.5	26	300				(2.2)	2.80

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

Table 25

Tokyo, Japan (35.7° N, 139.5° E) December 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.5	19	325					2.70
01		3.5	21	330					2.75
02		3.4	22	300					2.75
03		3.3	23	310					2.70
04		3.2	25	305					2.60
05		3.3	24	<340					2.70
06		3.6	24	295					2.80
07		(7.1)	25	240			----		(3.20)
08	---	9.9	29	240			2.55	3.1	3.30
09	---	11.6	28	240			2.95	3.2	3.30
10	---	13.0	28	230			3.20	3.4	3.25
11	---	11.5	29	<230			3.30	2.9	3.20
12	---	10.8	28	(230)			3.35		3.15
13	---	10.4	28	240			(3.15)	3.2	3.15
14		10.0	28	240			2.90	3.3	3.15
15		8.9	29	235			2.60	2.9	3.25
16		8.0	29	225			----		3.30
17		6.9	27	230					3.20
18		6.1	23	240				2.6	3.15
19		4.8	21	230				2.6	3.20
20		4.0	22	250				2.4	3.00
21		3.5	19	310				2.4	2.75
22		3.5	18	310					2.65
23		3.4	20	340					2.70

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

Table 26

White Sands, New Mexico (32.3° N, 106.5° W) December 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.55	28	(290)				2.0	2.90
01		3.6	27	302					2.80
02		3.5	28	<300					2.82
03		3.4	27	284					2.75
04		3.2	24	<280					2.78
05		3.2	28	<325					2.70
06		3.3	28	312					2.72
07		5.4	29	265		<156	1.80	2.0	3.10
08		8.2	31	245		125	2.40	2.7	3.30
09		9.5	31	240		118	2.80	3.1	3.20
10	(280)	10.6	31	235		112	3.10	4.0	3.05
11	(284)	11.4	30	235		117	3.35	3.6	2.95
12	(270)	12.1	30	240		(120)	3.35	3.5	3.00
13	(275)	11.6	31	240		122	3.30	3.6	3.00
14	---	11.2	31	234		119	3.20	3.3	3.00
15		10.7	31	245		120	2.90	3.1	3.05
16		10.4	31	244		<124	2.50	3.0	3.10
17		9.1	31	235		---	----	3.3	3.20
18		6.5	31	225				3.1	3.10
19		5.2	29	(250)				3.7	3.10
20		4.5	25	250				3.5	3.18
21		3.1	25	<272				3.4	3.00
22		3.3	28	<300				3.2	2.90
23		3.5	27	<310				3.2	2.75

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

Table 27

Yamagawa, Japan (31.2° N, 130.6° E) December 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.8	25	300				2.3	2.85
01		3.5	25	310				2.2	2.80
02		3.4	25	300					2.85
03		3.2	26	340					2.70
04		3.2	26	310					2.65
05		3.2	26	330					2.60
06		3.2	26	320					2.80
07		5.2	27	260				2.2	3.10
08		8.7	27	240			2.30	2.7	3.35
09		11.2	27	240			2.85	3.1	3.30
10		12.8	28	230			3.20		3.35
11		12.0	27	230			3.30		3.30
12		11.6	28	230			3.40		3.15
13		11.6	26	240			3.40		3.10
14		11.6	25	235			3.20		3.10
15		10.8	26	240			3.00	3.0	3.20
16		9.3	27	240			2.50	3.1	3.20
17		8.9	27	230				2.8	3.25
18		7.6	26	225				3.0	3.20
19		7.1	24	240				2.6	3.15
20		6.4	26	230				2.5	3.20
21		5.6	26	250				2.3	3.00
22		4.3	27	275					2.85
23		4.4	26	290					2.85

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

Table 28

El Cerillo, Mexico (19.3° N, 99.5° W) December 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.9	25	270				2.8	2.90
01		4.0	25	260				2.0	3.10
02		3.7	25	240				2.4	3.30
03		3.2	26	240				1.7	3.10
04		2.6	25	300					2.80
05		2.6	26	330					2.70
06		2.9	26	310				1.9	2.80
07		5.0	26	270		---	----	2.3	3.10
08		8.8	26	235		119	2.35	2.9	3.35
09		11.5	26	230		103	2.90	3.4	3.30
10		12.4	26	220		103	3.30	3.7	3.30
11		13.0	26	210		105	3.50	3.8	3.20
12		11.8	26	200		103	3.60	4.2	3.00
13		12.6	26	210		101	3.70	4.2	3.10
14		13.4	25	230		103	3.50	4.1	3.00
15		12.2	26	230		103	3.40	4.0	3.10
16		11.4	27	230		103	3.10	4.0	3.10
17		10.2	26	220		104	2.40	4.4	3.10
18		9.2	26	230				5.6	3.30
19		7.2	25	230				4.5	3.30
20		5.4	23	230				4.1	3.20
21		5.1	25	245				3.6	3.30
22		4.3	25	250				3.3	3.10
23		4.0	24	260				3.3	3.05

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

Table 29

Talara, Peru (4.6° S, 81.3° W) December 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		10.0	16	<240				3.5	3.25
01		7.9	16	245				2.7	3.25
02		6.2	15	260				3.7	3.15
03		5.6	13	270				3.1	3.12
04		4.7	12	250				3.9	3.22
05		4.95	20	235				3.2	3.20
06		5.6	25	265		---	----	3.5	3.00
07	---	9.0	27	245		119	2.40	3.3	3.05
08	---	11.45	30	230		<116	3.05	3.6	3.00
09	---	12.2	31	220		<113	3.45	4.3	2.85
10	---	12.7	30	<215		111	3.70	4.4	2.60
11	---	13.3	31	(205)	---	111	3.90	4.3	2.40
12	---	>13.0	31	(210)	---	111	3.95	4.1	2.30
13	---	12.6	31	210	---	111	3.90	4.5	2.35
14	(345)	13.2	31	205	---	111	3.80	4.3	2.40
15	---	13.2	31	(210)		111	3.60	4.4	2.45
16	---	13.0	31	<240		111	3.25	4.8	2.55
17		12.7	31	<245		115	2.85	4.3	2.62
18		12.9	31	260		(123)	2.25	4.2	2.65
19		12.8	31	260				3.2	2.80
20		12.75	30	265				2.6	2.82
21		>11.0	24	260				3.2	2.05
22		>11.05	18	255				2.8	2.98
23		11.45	14	250				2.6	3.25

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

Table 30

Huancayo, Peru (12.0° S, 75.3° W) December 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(7.55)	8	305					(2.90)
01		(6.0)	8	320					(3.00)
02		(5.4)	7	295					(2.90)
03		(6.35)	6	280					(3.10)
04		(5.65)	6	260					(3.25)
05		4.5	11	250					3.10
06		7.5	25	260		123	2.00	3.4	3.10
07		9.6	30	<240		111	2.80	4.8	2.92
08		11.3	30	225		<111	(3.30)	6.1	2.72
09		11.95	30	215	---	---	(3.70)	7.2	2.50
10	---	11.9	30	205	---	---	(3.95)	7.3	2.35
11	---	11.85	30	205	5.1	---	(4.08)	7.3	2.30
12	---	11.3	31	200	5.1	110	(4.10)	7.0	2.30
13	---	11.4	31	200	---	111	(4.00)	7.3	2.30
14	---	12.0	31	205		112	(3.90)	7.0	2.30
15		12.2	31	(210)		114	(3.65)	5.4	2.40
16		12.2	30	220		115	(3.30)	5.8	2.35
17		11.9	30	250		117	(2.75)	5.7	2.28
18		11.5	29	270		<139	1.95	4.5	2.30
19		11.0	29	295					2.30
20		10.4	24	325					2.32
21		9.95	16	310					2.40
22		9.2	11	290					2.55
23		>9.0	9	270					(2.90)

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

Table 31

Thule, Greenland (76.0° N, 68.0° W) November 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(3.7)	16	265					(2.85)
01		(3.3)	15	288					(2.60)
02		(3.75)	8	280					(2.70)
03		(4.0)	9	272					(2.75)
04		(3.65)	6	272					----
05		(4.0)	11	262					(2.68)
06		(3.65)	12	260					(2.78)
07		(3.7)	11	249					(2.90)
08		(4.1)	12	250				2.0	(2.78)
09		(4.4)	16	252		---	---		(2.92)
10		(4.55)	14	250		---	---	2.5	(2.88)
11		(5.35)	14	250		---	---	2.5	(3.00)
12		(5.45)	12	251		---	---	3.3	(3.00)
13		(5.4)	7	240		---	---	2.2	----
14		(5.4)	15	244				2.3	(2.90)
15		(5.2)	11	247				2.5	(2.95)
16		(5.4)	14	245				2.2	(2.90)
17		(5.6)	7	240				2.8	----
18		(4.8)	13	258				2.6	(2.90)
19		(4.55)	8	258				1.8	(2.92)
20		(4.2)	13	(274)				2.0	(2.75)
21		(4.4)	10	<264				1.7	(2.95)
22		(3.8)	11	<269					(2.85)
23		(3.6)	13	270					(2.82)

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

Table 32

Fairbanks, Alaska (64.9° N, 147.8° W) November 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(3.6)	5					5.0	----
01		(3.8)	5					5.9	----
02		(3.4)	3					6.0	----
03		(4.1)	4					5.4	----
04		(3.9)	5					5.4	----
05		(4.35)	12					5.0	(2.62)
06		(4.35)	14					3.1	(2.78)
07		(3.85)	16						(2.82)
08		4.45	18						3.05
09		5.55	18						3.10
10		6.1	19						3.15
11		6.8	21						3.10
12		7.4	23						3.10
13		8.0	23						3.10
14		8.8	24						3.15
15		8.2	23						3.15
16		7.05	22						3.15
17		5.75	20						3.20
18		5.2	15						3.20
19		(3.7)	13						(3.15)
20		(3.15)	8					2.3	(3.06)
21		(4.4)	9					4.0	(3.10)
22		(3.65)	8					4.2	----
23		(4.3)	3					5.0	----

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

Table 33

Anchorage, Alaska (61.2° N, 149.9° W) November 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(3.1)	8						(2.55)
01		(3.0)	6					2.3	(2.50)
02		(3.3)	8					1.9	(2.60)
03		(2.9)	11						(2.60)
04		(4.15)	6						(2.55)
05		(4.3)	8						(2.60)
06		(4.1)	9						(2.60)
07		(3.3)	13						(2.65)
08		4.7	16			---	---		3.02
09		5.7	19			---	---		3.10
10		7.1	19			---	---		3.08
11		7.7	22			---	---		3.08
12		8.4	23			---	---		3.10
13		9.1	23			---	---		3.10
14		9.5	20			---	---		3.12
15		9.2	21						3.20
16		7.9	23						3.15
17		6.5	24						3.12
18		5.1	21						3.25
19		(4.0)	15						3.18
20		2.8	11						2.95
21		(2.5)	9						(2.95)
22		(2.4)	9						(2.75)
23		(2.85)	6						(2.70)

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

Table 34

Nurmijarvi, Finland (60.5° N, 24.6° E) January 1960

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(2.6)	6						(2.60)
01		(2.4)	3						----
02		(2.6)	4						----
03		(2.3)	3						----
04		(2.4)	2						----
05		(2.9)	5						(2.80)
06		(2.7)	3						----
07		(2.5)	2						----
08		(3.0)	4						----
09		6.4	10						3.10
10		8.5	23						3.20
11		10.3	27						3.20
12		11.6	28						3.20
13		12.0	25						3.15
14		11.9	26						3.20
15		11.5	26						3.20
16		10.4	26						3.15
17		8.4	22						3.15
18		6.2	18						3.10
19		5.2	19						3.05
20		3.7	15						3.00
21		3.2	15						2.90
22		(3.3)	9						(2.80)
23		(3.0)	8						(2.70)

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

Table 35

Lindau/Harz, Germany (51.6° N, 10.1° E) December 1959

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		3.30	29	293					2.50
01		3.28	30	310					2.56
02		3.38	29	314					2.55
03		3.12	25	310					2.58
04		2.87	27	283					2.63
05		2.93	30	267					2.79
06		2.73	29	256					2.94
07		2.70	28	254		---	E		2.77
08		4.92	29	234		---	E	2.3	2.99
09		8.30	29	223		---	2.15	3.1	3.27
10		9.98	30	222		---	2.48	3.7	3.26
11		11.10	27	226		110	2.70	3.9	3.25
12		11.50	30	223		110	2.76	3.8	3.18
13		11.00	31	220		---	2.76	4.0	3.10
14		11.60	27	230		---	2.60	3.8	3.18
15		10.70	31	220		---	2.26	3.4	3.22
16		9.89	28	218		---	1.81	2.8	3.18
17		8.60	29	216		---	E		3.12
18		6.20	31	220				2.7	3.12
19		4.60	31	231					3.04
20		4.12	30	243					2.95
21		3.50	30	262					2.74
22		3.43	31	288					2.66
23		3.34	28	298					2.62

Time: 15.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 4 minutes.

Table 36

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

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		3.5	31	310					
01		3.5	31	310					
02		3.6	31	300					
03		>3.3	31	270					
04		3.2	30	260					
05		3.1	31	250					
06		4.5	29	240		---	---		
07	---	7.6	30	220	---	150	2.0		
08	---	10.3	31	225	---	120	2.5	2.9	
09	--	11.3	29	225	---	120	2.8	3.0	
10	---	11.4	31	225	---	120	3.0	3.1	
11	---	11.0	31	225	---	120	3.1		
12	---	11.3	31	230	---	120	2.9		
13	---	11.4	31	230	---	120	2.6		
14		10.2	30	220		130	2.2		
15		>9.0	31	220		---	---		
16		>7.0	30	220				2.0	
17		5.7	27	230					
18		>4.4	27	235					
19		3.8	27	260					
20		3.4	29	300					
21		3.4	30	300					
22		3.4	30	310					
23		3.5	30	315					

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

Table 37

Dakar, French W. Africa (14.8° N, 17.4° W) December 1959

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(16.0)	1	240		---	E	3.1	
01		>14.0	9	230		---	E	3.0	
02		>16.0	6	215		---	E	3.0	
03		>9.0	11	215		---	E	3.0	----
04		6.8	10	215		---	E	3.0	(3.00)
05		4.8	16	240		---	E	3.0	2.90
06		3.7	19	245		---	E	3.0	3.00
07		3.4	18	270		---	E	3.0	2.75
08		8.4	21	250		120	2.20	3.1	3.10
09		(12.2)	17	240		110	2.85	4.9	(3.05)
10	---	15.0	21	230		105	3.25	4.0	(3.20)
11	---	15.5	27	215		105	3.60	4.9	3.05
12	---	15.0	19	220	---	105	3.80	4.8	(2.80)
13	---	14.5	21	210		105	3.80	4.5	2.60
14	---	14.3	15	215		105	3.80	4.6	(2.50)
15	---	>14.3	19	225		105	3.70	4.5	(2.35)
16		>14.2	18	230		110	3.50	4.6	(2.35)
17		(13.5)	8	240		110	3.00	4.6	----
18		(14.5)	5	255		120	2.35	4.7	
19		>14.0	4	260		---	----	4.5	
20		>13.5	2	320		---	E	3.0	
21		----	0	280		---	----	3.1	
22		D	1	250		---	E	3.1	
23		>13.0	3	245		---	E	3.1	

Time: 0.0°.
Sweep: 1.2 Mc to 17.0 Mc.

Table 38

Djibouti, French Somaliland (11.6° N, 43.2° E) December 1959

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(9.1)	2	260				3.7	----
01		(9.0)	3	250		---	----	3.6	----
02		(8.2)	6	250		---	----	3.3	----
03		7.1	12	240		---	----	3.2	(2.90)
04		6.2	19	240		---	E	2.2	3.05
05		5.6	24	235		---	E	2.1	3.15
06		4.4	27	250		---	E	2.1	2.85
07		8.3	13	270		130	2.15	3.7	3.00
08		(11.3)	2	255		125	2.90	4.0	----
09		(11.4)	3	240		---	3.40	6.4	----
10		(11.5)	6	235		---	3.60	7.1	(2.45)
11		(11.5)	9	235		---	3.75	8.5	(2.40)
12	---	(11.5)	9	235		---	3.80	6.8	(2.35)
13		(11.7)	5	235		---	3.80	6.8	(2.30)
14		(12.6)	8	240		---	3.70	6.5	(2.30)
15		(11.6)	2	250		---	3.55	6.6	----
16		(11.6)	4	260		---	3.20	6.5	----
17		(11.4)	1	280		130	2.35	5.9	----
18		(8.8)	1	315		---	E	4.2	----
19		(8.8)	4	375		---	E	2.6	----
20		(9.0)	3	(360)		---	----	2.0	----
21		(8.6)	5	(290)				2.2	----
22		(8.3)	3	290				3.7	----
23		(9.0)	4	285				3.8	----

Time: 45.0°E.
Sweep: 1.25 Mc to 20.0 Mc.

Table 39

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

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		9.4	29	250					2.80
01		9.2	29	250					2.85
02		8.8	29	250					2.90
03		8.8	27	250					3.10
04		7.7	28	225					3.20
05		6.0	26	225			----		3.40
06		>6.8	23	265			1.80		3.00
07		9.5	26	250			2.75		2.95
08		11.0	27	240			3.30	8.2	2.65
09		11.0	28	225			3.70	6.4	2.50
10		10.9	27	220			(3.95)	9.1	2.40
11		11.0	28	215			(4.10)	9.1	2.30
12		11.2	27	215			(4.10)	9.2	2.35
13		11.5	29	220			4.00	9.1	2.30
14		11.8	30	225			3.85	8.9	2.30
15		11.7	31	235			3.50	6.6	2.25
16		11.7	31	250			3.00	6.4	<2.25
17		>10.9	30	270			2.20	4.4	2.25
18		>10.2	29	325			(1.20)		2.20
19		9.5	29	375					2.15
20		9.1	28	355					2.25
21		9.0	30	320					2.45
22		9.2	30	275					2.60
23		9.4	29	250					2.75

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

Table 40

Tananarive, Madagascar (18.8° S, 47.5° E) December 1959

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.7	27	255		---	----	3.1	2.80
01		7.4	28	250		---	----	3.0	2.65
02		7.0	28	285		---	E	3.0	2.60
03		6.4	28	295		---	E	2.7	2.60
04		6.0	28	<295		---	E	2.9	2.60
05		5.9	27	300		---	E	3.0	2.65
06		7.1	27	260		120	2.40	3.0	2.80
07	---	8.6	28	250	---	115	(3.10)	3.1	2.65
08	(440)	9.4	25	240	(5.0)	110	3.50	3.9	2.60
09	390	10.5	25	235	5.6	110	3.65	3.8	2.55
10	390	11.2	24	230	---	110	3.95		2.55
11	380	11.7	24	230	5.8	110	3.90	4.3	2.50
12	380	11.8	24	(240)	---	110	(4.05)	4.2	2.60
13	385	11.4	26	(250)	5.9	110	(4.00)	4.3	2.55
14	365	11.7	24	240	5.6	110	(3.90)	4.1	2.60
15	370	11.4	28	250	---	110	3.60	3.9	2.60
16	---	10.9	25	250	---	110	3.30	3.7	2.60
17		10.7	27	250		120	2.80	3.3	2.60
18		10.3	27	285		---	2.15	2.8	2.65
19		10.6	28	290		---	----	2.9	2.65
20		10.6	27	290		---	----	3.0	2.65
21		10.1	24	285		---	----	2.8	2.65
22		9.7	27	290		---	E	3.0	2.65
23		9.6	28	280		---	----	2.9	2.70

Time: 45.0°E.
Sweep: 1.25 Mc to 20.0 Mc.

Table 41

Townsville, Australia (19.3° S, 146.7° E) December 1959

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>6.0	1	280				3.0	
01		---	0	290				3.5	
02		>6.5	3	285				3.6	
03		>6.5	2	280				2.3	
04		>6.0	7	<300					
05		(6.1)	11	300					----
06		>6.3	11	250			2.20		----
07	---	>7.0	12	250	---		2.90	3.6	(2.70)
08	---	7.2	10	240	---		3.40	4.2	(2.55)
09	(440)	7.6	13	(240)	5.1		3.65	4.3	(2.55)
10	(420)	>10.7	14	(230)	<5.3		3.90	5.6	2.60
11	(450)	>11.0	15	---	6.0		(4.00)	5.8	(2.70)
12	385	(12.6)	18	---	5.8		>4.00	5.6	2.60
13	360	13.3	18	---	5.7		4.00	5.3	2.65
14	340	(12.4)	18	(240)	5.4		3.95	4.8	2.70
15	345	11.7	15	(230)	---		3.80	5.4	2.70
16	(355)	>11.0	11	(240)	---		3.50	4.2	----
17		(6.5)	1	250			3.05	4.3	----
18		>6.6	2	<270			2.30	4.0	----
19		>6.5	1	300				3.4	
20		---	0	330				3.5	
21		>7.5	1	330				2.9	
22		---	0	310				2.9	
23		---	0	300				3.1	

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

Table 42

Sao Paulo, Brazil (23.5° S, 46.5° W) December 1959

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>14.0	15	285					2.90
01		12.6	20	265					2.90
02		10.5	22	250					2.80
03		8.3	21	260					2.70
04		7.8	23	260					2.80
05		7.2	23	280					2.60
06		7.6	23	250			---		2.80
07		8.7	26	235			---	3.2	2.60
08		9.6	26	230			---		2.40
09	---	10.4	26	225	---		---	3.7	2.35
10	---	10.8	25	---	---		---		2.30
11	(420)	11.8	25	---	---		---		2.40
12	(400)	12.5	23	(220)	---		---		2.50
13	(380)	13.0	22	(230)	5.8		---		2.50
14	390	13.4	24	(225)	---		---		2.60
15	365	13.6	26	(240)	---		---		2.60
16	355	13.8	28	230	---		---	3.8	2.60
17	(325)	13.6	25	240			---	4.0	2.60
18		13.5	26	265			---	2.8	2.60
19		13.2	28	320				2.8	2.50
20		(13.6)	20	370				2.2	(2.40)
21		(13.8)	11	340					(2.55)
22		(14.0)	11	345					(2.60)
23		>14.0	13	315					(2.70)

Time: 45.0°W.
Sweep: 1.75 Mc to 20.0 Mc in 2 minutes 30 seconds.

Table 43

Johannesburg, Union of S. Africa (26.1° S, 28.1° E) December 1959

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.8	30	(255)				<1.8	(2.80)
01		6.1	31	(250)				1.5	2.70
02		5.6	31	(280)				1.4	2.70
03		5.3	31	---				<1.4	2.65
04		5.0	31	(270)				<1.5	2.70
05		5.1	31	285			<1.5		2.80
06		6.8	31	250			2.4	2.6	2.95
07	---	8.1	31	235	---		3.1	3.6	2.80
08	365	9.0	31	225	5.1		3.6	3.8	2.65
09	360	9.8	31	210	5.3		3.8	4.0	2.60
10	365	10.2	31	210	5.5		4.0	4.2	2.55
11	365	10.6	31	210	5.6		4.1	4.2	2.55
12	370	10.9	31	210	5.6		4.2	4.5	2.50
13	370	10.8	31	210	5.7		4.1	4.3	2.55
14	365	10.4	31	210	5.7		4.0	4.1	2.55
15	360	10.2	30	215	5.3		3.9	4.0	2.60
16	345	>9.6	31	220	5.1		3.6	3.6	2.65
17	310	9.3	31	230	---		3.2	3.3	2.65
18	---	>9.0	31	250			2.5		(2.75)
19		>9.0	31	260			<1.8	<2.0	(2.00)
20		>8.4	31	250				<2.0	(2.80)
21		>7.3	30	250				<1.8	(2.80)
22		>7.1	28	270				1.7	(2.70)
23		>6.9	30	(270)				<1.8	2.65

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

Table 44

Capetown, Union of S. Africa (34.1° S, 18.3° E) December 1959

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.5	26	---				2.8	2.60
01		5.2	26	---				2.8	2.60
02		5.0	26	---				2.8	2.60
03		5.0	26	---				2.7	2.55
04		4.6	25	---				2.8	2.60
05		4.4	25	(325)				2.7	2.60
06		5.7	24	265			2.1	2.8	2.80
07	---	6.8	24	250	---		2.7	2.9	2.80
08	440	7.8	24	240	4.6		3.1	3.4	2.55
09	450	8.3	24	235	5.0		3.5	3.7	2.45
10	420	9.0	24	(225)	5.2		---	4.0	2.50
11	395	9.3	24	---	5.6		---	4.0	2.50
12	395	9.5	25	---	5.8		---	(4.6)	2.50
13	395	9.9	25	---	5.6		---	(4.6)	2.50
14	[illegible]	9.9	25	---	5.5		---	(4.4)	2.55
15	375	9.6	24	---	5.7		---	4.1	2.55
16	365	9.3	25	235	5.2		3.6	3.9	2.55
17	350	9.0	26	230	5.0		3.4	3.6	2.60
18	330	8.6	26	245	---		3.0	3.2	2.70
19	---	8.4	26	250			2.4	2.6	2.00
20		7.8	26	250			<1.8	2.3	2.85
21		7.2	26	245				2.0	2.80
22		6.4	26	---				2.2	2.75
23		5.9	26	---				2.3	2.65

Time: 30.0°E.
Sweep: 1.0 Mc to 17.0 Mc in 7 seconds.

Table 45

Canberra, Australia (35.3° S, 149.0° E) December 1959

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(7.0)	28	300				3.2	2.65
01		(7.2)	20	<290				3.4	2.65
02		>6.7	28	280				3.4	2.65
03		>6.0	28	<295				2.4	2.60
04		5.9	28	290					2.70
05	---	6.0	28	275	---		1.90	2.1	2.70
06	---	6.1	28	250	---		2.60	3.0	2.90
07	400	7.0	24	240	5.0		3.10	3.9	2.80
08	370	7.4	24	235	5.2		3.55	4.6	2.80
09	390	0.0	24	240	5.8		3.70	4.9	2.70
10	390	8.5	22	220	5.7		3.90	5.0	2.65
11	360	>0.6	21	(220)	6.0		4.00	5.1	2.75
12	400	>8.5	21	220	5.8		4.00	5.7	2.55
13	360	>8.6	25	(230)	5.8		4.00	5.4	2.70
14	360	>8.6	27	225	5.8		3.95	4.5	2.70
15	360	8.6	27	230	5.7		3.75	4.3	2.70
16	350	8.6	30	235	5.6		3.55	4.0	2.70
17	350	8.5	30	245	5.0		3.25	3.9	2.75
18	---	8.2	28	255	---		2.65	3.8	2.75
19		8.0	30	255			1.85	3.8	2.75
20		>7.5	28	285				3.7	(2.65)
21		>7.5	28	300				2.8	(2.65)
22		>7.7	27	300				3.2	----
23		>7.7	28	300				3.2	(2.60)

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

Table 46

Port Lockroy (64.0° S, 63.5° W) December 1959

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		10.2	27	320			1.50	1.5	2.50
01		10.6	25	320			1.50	1.5	2.45
02		10.4	26	320	---		1.70	1.8	2.40
03		10.4	20	300	---		2.00	2.2	2.40
04		10.4	26	280	3.6		2.30	2.7	2.40
05		10.4	28	260	4.0		2.55	3.2	2.45
06		10.3	27	260	4.3		2.90	3.8	2.45
07		9.0	27	245	4.5		3.20	3.6	2.50
08		9.0	26	240	4.7		3.30	4.1	2.50
09		8.0	25	240	5.0		3.40	4.6	2.55
10		7.8	27	240	5.0		3.55	5.4	2.60
11		7.5	27	240	5.0		3.50	5.9	2.70
12		7.0	26	240	5.1		3.65	5.4	2.50
13		7.0	27	230	5.1		3.60	5.5	2.70
14		6.9	24	250	5.0		3.55	5.0	2.75
15		7.0	27	245	---		3.50	4.8	2.70
16		6.8	27	245	---		3.35	4.6	2.75
17		7.2	28	250	---		3.20	4.2	2.70
18		7.6	28	255	---		3.00	4.0	2.80
19		8.0	29	255	---		2.70	3.2	2.70
20		8.2	25	270			2.40	2.9	2.70
21		8.6	24	280			2.10	2.3	2.55
22		9.2	24	300			1.80		2.45
23		9.6	21	315			1.55	1.5	2.45

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

Table 47

Mawson (67.6° S, 62.9° E) December 1959

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(6.5)	9	200					(3.00)
01		6.8	13	200					2.60
02		7.2	10	200					2.40
03		(7.1)	8	(200)					(2.25)
04		(7.5)	6	(175)					(2.50)
05		(7.5)	4	(400)					----
06		(7.5)	7	(380)					(2.40)
07		(8.0)	7	(220)					(2.35)
08		(7.5)	8	(200)					(2.30)
09		7.8	13	200					2.35
10		8.0	14	410					2.45
11		7.9	10	200					2.50
12		(7.2)	8	(200)					(2.60)
13		7.0	10	200					2.70
14		7.0	14	200					2.95
15		7.0	15	210					3.00
16		7.0	16	235					3.00
17		6.0	13	240					3.00
18		(6.8)	9	(250)					(2.90)
19		6.0	12	250					3.00
20		(6.8)	8	(245)					(3.00)
21		6.0	11	250					3.00
22		6.0	12	220					3.00
23		(6.0)	7	(220)					(3.00)

Time: 0.0°.
Sweep: 1.0 Mc to 20.0 Mc in 15 seconds.

Table 48

Lwiro, Belgian Congo (2.3° S, 28.8° E) November 1959

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		11.4	24	215					2.80
01		11.0	21	250					2.81
02		10.6	22	255				(1.5)	2.92
03		10.4	25	240				(1.6)	3.01
04		8.4	22	220				(1.6)	3.10
05		6.5	21	220				(1.6)	3.14
06		7.9	22	245		(127)	1.90	(2.2)	3.20
07	(245)	9.8	21	235		119	2.80	3.0	3.19
08	(250)	10.5	19	230		111	3.35	3.6	2.92
09	---	11.2	24	220		111	3.75		2.70
10	---	11.6	25	215		109	3.95		2.58
11	---	12.3	25	205	---	109	4.10		2.51
12	---	13.0	26	200	---	107	4.10		2.48
13	420	13.6	26	200	---	109	4.05		2.47
14	425	14.1	25	210	---	109	3.90		2.44
15	390	>14.2	26	220		111	3.60		2.48
16	(380)	14.5	26	230		111	3.10	3.4	2.58
17	---	14.3	26	250		113	2.50	(2.8)	2.55
18		>14.0	26	280		---	----	(2.4)	2.46
19		>14.0	26	350				(1.8)	(2.39)
20		>14.0	24	310				(1.6)	(2.54)
21		(15.3)	21	260				(1.6)	2.90
22		15.6	24	225					3.13
23		13.4	20	205					3.02

Time: 30.0°E.
Sweep: 1.25 Mc to 20.0 Mc in 3 minutes.

Table 49

Lindau/Harz, Germany (51.6° N, 10.1° E) December 1958

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		4.15	29	313					2.52
01		3.96	28	316					2.48
02		4.07	27	318					2.45
03		3.81	24	311					2.53
04		3.54	24	289					2.62
05		3.52	25	269					2.76
06		3.33	25	263					2.67
07		3.24	26	255		---	----		2.73
08		6.23	31	232		---	E	2.3	2.78
09		10.20	30	233		---	2.24	3.2	3.02
10		12.60	31	227		---	2.61	3.1	3.09
11		13.27	31	229		---	2.88	3.5	3.02
12		13.63	31	230		---	2.97	3.5	2.94
13		13.50	31	232		---	2.93	3.4	2.94
14		13.35	31	234		---	2.72	3.4	2.92
15		13.05	31	230		---	2.44	3.3	2.94
16		12.16	30	230		---	1.80	2.9	2.94
17		10.75	31	220		---	----	2.7	2.96
18		0.35	31	222				3.0	2.92
19		6.50	31	224					2.95
20		5.55	31	235					2.84
21		4.56	30	254					2.70
22		4.27	30	284					2.59
23		4.10	30	296					2.56

Time: 15.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 4 minutes.

Table 50

Poitiers, France (46.6° N, 0.3° E) December 1958

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.7)	30	<310					2.45
01		(4.6)	30	(315)				2.3	2.35
02		(4.5)	30	(320)				2.3	(2.40)
03		(4.2)	30	(310)				2.0	(2.50)
04		(3.8)	29	<280				2.0	2.60
05		3.7	28	(270)					2.65
06	---	3.6	28	(265)	---				2.60
07	---	(5.2)	28	240		---	E		(2.60)
08	---	9.0	30	225		<160	1.90	2.6	3.00
09	---	>12.0	30	230		115	2.60	3.0	(3.00)
10	---	>13.5	30	225		115	3.00	3.4	----
11	---	>13.5	30	230		(115)	3.20	3.4	(2.80)
12		>13.4	30	225		(115)	3.25		(2.85)
13		(13.3)	30	250		(115)	3.20	3.2	(2.80)
14		(13.4)	30	230		115	2.95	3.2	(2.75)
15		(12.7)	31	230		120	2.50	2.8	----
16		(12.2)	30	230		---	1.80	2.4	----
17		>10.0	30	220		---	E	2.4	----
18		(8.9)	30	225				2.4	(2.90)
19		>7.0	29	235				2.3	(2.70)
20		(5.7)	29	235					(2.55)
21		(5.4)	30	<280					(2.50)
22		(5.2)	30	(290)					(2.50)
23		(5.0)	30	(290)					(2.50)

Time: 0.0°.
Sweep: 1.6 Mc to 17.0 Mc in 1 minute.

Table 51

Rabat, Morocco (30.9° N, 6.8° W) December 1958

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(6.3)	13	<260					(2.70)
01		6.0	14	<260					(2.85)
02		(5.9)	19	<260					2.85
03		5.7	21	<260					2.95
04		4.6	21	<260					2.95
05		3.9	25	<260					2.75
06		4.0	26	<295					2.70
07		5.8	24	(265)					3.00
08		>10.0	24	235		130	2.20		3.30
09		12.0	24	235		120	2.80		3.20
10	---	12.9	25	235		120	3.25		3.05
11	(260)	13.3	25	235		120	3.55		2.90
12	---	13.3	24	235		120	3.65		2.80
13	(300)	12.4	25	245	---	120	3.60		2.75
14	330	12.2	25	245	---	120	3.50		2.70
15	---	12.3	25	245		120	3.20		2.70
16		12.2	26	250		125	2.75		2.75
17		11.5	28	250		140	2.00	2.0	2.85
18		10.4	29	<230				2.2	2.90
19		9.0	29	<245				1.9	2.00
20	---	8.6	27	<250				1.8	2.75
21		8.0	26	<250					2.70
22		7.0	27	<255					2.65
23		6.8	22	<275					2.75

Time: 0.0°.
Sweep: 1.6 Mc to 17.0 Mc in 1 minute.

Table 52

Dakar, French W. Africa (14.8° N, 17.4° W) December 1958

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>12.4	4	240		---	----	3.0	----
01		(12.7)	6	230		---	E	2.8	(2.95)
02		(13.0)	8	225		---	----	2.6	(3.05)
03		11.4	11	220		---	E	2.5	3.00
04		7.9	12	220		---	----	2.7	(2.80)
05		7.6	10	225		---	E	2.8	3.00
06		5.4	14	240		---	E	3.0	3.10
07		5.0	12	<245		---	E	2.9	3.20
08		10.2	22	250		115	2.30	3.0	3.20
09		14.2	22	235		105	3.05	3.6	3.20
10		15.4	16	225		100	(3.50)	4.0	3.05
11	---	15.2	14	220		100	(3.80)	4.2	2.90
12	---	15.0	15	(210)		100	3.95	4.4	2.70
13	(420)	15.0	15	(210)	(7.2)	100	3.95	5.0	2.60
14		(15.0)	15	205		100	4.00	4.2	(2.40)
15		14.6	15	220		105	3.90	4.1	2.35
16		14.6	16	225		105	3.70	4.0	2.35
17		14.5	13	240		110	3.20	3.9	2.35
18		(14.5)	8	260		115	2.50	4.2	(2.40)
19		>13.9	8	300		---	----	4.2	(2.20)
20		(14.2)	1	380		---	E	3.2	----
21		(14.9)	1	360		---	----	3.1	----
22		----	0	290		---	----	3.0	
23		----	0	260		---	----	3.0	

Time: 0.0°.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes.

Table 53

Djibouti, French Somaliland (11.6° N, 43.2° E) December 1958

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>11.3	4	285				2.1	----
01		(11.4)	2	260				2.0	
02		(8.8)	8	250				2.0	
03		>8.3	11	245				1.9	----
04		8.2	16	225		---	----	1.8	(3.00)
05		6.2	17	215		---	----		3.15
06		5.6	22	235		---	E	1.9	2.95
07		8.8	12	260		120	2.40	3.2	
08		>11.3	6	250		110	3.15	3.5	----
09		>13.3	8	240		<110	(3.60)	5.5	----
10		(13.6)	9	230		---	(3.95)	6.7	----
11	---	>12.5	15	230		---	(4.20)	9.5	(2.15)
12	---	12.4	19	<230		105	(4.20)	8.8	2.15
13	---	>12.3	17	220	---	110	(4.15)	6.8	2.20
14	---	>12.5	16	220	---	105	4.05	6.4	(2.20)
15	---	>12.5	11	245		110	(3.75)	6.6	(2.20)
16	---	>12.2	4	250		110	3.40	6.6	----
17		>11.3	3	260		115	2.65	4.6	----
18		>11.0	4	310		---	E	3.5	
19		>9.5	4	400		---	E		
20		>8.7	2	---					
21		(8.5)	1	(330)					
22		(8.4)	1	(290)				2.0	
23		(9.0)	1	(280)				2.2	

Time: 45.0°E.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes.

Table 54

Paramaribo, Surinam (5.8° N, 55.2° W) December 1958

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		13.4	25	280				2.3	2.75
01		15.9	20	250				1.8	2.80
02		14.3	21	250				1.6	2.85
03		15.4	22	230					3.00
04		12.8	28	215					2.95
05		10.4	24	215					2.95
06		7.5	23	215					3.00
07		6.6	28	240				1.8	2.85
08		5.1	24	245				1.6	2.90
09		5.7	27	250				2.0	2.75
10		9.3	29	250		105	2.1	2.3	2.90
11	---	13.0	28	250		100	3.0		3.05
12	---	15.0	27	240		100	3.6	(4.0)	3.00
13	(260)	14.3	26	250		110	4.0		2.90
14	330	14.0	26	250	---	115	4.2	<5.3	2.75
15	360	14.3	25	250	---	100	---	<5.7	2.65
16	375	13.4	26	(250)	7.4	110	---	<5.3	2.60
17	400	13.3	25	250	7.2	110	---	<5.0	2.55
18	410	13.2	26	250	6.8	110	4.0	4.5	2.45
19	400	13.0	27	245	6.7	100	3.8		2.45
20	375	13.0	28	250		100	3.2	3.8	2.45
21	---	13.0	29	260		100	2.3	3.5	2.55
22	---	13.2	29	295		---	1.8	3.0	2.65
23		13.3	27	300				2.8	2.70

Time: 0.0°.
Sweep: 1.4 Mc to 20.0 Mc in 40 seconds.

Table 55

Bangui, French Equatorial Africa (4.6° N, 18.6° E) December 1958

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>11.2	3	290					
01		(11.0)	6	290		---	----		(2.55)
02		10.3	11	275		---	----		2.00
03		9.4	12	245		---	----		(2.80)
04		9.3	15	230		---	----	1.8	3.00
05		7.7	16	220		---	E	2.0	3.20
06		7.7	19	260		145	2.00	3.1	2.90
07		10.2	22	250		115	3.00	3.1	2.85
08		11.1	24	245		105	3.50	3.7	2.50
09		11.5	23	230		105	3.90		2.25
10		>11.5	21	225		105	4.10		2.10
11		12.0	23	220		105	4.20		2.10
12		12.2	23	215		105	(4.20)		2.15
13		>12.0	24	215		105	4.20		2.15
14	---	>12.0	23	225	---	105	4.00		2.10
15	---	12.4	23	240		110	3.70		2.10
16		13.0	21	255		115	3.25		2.10
17		12.6	13	285		125	2.40	3.1	2.20
18		(11.5)	11	350		---	E	2.4	----
19		(11.5)	9	440		---	----		----
20		>11.0	8	400					----
21		>12.0	2	350					----
22		(11.8)	3	295				2.4	----
23		(11.5)	4	290					(2.50)

Time: 15.0°E.
Sweep: 1.2 Mc to 17.0 Mc in 1 minute.

Table 56

Hollandia, Netherlands New Guinea (2.5° S, 140.8° E) December 1958

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		(10.2)	9	---		100	---	4.0	(2.60)
01		(10.0)	3	---		---	---	<6.1	----
02		----	0	---		---	---	<8.1	----
03	---	(13.4)	3	---		---	---	<7.9	----
04	---	(14.0)	3	---	---	---	---	<8.7	----
05	---	(13.8)	4	---		---	---	<6.8	----
06	---	(13.5)	4	---		105	---		----
07		(13.5)	5	230		110	3.3	3.8	(2.50)
08		(13.2)	4	250		120	2.6	3.3	----
09		----	0	300					----
10		(12.3)	3	355				3.2	----
11		(11.8)	6	340					(2.50)
12		(10.6)	6	295					(2.80)
13		(10.3)	8	250					(2.70)
14		10.0	11	260					2.60
15		10.2	13	280					2.75
16		9.6	13	260					2.80
17		9.0	12	250					2.80
18		8.1	10	250					2.85
19		7.6	13	235					2.90
20		7.0	11	220		---	---		3.00
21		8.2	13	240		110	2.6	2.9	3.15
22		10.0	14	225		100	3.3	3.8	3.00
23		10.0	13	(220)		100	3.9	4.0	2.80

Time: 0.0°.
Sweep: 1.8 Mc to 20.0 Mc in 40 seconds.

Table 57

Tahiti, Society Is. (17.7° S, 149.3° W) December 1958

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		10.7	30	270		---	----	3.1	2.55
01		9.6	28	300		---	E	3.0	2.40
02		>9.0	28	325		---	----	3.1	2.40
03		9.0	27	310		---	E	3.1	2.50
04		0.6	26	300		---	E	2.8	2.45
05	---	8.7	26	300		---	E	3.1	2.60
06		9.7	30	260		120	2.30	3.2	2.80
07		10.6	30	250		110	3.20	3.8	2.70
08		11.2	28	240		105	3.70	4.6	2.55
09		12.2	28	240		105	3.95	4.1	2.35
10	---	13.1	30	240		105	----	3.1	2.35
11	(460)	13.9	29	230	---	105	(4.50)	4.5	2.35
12	460	14.7	29	230	6.9	105	----		2.35
13	445	15.1	28	235	6.7	105	----		2.35
14	435	15.0	30	240	6.6	105	(4.25)		2.35
15	445	14.4	30	250	6.5	105	4.00	4.0	2.35
16	445	14.0	30	250	---	105	3.60	4.0	2.35
17	---	14.0	30	255		110	3.00	4.6	2.35
18		13.4	27	295		130	2.10	4.0	2.30
19		12.6	20	360		---	E	4.0	2.30
20		12.2	28	390		---	----	3.8	2.30
21		12.4	28	350		---	----	3.5	2.40
22		13.2	28	310		---	----	3.1	2.55
23		12.0	29	290		---	----	3.1	2.60

Time: 150.0°W.
Sweep: 1.2 Mc to 17.0 Mc in 1 minute.

Table 58

Tananarive, Madagascar (18.8° S, 47.5° E) December 1958

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.8	28	280		---	E	2.8	2.60
01		8.2	29	285		---	E	2.6	2.60
02		7.6	30	290		---	E	2.7	2.55
03		6.8	29	285		---	E	2.4	2.50
04		6.7	30	290		---	E	2.5	2.50
05		6.4	29	305		---	E	1.7	2.60
06		8.0	28	260		115	2.50		2.70
07	---	>9.2	26	250	---	115	3.20		2.60
08	---	10.4	21	245	---	110	(3.70)		2.50
09	(400)	11.1	22	235	---	110	(4.10)		2.40
10	440	11.3	23	(230)	---	110	(4.20)		2.35
11	420	11.6	24	---	(6.4)	105	----		2.35
12	430	11.0	22	---	(6.3)	110	----		2.35
13	440	11.4	25	---	(6.4)	110	----		2.35
14	440	11.4	24	(245)	(5.9)	110	(4.20)		2.35
15	420	10.9	27	240	(5.8)	110	3.90		2.40
16	405	10.8	22	250	(5.3)	115	3.45	3.9	2.40
17	---	10.1	27	265		120	2.95	3.2	2.40
18		9.4	25	295		---	2.10	2.8	2.40
19		10.2	24	305		---	----	2.7	2.50
20		10.4	23	300		---	----	2.2	2.50
21		10.3	25	290		---	----	2.3	2.55
22		9.2	22	295		---	----	2.4	2.60
23		9.0	26	290		---	E	2.5	2.55

Time: 45.0°E.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes.

Table 59

Tsumeb, South W. Africa (19.2° S, 17.7° E) December 1958

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		8.36	28	270		---	----	1.8	2.67
01		7.64	28	262		---	----		2.61
02		7.02	29	285		---	----		2.63
03		6.51	29	262		---	----	1.6	2.67
04		5.92	29	262		---	----		2.58
05		6.00	28	290		---	----	2.2	2.65
06		8.12	29	250		114	2.45		2.81
07		9.56	28	238		110	3.28		2.70
08	---	10.26	30	230	----	107	3.70		2.54
09	---	11.12	31	225	----	---	4.02	4.1	2.45
10	430	11.56	30	215	6.42	---	4.21	4.6	2.38
11	420	11.82	30	215	6.55	---	4.32		2.35
12	430	11.88	30	225	6.55	---	4.37	4.5	2.33
13	430	11.74	30	220	6.30	---	4.32	4.4	2.32
14	425	11.82	29	220	6.15	---	4.20	4.2	2.35
15	405	11.52	28	230	6.00	---	3.96		2.38
16	(400)	11.17	27	240	5.75	---	3.56		2.43
17	---	10.85	29	250	----	---	2.96	3.0	2.43
10		10.83	28	280		120	2.14	2.8	2.50
19		10.84	28	285				2.4	2.59
20		10.78	27	275				2.5	2.61
21		10.28	29	270				2.2	2.62
22		9.76	28	280				1.8	2.64
23		9.05	29	285				2.0	2.62

Time: 15.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 4 minutes.

Table 60

Halley Bay (75.5° S, 26.6° W) December 1958

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	470	(7.25)	28	295	3.90	115	2.50	2.8	2.30
01	430	7.95	28	290	4.10	115	2.55	2.8	2.25
02	450	7.90	28	290	4.10	110	<2.70	2.9	2.25
03	450	>7.95	28	280	4.20	110	<2.80	3.0	2.20
04	475	(7.40)	29	275	4.30	105	(2.90)	2.9	2.20
05	490	>7.20	30	260	4.50	105	(3.00)	3.0	2.20
06	500	7.80	29	250	4.60	105	(3.20)		2.20
07	525	7.00	31	245	4.70	105	(3.40)		2.20
08	500	7.00	30	245	4.90	105	(3.45)	3.5	2.20
09	525	>6.80	31	250	5.00	105	(3.55)	3.5	2.20
10	545	6.70	31	245	5.10	105	(3.60)	3.6	2.20
11	550	6.60	29	245	5.15	<105	<3.60		2.30
12	550	6.55	30	245	5.15	<105	>3.60	<3.8	2.25
13	540	6.60	30	245	5.30	(100)	<3.70	<3.9	2.30
14	540	6.60	30	<245	5.30	(105)	<3.60	3.6	2.35
15	505	>6.60	30	245	5.30	(105)	(3.50)		2.40
16	465	6.80	31	250	5.10	105	(3.40)		2.45
17	455	6.90	29	250	5.00	(105)	(3.25)	3.4	2.55
18	450	7.00	30	260	4.85	(105)	(3.15)	<3.3	2.50
19	415	7.20	30	260	4.60	(110)	(2.90)	3.1	2.50
20	(460)	7.40	30	270	4.35	(110)	(2.80)	3.0	2.45
21	(455)	7.40	29	275	4.30	115	2.70		2.50
22	---	7.30	30	280	----	115	2.60		2.50
23	---	7.30	27	200	----	115	2.60	2.7	2.40

Time: 30.0°W.
Sweep: 0.65 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 61

Rabat, Morocco (30.9° N, 6.8° W) November 1958

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(7.9)	25	<260					(2.75)
01		(7.8)	26	<250					(2.80)
02		>7.1	26	<250					2.85
03		6.8	25	<250					3.05
04		5.9	25	<245					3.15
05		4.5	24	<235					2.85
06		4.1	23	<275					2.80
07		6.8	22	255		---	----		3.00
08		>11.0	21	235		120	2.40		(3.20)
09		(12.9)	24	235		115	3.05		3.05
10		13.4	23	235		115	3.40		3.00
11	---	13.8	26	235		110	3.60		2.80
12	---	13.7	27	240		110	3.6[illegible]		2.70
13	---	13.6	26	240		110	3.60		2.65
14	---	13.4	26	245		115	3.55		2.65
15		13.1	26	250		120	3.20		2.65
16		12.9	21	250		115	2.80	3.2	2.70
17		12.6	22	250		130	2.05	2.2	(2.80)
18		(10.7)	25	<240				2.6	----
19		(9.9)	28	<250				2.4	(2.70)
20		>9.0	28	<250					2.65
21		>9.0	28	<250				2.1	2.70
22		>9.0	27	<260				2.0	2.80
23		8.4	27	<250					2.80

Time: 0.0°.
Sweep: 1.6 Mc to 17.0 Mc in 1 minute.

Table 62

Tamanrasset, French W. Africa (22.8° N, 5.5° E) November 1958

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		D	22	225		---	----	2.4	----
01		>14.2	26	220		---	----	2.4	(3.15)
02		>10.9	20	205		---	----	2.0	(3.30)
03		>7.4	28	200		---	----	2.1	3.25
04		5.0	24	230		---	E	2.4	2.90
05		4.5	27	255		---	E	2.6	2.85
06		7.9	29	270		---	1.60	2.8	3.10
07		12.6	28	245		110	2.80	3.0	(3.25)
08		>14.8	30	235		105	3.30	4.4	3.20
09	---	>15.5	30	225		100	3.65	4.2	(3.00)
10	---	>15.5	30	220		100	3.85	4.4	(2.80)
11	(360)	>15.7	30	220		100	4.00	4.1	(2.70)
12	375	>16.2	30	220	---	100	3.95	4.2	----
13	380	D	29	230		100	3.80	4.1	----
14	380	0	30	230		105	3.65	3.8	
15	370	D	28	240		105	3.20	3.5	
16		0	30	255		110	2.50	3.2	
17		0	28	<275		---	----	3.2	
18		0	29	310		---	E	2.6	
19		D	26	310		---	E	2.3	
20		D	24	270		---	E	2.3	
21		D	24	240		---	----	2.1	
22		0	30	230		---	E	2.0	
23		0	29	230		---	----	2.0	

Time: 0.0°.
Sweep: 1.2 Mc to 17.0 Mc in 1 minute.

Table 63

Tahiti, Society Is. (17.7° S, 149.3° W) November 1958

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		11.8	25	255		---	----	3.1	2.70
01		10.8	25	280		---	E	3.1	2.50
02		10.3	25	300		---	E	3.0	2.50
03		10.2	26	300		---	E	2.6	2.55
04		10.0	26	290		---	E	2.8	2.55
05		9.8	26	300		---	E	2.8	2.65
06		11.5	23	255		115	2.40	3.1	2.85
07		12.3	23	245		105	3.15	3.6	2.90
08		12.2	22	240		105	3.70	4.4	2.60
09		12.8	25	240		105	3.95	5.1	2.45
10	---	13.6	22	240		105	(4.20)	5.0	2.40
11	460	15.0	23	240	---	105	(4.25)		2.40
12	445	15.9	25	240	7.0	105	(4.20)		2.40
13	440	16.0	26	240	(7.3)	105	(4.25)		2.40
14	430	16.2	26	250	(6.9)	105	(4.20)		2.40
15	430	16.0	27	250	---	105	3.85	4.1	2.40
16	410	15.5	27	250		105	3.50	4.5	2.40
17	---	15.0	27	270		115	2.80	4.0	2.45
18		14.4	22	300		---	E	3.8	2.40
19		14.0	24	355		---	----	4.0	2.35
20		14.3	23	370		---	----	3.1	2.35
21		15.0	26	330		---	----	3.1	2.45
22		15.0	26	305		---	----	3.1	2.60
23		14.4	27	280				3.1	2.70

Time: 150.0°W.
Sweep: 1.2 Mc to 17.0 Mc in 1 minute.

Table 64

Tananarive, Madagascar (18.8° S, 47.5° E) November 1958

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>9.3	14	<260		---	----	2.2	(2.60)
01		8.5	13	270		---	----	1.8	(2.60)
02		8.3	14	300		---	----	1.8	(2.60)
03		>8.1	14	290		---	E		2.65
04		>7.3	14	260		---	E		2.55
05		>7.0	14	285		---	E	1.8	2.70
06		8.4	13	250		(115)	2.65		(2.75)
07		>10.0	13	250		---	(3.20)		(2.70)
08	---	(11.0)	7	(235)	---	---	(3.70)		(2.55)
09	(390)	(12.0)	9	---	---	---	----	(4.0)	(2.50)
10	---	(11.8)	14	---	---	---	----	(4.1)	2.40
11	(430)	12.3	13	---	---	---	----		2.40
12	---	12.2	10	---	---	---	----		(2.35)
13	(430)	12.2	10	---	(6.6)	---	----		2.40
14	430	12.2	14	(230)	(6.2)	---	4.10		2.40
15	(415)	12.0	15	(240)	---	---	(3.80)	4.0	2.40
16	---	11.5	15	250		---	3.35	3.9	2.40
17		(11.2)	14	(260)		---	2.80	3.2	(2.40)
18		11.2	14	300		---	----	2.6	2.45
19		11.2	13	300		---	----	2.7	(2.40)
20		>11.4	14	290		---	----	2.3	(2.50)
21		>11.4	14	290		---	----	2.4	2.60
22		11.2	13	285		---	----	2.3	2.70
23		10.8	15	275		---	----	2.1	2.70

Time: 45.0°E.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes.

Table 65

Tsumeb, South W. Africa (19.2° S, 17.7° E) November 1958

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	fEs	(M3000)F2
00		9.90	29	260					2.77
01		8.81	29	248					2.73
02		8.01	28	250					2.71
03		7.18	28	250					2.80
04		6.23	29	240		---	----		2.73
05		6.28	29	265		130	1.28	1.5	2.74
06		8.55	29	240		115	2.50		2.90
07		10.15	30	230		110	3.20		2.86
08		11.34	28	220		110	3.62		2.64
09		11.95	29	220		---	3.94		2.50
10	---	12.78	29	220	----	---	4.14		2.46
11	(482)	13.13	28	215	6.53	---	4.28	4.5	2.42
12	400	13.40	28	220	6.60	---	4.26		2.43
13	(410)	13.50	27	220	6.77	---	4.20	4.3	2.44
14	395	13.48	26	225	6.72	---	4.07		2.42
15	(435)	13.30	27	230	6.15	---	3.81	3.9	2.44
16	---	13.17	29	242	----	---	3.38	4.0	2.48
17	---	12.82	30	255	----	115	2.67	3.6	2.52
18		12.51	30	270		---	----	3.0	2.58
19		12.00	26	270				2.4	2.62
20		11.88	28	265				2.2	2.62
21		11.60	27	268				2.0	2.64
22		11.50	29	265				1.8	2.70
23		10.82	28	265				1.9	2.74

Time: 15.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 4 minutes.

Table 66

Port Lockroy (64.8° S, 63.5° W) November 1958

Time	h'F2	foF2—Count		h'F	foF1	h'E	foE	foEs	(M3000)F2
00		11.0	30	325			---	1.0	2.40
01		<11.2	30	335			---		2.40
02		11.2	30	340			---	1.2	2.40
03		11.3	30	320			1.7	1.5	2.35
04		11.4	30	290			2.2	2.3	2.40
05		11.4	30	265			2.5	<2.7	2.40
06		11.2	30	255			(2.9)	3.2	2.35
07		10.6	29	245			(3.2)	3.5	2.40
08		10.4	29	245			(3.4)	3.9	2.45
09		10.2	30	<250			(3.6)	4.2	2.40
10		10.0	30	230			(3.7)	4.2	2.50
11		9.6	30	235			(3.8)	4.2	2.50
12		9.3	30	240			(3.8)	4.2	2.55
13		0.7	30	240			(3.8)	4.3	2.60
14		8.6	30	<240			3.6	4.4	2.60
15		8.5	30	240			(3.5)	3.9	2.60
16		8.3	28	245			(3.4)	3.7	2.65
17		8.4	30	250			(3.1)	3.8	2.70
18		8.5	29	(260)			2.8	3.8	2.70
19		8.6	28	265			(2.6)	3.2	2.65
20		9.0	30	285			2.0	2.5	2.55
21		9.6	30	295			1.6	2.0	2.45
22		10.0	30	315			---	1.4	2.40
23		10.5	30	320			---		2.40

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

Table 67

Inverness, Scotland (57.4° N, 4.2° W) August 1958

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.6	27	300				<1.2	2.45
01		6.3	27	320				1.8	2.35
02		5.7	28	325				3.0	2.35
03		5.5	28	320				2.2	2.40
04		5.2	28	330		115	1.40	1.9	2.50
05		5.4	24	295		105	2.00		2.65
06	---	6.0	24	260	---	115	2.50		2.70
07	(520)	6.3	26	250	4.6	110	2.90	3.2	2.70
08	(440)	6.7	24	245	5.0	110	3.25	>3.5	2.60
09	(565)	7.1	29	235	5.1	105	3.50	3.8	2.55
10	490	7.3	27	235	5.4	105	3.60	3.9	2.55
11	480	7.6	20	220	5.4	105	3.70		2.55
12	510	7.5	28	235	5.7	105	3.80		2.50
13	435	7.6	28	225	5.6	105	3.80		2.50
14	495	7.5	30	235	5.6	105	3.70		2.50
15	445	7.8	30	240	5.3	105	3.65		2.55
16	(475)	8.0	26	240	5.2	105	3.50		2.55
17	---	7.9	26	245	---	110	3.10		2.60
18		8.1	25	260		115	2.80	3.2	2.70
19		7.9	27	265		120	2.30	2.8	2.65
20		8.0	28	270		---	1.80	2.4	2.70
21		7.6	28	270				2.6	2.55
22		7.5	28	275				<1.6	2.50
23		>7.0	28	290				1.3	2.45

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

Table 68

Slough, England (51.5° N, 0.6° W) August 1958

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>6.9	26	300				<2.0	2.40
01		6.7	25	300				2.3	2.40
02		6.5	24	305				2.4	2.35
03		6.1	26	300				2.4	2.40
04		5.5	26	325		---	<1.40	1.8	2.45
05	---	6.1	25	280		125	1.80	2.3	2.60
06	---	6.6	25	250	---	115	2.60	3.0	2.65
07	---	7.1	23	245	4.8	110	<3.20	3.4	2.60
08	460	7.5	25	230	5.1	105	3.60	4.4	2.65
09	465	7.8	25	230	5.5	100	3.70	4.4	2.60
10	440	8.5	23	220	6.1	100	3.90	4.3	2.55
11	445	8.5	21	220	5.9	100	4.00	5.0	2.55
12	420	8.6	23	220	6.0	100	4.05	4.6	2.50
13	410	8.3	25	225	6.0	100	4.00	4.4	2.60
14	440	8.2	26	230	6.0	100	3.95	4.2	2.55
15	435	8.0	27	235	5.9	100	3.00	3.9	2.55
16	425	0.2	25	235	5.6	105	<3.60	3.8	2.65
17	---	8.4	25	250		105	3.20		2.65
18		8.6	25	250		115	2.70	3.6	2.70
19		8.4	23	270		115	<2.00	4.0	2.75
20		8.3	23	270		---	----	3.3	2.65
21		(7.3)	22	275				3.6	(2.45)
22		(7.5)	24	300				3.3	(2.45)
23		(7.2)	24	290				2.7	(2.45)

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

Table 69

Kerguelen I. (49.4° S, 70.3° E) November 1956

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.6	16	335		---	----	3.0	(2.45)
01		(4.2)	19	350		---	----	3.0	(2.30)
02		(3.8)	13	350		---	----	3.0	----
03		(3.8)	14	390		---	----	3.2	----
04	---	4.1	16	355	---	---	1.45	2.9	(2.25)
05	(550)	5.0	20	300	3.6	120	2.25	2.8	2.30
06	540	5.6	24	260	4.4	110	2.85		2.25
07	555	6.3	25	250	4.8	105	3.25		2.25
08	550	7.0	24	240	5.0	105	3.50		2.25
09	540	7.2	27	240	5.4	105	3.80		2.25
10	540	7.4	25	230	5.4	110	4.00		2.25
11	515	>7.5	25	230	5.6	105	4.00	4.3	2.25
12	545	7.9	27	240	5.5	110	4.00	4.2	2.25
13	510	7.7	28	240	5.5	105	4.00		2.25
14	505	8.0	27	230	5.4	105	4.00		2.25
15	500	7.8	28	235	5.3	105	3.70		2.35
16	500	7.9	27	240	5.1	110	3.50	3.6	2.40
17	(505)	7.6	28	250	5.0	110	3.20	3.5	2.50
18	---	6.3	23	260	---	110	2.70	2.9	2.60
19		>7.0	20	265		---	2.20	2.4	2.70
20		6.4	22	280		---	1.40	1.6	2.70
21		5.7	25	280		---	----	2.8	2.55
22		5.0	21	300		---	----	3.1	2.60
23		4.9	10	285		---	----	2.7	2.55

Time: Local.
Sweep: 0.80 Mc to 14.14 Mc in 10 minutes, automatic operation.

Table 70

Lwiro, Belgian Congo (2.3° S, 28.8° E) December 1955

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.8	28	230					2.84
01		8.4	29	255					2.90
02		7.9	28	250					3.00
03		7.1	28	240					3.16
04		6.1	27	220					3.16
05		4.7	20	230					3.14
06	---	5.6	28	255		139	1.50	1.9	3.20
07	260	7.4	28	235		113	2.55		3.11
08	300	8.4	28	225	(4.9)	111	3.10		2.91
09	315	9.2	29	215	(4.9)	107	3.45		2.67
10	370	10.2	30	205	(5.1)	107	3.65		2.50
11	520	10.4	31	205	5.2	107	3.80		2.41
12	500	10.9	31	200	5.2	109	3.80		2.41
13	455	12.0	30	200	5.2	107	3.80		2.46
14	420	12.3	31	210	5.1	109	3.65		2.50
15	430	12.1	31	215	(5.0)	109	3.45		2.50
16	440	11.7	30	220	(3.8)	111	3.00		2.50
17	420	11.8	30	245	---	115	2.45		2.49
18	---	11.5	30	285		135	1.60	(1.9)	2.59
19		10.8	30	320				(1.6)	2.53
20		11.0	30	330				(1.6)	2.55
21		12.2	30	290					2.78
22		12.9	29	235					3.15
23		10.1	27	210					3.03

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

Table 71

Lwiro, Belgian Congo (2.3° S, 28.8° E) November 1955

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.8	22	215					2.87
01		8.8	25	260					2.82
02		9.0	25	265					3.02
03		7.8	22	240					3.12
04		6.1	23	220					3.22
05		4.6	22	220					3.27
06	---	6.4	24	250		133	1.80		3.29
07	260	8.1	23	230		113	2.60		3.23
08	275	9.1	25	225	(4.6)	111	3.10		2.98
09	290	10.0	28	220	(5.0)	109	3.50		2.82
10	340	10.3	28	210	(5.0)	111	3.65		2.66
11	(450)	11.0	27	205	(5.0)	109	3.75		2.60
12	435	11.3	28	210	5.1	111	3.80		2.60
13	425	12.0	28	205	5.1	111	3.70		2.56
14	430	12.0	28	210	(4.9)	113	3.60		2.54
15	420	12.4	28	225	5.0	113	3.35		2.56
16	380	12.6	27	230	---	113	2.95		2.60
17	360	12.6	28	245	---	117	2.35	(2.8)	2.64
18	---	12.0	28	280		---	----	(2.2)	2.64
19		12.2	27	320				(2.0)	2.57
20		12.4	27	310				(1.7)	(2.61)
21		13.5	26	270				(1.5)	(2.80)
22		>14.0	27	235					(3.28)
23		12.0	25	210					3.30

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

Table 72

Lwiro, Belgian Congo (2.3° S, 28.8° E) October 1955*

Time	h'F2	foF2	Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>8.0	16	200					2.88
01		7.6	14	250				1.5	2.88
02		7.3	12	260					2.98
03		6.9	13	250					3.06
04		6.4	14	230					3.26
05		4.8	15	225				2.0	3.43
06	---	6.4	19	240		---	----	2.4	3.38
07	240	7.6	19	230		117	2.55		3.46
08	270	8.3	19	225	---	111	3.05		3.22
09	290	9.0	19	215	(4.6)	112	3.35		2.87
10	310	10.1	18	210	4.9	---	3.60		2.80
11	315	10.6	18	210	4.9	111	3.70		2.83
12	385	10.6	19	205	4.9	111	3.70		2.61
13	410	11.4	19	200	5.0	110	3.65		2.60
14	380	12.4	18	210	5.0	111	3.50		2.67
15	370	12.4	19	(210)	---	111	3.20	3.3	2.68
16	360	12.4	20	(210)	---	113	2.80	3.2	2.78
17	355	12.6	20	245		121	2.30	3.0	2.68
18		>12.9	20	280				2.4	2.67
19		>13.1	18	310				1.8	(2.72)
20		(13.0)	17	280				1.6	(2.91)
21		>13.5	18	240					(3.18)
22		(13.6)	17	210					(3.46)
23		10.9	16	200					(3.50)

Time: Local.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.
* Observations taken 12 through 31 only.

USCOMM-NBS-8L

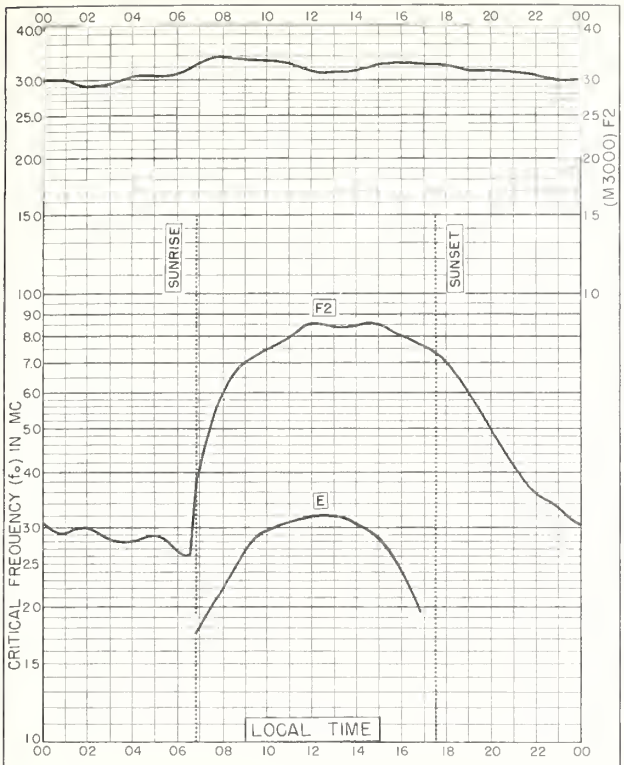

Fig. 1. WASHINGTON, D. C.
38.7°N, 77.1°W FEBRUARY 1961

NBS 503

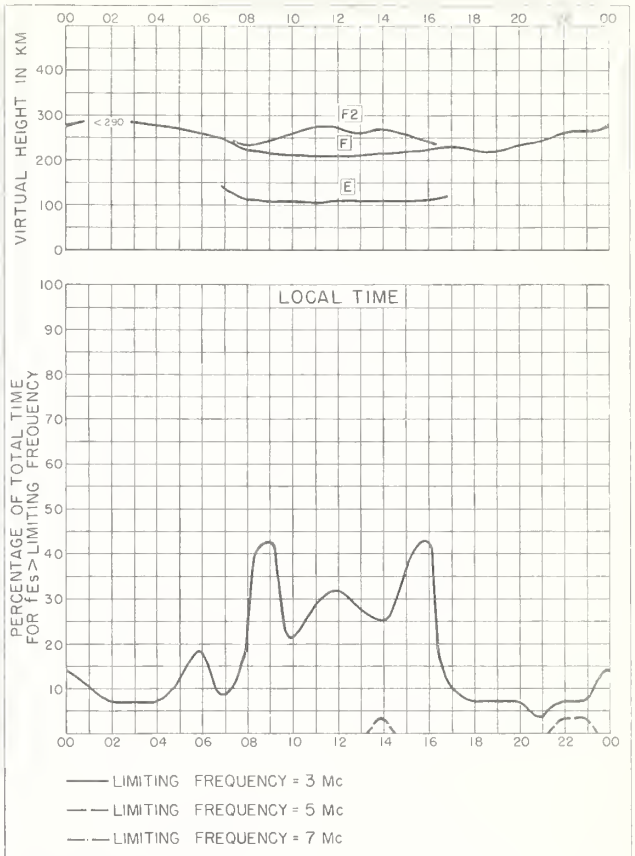

Fig. 2. WASHINGTON, D. C. FEBRUARY 1961

NBS 490

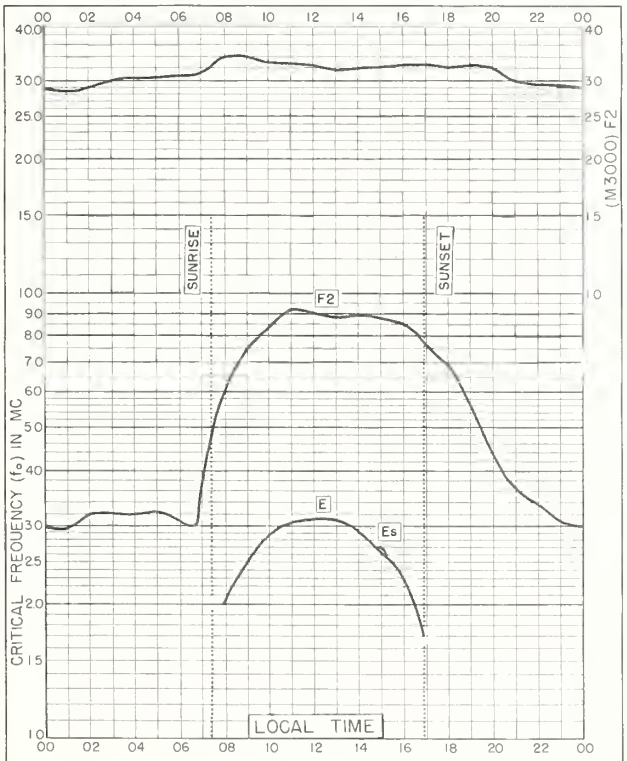

Fig. 3. WASHINGTON, D. C.
38.7°N, 77.1°W JANUARY 1961

NBS 503

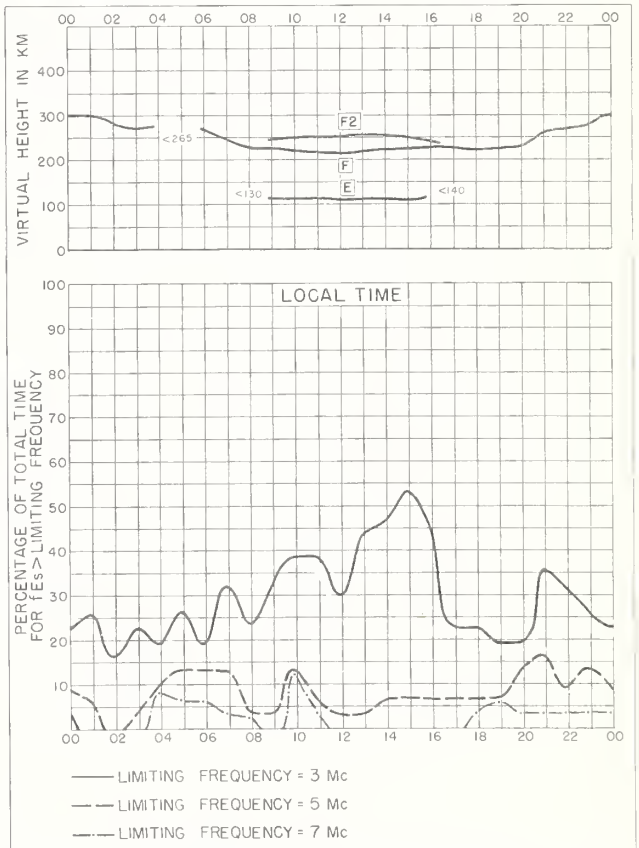

Fig. 4. WASHINGTON, D. C. JANUARY 1961

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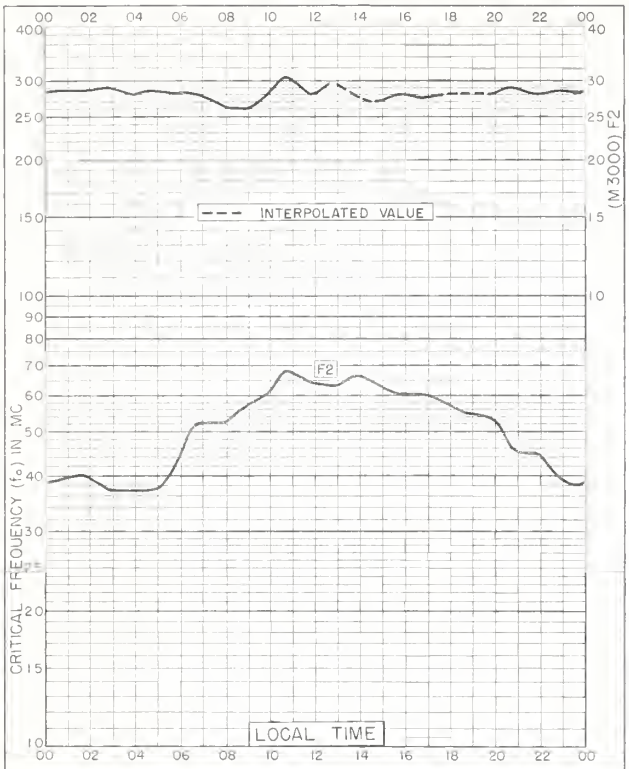

Fig. 5. RESOLUTE BAY, CANADA
74.7°N, 94.9°W DECEMBER 1960

NBS 503

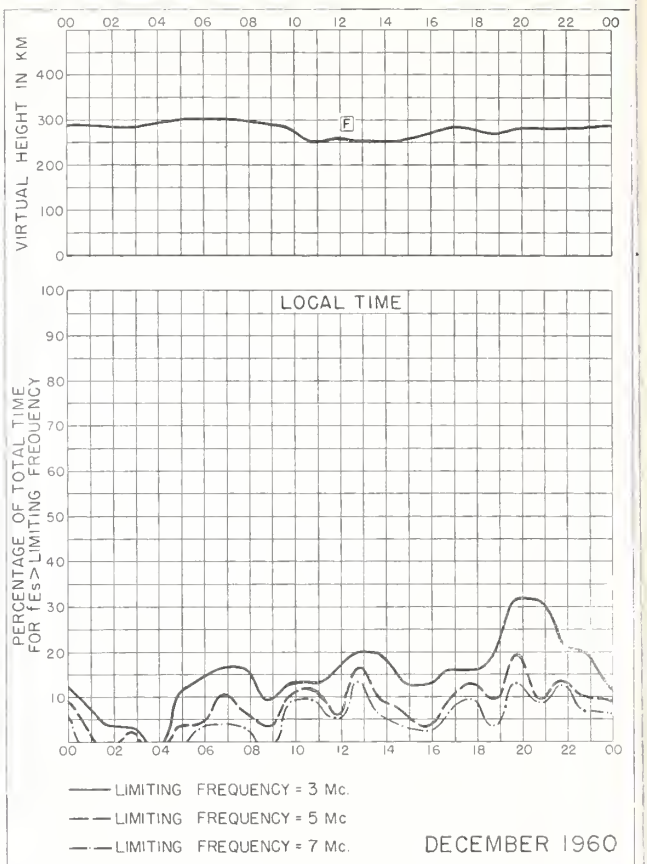

Fig. 6. RESOLUTE BAY, CANADA DECEMBER 1960

NBS 490

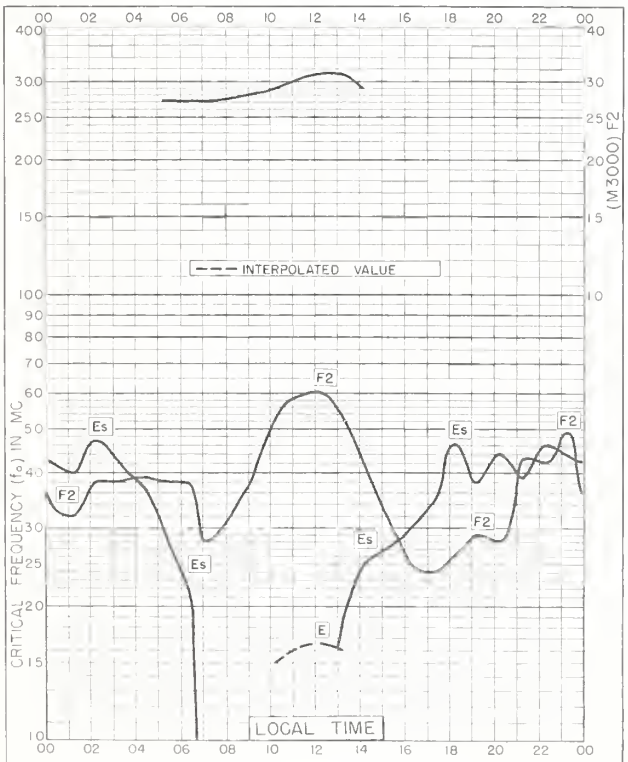

Fig. 7. TROMSO, NORWAY
69.7°N, 19.0°E DECEMBER 1960

NBS 503

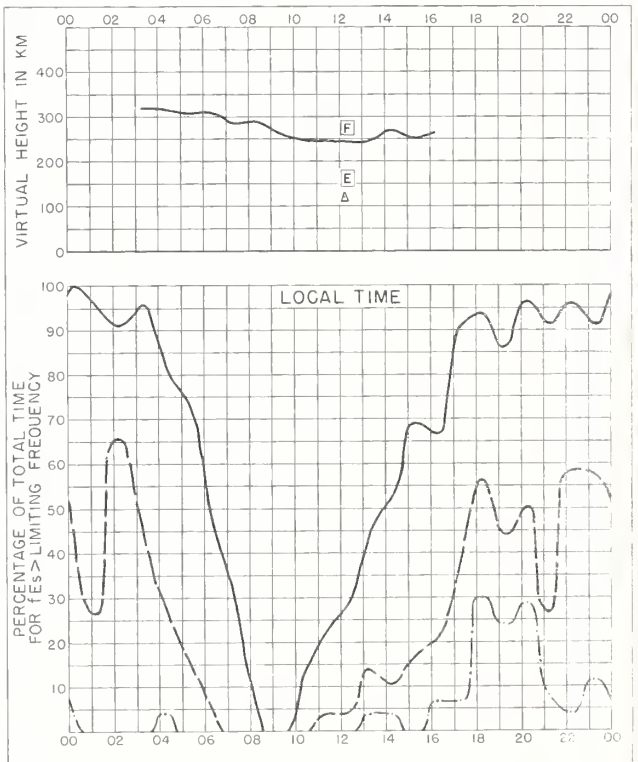

Fig. 8. TROMSO, NORWAY DECEMBER 1960

NBS 490

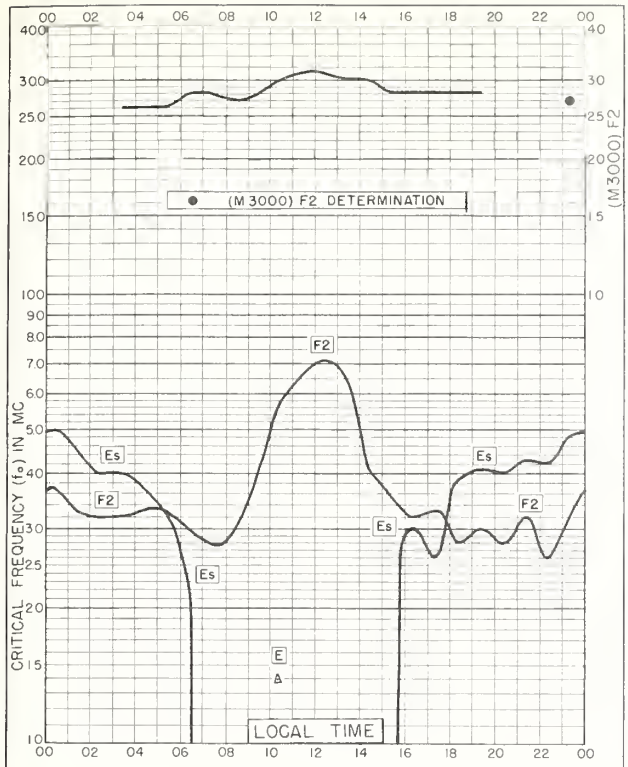

Fig. 9. KIRUNA, SWEDEN
67.8°N, 20.3°E DECEMBER 1960

NBS 503

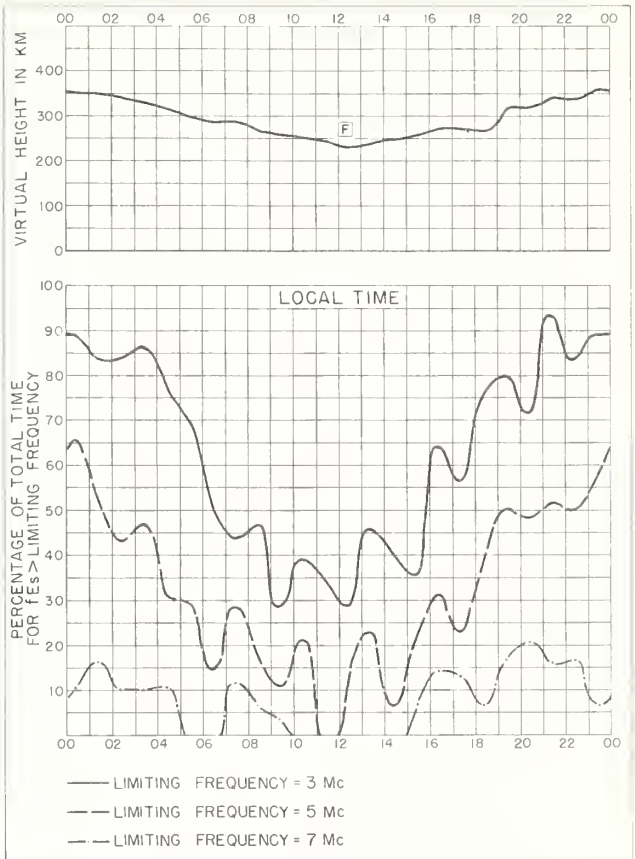

Fig. 10. KIRUNA, SWEDEN DECEMBER 1960

NBS 490

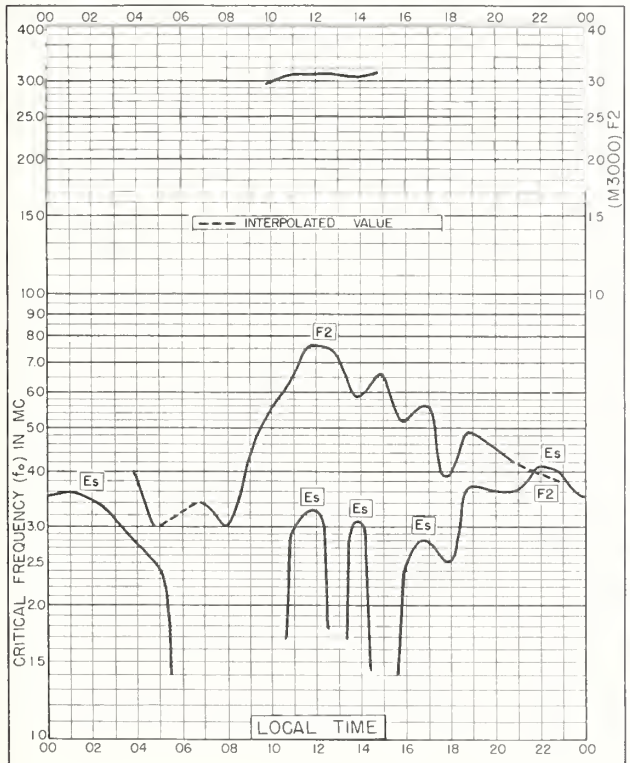

Fig. 11. SODANKYLA, FINLAND
67.4°N, 26.6°E DECEMBER 1960

NBS 503

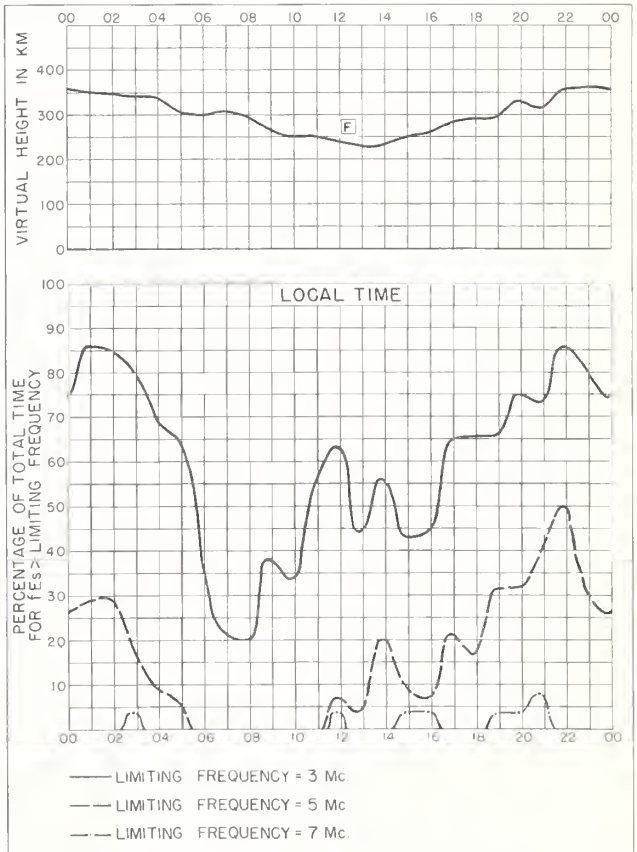

Fig 12. SODANKYLA, FINLAND DECEMBER 1960

NBS 490

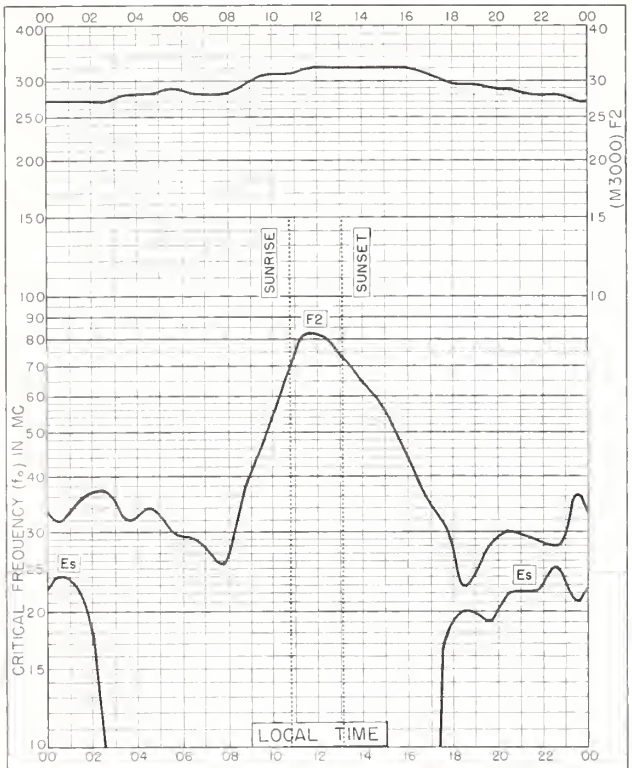

Fig. 13. LULEA, SWEDEN
65.6°N, 22.1°E DECEMBER 1960

NBS 503

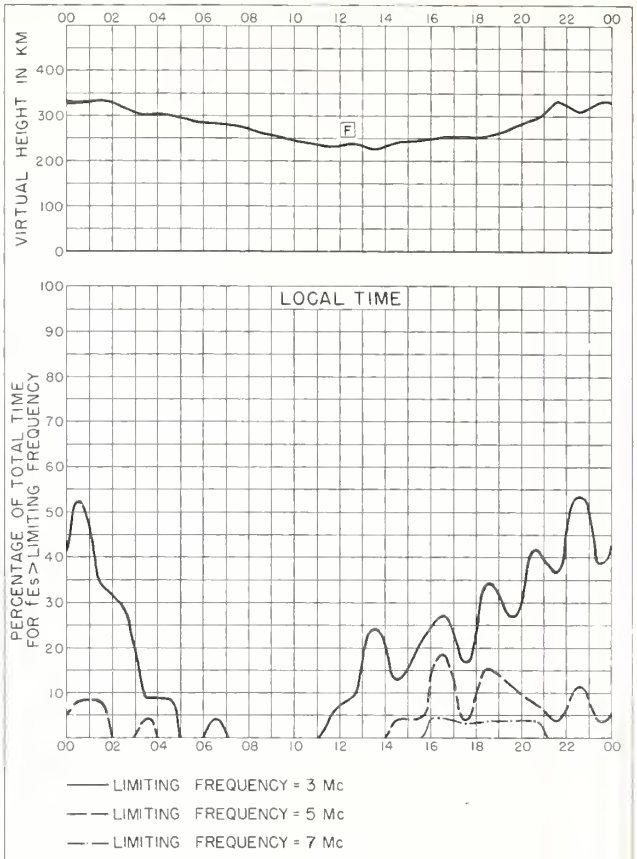

Fig. 14. LULEA, SWEDEN DECEMBER 1960

NBS 490

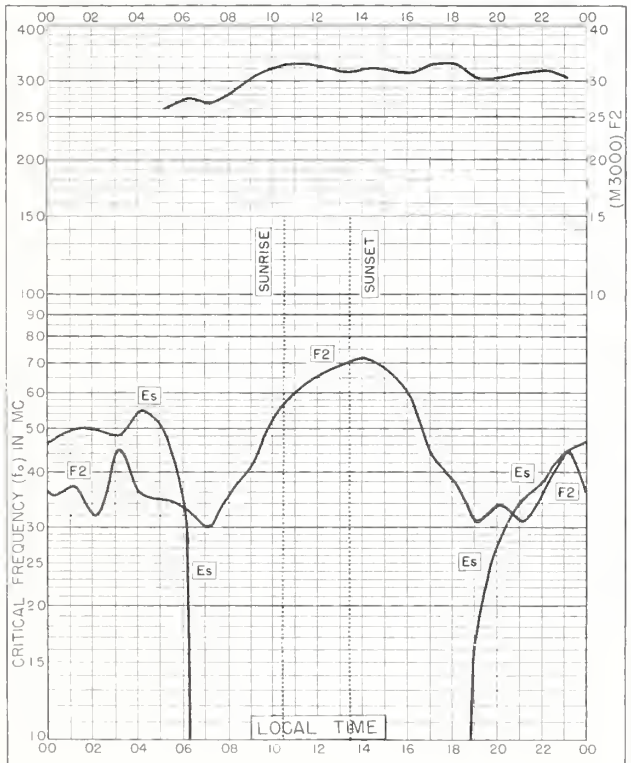

Fig. 15. FAIRBANKS, ALASKA
64.9°N, 147.8°W DECEMBER 1960

NBS 503

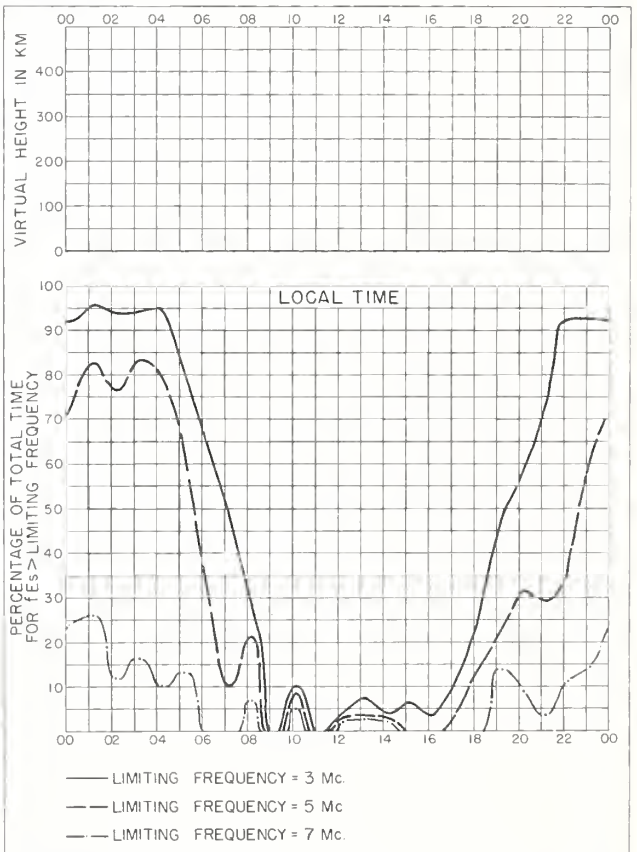

Fig. 16. FAIRBANKS, ALASKA DECEMBER 1960

NBS 490

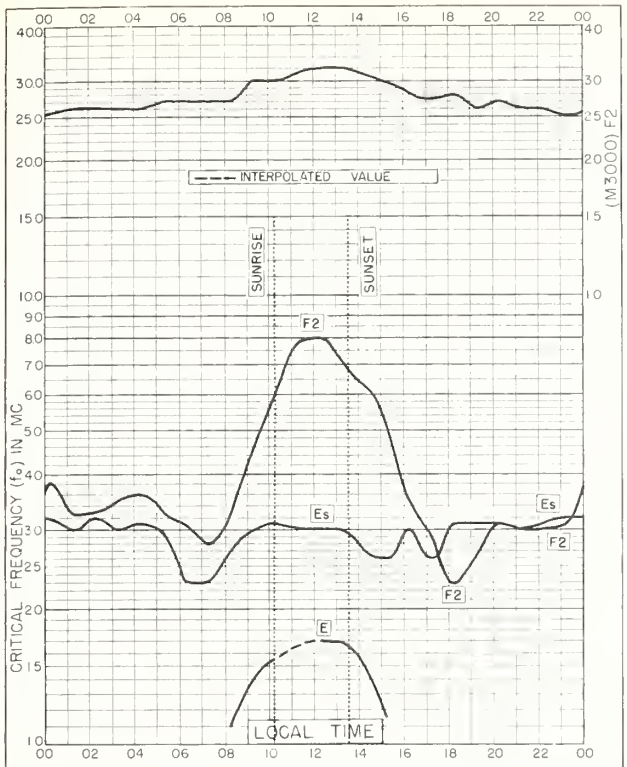

Fig. 17. LYCKSELE, SWEDEN
64.6°N, 18.8°E DECEMBER 1960

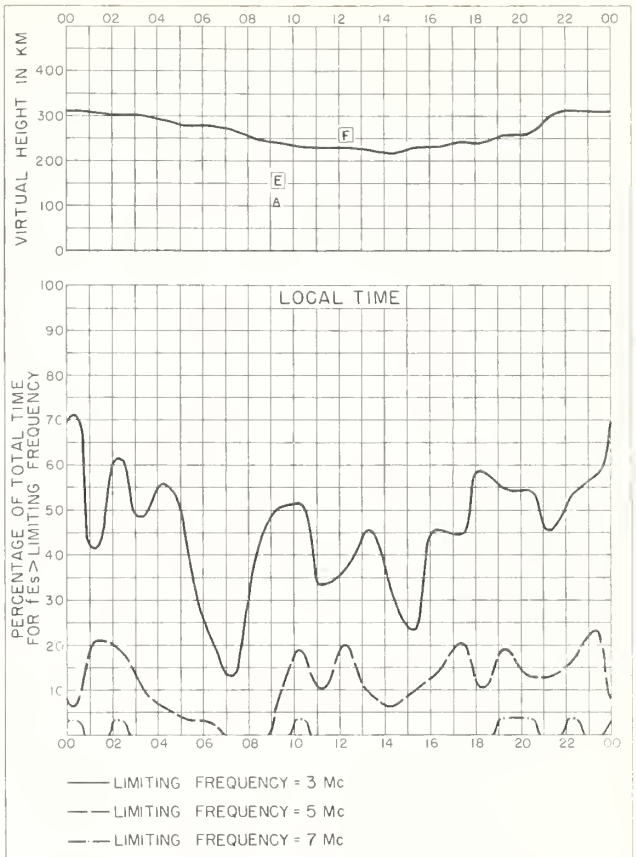

Fig. 18. LYCKSELE, SWEDEN DECEMBER 1960

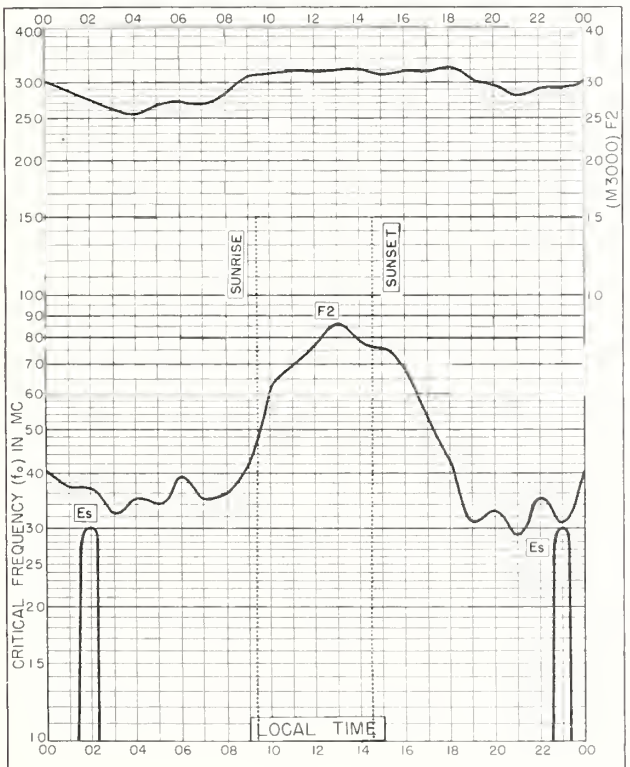

Fig. 19. ANCHORAGE, ALASKA
61.2°N, 149.9°W DECEMBER 1960

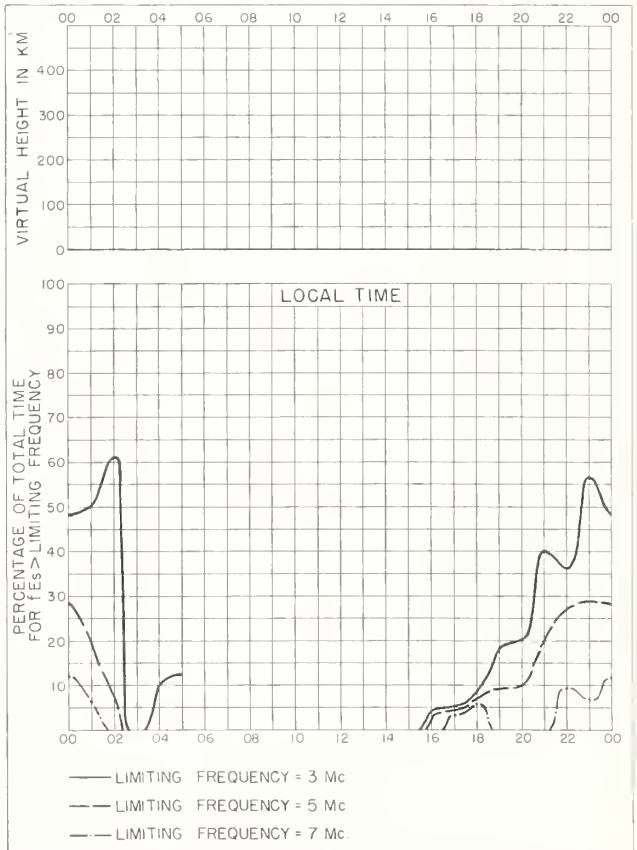

Fig. 20. ANCHORAGE, ALASKA DECEMBER 1960

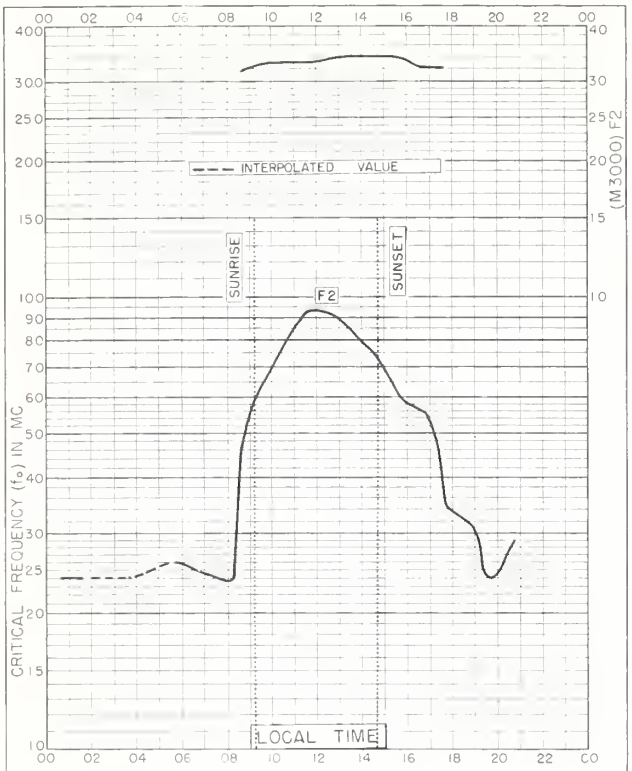

Fig. 21. NURMIJARVI, FINLAND
60.5°N, 24.6°E DECEMBER 1960

NBS 503

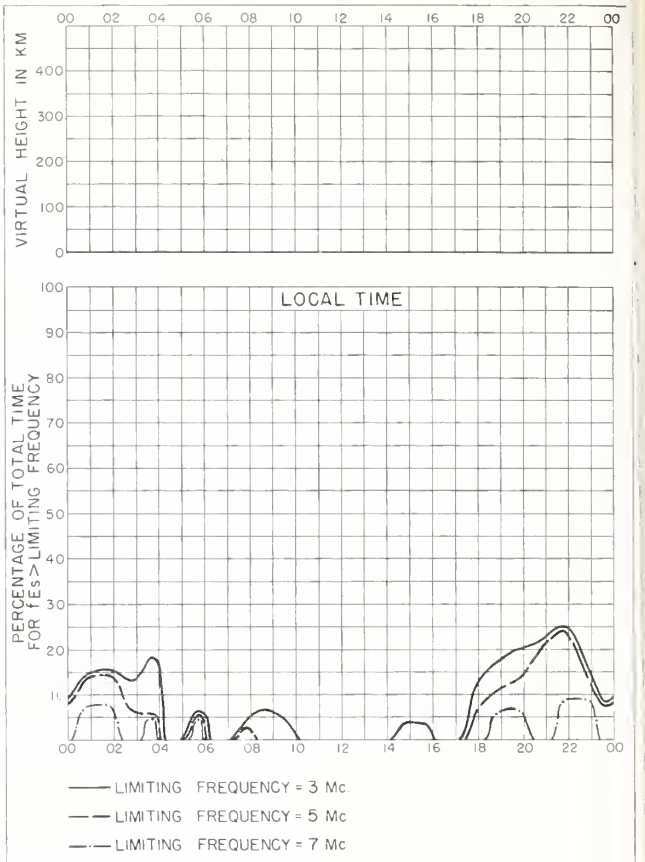

Fig. 22. NURMIJARVI, FINLAND DECEMBER 1960

NBS 490

Fig. 23. UPSALA, SWEDEN
59.8°N, 17.6°E DECEMBER 1960

NBS 503

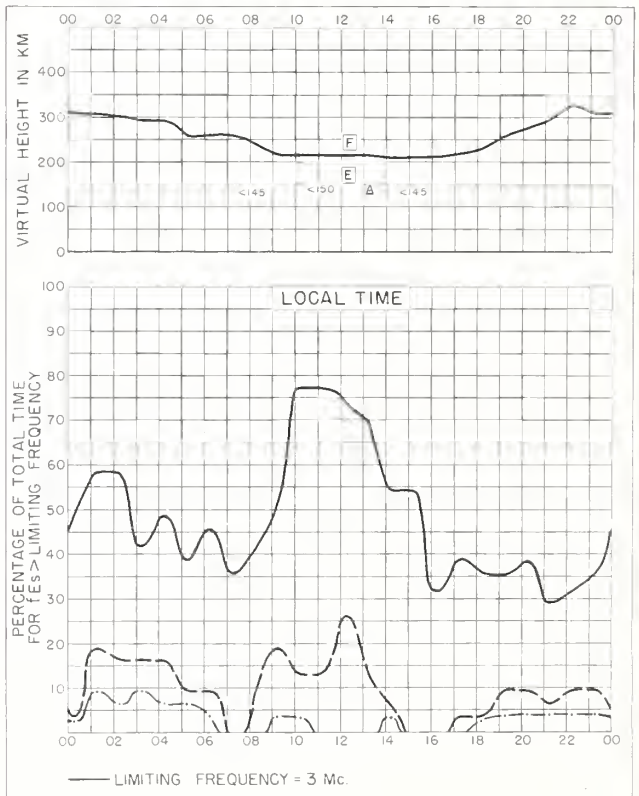

Fig. 24. UPSALA, SWEDEN DECEMBER 1960

NBS 490

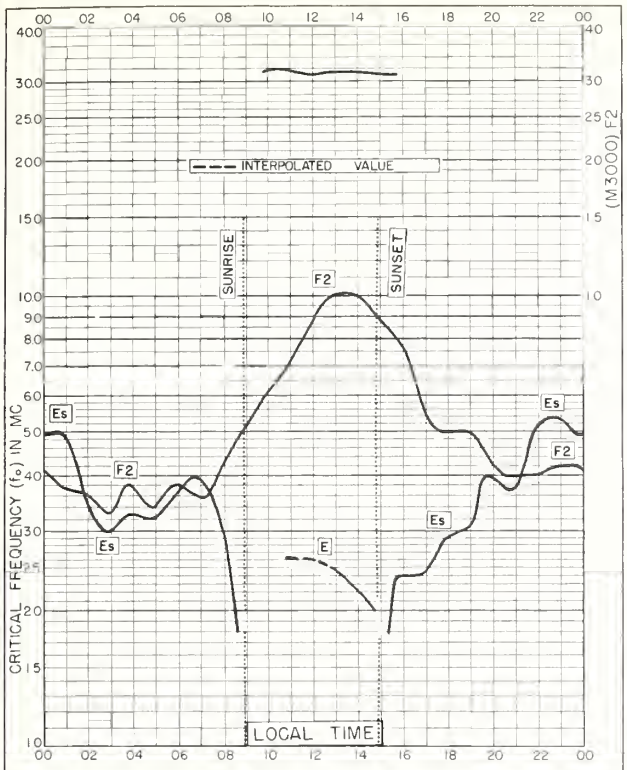

Fig. 25. CHURCHILL, CANADA
58.8°N, 94.2°W DECEMBER 1960

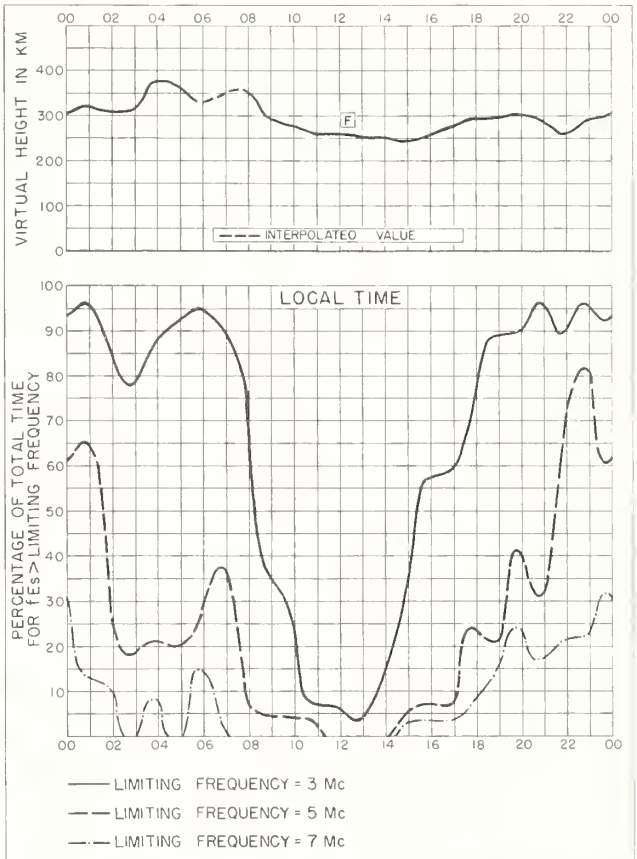

Fig. 26. CHURCHILL, CANADA DECEMBER 1960

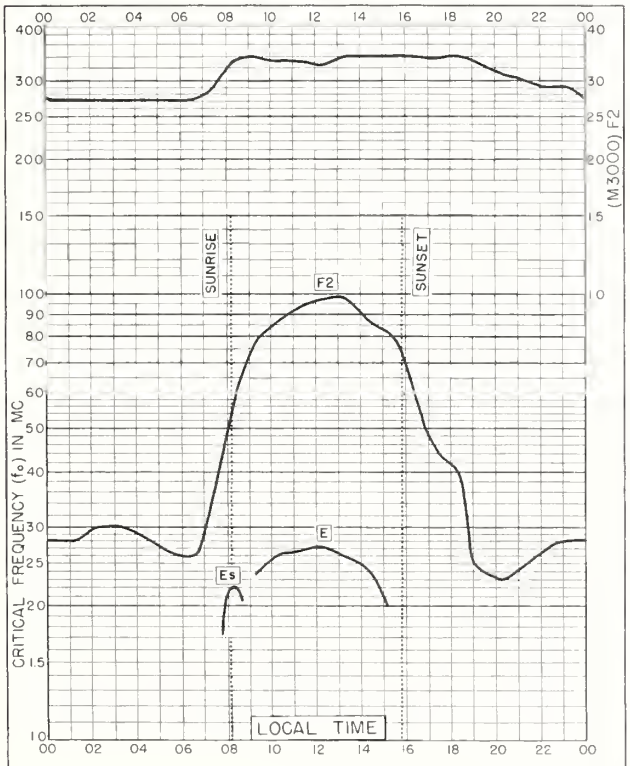

Fig. 27. ADAK, ALASKA
51.9°N, 176.6°W DECEMBER 1960

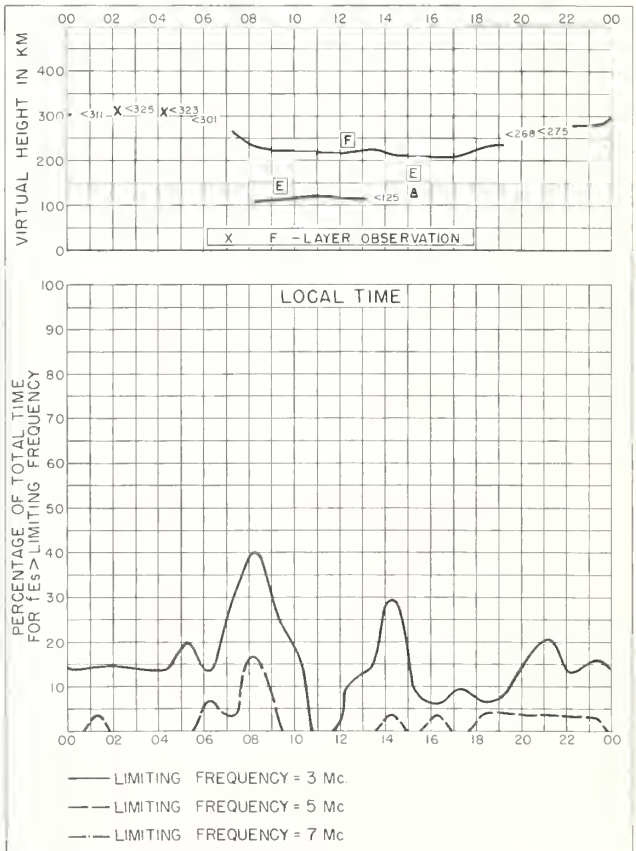

Fig. 28. ADAK, ALASKA DECEMBER 1960

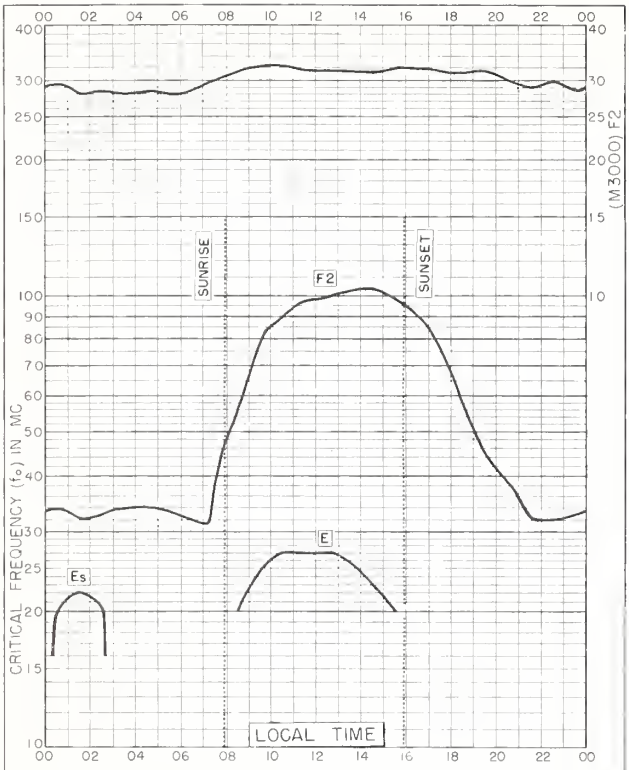

Fig. 29. WINNIPEG, CANADA
49.9°N, 97.4°W DECEMBER 1960

NBS 503

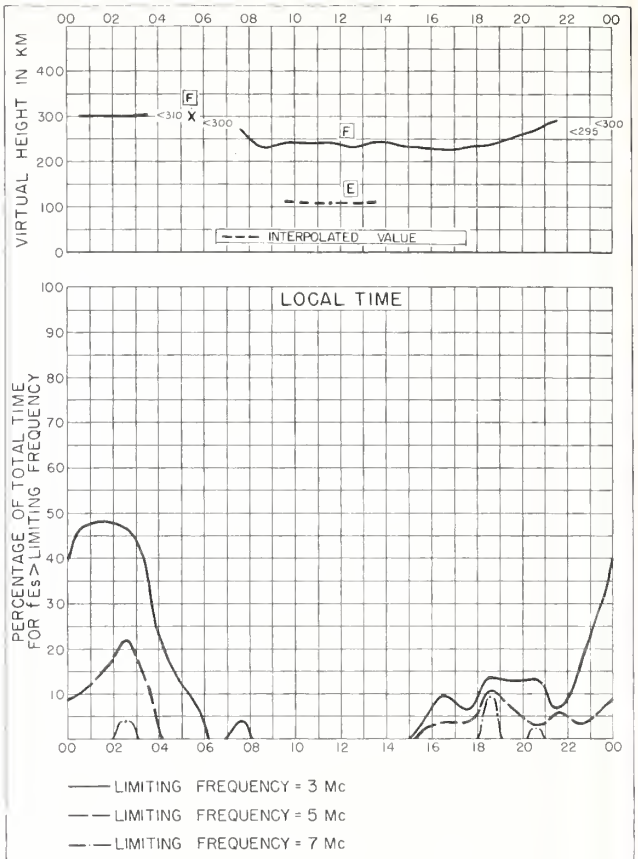

Fig. 30. WINNIPEG, CANADA DECEMBER 1960

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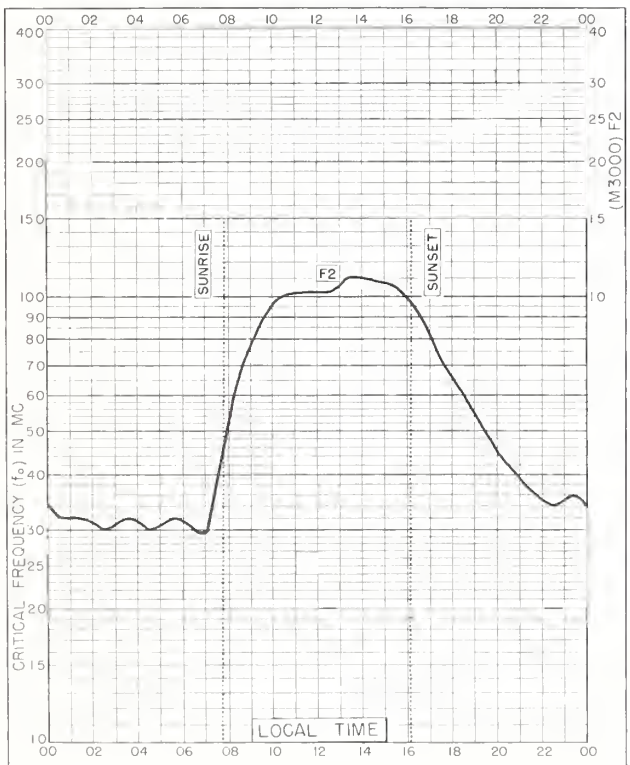


Fig. 31. ST. JOHN'S, NEWFOUNDLAND
47.6°N, 52.7°W DECEMBER 1960

NBS 503

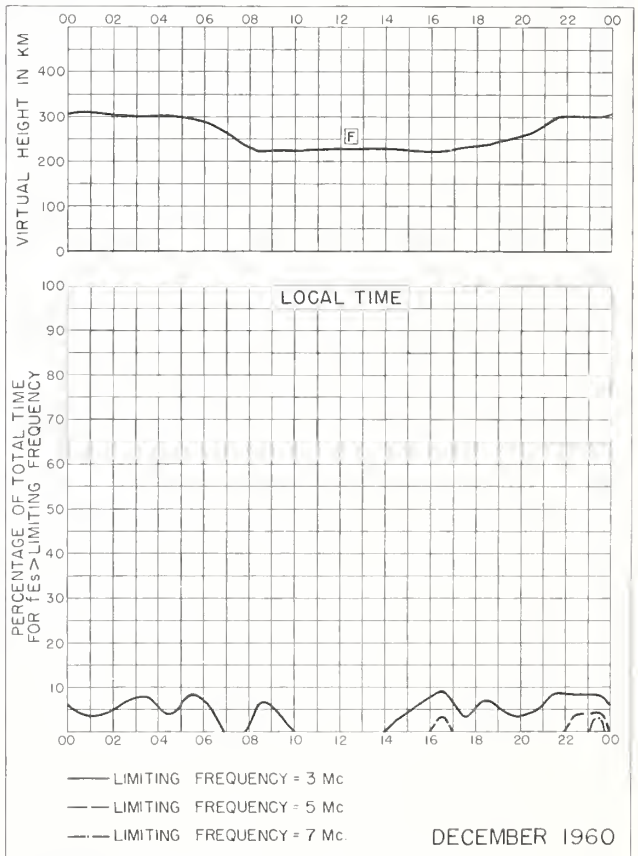


Fig. 32. ST. JOHN'S, NEWFOUNDLAND DECEMBER 1960

NBS 490

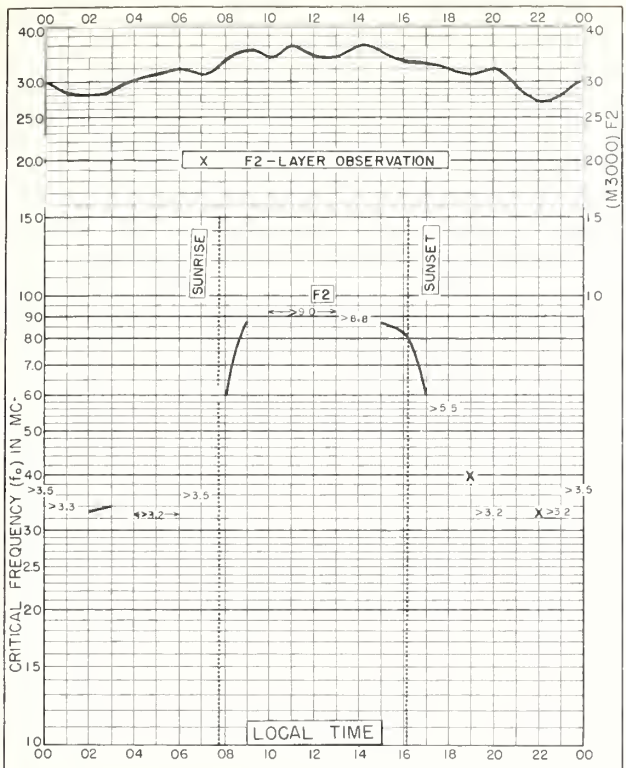


Fig. 33. GRAZ, AUSTRIA
47.1°N, 15.5°E DECEMBER 1960

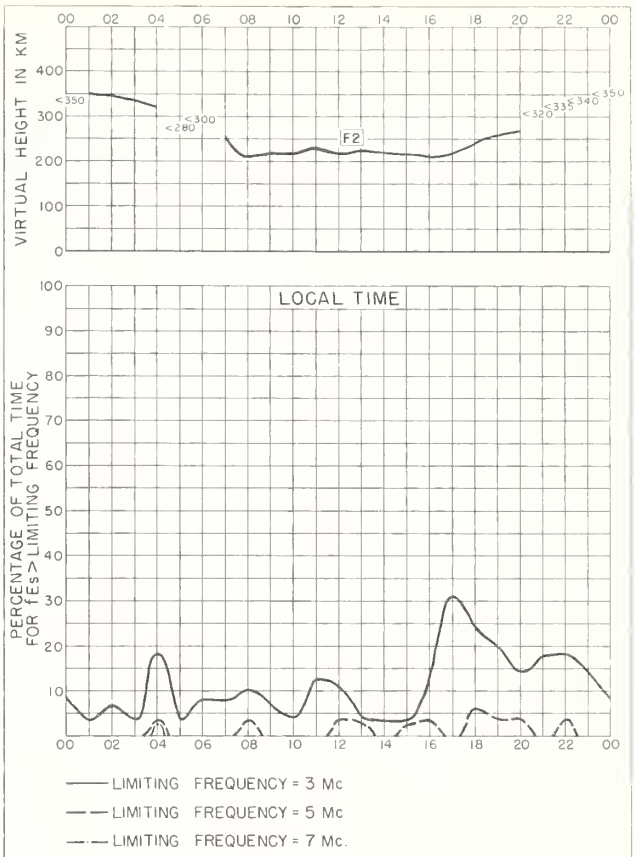


Fig. 34. GRAZ, AUSTRIA DECEMBER 1960

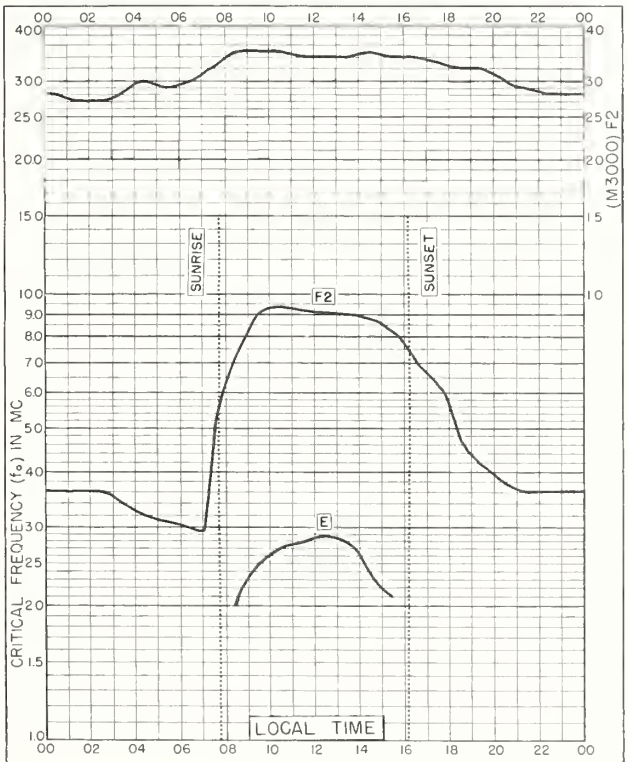


Fig. 35. SOTTENS, SWITZERLAND
46.6°N, 6.7°E DECEMBER 1960

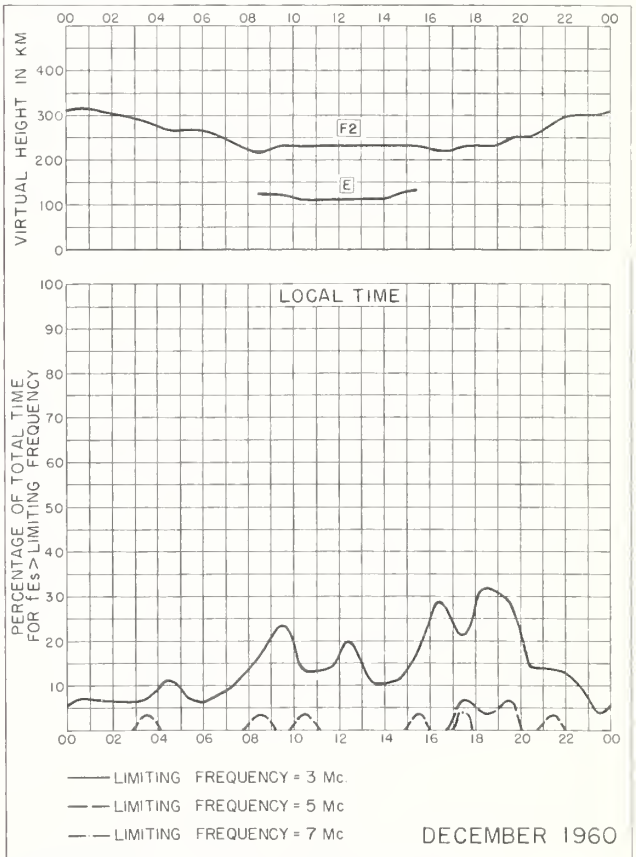


Fig. 36. SOTTENS, SWITZERLAND DECEMBER 1960

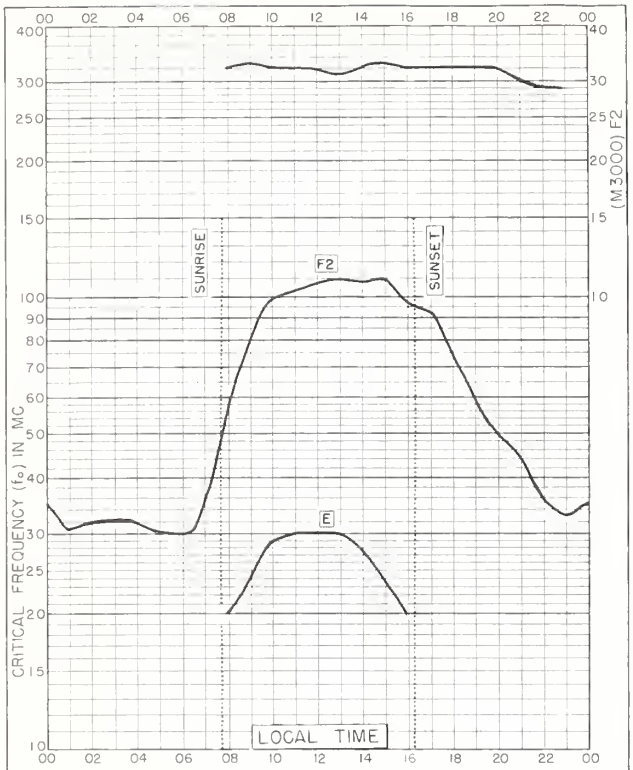


Fig. 37. OTTAWA, CANADA
45.4°N, 75.9°W DECEMBER 1960

NBS 503

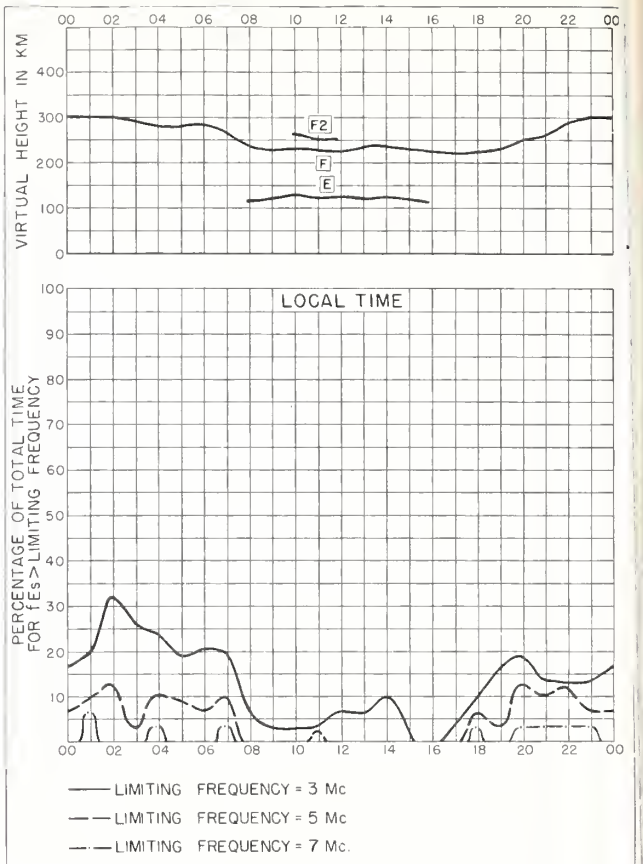


Fig. 38. OTTAWA, CANADA DECEMBER 1960

NBS 490

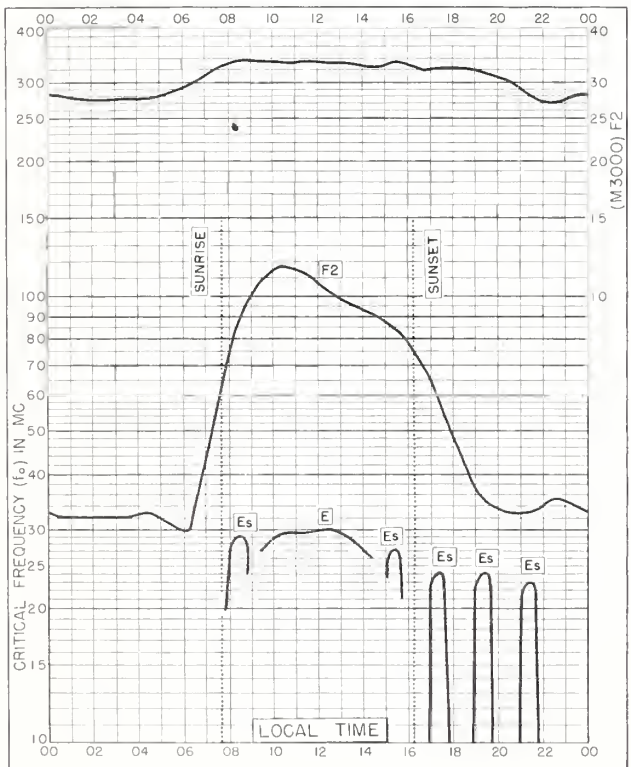


Fig. 39. WAKKANAI, JAPAN
45.4°N, 141.7°E DECEMBER 1960

NBS 503

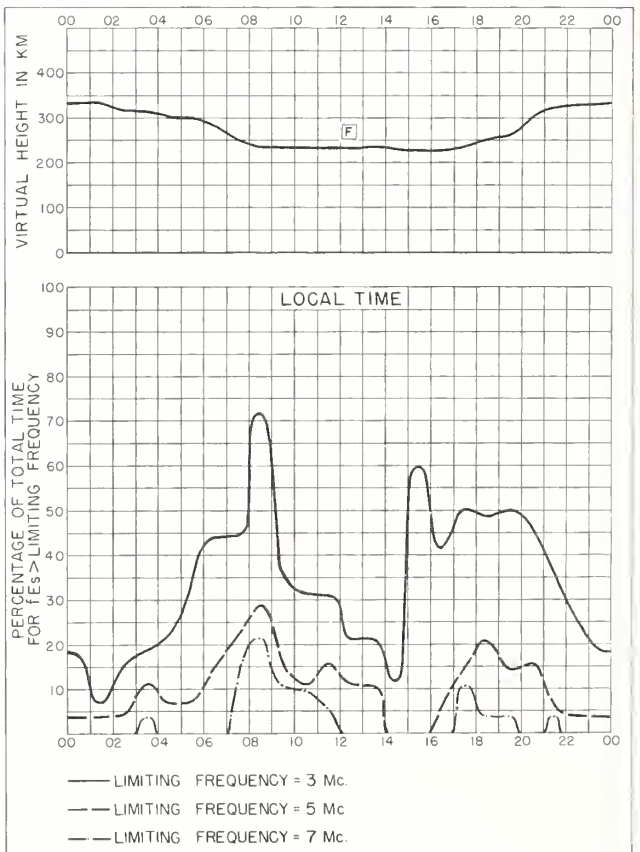


Fig. 40. WAKKANAI, JAPAN DECEMBER 1960

NBS 490

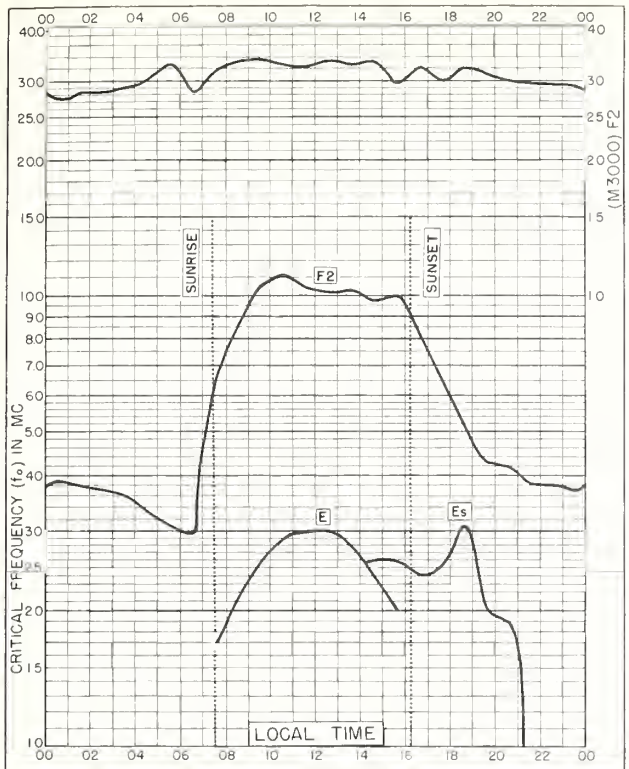


Fig. 41. GENOA (MONTE CAPELLINO), ITALY
44.6°N, 9.0°E DECEMBER 1960

NBS 503

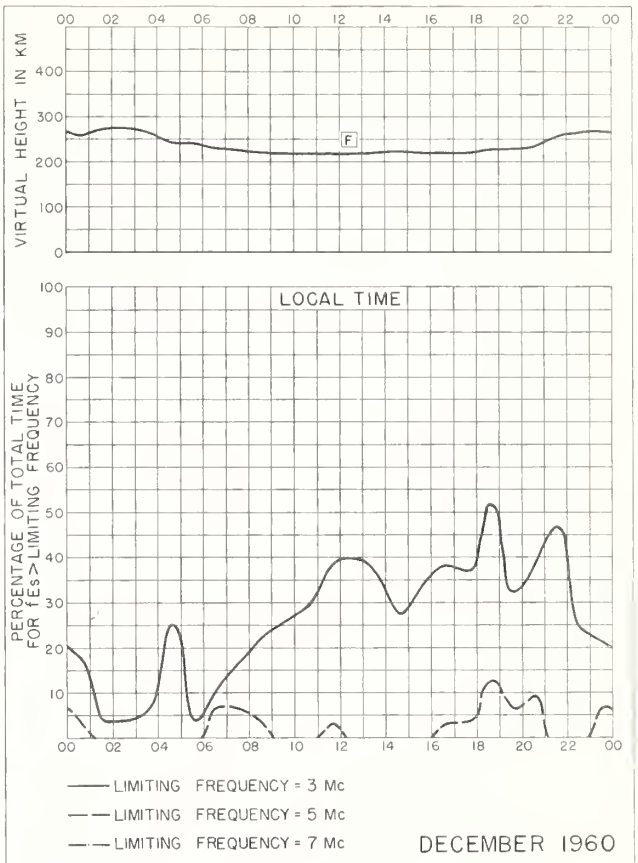


Fig. 42. GENOA (MONTE CAPELLINO), ITALY DECEMBER 1960

NBS 490

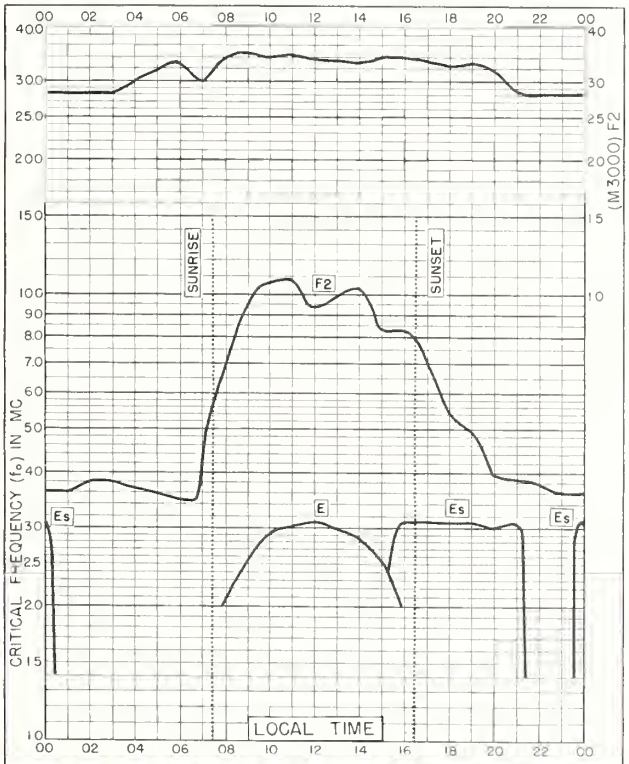


Fig. 43. ROME, ITALY
41.8°N, 12.5°E DECEMBER 1960

NBS 503

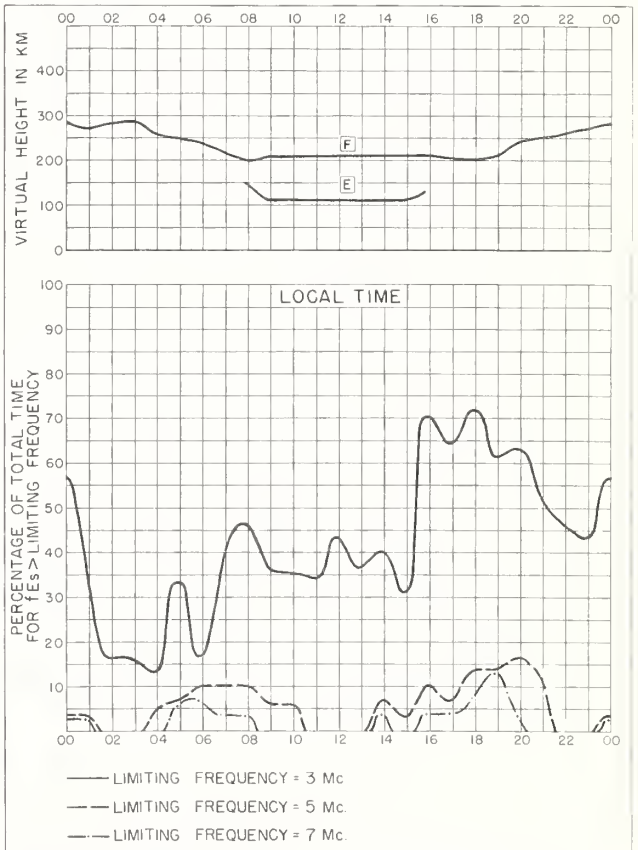


Fig. 44. ROME, ITALY DECEMBER 1960

NBS 490

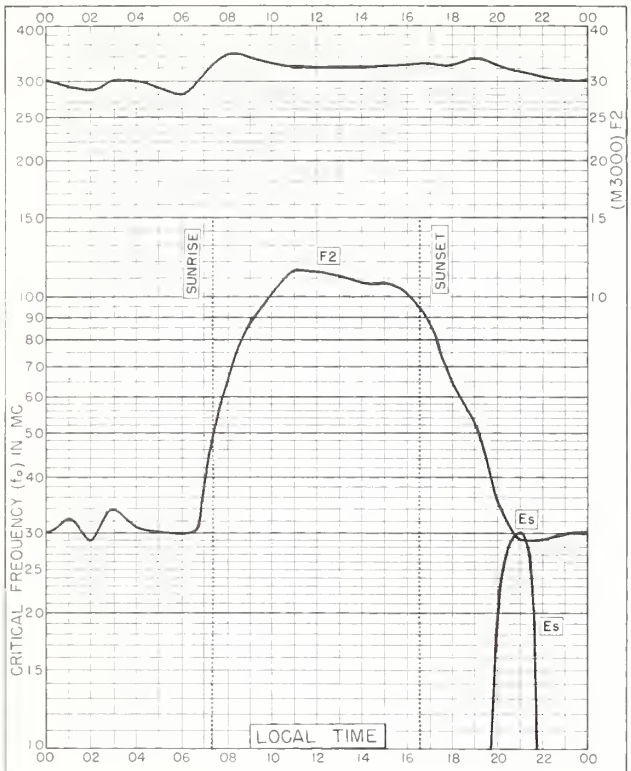


Fig. 45. BOULDER, COLORADO
40.0°N, 105.3°W DECEMBER 1960

NBS 503

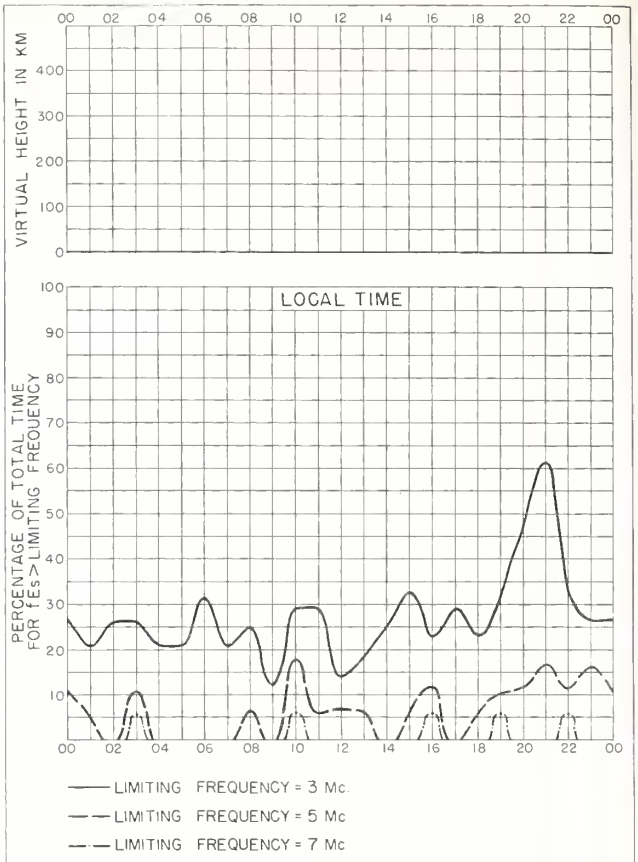


Fig. 46. BOULDER, COLORADO DECEMBER 1960

NBS 490

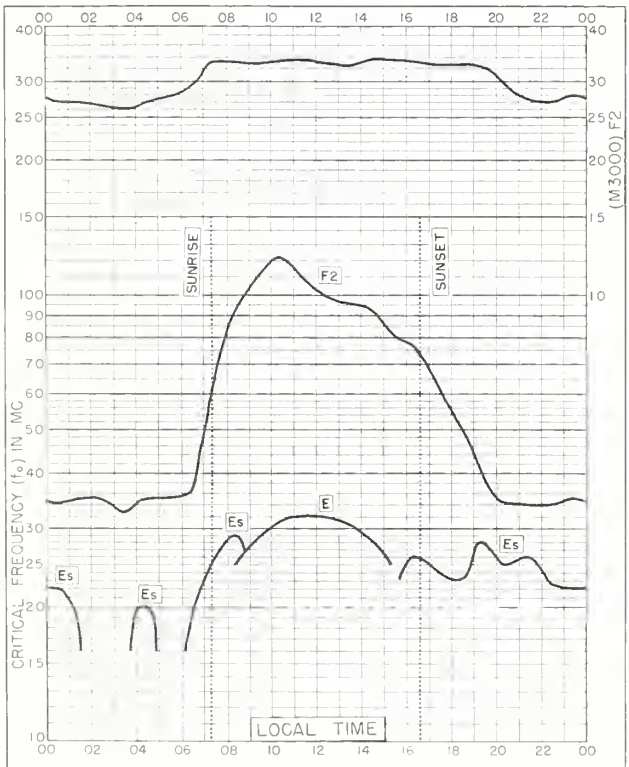


Fig. 47. AKITA, JAPAN
39.7°N, 140.1°E DECEMBER 1960

NBS 503

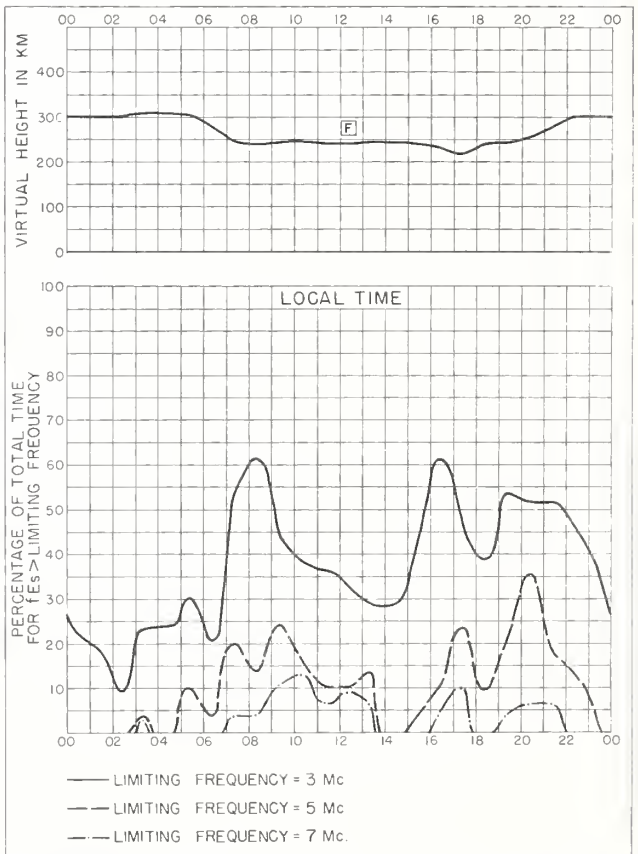


Fig. 48. AKITA, JAPAN DECEMBER 1960

NBS 490

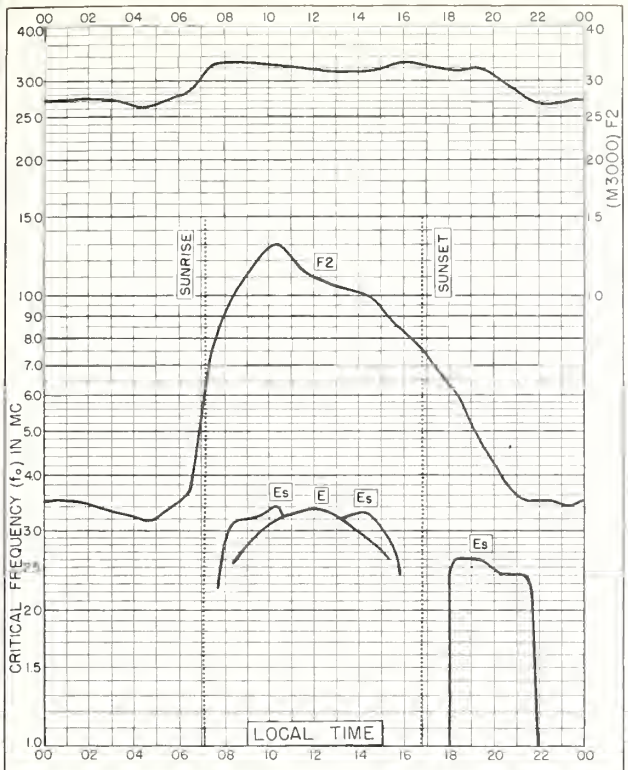


Fig. 49. TOKYO, JAPAN
35.7°N, 139.5°E DECEMBER 1960

NBS 503

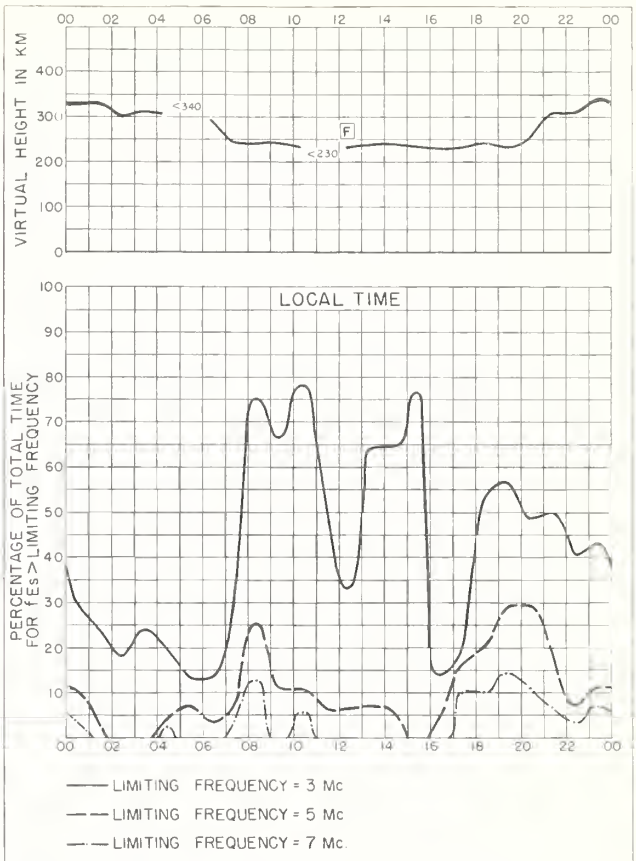


Fig. 50. TOKYO, JAPAN DECEMBER 1960

NBS 490

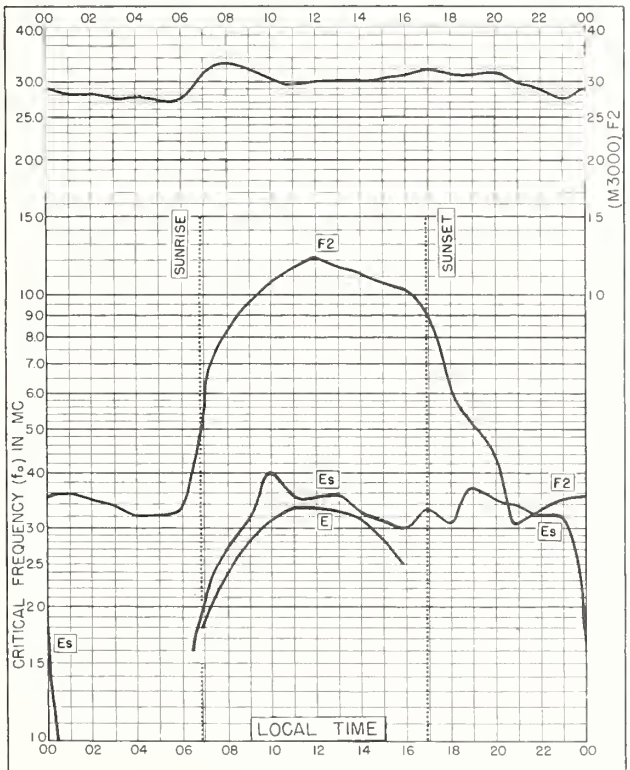
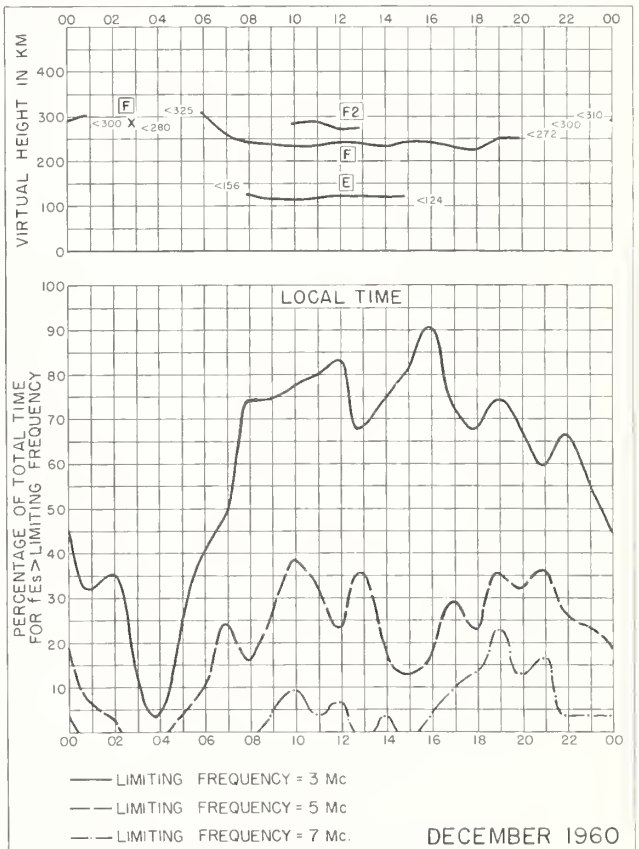


Fig. 51. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W DECEMBER 1960

NBS 503



DECEMBER 1960

Fig. 52. WHITE SANDS, NEW MEXICO

NBS 490

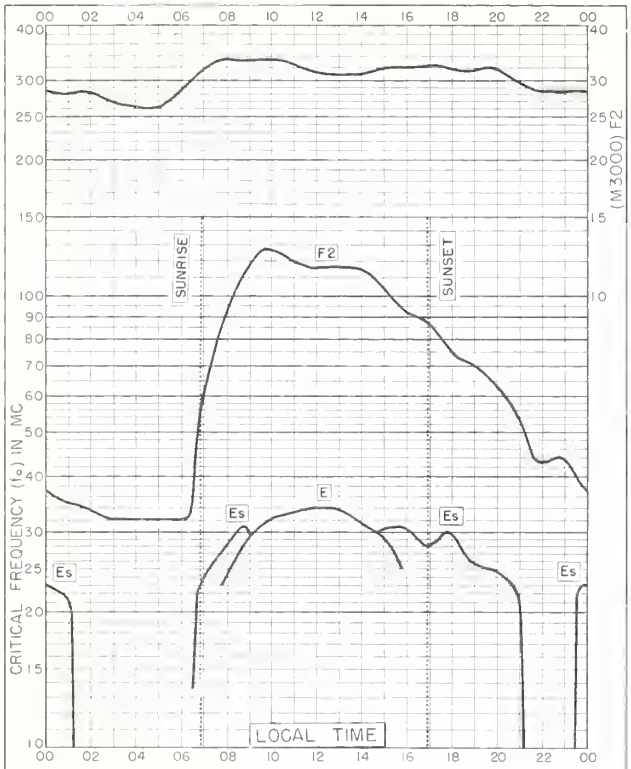


Fig. 53. YAMAGAWA, JAPAN
31.2°N, 130.6°E DECEMBER 1960

NBS 503

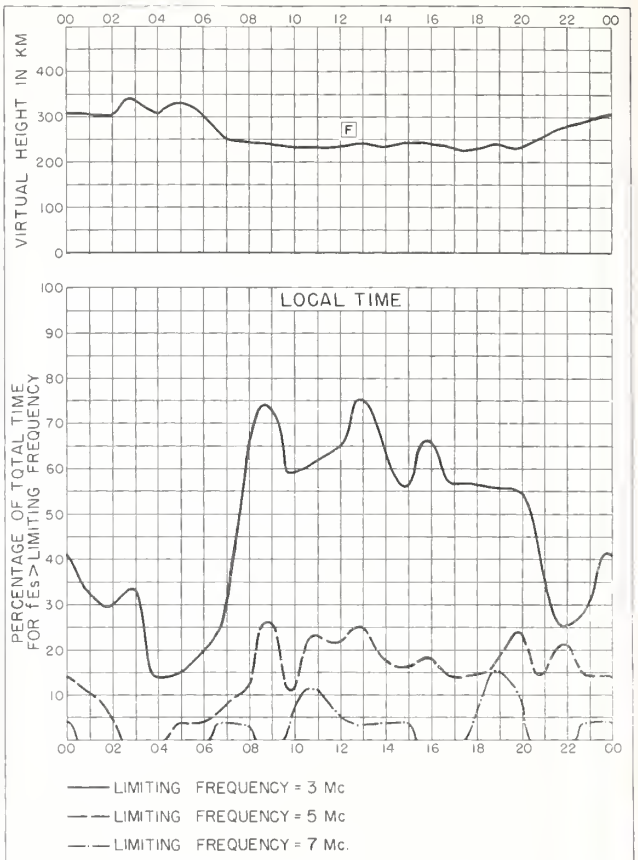


Fig. 54. YAMAGAWA, JAPAN DECEMBER 1960

NBS 490

Fig. 55. EL CERILLO, MEXICO
19.3°N, 99.5°W DECEMBER 1960

NBS 503

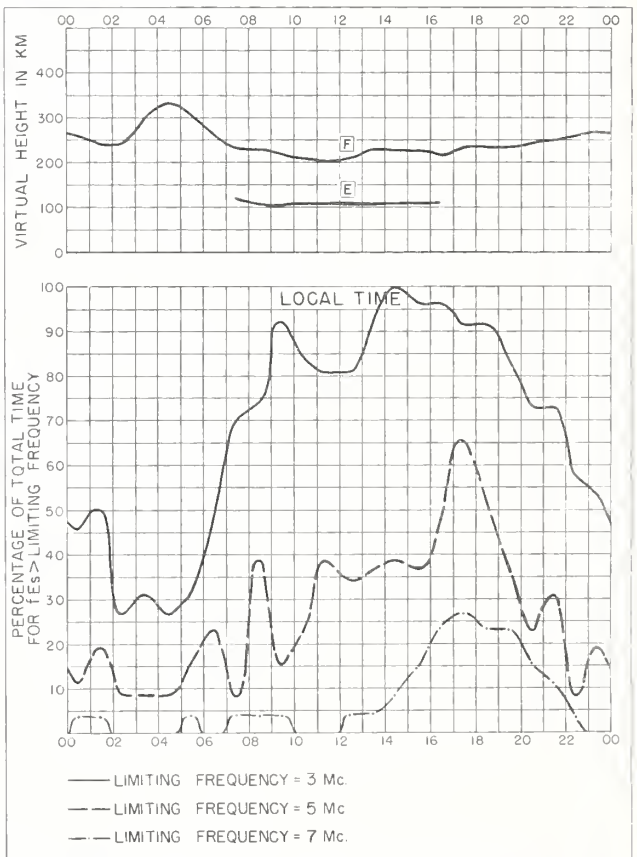


Fig. 56. EL CERILLO, MEXICO DECEMBER 1960

NBS 490

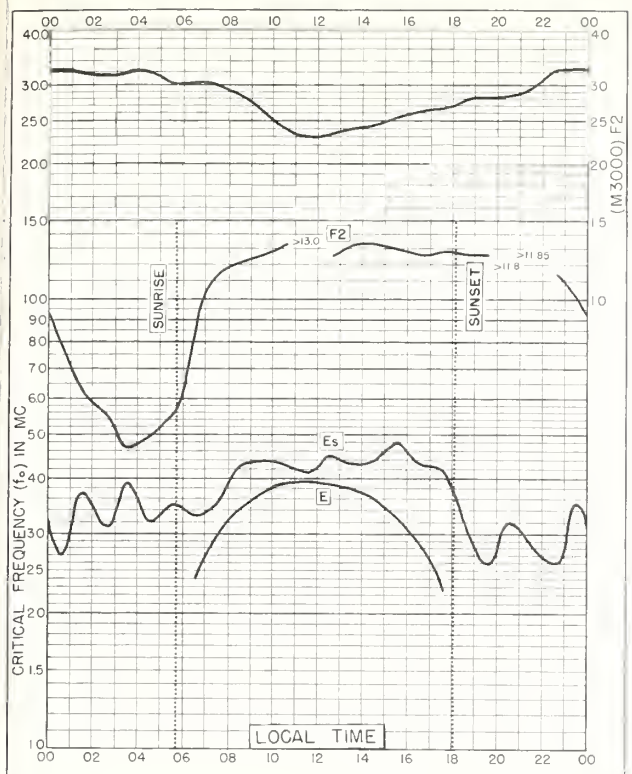


Fig. 57. TALARA, PERU
4.6°S, 81.3°W
DECEMBER 1960

NBS 503

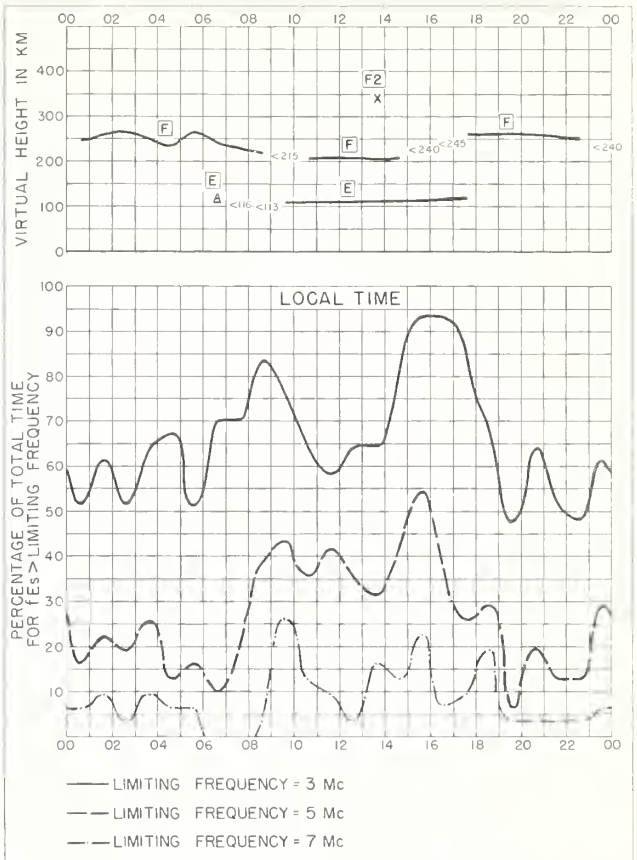


Fig. 58. TALARA, PERU
DECEMBER 1960

NBS 490

Fig. 59. HUANCAYO, PERU
12.0°S, 75.3°W
DECEMBER 1960

NBS 503

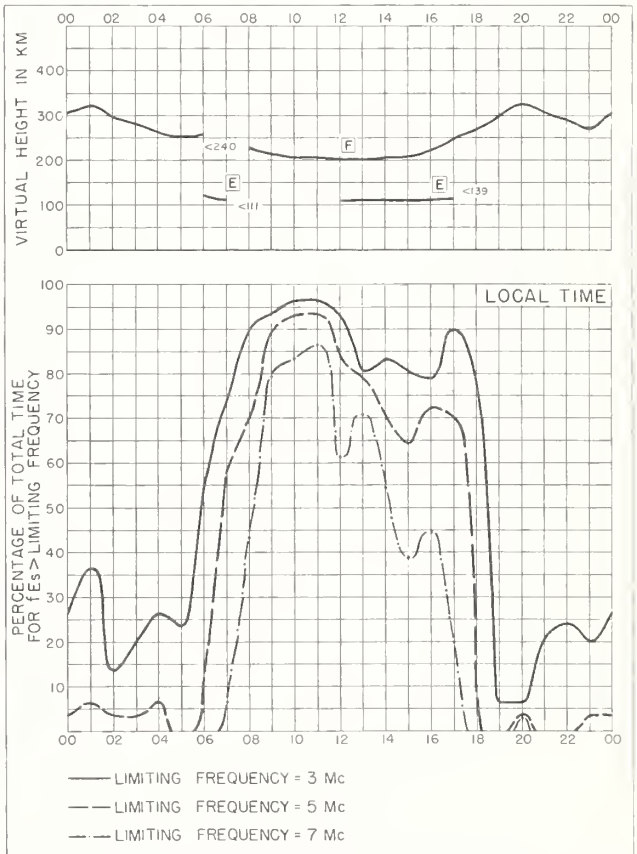


Fig. 60. HUANCAYO, PERU
DECEMBER 1960

NBS 490

Fig. 61. THULE, GREENLAND
76.0°N, 68.0°W NOVEMBER 1960

NBS 503

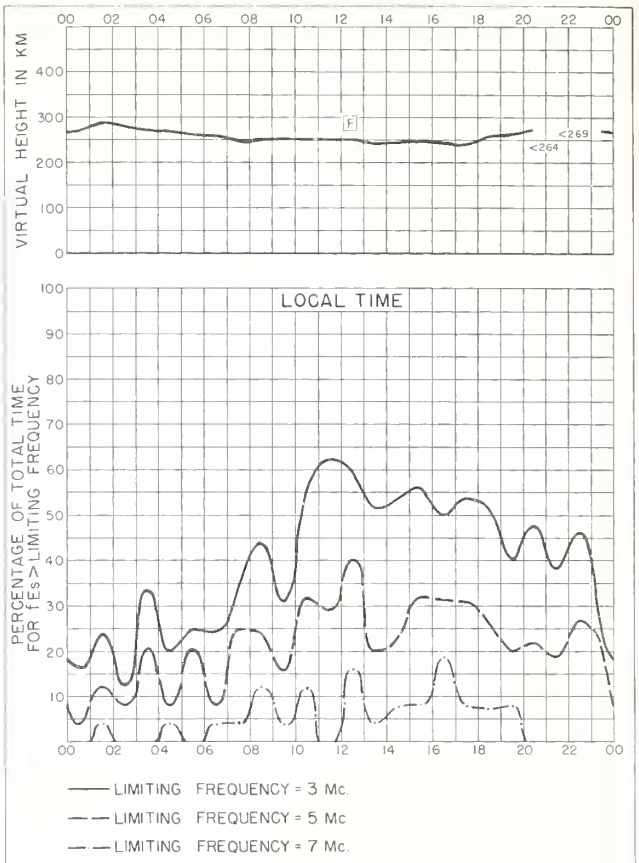


Fig. 62. THULE, GREENLAND NOVEMBER 1960

NBS 490

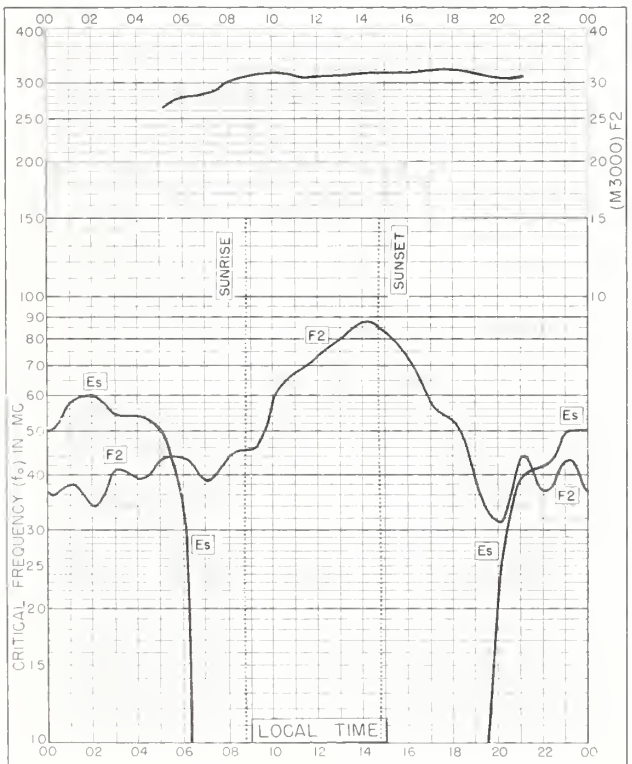


Fig. 63. FAIRBANKS, ALASKA
64.9°N, 147.8°W NOVEMBER 1960

NBS 503

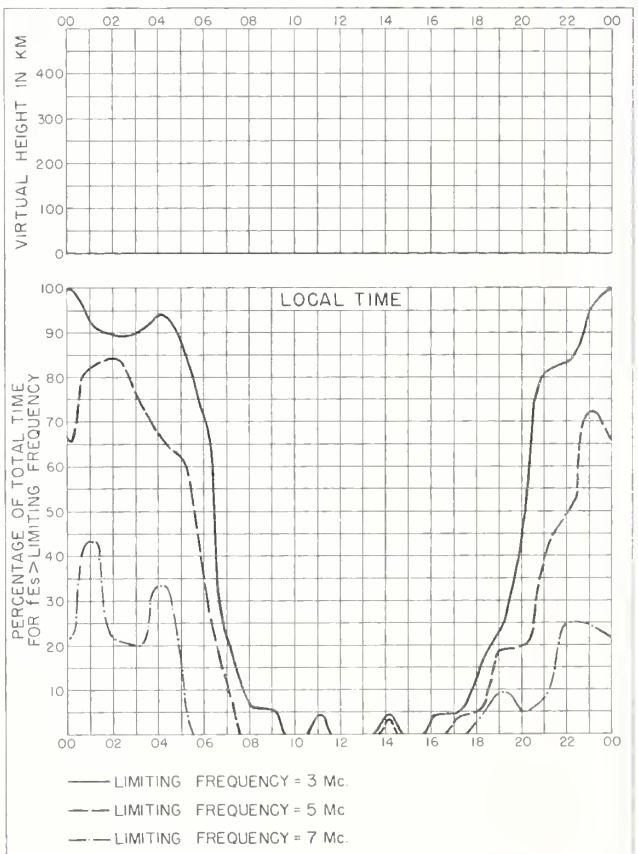


Fig. 64. FAIRBANKS, ALASKA NOVEMBER 1960

NBS 490

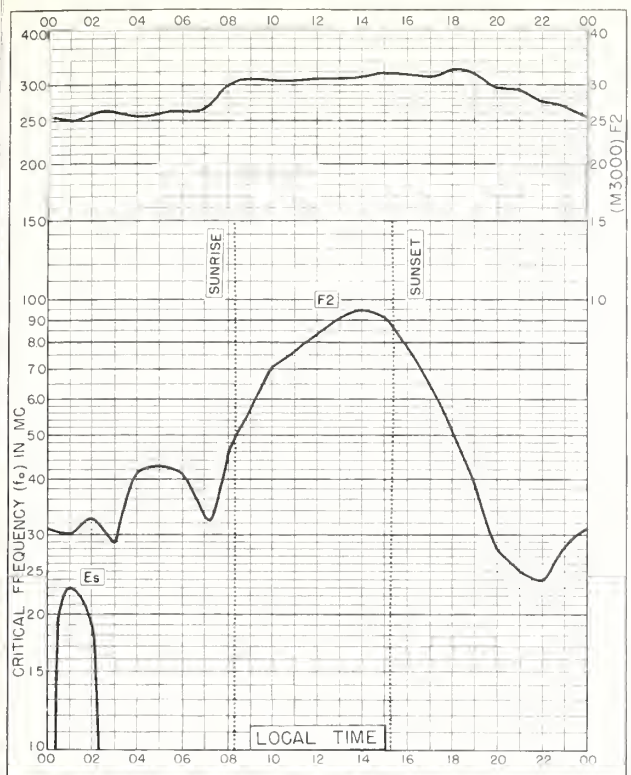


Fig. 65. ANCHORAGE, ALASKA
61.2°N, 149.9° W NOVEMBER 1960

NBS 503

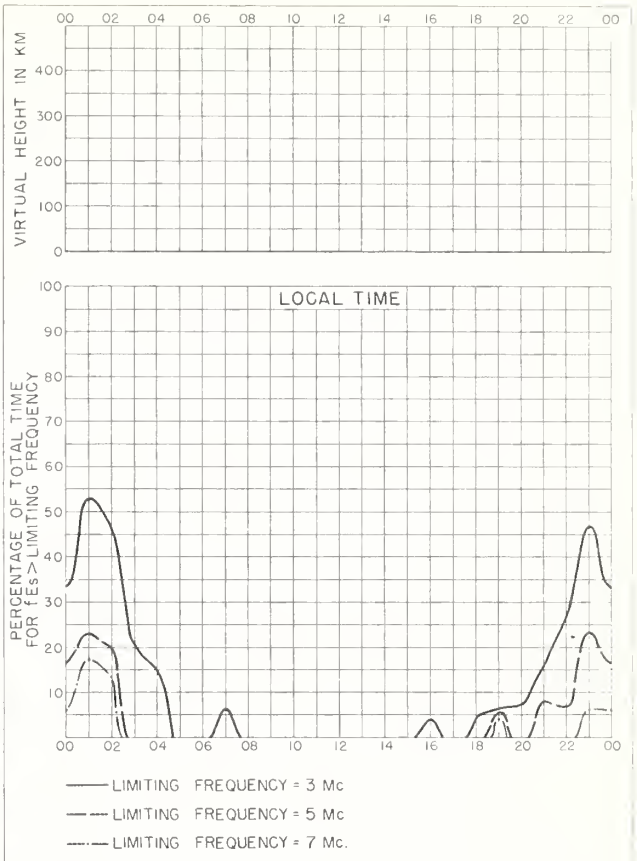


Fig. 66. ANCHORAGE, ALASKA NOVEMBER 1960

NBS 490

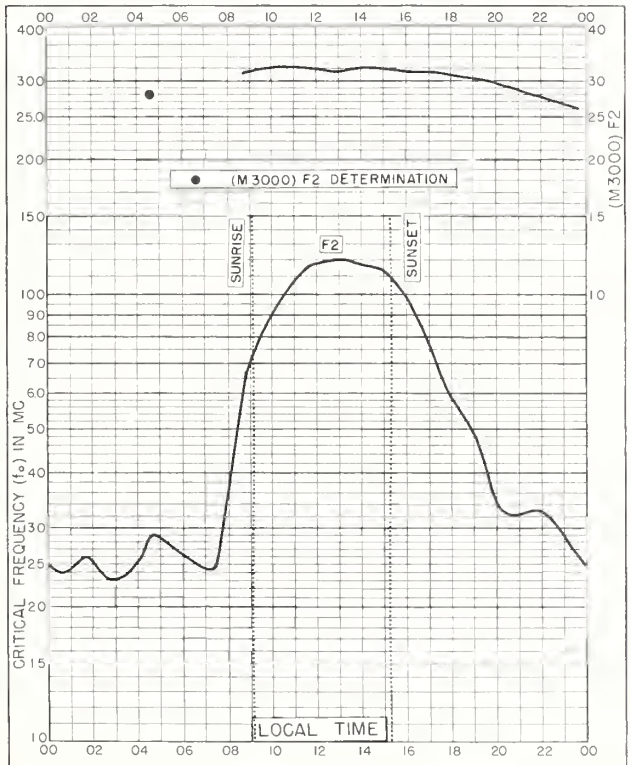


Fig. 67. NURMIJARVI, FINLAND
60.5°N, 24.6°E JANUARY 1960

NBS 503

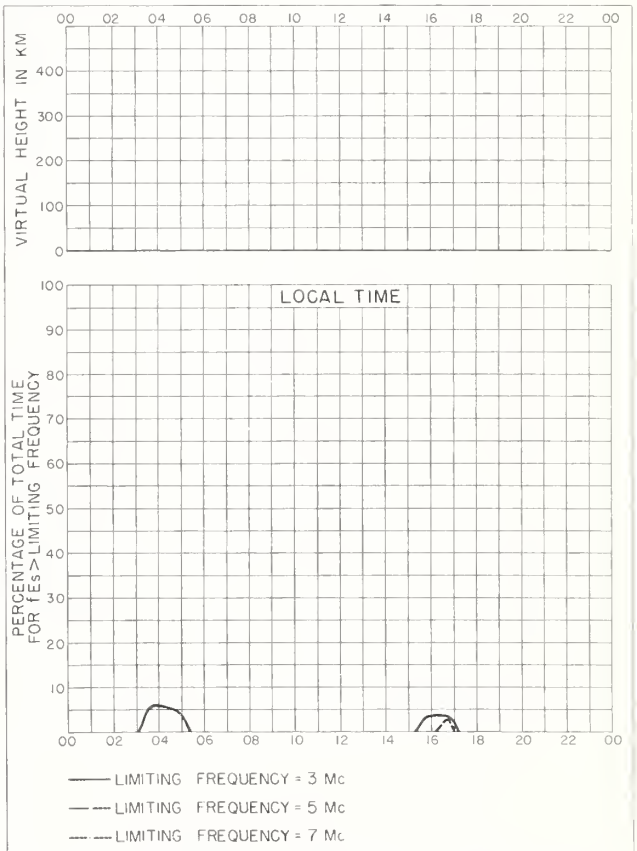


Fig. 68. NURMIJARVI, FINLAND JANUARY 1960

NBS 491

Fig. 69. LINDAU/HARZ, GERMANY
51.6°N, 10.1°E DECEMBER 1959

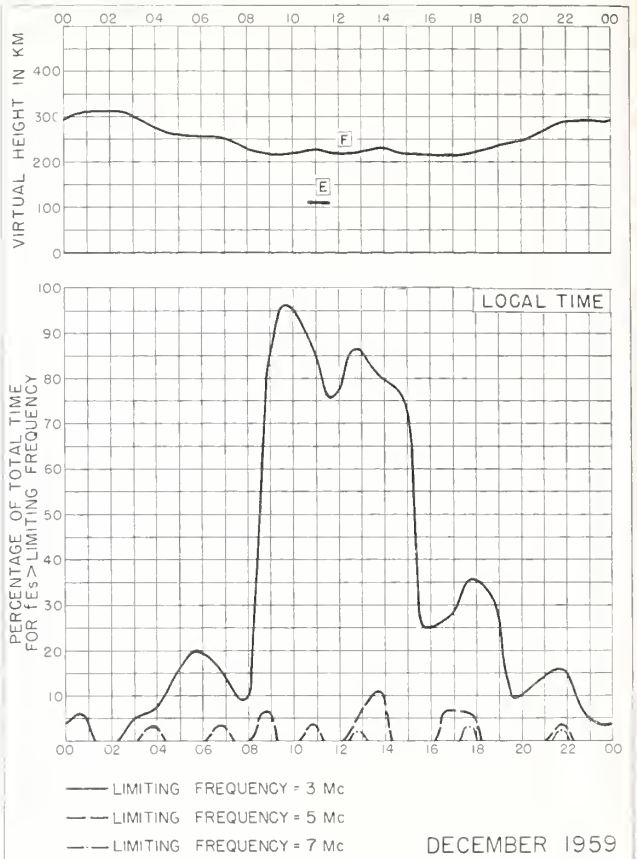


Fig. 70. LINDAU/HARZ, GERMANY DECEMBER 1959

Fig. 71. BUDAPEST, HUNGARY
47.4°N, 19.2°E DECEMBER 1959

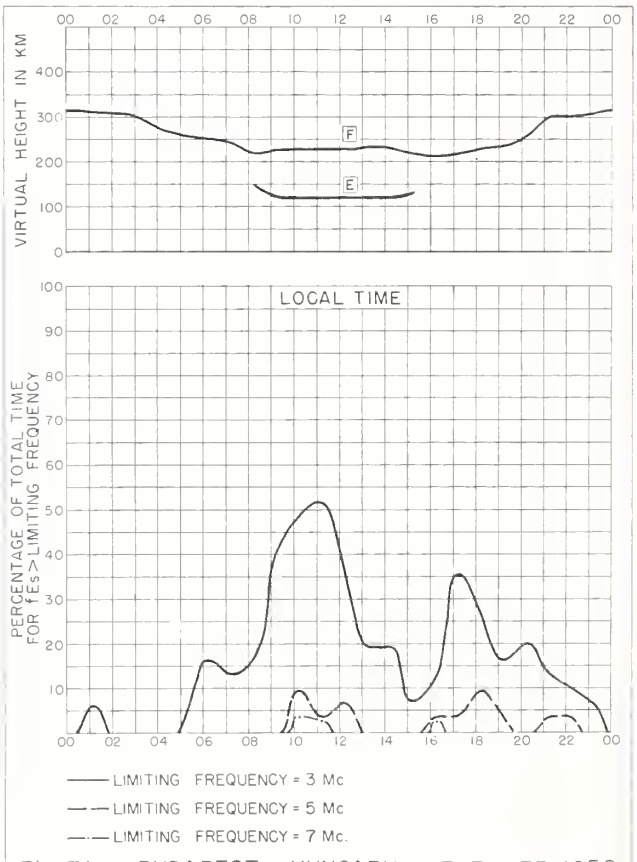


Fig. 72. BUDAPEST, HUNGARY DECEMBER 1959

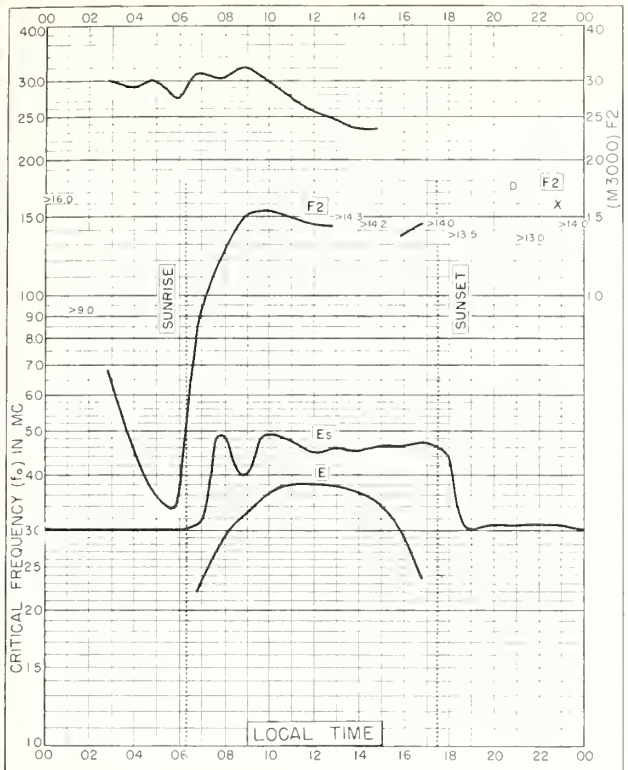
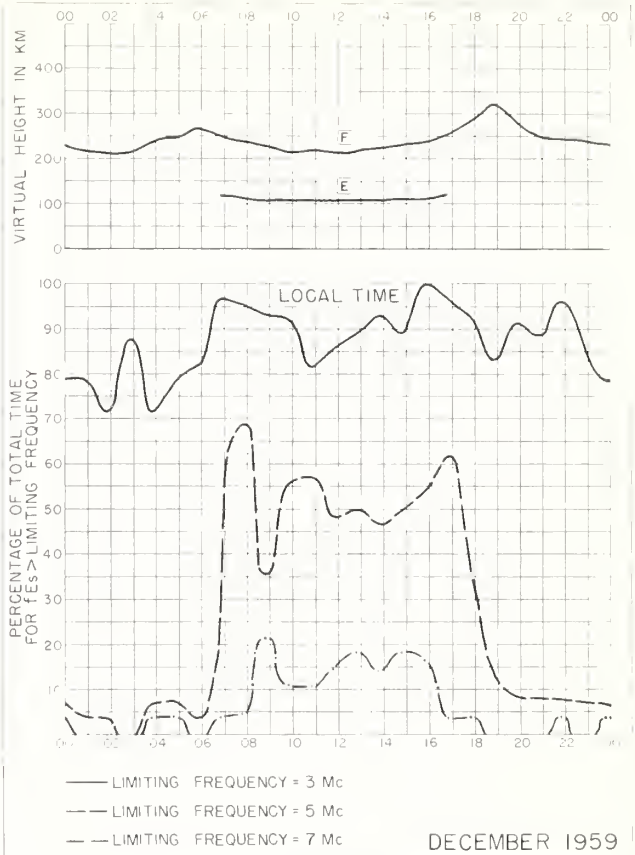


Fig. 73. DAKAR, FRENCH W. AFRICA
14.8°N, 17.4°W DECEMBER 1959



DECEMBER 1959

Fig. 74. DAKAR, FRENCH W. AFRICA

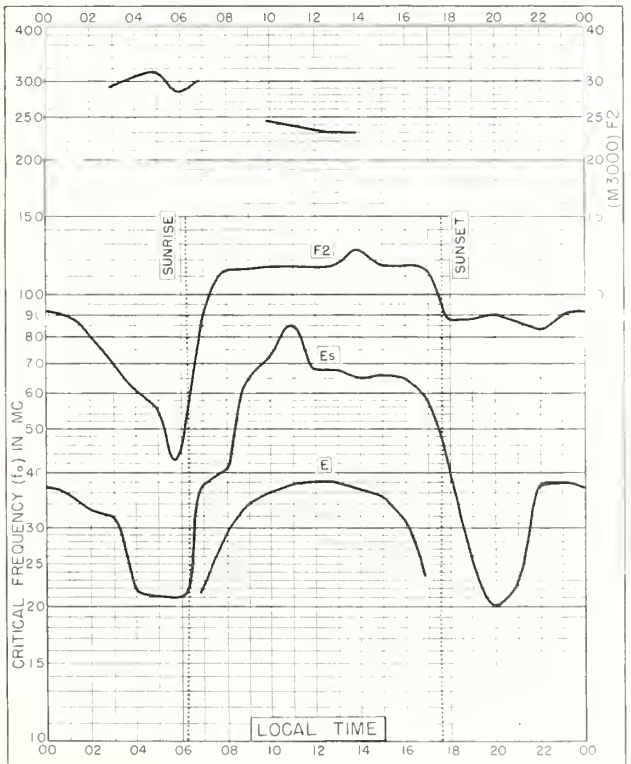
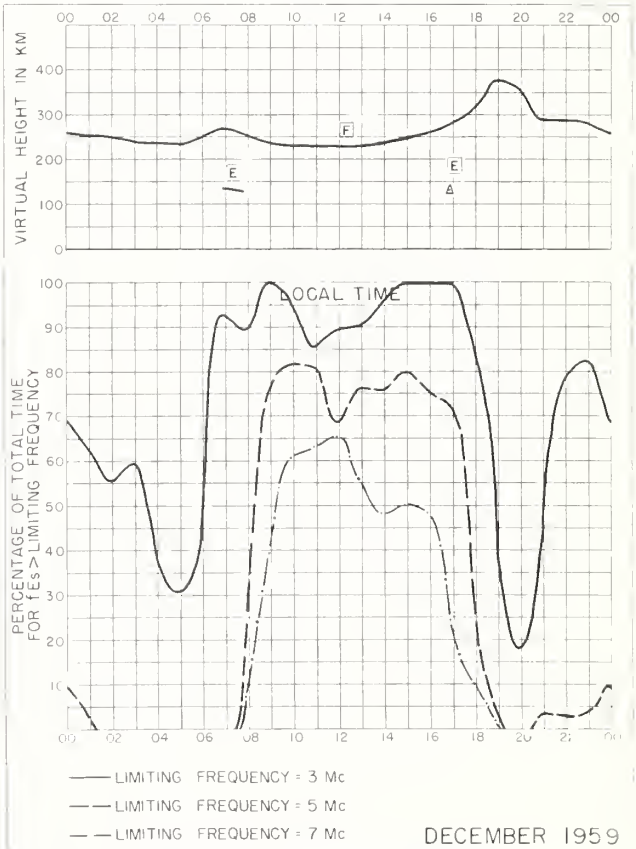


Fig. 75. DJIBOUTI, FRENCH SOMALILAND
11.6°N, 43.2°E DECEMBER 1959



DECEMBER 1959

Fig. 76. DJIBOUTI, FRENCH SOMALILAND

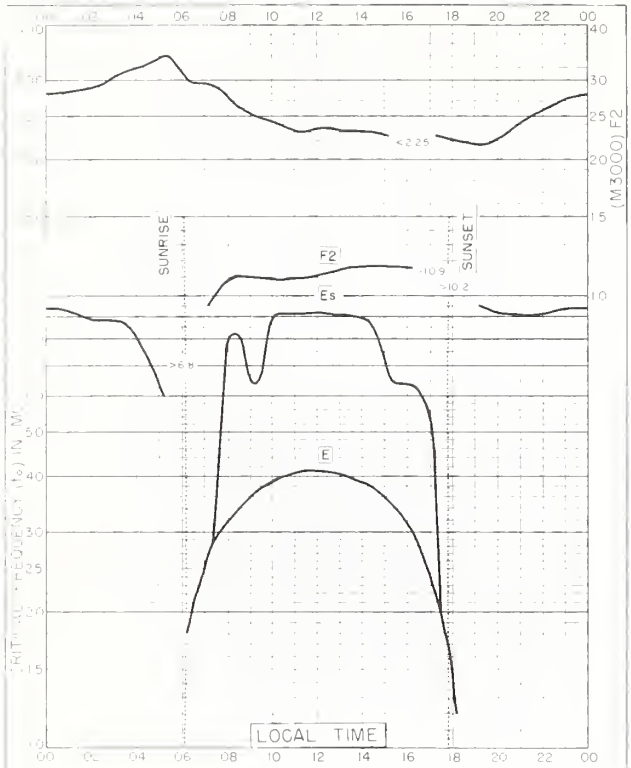


Fig. 77 IBADAN, NIGERIA
7.4°N, 3.9°E DECEMBER 1959

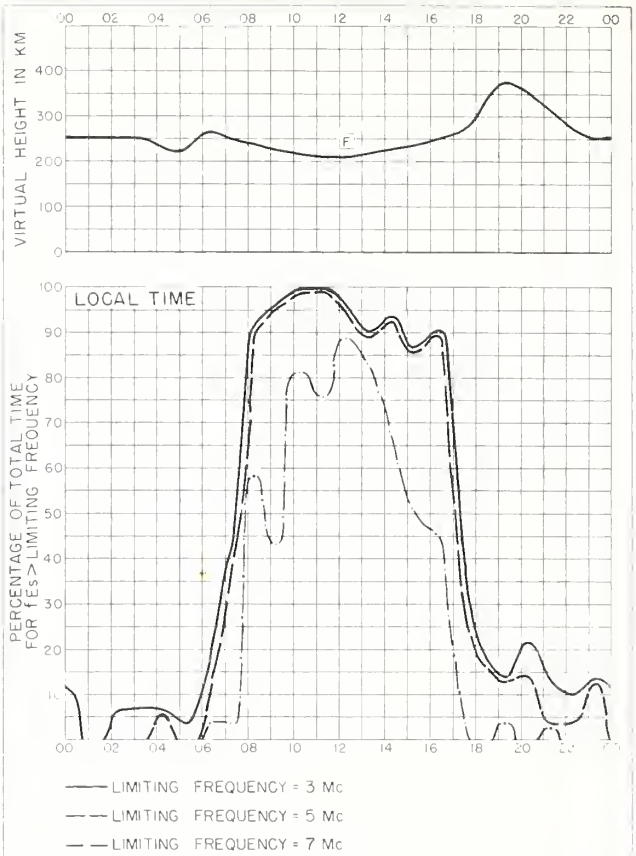


Fig. 78. IBADAN, NIGERIA DECEMBER 1959

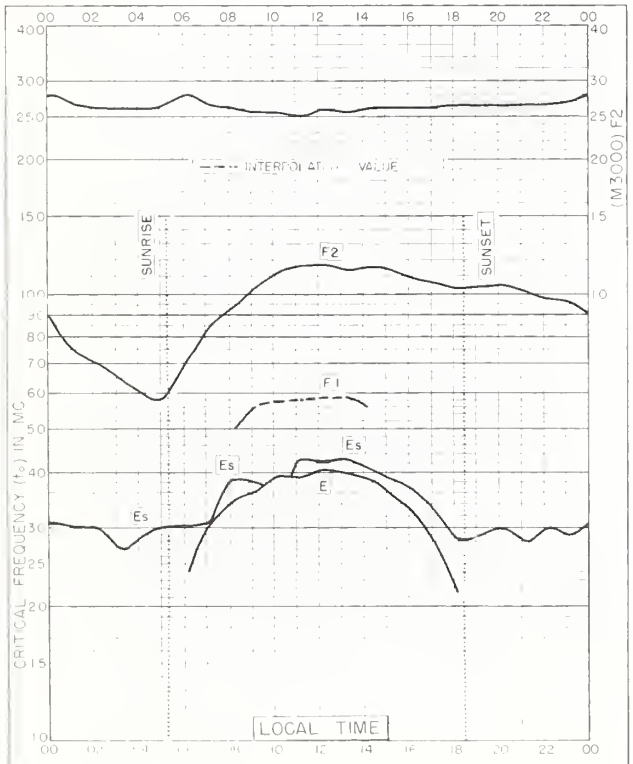


Fig 79. TANANARIVE, MADAGASCAR
18.8°S, 47.5°E DECEMBER 1959

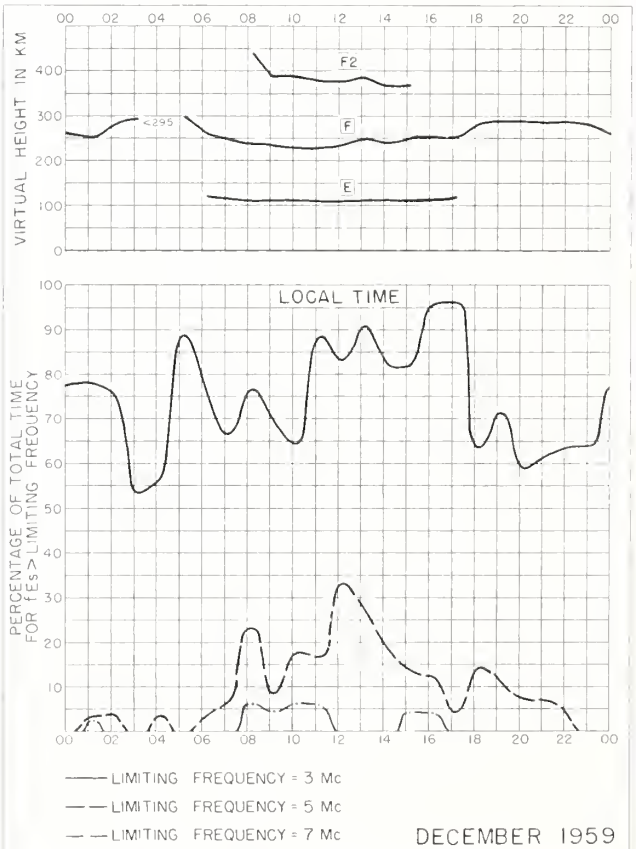


Fig. 80. TANANARIVE, MADAGASCAR DECEMBER 1959

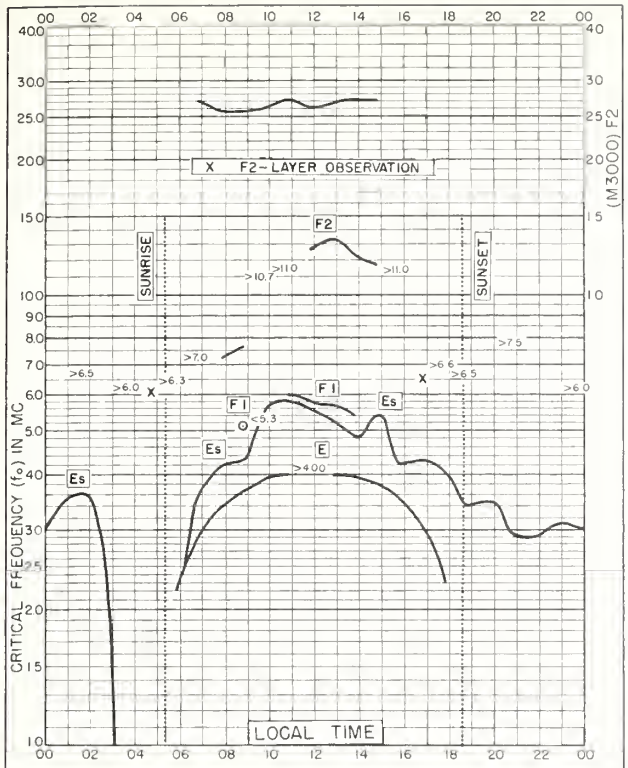
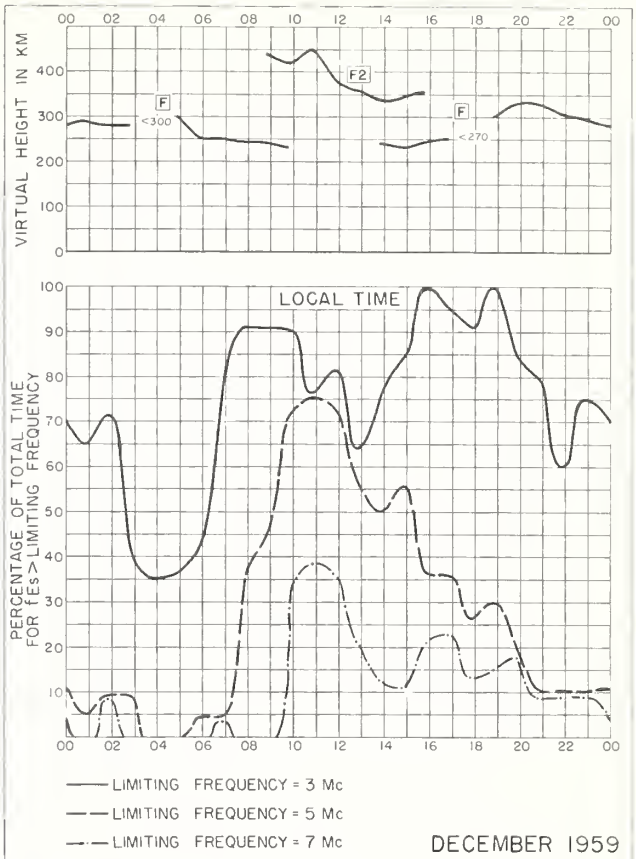


Fig. 81. TOWNSVILLE, AUSTRALIA
19.3°S, 146.7°E DECEMBER 1959



DECEMBER 1959

Fig. 82. TOWNSVILLE, AUSTRALIA

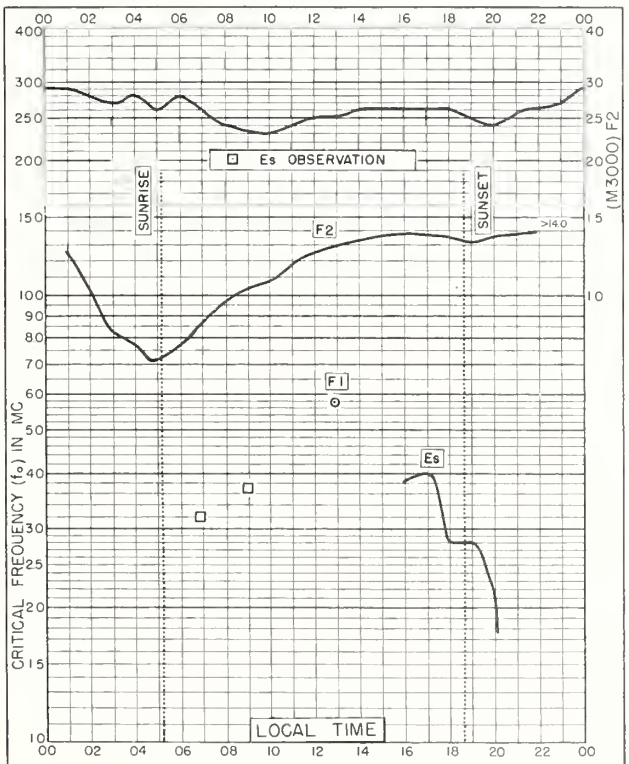


Fig. 83. SAO PAULO, BRAZIL
23.5°S, 46.5°W DECEMBER 1959

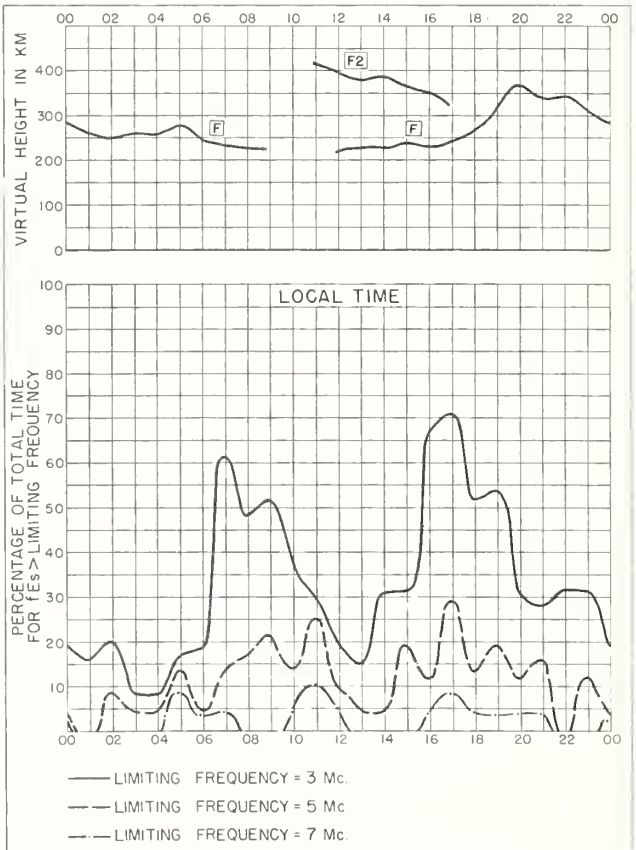


Fig. 84. SAO PAULO, BRAZIL DECEMBER 1959

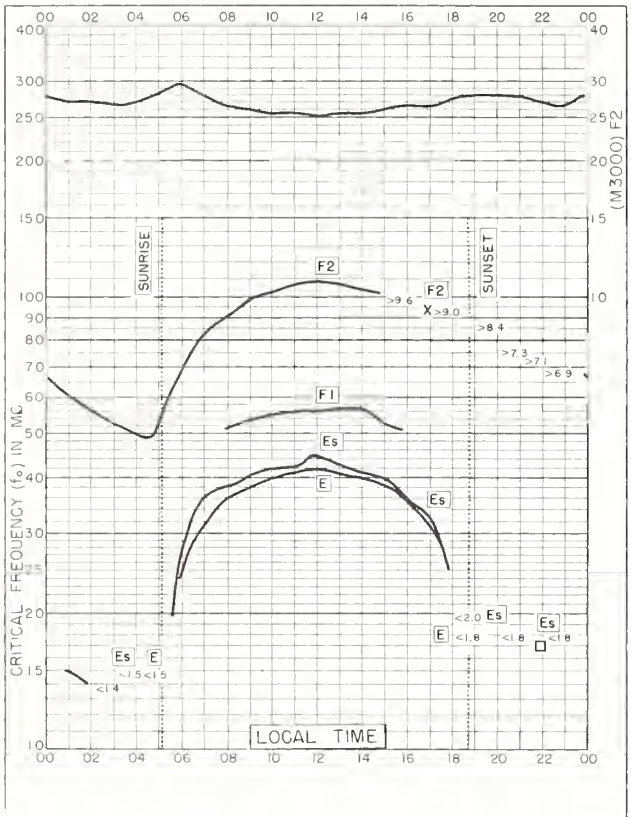


Fig. 85. JOHANNESBURG, UNION OF S. AFRICA
26.1°S, 28.1°E DECEMBER 1959

NBS 503

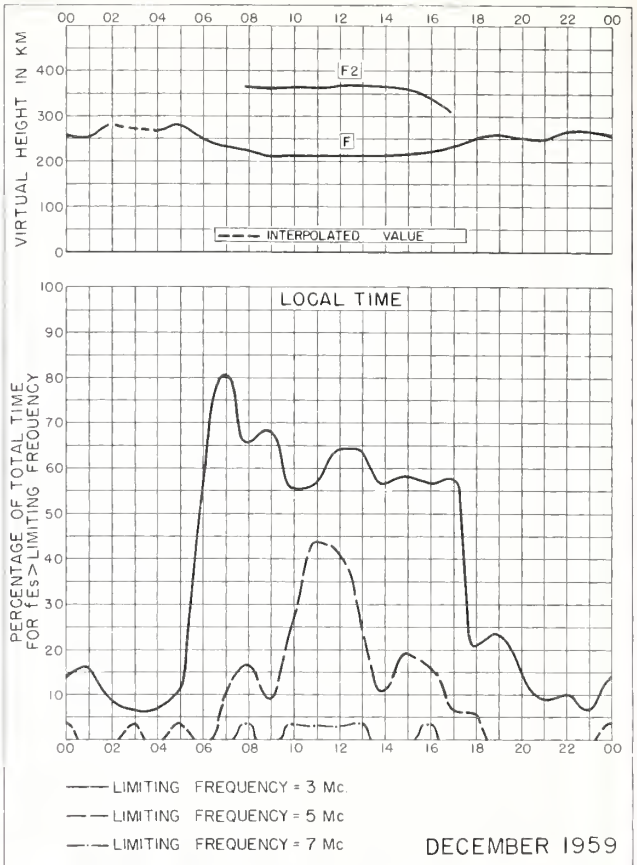


Fig. 86. JOHANNESBURG, UNION OF S. AFRICA DECEMBER 1959

NBS 490

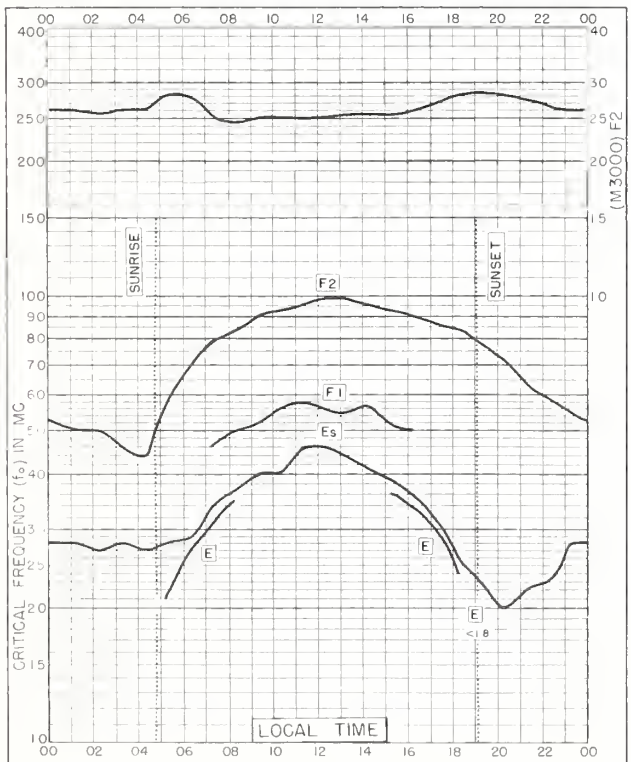


Fig. 87. CAPETOWN, UNION OF S. AFRICA
34.1°S, 18.3°E DECEMBER 1959

NBS 503

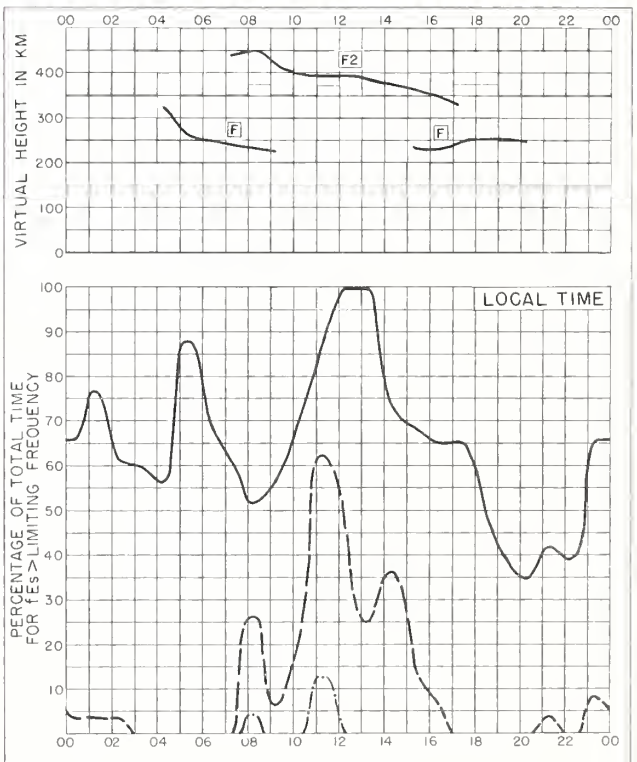


Fig. 88. CAPETOWN, UNION OF S. AFRICA DECEMBER 1959

NBS 490

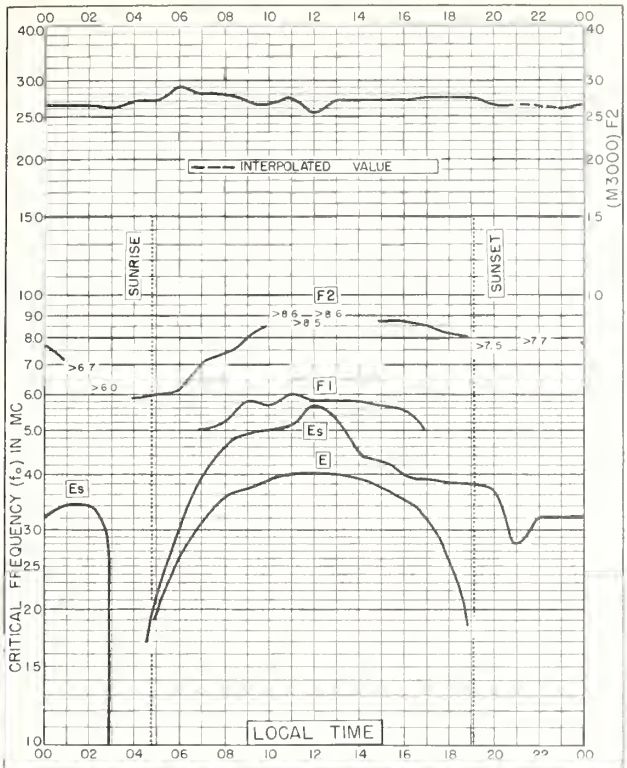


Fig. 89. CANBERRA, AUSTRALIA
35.3°S, 149.0°E DECEMBER 1959

NBS 503

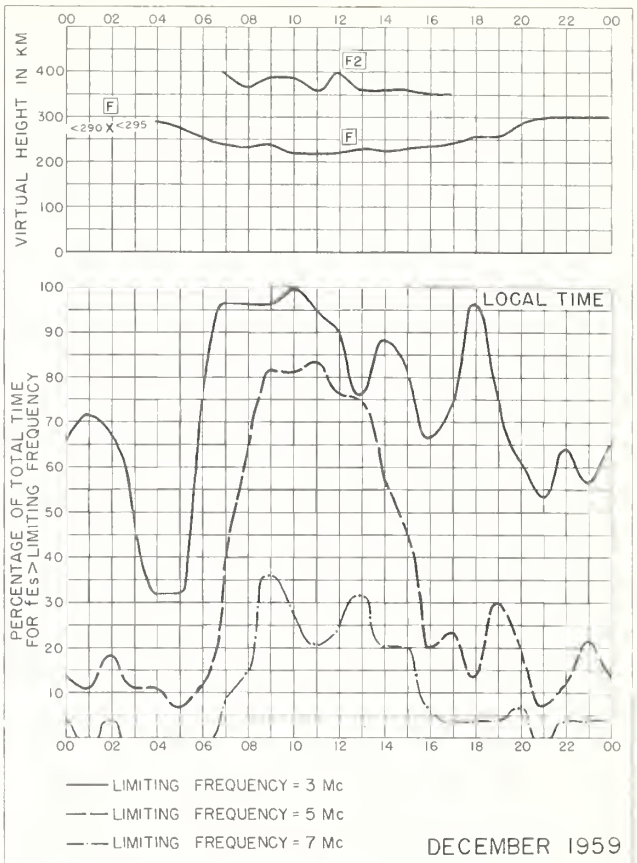


Fig. 90. CANBERRA, AUSTRALIA DECEMBER 1959

NBS 490

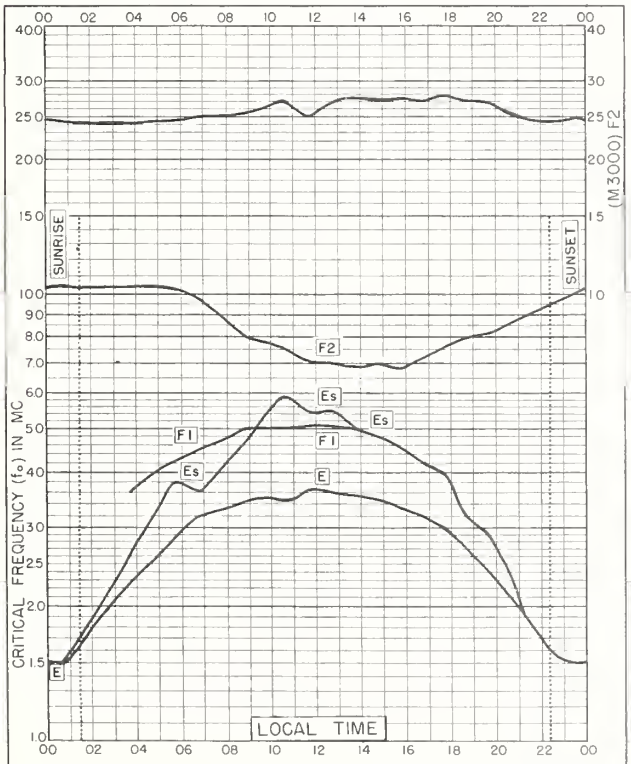


Fig. 91. PORT LOCKROY
64.8°S, 63.5°W DECEMBER 1959

NBS 503

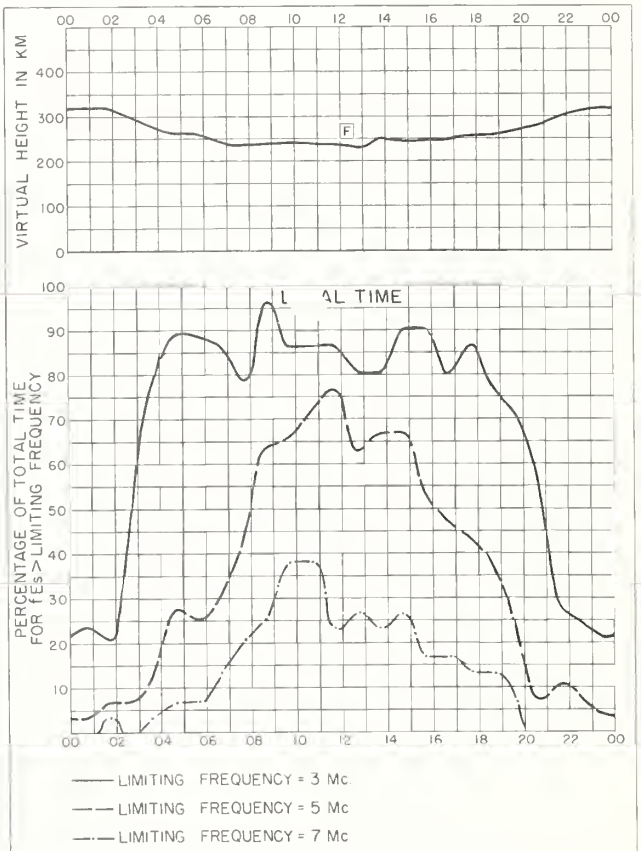


Fig. 92. PORT LOCKROY DECEMBER 1959

NBS 490

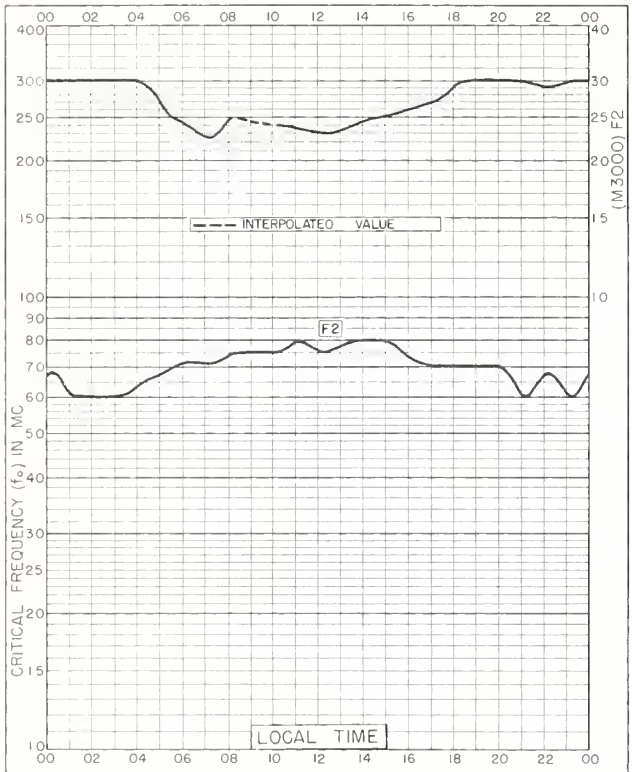


Fig. 93. MAWSON
67.6°S, 62.9°E DECEMBER 1959

NBS 503

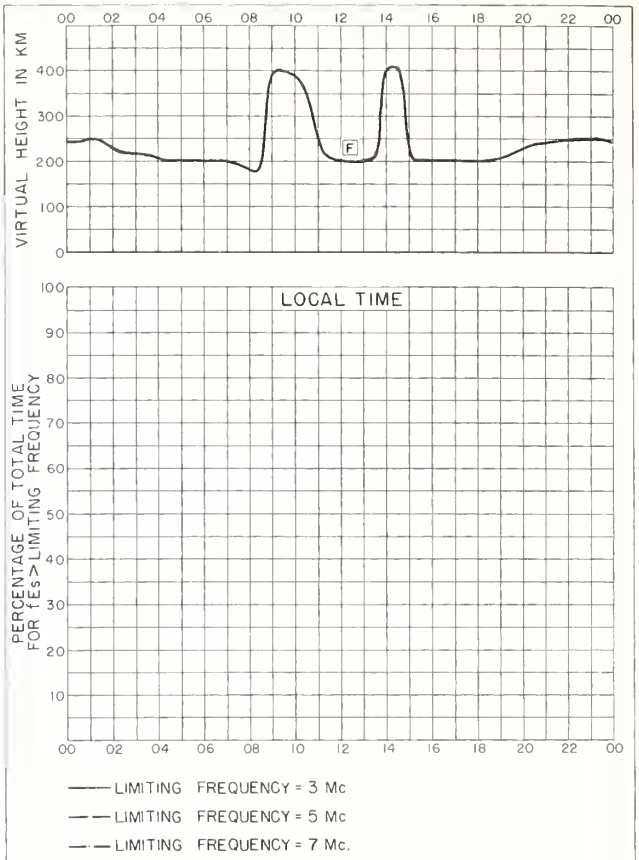


Fig. 94. MAWSON DECEMBER 1959

NBS 490

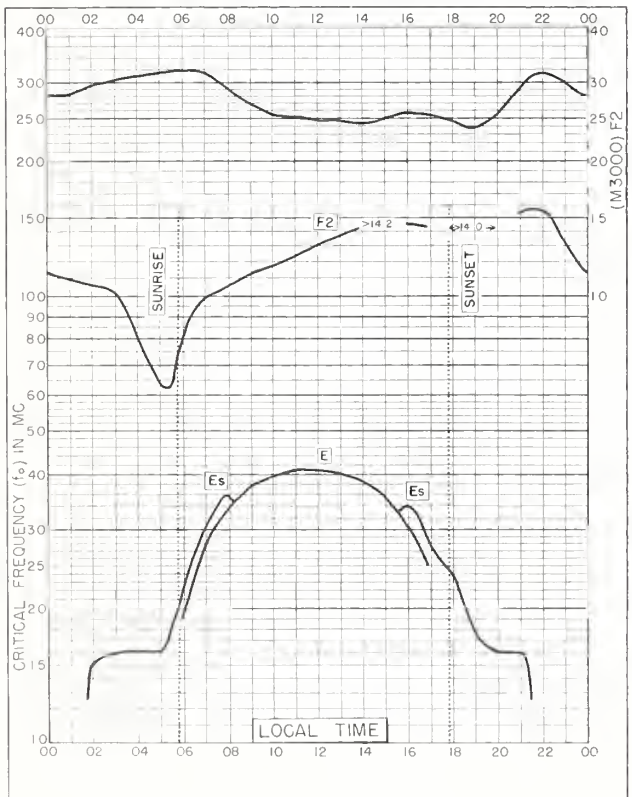


Fig. 95. LWIRO, BELGIAN CONGO
2.3°S, 28.8°E NOVEMBER 1959

NBS 503

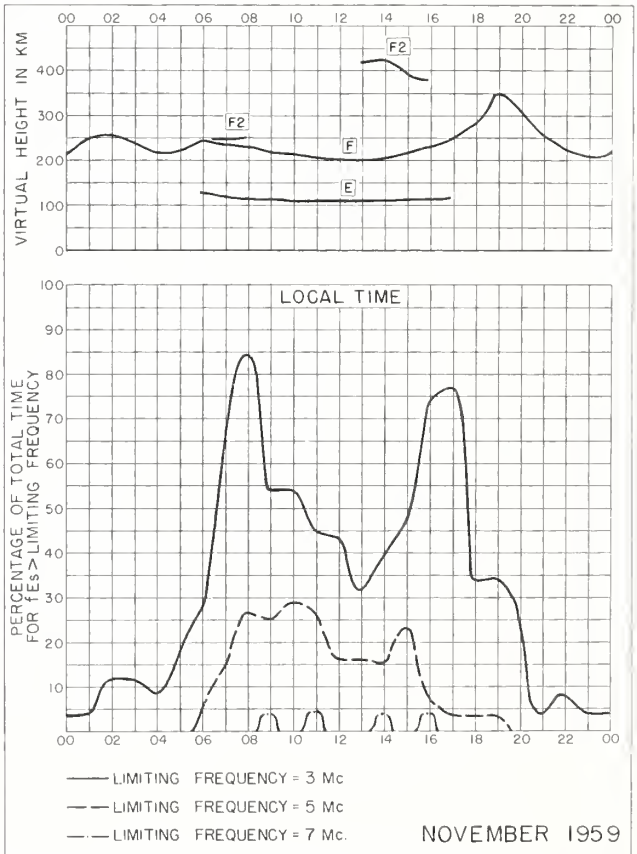


Fig. 96. LWIRO, BELGIAN CONGO NOVEMBER 1959

NBS 490

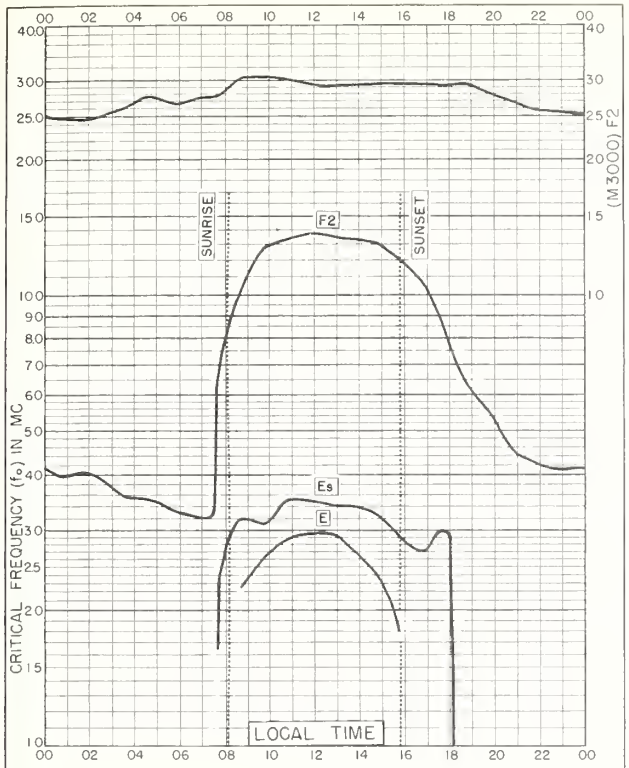


Fig. 97. LINDAU/HARZ, GERMANY
51.6°N, 10.1°E DECEMBER 1958

NBS 503

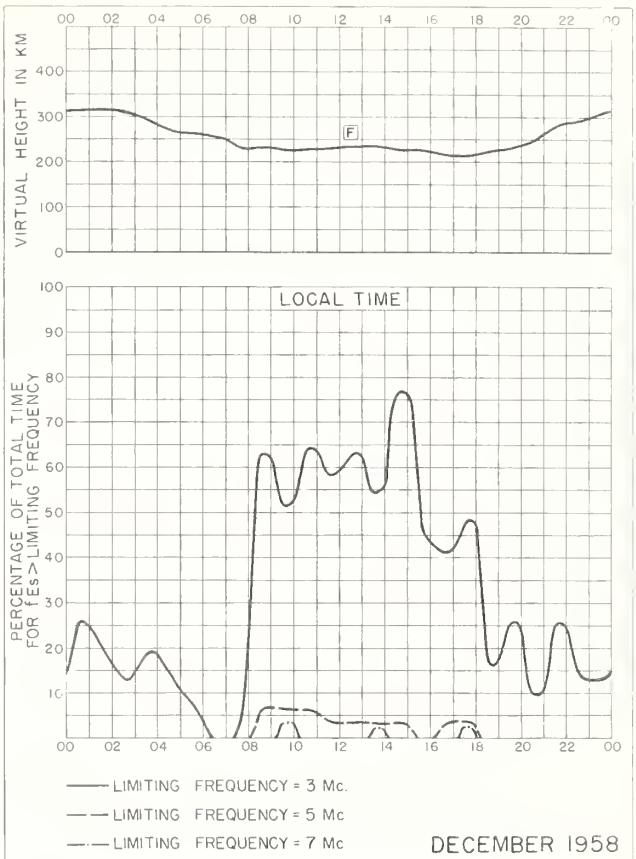


Fig. 98. LINDAU/HARZ, GERMANY DECEMBER 1958

NBS 490

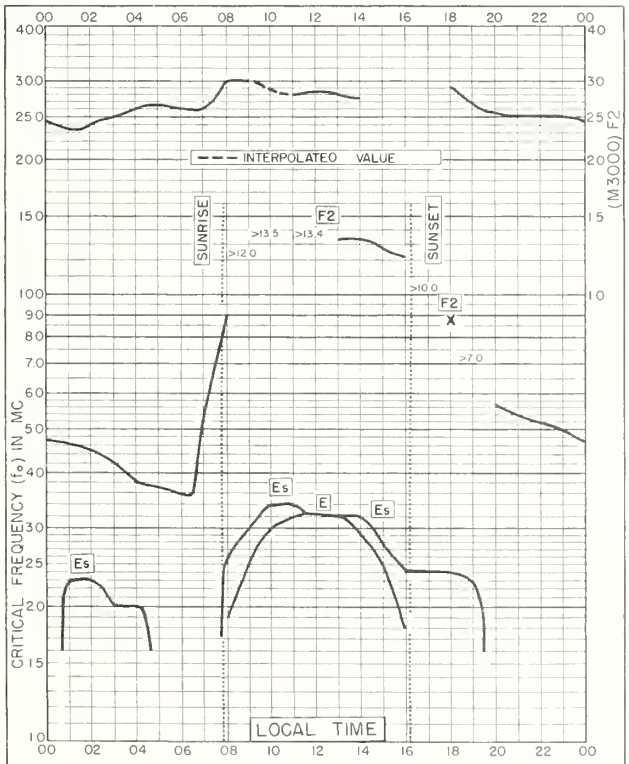


Fig. 99. POITIERS, FRANCE
46.6°N, 0.3°E DECEMBER 1958

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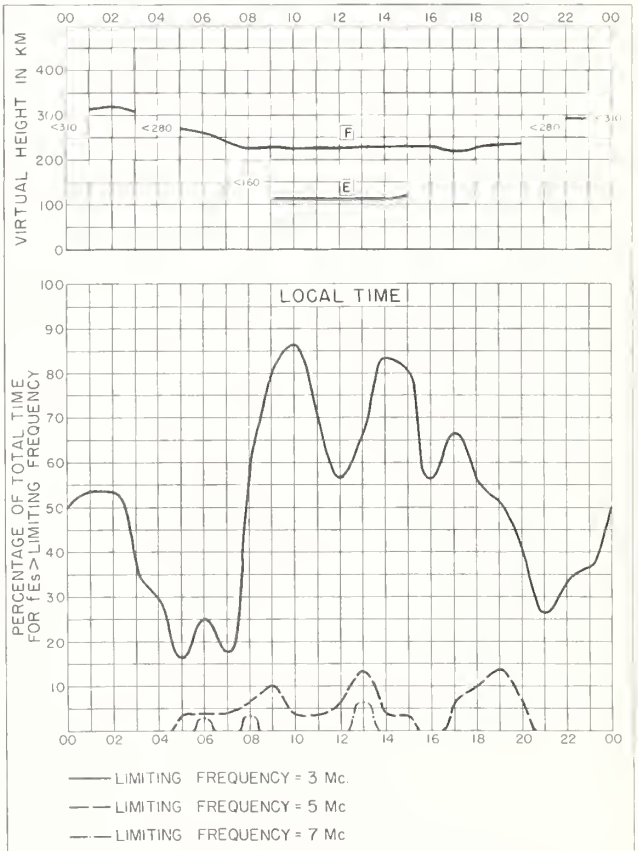

Fig. 100. POITIERS, FRANCE DECEMBER 1958

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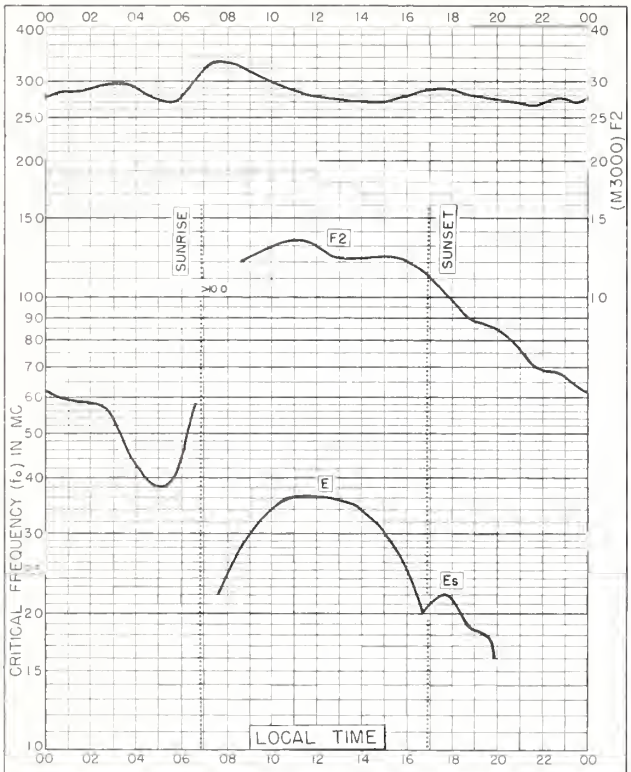

Fig. 101. RABAT, MOROCCO
30.9°N, 6.8°W DECEMBER 1958

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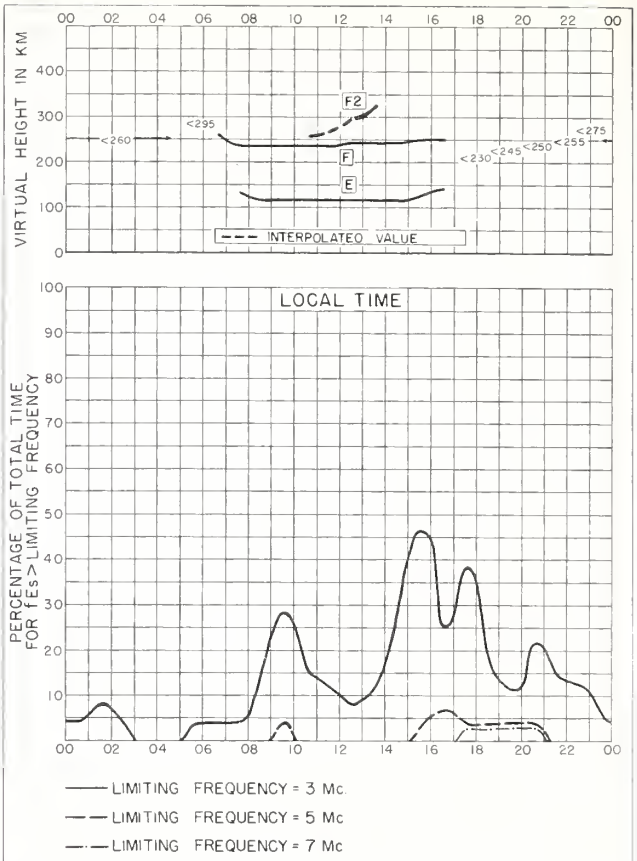

Fig. 102. RABAT, MOROCCO DECEMBER 1958

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Fig. 103. DAKAR, FRENCH W. AFRICA
14.8°N, 17.4°W DECEMBER 1958

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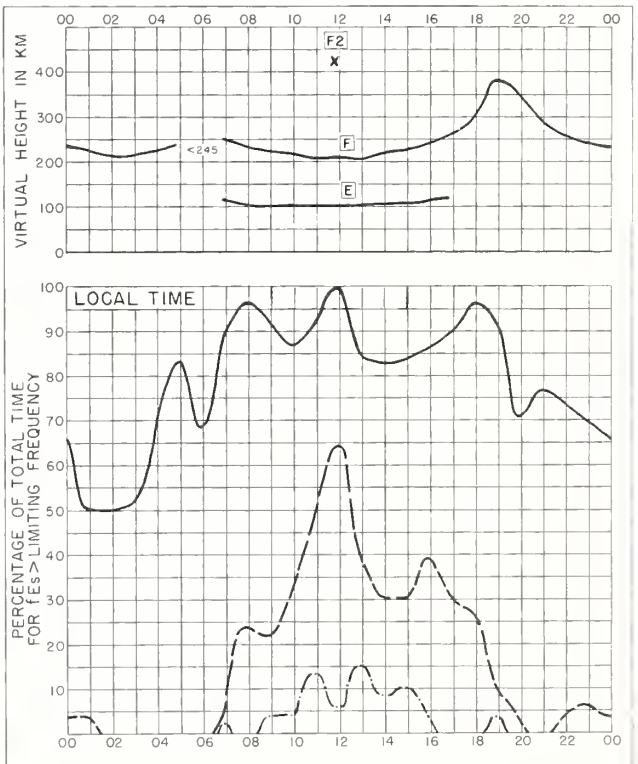


DECEMBER 1958

Fig. 104. DAKAR, FRENCH W. AFRICA

NBS 490

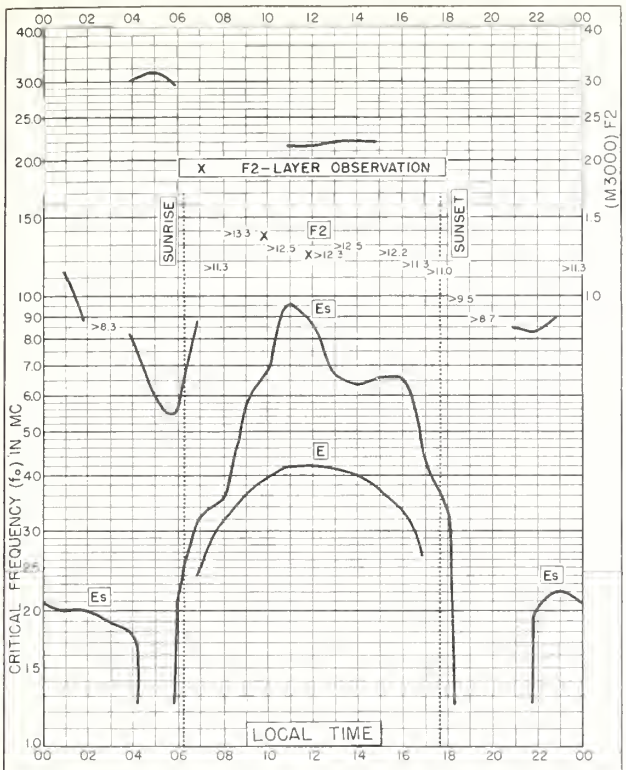
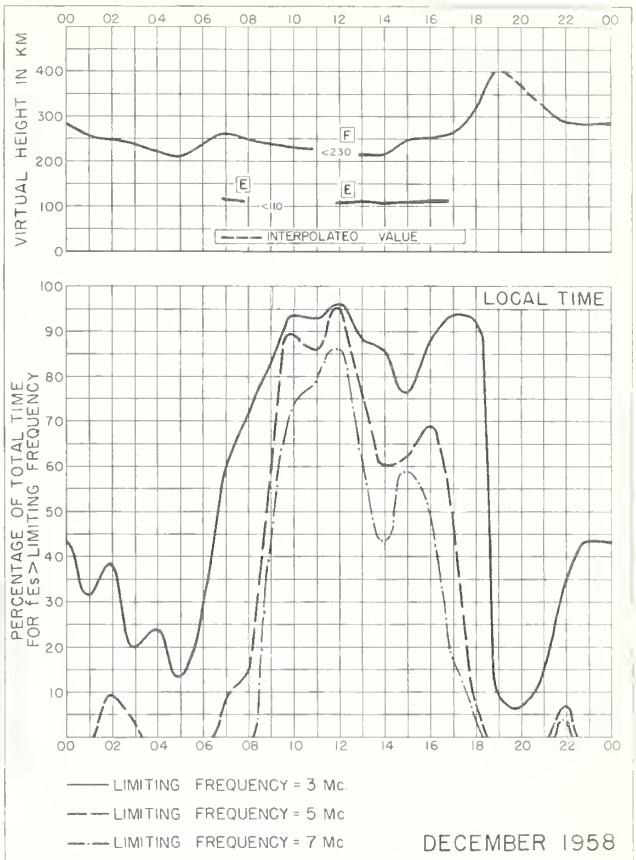


Fig. 105. DJIBOUTI, FRENCH SOMALILAND
11.6°N, 43.2°E DECEMBER 1958



DECEMBER 1958

Fig. 106. DJIBOUTI, FRENCH SOMALILAND

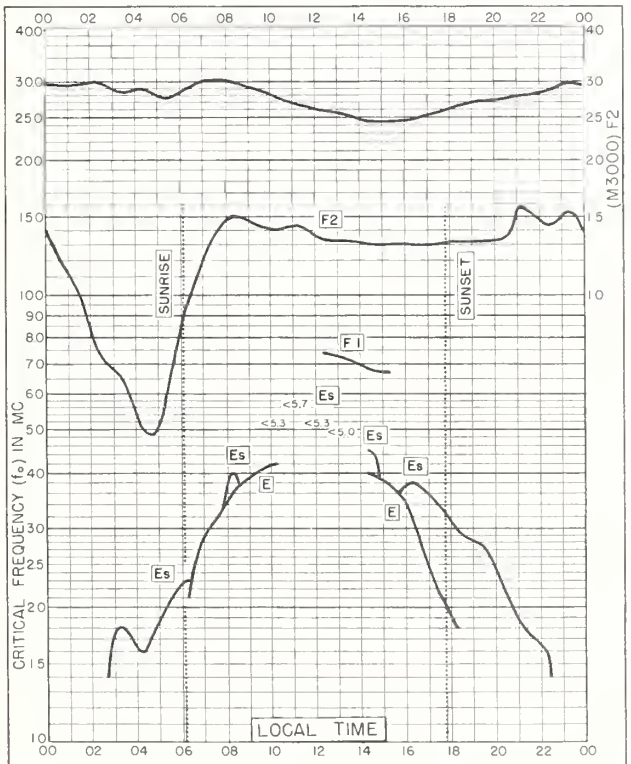


Fig. 107. PARAMARIBO, SURINAM
5.8°N, 55.2°W DECEMBER 1958

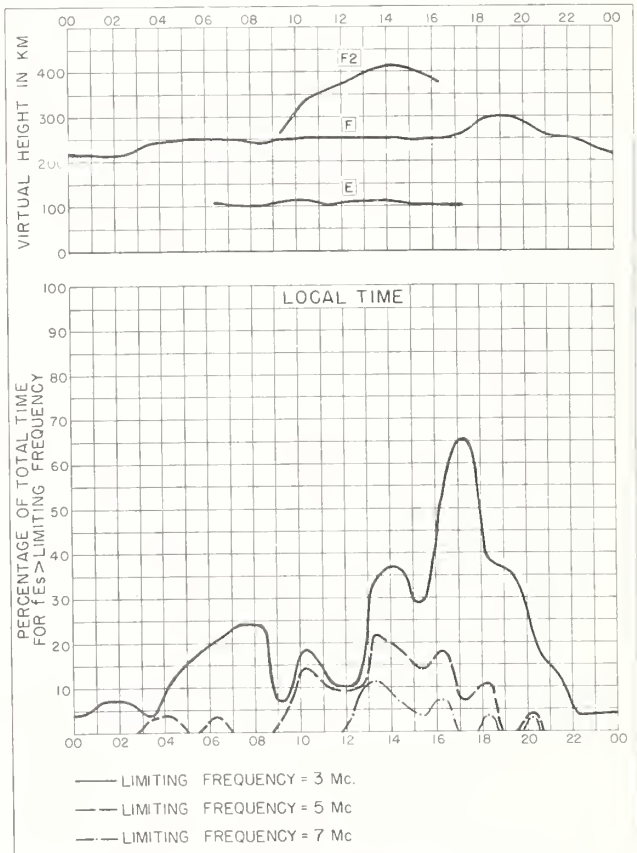


Fig. 108. PARAMARIBO, SURINAM DECEMBER 1958

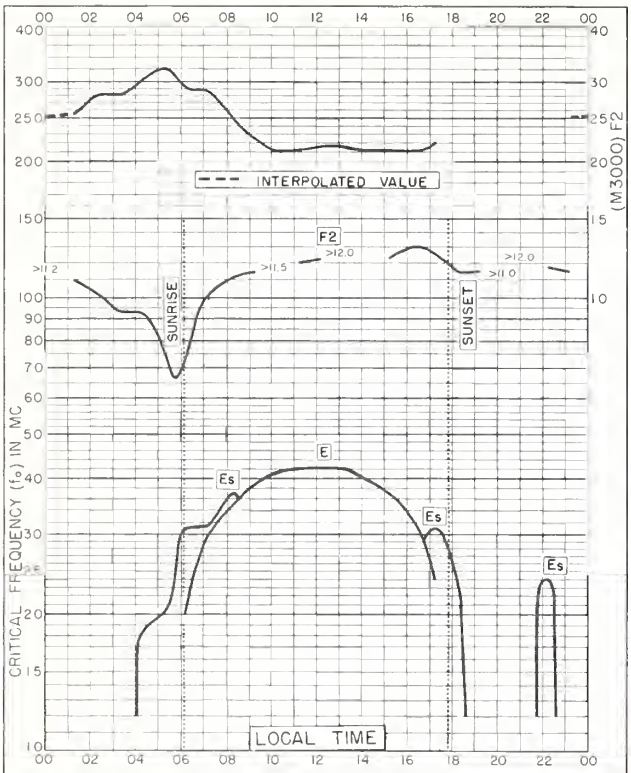
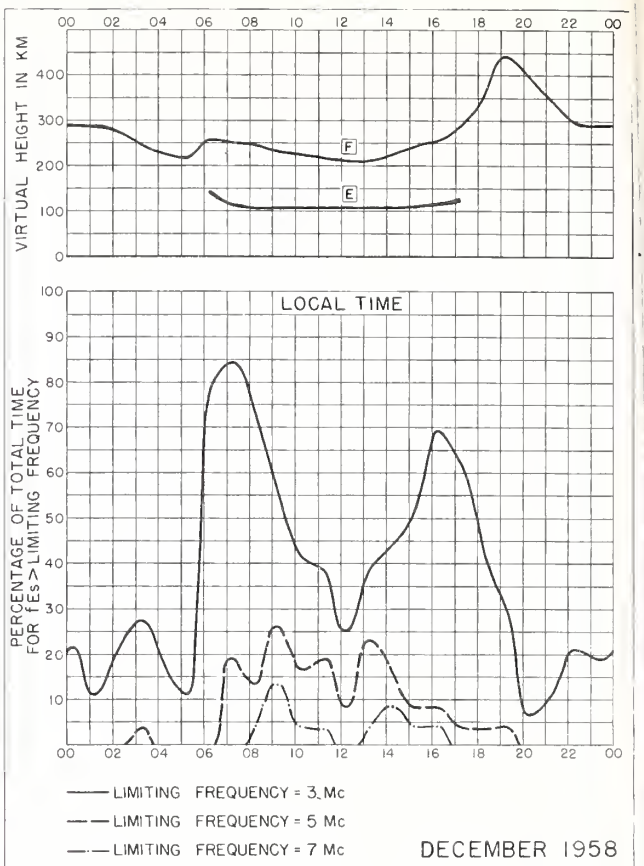


Fig. 109. BANGUI, FRENCH EQUATORIAL AFRICA
4.6°N, 18.6°E DECEMBER 1958

N8S 503



DECEMBER 1958

Fig. 110. BANGUI, FRENCH EQUATORIAL AFRICA

N8S 490

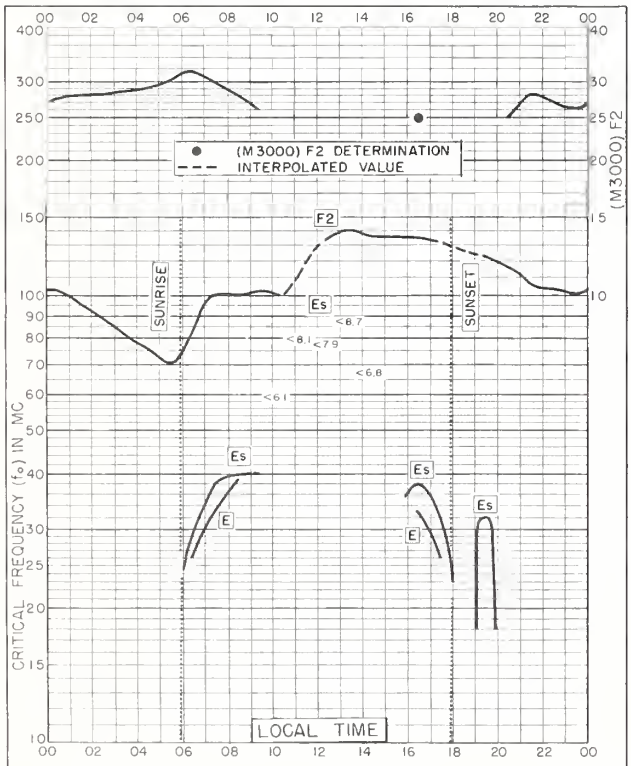
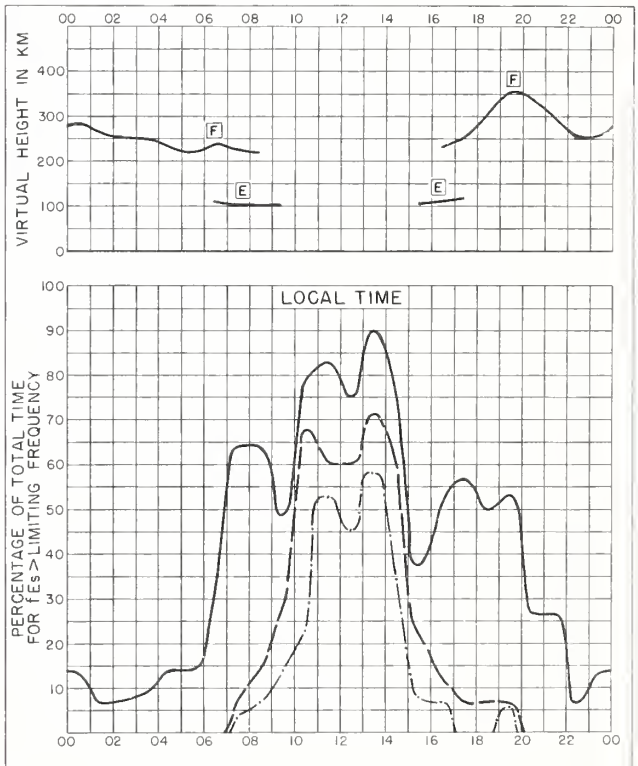


Fig. 111. HOLLANDIA, NETHERLANDS NEW GUINEA
2.5°S, 140.8°E DECEMBER 1958

N8S 503



DECEMBER 1958

Fig. 112. HOLLANDIA, NETHERLANDS NEW GUINEA

N8S 490

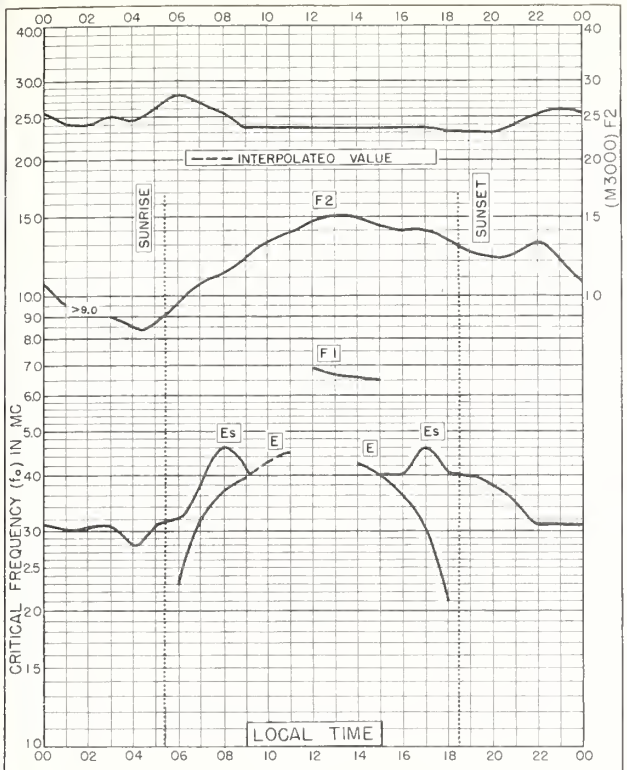


Fig. 113. TAHITI, SOCIETY IS.
17.7° S, 149.3° W DECEMBER 1958

NBS 503

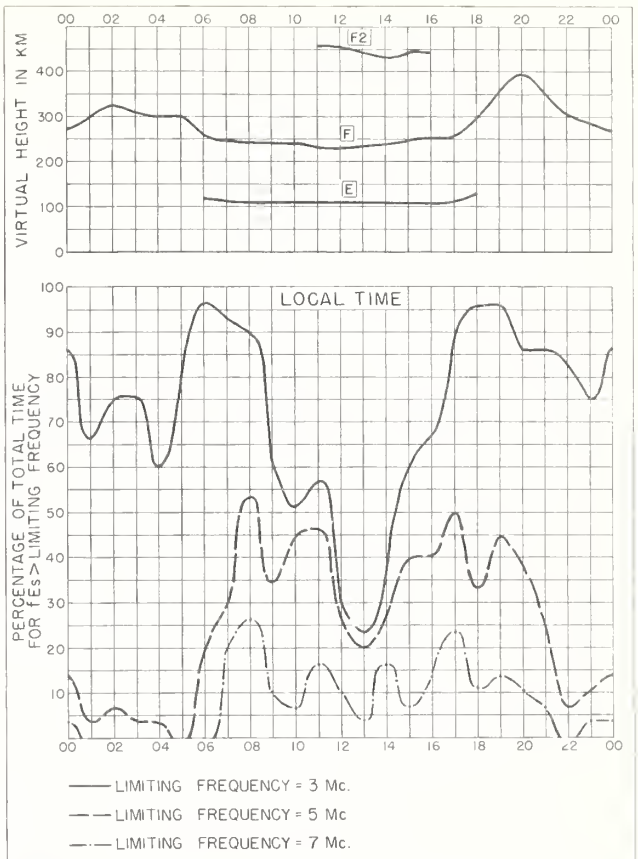


Fig. 114. TAHITI, SOCIETY IS. DECEMBER 1958

NBS 490

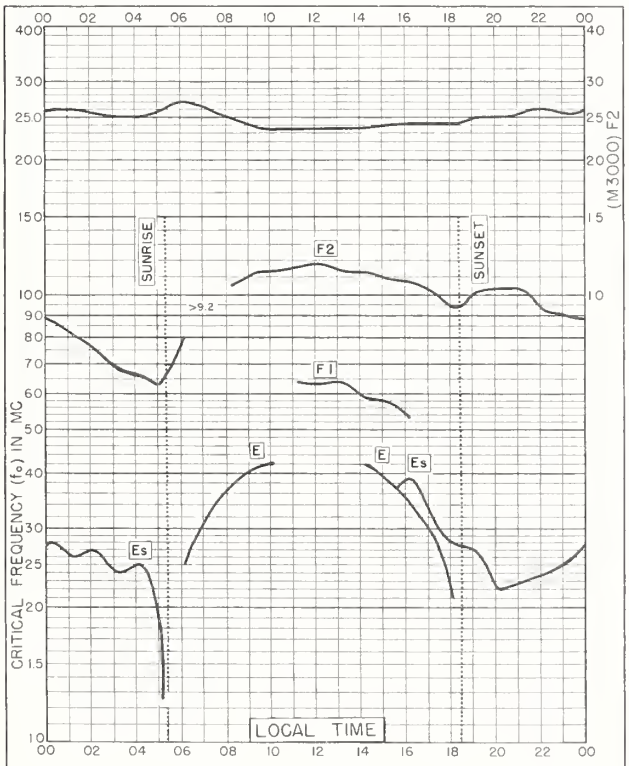


Fig. 115. TANANARIVE, MADAGASCAR
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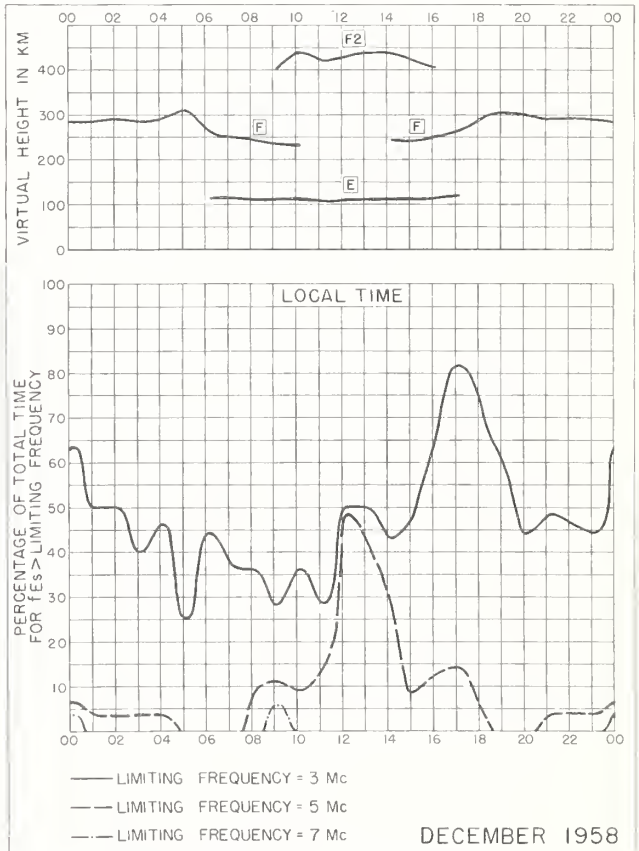

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Fig. 116. TANANARIVE, MADAGASCAR

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Fig. 117. TSUMEB, SOUTH W. AFRICA
19.2° S, 17.7° E DECEMBER 1958

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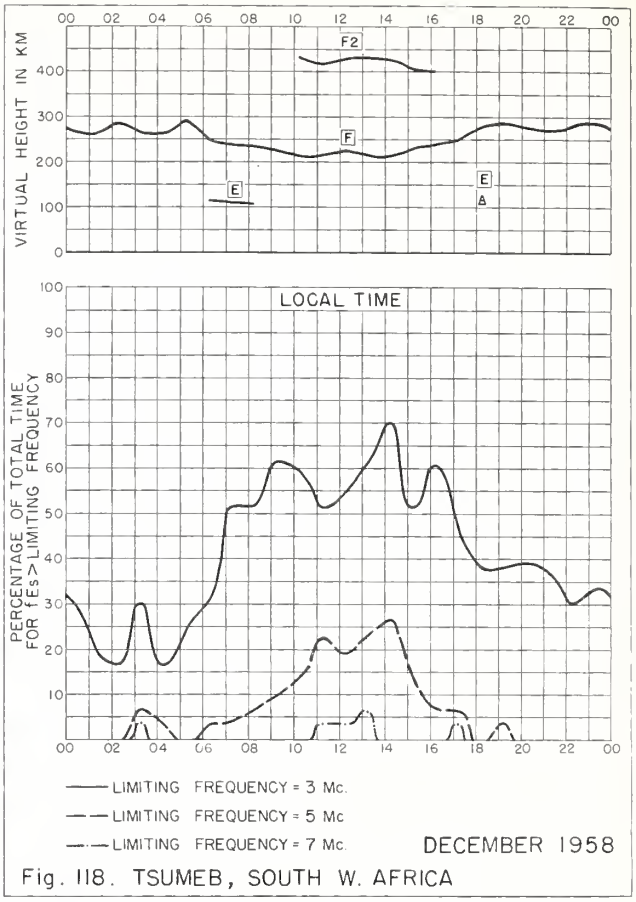

Fig. 118. TSUMEB, SOUTH W. AFRICA DECEMBER 1958

NBS 490

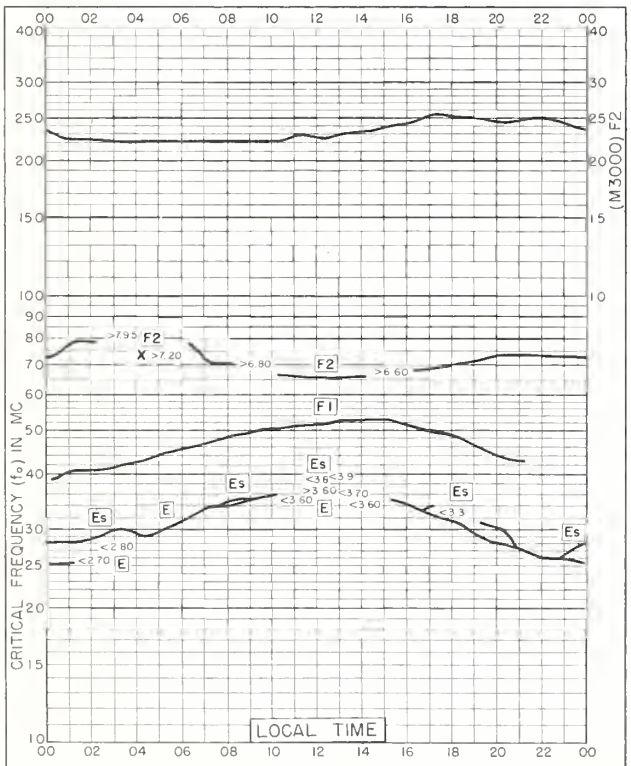

Fig 119. HALLEY BAY
75.5°S, 26.6°W DECEMBER 1958

NBS 503

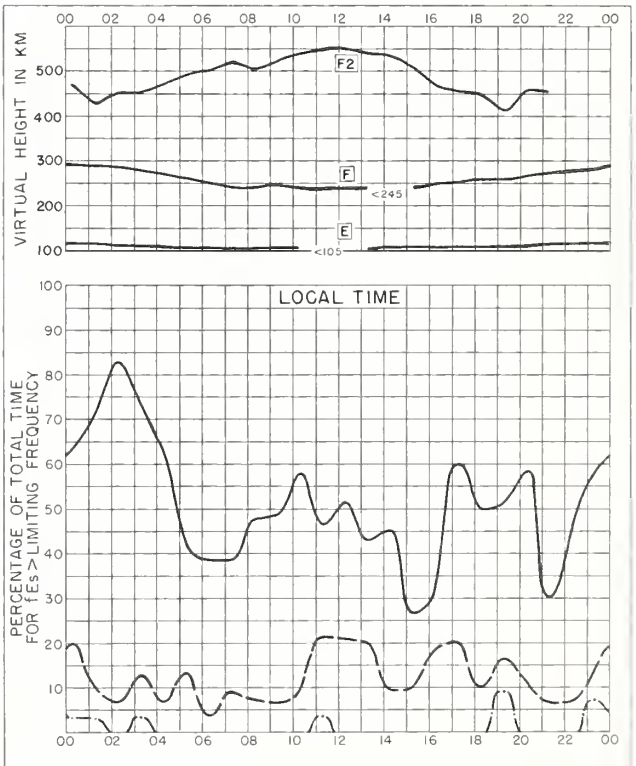

Fig. 120. HALLEY BAY DECEMBER 1958

NBS 490

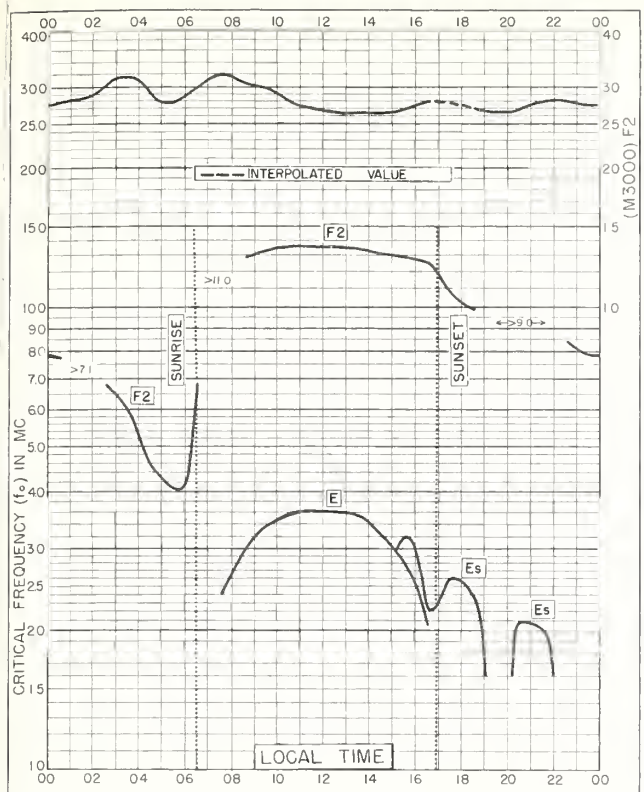

Fig. 121. RABAT, MOROCCO
30.9°N, 6.8°W NOVEMBER 1958

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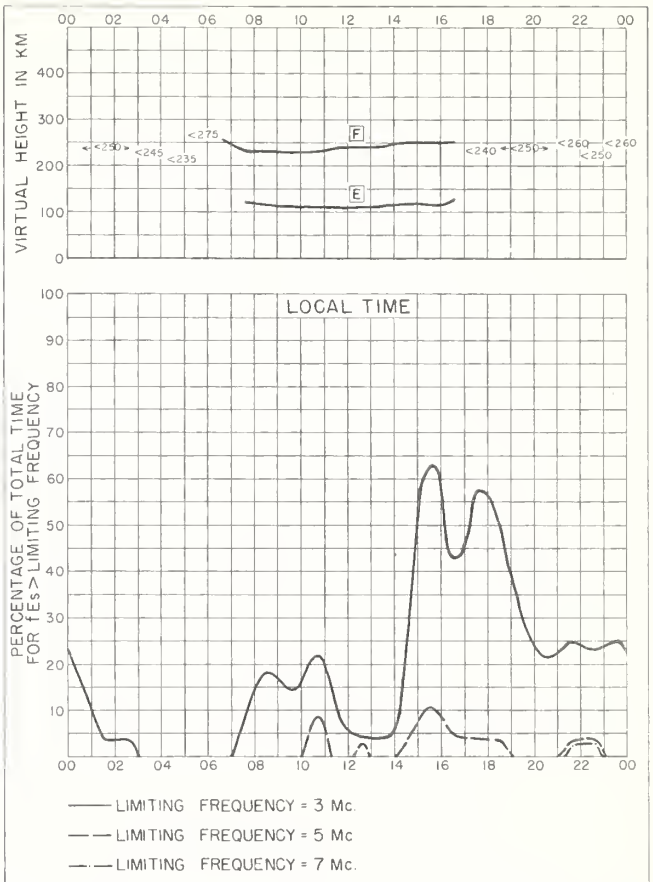

Fig. 122. RABAT, MOROCCO NOVEMBER 1958

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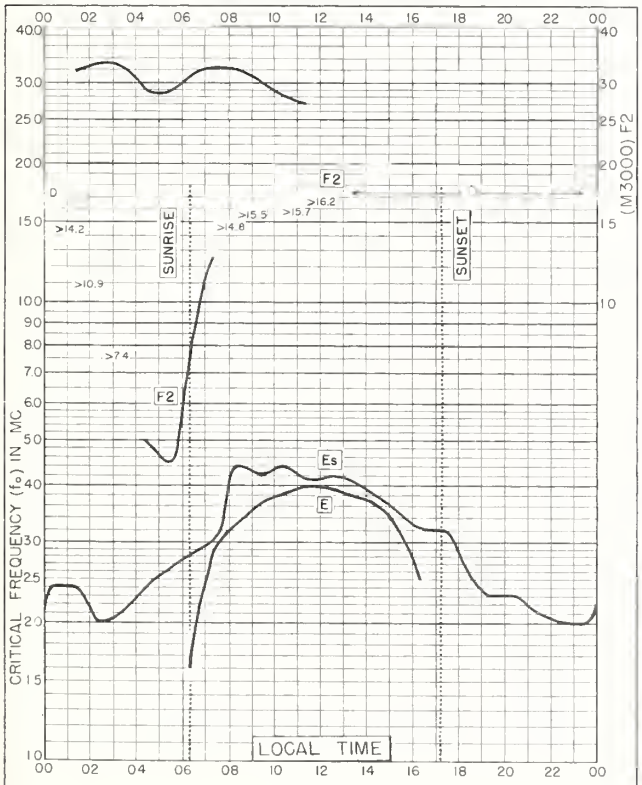

Fig. 123. TAMANRASSET, FRENCH W. AFRICA
22.8°N, 5.5°E NOVEMBER 1958

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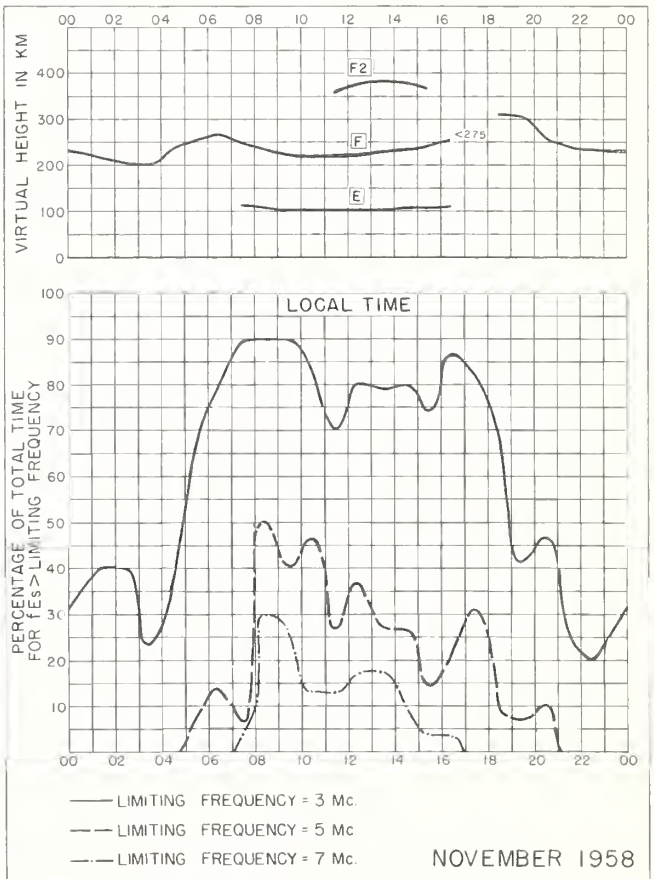

Fig. 124. TAMANRASSET, FRENCH W. AFRICA NOVEMBER 1958

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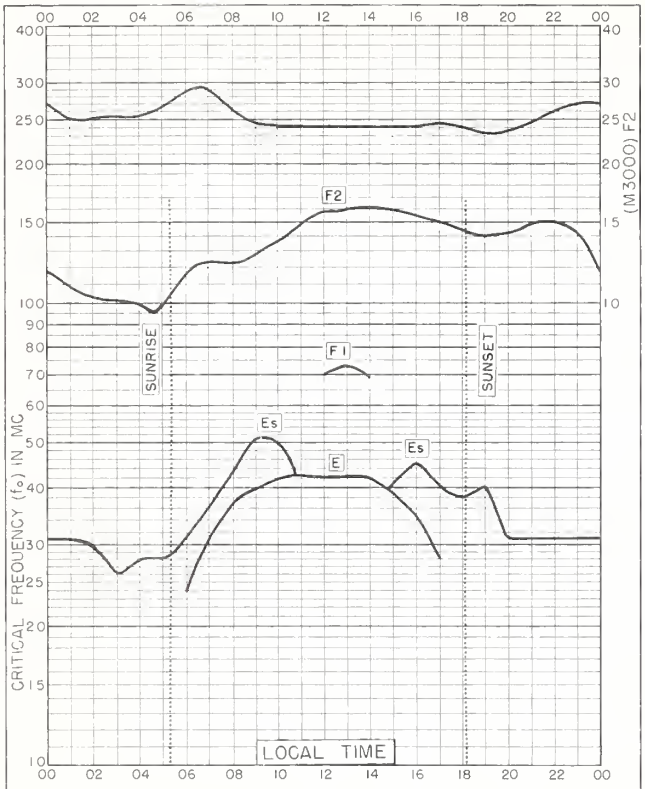

Fig. 125. TAHITI, SOCIETY IS.
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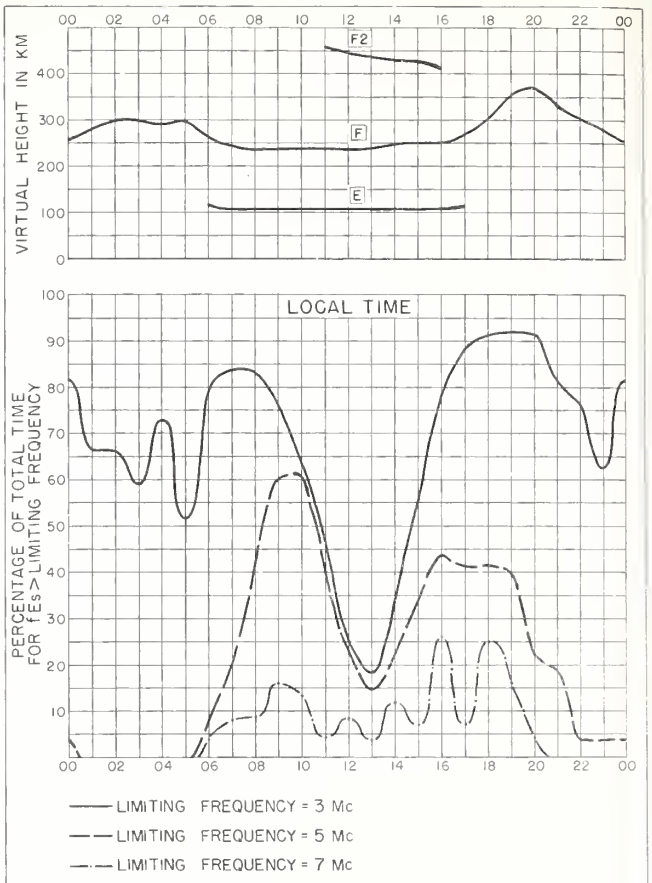

Fig. 126. TAHITI, SOCIETY IS. NOVEMBER 1958

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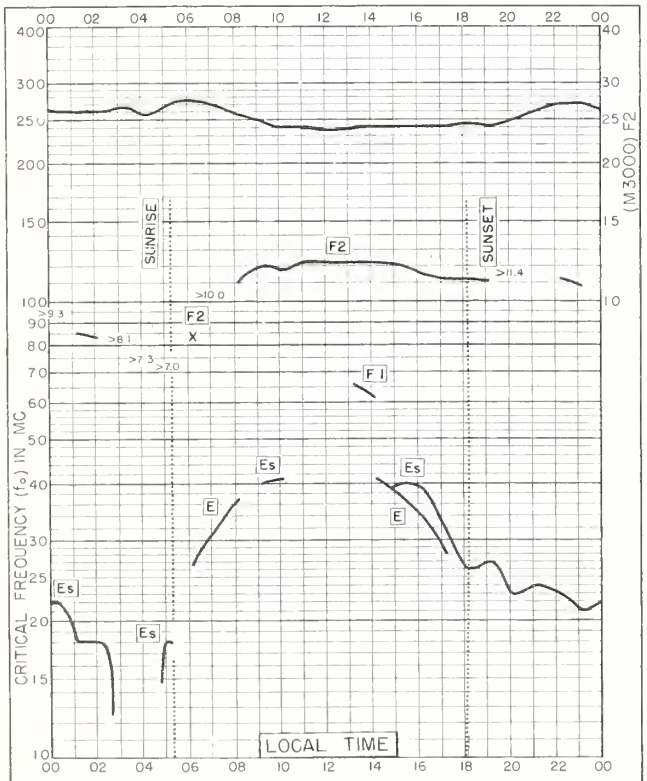

Fig. 127. TANANARIVE, MADAGASCAR
18.8°S, 47.5°E NOVEMBER 1958

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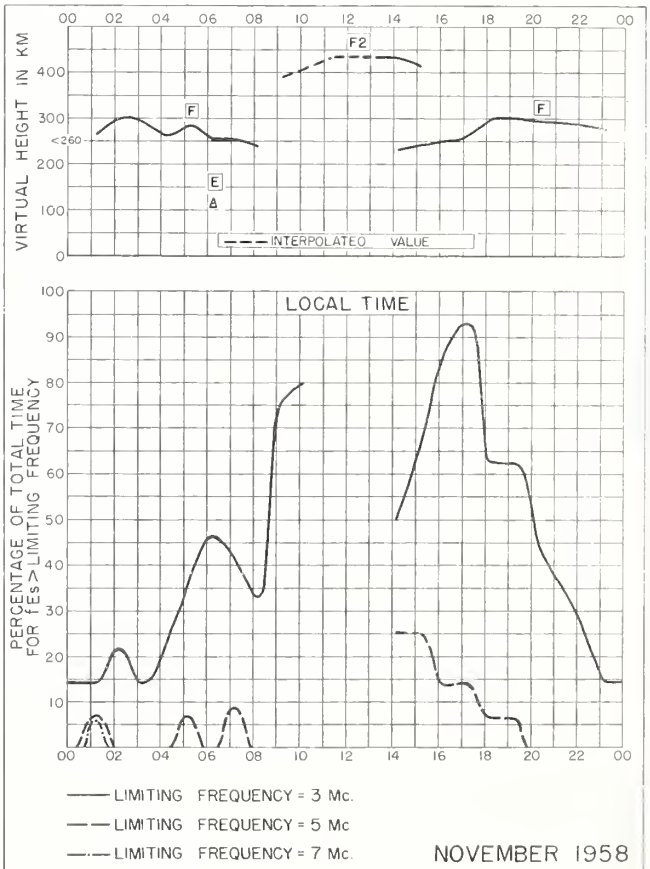

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Fig. 128. TANANARIVE, MADAGASCAR

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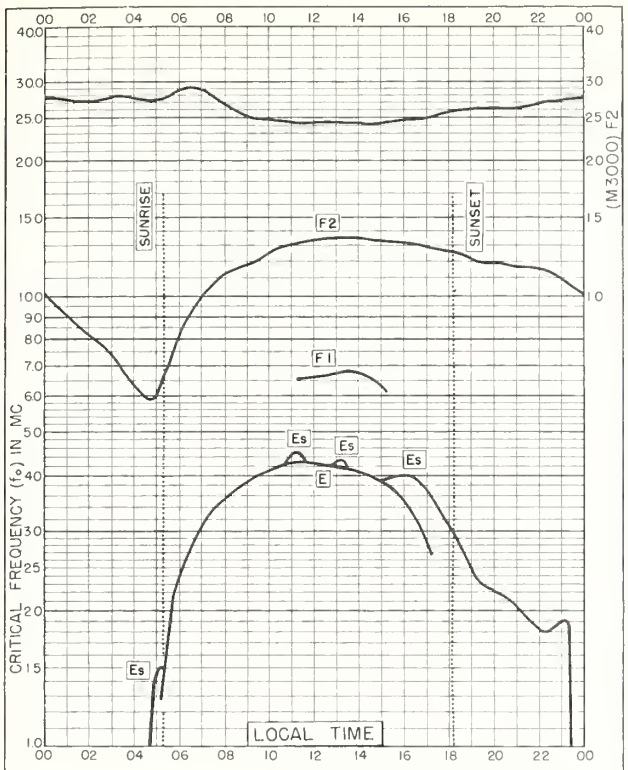

Fig. 129. TSUMEB, SOUTH W. AFRICA
19.2°S, 17.7°E NOVEMBER 1958

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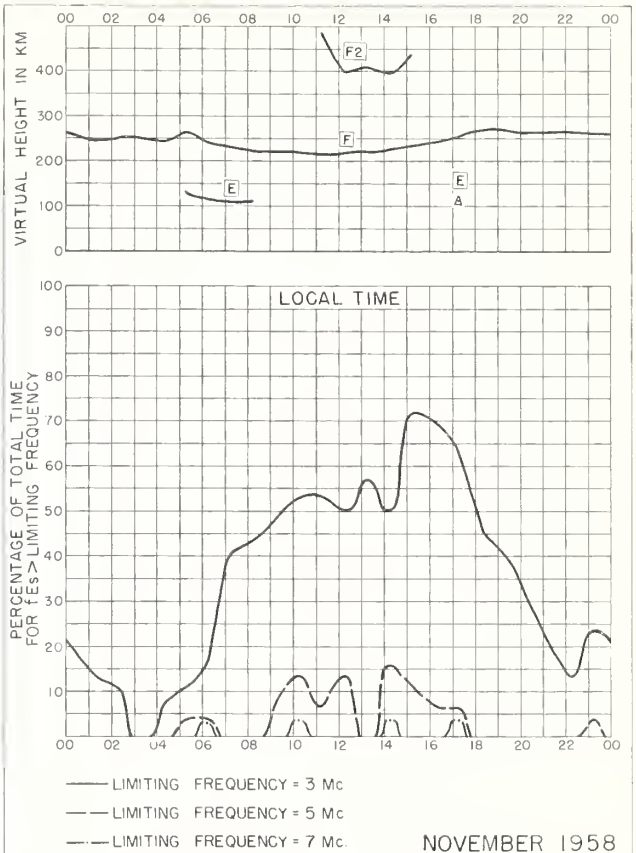

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Fig. 130. TSUMEB, SOUTH W. AFRICA

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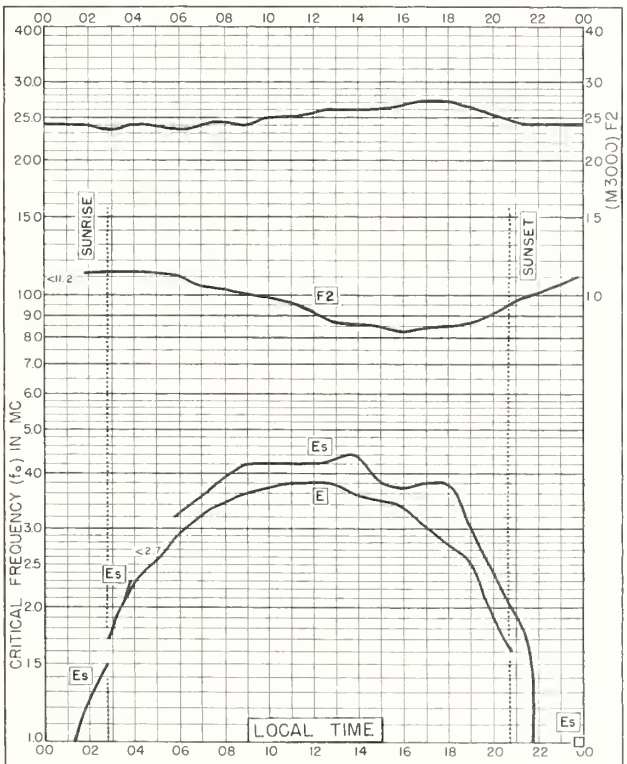

Fig. 131. PORT LOCKROY
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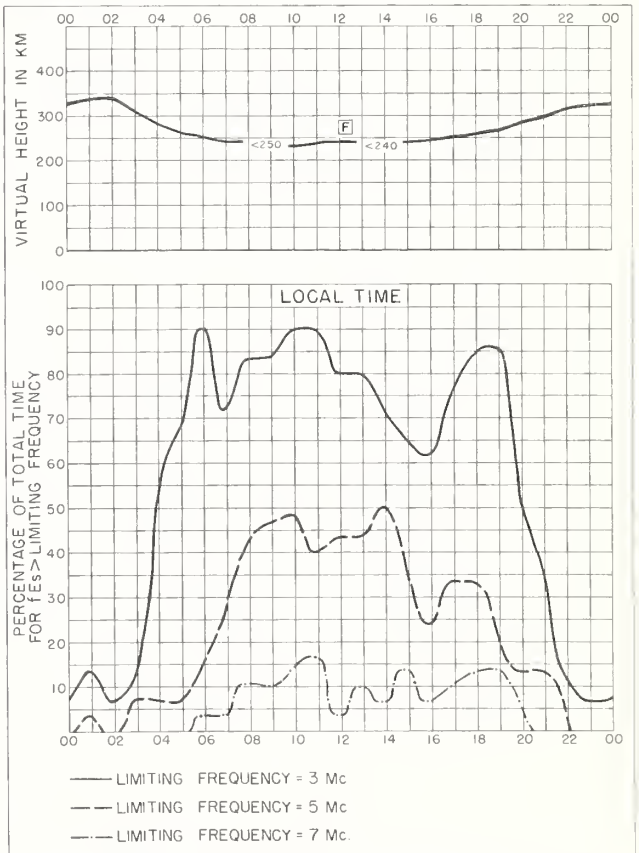

Fig. 132. PORT LOCKROY NOVEMBER 1958

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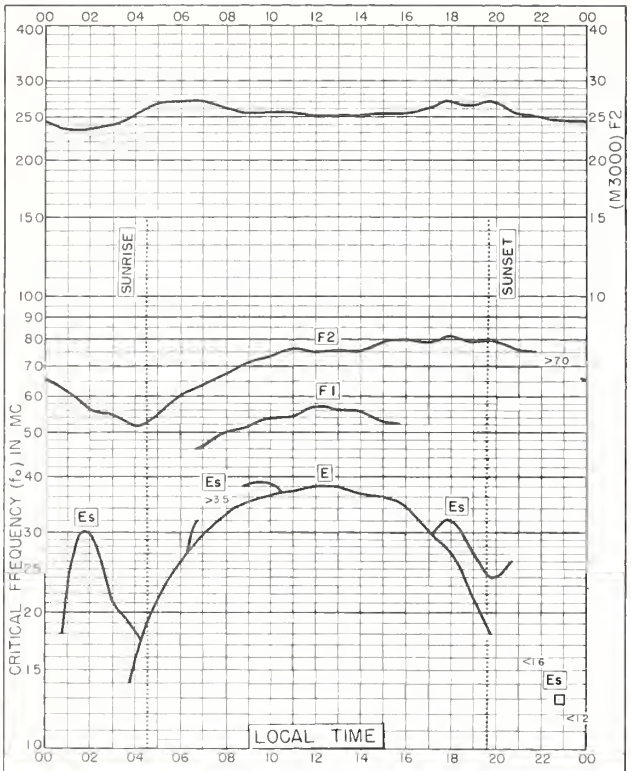

Fig. 133. INVERNESS, SCOTLAND
57.4°N, 4.2°W AUGUST 1958

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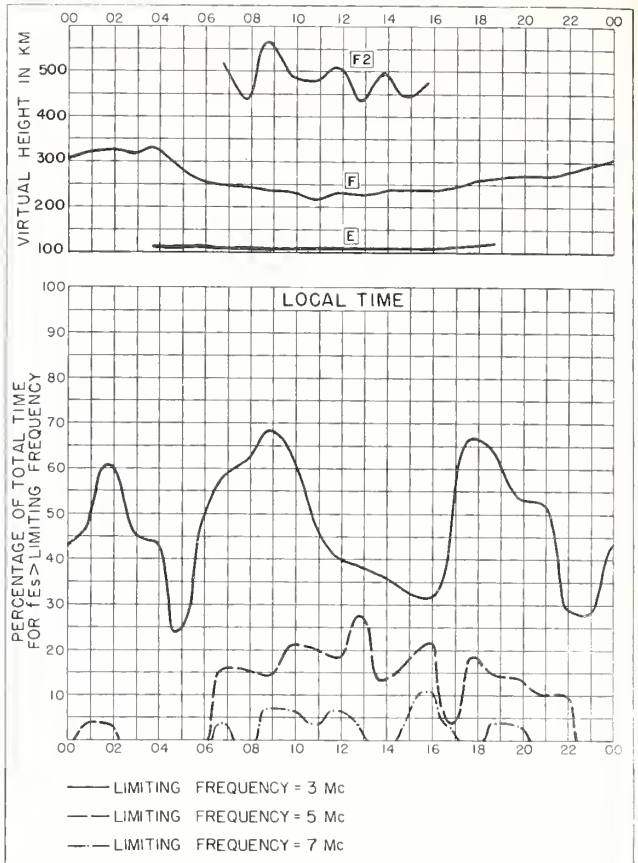

Fig. 134. INVERNESS, SCOTLAND AUGUST 1958

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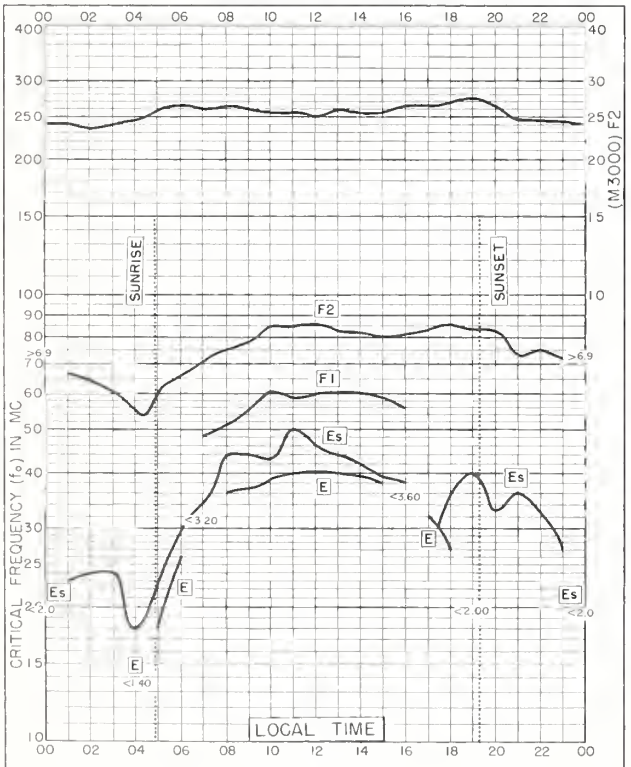

Fig. 135. SLOUGH, ENGLAND
51.5°N, 0.6°W AUGUST 1958

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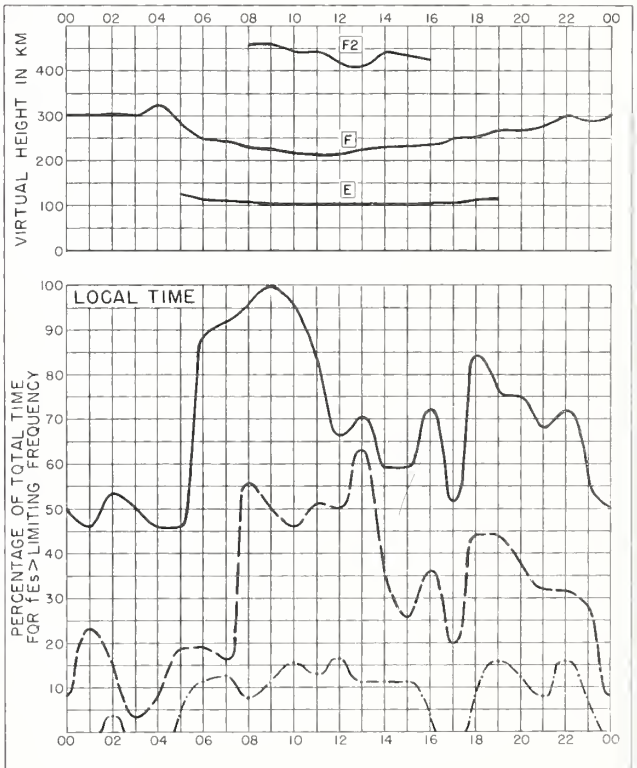

Fig. 136. SLOUGH, ENGLAND AUGUST 1958

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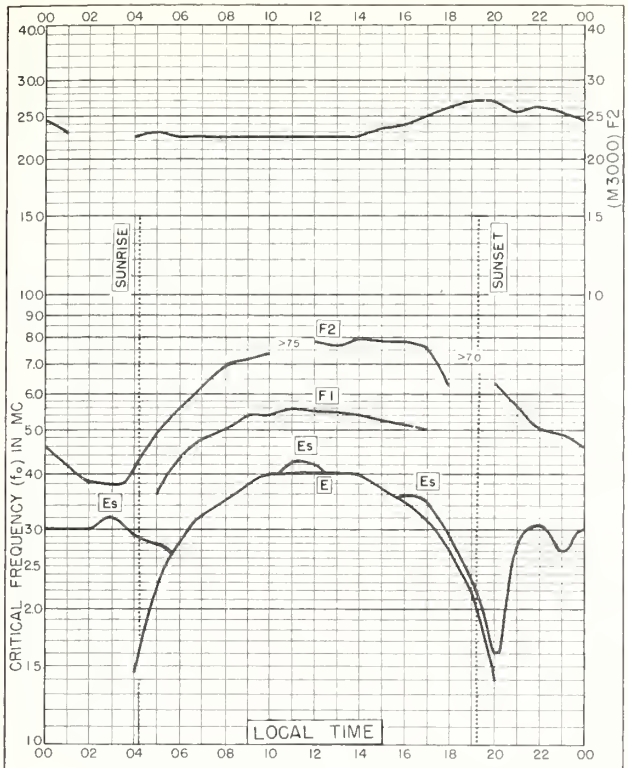

Fig. 137. KERGUELEN I.
49.4°S, 70.3°E NOVEMBER 1956

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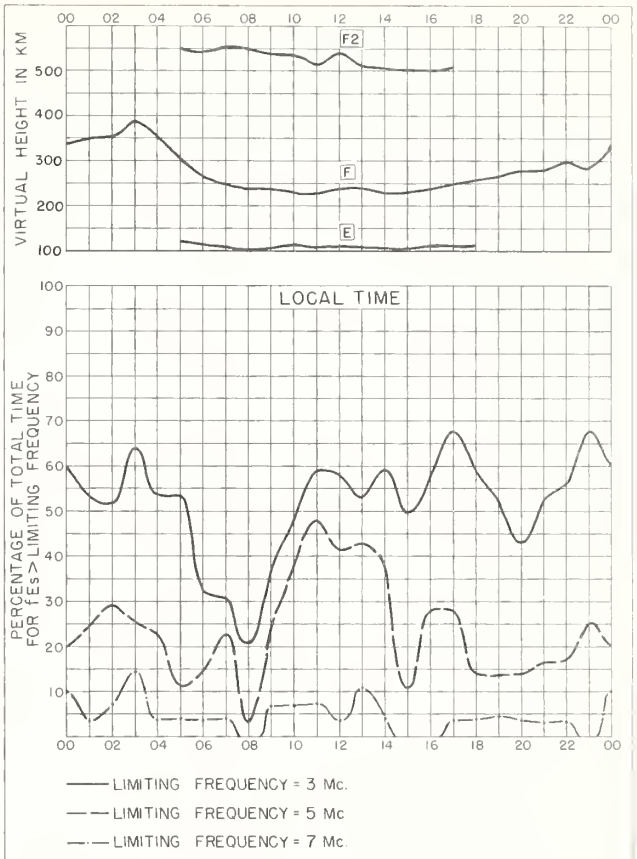

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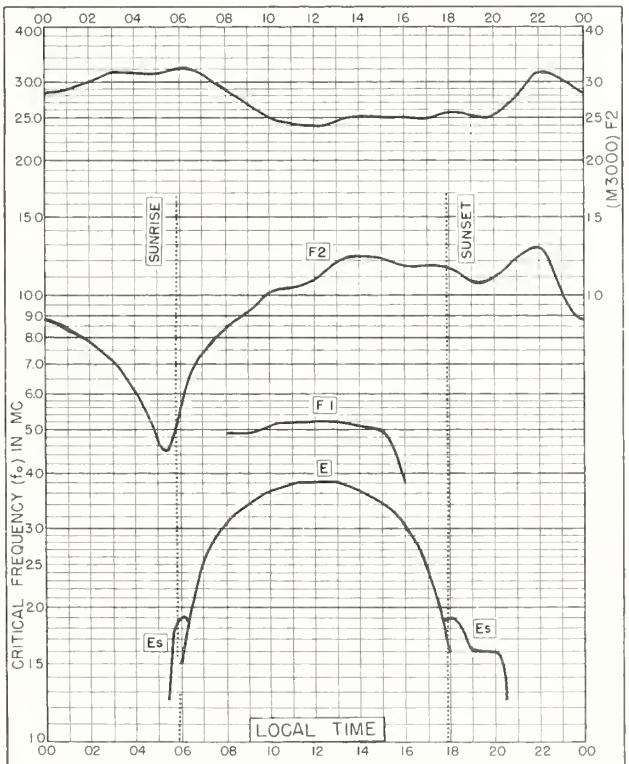

Fig. 139. LWIRO, BELGIAN CONGO
2.3°S, 28.8°E DECEMBER 1955

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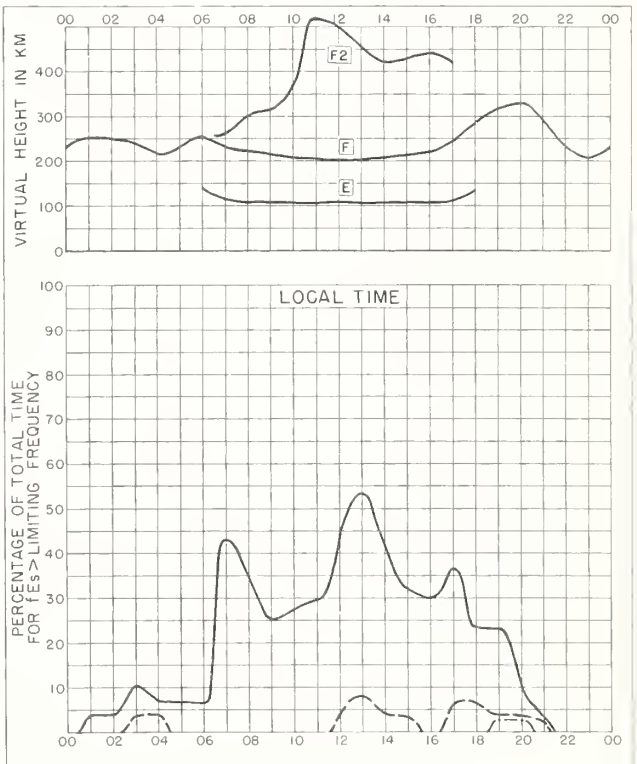

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Fig. 140. LWIRO, BELGIAN CONGO

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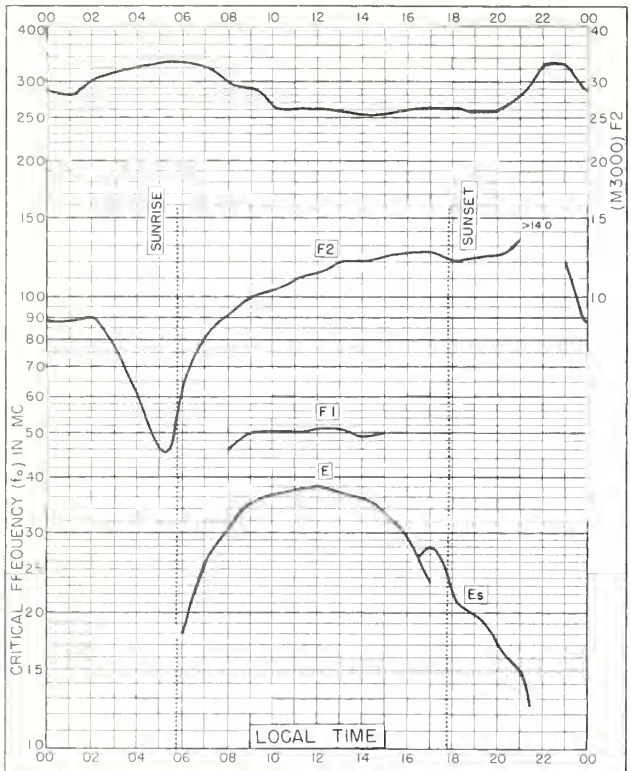

Fig. 141. LWIRO, BELGIAN CONGO
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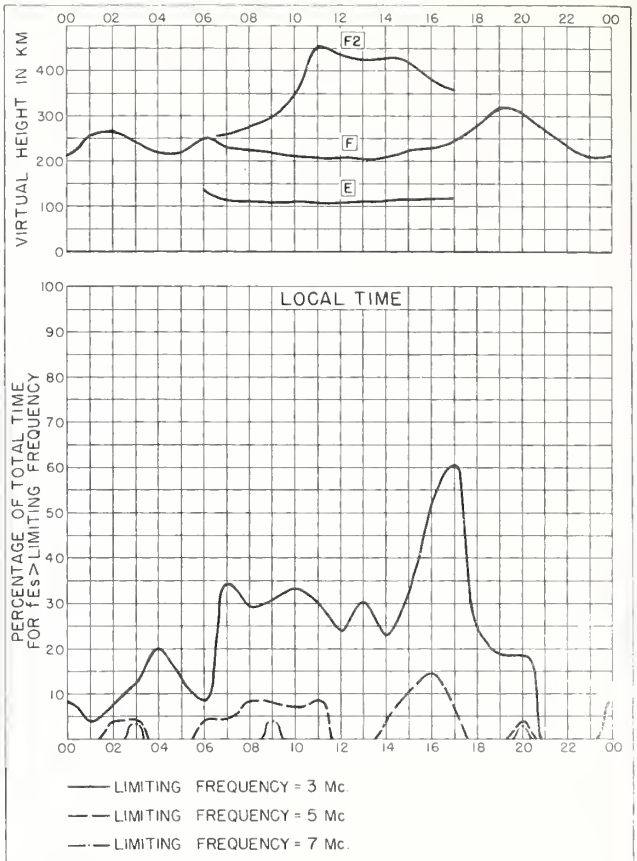

Fig. 142. LWIRO, BELGIAN CONGO NOVEMBER 1955

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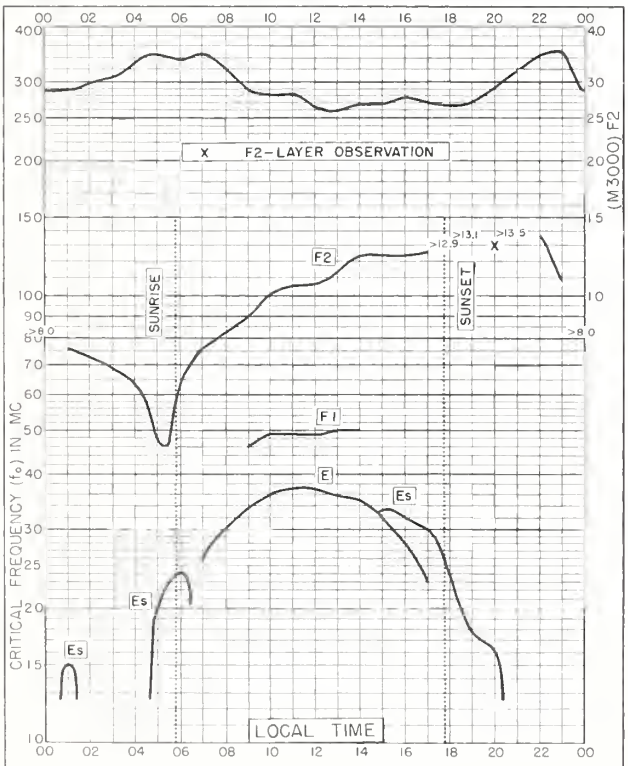

Fig. 143. LWIRO, BELGIAN CONGO
2.3°S, 28.8°E OCTOBER 1955

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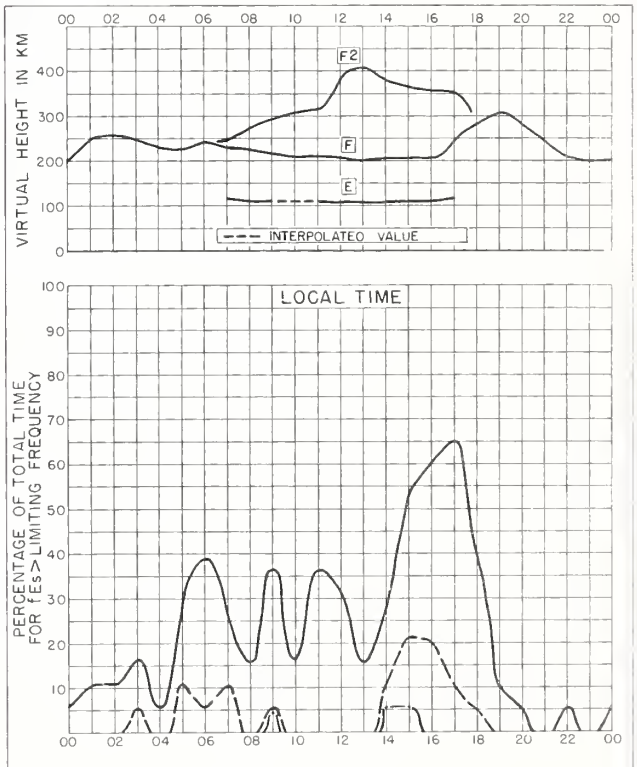

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Fig. 144. LWIRO, BELGIAN CONGO

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CRPL Reports

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

CRPL—F. (Part A). Ionospheric Data.
(Part B). Solar-Geophysical Data.

Limited distribution. These publications are in general disseminated only to those individuals or scientific organizations which collaborate in the exchange of ionospheric, solar, geomagnetic, or other radio propagation data.

Catalog of Data:

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

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

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

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Selected Technical Notes of the National Bureau of Standards:

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