

11th December 1963

Dr. G. L. Nelms
Defense Research Board
Ottawa 4, Ontario
Canada

Dear Dr. Nelms:

A couple of months ago I wrote to Mr. T. R. Hartz about some results of the "Alouette" satellite. He replied on 17/10/63 and included a small graph showing contours of plasma frequency versus height from 60°N to 40°S at about 70°W .

There should be a trough over Tasmania. I wonder if any information is available on this subject. If I provide you with a short list of nights having transparent ionosphere could you reduce the corresponding satellite data over this island? Conversely, if you have a collection of satellite data I would like to compare it against ionosphere transparency.

Your comments and suggestions will be much appreciated by me.

Yours faithfully,

Grote Reber
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Alouette Data Comparison

18/12/64

1963

Day	Date	GMT	HT	Ionosphere		Beam		Trace		Hole
				foF ₂	h'x F ₂	Direction	Dir.	Type	Condition	
053	22/2	1815	415a	2.0?	2.3	S48	3	Rough	Probably nearly open	
063	4/3	1727	327a	?	2.4	ZO	7	"	Mostly closed.	
245	2/9	1627	227a	?	2.0	N8	30	"	Open + turbulent	
258	15/9	1545	145a	2.0	2.7	N24	19	Smooth	Open + stable.	
302	29/10	2045	645a	3.3	3.8	ZO	1	Smooth	Daytime	
321	17/11	1829	429a	?	3.5	N16	8	Rough	Mostly closed.	

1963 Date	GMT	HT	Dir	Blane	Hole
205 24/7	0935	735p	4 rough	S36°	closed tight
206 26/7	0903	703p	2 smooth	"	" "
<u>310</u> 29/7	0909	709p	1 "	"	" "
222 10/8	1935	535a	3 "	S30°	" "
<u>225</u> 13/8	1942	542a	8 rough	"	<u>partly open</u>

<u>048</u>	17/2	1831	431a	3	536a	N48°	<u>closed tight</u>
<u>050</u>	19/2	1801	401a	2	538a	"	"
<u>053x</u>	22/2	1807	407a	3	543a	S48°	"
<u>055</u>	24/2	1736	336a	3	544a	"	"

1963 Date	GMT	HT	Trace. Dir	SR	Beam	Hole
043	12/2	1856	456a	8	529a	Z0° Part open
056	25/2	1813	413a	4	546a	" closed
058	27/2	1746	346a	4	549a	" "
062	3/3	1641	241a	12	555a	" Part open
063x	4/3	1718	318a	12	556a	" "
064	5/3	1611	211a	11	557a	" "
065	6/3	1647	247a	4	558a	" closed
067	8/3	1616	216a	12	600a	N16 Part open
069	10/3	1546	146a	6	602a	" closed.
<u>070</u>	11/3	1623	223a	21	603a	" <u>Open</u>
072	13/3	1554	154a	Rainy Static	606a	" ?
<u>076</u>	17/3	1451	1251a	3 Smooth	611a	" <u>closed tight</u>
091	1/4	1337	1137p	6	623a	S8° closed.
097	7/4	1205	1005p	7	635a	" "
<u>123</u>	3/5	0856	656p	3	705a	Z0° <u>closed tight</u>
<u>123</u>	3/5	2004	604a	23	705a	Z0° <u>Open</u>
<u>125</u>	5/5	1933	533a	22	707a	Z0° <u>Open</u>
128	8/5	1939	539a	12	710a	Z0° Partly open
<u>130</u>	10/5	1909	509a	35	?	Z0° <u>Open</u>
<u>132</u>	12/5	0731	531p	1	S501p	N16° <u>closed tight</u>
<u>132</u>	12/5	1839	439a	3	714a	" "
<u>144</u>	24/5	1719	319a	14	726a	N24° Partly open.
170	19/6	1409	1209a	5	743a	N40° closed.
196	15/7	1100	900p	8	-	S24° Partly open
<u>197</u>	16/7	0951	751p	2	-	" <u>closed tight</u>
<u>200</u>	19/7	0958	758p	18	-	" <u>Partly open</u>
<u>203</u>	22/7	1005	805p	19	-	" "
228	16/8	1948	548a	20	-	S16° <u>Open + rough</u>
<u>230</u>	18/8	1919	519a	19	-	" <u>Open</u>

1963	Date	GMT	HT	Dir	SR	Beam	Hole
<u>231</u>	19/8	1810	0410a	20		S16°	<u>Open.</u>
<u>239</u>	27/8	1751	0351a	19	smooth	N8°	<u>Open</u>
<u>245</u> x	2/9	1620	0220a	30		"	<u>Open</u>
<u>246</u>	3/9	1656	0256a	19		"	<u>Open</u>
251	8/9	1632	0432	15	rough	N32°	partly open
253	10/9	1601	0401a	15	"	"	" "
257	14/9	1459	1259a	12		N24°	" "
<u>258</u> x	15/9	1537	0137a	19	smooth	"	<u>Open</u>
260	17/9	1506	0106a	17	"	"	"
264	22/9	1442	1242a	8.2	sw	N8°	"
271	28/9	1309	1109p	8.4	sw	"	"
286	13/10	1157	957p	5	dir rough	E0°	closed.
288	15/10	1126	926p	7	dir smooth	"	partly open
293	20/10	1102	902p	8	" rough	"	" "
295	22/10	1031	831p	5	" smooth	"	closed
298	25/10	1037	837p	8	" rough	"	partly open.
300	27/10	1006	806p	11	" "	"	" "
302	29/10	0937	737p	6	" "	"	closed.
302 x		2042	642a		daytime		
307	3/11	0911	711p	4	rough	"	"
312	8/11	1846	446a	12	"	"	partly open
315	11/11	1815	415a	7	"	N16°	closed.
318	14/11	1821	421a	5	smooth	"	"
320	16/11	1750	350a	7	rough	"	"
321x	17/11	1828	428a	8	"	"	partly open
322	18/11	1721	321a	8	"	"	" "
328	24/11	1732	332a	8	"	"	" "
<u>348</u>	14/12	1410	1210a	5	smooth	E0°	<u>closed tight,</u>
349	15/12	1447	1247a	9	rough	"	partly open.

PASSES OF THE ALOUETTE SATELLITE OVER TASMANIA ($\pm 10^\circ$ OF LONGITUDE)

FOR WHICH TOPSIDE SOUNDER IONOGRAMS ARE AVAILABLE

x = Plots on hand

<u>Year</u>	<u>Day</u>	<u>Start Time (GMT)</u>	<u>Year</u>	<u>Day</u>	<u>Start Time (GMT)</u>	<u>Year</u>	<u>Day</u>	<u>Start Time (GMT)</u>		
62	1	274	1250	63	016	0942	63	3	123	2004
			2357		016	2312		5	125	1933
	2	275	1326		018	2242		8	128	1939
	5	278	1149		019	0949		10	130	1909
	8	281	1155		021	0918		12	132	0731
	9	282	1232		021	2248		12	132	1839
	15	288	1100		025	2147		15	135	0737
	16	289	1137		027	2117		24	144	1719
	17	290	1029		028	0823		10	161	0428
	18	291	1106		028	2153		16	167	0258
	19	292	1000		029	2046		19	170	0302
	20	293	1036		030	0753		19	170	1409
	22	295	1005		031	0830		11	192	2346
	23	296	1043		032	2052		14	195	2352
	25	298	1012		3	034		15	196	1100
	26	299	0910		4	035		16	197	0951
	29	302	0911		11	042		19	200	0958
	30	303	0948		12	043		20	201	2223
	1	305	0917		13	044		22	203	1005
	3	307	0846		17	048		23	204	2227
	5	309	0816		18	049		24	205	0935
	6	310	0854		19	050		26	207	0903
	10	314	0752		20	051		26	207	2233
	15	319	0727		22	053 x		28	209	0832
	16	320	0622		24	055		29	210	0909
	17	321	0656		25	056		30	211	0801
	17	321	1805		27	058		2	214	0808
	20	324	0703		3	062		4	216	0737
	21	325	0557		4	063 x		4	216	2107
	22	326	0632		5	064		6	218	0706
	24	328	0601		6	065		6	218	2037
	26	330	0534		8	067		7	219	0744
	27	331	0608		10	069		9	221	0713
	4	338	0514		11	070		9	221	2043
	8	342	0411		13	072		10	222	1935
	15	349	0317		17	076		12	224	0720
	19	353	0216		29	088		13	225	1942
					1	091		16	228	0618
63	008	0038			7	097		16	228	1948
	010	0008			19	109		18	230	1919
	014	2343			23	113		19	231	0625
	015	1050			3	123		19	231	1810

<u>Year</u>	<u>Day</u>	<u>Start Time (GMT)</u>	<u>Year</u>	<u>Day</u>	<u>Start Time (GMT)</u>
63	23 235	0524	63	16 320	1750
	26 238	0529		17 321	0721
	<u>27 239</u>	1751		17 321x	1828
	2 245x	1620		18 322	0759
	3 246	1656		18 322	1721
	8 251	1632		19 323	0650
	10 253	1601		24 328	0627
	14 257	1459		24 328	1732
	15 258x	1537		<u>26 330</u>	0555
	17 260	1506		1 335	0530
	21 264	1404		8 342	0439
	22 265	1442		10 344	0404
	24 267	1410		14 348	1410
	28 271	1309		15 349	0340
	<u>29 272</u>	1347		15 349	1447
	1 274	1315		17 351	0309
	6 279	1252		29 363	0150
	8 281	1221			
	13 286	1157			
	15 288	1126			
	20 293	1102			
	22 295	1031			
	22 295	2138			
	24 297	2107			
	25 298	1037			
	26 299	2036			
	29 302	0937			
	29 302x	2042			
	31 304	2012			
	2 306	1941			
	3 307	0911			
	3 307	2018			
	27 300	1006			
	27 300	2113			
	28 301	2005			
	4 308	1910			
	5 309	0840			
	5 309	1947			
	7 311	1916			
	8 312	0847			
	8 312	1846			
	10 314	0816			
	10 314	1923			
	11 315	1815			
	12 316	0745			
	12 316	1852			
	14 318	1821			
	16 320	0643			