CRPL-F 202 PART A

FOR OFFICIAL USE

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PART A
IONOSPHERIC DATA

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

IONOSPHERIC DATA

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SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1952, and continuing through December 1956, the symbols, terminology, and conventions for the determination of median values used in this report (CRPL-F series) conform as far as practicable to those adopted at the Sixth Meeting of the International Radio Consultative Committee (C.C.I.R.) in Geneva, 1951. Excerpts concerning symbols and terminology from Document No. 626-E of this Meeting are given on pages 2-7 of the report CRPL-F89, "Ionospheric Data," issued January 1952. Reprints of these pages are available upon request.

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

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

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

There was an expansion in meaning of the following:

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

Beginning with data for January 1945, median values are published wherever possible. Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data exist.

The following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given above.

- a. For all ionospheric characteristics:

Values missing because of A, C, F, H, L, N or R are omitted from the median count.

b. For critical frequencies and virtual heights:

Values of foF2 (and foE near sunrise and sunset) missing because of E are counted as equal to or less than the lower limit of the recorder. Values of h'F (and h'E near sunrise and sunset) missing for this reason are counted usually as equal to or greater than the median. Other characteristics missing because of E are omitted from the median count.

Values missing because of G are counted:

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

The symbol W is included in the median count only when it replaces a height characteristic; the descriptive symbol D, only when it replaces a frequency characteristic.

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

c. For MUF factor (M-factors):

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

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

d. For sporadic E (Es):

Values of fEs missing because of E or G are counted as equal to or less than the median foE, or equal to or less than the lower frequency limit of the recorder.

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

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

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

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

WORLD - WIDE SOURCES OF IONOSPHERIC DATA

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

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

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

University of Graz:
Graz, Austria

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

Belgian Royal Meteorological Institute:
Dourbes, Belgium

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

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

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

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

The Finnish Academy of Sciences and Letters:
Sodankyla, Finland

French National Center for Geophysical Studies:
Garchy, France

French National Center for Telecommunications Studies:
Bangui, French Equatorial Africa
Dakar, French West Africa
Djibouti, French Somaliland
Poitiers, France
Rabat, Morocco
Tahiti, Society Is.
Tamarassat, 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:
De Bilt, Holland
Hollandia, Netherlands New Guinea
Paramaribo, Surinam

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

Telecommunication Administration, Oslo, Norway:
Svalbard, Norway

Institute of Terrestrial Magnetism, Ionosphere and Radio Propagation,
Moscow, U.S.S.R.:
Murmansk

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
White Sands, New Mexico

National Bureau of Standards (Central Radio Propagation Laboratory):
Boulder, Colorado
Huancayo, Peru (Instituto Geofisico de Huancayo)
Talara, Peru (Instituto Geofisico de Huancayo)
Washington, D. C.

ERRATUM

CRPL-F201(A), p. 44, fig. 125: foF2 curve at 08.3 should read >12.7.

TABULATIONS OF ELECTRON DENSITY DATA

Reduction of hourly ionospheric vertical soundings to electron density profiles has become a part of the systematic ionospheric data program of the Central Radio Propagation Laboratory, National Bureau of Standards. Scalings of ionograms for this purpose are being provided by ionosphere stations operated by several stations associated with CRPL. For the present, the hourly profile data from one CRPL station, Puerto Rico, are appearing in the monthly CRPL-F Reports, Part A. The very considerable task of scaling the ionograms for this purpose is being undertaken by T. R. Gilliland, Engineer in Charge, Puerto Rico Ionosphere Sounding Station; the computations are performed at the NBS Boulder Laboratories by a group headed by J. W. Wright. Basic conversion of virtual to true heights uses the well-known matrix method developed by K. G. Budden of the Cavendish Laboratory, Cambridge University, programmed by Dr. H. H. Howe for a CDC-1604 computer.

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

<u>Quantity</u>	<u>Units</u>	<u>Remarks</u>
Electron Density (N)	$\times 10^3 = \text{electrons/cm}^3$	Body of table; given at each 10 km of height.
NMAX	$\times 10^3 = \text{electrons/cm}^3$	Always the highest value of N at each hour. To maintain this rule, the electron density at the next 10 km increment above HMAX is always given as exactly equal to NMAX (unless HMAX coincides with a 10 km level).
QUALification	(Alphabetic)	A standard scaling letter qualifying the observation when necessary.
KP		The standard Kp magnetic index, to one digit.
HMIN	Kilometers	The height of zero or very low electron density, obtained by linear extrapolation of the electron density vs. height curve.
SCAT	Kilometers	One half of the half-thickness of the parabola best fitting the upper portion of the F region profile. Approximates the scale height near the level HMAX.
HMAX	Kilometers	The height of maximum electron density, determined by fitting a parabola to the upper portion of the profile.
SHMAX	$\times 10^{10} = \text{electrons/cm}^2$ 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 FEB 1961
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100		
Q _z KP	1	1	0	A0	0	0	0	0	1	1	1	1		
HMIN	228	214	219	208	198	279	217	199	109	110	105	109		
SCAT	38.4	40.6	45.2	35.9	91.6	53.4	58.2	40.4	38.1	40.5	40.2	46.9		
HMAXF	303	308	308	269	337	360	332	285	249	249	260	289		
SHMAX	103	123	147	115	141	89	139	167	415	547	792	1081		
KM														
360							139							
350							138							
340							127	134	179					
330							127	128	179					
320							126	120	177					
310	198	214	251		124	110	173							
300	198	212	249		122	96.4	166							
290	192	203	241		119	77.5	156	310				1328		
280	180	189	227		115	12.4	146	309				1317		
270	161	170	209	262	110		131	299				1119	1277	
260	135	140	181	258	104		112	281				1119	1203	
250	105	106	141	244	98.8		90.4	255	707	834	1101	1108		
240	70.6	74.8	89.8	221	92.3		67.6	214	697	823	1044	967		
230	22.3	51.3	52.4	185	85.3		46.2	156	662	787	960	808		
220		24.9	6.1	110	75.6		12.4	95.9	609	724	837	655		
210				26.9	61.9			54.7	503	639	682	529		
200					28.3			5.3	363	520	530	428		
190									251	378	415	366		
180									180	281	340	324		
170									138	225	293	293		
160									110	187	260	263		
150									92.0	156	230	229		
140									82.1	135	200	189		
130									77.4	123	177	162		
120									72.8	115	154	151		
110									12.4	12.4	129	84.9		

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO													60 W	1 FEB 1961
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300		
Q _z KP	1	1	2	2	2	A1	1	1	1	F1	F1	F0		
HMIN	105	106	107	106	109	109	203	209	211			228	227	
SCAT	38.7	37.7	44.9	41.8	51.4	35.1	34.0	44.3	42.6			46.7	53.4	
HMAXF	266	258	254	260	283	264	253	286	312			321	333	
SHMAX	1101	822	703	656	778	558	245	203	182			230	233	
KM														
340													335	
330													382	335
320										298			382	331
310										298			376	320
300										292			362	303
290					906					362	276		339	281
280					906					360	254		307	254
270	1669				892	928				349	224		267	219
260	1659	1191	875	834	859	925	643	309	188				210	170
250	1599	1177	873	823	812	885	642	301	149				124	109
240	1485	1121	852	787	747	817	619	262	108				64.2	63.7
230	1315	1024	808	727	660	719	573	207	71.5				12.4	19.9
220	1065	881	744	651	557	582	486	135	44.5					
210	787	724	667	564	459	428	274	38.9						
200	568	565	585	482	378	303								
190	430	439	502	412	318	227								
180	358	361	425	353	273	177								
170	314	318	354	303	237	140								
160	284	287	302	262	207	113								
150	260	253	269	228	181	96.2								
140	237	220	232	194	159	85.5								
130	207	187	192	160	135	79.9								
120	174	171	170	139	119	75.2								
110	151	147	135	127	76.1	49.0								

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO													60 W	2 FEB 1961
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100		
Q _z KP	0	0	0	0	0	0	0	0	S1	1	A1	A0		
HMIN	226	227	224	195	299	266	240	210	110	109		109		
SCAT	43.7	38.3	32.5	15.4	49.3	49.0	44.5	39.2	31.2	33.9		43.8		
HMAXF	309	309	283	223	378	365	339	308	250	257		275		
SHMAX	168	176	185	90	69	93	94	134	429	701		943		
KM														
380							112							
370							111	139						
360							108	139						
350							103	136						
340							94.6	130	156					
330							85.0	121	155					
320							72.9	109	149					
310	298	342			57.9	94.5	139	257						
300	295	337			12.4	79.3	126	254						
290	284	319	46.9			62.9	108	243						
280	265	293	46.8			47.0	87.9	225				1215		
270	240	253	451			16.8	64.9	199				1211		
260	204	200	418				42.6	157				1177		
250	156	137	347					108	794	1130		1111		
240	97.0	70.4	213					59.9	775	1066		1015		
230	41.6	20.3	73.0					4.1	717	960		889		
220									613	809		736		
210									477	637		596		
200									330	476		486		
190									233	351		401		
180									177	283		339		
170									140	240		299		
160									113	205		267		
150									94.8	171		238		
140									83.2	143		208		
130									78.5	126		174		
120									73.8	117		154		
110									12.4	76.1		117		

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO								60 W		2 FEB 1961			
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
Q _z KP	A0	0	0	50	0	0	0	0	1	1	1	F0	
HMIN		107	105	104	108	110	199	200	199	239	208	227	
SCAT		54.1	39.9	42.6	50.6	38.8	38.3	36.1	55.5	40.8	48.2	31.7	
HMAXF		297	273	270	281	272	282	258	315	334	311	283	
SHMAX		1258	900	789	745	614	420	187	184	168	199	96	
KM													
340											286		
330											285		
320										235	277	304	
310										234	261	304	
300		1420								230	235	300	
290		1413			834		834			223	202	290	240
280		1384	1215		834	917	833			210	166	270	240
270		1328	1213	1050	824	917	815			195	129	247	231
260		1255	1181	1036	798	896	765	432	176	90.6	219	209	
250		1153	1100	992	754	861	691	426	155	53.5	184	178	
240		1006	1002	973	696	762	594	404	132	5.8	141	127	
230		834	855	825	627	653	438	370	109		92.2	40.7	
220		672	698	699	550	522	234	300	87.4			54.8	
210		532	558	559	472	396	98.4	192	65.1			12.4	
200		423	450	423	401	148	93.8	12.4	12.4	12.4			
190		371	377	368	344	231							
180		333	329	300	296	189							
170		305	295	266	258	159							
160		280	265	237	226	136							
150		254	232	210	198	117							
140		228	193	180	171	103							
130		199	166	152	148	93.8							
120		172	153	138	132	87.9							
110		145	144	128	122	3	12.4						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W

3 FEB 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
	F0	F0	F1	F1	1	4	4	4	5	5	5	A3
HMIN	259	238		200	198	287	226	200	108	108	108	108
SCAT	47.1	32.4		57.4	69.5	46.0	59.6	36.4	32.5	42.1	55.2	47.2
HMAXF	341	300		304	319	377	353	284	257	273	291	271
SHMAXF	131	111		162	139	117	194	179	418	690	1071	939
KW												
380						189						
370						187						
360						182	240					
350	219					170	240					
340	219					155	237					
330	216					137	231					
320	208				156	117	221					
310	194			219	156	94.6	207					
300	177	262		219	153	62.1	192			1240		
290	154	257		216	150	19.6	172	362				
280	123	238		210	144	149	361			939	1248	1215
270	86.1	209		200	136		120	349		938	1196	1215
260	12.4	163		187	127	89.6	322	716		918	1144	1198
250		98.7		172	116	64.8	284	707	869	1070	1154	
240		26.9		152	105	46.0	226	664	798	976	1083	
230				127	92.5	16.3	150	589	704	854	983	
220				97.8	77.0		89.1	490	587	707	884	
210				63.0	56.3		50.8	367	465	559	681	
200				2.6	12.4			263	367	463		
190								197	298	353	418	
180								156	248	300	340	
170								125	210	261	294	
160								102	175	227	262	
150								87.9	143	191	235	
140								81.3	127	159	208	
130								77.5	121	141	179	
120								73.6	115	132	154	
110								53.1	58.7	78.1	97.9	

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W

3 FEB 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q,KP	A3	3	A2	2	A2	A2	2	1	1	1	2	2
H _{min}	109	107	109	107			211	200	218	207	260	254
SCAT	55.2	52.1	60.5	47.8			43.7	47.5	48.6	48.2	49.0	50.7
HMAXF	307	300	304	285			291	284	314	331	354	355
SHMAX	1159	1266	1200	941			485	339	218	237	220	213
KW												
360											335	310
350											335	309
340										335	328	303
330										335	315	292
320									335	331	294	273
310	1215	1433	1240						335	320	267	249
300	1211	1433	1239				875		328	300	233	220
290	1187	1419	1223	1096			875	573	315	274	193	186
280	1144	1378	1191	1093			860	572	293	242	150	149
270	1086	1308	1141	1069			821	561	267	205	98.1	108
260	996	1221	1076	1016			761	536	231	164		53.7
250	880	1098	907	106			674	505	188	126		
240	752	947	885	861			563	540	141	94.0		
230	625	786	771	758			414	368	91.4	66.4		
220	514	635	648	645			177	266	28.3	45.6		
210	435	508	528	536				156		12.4		
200	381	420	420	445				12.4				
190	345	361	358	375								
180	318	325	314	323								
170	296	296	282	283								
160	275	269	251	251								
150	253	240	219	223								
140	227	210	183	194								
130	197	185	160	167								
120	175	170	151	150								
110	120	140	97.8	98.8								

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W

4 FEB 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q _{MAX}	A2	2	2	2	2	1	1	2	5	5	5	A4
H _{KMP}		232	227	202	233	291	210	228	109	108	107	107
SCAT		45.4	34.5	33.6	87.8	52.6	55.8	41.4	41.7	34.8	68.3	44.6
H _{MAX}		324	290	264	401	391	324	299	265	252	312	294
SH _{MAX}		264	234	238	282	188	166	187	532	525	1047	1215
KM												
410					240							
400					240	274						
390					239	274						
380					237	271						
370					233	263						
360					227	250						
350					220	234						
340					210	211						
330	466				199	181	219					
320	466				187	146	218				960	
310	436				175	104	215				960	
300	415	540			161	58.0	208	362			953	1555
290	385	540			145		198	357			935	1553
280	342	528			128		184	342			906	1520
270	283	493	599		111		167	316	834		871	1447
260	203	439	597	92.2			146	281	831	875	821	1340
250	111	343	575	70.4			123	227	807	874	761	1188
240	54.8	202	528	41.9			70.4	149	761	849	692	1004
230		56.1	42				97.8	48.9	688	785	618	819
220			255				47.1		581	689	533	643
210			74.9				1.1		426	560	455	505
200									299	471	392	406
190									210	300	344	345
180									155	229	305	303
170									122	186	270	272
160									100	147	235	247
150									87.4	120	196	221
140									80.7	109	157	187
130									76.3	104	139	153
120									71.8	99.2	130	137
110									38.9	55.7	98.7	122

ELECTRON DENSITY

RAMFAY AFB, PUERTO RICO

60 W

4 FEB 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Ω _{KP}		A4	A7	A7	7	A7	7	7	6	6	6	6
H _{MIN}	110			109	108	108	208	211	227	190	210	228
SCAT	55.1			58.8	78.6	69.1	46.5	49.0	56.3	55.1	44.8	43.5
HMAXF	31.0			330	349	343	357	307	364.3	360	303	327
SHMAX	1335			1457	1702	1499	984	908	778	724	385	359
FM												
370									960			
360							1446		954			
350					1446	1433	1438		933			
340					1442	1432	1397		896			
330				1446	1426	1420	1319		885	854		590
320				1437	1398	1392	1207		780	823		587
310	1433			1406	1359	1350	1076	1446	699	789	670	566
300	1422			1355	1299	1284	951	1438	611	739	669	532
290	1388			1271	1233	1212	734	1400	512	686	655	423
280	1326			1180	1166	1132	536	1331	417	625	625	481
270	1236			1076	1083	1024	346	1232	318	557	578	345
260	1140			953	972	895	208	1107	219	483	510	256
250	816			828	848	762	135	951	133	402	418	169
240	878			701	721	673	93.3	710	69.3	324	280	188.8
230	741			584	603	511	65.0	423	20.3	255	149	24.6
220	618			494	502	411	44.3	135		183	68.3	
210	507			425	417	330	8.2			103	3.7	
200	424			372	356	269				12.4		
190	365			329	309	225						
180	321			292	269	191						
170	284			259	235	164						
160	254			229	203	141						
150	226			197	175	122						
140	187			170	149	106						
130	159			155	129	95.8						
120	149			145	118	89.2						
110	124.6			65.5	85.3	73.8						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 5 FEB 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q _z FP	6	6	5	5	4	4	4		A2	A2	2	A2
HMJN	229	203	242	266	269	207	209	237			109	
SCAT	60.5	39.2	46.0	56.5	51.4	60.7	43.6	33.4			31.5	
HMAXF	153	288	325	391	389	352	288	301			266	
SHMAX	412	255	191	204	176	227	68	131			1158	
KM												
400				262								
390				262	240							
380				260	238							
370				254	232							
360	500			243	221	262						
350	500			228	205	262						
340	494			211	185	260						
330	481		329	187	161	254						
320	460		328	158	134	244						
310	434		320	127	107	230		304				
300	402		304	97.0	79.7	213		304				
290	364	492	284	68.4	57.6	193	119	295				
280	323	488	251	47.5	40.9	170	118	273				
270	273	465	202	16.4	5.1	143	114	240		2294		
260	217	431	141			117	106	180		2275		
250	148	377	76.0			91.9	96.6	103		2151		
240	79.5	298				71.2	83.5	36.8		1915		
230	12.4	199				54.5	66.5			1490		
220		114				40.7	47.6			1009		
210		52.6				9.2	7.0			583		
200										388		
190										311		
180										265		
170										231		
160										199		
150										170		
140										147		
130										129		
120										120		
110										104		

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 5 FEB 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q _z FP	A2	2	1	A1	1	A1	1	1	2	2	2	2
HMJN	108	106	108	110				218	200	208	199	306
SCAT	62.5	49.8	53.4	45.1				35.3	41.0	42.5	64.8	42.2
HMAXF	320	303	288	283				287	277	281	318	378
SHMAX	1158	959	745	626				328	238	107	108	75
KM												
390												161
380												143
370												142
360												137
350												128
340												115
330		1096										97.3
320		1096										127
310		1088	1050									126
300		1067	1049									125
290		1029	1032	794	745		754		198	121		44.6
280		980	992	789	744		746	446	198	116		15.9
270		919	932	771	730		707	443	195	109		
260		842	853	736	696		642	428	186	101		
250		755	752	690	645		527	398	172	91.3		
240		658	627	632	580		330	357	153	80.5		
230		552	513	560	501		119	300	127	68.5		
220		458	425	476	421		26.9	225	91.0	55.1		
210		384	365	394	351			131	30.0	41.5		
200		336	327	333	298			12.4				
190		308	301	295	261							
180		292	282	269	232							
170		271	267	249	207							
160		248	248	229	185							
150		224	223	206	165							
140		196	193	181	145							
130		169	165	160	127							
120		152	151	149	116							
110		130	131	78.1	12.4							

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 6 FEB 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q _z FP	2	2	F5	5	F5	F4	F4	4	F4	4	A4	5
HMJN	301	272	231	218	196		332	212	109	109		
SCAT	59.5	44.3	42.2	30.3	57.1		41.6	42.4	34.6	31.4		55.7
HMAXF	412	352	314	279	308		409	312	246	241		292
SHMAX	139	118	126	106	97		53	147	487	571		1175
KM												
420	179											
410	179						97.2					
400	177						96.1					
390	173						92.3					
380	164						85.6					
370	157						76.6					
360	146	208					64.7					
350	132	208					48.8					
340	114	205					26.5					
330	94.0	195										
320	69.5	182	229					246				
310	44.1	162	229		127			245				
300		135	223		126			240			1341	
290		98.2	211		124			226			1341	
280		54.5	195	262	119			208			1327	
270			168	256	113			184			1291	
260			130	236	103			151			1233	
250			82.3	203	92.5			111	917	1050	1159	
240			46.5	149	80.5			79.5	910	1049	1055	
230				83.3	67.1			55.4	868	1018	918	
220				22.3	52.9			33.8	792	935	753	
210					41.0				657	791	605	
200					12.4				464	579	474	
190									278	420	385	
180									191	304	330	
170									143	241	292	
160									115	202	258	
150									96.6	171	223	
140									83.7	144	189	
130									78.1	126	163	
120									72.5	116	151	
110									43.1	62.8	84.9	

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 6 FEB 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q _z FP	5	5	53	A3	A3	A3	A3	A3	A3	3	3	3
HMJN	105	107	108				199	218	209	280	266	228
SCAT	47.9	61.2	53.0				38.6	31.3	38.0	54.9	49.6	43.3
HMAXF	283	319	317				292	285	275	398	371	326
SHMAX	1116	1427	1604				657	362	166	180	200	189
KM												
400										240		
390										239		
380										234	298	
370										225	298	
360										210	294	
350										193	284	
340										172	268	
330										148	247	310
320		1433	1786							118	218	308
310		1425	1777							86.2	180	299
300		1399	1739				1240			59.7	139	281
290		1341	1353	1668			1240	875		41.0	96.4	255
280		1339	1279	1564			1212	869	342		62.6	222
270		1315	1197	1433			1144	823	340		26.2	183
260		1261	1101	1267			1032	735	325			141
250		1171	971	1116			874	588	301			97.0
240		1065	821	920			675	399	267			57.0
230		932	679	745			454	179	221			12.4
220		787	562	598			248	32.2	158			
210		644	468	482			110		38.9			
200		525	400	402			12.4					
190		428	353	347								
180		361	319	306								
170		317	291	273								
160		283	263	243								
150		250	229	206								
140		209	182	175								
130		182	160	158								
120		170	152	150								
110		155	142	116								

7 FEB 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
χ^2_{RDP}		3	3	F2	2	2	2	2	S2	2		1
HMIN	249	238	281	229	220	288	197	199	109	109	109	107
SCAT	44.7	54.0	34.6	39.8	41.0	53.6	37.9	36.7	43.6	43.4	51.3	41.5
HMAXF	334	341	336	298	283	393	289	267	248	257	298	273
SHMAX	170	186	109	165	115	131	132	130	366	504	961	1062
FM												
400						184						
390						184						
380						181						
370						174						
360						165						
350			262			154						
340	286	262	262			139						
330	285	260	260			120						
320	279	252	248			97.3						
310	265	241	224			73.5						
300	243	224	190	335		69.9						
290	215	203	122	332	235	12.4	240			1050		
280	181	178				237					1018	1555
270	141	148		293	239	225	274				969	1553
260	92.9	110		259	216	205	272			643	905	1517
250	12.4	62.4		210	198	177	259	532	638	824	1433	
240		12.4		122	171	143	238	527	617	718	1292	
230				12.4	121	106	205	508	578	611	1139	
220					12.4	72.9	160	478	524	516	905	
210						48.5	97.8	430	460	442	664	
200						12.4	12.4	363	396	381	472	
190								291	338	334	366	
180								220	286	298	306	
170								165	243	269	270	
160								128	205	243	241	
150								105	175	214	204	
140								86.8	150	182	173	
130								74.1	123	158	158	
120								72.0	108	137	150	
110								43.1	87.3	75.1	110	

7 FEB 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q ₁ KP	A1	A1	A2	A2	A2	4	4	4	3	A3	3	A2
HMIN			109			105	219	200	199	201	209	227
SCAT			47.4			51.5	38.6	37.6	41.0	38.6	42.2	53.6
HMAXF			282			283	289	274	283	301	301	345
SHMAX			97.0			114.0	585	442	212	164	129	164
KM												
350										286	219	199
340										286	219	180
330												218
320												207
310												169
300												180
290			1240			1514	1240		389	280	215	161
280			1240			1513	1222	875	388	264	206	138
270			1221			1489	1163	872	380	238	189	114
260			1175			1433	1064	864	359	203	168	88.1
250			1102			1346	900	784	330	164	140	63.2
240			990			1232	654	695	284	123	110	64.8
230			868			1100	298	576	222	86.1	73	12.4
220			715			933	41.5	416	155	58.9	49.0	
210			560			717		186	83.2	38.8	7.0	
200			430			480		12.4	12.4			
190			347			316						
180			295			232						
170			255			187						
160			218			159						
150			180			135						
140			156			112						
130			142			96.7						
120			134			90.2						
110			114			83.0						

8 FEB 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Ω_{HPD}	A2	A2	A2	2	2	2	2	2	52	2	2	2
Γ_{KMP}	248	254	234	223	244	278	245	218	109	107	107	105
SCAT	53.1	49.9	31.7	43.8	48.2	39.4	50.8	39.2	41.5	34.7	40.6	34.2
H ₁₆	358	341	309	312	340	359	340	281	248	243	257	254
SMAX	156	147	117	148	151	118	146	171	407	460	675	654
κ_{M}												
360	219					219						
350	217	235			235	216						
340	212	235			235	205	219					
330	203	232			232	187	217					
320	190	224			257	224	163	210				
310	174	211	262		257	211	133	200				
300	153	195	258		252	194	100	186				
290	127	174	240		241	171	63.4	168				
280	97.1	146	211	223	141	12.4	143	36.1	76.2			
270	64.9	104	164	199	106		111	334				
260	44.8	50.3	105	166	71.2		78.1	355			960	960
250	8.1		35.0	119	38.8		42.9					
240				75.9	71.7			209	643	754	953	958
230				41.7				360	637	753	918	922
220									613	729	856	862
210								51.6	572	673	756	736
200									509	586	624	606
190									412	478	496	487
180									295	351	390	396
170									211	263	321	332
160									195	211	272	288
150									120	174	237	255
140									97.2	145	207	225
130									83.8	122	178	195
120									77.6	109	151	167
110									71.8	102	135	152
100									41.0	82.6	84.9	130

8 FEB 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
QEXP	2		A3	A3	3			2	3	3			
HMIN	106	108			105	110	219	199	212	229	269	247	
SCAT	42.2	48.1			48.5	46.4	44.1	37.5	44.6	52.7	44.8	46.3	
HMAX	256	280			289	290	307	271	281	323	347	350	
SHMAX	678	813			1188	874	755	450	236	158	121	142	
κM													
350										214	219		
340											212	216	
330										235	205	209	
320											234	193	195
310							1341			231	176	178	
300						1143	1333			224	153	155	
290					1542	1143	1292		446	212	124	128	
280		917			1529	1129	1214	960	446	199	80.2	98.2	
270		908			1483	1088	1110	960	440	177	12.4	69.0	
260		917	879		1399	1022	947	961	422	151		47.0	
250		913	828		1269	929	724	885	392	117		12.4	
240	886	761			1149	815	470	799	352	74.3			
230	830	682			947	682	192	665	292	12.4			
220	754	597			741	545	12.4	477	188				
210	645	507			563	426		159					
200	532	430			424	330		12.4					
190	412	372			229	256							
180	335	326			275	208							
170	201	297			238	171							
160	258	269			209	143							
150	228	239			184	122							
140	199	202			161	104							
130	172	173			141	93.0							
120	154	153			125	85.4							
110	132	122			113								

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W

9 FEB 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q _z FP	53	3	2	2	2	2	2	2	2	2	2	2
HMIN	208	250	237	237	198	266	195	209	107	110	107	109
SCAT	54.6	48.2	52.1	36.2	41.1	42.3	54.9	24.9	34.8	47.6	36.0	34.6
HMAXF	322	344	339	307	289	366	333	254	244	258	257	256
SHMAX	147	166	158	161	113	112	161	134	381	556	664	730
FM												
370						184						
360						183						
350		262				176						
340		262	229			164	198					
330	198	257	228			149	198					
320	198	246	22			129	196					
310	196	227	210	335		105	190					
300	191	205	195	332		81.1	181					
290	182	179	177	317	198	59.8	168					
280	169	144	157	288	196	43.3	152					
270	154	98.3	134	248	188	12.4	134					
260	135	53.8	95.8	197	173		113	446				
250	112		56.6	137	153		94.0	444	643	716	1004	1096
240	85.1		18.3	43.1	128		77.1	411	641	691	948	1033
230	60.7				96.0		61.9	344	616	654	864	937
220	43.0				65.9		49.3	177	566	604	739	801
210	8.5				45.1		37.5	12.4	487	531	592	653
200					8.0		12.4		383	448	457	515
190									282	368	358	409
180									210	299	297	342
170									158	246	258	298
160									126	205	227	263
150									104	175	198	231
140									89.7	150	169	199
130									30.9	128	147	169
120									74.9	115	129	151
110									61.6	12.4	112	78.9

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W

9 FEB 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q _z FP	2	2	0	A0	A0	A1	1	A1	A2	A2	2	0
HMIN	110	109	109	107			219	199	199	204	259	267
SCAT	47.1	62.8	51.8	53.4			34.5	33.4	31.8	59.8	55.2	43.5
HMAXF	282	308	302	294			284	271	256	343	362	340
SHMAX	855	1285	1264	1204			513	343	114	139	144	108
FM												
370											198	
360											198	
350											161	196
340											161	190
330											159	181
320											155	168
310		1316	1446								149	152
300		1310	1446	1420							139	134
290	960	1288	1427	1417			1143				127	114
280	960	1249	1382	1394			1139	794			114	89.6
270	944	1194	1305	1346			1097	793			100	54.8
260	904	1133	1207	1270			1005	773	286	86.2	5.6	40.6
250	845	1028	1082	1173			867	716	284	72.5		
240	769	899	930	1052			685	622	269	60.1		
230	690	757	772	905			391	460	243	49.0		
220	607	610	624	731			58.9	262	196	38.8		
210	524	494	499	553				113	117	14.8		
200	451	410	408	425				12.4	12.4			
190	389	353	349	345								
180	339	314	307	292								
170	302	284	277	256								
160	273	259	251	226								
150	240	237	227	198								
140	200	211	201	173								
130	165	171	174	151								
120	150	152	153	137								
110	12.4	65.5	84.4	124								

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W

10 FEB 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q _z FP	F0	0	1	1	A1	A0	F0	0	50	0	0	0
HMIN	277	289	228	199	199		203	215		109	109	108
SCAT	56.1	36.9	50.4	40.3	20.5		62.3	35.1		32.7	36.1	35.2
HMAXF	397	354	319	278	232		357	292		244	251	251
SHMAX	170	94	153	176	25		133	147		465	591	703
FM												
400	219											
390	218											
380	214											
370	206											
360	194	198					143					
350	178	198					143					
340	160	191					141					
330	140	177					137					
320	120	157	240				131					
310	96.9	128	238				122					
300	69.2	91.7	231				111	310				
290	46.5	12.4	220				99.5	310				
280			205	335			87.9	301				
270			185	332			77.0	279				
260			156	319			66.9	247				
250			113	295			57.7	200				
240			61.7	263	97.2		49.6	134				
230			12.4	219	96.9		42.7	72.9				
220				159	88.5		29.4	34.0				
210				73.2	70.1		12.4					
200				12.4	12.4							
190												
180												
170												
160												
150												
140												
130												
120												
110												

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W

10 FEB 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
Q _z KP	0	0	1	S1	A1	A2	2	2	3	3	A3	3	
H _{min}	109	107	109	109		109	209	209	199	199	200	217	258
SCAT	47.1	41.6	39.5	47.5		35.8	43.1	28.4	40.2	57.6	55.5	55.5	
HMAXF	284	277	276	284		269	287	264	275	294	334	361	
SHMAX	907	897	832	889		701	580	331	199	130	124	126	
FM													
370												174	
360												174	
350												173	
340												161	
330												161	
320												158	
310												153	
300												150	
290	1050			1096			1096				179	146	
280	1048	1131	1096	1094			1089			389	179	135	
270	1026	1124	1089	1072			1072	1055	875	387	171	107	
260	977	1083	1050	1023			1056	991	870	375	163	90.6	
250	909	1013	973	953			992	895	819	351	152	73.7	
240	829	913	865	866			901	749	717	316	139	58.4	
230	728	787	734	752			784	543	550	263	123	43.5	
220	615	655	598	616			646	247	304	184	103	12.4	
210	512	537	482	494			500	41.5	110	96.5	78.7		
200	430	441	394	397			382		12.4	12.4	12.4		
190	373	376	337	326			289						
180	331	331	301	279			228						
170	299	300	276	245			188						
160	271	275	253	218			158						
150	245	251	228	191			134						
140	209	228	201	159			115						
130	167	205	178	141			100						
120	150	174	155	132			89.5						
110	55.6	118	110	76.1			55.6						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W

11 FEB 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q _z KP	3	3	1	1	1	3	3	3	2	2	52	1
HMIN	243	212	207	225	226	257	236	249	115	109		106
SCAT	49.3	40.2	46.4	37.2	56.0	45.9	49.4	34.6	32.3	40.7		36.2
HMAXF	333	299	285	293	346	356	343	308	259	269		249
SHMAX	123	107	107	94	112	103	124	113	415	637		773
KM												
360						161						
350						143	160	179				
340	193					143	156	179				
330	193					140	148	176				
320	190					136	135	169				
310	183					129	119	158	262			
300	171	193		193	118	101	145	259				
290	157	191	189	193	106	79.8	127	244				
280	137	183	188	188	92.6	60.2	105	221				
270	112	167	183	175	78.5	43.8	82.4	183				
260	79.8	147	174	157	64.0	12.4	62.5	123	754	865		
250	44.2	121	164	129	50.1		45.6	12.4	741	827		
240		89.2	147	94.0	37.0		16.2		691	765	1320	
230		59.7	119	50.0	9.7				606	676	1248	
220		35.7	68.9						479	575	1129	
210			20.3						332	473	923	
200									231	381	659	
190									178	306	397	
180									144	249	300	
170									119	205	260	
160									94.5	170	230	
150									76.0	145	196	
140									68.7	127	162	
130									64.7	116	142	
120									60.7	105	134	
110										65.8	118	

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W

11 FEB 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q _z KP	1	1	1	1	1	1	1	1	0	A0	0	51
HMIN	105	106	109	109	108	110	218	200	190	208	226	203
SCAT	34.8	38.9	52.4	57.0	58.5	38.7	48.0	36.5	43.0	57.9	64.8	69.4
HMAXF	244	246	267	276	308	284	299	262	262	306	357	343
SHMAX	526	577	670	668	873	802	757	435	194	105	123	135
KM												
360											139	
350											139	143
340											137	143
330											133	142
320											128	139
310						875					143	120 135
300						871		1341			143	112 130
290						854	1240	1328			141	102 122
280						824	1237	1287			136	89.9 113
270						754	714	782	1201	1215	1004	362 130 77.5 103
260						752	702	728	1123	1128	1004	361 120 64.7 91.5
250	764	794	736	678	663	1005	967	979	354	110	51.8	79.7
240	762	788	705	646	590	839	689	917	338	97.6	40.6	67.4
230	727	758	663	599	512	635	321	812	313	81.6	12.4	54.9
220	669	697	606	540	441	461	58.7	616	277	60.7		43.5
210	592	621	539	469	378	338		330	222	21.2		20.9
200	498	524	462	400	325	261		12.4	147			
190	403	426	391	340	280	213			12.4			
180	338	357	337	294	243	178						
170	296	310	296	261	212	150						
160	262	276	264	234	186	127						
150	224	248	237	208	161	110						
140	177	216	208	182	138	96.8						
130	146	181	174	151	118	91.7						
120	136	154	151	132	105	85.6						
110	127	128	87.9	49.0	90.6	12.4						

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W

12 FEB 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q _z KP	51	1	0	0	0	0	0	A0	0	0	0	0
HMIN	278	241	252	215	200	216	223	208	109	109	107	109
SCAT	58.7	55.0	40.4	28.6	57.2	57.8	47.1	36.9	32.6	40.2	35.4	32.2
HMAXF	389	355	331	273	295	334	310	274	224	249	261	242
SHMAX	150	121	108	92	115	107	88	119	257	418	642	581
KM												
390	193											
380	192											
370	188											
360	181	161										
350	170	160										
340	158	158	198			135						
330	143	152	198			135						
320	126	144	194			133						
310	106	133	185			129	143					
300	83.6	120	168			161	123	142				
290	54.5	104	147			160	115	137				
280	12.4	85.6	119	240	158	105	129	257				
270		66.4	88.9	239	153	93.4	117	256				
260		49.7	51.6	227	146	80.5	104	248				
250		29.3		201	136	66.8	85.3	231		573	896	960
240				157	125	53.7	62.0	207		566	836	960
230				97.5	111	41.5	39.7	163	446	541	745	929
220				44.4	90.1	12.4		101	445	498	643	852
210					61.8			25.6	426	438	521	723
200					2.6				384	369	409	565
190									325	306	330	418
180									256	256	281	327
170									193	218	249	280
160									148	185	224	252
150									120	158	201	227
140									103	136	179	199
130									93.2	118	157	174
120									86.0	105	139	156
110									51.0	75.8	110	97.2

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W

12 FEB 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QzKP	A0	0	0		A0	A1	1	1	1	1	1	A1
HMIN	109	108	109		108		208	200	200	199	209	248
SCAT	33.7	43.5	44.1		46.3		27.6	29.4	43.6	30.5	43.2	48.6
HMAXF	258	258	271		274		266	263	292	259	297	351
SHMAX	612	676	719		673		356	244	227	106	97	107
KM												
360												161
350												161
340												159
330												153
320												145
310												132
300									389		165	117
290												164 97.8
280					854				389			158 75.3
270					853		1004	608	382			147 55.5
260	875	917	891		835		993	605	338	262	133	40.0
250	863	909	852		795		918	576	301	257	116	5.5
240	811	878	791		739		780	513	249	238	95.2	
230	726	825	706		666		561	406	182	206	72.4	
220	620	741	605		576		178	281	121	156	47.6	
210	515	623	497		469		32.2	132	67.8	87.1	7.1	
200	417	490	403		372							
190	343	379	335		302			12.4	2.6	12.4		
180	297	309	292		252							
170	268	273	263		217							
160	244	248	240		189							
150	215	225	210		162							
140	180	192	176		132							
130	160	162	152		112							
120	150	151	136		104							
110	110	129	95.0		93.5							

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 13 FEB 1961

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

Q.KP A1 A1 4 4 4 5 5 5 5 4 4 4 5
 HMIN 202 226 237 242 198 200 197 198 109 109 106 104
 SCAT 52.3 45.8 50.5 42.5 42.5 32.0 45.0 34.9 33.7 62.6 34.6 44.3
 HMAXF 306 320 347 323 286 247 282 274 243 326 260 243
 SHMAX 107 93 126 111 115 55 82 125 337 868 260 605

KM
 350 179
 340 178
 330 148 174 198
 320 148 167 198
 310 152 146 155 193
 300 151 139 141 183
 290 148 129 123 168 198
 280 142 117 101 148 198
 270 133 102 79.9 120 192
 260 122 85.2 60.4 87.4 180
 250 108 67.8 44.0 45.9 163 143 121 231 643 530 1621 834
 240 90.8 49.3 12.4 141 141 109 201 641 475 1518 833
 230 72.4 17.1 114 133 92.8 155 617 419 1357 815
 220 55.2 82.8 118 70.3 101 566 366 1107 774
 210 35.0 43.5 96.2 47.9 58.2 483 318 784 715
 200 12.4 12.4 12.4 12.4 152 270 538 634
 190 199 247 397 537
 180 132 219 317 430
 170 101 193 266 327
 160 82.5 168 226 264
 150 71.8 138 192 229
 140 68.1 109 161 204
 130 64.6 94.8 137 167
 120 61.2 88.2 122 141
 110 43.5 71.4 110 129

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 13 FEB 1961

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

Q.KP 5 5 3 3 3 A2 2 2 2 2 2 F2 A1
 HMIN 109 107 106 108 109 290 290 290 218 287 247
 SCAT 42.5 75.5 63.9 60.7 55.2 46.3 39.4 40.8 39.9 54.1 42.9
 HMAXF 241 319 351 363 324 273 270 283 300 400 341
 SHMAX 509 900 1144 1662 1674 754 281 164 130 230 183

KM
 400 310
 390 308
 380 300
 370 1528
 360 896 1527
 350 896 1510
 340 889 1472
 330 869 1408 2000
 320 745 832 1333 1997
 310 742 754 1229 1967
 300 734 753 1113 1903
 290 718 709 981 1810
 280 695 665 855 1686
 270 669 621 741 1511
 260 635 576 643 1285
 250 679 590 530 559 1058
 240 679 542 485 487 808
 230 668 489 441 427 596
 220 637 437 399 377 438
 210 588 386 360 336 340
 200 522 343 322 303 277
 190 443 305 287 275 235
 180 366 272 256 250 203
 170 308 239 227 227 175
 160 271 202 195 203 149
 150 246 177 144 176 122
 140 222 163 148 149 105
 130 185 155 139 128 94.6
 120 157 149 133 119 88.7
 110 113 130 120 101 55.6

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 14 FEB 1961

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

Q.KP A1 A1 A1 A1 1 1 1 1 1 1 1 1
 HMIN 236 219 217 210 209 213 234 238 109 110 107 109
 SCAT 37.8 40.3 39.5 41.4 42.1 45.5 51.3 35.6 38.6 38.6 39.4 40.6
 HMAXF 300 292 299 291 292 303 349 302 263 251 263 261
 SHMAX 143 145 139 156 152 134 158 136 496 562 724 765

KM
 350 219
 340 217
 330 211
 320 201
 310 310
 300 310 286 262 286 274 218 168 297
 290 304 286 259 286 274 214 146 289
 280 288 280 248 281 268 205 122 270
 270 261 265 228 268 254 189 96.9 240 794
 260 222 240 200 247 235 170 70.9 191 793 875 1003 1095
 250 153 209 161 218 205 144 50.1 132 772 875 976 1075
 240 48.9 162 110 176 164 115 24.0 34.9 724 858 918 1020
 230 85.5 63.2 126 112 82.5 651 811 825 934
 220 12.4 19.9 66.8 66.2 44.7 544 737 712 809
 210 426 623 586 647
 200 316 484 465 497
 190 229 373 372 387
 180 159 284 309 318
 170 117 226 264 276
 160 94.5 188 231 245
 150 81.1 157 204 216
 140 71.6 134 180 185
 130 67.4 116 158 160
 120 63.2 102 134 149
 110 50.0 12.4 101 114

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 14 FEB 1961

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

Q.KP 1 1 3 A3 3 3 3 3 3 3 3 F2
 HMIN 108 107 107 107 109 109 207 200 194 248 238 268
 SCAT 41.2 50.2 60.1 39.8 38.4 33.5 28.6 48.9 47.1 57.6 48.7
 HMAXF 258 274 300 271 258 273 253 280 343 348 355
 SHMAX 706 782 1245 704 588 400 177 121 126 180 159

KM
 360 257
 350 198 240 256
 340 198 239 251
 330 195 234 240
 320 187 226 224
 310 173 214 203
 300 157 199 174
 290 135 180 137
 280 875 1303
 270 873 1255
 260 960 857 1192
 250 952 822 1117
 240 917 770 988
 230 849 704 830
 220 762 628 665
 210 644 547 527
 200 526 465 426
 190 417 393 355
 180 343 338 309
 170 296 300 280
 160 263 271 256
 150 234 245 232
 140 203 216 208
 130 173 182 187
 120 154 157 162
 110 124 144 142

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO													60 W	15 FEB 1961
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100		
Q _z FP	F2	2	F2	2	2	3	S3	3	S2	2	A2	1		
HMIN	228	208	219	211	199	210	258	227	109	109	107	109		
SCAT	32.5	37.4	31.3	46.9	53.1	39.9	47.4	29.6	32.5	41.9	32.7	36.7		
HMAXF	302	284	275	299	295	282	340	275	227	245	274	260		
SHMAX	128	144	95	146	177	83	83	104	276	392	722	933		
KM														
340													139	
330													138	
320													133	
310	286												126	
300	286				240	262							115	
290	277	286			238	262	161	102					102	
280	254	285	240		230	257	161	84.4	286				1096	
270	219	275	238	217	248	157	54.9	284					1091	
260	163	254	225	199	234	149	12.4	267					1044	1341
250	101	224	200	174	216	134		238					540	945
240	59.0	186	163	144	193	116		181					538	814
230	12.4	140	99.6	104	162	91.8		72.0	508	523	653	1121		
220		74.7	12.4	54.7	117	60.7			502	490	507	932		
210		22.3			69.5	4.1			473	445	397	704		
200					12.4				422	388	327	486		
190									339	329	282	347		
180									248	275	249	291		
170									177	227	218	258		
160									134	185	186	228		
150									108	151	155	200		
140									92.8	127	135	175		
130									75.6	103	124	157		
120									62.1	91.0	117	146		
110									12.4	72.6	97.9	110		

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO													60 W	15 FEB 1961
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300		
Q _z FP	1	1	1	A1	A1	A0	0	0	4	4	A4	F4		
HMIN	109	109	108	108		110	206	200	199	233	290	266		
SCAT	33.6	45.4	42.1	48.0		36.2	23.9	41.0	51.0	55.3	44.4	44.2		
HMAXF	252	284	270	286		269	254	269	290	338	386	367		
SHMAX	697	910	775	851		700	344	268	132	158	153	140		
KM														
390													251	
380													250	
370													243	224
360													228	223
350													209	215
340													219	183
330													218	151
320													213	112
310													205	71.5
300													193	45.6
290		1096		1050						198	180	1.9	73.5	
280		1093		1045						197	161	49.5		
270		1069	1004	1019		1143		532		191	136	17.1		
260	1096	1015	991	968		1123	1096	525	182	107				
250	1095	939	947	899		1059	1087	502	167	73.6				
240	1062	841	876	800		953	994	465	150	42.4				
230	975	727	786	673		808	810	410	130					
220	857	603	676	539		627	520	321	108					
210	699	490	555	431		451	116	201	82.4					
200	537	409	452	353		308								
190	415	352	370	301		235								
180	333	310	312	261		195								
170	283	281	274	228		165								
160	251	255	245	195		138								
150	222	226	216	167		117								
140	192	187	187	149		102								
130	167	162	165	139		92.7								
120	152	151	151	131		85.9								
110	127	97.2	130	106		12.4								

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO													60 W	16 FEB 1961
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100		
Q _z FP	F4	4	5	5	5	5	5	5	5	5	5	3		
HMIN	302	221	243	209	199	258	218	208	109	109	105			
SCAT	42.1	41.5	40.4	22.2	31.6	58.4	61.4	37.5	35.9	40.0	45.7	48.8		
HMAXF	377	309	313	249	247	366	327	290	274	254	294	277		
SHMAX	141	148	156	89	76	94	114	113	536	541	1065	1135		
KM														
380	262													
370	261													
360	252													
350	235													
340	212													
330	181													
320	140													
310	76.3	262	310			104	143							
300		260	302			95.0	141							
290		249	285			84.0	136							
280		231	262			71.1	130	219						
270		206	223			56.0	122	215	834					
260		172	168			40.3	113	204	831					
250		130	81.1	310	208	5.4	101	184	800	784	1153	1453		
240		86.0		296	206		86.7	157	737	781	1027	1378		
230		47.1		252	193		69.8	123	644	759	868	1279		
220				170	174		49.2	82.0	530	711	708	1147		
210				43.1	130		12.4	52.0	416	640	564	946		
200									314	551	450	725		
190									237	442	363	538		
180									187	342	307	399		
170									152	272	271	322		
160									124	222	242	273		
150									101	185	217	241		
140									86.4	154	193	215		
130									80.3	130	169	190		
120									76.0	120	146	168		
110									71.8	113	133	152		
									43.1	65.5	74.1	109		

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO							60 W		16 FEB 1961				
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
Q _z FP	3	3	2	2	2	3	A3	3	2	A2	2	A1	
HMIN	107	108	106	109	106	109	209	201	199	208	216	216	
SCAT	51.4	52.6	50.8	41.6	49.8	43.6	35.7	30.2	39.6	40.2	69.3	59.2	
HMAXF	284	313	302	281	287	276	279	272	286	274	369	346	
SHMAX	994	1253	1335	1076	1009	792	443	284	240	138	189	175	
KM													
370												193	
360												193	
350												190	214
340												185	213
330												178	210
320		1290										168	203
310		1289	1555									158	193
300		1271	1555									146	182
290	1143	1226	1533	1500	1240					446		131	167
280	1141	1160	1481	1500	1235	1096	917	661	444	286	115	147	
270	1122	1074	1392	1476	1205	1090	901	660	428	285	99.2	124	
260	1080	969	1277	1440	1073	1051	1058	846	61	398	277	83.4	98.8
250	1017	863	1164	1305	1073	997	760	570	354	260	68.4	76.4	
240	938	754	959	1142	968	908	641	479	295	234	54.1	56.9	
230	846	652	784	969	846	798	495	361	219	200	41.0	42.0	
220	739	559	642	775	706	676	525	217	133	135	12.4	12.4	
210	623	482	523	581	575	548	35.6	105	70.2	28.3			
200	506	419	434	441	354	77			12.4				
190	404	368	366	345	352	302							
180	330	325	318	286	279	224							
170	280	290	282	249	230	177							
160	247	260	255	218	194	147							
150	217	230	227	190	164	125							
140	188	194	189	164	140	108							
130	164	170	162	142	124	95.3							
120	152	154	132	116	116	88.1							
110	122	137	132	109	97.3	56.6							

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 17 FEB 1961

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

HPKIN	4	4	54	4	4	6	208	6	7	7	7	F5
HMEN	107	108	107	107	110	110	208	200	199	248	279	265
SCAT	66.0	49.9	46.8	54.6	47.3	37.1	41.8	44.6	55.0	43.5	45.2	55.6
HMAXF	303	288	302	306	312	295	287	283	344	342	380	381
SHMAX	1307	1035	1223	1159	1280	1125	773	618	388	286	302	390
PM												
390												
380											477	540
370											471	535
360											454	521
350									477	477	424	498
340									476	477	384	465
330									469	468	335	427
320						1555			454	447	276	376
310	1328		1500	1303	1555				430	411	217	310
300	1235	1240	1500	1299	1532				400	367	150	224
290	1315	1240	1477	1276	1475	1786	1446	1096	361	314	76.7	147
280	1288	1232	1414	1229	1375	1776	1437	1094	317	246	12.4	66.0
270	1245	1201	1325	1158	1245	1709	1388	1072	270	170		12.4
260	1187	1164	1197	1074	1202	1566	1291	1020		221	99.8	
250	1121	1060	1041	966	915	1375	1182	944		175	25.6	
240	1023	957	860	836	749	1170	999	839	134			
230	903	826	697	690	611	927	753	690	97.1			
220	757	677	559	551	498	676	397	492	65.6			
210	614	546	445	433	405	474	55.7	220	43.8			
200	491	432	368	355	341	334		12.4	3.4			
190	422	362	318	299	293	250						
180	323	304	280	259	253	206						
170	279	271	251	226	220	172						
160	249	238	225	197	192	144						
150	221	196	201	170	166	121						
140	182	174	179	148	140	102						
130	160	159	160	138	123	92.2						
120	151	151	150	131	115	85.7						
110	129	129	119	107	12.4							

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 18 FEB 1961

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

[illegible]

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W

19 FEB 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q ₁ KP	2	2	3	3	A3	53	3	5	A5	5	4	
HMIN	220	210	201	198	232	258	257	209	109	106	109	109
SCAT	50.8	28.0	33.7	40.5	39.2	58.9	51.8	27.3	32.8	29.0	44.3	48.7
HMAXF	323	270	262	273	295	358	359	272	244	241	278	307
SHMAX	255	134	97	94	69	95	75	128	370	572	822	1264
KM												
360						127	108					
350						126	107					
340						124	104					
330	189					120	99.7					
320	388					114	92.2					
310	382					105	83.8					
300	369					143	96.8	72.5				1446
290	347					143	85.3	60.6				1439
280	320			179		138	70.7	49.1	335		1038	1334
270	282	362	224	179	129	50.9	34.2	335			1029	1228
260	274	351	224	175	117	12.4	6.9	320			991	1109
250	159	318	217	165	90.6			282	670	1131	929	964
240	93.8	260	200	150	65.9			220	667	1131	841	809
230	50.9	162	175	130				142	638	1090	729	664
220		74.7	137	101				70.6	578	984	607	549
210		2.0	77.5	63.5				12.4	486	812	490	458
200				12.4					355	557	398	393
190									248	375	335	346
180									183	272	294	309
170									142	216	261	279
160									114	180	232	251
150									95.2	150	203	225
140									82.9	127	172	199
130									76.6	111	147	170
120									68.4	104	134	152
110									12.4	88.9	99.3	114

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W

19 FEB 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q ₁ KP	4	A4	3	3	3	2	2	2	4	54	4	4
HMIN	107		108	109	109	107	214	200	195	198	258	284
SCAT	36.5		44.3	52.6	46.8	40.4	39.3	37.4	59.2	49.9	58.3	46.3
HMAXF	273		275	304	286	283	293	270	297	302	378	364
SHMAX	1195		1022	1143	951	836	687	552	249	123	128	128
KM												
380											161	
370											160	219
360											157	218
350											151	214
340											144	204
330											133	189
320											121	170
310											179	106
300											329	179
290											179	88.9
280	1907										328	177
270	1902										322	171
260	1842										295	147
250	1707										255	131
240	1507										251	111
230	1225										842	224
220	939										164	566
210	653										187	146
200	474										90.7	7.5
190	372											
180	318											
170	282											
160	247											
150	208											
140	171											
130	157											
120	150											
110	130											

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W

20 FEB 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q ₁ KP	F4	4	4	A4	A4	E4	S4	4	5	5	5	5
HMIN	261	243	231	220	200			219	108	108	109	108
SCAT	40.1	33.1	40.5	21.7	24.2			48.3	38.0	47.9	38.4	50.2
HMAXF	342	318	315	254	244			297	263	287	275	285
SHMAX	104	93	154	90	45			129	402	743	902	1113
KM												
350	193											
340	193											
330	189											
320	179	198	286									
310	163	195	285									
300	141	184	276									
290	113	162	259									
280	79.2	132	234									
270	46.8	98.2	199									
260		61.9	152	362								
250		38.8	95.5	359	143							
240			49.0	325	143							
230				249	132							
220				12.4	113							
210					70.2							
200					3.2							
190												
180												
170												
160												
150												
140												
130												
120												
110												

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W

20 FEB 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q ₁ KP	5	5	3	3	3	S4	4	4	3	53	53	3
HMIN	108	109	108	110	109							
SCAT	59.3	55.2	66.7	51.2	40.6							
HMAXF	305	293	312	286	287							
SHMAX	1400	1234	1421	1036	925							
KM												
410												161
400												160
390												158
380												153
370												147
360												139
350												130
340												119
330												143
320												106
310	1514											139
300	1511	1420	1396									55.2
290	1400	1418	1369	1240	1155							41.2
280	1447	1399	1323	1236	1145							9.0
270	1375	1357	1262	1211	1093							
260	1289	1287	1191	1163	1019							
250	1185	1204	1107	1091	929							
240	1057	1088	992	994	823							
230	890	928	851	879	713							
220	710	760	696	745	601							
210	561	598	557	609	495							
200	448	465	454	478	414							
190	371	381	378	373	350							
180	320	328	324	307	295							
170	284	291	287	264	247							
160	255	262	259	233	206							
150	225	235	234	204	176							
140	190	200	203	178	154							
130	162	165	165	151	132							
120	150	150	150	133	120							
110	122	78.9	91.9	12.4	76.1							

ELECTRON DENSITY

ELECTRON DENSITY

21 F

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
O.F.P	5	5		4			4			3	F3	4
H.M.P	109	109	108	109	110	109	208	200	210	209	239	259
SCAT	41.6	54.0	56.0	51.2	48.4	59.5	41.3	37.6	42.4	40.6	60.0	50.0
HMAX	283	295	301	309	295	303	289	268	291	289	358	35
SHMAX	1251	1412	1243	1344	1279	1351	789	586	284	166	169	170
360											208	262
350											208	262
340											204	258
330											197	249
320											186	234
310											174	215
300		1555	1341	1529	1669	1554			508		159	190
290	1786	1552	1328	1518	1618	1516	1528					
280	1783	1526	1293	1413	1630	1495	1509			508	310	143
270	1739	1473	1236	1318	1559	1432	1446	1240		477	294	104
260	1643	1389	1159	1458	1458	1356	1347	1227		440	272	80.8
250	1507	1285	1060	1040	1315	1254	1189	1127		389	242	50.6
240	1293	1153	942	867	1144	1110	939	1073		322	197	6.8
230	1050	1022	811	702	921	924	951	921	240		142	
220	799	886	800	566	701	716		200	702	146	78.3	
210	582	750	566	459	509	541	32.2		386	12.4	12.4	
200	441	616	460	390	380	406						
190	365	506	386	340	303	304			12.4			
180	316	412	333	300	256	242						
170	280	339	294	264	221	202						
160	246	291	261	232	192	172						
150	211	259	223	199	165	145						
140	176	226	180	167	140	123						
130	158	194	159	143	124	107						
120	148	172	149	133	115	97.1						
110	49.0	110	121	62.8	12.4	49.0						

ELECTRON DENSITY

ELECTRON DENSITY

22 F

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
OK+P	S3	S3	52	2	52	54	4	20	3	3	3	5
HMI+N			108	109	110	109	218	207	200	200	288	257
SCAT			36.9	42.5	52.3	42.5	46.9	42.3	40.0	37.4	45.7	50.7
HMAX+F			276	260	286	285	309	291	274	267	377	356
SHMAX			1007	790	870	779	734	591	396	128	109	131
KM												
380											179	
370											178	
360											173	193
350											163	193
340											149	189
330											131	181
320											108	168
310							1240				82.0	153
300							1230	1096			54.7	134
290					1004	1038	1191	1096			12.4	112
280			1555		1001	1034	1123	1078	774			86.1
270			1546	1143	980	1004	1029	1029	771	262		55.2
260			1484	1143	938	942	898	951	748	260		18.1
250			1372	1126	883	857	716	838	701	249		
240			1203	1076	807	754	473	667	630	227		
230			946	997	713	640	199	457	526	198		
220			679	883	613	518	34.9	218	386	158		
210			492	723	512	408		57.6	222	110		
200			378	542	421	323			12.4	12.4		
190			314	388	348	260						
180			275	307	290	214						
170			243	267	243	178						
160			217	235	208	150						
150			196	202	181	140						
140			180	172	151	109						
130			172	156	125	94.7						
120			164	146	113	88.0						
110			122	73.0	12.4	55.6						

ELFCTRON DENSITY

RAMEY AFB, PUERTO RICO												
60 W 23 FEB 1961												
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q _z KP	3	F3	F3	F3	F3	F2	S2	2	S2	2	2	2
HMIN	263	249		248	239	222	197	199	107	109	106	108
SCAT	51.2	44.9		40.1	54.1	48.5	62.0	39.4	38.1	39.3	37.3	45.5
HMAXF	368	337		323	339	324	376	277	249	252	259	299
SHMAX	152	184		122	136	145	139	162	377	542	647	1102
KM												
370	219											
360	218											
350	212											
340	203	310			193							
330	189	308		240	192	219	161					
320	173	298		240	187	218	160					
310	150	280		234	179	214	158					
300	123	255		220	167	205	153				1393	
290	92.9	223		199	153	190	147				1380	
280	63.9	184		171	135	171	137	310			1331	
270	37.9	130		127	114	149	127	307			1249	
260		69.8		65.2	87.1	123	114	295	784	875	1146	
250		12.4		12.4	53.3	92.3	99.4	273	608	783	861	984
240					61.5	84.9		242	600	767	814	791
230					37.2	71.0		199	571	723	738	614
220						57.4		144	523	657	646	482
210						43.9	74.5	452	566	547	394	
200						12.4	12.4	354	462	449	339	
190								259	366	374	303	
180								188	293	320	275	
170								142	243	281	248	
160								114	207	248	215	
150								98.6	177	217	184	
140								79.3	152	191	167	
130								68.4	127	169	156	
120								63.8	110	142	149	
110								54.2	95.7	120	129	

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO												
60 W 23 FEB 1961												
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q _z KP	2	2	3	3	3	2	2	2	2	2	2	4
HMIN	107	106	108	110	109	109	209	200	200	216	268	263
SCAT	45.2	60.8	52.9	47.8	42.2	35.9	46.1	44.6	41.6	51.6	47.5	52.9
HMAXF	276	312	301	288	271	278	292	271	274	323	368	379
SHMAX	1068	1301	1248	1087	871	804	804	456	167	183	156	211
KM												
380												286
370												240
360												238
350												231
340												219
330												262
320		1328										262
310		1328	1393									258
300		1316	1393				1446					249
290		1286	1378	1341			1446					235
280	1446	1238	1338	1331	1240	1240	1421	875	310	218	52.1	66.6
270	1441	1173	1265	1291	1240	1225	1363	875	309	194	12.4	40.4
260	1403	1093	1180	1219	1217	1163	1267	861	301	163		
250	1329	975	1070	1119	1160	1050	1148	824	284	127		
240	1234	843	929	1000	1066	907	956	767	258	91.3		
230	1075	706	779	855	940	743	644	682	223	58.7		
220	866	579	645	704	772	578	186	541	177	24.1		
210	661	473	525	560	595	445	12.4	292	121			
200	484	399	437	442	439	337						
190	378	353	373	362	343	261						
180	323	319	328	307	284	214						
170	287	290	296	267	241	177						
160	254	258	267	236	209	147						
150	218	216	236	211	183	120						
140	192	182	202	179	160	99.9						
130	176	162	174	145	135	92.2						
120	166	152	151	133	117	86.2						
110	138	140	125	12.4	82.9	44.7						

ELFCTRON DENSITY

RAMEY AFB, PUERTO RICO												
60 W 24 FEB 1961												
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q _z KP	4	4	4	4	4	1	1	1	S1	S1	1	1
HMIN	259	231	243	266	264	220	198	217	110	107	107	108
SCAT	45.2	38.7	37.8	48.2	48.1	42.0	53.4	36.7	35.3	37.4	43.5	50.6
HMAXF	342	296	317	349	357	307	302	271	249	243	279	281
SHMAX	159	107	100	119	137	125	155	175	338	524	838	1034
KM												
360					214							
350	274				193	213						
340	274				192	207						
330	269				186	197						
320	257		198		175	183						
310	241		197	162	165	219	219					
300	217	219	188	143	140	217	219					
290	181	217	172	121	110	210	216					
280	137	209	150	91.8	77.6	195	209	417		1050	1240	
270	82.0	193	120	45.1	45.8	176	199	417		1038	1224	
260	12.4	171	81.0			149	184	409		999	1184	
250		139	44.4			118	166	384	608	794	930	1118
240		97.2				78.6	144	348	598	793	840	1031
230						47.1	117	284	564	771	726	917
220						1.1	87.7	105	507	720	611	785
210						56.3			419	642	508	645
200						12.4			304	541	424	520
190									185	434	362	407
180									123	342	313	340
170									92.0	273	269	298
160									77.6	227	230	263
150									70.1	190	193	226
140									67.1	160	160	187
130									64.1	138	143	161
120									61.1	120	134	150
110									12.4	96.7	112	117

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO						60 W			24 FEB 1961			
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q _Z KP	1	1	0	0	50	0	0	0	0	F0	F0	F0
HMIN	106	107	109	109	109	110	208	200	200	242	218	200
SCAT	42.2	45.1	46.1	47.9	49.6	47.1	32.5	32.6	36.1	34.9	56.4	56.3
HMAXF	262	256	267	272	285	287	269	261	258	305	334	329
SHMAX	981	764	758	764	788	910	450	326	135	108	168	221
KM												
340												219
330												219
320												216
310												240
300												239
290						917	1240					230
280						915	1233					209
270	1393		917	917	897	1199	1143	794				181
260	1392	1004	913	903	858	1138	1122	794	310	143	127	176
250	1364	1000	888	868	803	1052	1049	772	306	84.2	102	143
240	1292	972	839	817	732	927	917	714	291			73.9
230	1189	918	772	740	646	773	687	614	265			49.3
220	1043	842	683	649	555	588	248	467	225			12.4
210	852	745	586	553	468	419	34.9	211	159			40.1
200	654	627	496	461	390	309		12.4	12.4			.6
190	490	501	421	384	328	243						
180	376	392	362	327	279	204						
170	317	322	316	282	237	174						
160	281	280	281	246	200	147						
150	253	249	251	215	167	123						
140	222	214	217	184	140	105						
130	188	179	178	161	124	93.8						
120	170	167	165	149	117	87.1						
110	145	142	78.9	68.6	49.9	12.4						

ELECTRON DENSITY

RAMFAY AFB, PUERTO RICO													60 W	25 FEB 1961
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100		
Q _z KP	F0	F0	F1	F1	1	2	2	2	0	A0	A0	A0		
HMIN	259	233	206	203	205	197	238	199	108	108				105
SCAT	36.5	37.5	39.7	36.5	44.1	38.8	51.7	28.7	30.2	42.1				43.3
HMAXF	323	314	293	274	282	276	330	250	233	247				287
SHMAX	133	156	170	159	101	76	106	111	310	525				942
KM														
330	292						161							179
320	291	310					159							179
310	283	309					155							176
300	263	300	310				147							168
290	213	278	310		179		137				1143			153
280	190	246	302	335	179	143	124				1134			134
270	112	205	285	334	176	142	108				1097			112
260	12.4	148	257	323	168	137	86.2	310			1026			84.9
250		81.1	221	298	155	127	57.1	310			929			58.6
240		44.2	176	262	139	113	12.4	301	573	749	811			35.0
230			124	214	117	93.5		272	572	724	685			
220			72.7	141	89.4	67.6		225	545	677	564			
210			27.5	57.9	50.8	45.8		136	486	609	468			
200						12.4	12.4	403	516	399				
190								312	416	351				
180								291	325	315				
170								171	259	284				
160								130	211	251				
150								97.2	176	216				
140								78.0	146	183				
130								68.9	121	162				
120								64.0	106	153				
110								53.6	78.1	144				

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO													60 W	25 FEB 1961
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300		
Q _z KP	A0	0	1	51	51		S2							
HMIN	119	109	107	109	109			229	200	199	207	200		242
SCAT	52.5	51.1	43.5	48.9	45.6			25.9	36.3	29.2	39.4	38.5		41.7
HMAXF	300	295	281	270	279			279	274	276	287	285		331
SHMAX	1183	1098	1007	838	807			393	398	262	176	129		103
KM														
340														179
330														179
320														176
310	1341													168
300	1341	1240												153
290	1378	1237	1341											134
280	1291	1214	1341	1004	1004			1143	834	608	329	239		112
270	1228	1166	1320	987	995			1106	832	600	316	230		84.9
260	1143	1094	1264	968	962			981	804	557	293	213		58.6
250	1033	1000	1175	915	902			784	745	482	260	188		35.0
240	904	878	1045	847	823			492	656	380	216	156		
230	754	742	870	763	727			58.9	528	263	162	118		
220	605	620	677	662	617				358	155	97.6	78.4		
210	486	515	514	547	508				156	72.4	36.8	48.3		
200	405	432	410	443	411				12.4	12.4				7
190	349	372	347	361	337									
180	309	328	308	304	284									
170	275	293	280	263	245									
160	241	262	254	230	213									
150	205	230	223	196	185									
140	182	198	189	170	162									
130	171	176	160	155	142									
120	161	163	149	146	129									
110	12.4	112	111	74.8	55.6									

ELECTRON DENSITY

RAMFAY AFB, PUERTO RICO													60 W	26 FEB 1961
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100		
Q _z KP	1	1	0	0	0	51	1	1	1	A1	1	1		1
HMIN	260	240	234	209	199	198	295	219	109	109	109	109		109
SCAT	41.7	39.5	31.1	26.0	37.5	31.2	45.2	38.1	35.2	37.9	38.7	45.9		45.9
HMAXF	350	325	303	257	267	251	371	285	240	251	250	271		271
SHMAX	104	108	96	87	87	39	51	145	365	529	570	774		774
KM														
380							90.4							
370							90.4							
360	179						89.1							
350	179						85.6							
340	176						79.0							
330	169	198					71.4							
320	155	198					61.7							
310	137	191	219				49.6							
300	114	179	218				21.7							
290	90.1	160	210					310						
280	64.6	134	189					308						982
270	42.2	105	158		179			297						982
260		70.8	119	262	178	97.2		275		834				969
250		45.6	77.2	258	170	97.2		246	608	834	794	930		
240		1.9	40.6	235	157	94.0		192	608	817	781	876		
230				193	139	85.8		112	595	769	739	787		
220				119	110	73.5		556	695	673	668			
210				12.4	68.7	54.9		496	586	591	545			
200						12.4	12.4	405	449	498	440			
190								314	331	412	363			
180								237	250	337	314			
170								178	198	283	278			
160								141	157	244	246			
150								117	136	211	213			
140								104	125	179	181			
130								86.0	120	158	161			
120								73.4	114	146	151			
110								38.9	65.5	97.2	116			

ELECTRON DENSITY

RAYEY AFB, PUERTO RICO							6N W		26 FEB 1961					
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300		
Q _z KP	1	1	1	1	1	A1	1	1	1	1	1	1		
HMIN	108	109	109	109	109	109	110	209	200	199	209	224		
SCAT	47.9	42.9	53.1	48.9	43.9	40.7	45.5	37.0	42.7	44.9	43.2	40.8		
HMAXF	282	272	291	296	280	284	293	277	278	312	312	300		
SHMAX	1000	906	904	1051	810	757	668	440	273	236	193	156		
KM														
320											382	335		
310											382	335		
300											375	328		
290	1240			960	1240		1191					286		
280	1240	1215	960	1235		1050	1189				359	313		
270	1240	1214	969	1207	1096	1047	1166	865	508	334	289	268		
260	1177	1190	876	1072	1037	955	1033	814	486	252	210	217		
250	1107	1133	815	966	968	866	907	745	454	195	155	179		
240	1007	1045	733	837	873	750	737	647	409	136	90.9	127		
230	864	911	646	693	743	624	500	522	339	84.6	45.4	72.4		
220	699	742	558	558	594	501	212	375	241	50.2		27.5		
210	549	578	474	449	463	401	12.4	212	131	6.8				
200	443	447	411	374	353	317		12.4	12.4					
190	372	369	365	321	277	254								
180	327	323	328	284	232	209								
170	297	293	295	256	190	173								
160	263	262	264	212	169	141								
150	234	239	228	200	146	114								
140	198	207	192	186	132	6.6								
130	178	179	165	161	122	91.9								
120	168	168	152	147	116	86.5								
110	134	78.9	84.9	55.6	84.9	12.4								

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W

27 FEB 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q _z FP	3	3	2	2	2	2	2	53	3	3	3	3
HMIN	210	231	276	249	206	197	209	199	109	108	108	108
SCAT	41.3	48.8	51.8	49.3	32.9	49.9	53.2	29.1	27.0	30.2	41.0	45.9
HMAXF	314	336	367	354	277	295	308	261	236	240	259	274
SHMAX	128	130	129	131	91	107	112	142	321	481	656	865
KM												
370			193									
360			193	193								
350			188	193								
340			193	180	190							
330			193	169	182							
320	210	188	156	170								
310	218	179	136	157								
300	213	166	111	136		161	160					
290	201	150	81.6	112		160	156					
280	181	129	47.5	85.3	198	157	149				1050	
270	157	105		61.4	196	151	140	362			1047	
260	127	77.4		42.3	184	141	128	361			875	1024
250	94.7	54.6		4.1	164	129	113	349			865	972
240	64.0	35.6			134	113	94.5	314	643	834	827	900
230	43.0				98.5	92.1	71.6	259	635	811	764	816
220	3.6				63.0	69.5	47.6	175	584	740	682	717
210					26.2	48.5	7.1	87.8	493	629	588	611
200						12.4		12.4	376	491	489	506
190									263	374	402	414
180									187	299	332	342
170									138	249	282	298
160									106	205	242	264
150									88.1	168	207	227
140									81.1	139	175	185
130									77.3	118	147	161
120									73.5	105	135	151
110									49.0	86.6	115	129

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W

27 FEB 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q _z FP	3	3	1	A1	A1	A1	51	1	2	2	F2	3
HMIN	108	108	109		112		230	210	200	209	259	251
SCAT	45.3	45.7	59.1		46.4		36.7	43.7	29.9	36.9	43.0	47.6
HMAXF	296	284	315		289		295	286	262	275	348	358
SHMAX	1119	932	1292		775		585	678	348	208	139	240
KM												
360											362	
350											240	359
340											238	348
330											230	328
320					1341						214	301
310					1330						192	267
300	1303				1320						165	228
290	1297	1096	1282			917		1328	1316		133	182
280	1263	1094	1224			909		1271	1309		446	89.2
270	1191	1071	1156			881		1168	1271	875	444	82.9
260	1100	1018	1053			825		1016	1197	874	427	6.1
250	967	945	915			758		771	1099	841	394	
240	827	852	766			680		206	911	758	344	
230	696	746	622			590		12.4	589	632	267	
220	578	640	510			498			227	438	165	
210	490	537	428			412			12.4	196	38.9	
200	425	444	373			342						
190	378	375	336			293						
180	341	326	308			255						
170	313	291	282			221						
160	287	260	252			188						
150	257	229	214			161						
140	219	201	178			144						
130	186	179	150			135						
120	170	168	150			125						
110	138	117	124									

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W

28 FEB 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q _z FP	3	3	3	3	3	3	3	3	3	3	3	2
HMIN	268	248	208	210	202	200		202	110	109	105	109
SCAT	41.8	42.5	35.6	37.5	27.4	16.4		43.5	35.9	51.0	44.3	44.7
HMAXF	348	342	288	281	253	224		292	241	283	275	285
SHMAX	158	170	163	126	75	22		178	351	794	880	1001
KM												
350	286	286										
340	283	285										
330	272	280										
320	252	266										
310	225	243										
300	192	214						310				
290	151	179	335	262				310		960		1215
280	98.1	139	331	262				304		960	1084	1212
270	26.9	95.3	314	256				291		946	1080	1182
260	56.0	285	241	214				270		912	1051	1121
250	12.4	240	219	213				241		573	861	994
240		178	183	202				198		573	793	911
230		111	123	179	112			142		560	701	805
220		61.0	61.4	136	110			83.7		522	597	692
210		12.4	4.1	69.1	92.1			45.8		465	490	584
200					12.4					388	395	488
190										305	318	411
180										228	260	349
170										172	213	300
160										137	172	258
150										115	141	222
140										93.5	126	194
130										80.4	120	166
120										74.0	113	141
110										12.4	73.0	127

ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W

28 FEB 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q _z FP	2	2	3	3	3	2	2	2	1	1	F1	3
HMIN	106	107	109	108	109	109	228	199	200	199	189	236
SCAT	65.9	52.1	44.0	46.6	48.2	45.6	44.4	34.3	37.1	31.2	74.2	46.1
HMAXF	313	286	289	283	297	293	305	273	271	260	340	329
SHMAX	1410	1146	1023	957	915	942	676	519	406	184	255	130
KM												
350											240	
340											240	
330											239	208
320	1341										236	207
310	1341										230	200
300	1329										222	187
290	1302	1328	1240	1215	1045	1201	1280				211	171
280	1259	1324	1228	1214	1018	1177	1213	1131	865		198	150
270	1201	1296	1184	1191	965	1122	1126	1129	864	446	183	127
260	1138	1244	1106	1139	896	1040	958	1090	846	446	168	95.3
250	1037	1165	1001	1060	812	933	677	1004	795	435	153	66.3
240	924	1067	876	954	713	801	195	880	715	398	137	27.5
230	808	938	745	826	612	659	32.2	694	592	342	121	
220	691	791	621	671	515	528		451	414	263	107	
210	581	644	509	522	427	420		160	165	156	94.1	
200	485	515	426	412	357	336		12.4	12.4	12.4	81.6	
190	407	414	367	340	302	275					51.3	
180	349	350	324	291	262	231						
170	310	310	291	253	232	197						
160	282	281	262	218	204	169						
150	246	254	233	182	174	145						
140	231	227	203	155	145	125						
130	202	199	169	140	126	110						
120	178	176	152	132	117	99.9						
110	148	152	110	106	65.5	45.5						

RAMEY AFB, PUERTO RICO	AVERAGE ELECTRON DENSITY										60 W		KD BELOW 4000	
	TIME										COUNT		FEB 1961	
	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100		
COUNT	25	26	22	24	24	22	22	25	19	20	17	21		
KP	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.2	2.0	1.9	1.9	1.7		
HMIN	250	235	228	219	217	235	228	216	109	109	108	108		
RATIO	5.8	6.2	6.6	7.3	6.2	6.0	5.1	7.2	6.0	5.1	5.0	4.8		
SCAT	46.0	41.9	39.6	37.9	47.1	46.0	51.5	36.3	34.7	41.3	39.2	42.4		
NMAX	241	263	275	295	195	173	167	311	644	799	1110	1246		
HMAXF	340	320	307	290	302	326	332	284	244	257	267	273		
SHMAX	145	145	138	136	118	110	117	143	369	565	779	927		
SHINF	824	888	914	967	669	598	587	1021	2187	2817	3912	4443		
KM														
950	18.8	18.5	17.9	17.5	12.9	13.3	12.5	18.3	31.3	41.4	60.4	70.2		
900	24.1	23.7	23.0	22.5	16.5	17.0	16.0	23.5	40.2	53.1	77.5	90.2		
850	30.9	30.4	29.5	28.9	21.2	21.8	20.5	30.2	51.6	68.1	99.4	116		
800	39.6	39.0	37.8	37.1	27.1	28.0	26.3	38.7	66.2	87.4	128	148		
750	50.6	49.9	48.5	47.5	34.8	35.8	33.6	49.6	84.9	112	164	190		
700	64.6	63.8	62.0	60.8	44.4	45.7	43.0	63.4	109	144	209	244		
650	82.2	81.4	79.1	77.6	56.6	58.1	54.7	81.0	139	184	268	311		
600	104	103	100	98.7	71.9	73.4	69.2	103	178	234	341	397		
550	130	130	127	125	90.5	91.9	86.9	131	226	297	433	503		
500	160	161	158	156	113	113	107	164	286	375	545	632		
450	192	196	194	193	137	135	129	203	358	467	678	784		
440	198	203	201	201	142	140	134	211	373	487	707	816		
430	204	210	208	208	147	144	138	219	390	508	736	849		
420	210	217	216	216	152	148	142	228	406	529	766	883		
410	215	224	223	224	157	152	146	236	423	550	795	916		
400	220	230	230	232	162	155	150	244	440	571	826	950		
390	224	236	237	239	166	158	153	253	458	593	856	984		
380	228	242	243	247	170	161	156	261	475	614	886	1017		
370	230	247	249	254	174	163	158	269	493	636	915	1049		
360	232	251	255	261	178	163	160	276	510	656	944	1080		
350	231	255	259	267	181	163	161	283	527	677	971	1110		
340	229	257	263	272	183	160	160	290	544	696	998	1138		
330	224	257	266	277	184	155	158	296	560	715	1022	1164		
320	215	255	267	280	184	148	156	300	576	732	1044	1186		
310	202	249	265	282	183	139	151	304	590	748	1064	1206		
300	183	238	260	282	179	128	143	307	604	761	1080	1221		
290	163	220	250	279	175	113	133	306	616	771	1093	1229		
280	136	198	231	271	169	99.1	122	301	626	779	1099	1229		
270	105	168	210	258	160	87.6	107	289	634	793	1096	1213		
260	70.7	133	182	240	148	75.4	89.1	267	639	783	1081	1179		
250	47.9	93.0	144	214	133	64.9	71.4	233	640	775	1039	1118		
240	28.5	56.2	97.2	178	112	54.3	53.7	187	632	754	961	1027		
230	15.0	25.3	51.7	135	85.6	43.1	39.1	129	504	709	845	911		
220	6.0	8.6	22.3	79.0	56.4	28.6	25.8	65.9	553	641	707	771		
210	2.4	.9	6.3	34.4	34.7	12.8	13.6	24.4	472	552	564	620		
200				7.1	4.3	2.3	3.4	2.2	368	448	448	486		
190									266	354	366	384		
180									194	282	308	322		
170									146	231	267	283		
160									115	192	233	252		
150									95.5	137	203	222		
140									83.3	137	174	191		
130									75.6	119	151	166		
120									69.7	108	134	151		
110									31.8	68.0	101	113		

TABLES OF IONOSPHERIC DATA

DECEMBER 1960 - OCTOBER 1957

Table 1

Washington, O. C. (38.7° N, 77.1° W)							
December 1960							
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00		3.6 29	290				2.88
01		3.5 24	305				2.78
02		3.7 28	300				2.90
03		3.5 31	275				2.90
04		3.4 29	270				3.00
05		3.2 30	270				3.00
06		(3.0) 27	(275)			2.6	(3.10)
07		(3.7) 29	260			2.8	
08		6.9 31	230		125	2.00	2.2
09	---	8.35 30	230		111	2.50	3.35
10	(240)	10.2 31	230	---	<114	2.85	3.30
11	240	11.2 30	230	---	115	3.10	3.20
12	240	10.95 30	225	---	115	3.18	3.20
13	235	10.8 29	230	---	113	3.10	3.10
14	(250)	11.0 29	235		113	2.95	3.10
15	(240)	10.8 29	235		115	2.55	2.9
16		10.3 31	230		119	2.15	3.15
17		9.2 31	225		---	---	1.7
18		8.3 30	225				3.15
19		6.5 29	220				3.15
20		4.8 31	240				3.10
21		4.2 29	260				3.00
22		3.9 28	275				2.90
23		3.65 30	280				2.88

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

Table 2

Resolute Bay, Canada (74.7° N, 94.9° W)							
November 1960							
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00		5.4 13	285				---
01		(5.2) 18	290				---
02		5.6 19	280				---
03		5.6 16	285				---
04		(5.9) 13	285				---
05		(5.5) 11	300				---
06		5.6 15	300				---
07		6.0 13	300				---
08		6.1 15	290				---
09		6.3 17	295		---	---	(2.80)
10		6.0 17	260		---	---	---
11		6.3 17	280		---	---	---
12		6.2 19	280		---	---	---
13		6.5 17	250		---	---	---
14		6.0 20	270		---	1.70	(2.80)
15		6.8 22	270		---	---	---
16		6.8 22	270		---	---	(3.00)
17		6.2 19	270		---	---	(2.30)
18		6.0 23	280				---
19		6.2 19	285				---
20		6.0 20	290				---
21		(6.0) 20	290				---
22		6.0 17	295				---
23		(5.2) 16	295				---

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

Table 3

Tromsø, Norway (69.7° N, 19.0° E)							
November 1960							
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00		(4.4) 3	---				3.9
01		(2.9) 5	---				4.0
02		(3.0) 4	---				4.6
03		(3.4) 8	---		---	---	3.8 (2.50)
04		(3.9) 9	(295)		---	---	3.2
05		(3.9) 12	(290)		---	---	2.8
06		(3.4) 9	(275)				2.0 (2.70)
07		3.2 13	(295)		---	---	2.8 (2.65)
08		3.8 16	(270)		---	---	2.80
09		5.8 12	(250)		---	---	(3.10)
10	---	6.8 14	(245)		---	---	3.05
11	(245)	8.5 17	---		---	---	3.00
12	245	8.5 17	---		---	---	3.05
13	(245)	8.1 21	245		---	---	3.00
14	---	6.9 15	245		---	---	2.95
15		4.8 10	250			2.0	(2.90)
16		(4.0) 8	(245)			2.6	---
17		(4.9) 5	(245)			2.9	---
18		(4.2) 4	(255)			3.0	---
19		(4.2) 6	---			3.2	---
20		(4.2) 2	---			3.0	---
21		(4.3) 3	---			5.0	---
22		(3.8) 2	---			3.2	---
23		(3.8) 3	---			3.1	---

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

Table 5

Sodankylä, Finland (67.4° N, 26.6° E)							
November 1960							
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00		(4.1) 1	350				3.4
01		---	0 360				3.5
02		---	0 350				(3.6)
03		---	0 330				(3.3)
04		---	0 330				2.8
05		(2.4) 1	320				(3.3)
06		(3.2) 2	300				2.2
07		(2.8) 1	310		---	---	2.4
08		(4.0) 2	280		---	E	(2.8)
09		5.7 15	260		---	E	(3.0)
10		6.1 21	250		---	---	(3.3)
11		7.8 19	245		---	---	3.00
12		9.2 16	240		---	---	2.8
13		9.4 16	240		---	---	(3.3)
14		8.5 15	235		---	---	(3.3)
15		8.3 10	240		---	E	2.6
16		(8.2) 4	245		---	E	2.9
17		(7.3) 6	260		---	E	(2.6)
18		(5.8) 2	270		---	---	(3.2)
19		(4.9) 3	280		---	---	3.0
20		(4.8) 3	315				2.3
21		(4.3) 3	300				2.3
22		(4.2) 6	325				3.4
23		(2.9) 3	335				3.7

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

Table 4

Kiruna, Sweden (67.8° N, 20.3° E)							
November 1960							
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00		(4.0) 9	335				4.6 (2.6)
01		(3.2) 7	345				4.0 (2.6)
02		(3.0) 5	335				4.0 (2.6)
03		3.7 10	310				3.4 (2.6)
04		3.3 12	<295				3.0 (2.6)
05		3.3 15	<295				2.8
06		3.0 16	290				2.4
07		3.2 15	290				2.8
08		4.0 22	265		---	---	2.8
09		5.8 19	250		---	---	3.0
10		6.8 19	240		---	---	3.0
11		8.3 21	240		---	---	3.0
12		8.6 21	240		---	---	3.0
13		8.0 23	240		---	---	3.0
14		7.0 17	235		---	---	3.0
15		6.4 15	235				3.0
16		4.6 13	240				2.8
17		(3.3) 8	250			2.5	(2.85)
18		(2.3) 9	275			2.8	(2.8)
19		(3.6) 4	270			3.0	---
20		(3.3) 6	300			3.4	---
21		(3.6) 4	310			3.8	---
22		(3.3) 3	(340)			4.4	---
23		(4.1) 7	(355)			4.5	(2.6)

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

Table 6

Luleå, Sweden (65.6° N, 22.1° E)							
November 1960							
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00		3.0 13	355				1.9 2.65
01		3.2 10	330				(2.7)
02		3.1 17	330				2.6
03		3.0 14	310				2.9
04		3.3 15	310				2.8
05		2.8 16	300				2.9
06		2.7 17	295				2.8
07		2.8 15	280				2.8
08		5.0 20	250		---	---	3.1
09		6.3 17	240		---	---	3.2
10		7.3 17	240		---	---	3.2
11		8.2 18	240		---	---	3.2
12		9.4 17	245		---	---	3.3
13		9.0 19	240		---	---	3.2
14		8.3 18	230		---	---	3.2
15		6.8 18	230		---	---	3.1
16		5.6 15	240				3.2
17		4.8 14	245				3.1
18		3.7 15	250				3.0
19		3.5 11	250				2.95
20		3.3 10	290				(2.8)
21		3.2 10	305				(2.75)
22		4.0 11	315				(2.3)
23		(3.0) 9	350				(2.2) (2.65)

Time: 15.0°E.
Sweep: 0.66 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 7

Lycksele, Sweden (64.6° N, 18.0° E)								November 1960	
Time	h'F2	foF2—Count	h'F	fof1	h'E	foE	fEs	(M3000)F2	
00		3.6 20 330			---	---	3.1	2.5	
01		(3.6) 22 320			---	---	3.0	(2.5)	
02		(3.6) 20 300			---	---	3.2	(2.5)	
03		(3.2) 23 300			---	---	2.7	(2.5)	
04		(3.1) 23 290			---	---	3.0	2.55	
05		3.2 23 275			---	---	2.6	2.6	
06		2.6 22 275			---	---	2.3	2.6	
07		3.2 23 255			---	---	2.8	2.6	
08		4.4 25 245	110	1.40	3.0	2.8			
09		6.2 24 235			---	2.00	2.8	3.0	
10		7.4 24 230			---	2.10	3.3	3.0	
11		8.5 26 235			---	---	2.6	3.1	
12		9.1 26 230			---	2.20	2.7	3.1	
13		9.2 24 230			---	2.10		3.1	
14		8.6 23 220			---	---	2.8	3.1	
15		>7.6 24 220			---	1.30	3.0	3.0	
16		6.3 22 230			---	---	3.1	3.0	
17		5.4 20 235			---	---	3.0	3.0	
18		4.0 22 240			---	---	3.1	2.85	
19		3.5 20 245			---	---	3.0	2.7	
20		(2.7) 21 260			---	---	2.5	(2.6)	
21		(2.8) 19 285			---	---	3.0	2.6	
22		3.1 18 (280)			---	---	3.0	2.45	
23		3.5 17 310			---	---	3.1	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 9

Upsala, Sweden (59.8° N, 17.6° E)								November 1960	
Time	h'F2	foF2—Count	h'F	fof1	h'E	foE	fEs	(M3000)F2	
00		2.9 11 345			---	E	3.1	2.6	
01		2.4 14 315			---	E	3.1	2.7	
02		2.4 15 310			---	E	3.2	2.6	
03		2.4 16 300			---	E	2.7	2.65	
04		2.5 20 300			---	E	2.2	2.7	
05		2.6 24 270			---	E	2.5	2.8	
06		(2.4) 25 260			---	E	2.4	(2.9)	
07		3.8 26 255	135	1.00	1.3	2.85			
08		5.0 29 240	(105)	1.00	2.8	3.2			
09		6.8 29 235		<115	2.10	2.5	3.2		
10		8.0 29 235		(110)	2.25	2.9	3.3		
11		9.1 27 235		<115	2.40	2.8	3.2		
12		9.7 27 230		<125	2.50		3.2		
13		9.8 29 230		<130	2.40		3.2		
14		9.4 25 225		<135	2.20	2.4	3.3		
15		8.4 26 215		---	1.90	2.4	3.25		
16		7.7 24 220		---	---	2.5	3.2		
17		6.7 25 220		---	E	2.4	3.2		
18		5.3 24 230		---	E	2.4	3.1		
19		3.6 23 240		---	E	2.2	3.1		
20		3.3 18 260		---	E	2.2	2.9		
21		2.6 22 290		---	E	2.2	2.7		
22		2.5 17 310		---	E	2.2	2.6		
23		2.6 12 340		---	E	2.3	2.6		

Time: 15.0°E.

Sweep: 0.33 Mc to 20.0 Mc in 3 minutes.

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

Table 11

De Bilt, Holland (52.1° N, 5.2° E)								November 1960	
Time	h'F2	foF2—Count	h'F	fof1	h'E	foE	fEs	(M3000)F2	
00		(2.9) 28 (330)						(2.65)	
01		(2.8) 28 <335						(2.60)	
02		(2.6) 27 <335						2.65	
03		(2.5) 29 (300)						(2.70)	
04		(2.4) 29 <300						(2.85)	
05		(2.3) 29 <290						(2.85)	
06		(2.6) 27 <300						(2.70)	
07		4.6 30 225			---	1.7	2.2	3.15	
08		6.9 30 210			110	2.1	2.2	3.35	
09		8.4 29 210			110	2.5		3.25	
10		9.5 29 215			100	2.7	2.8	3.30	
11	(225)	10.4 30 215			110	2.9		3.30	
12		10.4 30 215			115	2.8		3.30	
13		10.0 30 215			120	2.0		3.20	
14		10.2 30 215			125	2.5		3.30	
15		9.1 30 210			130	2.1		3.35	
16		8.2 30 200			---	1.6	1.9	3.20	
17		7.4 30 215					2.2	3.20	
18		5.2 30 210						3.25	
19		4.0 29 225						3.10	
20		3.2 29 250						2.90	
21		3.0 30 <295						2.70	
22		2.9 29 <310						2.60	
23		(2.0) 27 (320)						2.65	

Time: 0.0°.

Sweep: 1.4 Mc to 16.0 Mc in 40 seconds.

Table 0

Nurmijarvi, Finland (60.5° N, 24.6° E)								November 1960	
Time	h'F2	foF2—Count	h'F	fof1	h'E	foE	fEs	(M3000)F2	
00		(2.9) 1							---
01		---	0						---
02		(2.4) 1							---
03		(2.4) 2							---
04		(2.4) 3							---
05		(2.2) 2							---
06		(2.4) 5							(2.90)
07		(3.2) 4							---
08		5.4 11							3.00
09		6.0 17							3.20
10		8.4 19							3.30
11		9.8 21							3.20
12		10.2 23							3.20
13		10.4 23							3.20
14		9.4 25							3.20
15		8.8 17							3.20
16		9.2 15							3.20
17		8.4 12							3.20
18		7.1 10							(3.10)
19		(5.3) 6							(3.10)
20		(4.0) 4							---
21		(3.0) 4							---
22		(3.0) 5							(2.90)
23		(3.0) 3							---

Time: 30.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 1 minute.

Table 10

Churchill, Canada (58.0° N, 94.2° W)								November 1960	
Time	h'F2	foF2—Count	h'F	fof1	h'E	foE	fEs	(M3000)F2	
00		4.2 19 300						4.9	
01		4.0 19 (295)						4.0	---
02		3.9 17 (305)						3.9	---
03		3.6 16 (345)						3.2	
04		4.0 14 320				---	---	3.0	
05		3.9 15 (310)						3.8	
06		4.1 14						3.2	---
07		4.4 15 (300)				---	---	4.0	---
08		5.0 21 300				---	---	3.2	
09		5.7 21 290				---	---		3.10
10		6.6 22 205				---	---		3.10
11		7.2 22 270				---	2.90		3.10
12		8.0 22 260				---	---	2.80	3.10
13		8.2 24 265				---	---	2.80	3.10
14		9.0 24 260				---	130	2.60	3.05
15		8.8 24 250				---	120	2.20	3.10
16		8.6 24 250				---	1.95		(3.10)
17		5.5 25 300				---	---	2.3	
18		5.0 26 300				---	---	3.0	---
19		4.6 26 300				---	---	3.9	---
20		4.3 27 295				---	---	3.6	---
21		4.3 24 300				---	---	4.6	---
22		4.6 20 300				---	---	6.0	---
23		4.2 19 (300)				---	---	5.5	---

Time: 90.0°W.

Sweep: 1.0 Mc to 17.0 Mc in 16 seconds.

Table 12

Adak, Alaska (51.9° N, 176.6° W)								November 1960	
Time	h'F2	foF2—Count	h'F	fof1	h'E	foE	fEs	(M3000)F2	
00		2.7 25 312							2.70
01		2.7 26 310							2.70
02		2.7 23 310							2.75
03		2.8 22 319							2.70
04		2.7 24 (317)						1.7	2.65
05		2.8 23 315						2.6	2.62
06		2.8 26 <310						1.4	2.75
07		4.4 25 246			134	1.85		1.8	3.10
08		6.7 29 220			113	2.25		2.3	3.38
09		8.8 30 224			110	2.50			3.30
10		10.55 30 225			110	2.75			3.25
11		11.0 29 225			(115) 2.80				3.30
12		11.15 30 220			113	2.80			3.30
13		11.0 30 220			115	2.75			3.30
14		10.15 30 220			(115) 2.55		2.6		3.30
15		9.75 30 214			(120) 2.25				3.33
16		7.8 30 212			125	---	1.9		3.40
17		6.05 30 212			---	---	1.4		3.30
18		4.2 29 215			---	---			3.40
19		2.8 29 236							3.20
20		2.3 26 255							3.12
21		2.4 25 283							2.92
22		2.5 25 305							2.78
23		2.6 26 <318							2.65

Time: 180.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 13

Winnipeg, Canada (49.9° N, 97.4° W) November 1960									
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		3.4 22	290					(2.90)	
01		3.2 22	300					2.90	
02		3.3 22	300					(2.85)	
03		3.2 20	300					(2.90)	
04		3.3 22	300					(2.80)	
05		3.1 23	300					(2.90)	
06		3.2 19	300					(2.80)	
07		3.2 22	295					3.00	
08		5.0 24	260		<135	2.00		3.20	
09		6.3 23	240		120	2.40		3.30	
10		7.5 24	240		110	2.80		3.30	
11	---	8.9 25	240		110	3.00		3.15	
12	---	9.5 25	235		110	3.00		3.10	
13	---	10.0 25	240		110	3.00		3.20	
14	---	10.2 24	240		120	3.00		3.15	
15		10.1 25	240		120	2.60		3.20	
16		9.8 25	235		---	2.30		3.20	
17		9.9 25	230		---	1.80		3.20	
18		7.6 26	230					3.10	
19		6.0 25	235					3.10	
20		4.8 26	240					3.10	
21		4.0 23	255					3.00	
22		3.8 25	275					3.00	
23		3.3 22	280					2.95	

Time: 90.0°W.

Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 15

Graz, Austria (47.1° N, 15.5° E) November 1960									
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		(3.3) 23	340					(2.7)	
01		(3.4) 28	330					(2.7)	
02		(3.3) 23	330					(2.0)	
03		>3.2 22	315					(2.8)	
04		>3.4 24	205					(3.0)	
05		>3.1 21	(260)					(3.0)	
06		(3.2) 19	(300)					(2.8)	
07		>5.0 27	240					(3.3)	
08		>6.8 27	220					(3.4)	
09		>8.9 27	220					(3.3)	
10		>8.9 27	220					(3.4)	
11		>9.0 26	230						
12		>9.0 27	230						
13		>9.0 28	230						
14		>9.0 28	230						
15		>9.0 28	220						
16		8.8 29	210					(3.4)	
17		>6.0 28	210					(3.3)	
18		>5.6 29	240					3.2	
19		>5.5 23	240					(3.3)	
20		(3.7) 21	250					(3.0)	
21		>3.2 24	(330)					(2.8)	
22		>3.2 20	(335)					(2.8)	
23		>3.2 17	<350					(2.6)	

Time: 15.0°E.

Sweep: 2.8 Mc to 18.0 Mc in 50 seconds.

Table 17

Ottawa, Canada (45.4° N, 75.9° W) November 1960									
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		4.0 24	280					---	
01		3.6 26	290					---	
02		3.4 26	300					---	
03		3.4 26	300					---	
04		3.4 27	300					---	
05		3.2 27	295					---	
06		3.2 27	290					---	
07		4.4 29	265			1.8		(3.00)	
08		6.7 20	240		110	2.2		3.30	
09		8.0 28	240		110	2.7		3.20	
10		9.2 20	225	---	110	3.0		3.15	
11	(280)	10.1 20	230	---	115	3.0		3.20	
12	250	10.6 28	225	---	110	3.0		3.10	
13	(250)	10.2 28	230	---	110	3.0		3.10	
14	---	10.8 27	240	---	110	2.9		3.10	
15	---	10.4 26	240		120	2.6		3.15	
16	---	10.0 26	230		120	2.0		(3.15)	
17		9.0 27	220		---	---		(3.15)	
18		7.5 27	230					(3.05)	
19		6.1 27	250					(3.10)	
20		5.1 28	250					(3.10)	
21		4.4 25	270					(3.00)	
22		4.2 22	290					(2.90)	
23		4.2 21	290					---	

Time: 75.0°W.

Sweep: 1.0 Mc to 20.0 Mc in 16 seconds.

Table 14

St. John's, Newfoundland (47.6° N, 52.7° W) November 1960									
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		4.0 27	300						2.65
01		3.6 25	300						2.65
02		3.2 25	300						2.65
03		3.2 27	300						2.70
04		3.0 25	295						2.70
05		2.8 25	290						2.70
06		3.6 27	280						2.80
07		5.9 29	230						3.10
08		7.3 20	225		---	---			3.15
09		8.4 28	220		---	---			3.10
10		9.6 27	230		---	---			3.05
11		10.3 28	230		---	---			3.10
12		11.0 28	230		---	---			3.10
13		10.8 28	230		---	---			3.05
14		10.8 27	235		---	---			3.00
15		10.3 27	225		---	---			3.00
16		9.6 27	220						3.00
17		8.0 20	215						2.95
18		6.7 23	230						2.85
19		5.3 22	245						2.80
20		5.0 21	280						2.70
21		4.5 20	300						2.70
22		4.6 20	300						2.65
23		4.1 23	300						2.65

Time: 60.0°W.

Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 16

Sottens, Switzerland (46.6° N, 6.7° E) November 1960									
Time	h'F2	foF2-Count	h'F1	foF1	h'E	foE	foEs	(M3000)F2	
00	320	3.4 27							2.7
01	310	3.4 27							2.8
02	300	3.5 28							2.75
03	300	3.4 28							2.8
04	280	3.3 30							2.8
05	270	3.0 27							2.9
06	270	2.7 25							3.0
07	270	3.4 26							2.9
08	230	5.9 29			130	1.9			3.3
09	230	8.0 28			120	2.3			3.4
10	230	8.9 28			110	2.7			3.5
11	230	9.1 28			110	2.8			3.45
12	240	9.3 25			100	3.0			3.5
13	230	9.3 25			110	3.0			3.4
14	240	9.2 25			115	2.9			3.4
15	240	9.2 24			120	2.6			3.5
16	230	9.0 26			120	2.2			3.45
17	220	8.0 29			130	1.8			3.4
18	220	6.8 26							3.2
19	240	5.9 27							3.2
20	230	4.7 28							3.2
21	240	3.5 26							3.0
22	290	3.3 25							2.9
23	300	3.4 20							2.8

Time: 15.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 18

Wakkanai, Japan (45.4° N, 141.7° E) November 1960									
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		3.7 29	320						2.70
01		3.6 28	330						2.70
02		3.6 20	320						2.70
03		3.5 28	300						2.70
04		3.5 28	290						2.80
05		3.5 27	285						2.80
06		4.1 29	260						2.90
07		6.8 30	235			2.05			3.25
08		9.6 28	230			2.50	2.8		3.20
09	---	10.5 26	230	---		2.75	3.4		3.20
10	---	11.6 26	230	---		3.00			3.15
11	---	12.3 26	235			3.05	3.2		3.15
12		11.8 28	235			3.00	3.1		3.20
13		10.7 27	235			2.90			3.15
14		10.3 29	235			2.70	2.8		3.15
15		9.8 30	230			2.30			3.20
16		8.6 30	220						3.20
17		6.5 30	220						3.10
18		5.8 30	245						3.05
19		4.8 30	250						3.05
20		4.0 27	260						3.00
21		3.5 28	300						2.75
22		3.6 28	310						2.75
23		3.5 29	310						2.75

Time: 135.0°E.

Sweep: 1.0 Mc to 20.7 Mc in 1 minute.

Table 19

Rome, Italy (41.8° N, 12.5° E)							
November 1960							
Time	h°F2	foF2—Count	h'F	fof1	h'E	foE	foEs (M3000)F2
00		3.6 28	310				2.60
01		3.8 30	300				2.65
02		3.8 29	310				2.65
03		3.7 30	300				2.70
04	---	3.7 29	200	---			2.80
05	---	(3.3)	26 250	---			3.00
06	---	(3.1)	29 280	---			(2.85)
07		(5.5)	30 240		160	1.8	(2.95)
08		(8.5)	25 240		120	2.3	(3.25)
09		(9.9)	23 230		110	2.7	3.15
10		(11.2)	20 240		110	3.0	(3.15)
11		(11.8)	24 230		110	3.1	(3.05)
12		(12.0)	24 230		110	3.2	(3.10)
13		11.2 27	240		110	3.2	3.05
14		10.9 22	240		110	3.0	3.05
15		(11.0)	23 240		120	2.7	(3.10)
16		(10.4)	23 230		130	2.1	(3.15)
17		(8.5)	17 220		---	---	(3.10)
18		6.0 24	230				2.95
19		(5.8)	26 240				(3.00)
20		(4.9)	23 240				(3.05)
21		3.7 26	250				2.80
22		3.5 27	300				2.70
23		3.6 27	300				2.65

Time: 15.0°E.

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

Table 20

Boulder, Colorado (40.0° N, 105.3° W)							
November 1960							
Time	h°F2	foF2—Count	h'F	fof1	h'E	foE	foEs (M3000)F2
00		3.2 14					2.75
01		3.4 15					2.80
02		3.5 15					2.75
03		3.5 15					2.80
04		3.45 16					2.80
05		3.4 15					2.78
06		(3.6)	15				2.80
07		6.2 16					3.30
08		8.6 16					3.40
09		10.15 16					3.32
10		11.1 16					3.25
11		11.7 16					3.15
12		11.8 17					3.10
13		12.0 16					3.10
14		12.0 13					3.05
15		11.5 14					3.10
16		11.0 16					3.18
17		9.8 16					3.22
18		7.7 14					3.10
19		6.15 14					3.25
20		4.6 13					3.25
21		3.8 13					3.10
22		3.3 13					2.90
23		3.2 13					2.82

Time: 105.0°W.

Sweep: 0.25 Mc to 20.0 Mc in 27 seconds.

*Data through 0100 on 21st.

Table 21

Akita, Japan (39.7° N, 140.1° E)							
November 1960							
Time	h°F2	foF2—Count	h'F	fof1	h'E	foE	foEs (M3000)F2
00		3.8 28	300				(2.1) 2.70
01		3.6 28	315				2.0 2.70
02		3.6 28	305				(2.1) 2.70
03		3.6 26	300				2.2 2.75
04		3.5 27	290				(2.1) 2.70
05		3.5 28	290				2.70
06		4.5 28	260				2.95
07		8.1 29	245			2.05	3.40
08		10.2 20	240			2.70	3.35
09	---	11.1 28	240	---		3.05 3.4	3.25
10	(245)	12.1 28	240			3.25 3.5	3.25
11	(245)	12.5 28	245			3.30 3.6	3.20
12	(245)	11.8 20	240			3.30 3.4	3.20
13	---	11.6 28	245			3.20 3.2	3.15
14		11.4 27	245			2.90	3.20
15		10.8 27	245			2.55 2.8	3.25
16		9.5 28	225			2.00 2.3	3.30
17		7.1 29	215			(2.3)	3.20
18		6.0 29	240			(2.4)	3.15
19		5.4 20	245			(2.1)	3.15
20		4.6 27	245			2.2	3.05
21		3.8 27	255			2.2	2.80
22		3.6 28	290			2.1	2.70
23		3.6 28	300			1.8	2.70

Time: 135.0°E.

Sweep: 1.6 Mc to 20.0 Mc in 20 seconds.

Table 23

Tokyo, Japan (35.7° N, 139.5° E)							
November 1960							
Time	h°F2	foF2—Count	h'F	fof1	h'E	foE	foEs (M3000)F2
00		3.6 29	305				2.70
01		3.5 29	310				2.70
02		3.6 30	310				1.6 2.70
03		3.5 29	290				1.4 2.75
04		3.2 29	290				1.3 2.70
05		3.2 29	305				2.65
06		4.6 30	255			----	2.90
07		(8.2)	29 230			(2.30)	(3.20)
08	---	10.8 29	225			2.60 2.9	3.30
09	(255)	11.6 30	230			3.05 3.2	3.20
10	250	12.8 30	230			3.30 3.4	3.15
11	250	12.9 30	225			3.40 3.6	3.15
12	250	12.2 29	230			3.30 3.6	3.10
13	(255)	12.3 30	230			3.20 3.2	3.10
14	---	11.6 30	230			3.00 3.3	3.10
15		11.0 30	230			2.65 3.2	3.20
16		9.8 30	220			(2.20) 2.6	3.20
17		8.2 30	210			---- (2.4)	3.15
18		6.2 30	250			2.4	3.10
19		5.2 29	250				3.10
20		5.0 29	250			2.2	2.95
21		4.2 29	260			2.1	2.90
22		3.8 30	300				2.75
23		3.6 29	305				2.70

Time: 135.0°E.

Sweep: 1.0 Mc to 20.0 Mc in 20 seconds.

Table 22

Washington, D. C. (38.7° N, 77.1° W)							
November 1960							
Time	h°F2	foF2—Count	h'F	fof1	h'E	foE	foEs (M3000)F2
00		3.9 29	200				2.85
01		3.9 28	280				2.82
02		3.85 28	290				2.82
03		3.6 28	275				2.90
04		3.7 28	200				2.98
05		3.4 28	280				2.88
06		(3.3)	28 280				(2.88)
07		5.3 28	245		(124)	1.80	3.20
08	---	8.0 28	235		115	2.40	3.30
09	240	9.0 30	230	---	111	2.80	3.25
10	240	9.7 29	220		113	3.00	3.15
11	(260)	11.0 29	220		114	3.15	3.10
12	(255)	11.0 30	225	---	119	3.20	3.08
13	250	11.25 30	230	---	119	3.20	3.05
14	245	11.0 30	230	---	119	3.00	3.02
15	240	10.8 30	235		119	2.75	3.10
16	---	10.7 30	235		122	2.25	3.15
17		9.5 30	220				3.10
18		7.75 30	230				3.05
19		6.65 30	230				3.35
20		5.55 28	250				3.00
21		4.8 30	260				2.90
22		4.7 29	270				2.38
23		3.85 20	270				2.08

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 24

White Sands, New Mexico (32.3° N, 106.5° W)							
November 1960							
Time	h°F2	foF2—Count	h'F	fof1	h'E	foE	foEs (M3000)F2
00		3.6 27	<290		---	----	2.70
01		3.5 27	<300		---	----	2.70
02		3.7 28	<300		---	----	2.70
03		3.6 28	<300		---	----	2.70
04		3.65 28	(285)				2.70
05		3.6 28	<300				2.70
06		3.9 29	<290				2.75
07		6.8 29	250		<133	2.10	3.15
08	---	9.4 30	240	---	115	2.60	3.30
09	---	10.6 28	234	---	110	2.98	3.20
10	(255)	11.5 28	225	---	111	3.25	3.10
11	---	11.8 29	225	---	115	3.35	3.05
12	---	11.55 30	224	---	117	3.40	3.00
13	---	11.8 30	230	---	117	3.40	2.98
14	---	11.8 30	240	---	115	3.25	3.00
15	---	11.25 30	240	---	117	2.90	3.00
16		10.3 30	236		(122)	2.52	3.10
17		9.6 30	225				2.2
18		7.3 30	220				1.8
19		5.45 30	235				3.10
20		4.5 29	245				2.0
21		3.9 28	(260)				2.0
22		3.7 29	(285)				2.9
23		3.55 28	<295				2.6

Time: 105.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 25

Yamagawa, Japan (31.2° N, 130.6° E)								November 1960	
Time	h°F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	4.1	28	300					2.75	
01	4.0	27	295					2.80	
02	3.6	28	295					2.80	
03	3.5	28	270					2.90	
04	3.2	27	265			----		2.95	
05	3.1	26	330			----		2.60	
06	3.5	27	300					2.75	
07	6.8	27	245			1.95		3.25	
08	9.5	29	235			2.60	2.1	3.35	
09	11.1	29	240			3.00	3.0	3.25	
10	12.3	20	230			3.20	3.4	3.20	
11	13.0	26	230			3.40	3.6	3.15	
12	12.7	27	230			3.50	3.7	3.05	
13	13.8	24	240			3.40	3.8	3.05	
14	13.0	25	240			3.30	3.9	3.10	
15	13.1	27	240			3.10	3.5	3.15	
16	11.9	29	235			2.65	3.1	3.20	
17	10.8	28	225			----	3.0	3.25	
18	(8.7)	29	220				3.1	(3.15)	
19	7.4	20	235				2.4	3.00	
20	(7.1)	25	240					(3.00)	
21	6.5	29	235					3.00	
22	5.5	28	240					2.90	
23	4.1	27	285					2.70	

Time: 135.0°E.

Sweep: 1.0 Mc to 20.0 Mc in 30 seconds.

Table 27

Talara, Peru (4.6° S, 81.3° W)								November 1960	
Time	h°F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	11.0	14	240				2.7	3.10	
01	9.3	14	240				3.2	3.20	
02	8.1	19	240				2.8	3.05	
03	6.95	20	250				2.3	3.12	
04	6.1	23	245				2.0	3.20	
05	5.2	25	240				3.0	3.25	
06	5.8	27	270			---	4.0	3.05	
07	9.7	29	250			<121	2.52	4.2	
08	12.0	30	240			119	3.25	4.6	
09	12.85	26	230			119	3.50	3.8	
10	---	13.25	26	220		117	3.80	4.0	
11	---	13.3	27	<215		115	3.90	2.45	
12	---	13.35	28	(210)		117	4.00	2.40	
13	---	13.4	28	(210)	---	115	3.95	2.40	
14	---	13.4	28	(215)		115	3.78	4.2	
15	---	13.7	29	(220)		113	3.55	6.0	
16	---	13.2	29	(230)		113	3.20	6.9	
17	---	13.3	30	(255)		119	2.72	4.5	
18	---	13.8	30	(265)		<153	2.02	3.2	
19	---	13.65	30	285			3.4	2.70	
20	---	(13.0)	28	315			2.1	(2.58)	
21	---	(12.5)	17	280			2.3	(2.75)	
22	---	(12.55)	12	255			3.3	(2.92)	
23	---	11.3	12	245			3.0	(2.95)	

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 29

Townsville, Australia (19.3° S, 146.7° E)								November 1960	
Time	h°F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	>7.5	3	250				2.8		
01	>7.0	3	250				3.2		
02	>6.5	3	300				3.3		
03	>7.0	3	290				3.1	----	
04	>6.6	8	285				2.5	----	
05	>6.5	5	280					----	
06	>6.4	6	250			2.20			
07	>7.0	7	240	---		2.85	3.4	----	
08	>8.4	13	230	---		3.20	3.8	(3.05)	
09	10.9	10	(220)	---		3.50	4.2	(3.00)	
10	>10.7	12	(220)	5.1		3.55	4.6	2.75	
11	>11.0	15	(225)	5.6		3.80	5.6	2.80	
12	>11.0	15	(230)	5.4		>3.80	4.8	2.80	
13	(11.5)	15	(220)	5.2		3.85	4.4	2.05	
14	>11.0	13	<230	5.1		3.80		(2.75)	
15	>11.0	14	(225)	---		3.50		2.85	
16	>10.0	10	245	---		3.30	4.0	----	
17	>9.0	9	250			2.90	3.4	----	
18	>6.5	2	290			2.05	4.0	----	
19	---	0	295				3.8		
20	---	0	310				3.4		
21	---	0	300				3.1		
22	>7.0	1	295				3.6		
23	>8.0	2	275				3.4		

Time: 150.0°E.

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

Table 26

El Cerillo, Mexico (19.3° N, 99.5° W)								November 1960	
Time	h°F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	3.8	26	270					3.05	
01	3.6	25	260					3.10	
02	3.4	26	265					3.00	
03	3.2	26	280					2.90	
04	3.1	26	290					2.70	
05	3.1	26	305					2.80	
06	3.2	26	305					2.80	
07	6.0	26	250			155	1.90	3.30	
08	9.6	25	230			109	2.50	3.40	
09	11.2	25	230			105	3.00	3.30	
10	12.0	23	220			107	3.35	3.20	
11	(12.0)	22	220			103	3.50	(3.20)	
12	(11.5)	22	210			103	3.65	(3.10)	
13	(11.4)	23	220			104	3.65	3.9	
14	(11.7)	20	230			103	3.60	3.7	
15	(12.0)	21	230			103	3.35	3.9	
16	11.2	25	230			103	3.00	3.8	
17	10.8	25	230			103	2.30	4.0	
18	9.6	26	215					3.0	
19	7.8	26	210					2.8	
20	5.4	24	220					1.9	
21	4.6	26	250					2.8	
22	4.3	26	240					1.8	
23	3.8	25	260					3.15	

Time: 90.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 18 seconds.

Table 28

Huancayo, Peru (12.0° S, 75.3° W)								November 1960	
Time	h°F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	(9.65)	2	300					----	
01	(10.0)	2	270					----	
02	(7.85)	6	260					(3.18)	
03	6.5	11	240					3.25	
04	6.2	15	230					3.30	
05	5.6	21	235					3.22	
06	8.0	30	250			129	2.15	3.18	
07	10.8	30	235			119	2.85	3.00	
08	12.0	30	225			117	(3.40)	7.0	
09	---	12.7	28	220	---	(3.75)		7.2	
10	---	12.55	28	210	---	(4.00)		7.4	
11	---	12.2	29	210	---	(4.05)		7.4	
12	---	12.2	29	205	---	(4.00)		7.3	
13	---	12.05	30	210	---	(115) (4.00)		7.0	
14	---	12.95	30	205		117	(3.80)	7.2	
15	---	12.9	30	215		113	(3.55)	7.0	
16	---	13.05	30	230		119	(3.20)	7.0	
17	---	12.05	30	250		119	(2.60)	5.8	
18	---	12.25	30	270		<153	1.70	4.0	
19	---	11.1	29	330				2.25	
20	---	10.2	18	(340)				2.20	
21	---	9.4	11	340				2.30	
22	---	(10.6)	5	350				(2.50)	
23	---	(10.95)	4	340				----	

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 30

Talara, Peru (4.6° S, 81.3° W)								September 1960	
Time	h°F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	>11.1	28	215					3.08	
01	9.35	28	225					(3.10)	
02	7.8	23	230					3.15	
03	6.4	26	230					3.20	
04	5.5	28	235					3.20	
05	4.0	22	265					2.95	
06	4.3	24	275					2.68	
07	8.0	30	250			125	2.50	3.00	
08	10.4	29	230			115	3.20	2.80	
09	11.6	29	220			115	3.65	2.50	
10	12.0	29	210			113	3.90	2.32	
11	---	12.5	29	200	---	113	4.00	2.25	
12	---	12.4	29	200	---	111	4.05	2.20	
13	---	12.3	29	205	---	111	4.00	2.20	
14	---	12.2	30	205	---	111	3.85	2.20	
15	---	12.0	30	205	---	111	3.70	4.2	
16	---	11.8	29	220	---	111	3.40	3.5	
17	---	11.5	29	240		115	2.92	2.22	
18	---	11.4	29	270		(145)	2.10	2.1	
19	---	>11.25	30	330				(2.30)	
20	---	>11.2	23	365				(2.38)	
21	---	>11.4	20	275				(2.68)	
22	---	>11.6	24	230				(2.85)	
23	---	>11.65	26	220				3.05	

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 31

Bunia, Belgian Congo (1.5° N, 30.2° E)									
December 1959									
Time	h'F2	foF2—Count	h'F1	foF1	h'E	foE	fEs	(M3000)F2	
00	260	9,3	19				1.7	2.67	
01	250	9,1	25					1.6	2.72
02	240	8,0	20						<2.04
03	230	6,6	23				1.9	2.92	
04	250	6,3	22	---	---	---	2.2	<2.86	
05	250	8,6	27	250	---	120	2.7	2.86	
06	---	10,4	28	240	---	110	3.2	2.55	
07	---	11,1	28	230	---	110	3,6	2.43	
08	---	11,0	28	230	---	110	3,9	2.26	
09	---	>11,1	22	230	---	110	4,0	2.16	
10	---	12,0	21	220	---	110	4,0	2.17	
11	(380)	12,5	24	220	---	110	4,0	2.26	
12	---	12,4	23	240	---	110	3,7	2.16	
13	(540)	(12,0)	22	230	---	110	3,5	<2.12	
14	---	12,5	14	250	---	115	3,1	<2.16	4.0
15	---	12,6	10	260	---	120	2,5	2.16	
16	---	>11,4	6	300	---	---	---	<2.15	
17	380	(11,1)	7				3,0	(2,14)	
18	380	>12,2	7				3,0	(2,24)	
19	310	(12,7)	11				2,1	2.38	
20	250	12,5	11				2,0	<2.61	
21	240	10,4	12					2.47	
22	260	10,0	15					2.50	
23	260	9,6	18				1.8	2.53	

Time: 0.0°.

Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Table 33

Elisabethville, Belgian Congo (11.6° S, 27.5° E)									
December 1959									
Time	h'F2	foF2—Count	h'F1	foF1	h'E	foE	fEs	(M3000)F2	
00	275	8,2	20					2.58	
01	270	7,6	17					2.57	
02	265	7,0	27					2.59	
03	260	6,0	28				1.5	2.56	
04	270	6,5	27	---	---	140	1,7	2.5	
05	(280)	8,6	21	250	---	120	2,9	3,0	2.74
06	285	9,0	30	240	---	115	3,4	3,5	2.62
07	320	10,0	30	235	---	110	3,7	3,6	2.50
08	330	10,7	30	235	---	110	3,9		2.40
09	350	11,0	31	230	5,2	110	4,0		2.34
10	385	11,1	30	230	5,4	110	4,0		2.26
11	380	11,8	30	230	5,8	110	4,0	4,0	2.30
12	360	11,8	31	230	5,2	110	4,0	4,1	2.34
13	360	11,6	28	230	5,0	110	3,7	4,0	2.31
14	380	11,2	30	240	5,5	115	3,4	4,0	2.28
15	355	11,1	29	250	---	120	3,0	3,3	2.31
16	310	11,4	24	280	---	130	2,2	3,0	2.46
17	280	11,0	18					2,9	2.50
18	290	11,0	13					2,5	<2.46
19	280	11,1	22					2,0	2.52
20	270	11,3	25					1,9	2.60
21	250	11,0	26					1,4	2.65
22	250	9,1	27						2.60
23	260	8,8	20						2.56

Time: 0.0°.

Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Table 35

Lindau/Harz, Germany (51.6° N, 10.1° E)									
November 1959									
Time	h'F2	foF2—Count	h'F1	foF1	h'E	foE	fEs	(M3000)F2	
00		4,22	30	312				2,54	
01		4,18	29	306				2,57	
02		3,72	29	299				2,55	
03		3,52	28	296				2,58	
04		3,26	30	290				2,64	
05		3,18	30	278				2,68	
06		2,88	28	262				2,73	
07		3,75	30	263	---	E		2,82	
08		6,70	29	228	---	1,90	2,6	3,18	
09		9,30	27	227	---	2,34	3,5	3,22	
10		10,98	26	222	108	2,65	4,0	3,18	
11		12,09	26	227	107	2,87	3,9	3,14	
12		12,16	28	221	104	2,92	3,9	3,12	
13		11,85	29	226	105	2,91	3,8	3,04	
14		11,09	30	230	---	2,78	3,8	3,05	
15		12,00	27	228	---	2,44	3,6	3,13	
16		11,02	29	220	---	1,88	3,5	3,12	
17		9,44	29	213	---	E	2,8	3,15	
18		7,67	29	222				3,06	
19		6,35	30	229				3,01	
20		5,22	30	234				2,94	
21		4,50	30	262				2,68	
22		4,38	30	293				2,62	
23		4,18	30	303				2,54	

Time: 15.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 4 minutes.

Table 32

Leopoldville, Belgian Congo (4.4° S, 15.2° E)									
December 1959									
Time	h'F2	foF2—Count	h'F1	foF1	h'E	foE	fEs	(M3000)F2	
00	265	(8,7)	8						(2,50)
01	270	8,2	14						(2,56)
02	260	8,0	17						2,50
03	250	7,2	21						2,68
04	240	6,4	24						2,80
05	260	6,9	27	---	---	130	1,9	2,6	2,80
06	(255)	8,6	20	245	---	120	2,9	3,3	2,77
07	---	10,0	20	235	---	110	3,4		2,60
08	(300)	10,8	23	235	---	110	3,7		2,39
09	(325)	11,4	11	230	---	110	3,9		2,27
10	---	---	0	240	---	110	---		---
11	---	(12,1)	1	---	---	110	---		---
12	---	13,1	17	250	---	110	---		(2,22)
13	380	13,0	20	240	---	110	---		2,24
14	430	13,0	28	240	---	115	3,6	3,7	2,20
15	400	13,6	22	245	---	115	3,2	3,6	2,23
16	---	13,6	16	260	---	120	2,6	3,2	2,30
17	290	13,0	17	---	---			2,8	2,37
18	325	13,6	13					2,6	<2,24
19	320	(13,6)	5					2,0	(2,38)
20	275	>15,0	14						<2,55
21	240	13,9	16						2,72
22	225	12,7	13						2,63
23	250	11,8	15						2,54

Time: 0.0°.

Sweep: 1.0 to 20.0 Mc in 7 seconds.

Table 34

Inverness, Scotland (57.4° N, 4.2° W)									
November 1959									
Time	h'F2	foF2—Count	h'F1	foF1	h'E	foE	fEs	(M3000)F2	
00		3,4	28	325				<1,2	2,50
01		>3,1	30	315				<1,1	2,50
02		2,9	29	310				<1,2	2,50
03		3,0	30	310				<1,2	2,50
04		3,0	29	300				<1,1	2,50
05		3,1	30	300				<1,3	2,60
06		3,0	30	300				<1,6	2,70
07		3,4	30	270				<1,6	2,70
08		5,4	30	250		120	1,80		2,90
09		7,2	30	250		120	2,20		3,10
10		8,8	30	250		120	2,50		3,10
11	---	10,7	29	250		115	2,70		3,10
12		11,2	30	250		120	2,75		3,10
13		11,2	30	245		120	2,65		3,05
14		11,4	29	240		120	2,50		3,10
15		10,6	29	240		120	2,20		3,10
16		>8,3	28	230		105	1,80		3,10
17		8,2	29	220				<1,6	3,05
18		6,6	30	240				<1,6	3,00
19		4,9	29	245				<1,6	2,95
20		(4,2)	28	260				<1,6	2,70
21		(3,8)	28	270				<1,6	2,60
22		>3,4	30	300				<1,6	2,55
23		3,6	30	300				<1,6	2,55

Time: 0.0°.

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

Table 36

Oourbes, Belgium (50.1° N, 4.6° E)						November 1959			
Time	h'F2	foF2→Count	h'F	fof1	h'E	foE	foEs	(M3000)F2	
00		3,9	29	<300			<1.3	2.65	
01		3,9	29	290			<1.1	2.65	
02		3,7	29	295			<1.1	2.70	
03		3,4	29	280			<1.1	2.75	
04		3,2	29	265			<1.2	2.80	
05		3,0	29	(270)			<1.4	2.80	
06		3,0	29	<270			<1.5	2.85	
07		5,5	29	230	(119)	<1.65		3.10	
08		8,4	29	225	<114	2,20		3,25	
09		10,3	28	220	(111)	2,60	<2,8	3,25	
10		11,2	29	220	(111)	2,75	3,0	3,20	
11		11,7	29	220	(111)	2,90	3,0	3,25	
12		11,4	29	220	(113)	2,95		3,15	
13		11,5	29	230	(115)	2,85		3,15	
14		11,5	27	230	<119	2,60		3,15	
15		11,0	29	220	<124	2,20		3,20	
16		9,8	29	215	---	<1,60	1,9	3,20	
17		8,0	29	210			<1,6	3,20	
18		6,6	26	220			<1,6	3,15	
19		5,4	29	230			<1,6	3,05	
20		4,6	28	245			<1,6	2,85	
21		4,4	27	275			<1,6	2,70	
22		4,2	28	295			<1,6	2,65	
23		4,1	28	310			<1,6	2,65	

Table 37

Garchy, France (47.3° N, 3.1° E)									
November 1959									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	4.7	19	<310						
01	4.4	17	<310						
02	(4.3)	16	<310						
03	4.2	16	<300						
04	(4.1)	14	<280						
05	(3.6)	14	<275						
06	(3.6)	15	<280						
07	(6.3)	2	---						
08	9.0	20	225		120	2.50			
09	11.0	21	225		115	2.80			
10	12.0	23	225		110	3.00	3.4		
11	>12.3	24	230		105	3.10			
12	12.0	23	225		110	3.15			
13	11.9	25	230		110	3.15			
14	>12.0	23	235		110	2.85			
15	11.8	22	225		120	2.55			
16	(10.5)	8	(225)						
17	8.8	17	<225						
18	>7.0	24	<240						
19	(6.0)	24	<250						
20	5.3	23	<270						
21	(5.0)	22	<300						
22	5.0	21	<300						
23	4.9	21	<305						

Time: 0.0°.

Table 38

Ibadan, Nigeria (7.4° N, 3.9° E)									
November 1959									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	>9.5	27	240						(2.90)
01	(9.6)	27	240						(3.05)
02	8.9	27	245						3.05
03	8.5	27	240						3.10
04	7.9	26	230						3.20
05	5.9	27	220						3.25
06	7.6	27	250			2.00			3.10
07	10.4	25	245			2.90			3.05
08	>11.8	28	235			3.40	6.5		2.80
09	12.6	28	230			3.75	7.0		<2.50
10	(12.0)	30	220			(3.95)	9.0		(2.35)
11	11.6	30	210			(4.05)	9.0		2.35
12	11.4	30	210			4.05	9.0		2.30
13	>11.9	30	205			3.95	7.0		2.30
14	(12.2)	29	210			3.75	7.0		(2.30)
15	12.2	30	225			3.40	7.0		(2.30)
16	>11.6	30	245			2.90	6.8		(2.25)
17	>11.5	29	275			2.10			(2.30)
18	>10.4	30	350			(1.10)			(2.15)
19	9.2	30	390						(2.10)
20	9.4	28	355						(2.25)
21	>9.4	26	295						(2.50)
22	>9.4	29	260						(2.50)
23	10.0	29	245						(2.75)

Time: 0.0°.

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

Table 39

Sao Paulo, Brazil (23.5° S, 46.5° W)									
November 1959									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	>14.0	16	290						2.80
01	>14.0	16	200						2.95
02	12.9	16	265						3.05
03	11.7	15	250						3.00
04	10.7	18	235						3.00
05	8.8	18	230						2.90
06	8.7	21	235			---			3.00
07	9.3	21	230			---			2.80
08	10.3	21	230			---			2.60
09	---	11.0	20	225	---	---			2.40
10	---	11.6	20	220	---	---			2.40
11	---	12.6	20	---	---	---			2.45
12	(400)	>13.0	19	(240)	---	---			2.50
13	(390)	14.0	17	---	---	---			2.50
14	---	>14.0	19	<240	---	---			2.60
15	(370)	>14.0	19	230	---	---			(2.70)
16	(385)	14.5	20	240	---	---			2.70
17	---	14.2	19	245	---	---	3.5		2.60
18	>14.0	21	270						2.65
19	(14.2)	20	325						(2.60)
20	>14.0	13	355						(2.65)
21	(14.5)	13	300						(2.80)
22	(14.3)	13	300						(2.80)
23	>14.0	13	295						(2.75)

Time: 45.0°W.

Sweep: 1.75 Mc to 20.0 Mc in 2 minutes 30 seconds.

Table 41

Capetown, Union of S. Africa (34.1° S, 18.3° E)									
November 1959									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	5.7	30	---				<1.6	2.65	
01	5.4	30	---				<1.6	2.60	
02	5.2	30	---				<1.6	2.65	
03	5.0	30	---				<1.5	2.60	
04	4.9	30	---				<1.5	2.60	
05	4.6	30	(305)				<1.5	2.60	
06	6.1	30	265			2.1		2.85	
07	---	7.7	30	250	---	2.8		2.90	
08	---	8.9	29	240	---	3.2		2.80	
09	(400)	10.0	20	240	---	3.6		2.65	
10	355	10.6	28	230	5.5	---		2.65	
11	365	11.0	28	(225)	5.8	---		2.60	
12	370	11.5	28	---	5.9	---	4.6	2.60	
13	365	12.0	28	---	6.1	---	(4.7)	2.60	
14	350	12.0	20	---	6.1	---	(4.6)	2.60	
15	360	11.8	28	(220)	5.7	---		2.60	
16	360	11.6	28	245	5.5	3.6		2.65	
17	(325)	11.4	29	245	---	3.2		2.70	
18	---	10.8	29	250	---	2.7		2.30	
19	---	10.2	28	250	---	2.0		2.35	
20	9.3	29	245				<1.6	2.90	
21	8.0	30	230				<1.6	2.90	
22	6.7	30	(230)				<1.6	2.80	
23	6.0	30	---				<1.6	2.70	

Time: 30.0°E.

Sweep: 1.0 Mc to 17.0 Mc in 7 seconds.

Table 40

Johannesburg, Union of S. Africa (26.1° S, 28.1° E)									
November 1959									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	7.0	24	---				1.5	2.75	
01	6.7	24	---				<1.4	2.80	
02	6.0	22	---				1.8	2.80	
03	5.5	22	---				1.9	2.70	
04	5.4	23	290				2.0	2.60	
05	5.7	21	285				1.4	2.80	
06	---	7.6	19	245	---		2.4	2.7	3.00
07	---	8.8	19	230	---		3.1	3.3	2.90
08	---	10.3	19	220	---		3.5		2.85
09	(330)	10.8	21	220	---		3.8	4.0	2.80
10	(340)	11.7	21	210	---		4.0	4.2	2.70
11	325	11.7	21	210	5.6		4.1	4.2	(2.65)
12	350	12.2	22	215	5.9		4.1	4.2	2.65
13	(350)	12.6	22	220	5.9		4.1	4.3	2.65
14	(355)	12.4	22	225	---		4.0	4.1	2.65
15	(340)	11.9	21	225	---		3.8	4.0	2.70
16	---	11.0	21	235	---		3.5	3.7	2.70
17	---	11.7	20	240	---		2.9	3.2	2.80
18	---	11.6	20	250	---		2.2	2.2	2.85
19	(11.5)	19	240					1.7	2.90
20	(9.7)	19	235					1.6	(2.90)
21	8.9	21	235					<1.6	2.80
22	7.8	21	(245)					<1.4	2.80
23	7.1	23	(265)					<1.5	2.70

Time: 30.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 42

Buenos Aires, Argentina (34.5° S, 58.5° W)									
November 1959									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	10.9	29	320						2.55
01	10.4	28	300						2.65
02	10.0	28	270				2.9		2.65
03	9.3	25	275				2.4		2.60
04	8.8	27	270						2.55
05	9.1	27	245			161	2.05	2.4	2.70
06	9.4	29	240			109	2.70		2.75
07	9.8	28	230			107	---	3.4	2.60
08	---	(10.2)	28	230		105	---		2.55
09	---	(11.3)	26	225		105	---		2.50
10	(340)	>12.0	29	225	---	109	---		2.55
11	370	13.0	27	225	---	---	---		2.60
12	360	13.7	29	(255)	---	---	---		2.65
13	360	14.0	29	(250)	---	109	---		2.65
14	345	14.2	30	240		105	---		2.70
15	(330)	14.0	27	235		109	---		2.70
16	320	13.0	26	240		109	---		2.70
17	---	13.2	29	250		109	---	3.3	2.75
18	---	13.4	28	270		---	2.20		2.75
19	---	13.0	29	290					2.70
20	---	12.0	30	300					2.60

Table 43

Canberra, Australia (35.3° S, 149.0° E)									
November 1959									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		>7.0	29	300				(2.60)	
01		(6.8)	29	290				(2.70)	
02		>6.5	28	290				(2.70)	
03		>6.0	29	295				2.60	
04		5.8	29	290				2.55	
05	---	5.6	29	295	---	1.80		2.80	
06	---	6.2	29	250	---	2.60	2.7	2.90	
07	(350)	7.0	28	240	4.7	3.05	3.3	2.80	
08	380	7.5	28	230	5.1	3.50	3.8	2.80	
09	400	7.8	26	225	5.6	3.70	4.0	2.70	
10	360	(8.4)	24	220	5.8	3.80	4.2	2.70	
11	390	>8.5	23	215	(6.0)	3.95		2.75	
12	365	>8.6	20	215	(6.0)	4.00		(2.70)	
13	375	>8.5	22	220	5.7	3.90		(2.75)	
14	360	>8.5	25	220	5.9	3.85	4.1	2.65	
15	370	>8.5	26	235	(5.6)	3.65		2.70	
16	(365)	8.5	27	240	(5.1)	3.50	3.5	2.70	
17		8.4	27	250	---	3.00	3.3	2.80	
18		(8.0)	28	255	---	2.25	2.8	(2.85)	
19		>7.9	29	260	---	<1.60	1.9	(2.75)	
20		>7.6	20	<270	---	---	---	(2.70)	
21		>7.3	29	<290	---	---	1.0	---	
22		>7.2	29	300	---	---	---	(2.60)	
23		>7.0	28	300	---	---	---	(2.60)	

Time: 150.0°E.

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

Table 45

Johannesburg, Union of S. Africa (26.1° S, 28.1° E)									
October 1959									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		6.8	29	(250)			1.4	2.85	
01		6.1	29	---			2.0	2.80	
02		5.7	29	---			1.8	2.80	
03		5.4	29	270			1.8	2.80	
04		4.9	29	255			2.0	2.80	
05		4.8	28	260			1.8	2.85	
06		7.2	28	240		2.1	2.2	3.20	
07	---	9.6	28	230		2.9	3.3	3.15	
08	(245)	11.2	28	225		3.4	3.8	3.05	
09	(255)	11.7	28	215		3.7	3.9	2.90	
10	265	12.2	28	210	---	3.9	4.2	2.85	
11	(295)	12.6	28	205	---	4.0	4.4	2.80	
12	305	12.9	28	205	---	4.0	4.4	2.75	
13	(305)	13.0	28	210	---	4.0	4.2	2.70	
14	---	12.9	28	220	---	3.9	4.2	2.65	
15	---	12.7	28	220	---	3.7	3.9	2.70	
16		12.4	28	230		3.3	3.7	2.75	
17		12.4	29	245		2.8	3.3	2.85	
18		12.1	29	250		1.9	2.2	2.90	
19		11.2	29	230		---	2.0	2.95	
20	(10.2)	29	225			---	1.6	(2.95)	
21	9.0	29	230			---	<1.6	2.95	
22	8.0	28	235			---	<1.5	2.90	
23	7.5	29	250			---	<1.4	2.90	

Time: 30.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 47

Svalbard, Norway (78.2° N, 15.7° E)									
November 1958									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		(4.4)	5	270	---	---	2.1	---	
01		(4.3)	3	280	---	---	3.0	---	
02		(4.3)	6	290	---	(1.50)	1.5	---	
03		(4.3)	6	290	---	(1.65)	1.8	---	
04		(4.7)	7	330	---	2.15	2.6	---	
05		(3.4)	6	285	---	(2.20)	3.2	(2.20)	
06		(4.7)	7	250	---	---	3.1	---	
07		(4.8)	7	300	---	---	3.2	---	
08		(4.6)	0	290	120	2.25	3.1	---	
09		(7.6)	6	280	---	2.00	3.0	(2.70)	
10		(6.7)	9	265	---	---	2.6	(2.80)	
11		(4.8)	9	265	---	1.70	3.2	(2.85)	
12		(4.6)	5	270	120	1.85	3.2	---	
13		(5.3)	7	255	---	2.25	3.4	---	
14		(4.4)	5	255	---	(1.55)	3.2	---	
15		(4.9)	7	260	---	---	3.8	---	
16		(4.6)	3	260	---	---	4.0	---	
17		(5.8)	4	250	---	---	3.9	---	
18		(5.6)	4	250	---	1.40	3.3	---	
19		(6.1)	2	250	---	---	3.1	---	
20		---	0	250	---	---	2.0	---	
21		(9.3)	1	255	---	---	2.8	---	
22		(5.8)	6	250	---	E	1.8	---	
23		(6.7)	3	250	---	---	1.0	---	

Time: 15.0°E.

Sweep: 0.68 Mc to 24.6 Mc in 5 minutes, automatic operation.

Table 44

Port Lockroy (64.8° S, 63.5° W)									
November 1959									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		10.2	22	310			---	---	2.50
01		10.2	24	330			(1.30)	---	2.50
02		10.1	20	325			1.40	---	2.50
03		9.8	26	310	---		1.70	---	2.50
04		9.8	27	280	---		2.05	---	2.50
05		9.4	29	260	3.7		2.45	---	2.60
06		9.6	27	250	4.1		2.80	---	2.50
07		9.2	20	250	4.3		(3.00)	---	2.65
08		8.8	28	240	4.4		3.30	---	2.70
09		8.0	26	235	4.7		3.40	---	2.70
10		8.2	28	230	4.9		3.60	---	2.75
11		7.8	30	230	5.1		3.60	---	2.80
12		8.0	30	230	5.0		3.70	---	2.85
13		8.0	29	225	---		3.65	---	2.90
14		8.1	29	230	---		3.60	---	2.95
15		7.9	27	235	---		3.45	---	2.95
16		8.1	28	240			3.20	---	2.90
17		8.0	29	240			3.00	---	2.90
18		8.0	28	250			2.75	---	2.90
19		8.3	29	260			2.45	---	2.80
20		8.7	25	275			2.10	---	2.75
21		9.0	24	290			1.75	---	2.60
22		(9.6)	25	300			1.50	---	2.55
23		10.0	22	305			1.20	---	2.50

Time: 60.0°W.

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

Table 46

Mawson (67.6° S, 62.9° E)									
October 1959									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		(6.0)	7	(260)				(3.00)	
01		(6.5)	8	(240)				(3.00)	
02		(7.5)	7	(400)				(2.70)	
03		7.2	10	395				2.60	
04		(8.0)	8	(410)				(2.55)	
05		8.9	10	395				2.55	
06		9.0	14	370				2.65	
07		9.2	14	350				2.70	
08		9.2	16	390				2.55	
09		9.2	20	350				2.60	
10		9.0	21	340				2.60	
11		9.0	21	300				2.70	
12		8.9	16	235				2.95	
13		7.8	19	225				3.00	
14		7.0	17	220				3.10	
15		7.0	15	235				3.00	
16		(7.0)	5	(250)				(3.10)	
17		(6.0)	3	---				---	
18		---	0	---				---	
19		(5.5)	4	---				---	
20		(5.5)	6	(260)				(3.00)	
21		(6.0)	7	(250)				(2.90)	
22		(6.2)	6	(275)				(3.00)	
23		(6.2)	6	(240)				(3.00)	

Time: 0.0°.

Sweep: 1.0 Mc to 20.0 Mc in 15 seconds.

Table 40

Dourbes, Belgium (50.1° N, 4.6° E)							November 1950	
Time	h'F2	foF2—Count	h'F	fof1	h'E	foE	foEs	(M3000)F2
00		5.1	28	285			(1.4)	2.50
01		4.8	28	280				2.50
02		4.7	28	270			<1.2	2.50
03		4.4	28	265			<1.3	2.60
04		4.0	28	250			<1.3	2.70
05		3.9	28	240			<1.6	2.70
06		3.9	27	245			<1.6	2.60
07		7.3	27	220				2.90
08		11.0	25	215		113	2.20	3.05
09		13.0	22	215		109	2.70	3.00
10		(14.0)	23	220		(112)	3.00	(2.90)
11		(14.4)	26	220		113	3.10	2.90
12		14.2	26	220		111	3.10	2.85
13		13.8	26	225		113	3.00	2.80
14		13.9	26	225		113	2.70	2.80
15		13.4	27	220		(118)	2.30	2.85
16		12.3	27	215		---	---	2.1
17		10.9	27	215				2.0
18		8.8	29	220				<1.7
19		7.2	28	220				<1.6
20		6.1	28	235				<1.6
21		5.4	20	250				<1.6
22		5.0	20	270				<1.6
23		5.0	28	285				<1.6

Table 49

Poitiers, France (46.6° N, 0.3° E)									
November 1958									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	(6.1)	30	295				2.3	(2.45)	
01	(6.0)	30	285				2.2	2.50	
02	(5.8)	30	290				2.2	(2.50)	
03	(5.6)	30	280				2.2	(2.60)	
04	(5.1)	30	260				2.2	(2.60)	
05	4.4	29	<250	---			2.65		
06	(4.3)	30	260		---	E	2.55		
07	(7.1)	29	235		---	E	(2.80)		
08	>11.0	29	225		120	2.20	2.6	(2.90)	
09	>13.0	29	225		(115)	2.80	3.1		
10	(13.9)	29	230		<115	3.10	3.6	---	
11	>14.0	29	230		<115	3.30	3.4	(2.80)	
12	(13.8)	30	230		<115	3.35	3.6	---	
13	(13.8)	30	230		(110)	3.25	3.5	---	
14	>13.6	30	235		<115	3.00	3.4	---	
15	>13.5	30	240		(115)	2.60	3.2	(2.75)	
16	>12.9	30	230		---	1.80	3.0	---	
17	>11.2	30	220		---	E	3.0	---	
18	(9.6)	30	230		---	---	2.6	---	
19	(8.9)	30	235				2.2	(2.65)	
20	(7.2)	30	245				2.1	(2.70)	
21	(6.6)	29	250				2.0	(2.60)	
22	(6.3)	29	270					(2.40)	
23	(6.2)	30	280				2.0	(2.50)	

Time: 0.0°.

Sweep: 1.6 Mc to 17.0 Mc in 1 minute.

Table 51

Djibouti, French Somaliland (11.6° N, 43.2° E)									
November 1958									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	>8.9	2	275		---	---	2.0		
01	>8.5	2	250				2.0	---	
02	>8.6	1	245				2.0		
03	(8.2)	8	240				2.0	---	
04	7.6	15	230		---	---	1.9	(2.75)	
05	7.0	15	225		---	---	1.9	(3.00)	
06	6.6	16	260		---	E	1.9	(2.75)	
07	(10.9)	11	260		120	2.65	3.3		
08	>12.9	4	250		115	3.30	4.1	---	
09	>13.7	5	240		---	(3.65)	6.6	---	
10	>14.0	4	235		---	(3.95)	6.8	---	
11	>13.8	11	230		---	(4.10)	6.8	---	
12	---	>13.8	13	230		---	(4.20)	6.8	---
13	---	>13.8	10	230		---	(4.00)	6.8	---
14	---	>13.8	11	235		115	(3.90)	7.6	(2.10)
15	---	>14.0	6	240		---	(3.60)	6.8	---
16	>11.5	1	250		---	3.20	6.7	---	
17	>11.6	2	280		130	---	4.2	---	
18	>11.5	1	335		---	---	2.2	---	
19	>9.3	2	430		---	E			
20	>9.0	1	---		---	---			
21	---	0	---		---	---			
22	>9.0	1	(330)				2.2		
23	(9.5)	1	300				2.2		

Time: 45.0°E.

Sweep: 1.25 Mc to 20.0 Mc in 10 minutes.

Table 53

Bangui, French Equatorial Africa (4.6° N, 18.6° E)									
November 1958									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	(11.0)	3	265				2.0	---	
01	(11.5)	5	260					---	
02	11.4	14	250					2.80	
03	(11.5)	11	240					(3.00)	
04	>9.8	8	210				1.9	(3.00)	
05	7.8	11	210		---	---	2.0	3.10	
06	8.7	13	260		130	2.20	3.1	3.00	
07	10.6	19	245		110	3.05	3.1	2.85	
08	11.8	23	240		105	3.60		2.50	
09	12.5	19	230		105	4.00	4.3	2.30	
10	12.6	20	225		105	4.20		2.20	
11	13.0	19	210		105	4.25		2.15	
12	13.0	22	210		105	4.25		2.10	
13	13.0	25	210		105	4.10		2.15	
14	>12.8	25	215		105	4.00	4.2	2.10	
15	---	(13.0)	22	240		105	3.60	4.0	
16	>12.2	13	250		110	3.00	3.1	---	
17	>11.6	7	290		120	2.00		---	
18	>11.5	4	390		---	E	2.4	---	
19	---	0	460		---	---			
20	---	0	(405)		---	---			
21	---	0	(310)		---	---			
22	(13.0)	1	285					---	
23	(12.7)	1	280					---	

Time: 15.0°E.

Sweep: 1.2 Mc to 17.0 Mc in 1 minute.

Table 50

Dakar, French W. Africa (14.8° N, 17.4° W)									
November 1958									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	>14.5	1	240				3.1		
01	>14.2	1	230				2.6		
02	(13.4)	3	210		---	---	2.9	---	
03	(10.8)	5	210		---	---	2.9	---	
04	7.9	11	200		---	---		3.20	
05	7.3	10	215		---	---	2.3	(3.20)	
06	(6.2)	12	225		---	E	2.8	(3.20)	
07	(6.8)	15	250		---	(1.55)	3.0	3.10	
08	11.4	15	240		100	2.50	2.9	(3.30)	
09	14.2	15	235		95	(3.25)	3.3	3.10	
10	(15.4)	5	210		100	3.75		---	
11	(15.6)	2	210		100	3.95		---	
12	---	(15.6)	5	(195)	100	4.00	4.8	---	
13	---	(15.2)	5	<215	100	4.00	4.6	---	
14	---	(15.2)	5	(210)	---	100	---	4.2	(2.35)
15	---	(14.6)	6	220	100	3.80	4.1	(2.30)	
16	(14.4)	4	225		100	3.60	4.0	---	
17	(14.6)	3	240		105	3.10	3.6	---	
18	(14.4)	4	260		110	2.30	4.6	---	
19	>14.2	3	320		---	(1.45)	4.2	---	
20	---	0	400		---	---	3.2	---	
21	---	0	335		---	---	3.0	---	
22	---	0	285		---	---	3.0	---	
23	---	0	260		---	---	3.1	---	

Time: 0.0°.

Sweep: 1.25 Mc to 20.0 Mc in 10 minutes.

Table 52

Paramaribo, Surinam (5.8° N, 55.2° W)									
November 1958									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	(16.3)	16	260				1.7	(2.90)	
01	(16.1)	14	240					(3.00)	
02	16.4	16	230					(3.00)	
03	15.6	20	215					3.05	
04	13.0	25	205					3.05	
05	10.1	26	210					3.05	
06	7.6	28	210					3.00	
07	6.4	29	215					2.90	
08	5.4	29	250					2.85	
09	5.8	29	250					2.80	
10	10.0	30	250		<135	2.3		3.00	
11	13.0	25	250		110	---	<3.7	3.00	
12	---	15.3	19	255	---	---	<5.8	3.05	
13	(300)	13.9	18	260	---	---	<5.9	2.95	
14	(325)	13.5	21	250	---	---	<6.2	2.90	
15	<380	13.2	15	(260)	---	---	<7.2	2.75	
16	385	13.1	16	(250)	---	---	<7.0	2.75	
17	400	13.0	19	---	---	---	<6.1	2.65	
18	410	13.0	19	270	7.6	---	<5.8	2.55	
19	400	12.8	19	250	(6.8)	---	<5.6	2.60	
20	(380)	13.0	24	250	---	100	---	4.0	
21	(360)	13.0	17	280	---	100	2.3	3.7	
22	---	13.5	23	300	---	---		2.3	
23	---	14.0	15	350	---	---		2.8	

Time: 0.0°.

Sweep: 1.4 Mc to 20.0 Mc in 40 seconds.

Table 54

Hollandia, Netherlands New Guinea (2,5° S, 140,8° E)							November 1958	
Time	h'F2	foF2—Count	h'F	fof1	h'E	foE	fEs	(M3000)F2
00	---	(12,5)	5	---	---	---	<6,5	----
01	---	(12,0)	1	---	---	---	<7,7	----
02	---	----	0	---	---	---	<10,0	----
03	---	----	0	---	---	---	<9,0	----
04	---	(12,5)	1	---	---	---	<9,0	----
05	---	(12,5)	1	---	---	---	<10,0	----
06	---	----	0	---	---	---	<7,2	----
07	---	----	0	240	---	---	(3,4)	----
08	---	----	0	260	---	---	<3,0	----
09	---	(14,0)	1	345	---	---	<2,5	----
10	---	(12,8)	2	350	---	---		----
11	---	----	0	300	---	---		----
12	---	(13,3)	5	250	---	---		(2,75)
13	---	(12,4)	8	230	---	---		(2,80)
14	---	(11,7)	8	240	---	---		(2,85)
15	---	11,6	11	250	---	---		2,90
16	---	(10,6)	9	245	---	---		(2,85)
17	---	10,2	10	240	---	---		2,90
18	---	(9,6)	8	(245)	---	---		(2,90)
19	---	8,7	10	260				2,85
20	---	9,0	10	250				3,00
21	---	10,6	11	240	120	(2,8)		3,10
22	---	11,5	10	220	110	3,4		3,00
23	---	(12,2)	6	(230)	---	---	<5,4	(2,70)

Table 55

Ocepcion I, (63.0° S, 60.7° W)									
November 1950									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	(10.3)	11 (310)						(2.55)	
01	>10.7	13 310						(2.40)	
02	>10.0	13 315						(2.55)	
03	>10.2	14 310						(2.25)	
04	>10.6	14 (310)						(2.45)	
05	>10.2	14 (300)						(2.50)	
06	---	>10.5	14 (280)					(2.50)	
07	(315)	>11.4	14		6.2			(2.55)	
08	(390)	11.6	14 (220)					2.50	
09	(410)	11.3	13					(2.50)	
10	(390)	11.4	13 (215)		7.2			2.50	
11	(370)	>11.0	12		7.6			2.60	
12	(345)	11.1	14		7.3			2.60	
13	---	---	0						
14	(380)	10.7	14		7.7			2.60	
15	(450)	10.3	17 (220)		7.5			2.60	
16	---	10.0	17					2.65	
17	---	10.0	12					(2.70)	
18	---	>9.9	18 (220)					2.70	
19	---	10.1	13 (250)					(2.80)	
20	---	>10.0	11 (265)					(2.70)	
21	---	>10.0	11 (295)					---	
22	---	>10.1	11 (305)					---	
23	---	>10.4	6					---	

Time: 60.0°W.

Sweep: 1.3 Mc to 10.0 Mc in 30 seconds.

Table 57

Murmansk, U.S.S.R. (69.0° N, 33.0° E)									
October 1950									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	(6.3)	12 (390)					>3.9	(2.40)	
01	(6.2)	10 (380)					3.8	(2.40)	
02	6.7	11 340					3.6	2.45	
03	6.1	13 (320)					<2.6	2.40	
04	6.5	13 (295)					<2.0	2.50	
05	(6.8)	16 <290					<1.8	2.60	
06	(5.8)	19 (290)					<2.3	2.60	
07	7.3	21 (270)			(1.90)		<2.7	2.80	
08	8.3	27 255			(2.20)		<2.6	2.80	
09	---	9.6 30 (250)			2.45		<3.0	2.80	
10	---	10.8 30 250			123 (2.70)		<3.0	2.75	
11	---	11.5 28 245			117 (2.80)		<2.9	2.70	
12	---	12.1 28 240			127 (2.85)		<2.9	2.80	
13	---	11.2 24 240			129 <2.80		<2.8	2.80	
14	---	12.0 22 240			121 (2.60)		<3.0	2.80	
15	---	11.3 26 250			<135 <2.40		<2.6	2.80	
16	---	11.5 27 <245			(2.00)		<2.5	2.90	
17	---	11.0 28 245			1.85		<2.3	2.85	
18	---	9.1 26 250					<2.4	2.80	
19	---	8.1 22 (260)					<2.3	2.80	
20	---	6.9 19 <290					3.1	2.70	
21	---	6.1 17 <330					<3.0	2.60	
22	---	(6.3)	9 (355)				3.2	(2.50)	
23	---	(5.8)	6 360				4.0	(2.50)	

Time: 30.0°E.

Sweep: 1.0 Mc to 20.0 Mc in 30 seconds.

Table 59

Rabat, Morocco (30.9° N, 6.8° W)									
October 1950									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	(9.0)	27 <275						(2.45)	
01	9.0	26 <280						(2.65)	
02	>9.0	24 <275						(2.75)	
03	(8.7)	25 <265						2.75	
04	8.0	25 <250						3.00	
05	6.6	26 <250						2.70	
06	6.6	24 <265						2.70	
07	>9.1	20 245						(3.10)	
08	---	12.5 22 240			130 2.00				
09	---	13.9 23 235			115 2.85			3.05	
10	---	13.4 27 230			110 3.40			2.90	
11	---	13.5 28 230			110 3.55			2.85	
12	---	13.3 29 230			110 3.60			2.70	
13	---	13.4 28 230			110 3.70			2.60	
14	(365)	13.4 27 240			110 3.75			2.50	
15	---	13.4 26 245			110 3.70			2.50	
16	---	13.2 25 250			115 3.20		3.7	2.60	
17	---	13.0 24 (255)			120 2.45		2.65	2.65	
18	---	(12.5)	23 250				2.9	(2.70)	
19	---	>10.0	26 <260				3.2	---	
20	---	(9.5)	26 <275				2.5	---	
21	---	>9.0	26 <275				2.4	(2.70)	
22	---	(9.4)	26 <270				2.0	---	
23	---	>9.0	25 <270					(2.50)	

Time: 0.0°.

Sweep: 1.6 Mc to 17.0 Mc in 1 minute.

Table 56

Halley Bay (75.5° S, 26.6° W)									
November 1950									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	---	>9.1	29 300		125 (2.20)		2.2	2.40	
01	(385)	(9.2)	30 300		3.85		2.20	<2.4	
02	430	9.6	26 300		3.90		120	2.25	
03	415	(9.7)	20 200		4.00		115	<2.45	
04	435	9.4	28 275		4.25		115	>2.55	
05	420	9.4	29 260		4.50		110	2.75	
06	430	>9.6	30 250		4.70		110	2.90	
07	430	>9.3	30 250		4.90		110	>3.00	
08	445	>8.9	30 245		5.05		110	3.20	
09	455	8.6	30 245		5.20		105	(3.30)	
10	460	8.0	30 <245		5.30		105	(3.35)	
11	515	7.8	30 245		5.55		105	(3.40)	
12	460	7.5	30 240		5.40		105	3.40	
13	495	7.6	30 240		5.45		105	3.40	
14	(485)	7.3	27 245		5.50		105	3.30	
15	---	7.2	30 245		5.20		105	3.25	
16	---	7.5	29 250		(5.10)		105	>3.10	
17	---	7.6	30 250		4.85		110	(3.00)	
18	---	7.9	29 255		---		110	(2.80)	
19	---	8.0	29 265		---		115	(2.60)	
20	---	8.1	29 275		---		120	>2.40	
21	---	8.5	30 280		---		120	(2.40)	
22	---	8.6	30 290		---		125	(2.30)	
23	---	8.9	30 295		---		130	2.20	

Time: 30.0°W.

Table 58

Poitiers, France (46.6° N, 0.3° E)									
October 1950									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	(7.5)	29 290						(2.40)	
01	(7.4)	29 295						2.0	
02	7.1	30 290						2.3	
03	(6.7)	29 290						2.4	
04	(6.7)	29 270						2.2	
05	(6.0)	29 250						2.0	
06	6.4	30 270						2.3	
07	---	>9.0	31 240		120 2.15			(2.00)	
08	---	(12.4)	29 235		110 2.85		3.0	2.80	
09	---	(12.8)	28 230		105 3.20		3.8	(2.70)	
10	---	13.4	30 230		105 3.35		4.0	(2.65)	
11	---	>13.2	30 235		105 3.60		4.1	(2.70)	
12	(305)	>13.5	30 235		(7.4)	110 3.60	3.8	(2.65)	
13	---	>13.4	30 235		---	110 3.60	3.6	<2.60	
14	---	>13.0	31 240		<110	3.45	3.6	---	
15	---	>13.0	31 245		<115	3.20	3.6	---	
16	---	>12.5	31 250		(115)	2.60	3.1	---	
17	---	>12.0	30 245		---	E	3.3	---	
18	---	>11.0	31 245		---	E	2.7	---	
19	---	>10.0	30 240		---	---	2.6	---	
20	---	>9.0	29 250		---	---	2.4	---	
21	---	>8.5	29 255		---	---		---	
22	---	(8.0)	29 260		---	---		(2.30)	
23	---	(8.0)	29 280		---	---		(2.35)	

Time: 0.0°.

Sweep: 1.6 Mc to 17.0 Mc in 1 minute.

Table 60

Tamanrasset, French W. Africa (22.8° N, 5.5° E)							October 1950	
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	>16.0	29	240		---	E	2.0	----
01	>14.5	23	235		---	E	2.0	----
02	>13.2	20	230		---	E	2.1	----
03	>9.0	21	210		---	E	2.0	----
04	>7.5	23	<235		---	E	2.2	(2.90)
05	>7.2	25	250		---	E	2.5	3.00
06	>10.5	24	260		120	2.00	2.6	(3.10)
07	>13.7	31	240		105	2.90	3.2	3.20
08	14.4	31	230		100	(3.50)	3.7	3.10
09	15.0	31	225		100	3.80	4.1	(2.90)
10	>15.0	31	215		100	(4.00)	4.3	(2.80)
11	(415) >15.0	31	215		100	4.10	4.3	2.60
12	415 >16.0	30	210		100	(4.10)	4.3	(2.55)
13	410	0	30	230	100	(4.00)	4.3	----
14	400	0	29	235	105	(3.80)	3.9	
15	(380)	0	30	240	105	(3.45)	3.7	
16	---	0	28	250	110	2.80	3.3	
17	0	0	27	275	---	1.85	2.7	
18	0	0	26	335	---	E	2.6	
19	0	0	21	335	---	E	2.0	
20	0	0	21	285	---	E	1.9	
21	0	0	18	250	---	E	1.8	
22	0	0	25	240	---	E	2.0	
23	0	0	28	240	---	E	1.9	----

Table 61

N'kar, French W. Africa (14.8° N, 17.4° W)									
October 1950									
Time	h°F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		>14.0	1	250	---	----			
01		(16.8)	3	240	---	----			
02		>17.0	5	220	---	----			
03		>13.5	5	200	---	----			
04		(9.2)	5	210	---	E	1.7		
05		8.2	10	220	---	E		(3.10)	
06		>8.2	9	220	---	E		(3.30)	
07		(7.1)	8	240	---	----	2.6	(3.20)	
08		(12.4)	7	220	100	2.70	3.1		
09	---	>14.0	14	215	100	(3.40)	3.7	(3.10)	
10	---	>15.0	15	205	100	3.80	3.8	(3.10)	
11	---	(15.4)	14	(210)	100	----		(2.80)	
12	---	>15.5	13	---	100	----		(2.60)	
13	---	>16.0	9	---	100	----	(3.7)		
14	---	>16.5	14	(200)	100	----	(3.9)		
15	---	(16.8)	8	(190)	100	----	(4.0)		
16	---	>16.3	10	210	100	(3.70)	3.8		
17		>14.5	3	220	100	3.35	3.4		
18		>14.3	2	240	105	2.65	2.8		
19		>14.6	2	300	---	----	3.5		
20		>15.1	2	380	---	----	2.8		
21		----	0	340	---	----			
22		----	0	290	---	----			
23		----	0	290	---	----	2.1		

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

Table 63

Bangui, French Equatorial Africa (4.6° N, 18.6° E)									
October 1958									
Time	h°F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		(12.5)	7	250			1.8	(2.70)	
01		>11.5	12	260			2.1	2.85	
02		11.9	15	250			1.9	2.90	
03		11.2	16	245	---	----	1.7	3.00	
04		>10.2	10	225	---	----	2.2	(3.10)	
05		7.2	10	220	---	----	2.6	3.10	
06		9.0	14	255	130	2.20	3.1	3.10	
07		11.8	18	250	110	3.20	4.2	2.90	
08		13.0	24	240	105	3.70	4.4	2.60	
09		13.7	18	225	105	4.00	4.4	2.40	
10		14.0	23	225	110	4.20	4.4	2.30	
11		13.6	21	220	105	4.40		2.20	
12	---	14.0	21	220	105	4.40		2.20	
13	---	14.0	22	220	105	4.20		2.20	
14	---	13.9	18	210	105	4.00		2.20	
15	---	13.5	19	240	105	(3.60)	3.8	2.10	
16		13.4	15	250	110	----	3.2	2.10	
17		>12.2	11	280	125	2.20	3.0	----	
18		>12.2	3	375	---	E			
19		----	0	475	---	----			
20		(12.7)	2	390	---	----			
21		>11.8	1	(310)	---	----			
22		(11.8)	2	275	---	----			
23		>11.8	3	260	---	----			

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

Table 65

Tahiti, Society Is. (17.7° S, 149.3° W)									
October 1950									
Time	h°F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		13.4	22	250	---	E	3.0	2.80	
01		>11.5	23	250	---	(0.90)	2.4	2.60	
02		10.3	23	280	---	(0.90)	2.6	2.55	
03		9.6	23	290	---	E	2.2	2.60	
04		9.2	22	280	---	E	2.3	2.65	
05		9.2	20	280	---	(1.05)	2.3	2.70	
06		11.9	20	260	125	2.20	3.1	2.85	
07		13.2	20	245	110	3.10	3.4	2.85	
08		13.5	19	240	105	3.60	3.8	2.70	
09		14.1	22	240	105	(4.00)		2.60	
10		15.0	22	240	105	----		2.50	
11	420	15.4	24	245	---	105	----	2.45	
12	450	15.5	21	245	---	105	----	2.40	
13	445	15.7	25	250	---	105	(4.25)	2.40	
14	445	15.6	24	250	7.0	105	(4.10)	2.40	
15	430	15.4	24	250		105	3.80	2.40	
16	420	15.6	24	250		110	3.40	3.4	
17		15.6	26	270	115	2.75	3.2	2.40	
18		15.8	25	310	---	(1.40)	3.1	2.40	
19		16.0	25	360	---	(1.10)	3.6	2.40	
20		0	25	340	---	E	3.1	2.40	
21		0	25	310	---	E	3.0	2.50	
22		D	24	280	---	E	2.7	2.60	
23		15.6	24	270	---	E	2.8	2.75	

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

Table 62

Djibouti, French Somaliland (11.6° N, 43.2° E)									
October 1958									
Time	h°F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		(9.4)	2	265			2.2		
01		>9.3	6	250			1.9	----	
02		(8.8)	8	240			1.0	(2.80)	
03		7.9	13	245	---	----	1.8	2.80	
04		>8.0	10	240	---	----	2.1	(3.00)	
05		>7.0	12	230	---	----	3.5	(3.10)	
06		7.8	13	255	---	E	3.4	(2.95)	
07		>11.0	9	250	120	2.80	4.0	(3.00)	
08		----	0	240	(110)	3.40	4.0		
09		----	0	240	110	(3.80)	4.4		
10	---	(16.6)	2	230	---	110	(4.00)	6.3	----
11	---	>15.1	4	230	---	---	(4.20)	6.6	----
12	---	>14.0	3	(235)	---	---	(4.30)	6.5	----
13	---	(14.0)	3	(230)	(110)	(4.20)	5.8	----	
14	---	(13.9)	4	230	<120	(4.00)	4.5	----	
15	---	----	0	240	<120	(3.75)	4.5		
16	---	>12.5	1	245	110	(3.30)	4.4		
17		----	0	260	120	----	4.4		
18		----	0	320	---	E	3.5		
19		(9.5)	6	460	---	E			
20		(9.0)	2	---					----
21		(6.0)	1	(345)					
22		(9.5)	1	(310)			2.0		
23		(8.9)	1	285			2.1	----	

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

Table 64

Hollandia, Netherlands New Guinea (2.5° S, 140.8° E)									
October 1958									
Time	h°F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		<390	----	0	(260)	---	---	<7.5	
01		<425	----	0	<350	---	---	<9.7	
02		(450)	----	0	---	---	---	<10.0	
03		<465	----	0	---	---	---	<10.0	
04		<460	----	0	---	---	---	<10.0	
05		<440	----	0	<350	---	---	<9.4	
06		(430)	(13.7)	1	<200	---	---	<9.0	----
07		<435	----	0	<250	---	110	3.1	<3.8
08		(445)	(12.8)	1	265	---	120	2.7	3.3
09		(12.4)	1	350					
10		(12.8)	7	360					(2.40)
11		(12.8)	5	305					(2.60)
12		(12.7)	9	250					(2.70)
13		(11.7)	13	230					(2.90)
14		(11.8)	16	215					(2.75)
15		(11.3)	22	250					(2.80)
16		11.2	22	245					(2.90)
17		10.9	26	235					2.95
18		10.4	24	230					3.00
19		10.0	25	230					3.05
20		8.9	24	210	---	E			3.20
21		10.8	26	230	115	2.8	2.8		3.15
22		11.8	24	230	100	3.5	(3.8)		3.00
23		(12.3)	7	250	100	---	<6.0		(2.70)

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

Table 66

Tananarive, Madagascar (18.8° S, 47.5° E)							October 1958	
Time	h'F2	foF2—Count	h'F	fof1	h'E	foE	foEs	(M3000)F2
00		9.3	21	250	---	----		2.90
01		8.6	20	240	---	E		2.75
02		7.7	10	245	---	E		(2.75)
03		7.2	16	260	---	E	1.7	(2.80)
04		6.4	15	260	---	E	1.5	(2.80)
05		6.5	17	270	---	E		(2.05)
06		9.5	17	240	115	2.35	2.8	3.05
07		11.8	20	240	110	3.10		3.00
08	---	12.7	19	235	105	----		2.95
09	---	12.8	13	225	105	----		2.80
10	---	(13.0)	9	(220)	100	----		(2.75)
11	---	(13.0)	9	(215)	100	----		(2.70)
12	---	(13.0)	8	----	---	----		(2.65)
13	(390)	12.8	14	----	100	----		2.50
14	(390)	12.7	17	(235)	100	----		2.50
15	(390)	12.7	20	235	110	(3.80)	4.3	2.50
16	(385)	12.4	21	240	110	3.20	3.8	2.55
17		12.3	23	255	120	(2.40)	3.2	2.60
18		12.5	23	270	---	----	2.8	2.70
19		12.4	24	270	---	----	2.7	2.80
20		12.5	19	260	---	----	2.0	2.80
21		12.2	20	250	---	----		(2.90)
22		11.0	20	245	---	----	1.9	2.90
23		10.8	19	250	---	E		2.95

Table 67

Tsumeb, South W. Africa (19.2° S, 17.7° E)								
October 1958								
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		8.90 30	244				1.8	2.78
01		7.80 31	245				1.6	2.68
02		7.22 31	257				1.7	2.67
03		6.81 31	260					2.75
04		6.40 31	245					2.84
05		6.32 30	255		150	1.10		2.76
06		9.20 31	235		115	2.26		3.07
07		11.28 30	230		110	3.17		2.98
08		12.20 29	229		106	3.62		2.83
09		12.80 29	222		---	3.94		2.65
10		13.02 31	220		---	4.14		2.55
11		13.50 31	218		---	4.27		2.52
12		13.80 29	220		---	4.28		2.47
13		13.62 30	225		---	4.23		2.45
14	---	13.62 29	230	---	---	4.07	4.8	2.44
15		13.52 30	240		---	3.76	4.7	2.45
16		13.30 30	244		108	3.30	4.4	2.48
17		13.15 30	260		112	2.53	3.8	2.53
18		13.10 31	270		---	---	3.0	2.62
19		12.75 30	268		---	---	2.2	2.66
20		12.65 31	260		---	---	2.6	2.70
21		11.94 30	245		---	---	2.2	2.70
22		10.90 31	250		---	---	1.7	2.71
23		10.20 31	250		---	---	2.3	2.80

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

Table 69

Murmansk, U.S.S.R. (69.0° N, 33.0° E)								
November 1957								
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00	(7.3)	4 (360)					3.3	---
01	(7.4)	6 (350)					3.2	(2.55)
02	(8.1)	6 (320)					<3.2	---
03	(7.9)	10 (340)					<3.3	(2.45)
04	(7.1)	15 (305)					<2.2	(2.65)
05	(7.0)	14 (270)					<2.0	(2.60)
06	(6.4)	14 (260)					<2.0	(2.65)
07	(6.1)	20 (270)					<2.0	(2.60)
08	6.8	22 (270)			<2.0	<2.0	2.70	
09	8.2	28 (270)			<2.0	<2.3	2.80	
10	10.0	10 (240)			<2.0	<3.1	2.85	
11	11.0	10 (250)			<2.50	<3.4	2.90	
12	>11.0	8 (230)			<2.40	<3.0	(2.75)	
13	(10.7)	5 (230)			<2.50	<3.0	---	---
14	9.5	10 (240)			<2.20	<2.8	(2.75)	---
15	(7.3)	7 (220)				<2.00	---	---
16	(7.8)	14 (230)				<2.3	(2.80)	---
17	(7.4)	14 (270)				2.4	(2.95)	---
18	(6.5)	15 (270)				<2.7	(2.70)	---
19	(7.1)	8 (270)				3.0	(2.80)	---
20	(6.3)	8 (260)				3.1	(2.85)	---
21	(6.1)	6 (325)				3.8	---	---
22	(5.3)	7 (340)				3.6	---	---
23	(7.0)	6 (380)				3.2	(2.35)	---

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

Table 71

Murmansk, U.S.S.R. (69.0° N, 33.0° E)								
October 1957								
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00	(7.0)	6 (390)					(3.9)	(2.50)
01	(6.5)	9 (360)					<4.0	(2.40)
02	(6.0)	12 (380)					>4.1	(2.50)
03	(6.6)	14 (350)					<3.5	(2.45)
04	(5.8)	9 (290)					2.5	(2.40)
05	(6.0)	15 (270)					2.3	(2.50)
06	(6.5)	15 (270)			<1.55	<2.0	2.60	
07	7.6	25 (270)			(2.00)	<2.0	2.70	
08	9.0	25 (250)			2.20		2.85	
09	10.0	25 (250)			(2.60)		2.80	
10	10.6	21 (240)			2.65		2.00	
11	10.7	17 (240)			2.85		2.75	
12	11.0	18 (240)			<3.00		2.75	
13	11.4	18 (230)			<2.80		2.80	
14	11.5	19 (230)			2.60		2.85	
15	11.8	20 (240)			2.30		2.85	
16	11.2	19 (240)			(2.00)		2.90	
17	10.6	20 (260)			<1.80	<2.2	2.85	
18	9.0	18 (260)			---	(2.3)	2.80	
19	(6.8)	17 (280)			<2.3		2.70	
20	(6.3)	12 (320)				3.0	(2.80)	
21	(6.2)	9 (340)				3.4	(2.55)	
22	(6.4)	11 (370)				3.4	(2.45)	
23	(6.6)	8 (370)				3.8	(2.45)	

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

Table 68

Deception I. (63.0° S, 60.7° W)								
October 1958								
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		8.5 13	300					2.40
01		9.1 13	300					2.40
02		8.6 19	300					2.30
03		8.5 25	320					2.30
04		8.4 26	325					2.30
05		8.8 26	300					2.30
06		9.0 24	265					2.40
07	---	9.1 14	225			---		2.60
08	---	10.3 11	210					2.80
09	---	(9.8)	8 200					(2.70)
10	(300)	(10.8)	9 200			---		(2.70)
11	315	11.5 10	200			---		2.85
12	(310)	12.6 14	215					2.85
13	---	(13.2)	2					---
14	(260)	12.8 15	215					2.80
15	---	12.0 10	210					2.70
16	---	11.3 11	220					2.80
17	---	(10.4)	8 220					(2.90)
18	---	(11.4)	7 220					(2.90)
19	---	(11.5)	1 230			---		---
20	---	---	0 250			---		---
21		(8.9)	6 250					(2.80)
22		9.5 13	265					2.60
23		9.4 12	295					2.50

Time: 45.0°W.
Sweep: 1.3 Mc to 18.0 Mc in 30 seconds.

Table 70

Halley Bay (75.5° S, 26.6° W)								
November 1957								
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00	---	(7.3)	27 325	4.00	<150	<2.10	2.4	(2.30)
01	(450)	>7.0	24 320	3.90	120	2.10	<2.6	2.15
02	500	(7.5)	25 320	4.00	110	>2.30	2.7	2.20
03	490	>7.1	25 305	4.05	110	<2.50	2.8	2.15
04	540	7.3	26 300	4.20	110	(2.75)	2.8	2.10
05	510	7.7	23 275	4.30	110	2.80		2.10
06	505	8.2	22 260	4.60	110	<3.00	<2.9	2.10
07	540	7.4	25 255	4.80	110	(3.20)		2.10
08	560	7.0	24 250	4.90	105	(3.30)	(3.4)	2.15
09	550	6.8	25 250	5.00	105	(3.40)	3.5	2.20
10	575	6.6	27 250	5.20	105	(3.40)		2.20
11	615	6.6	28 250	5.30	105	>3.40		2.10
12	560	6.8	26 250	5.40	105	(3.50)		2.20
13	550	6.9	24 250	5.40	105	(3.50)		2.25
14	550	6.9	27 250	5.05	105	3.40		2.30
15	545	6.9	28 250	5.10	105	(3.30)		2.30
16	400	7.0	28 250	<5.05	110	>3.10		2.40
17	480	7.2	28 260	4.60	110	>3.00	(3.4)	2.40
18	520	7.2	28 (270)	<4.60	110	<2.90	<3.3	2.45
19	495	7.4	28 270	4.35	110	(2.80)		2.45
20	---	7.6	27 300	3.90	115	<2.70	2.7	2.50
21	---	(7.4)	28 310	---	115	(2.20)	2.7	2.45
22	---	(7.6)	26 310	---	<150	<2.15		2.40
23	---	>6.9	28 320	---	110	<2.10	<2.5	2.25

Time: 30.0°W.

Table 72

Halley Bay (75.5° S, 26.6° W)							October 1957	
Time	h'F2	foF2—Count	h'F	fof1	h'E	foE	foEs	(M3000)F2
00		>6.3	27 385		150	1.60	<2.1	----
01		(6.7)	25 375		150	1.79		----
02		>6.9	27 360		150	1.80		(2.20)
03	---	7.3	27 355	3.60	125	(1.90)	<2.1	(2.10)
04	<455	(7.7)	26 335	3.80	125	(2.10)	<2.3	(2.05)
05	465	7.6	28 (310)	<4.10	<125	(2.50)		(2.10)
06	460	7.6	29 (290)	4.30	115	(2.70)		<2.15
07	500	7.5	30 265	4.50	110	>2.90		2.15
08	480	7.5	29 250	5.00	110	(3.10)		2.30
09	500	7.7	30 250	5.25	110	>3.30		2.30
10	480	7.8	29 250	5.25	110	(3.45)		2.40
11	490	8.1	29 (250)	5.20	110	>3.50		2.45
12	500	8.3	31 250	<5.65	110	>3.40		2.45
13	(470)	8.3	30 250	5.65	110	>3.10		2.50
14	---	8.7	31 245	(5.40)	110	(3.40)		2.50
15	---	9.2	30 250	----	110	>3.05		2.60
16	---	9.3	31 250	----	110	(2.90)		2.55
17	---	>9.3	30 260	----	115	(2.80)		<2.75
18		9.1	31 265		115	(2.50)		2.70
19		8.4	20 205		115	>2.30		2.65
20		8.6	27 300		<150	(2.10)	<2.2	2.60
21		8.1	27 305		150	(1.80)		(2.50)
22		(7.3)	27 320		165	<1.70		(2.50)
23		>6.7	27 330		170	<1.80	2.0	(2.45)

Fig. 1. WASHINGTON, D.C.
38.7°N, 77.1°W
DECEMBER 1960

Fig. 2. WASHINGTON, D.C.
DECEMBER 1960

Fig. 3. RESOLUTE BAY, CANADA
74.7°N, 94.9°W
NOVEMBER 1960

Fig. 4. RESOLUTE BAY, CANADA
NOVEMBER 1960

Fig. 5. TROMSØ, NORWAY
69.7°N, 19.0°E

NOVEMBER 1960

Fig. 6. TROMSØ, NORWAY

NOVEMBER 1960

Fig. 7. KIRUNA, SWEDEN
67.8°N, 20.3°E

NOVEMBER 1960

Fig. 8. KIRUNA, SWEDEN

NOVEMBER 1960

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

Fig. 14. LYCKSELE, SWEDEN NOVEMBER 1960

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

Fig. 16. NURMIJARVI, FINLAND NOVEMBER 1960

Fig. 17. UPSALA, SWEDEN

59.8°N, 17.6°E

NOVEMBER 1960

Fig. 18. UPSALA, SWEDEN

NOVEMBER 1960

Fig. 19. CHURCHILL, CANADA

58.8°N, 94.2°W

NOVEMBER 1960

Fig. 20. CHURCHILL, CANADA

NOVEMBER 1960

Fig. 21. De BILT, HOLLAND
52.1°N, 5.2°E

NOVEMBER 1960

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Fig. 22. De BILT, HOLLAND

NOVEMBER 1960

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Fig. 23. ADAK, ALASKA
51.9°N, 176.6°W

NOVEMBER 1960

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Fig. 24. ADAK, ALASKA

NOVEMBER 1960

NBS 490

Fig. 29. GRAZ, AUSTRIA
47.1°N, 15.5°E

NOVEMBER 1960

Fig. 30. GRAZ, AUSTRIA

NOVEMBER 1960

Fig. 31. SOTTENS, SWITZERLAND
46.6°N, 6.7°E

NOVEMBER 1960

Fig. 32. SOTTENS, SWITZERLAND

NOVEMBER 1960

Fig. 33. OTTAWA, CANADA
45.4°N, 75.9°W

NOVEMBER 1960

Fig. 34. OTTAWA, CANADA

NOVEMBER 1960

Fig. 35. WAKKANAI, JAPAN
45.4°N, 141.7°E

NOVEMBER 1960

Fig. 36. WAKKANAI, JAPAN

NOVEMBER 1960

Fig. 41. AKITA, JAPAN
39.7°N, 140.1°E

NOVEMBER 1960

Fig. 42. AKITA, JAPAN

NOVEMBER 1960

Fig. 43. WASHINGTON, D.C.
38.7°N, 77.1°W

NOVEMBER 1960

Fig. 44. WASHINGTON, D.C.

NOVEMBER 1960

Fig. 45. TOKYO, JAPAN
35.7°N, 139.5°E

NOVEMBER 1960

NBS 503

Fig. 46. TOKYO, JAPAN

NOVEMBER 1960

NBS 490

Fig. 47. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W

NOVEMBER 1960

NBS 503

Fig. 48. WHITE SANDS, NEW MEXICO

NOVEMBER 1960

NBS 490

Fig. 49. YAMAGAWA, JAPAN

31.2°N, 130.6°E

NOVEMBER 1960

Fig. 50. YAMAGAWA, JAPAN

NOVEMBER 1960

Fig. 51. EL CERILLO, MEXICO

19.3°N, 99.5°W

NOVEMBER 1960

Fig. 52. EL CERILLO, MEXICO NOVEMBER 1960

Fig. 57. TOWNSVILLE, AUSTRALIA
19.3°S, 146.7°E NOVEMBER 1960

Fig. 58. TOWNSVILLE, AUSTRALIA NOVEMBER 1960

Fig. 59. TALARA, PERU
4.6°S, 81.3°W SEPTEMBER 1960

Fig. 60. TALARA, PERU SEPTEMBER 1960

Fig. 61. BUNIA, BELGIAN CONGO
1.5°N, 30.2°E
DECEMBER 1959

Fig. 62. BUNIA, BELGIAN CONGO

Fig. 63. LEOPOLDVILLE, BELGIAN CONGO
4.4°S, 15.2°E
DECEMBER 1959

Fig. 64. LEOPOLDVILLE, BELGIAN CONGO

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

Fig. 70. LINDAU/HARZ, GERMANY
NOVEMBER 1959

Fig. 71. DOORBES, BELGIUM
50.1°N, 4.6°E
NOVEMBER 1959

Fig. 72. DOORBES, BELGIUM
NOVEMBER 1959

Fig. 73. GARCHY, FRANCE
47.3°N, 3.1°E

NOVEMBER 1959

Fig. 74. GARCHY, FRANCE

NOVEMBER 1959

Fig. 75. IBADAN, NIGERIA
7.4°N, 3.9°E

NOVEMBER 1959

Fig. 76. IBADAN, NIGERIA

NOVEMBER 1959

Fig. 77. SAO PAULO, BRAZIL
23.5°S, 46.5°W NOVEMBER 1959

Fig. 78 SAO PAULO, BRAZIL NOVEMBER 1959

Fig. 79. JOHANNESBURG, UNION OF S. AFRICA
26.1°S, 28.1°E NOVEMBER 1959

Fig. 80. JOHANNESBURG, UNION OF S. AFRICA
NOVEMBER 1959

Fig. 81. CAPE TOWN, UNION OF S. AFRICA
34.1°S, 18.3°E
NOVEMBER 1959

Fig. 82. CAPE TOWN, UNION OF S. AFRICA
NOVEMBER 1959

Fig. 83. BUENOS AIRES, ARGENTINA
34.5°S, 58.5°W
NOVEMBER 1959

Fig. 84. BUENOS AIRES, ARGENTINA
NOVEMBER 1959

Fig. 85. CANBERRA, AUSTRALIA
35.3°S, 149.0°E NOVEMBER 1959

NBS 503

Fig. 86. CANBERRA, AUSTRALIA

NBS 490

Fig. 87. PORT LOCKROY
64.8°S, 63.5°W NOVEMBER 1959

NBS 503

Fig. 88. PORT LOCKROY NOVEMBER 1959

NBS 490

Fig. 89. JOHANNESBURG, UNION OF S. AFRICA
26.1°S, 28.1°E
OCTOBER 1959

Fig. 90. JOHANNESBURG, UNION OF S. AFRICA
OCTOBER 1959

Fig. 91. MAWSON
67.6°S, 62.9°E
OCTOBER 1959

Fig. 92. MAWSON
OCTOBER 1959

Fig. 93. SVALBARD, NORWAY
78.2°N, 15.7°E

NOVEMBER 1958

NBS 503

Fig. 94. SVALBARD, NORWAY

NOVEMBER 1958

NBS 490

Fig. 95. DOURBES, BELGIUM
50.1°N, 4.6°E

NOVEMBER 1958

NBS 503

Fig. 96. DOURBES, BELGIUM

NOVEMBER 1958

NBS 490

Fig. 97. POITIERS, FRANCE

46.6°N, 0.3°E

NOVEMBER 1958

— LIMITING FREQUENCY = 3 Mc

- - - LIMITING FREQUENCY = 5 Mc

- · - · - LIMITING FREQUENCY = 7 Mc.

Fig. 98. POITIERS, FRANCE

NOVEMBER 1958

Fig. 99. DAKAR, FRENCH W. AFRICA

14.8°N, 17.4°W

NOVEMBER 1958

— LIMITING FREQUENCY = 3 Mc

- - - LIMITING FREQUENCY = 5 Mc

- · - · - LIMITING FREQUENCY = 7 Mc.

Fig. 100. DAKAR, FRENCH W. AFRICA

NOVEMBER 1958

Fig. 101. DJIBOUTI, FRENCH SOMALILAND
11.6°N, 43.2°E
NOVEMBER 1958

Fig. 102. DJIBOUTI, FRENCH SOMALILAND

Fig. 103. PARAMARIBO, SURINAM
5.8°N, 55.2°W
NOVEMBER 1958

Fig. 104. PARAMARIBO, SURINAM NOVEMBER 1958

Fig. 109. DECEPCION I.
63.0°S, 60.7°W NOVEMBER 1958

Fig. 110. DECEPCION I. NOVEMBER 1958

Fig. 111. HALLEY BAY
75.5°S, 26.6°W NOVEMBER 1958

Fig. 112. HALLEY BAY NOVEMBER 1958

Fig. II3. MURMANSK, U.S.S.R.

69.0°N, 33.0°E

OCTOBER 1958

— LIMITING FREQUENCY = 3 Mc.

--- LIMITING FREQUENCY = 5 Mc.

... LIMITING FREQUENCY = 7 Mc.

Fig. II4. MURMANSK, U.S.S.R.

OCTOBER 1958

Fig. II5. POITIERS, FRANCE

46.6°N, 0.3°E

OCTOBER 1958

— LIMITING FREQUENCY = 3 Mc.

--- LIMITING FREQUENCY = 5 Mc.

... LIMITING FREQUENCY = 7 Mc.

Fig. II6. POITIERS, FRANCE

OCTOBER 1958

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

OCTOBER 1958

Fig. 118. RABAT, MOROCCO

OCTOBER 1958

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

OCTOBER 1958

Fig. 120. TAMANRASSET, FRENCH W. AFRICA

OCTOBER 1958

Fig. 121. DAKAR, FRENCH W. AFRICA
14.8°N, 17.4°W
OCTOBER 1958

Fig. 122. DAKAR, FRENCH W. AFRICA

Fig. 123. DJIBOUTI, FRENCH SOMALILAND
11.6°N, 43.2°E
OCTOBER 1958

Fig. 124. DJIBOUTI, FRENCH SOMALILAND

Fig. 129. TAHITI, SOCIETY IS.

17.7°S, 149.3°W

OCTOBER 1958

Fig. 130. TAHITI, SOCIETY IS.

OCTOBER 1958

Fig. 131. TANANARIVE, MADAGASCAR

18.8°S, 47.5°E

OCTOBER 1958

Fig. 132. TANANARIVE, MADAGASCAR

OCTOBER 1958

Fig. 133. TSUMEB, SOUTH W. AFRICA
19.2°S, 17.7°E
OCTOBER 1958

NBS 503

Fig. 134. TSUMEB, SOUTH W. AFRICA
OCTOBER 1958

NBS 490

Fig. 135. DECEPTION I.
63.0°S, 60.7°W
OCTOBER 1958

NBS 503

Fig. 136. DECEPTION I.
OCTOBER 1958

NBS 490

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

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

Fig. 139. HALLEY BAY
75. 5°S, 26. 6°W NOVEMBER 1957

Fig. 140. HALLEY BAY NOVEMBER 1957

Fig 141. MURMANSK, U. S. S. R.
69.0°N, 33.0°E

OCTOBER 1957

NBS 503

Fig. 142. MURMANSK, U. S. S. R.

OCTOBER 1957

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Fig. 143. HALLEY BAY
75.5°S, 26.6°W

OCTOBER 1957

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Fig. 144. HALLEY BAY

OCTOBER 1957

NBS 490

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Sottens, Switzerland		
November 1960	3	20
Svalbard, Norway		
November 1958	8	36
Tahiti, Society Is.		
October 1958	11	45
Talara, Peru		
November 1960	5	26
September 1960	5	27
Tamanrasset, French W. Africa		
October 1958	10	42
Tananarive, Madagascar		
October 1958	11	45
Tokyo, Japan		
November 1960	4	24
Townsville, Australia		
November 1960	5	27
Tromso, Norway		
November 1960	1	14
Tsumeb, South W. Africa		
October 1958	12	46
Upsala, Sweden		
November 1960	2	17
Wakkanai, Japan		
November 1960	3	21
Washington, D. C.		
December 1960	1	13
November 1960	4	23
White Sands, New Mexico		
November 1960	4	24
Winnipeg, Canada		
November 1960	3	19
Yamagawa, Japan		
November 1960	5	25

CRPL Reports

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

Daily:

Radio disturbance forecasts, every half hour from broadcast stations WWV and WWVH of the National Bureau of Standards.
Telephoned and telegraphed reports of ionospheric, solar, geomagnetic, and radio propagation data.

Weekly:

CRPL—J. North Atlantic Radio Propagation Forecast.
CRPL—Jp. North Pacific Radio Propagation Forecast.

Semimonthly:

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

Monthly:

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

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

Catalog of Data:

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

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

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

NBS Circular 462. Ionospheric Radio Propagation. \$1.25.
NBS Circular 465. Instructions for the Use of Basic Radio Propagation Predictions. 30 cents.
NBS Circular 557. Worldwide Radio Noise Levels Expected in the Frequency Band 10 Kilocycles to 100 megacycles. 30 cents.
NBS Circular 582. Worldwide Occurrence of Sporadic E. \$2.25.

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

Selected Technical Notes of the National Bureau of Standards:

NBS Tech. Note 2. PB151361. World Maps of F2 Critical Frequencies and Maximum Usable Frequency Factors. \$3.50. PB151361-2. \$3.50.
NBS Tech. Note 13. PB151372. Technical Considerations Leading to an Optimum Allocation of Radio Frequencies in the Band 25 to 60 Mc. \$2.50.
NBS Tech. Note 18. PB151377. Radio Noise Data for the IGY. \$2.50.
18-2. PB151377-2. Quarterly Radio Noise Data (Mar.-May 1959). \$1.00.
18-3. PB151377-3. (June-Aug. 1959). \$1.00.
18-4. PB151377-4, etc. (Sept.-Nov. 1959). \$1.50.
NBS Tech. Note 31. PB151390. An Atlas of Oblique-Incidence Ionograms. \$2.25.
NBS Tech. Note 40-1. PB151399-1. Mean Electron Density Variations of the Quiet Ionosphere, 1: March 1959. \$1.25.
40-2. PB151399-2, etc. 2: April 1959. \$1.25.

These Technical Notes are on sale by the Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C. Order by PB number.