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COMMONWEALTH OF AUSTRALIA  
DEPARTMENT OF NATIONAL DEVELOPMENT  
BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS  
203 Collins Street,  
MELBOURNE. VIC.

FINAL SEISMOLOGICAL BULLETIN 1961

WILKES BASE, ANTARCTICA.

Latitude: 66° 15' S. Longitude: 110° 35' E.  
Height: 12 meters above M.S.L.  
Foundation: Gneiss.  
Instrument: Lehner and Griffith Long period seismograph.  
Seismometer periods: 15 sec.  
Galvanometer periods: 90 sec.  
Magnification (Nominal): 4,200 at 25 sec.  
Recorder: NEZ.

NOTE: Epicentre locations are those given by U.S.C. & G.S.

No.	Date 1961 JANUARY	Phase	Time (G.M.T.) h.m.s.	Amplitudes in M.M.			Per. Sec.	Remarks
				A <sub>N</sub>	A <sub>E</sub>	A <sub>Z</sub>		
1	7	iPS E iX N iL E	18 33 30 37 40 43 34					57.2S, 25.3W h = 94Km. Δ = 53° H = 18 16 51.2
2	8	iX E	03 17 02					
3	14	eL Z	17 44 38				22	East galvo. jammed for 13/14th January. 53.9N, 163.7W Δ = 138°
4	15	iP Z iPP Z iS N iL N	01 07 16 53 10 57 11 46	-2		-11		53.6S, 139.6E Δ = 20° Clear surface waves H = 01 02 50.2
5	15	iP Z ipP Z iS N	16 54 25 54 17 02 21	25		40	20	20.4S, 169.5E Δ = 60°
6	16	iPP N iSKS iX iSSP	07 38 36 44 56 48 02 53 26	- + -7 -20			18 12 32 27	36.ON, 141.1E h = 131Km. Δ = 103° H = 07 20 18.6
7	20	eL	18 15 30					56.4N, 152.3E Δ = 127° h = 46Km.
8	22	iP EZ ipP EZ iX Z iPP N iPcS Z iS NEZ iSS N Z iSSS NE eLq N Z eLr N Z M NEZ	03 34 54 35 07 36 25 37 25 39 27 43 37 47 53 50 48 52 00 54 00 04 02 00	- + -7 -20 -21 -		+6 +5 -6	6 32 35 17	11.9S, 166.2E Very clear large surface waves. H = 03 24 04.5

JANUARY

2.

No.	Date 1961	Phase	Time (G.M.T.) h.m.s.	Amplitudes in M.M.			Per. Sec.	Remarks
				A <sub>N</sub>	A <sub>E</sub>	A <sub>Z</sub>		
9	22	eL	18 13 02					
X 10	✓ 22	i(S) eL	N Z 19 24 24 36 08					12.3S, 166.1E h = 35Km. H = 19 04 54.1
✓ 11	✓ 25	iP iS eL	05 31 56 40 30 48 41			+2		14.1S, 165.4E h = 196Km. H = 05 21 42.2
12	26	i(S) eL	N Z N 07 46 20 50 00	+7		-3		possibly deep.
13	✓ 26	iP iX iScP iS iSS iSSS M	EZ Z Z NE EZ NE 43 ..	-11 -24	+18 +5	-13	16 22 38 20	21.4S, 169.5E. h = 119Km. $\Delta = 59^\circ$ H = 16 13 25.1
14	27	eL	15 11 ..					
15	28	eL	Z 04 13 50					13.6S, 76.6W $\Delta = 99^\circ$ path of waves a- cross Antarctic continent.
16	✓ 28	iS iScS iSSS	N N N 20 00 56 02 44 04 40	-7 -3 +9			14 20 20	East and Vertical galvos. stuck. 21.3S, 169E h = 50Km. $\Delta = 59^\circ$ H = 19 43 01.4
17	30	eL	Z 23 26 4..					

FEBRUARY

3.

No.	Date 1961	Phase	Time (G.M.T.) h.m.s.	Amplitudes in M.M.			Per. Sec.	Remarks
				A <sub>N</sub>	A <sub>E</sub>	A <sub>Z</sub>		
18	1	eL	04 44 ..					
19	5	eL	16 41 2..					
20	5	iP	17 57 48			-2		38.4S, 78.2E
		iX	58 16					h = 25Km.
		iS	18 02 56	-12				$\Delta = 33^\circ$
		eL	04 44					H = 17 50 51.1
21	6	iP	21 56 03	-1		-5		6.8S, 155.3E
		iX	57 08					$\Delta = 66.4^\circ$
		iX	32					H = 21 45 13.5
		iX	58 52					clear surface waves.
		iPPP	59 55					
		iScP	22 00 24					
		iS	04 50	-15		+4		
		iSS	09 04			+7		
		M	22 00			85	21	
22	9	iP	02 17 59		+6	-6		28.2S, 177.4W
		ipP	18 12			-4		h = 37Km.
		iS	25 42	-3	+8			$\Delta = 57^\circ$
		iPS	26 14	-3		-3	14	H = 02 08 15.9
		iPPS	30					
		iScS	27 43					
		iSS	29 56					
23	9	iS	20 38 44					9.9S, 111.3E = 56.4
24	11	iP	21 10 50		-6	-8		28.2S, 177.5W
		ipP	11 06			-3		h = 47Km.
		iPcP	11 41			-5		H = 21 01 06.4
		iPcS	15 45					
		iS	18 34					
		iScS	20 33					
		iSSS	26 18			-3		
25	12	iPP	23 11 04					43.7N, 148.0E
		iX	17 04					$\Delta = 114^\circ$
		iScSP	20 43					Hour marks on traces 2 mins.slow.
		iSS	28 48	+10				H = 22 51 27.7
26	21	iP	19 14 56					48.8S, 106.2E
								h = 50Km.
								$\Delta = 17^\circ$
								H = 19 10 56.8
27	22	iP	22 03 14			-3	5	28.4S, 177.2W
		ipP	24					h = 78Km.
		iPcP	04 09					$\Delta = 57^\circ$
		iS	11 01	-1	+5			H = 21 53 34.5
		iScS	12 56					
		i(SS)	14 18					
28	23	iSS	04 50 03					38.2N, 142.7E
								h = 116Km.
								$\Delta = 108^\circ$
								H = 04 16 2 <sup>r</sup>

FEBRUARY

4.

No.	Date 1961	Phase	Time (G.M.T.) h.m.s.	Amplitudes in M.M.			Per. Sec.	Remarks
				A <sub>N</sub>	A <sub>E</sub>	A <sub>Z</sub>		
29	26	iSKS iX iSS	N N	06 10 26 15 16				32.7S, 111.2W h = 29Km. $\Delta = 76.5^\circ$ H = 05 48 46.3
30	26	iP iPP iX iSKS iSKKS iPS iPPS iSS	N Z N Z Z EZ N N N	18 24 26 28 28 33 08 35 08 44 37 12 38 31 42 38	-2	-6 -7 +5 -8	18 17 28	31.4N, 131.2E h = 54Km. $\Delta = 100^\circ$ H = 18 10 48.7

MARCH

5.

No.	Date 1961	Phase	Time (G.M.T.) h.m.s.	Amplitudes in M.M.			Per. Sec.	Remarks
				A <sub>N</sub>	A <sub>E</sub>	A <sub>Z</sub>		
31	1	eL	09 42 ..					
32	2	eL	00 37 ..					
33	2	eL	16 11 5..					
34	3	iP	06 35 30			-4	22.9S, 171.4E h = 27Km. $\Delta = 57.5^\circ$ H = 06 25 37.9	
		iPcP	36 18			+3		
		iPP	37 37			+2		
		iS	43 28	E				
		iScS	45 17	Z				
35	4	i(P)	01 37 14					
		i(S)	45 42					
		eL	53 24					
36	7	i(S)	07 03 12					
37	7	iP	10 20 28				Very large quake; phases unreadable, records spoiled by light leak in door.  28.2S, 175.7W h = 43Km. $\Delta = 58^\circ$ H = 10 10 38.9	
38	7	iP	19 15 12		+1	+3	38.2S, 78.1E h = 30Km. $\Delta = 33^\circ$ H = 19 08 36.1	
		iPPP	16 28					
		iPcP	17 57					
		iS	20 36	E				
		eScS	25 40	N				
39	9	eL	08 38 00					
40	10	iX	03 09 24				51.9S, 161.6E h = 25Km. $\Delta = 29^\circ$ H = 03 00 43.3	
		iS	11 38	E				
		iX	15 53					
		M	17 20					
41	11	eL	02 31 ..				48.7N, 154.6E h = 26Km. $\Delta = 120^\circ$	
42	11	i(S)	09 24 44					
		eL	30 ..	E				
43	12	iP	23 31 22			+2	28.4S, 176.0W h = 113Km. $\Delta = 58^\circ$ H = 23 21 42.5	
		iS	39 20	NE				
		iX	41 16					
		iX	46 21					
44	13	iX	09 00 21					
		eL	02 ..	Z				
45	13	eL	21 01 40					
46	13	eL	21 47 10					

No.	Date 1961	Phase	Time (G.M.T.) h.m.s.	Amplitudes in M.M.			Per Sec.	Remarks
				A <sub>N</sub>	A <sub>E</sub>	A <sub>Z</sub>		
47	14	iX eL	01 38 52 44 ..					42.9N; 140.2E; h = 147 Km. $\Delta = 112^\circ$ H = 01 05 06.2
48	14	eL	06 52 50					
49	15	eP Z iX N iS NE iSS N iSSS Z	10 26 00 30 31 35 10 39 48 43 12	+5				3.3S; 150.7E; h = 99 Km. $\Delta = 71^\circ$ H = 10 14 55.5
50	16	iP Z ipP Z iPcP Z iPcS Z iS N iScS iSS	13 55 26 39 56 30 14 00 14 03 24 05 04 07 10			-6 +9 -5 -3	6 5	8.2S; 122.0E; h = 70 Km. $\Delta = 59^\circ$ H = 13 45 35.6
51	16	iP N iS E iScS N	18 31 02 39 07 41 05					After shock of No.50. H = 18 21 12.2
52	16	eL	23 46 ..					23.6S; 175.6W; h = 20 Km.
53	17	i(ScS) N eL	14 27 21 35 30					23.8S; 175.9W; $\Delta = 61.5^\circ$ H = 14 06 51.6
54	17	iPcS N iS N iScS N iSS N	20 25 42 29 42 30 48 33 20	-5			14	24.3S; 175.6W; h = 79 Km. $\Delta = 62^\circ$ H = 20 10 36.4
55	18	iP Z iPP Z iPcP N iS N	15 01 17 02 11 04 06 06 22			-5 +8 -7	28	49.9S; 163.3E; h = 38 Km. $\Delta = 31.8^\circ$ H = 14 54 59.3 Very large surface waves.
56	18	iX Z eL	21 39 48 22 09 ..				+6	
57	19	iX N eL	05 17 51 26 ..					40.5N; 142.9E; h = 14 Km. $\Delta = 111^\circ$ H = 04 51 52.2
58	19	iS NE iX N iSS N iSSS N	07 33 40 35 10 37 42 40 52					16.0S; 168.2E; h = 90 Km. $\Delta = 63^\circ$ H = 07 14 57
59	20	eL	07 15 ..					
60	20	iP Z ipP Z iX iPP Z iPPP Z iS N Z	16 03 51 04 35 58 06 20 08 04 11 16				+19 6 10	18.4S; 175.2W; h = 175 Km. $\Delta = 67.5$ H = 15 53 09.9 Very clear phases.

MARCH

No.	Date 1961	Phase	Time (G.M.T.) h.m.s.	Amplitudes in M.M.			Per. Sec.	Remarks
				A <sub>N</sub>	A <sub>E</sub>	A <sub>Z</sub>		
60	20	iScS N iSS N Z	12 22 15 33					
61	20	iP Z iS N iScS N iSS N	23 53 01 00 01 19 02 47 05 20					After shock of No.60.
62	21	eL	20 22 ..					
63	24	eL	23 53 30					
64	25	i(PP) eL	21 13 18 18 30					
65	26	eL	21 06 10					
66	28	iP N Z iPcP N iPPP Z iPcS Z iS NEZ iScS Z	09 46 44 47 18 50 28 51 28 55 24 56 32	-11    +12	    -20	    +22	12	0.2N; 123.6E; h = 83 Km. $\Delta = 68^\circ$ H = 09 35 55.4
67	28	iX NE iX NE iX E	21 25 54 26 36 30 04	-3 -5	+11 -8 +6			22.0S; 68.0W; h = 125 Km. $\Delta = 91.4^\circ$ H = 21 01 56.2
68	30	iX iSS	09 10 22 15 01					15.2S; 172.8W; h = 25 Km. $\Delta = 72^\circ$ H = 08 49 45.6

APRIL								
No.	Date 1961	Phase	Time (G.M.T.) h.m.s.	Amplitudes in M.M.			Per. Sec.	Remarks
				A <sub>N</sub>	A <sub>E</sub>	A <sub>Z</sub>		
69	1	iSKS N iX N iSKSP E iX	15 43 32 46 42 47 52 16 03 52				39.6S; 159.9E; h = 25 Km. Δ = 113° H = 15 18 22.8	
70	4	iSP N	10 15 03				40.1N; 77.8E; h = 25 Km. Δ = 110° H = 09 46 36.6	
71	5	eL	21 40 ..					
72	6	eL	14 37 ..					
73	8	iP iS iSS N iSSS	18 11 29 21 04 26 00 29 17		+10	-4	38.2S; 72.7W; h = 60 Km. Δ = 75.5° H = 17 59 46.7	
74	9	iP Z iSKKS EZ iX N iX N iX N	15 48 16 59 00 34 16 00 08 06 08				24.1N; 122.2E; h = 13 Km. Δ = 92° H = 15 35 05.4	
75	10	eL	20 14 ..					
76	12	eL	11 40 ..					
77	12	eL	23 20 ..					
78	13	iSKS N iPS E iX N iX N iSS iPKPPKS N Z	17 00 00 03 04 04 19 07 45 08 56 16 24				40.1N; 77.8E; h = 19 Km. Δ = 109° H = 16 34 39.1	
79	20	iS N eL	19 36 10 43 30				32.9S; 178.8W; h = 58 Km. Δ = 53° H = 19 19 29.7	
80	20	iP Z eL	21 50 24 22 13 ..			-3	15.2S; 173.7W; h = 25 Km. Δ = 71° H = 21 39 07.0	
81	22	iX Z eL	00 58 09 01 05 ..					
82	22	eL	19 34 ..					
83	23	iScSP Z [PKKP(DF)] iX	09 31 18 37 12			-5	44.6N; 150.2E; h = 44 Km. Δ = 116°	
84	25	iP Z iS E iX Z	11 25 55 33 20 42 38		-3	+3	32.7S; 178.5W; h = 45 Km. Δ = 53.5°	
85	26	eL	08 40 ..					



MAY

No.	Date 1961	Phase	Time (G.M.T.) h.m.s.	Amplitudes in M.M.			Per Sec.	Remarks
				A <sub>N</sub>	A <sub>E</sub>	A <sub>Z</sub>		
86	2	eL	20 09 50					
87	2	iP iPcP iPP iPcS iS iScS iSS iSSS M	EZ N N Z NE N N Z ✓	22 54 35 55 19 56 54 59 17 23 02 31 04 22 06 19 09 00 18 22	+6	+12	-5	27.8S; 176.5W; h = 47 Km. Δ = 59° H = 22 44 44.3
88	5	iS iScS iSS	N N N	14 04 09 03 02 05 12	-8 +3 +5			27.8S; 176.4N; h = 84 Km. Δ = 59° H = 13 43 21.1
89	6	eL		00 41 ..				
90	7	iP iPcP iPP iPcS iS iSS iSSS	Z Z N Z N Z Z	00 36 22 51 39 00 40 57 45 08 49 32 52 28				6.1S; 154.4E; h = 123 Km. Δ = 67° H = 00 25 40.8
91	7	eL		04 58 ..				
92	8	iX iX eL	N N	19 47 02 53 16 20 09 ..				
93	10	eL		02 45 ..				
94	11	eX eL		09 09 30 16 ..				37.2S; 73.6W; h = 47 Km. H = 08 38 27.1
95	13	iS	E	14 36 37		-6		27.9S; 176.0W; h = 25 Km. Δ = 58° H = 14 18 42.4
96	15	eL		19 42 ..				
97	16	eL		14 54 ..				
98	16	iX iS eX	N	17 41 41 45 24 55 04		-5		27.9S; 176.4W; h = 53 Km. Δ = 58° H = 17 27 34.1
99	17	iSSP iSSS iX	N N	20 08 04 12 43 16 04				52.0N; 173.9E; h = 21 Km. Δ = 129° H = 19 29 19.3
100	21	eL		18 39 ..				3.1S; 80.9W;
101	21	eL		22 02 ..				

MAY

No.	Date 1961.	Phase	Time (G.M.T) h.m.s.	Amplitudes in M.M.			Per. Sec.	Remarks
				A <sub>N</sub>	A <sub>E</sub>	A <sub>Z</sub>		
102	22	iP	Z	13 55 10			+3	21.3S; 174.4W; h = 97 Km. $\Delta = 63.6^\circ$ H = 13 44 35.8 East component galvo. stuck.
		ipP	Z	33				
		iX	Z	56 02				
		iS	N	14 03 45	+6			
		iScS	N	05 08				
		iSS	N	08 01				
103	22	iP	Z	17 42 46				22.8S; 176.1W; h = 35 Km. $\Delta = 63^\circ$ After shock of No. 103 H = 17 32 21.6
		iS	N Z	51 04				
		iPPS	N	38				
		iScS	N	52 26				
		iSS	N	55 18				
		iSSS	N	58 18				
104	23	iX	N	03 17 06				
		eX		22 ..				
105	23	eL		06 03 ..				
106	23	eL		17 44 ..				
107	27	iX		17 22 10				
		eL		25 ..				
108	28	eL		04 28 ..				
109	29	eX		07 49 40				39.0S; 73.4W; h = 13 Km. $\Delta = 75^\circ$ H = 07 28 11.7
		iX	N	58 30				
		eL		08 04 20				

JUNE

No.	Date 1961	Phase	Time (G.M.T.) h.m.s.	Amplitudes in M.M.			Per Sec.	Remarks
				A <sub>N</sub>	A <sub>E</sub>	A <sub>Z</sub>		
110	1	eP eSKS iX iPS iSS	Z E NE NE E	23 42 46 52 51 53 45 54 48 59 24	+6	-8	+3	10.6N; 39.3E; h = 51 Km. $\Delta = 92^\circ$ H = 23 29 21.1
111	3	eL		02 18 ..				
112	3	eL		06 29 ..				
113	4	eL		08 21 ..				
114	7	eL		15 00 ..				
115	8	eL		16 12 ..				
116	10	iScS iPS iSS iX	NE N E N	20 54 54 55 42 21 00 14 04 03				24.1S; 112.1W; h = 47 Km. $\Delta = 84^\circ$ H = 20 31 50.9
117	11	iSKS iScS iPS iSS iSSP iSSS iLR	N NE Z Z Z E N	05 35 04 36 16 37 44 43 20 43 40 47 08 58 38			73	37 27.9N; 54.7E; h = 44 Km. $\Delta = 103^\circ$ Well defined long period waves, particu- larly LR H = 05 10 27.7
118	12	eL	Z	07 51 ..				
119	13	ipP iS	Z NE	21 48 54 56 37				21.4S; 176.4W; h = 146 Km. $\Delta = 64.3$ H = 21 37 55.0
120	14	eL		21 19 ..				
121	16	i PKKS(DF) eL	NE	03 50 45 56 30				45.6N; 151.3E; h = 38 Km. $\Delta = 117^\circ$
122	16	iS eL	E	07 29 20 45 ..				41.1S; 74.5W; h = 17 Km. $\Delta = 73^\circ$ H = 03 17 56.5
123	18	iS		22 28 34				56.7S; 141.6W; h = 92 Km. $\Delta = 46.5^\circ$ H = 22 13 30.0
124	20	eL		04 06 ..				
125	21	eL		08 08 ..				
126	23	eL		10 01 ..				
127	25	eL		17 32 ..				
128	25	eL		20 18 ..				
129	26	eL		07 28 ..				
130	26	eL		15 49 ..				

JUNE

No.	Date 1961	Phase	Time (G.M.T.) h.m.s.	Amplitudes in M.M.			Per Sec.	Remarks
				A <sub>N</sub>	A <sub>E</sub>	A <sub>Z</sub>		
131	27	i(SKS) N iX iX	07 27 26 29 22 34 25					27.8N; 99.4E; h = 33 Km. $\Delta = 96^\circ$ H = 07 03 42.2
132	28	eL	13 45 ..					
133	29	iP Z ipP Z iPcP Z iPP Z iPPP E iS EZ isS E iScS E iSS Z M Z	09 33 27 38 34 00 35 56 37 28 42 10 25 43 15 46 13 56 40			+4 +6   -6   22	19	13.8S; 166.0E; h = 37 Km. $\Delta = 64^\circ$ H = 09 22 55.8

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JULY

No.	Date 1961	Phase		Time (G.M.T.) h.m.s.	Amplitudes in M.M.			Per Sec.	Remarks
					A <sub>N</sub>	A <sub>E</sub>	A <sub>Z</sub>		
134	4	iP	Z	19 22 23			+6	55.8S; 147.4E; h = 39 Km. $\Delta = 20.5^\circ$ H = 19 17 46.7	
		iS	EZ	25 13		-5	+3		
		eL		27 00					
		iX	Z	33 01			+5		
135	5	iP	Z	02 33 06				58.2S; 150.4E; h = 25 Km. $\Delta = 19.7^\circ$ H = 02 28 38.2	
		iPPP	Z	34					
		iS	E	36 44					
		iSSS	E	37 28					
		M		40 10			16		
		iScS	Z	44 56					
136	6	iP	Z	22 19 32			-8	20.0S; 169E; h = 47 Km. $\Delta = 59^\circ$ H = 22 09 31.4	
		iPcP	Z	20 20					
		iPcS	Z	24 24					
		iS	NE	27 29	-24	+38	22		
		iSS	NE	31 08					
		iSSS	NE	33 18			48		
137	7	iP	Z	13 21 32			-3	5.7S; 149.7E; h = 57 Km. $\Delta = 67^\circ$ H = 13 10 43.8	
		ipP	Z	46			-6		
		iPcP	Z	22 04					
		iPcS	Z	26 09					
		iS	NE	30 15	-11	+20			
		isS PS	Z	30					
		iScS	NEZ	31 19					
		iSS	N	34 16					
		M		48 00			19		
138	8	iP	Z	02 45 22			+2	20.0S; 168.8E; h = 52 Km. $\Delta = 60^\circ$ H = 02 35 20.1	
		iS	NE	53 22	-7	+6	(-4)		
		isS	E	47					
		iScS	E	54 43					
		iSS	E	57 18					
		iSSS	E	59 23					
139	8	iP	Z	15 44 38			+5	20.1S; 169.8E; h = 44 Km. $\Delta = 60^\circ$ H = 15 34 38.0	
		iPcP	Z	45 23					
		iPP	Z	46 39					
		iS	NE	52 41		+9	-6		
		iPPS	E	53 05					
		iSS	E	54 36					
		iSSS	E	59 08					
140	8	iS	N	21 32 04				20.2S; 169.0E; h = 56 Km. $\Delta = 60^\circ$ H = 21 13 59.4	
		eL		39 ..					
141	11	eL		10 01 ..					
142	15	iS	N	08 05 16				57.8S; 148.5E; h = 60 Km. $\Delta = 19^\circ$ H = 07 57 20	
		eL		07 ..					
143	16	eL		14 29 ..					
144	18	iP	Z	14 16 54				29.4N; 131.6E; h = 21 Km. $\Delta = 97.5^\circ$ H = 14 03 36.5	
		iPP	N Z	21 04					
		iSKS	N	27 40					
		iPS	N	29 40					
145	22	iP	Z	18 16 48				54.0S; 141.0E; h = 84 Km. $\Delta = 26^\circ$	
		iS	Z	20 25					

JULY

No.	Date 1961	Phase		Time (G.M.T) h.m.s.	Amplitudes in M.M.			Per. Sec.	Remarks
					A <sub>N</sub>	A <sub>E</sub>	A <sub>Z</sub>		
146	23	eP	Z	14 13 28					18.5S; 168.2E; h = 44 Km. $\Delta = 60^\circ$ H = 18 12 31.0
		iS	Z	22 04					
147	23	iP	Z	22 01 17	-8	+17	-13		18.3S; 168.3E; h = 44 Km. $\Delta = 60^\circ$ H = 21 51 07.5 Very large Quake Max. Amplitude L waves was 30 inches.
		iS	Z	09 06	+10				
148	28	eP	N	01 30 20					
		iS	N	34 00					
149	28	iS	N	06 29 58					18.6S; 167.7E; h = 41 Km. $\Delta = 60^\circ$ H = 06 11 38.7
150	29	eL		02 22 ..					
151	29	eL		17 03 ..					
152	30	eL		22 53 ..					

No.	Date 1961	Phase	Time (G.M.T.) h.m.s.	Amplitudes in M.M.			Per Sec.	Remarks
				A <sub>N</sub>	A <sub>E</sub>	A <sub>Z</sub>		
153	1	iP	Z	05 50 34			-6	9.8S; 160.5E; h = 50 Km. $\Delta = 67^\circ$ H = 05 39 53.2 North and East Comps. U/S From 2nd-13th August, Simplex Program Unit had major breakdown.
		iPPP	Z	54 28				
		iPcS	Z	55 16				
		iS	Z	59 23			+6	
		iSKS	Z	06 00 24				
		iSS	Z	03 13				
		iSSS	Z	06 20				
154	14	iP	Z	23 38 40				20.3S; 169.4E; h = 97 Km. $\Delta = 60^\circ$ H = 23 28 46.5
		ipP	Z	39 04				
		iS	N	46 32				
155	15	eL		20 02 ..				
156	16	eL		04 05 ..				
157	16	eL		17 04 ..				
158	17	eL		05 33 ..				
159	17	eL		07 13 ..				
160	17	iPP	Z	21 36 36				46.3N; 149.3E; h = 186 Km. $\Delta = 118^\circ$ H = 21 16 30
		iS	E	43 36				
		iX	NE	51 50			-7	
		iSS	E	55 20			-19	
		i(PKPPK?)		57 35				
161	19	iP	Z	05 22 45			+9	10.7S; 71.0W; h = 649 Km. $\Delta = 104^\circ$ H = 05 09 49.5 Very large deep Quake. All phases quite clear.
		ipP	Z	25 00			-4	
		iPP	Z	27 08			+20	
		ipPP	Z	29 04				
		iSKS	NE	32 24				
		iS	E	33 38			-50	
		iSP	N Z	35 19				
		isPS	N Z	39 20				
		iX	E	40 13				
		iSS	NE	41 00				
		iX	N Z	44 14				
		iX	Z	47 19				
		iG	E	52 00			+45	
		iX	Z	53 11				
162		eL		20 58 ..				
163	20	eL		01 57 30				
164	21	iS	N	16 26 33				
165	23	eL		05 08 ..				
166	24	eL		21 23 3..				
167	27	eL		02 33 5..				
168	27	iS		17 11 14				
169	28	eL		15 14 ..				
170	28	eL		21 07 ..				
171	31	eL		00 53 5..				

AUGUST

No.	Date 1961	Phase	Time (G.M.T.) h.m.s.	Amplitudes in M.M.			Per Sec.	Remarks
				A <sub>N</sub>	A <sub>E</sub>	A <sub>Z</sub>		
172	31	iP	Z	02 01 34			+2	As for Quake No. 162.
		ipP	Z	03 44			-2	
		epPP	Z	07 40				
		iSKS	NE	11 10				
		iS	N	12 32	-8			
		iSP	N Z	14 00				
		isPS	Z	17 58				
		iSS	NE	19 52			18	
		173	31	iP	Z	02 10 10		
ipP	Z			12 24				
ipPP	N Z			16 28				
iSKS	NE			19 45	+9			
iS	N			21 08	-7			
iSP	N Z			22 24			12	
isPS	N			26 32				
iSS	NE			28 28			22	
iG				39 28			40	



## SEPTEMBER

No.	Date 1961	Phase	Time (G.M.T.) h.m.s.	Amplitudes in M.M.			Per Sec.	Remarks
				A <sub>N</sub>	A <sub>E</sub>	A <sub>Z</sub>		
174	1	iP ipP iPP iPPP iPcS iS isS iScS iSS	NEZ Z NEZ NEZ Z NE NE NE NE	00 18 26 59 20 24 21 08 23 25 25 32 26 28 28 06 29 12	-19	-17       -33	-31	59.3S; 27.3W; h = 131 Km. $\Delta = 51^\circ$ H = 00 09 34.6 Very large Quake. Surface waves pass through main mass of ice cap. Max. amplitude 650 M.M.
175	1	iX eL	Z	19 22 58 50 ..				35.4N; 138.8E; h = 87 Km. $\Delta = 105^\circ$ H = 18 59 36.3.
176	2	eL		01 03 5..				
177	2	iP iS	Z NE	03 51 07 54 51				56.6S; 147.1E; h = 41 Km. $\Delta = 20^\circ$ H = 03 46 36.8
178	5	iPKP(E) iSS	Z N	11 54 10 12 16 20	-4			59.8N; 150.6W; h = 44 Km. $\Delta = 147^\circ$ H = 11 34 37.3
179	5	eL		13 19 ..				
180	8	eL		06 42 1..				
181	8	iP ipP iPP iPcS iS iSS	NEZ Z N N N N	11 35 43 36 11 37 40 40 49 43 04 47 10				56.1S; 27.3W; h = 125 Km. $\Delta = 54^\circ$ H = 11 26 32.8
182	11	eL		20 32 ..				
183	12	iS iSS M	NE E E	19 45 29 49 05 55 40	-3	-7 +5 60	15	59.4S; 29.2W; h = 25 Km. $\Delta = 54^\circ$ H = 19 29 05.2
184	13	iS	N	14 22 24				9.3S; 112.9E; h = 93 Km. $\Delta = 58^\circ$ H = 14-04 40.1
185	13	iP iS iSS	Z E E	21 30 42 40 10 45 08			-4	41.6S; 73.2W; h = 154 Km. $\Delta = 72^\circ$
186	14	iS iLq	E	18 46 36 50 14				56.2S; 139.9W; h = 25 Km. $\Delta = 47^\circ$ H = 18 31 17.8
187	15	eL		02 44 3..				
188	17	iS	N Z	23 41 25	-4			5.9S; 147.4E; h = 45 Km. $\Delta = 66^\circ$ H = 23 22 06

SEPTEMBER

No.	Date 1961	Phase		Time (G.M.T.) h.m.s.	Amplitudes in M.M.			Per Sec.	Remarks
					A <sub>N</sub>	A <sub>E</sub>	A <sub>Z</sub>		
189	19	iS	E	02 48 24		+3		20.3S; 63.2W; h = 609 Km. $\Delta = 93^\circ$ H = 02 25 49.2	
		isS	E	52 00		-11			
		iX	E	56 19		-5			
		isSS	E	58 08		+13			
		iX	E	03 04 40		+8			
190	19	iPS	E	21 50 44				60.1S; 22.9W; h = 56 $\Delta = 49^\circ$ high microseism H = 21 34 43.3	
		iLq	N	59 40					
191	20	iS	E	19 23 41				3.6S; 150.9E; h = 30 Km. $\Delta = 70^\circ$ H = 19 03 37	
192	24	eL		18 09 ..					
193	27	iS	E	06 52 08				17.4S; 178.7W; h = 576 Km. $\Delta = 67^\circ$ H = 06 34 03.7	
194	27	iP	Z	12 16 31			-5	59.4S; 24.2W; h = 110 Km. $\Delta = 50^\circ$ H = 12 07 39.2	
		iPP	Z	18 26			-5		
		iPPP	EZ	19 20					
		iPcS	Z	21 40					
		iS	NE	23 31	-6	-10	14		
		iSS	NE	27 12					
		iSSS	N	28 34					
195	27	eL		20 23 ..					
196	28	eL		01 52 4..					

No.	Date 1961	Phase	Time (G.M.T.) h.m.s.	Amplitudes in M.M.			Per Sec.	Remarks
				A <sub>N</sub>	A <sub>E</sub>	A <sub>Z</sub>		
197	2	eL	06 18 3..					
198	2	eL	07 26 5..					
199	3	eL	19 34 ..					
200	4	eX iSS	Z NE 02 42 2.. 47 18				13.2S; 166.5E; h = 66 Km. $\Delta = 66^\circ$ H = 02 23 23.5	
201	8 9	iP iS	Z E 23 52 27 00 01 20			+2 +5	1.6N; 127.3E; h = 102 Km. $\Delta = 70^\circ$ H = 23 41 32.2	
202	10	iS	N 17 44 26			-2	4.7S; 138.2E; h = 36 Km. $\Delta = 65^\circ$ H = 17 24 58.9	
203	12	iP iS	Z N 22 02 04 05 44			-2 -4	60.7S; 153.8E; h = 25 Km. $\Delta = 20^\circ$ H = 21 57 35.0	
204	13	iP iS	Z E 05 08 27 15 55			+4 -5	55.9S; 27.2W; h = 67 Km. $\Delta = 54^\circ$ H = 04 59 04.8	
205	13	iP iS	Z E 10 55 48 11 03 08			+2 -4	60.3S; 34.3W; h = 44 Km. $\Delta = 51^\circ$ H = 10 46 47.7	
206	17	iS	NE 04 43 12			-5 +3	55.8S; 0.5E; h = 25 Km. $\Delta = 48^\circ$ H = 04 27 33.5	
207	18	eL	03 17 ..					
208	18	iP iPcP iPP iS iPS iSS iSSS	Z Z Z E Z E E 17 03 49 04 14 06 46 13 38 14 20 18 37 21 40			+9 +3 -31 +10	36.7S; 72.6W; h = 67 Km. $\Delta = 76^\circ$ H = 16 52 00.2	
209	19	iP iX iS	Z E NE 19 31 09 32 24 35 05			+5 +5 -3	55.3S; 146.4E; h = 50 Km. $\Delta = 20^\circ$ H = 19 26 32.2	
210	22	eL	10 16 ..					
211	22	eL	14 03 3..					
212	23	iP ipP iPcP iPP iPcS iS iScS iSS	Z E E Z Z E E E 00 17 38 52 18 44 19 32 22 49 24 56 27 25 28 27			+3 -7 -37 -11	60.4S; 33.4W; h = 25 Km. $\Delta = 52^\circ$ H = 00 08 33.3	

OCTOBER

No.	Date 1961	Phase	Time (G.M.T.) h.m.s.	Amplitudes in M.M.			Per Sec.	Remarks
				A <sub>N</sub>	A <sub>E</sub>	A <sub>Z</sub>		
213	23	iP	Z	14 51 00			+8	3.5N; 126.4E; h = 25 Km. $\Delta = 71^\circ$ H = 14 39 33.5
		iPP	Z	53 29				
		iPPP	Z	55 16				
		iS	NE	15 00 06	-8	+5		
		iScS	N	01 16				
		iSS	E	04 28				
		iSSS	E	07 46				
214	24	eL		18 30 ..				
215	25	eL		14 54 ..				
216	25	eL		17 06 ..				
217	26	iP	Z	00 49 23				3.1S; 147.4E; h = 14 Km. $\Delta = 69^\circ$ H = 00 38 20.3
		iPcS	Z	53 57				
		iS	NE	58 17	-3	+5		
		iSS	E	01 02 53				
		iSSS	E	05 51				
218	26	iP	Z	15 37 52			-1	0.4S; 98.6E; h = 18 Km. $\Delta = 68^\circ$ H = 15 27 02.0
		iPcP	Z	38 22				
		iS	E	46 36	-4	+9		
		iPS	E	56				
		iScS	E	47 44				
		iSS	E	50 50				
		iSSS	E	53 46				
		M		16 06 ..			16	
219	27	iX		18 31 42				
220	28	iX		13 10 40				
221	28	iP	Z	22 55 04			+2	13.9S; 166.0E; h = 89 Km. $\Delta = 64^\circ$ H = 22 44 33.6
		iPcP	Z	34				
		iS	N	23 03 36	+2			
		iScS	N	04 48				
222	29	eL		10 21 0..				
223	30	eL		03 27 ..				
224	30	eL		09 45 ..				
225	31	eL		15 59 2..				



NOVEMBER

No.	Date 1961	Phase	Time (G.M.T.) h.m.s.	Amplitudes in M.M.			Per. Sec.	Remarks
				A <sub>N</sub>	A <sub>E</sub>	A <sub>Z</sub>		
226	2	eL NE (only)	19 15 ..				60	long period waves lasting 1.5 hours.
227	4	eL	03 39 ..					
228	6	iP Z iS E iSS E	05 38 54 47 31 52 14		-2 +3	+2		13.3S; 166.0E; h = 210 Km. $\Delta = 66^\circ$ H = 05 28 39.3
229	7	eL	12 47 ..					
230	8	eL	21 03 ..					
231	9	eL	01 38 ..					
232	10	eL	08 07 ..					
233	12	eL	02 57 3..					
234	12	eL NE (only)	08 54 ..				90	long period waves lasting 1 hour.
235	13	eL	08 13 ..					
236	14	eL	02 37 ..					
237	14	eL	05 47 ..					
238	18	eL	11 46 ..					
239	19	iS N	23 41 16					0.8N; 124.3E; h = 157 Km. $\Delta = 68^\circ$ H = 23 21 55.5
240	20	eP Z iX N	11 54 32 12 02 08					21.8S; 169.9E; h = 33 Km. $\Delta = 60^\circ$ H = 11 44 19.4
241	20	eL	19 03 3..					
242	22	eL	03 14 2..					
243	22	eL	11 34 3..					
244	22	eL	21 09 1..					
245	23	eL	16 53 ..					
246	25	eL	14 42 ..					
247	27	eL	06 47 3..					
248	27	iP Z ipP Z iPP Z iS E	17 21 28 37 23 52 30 20			-4 -4		0.6S; 127.1E; h = 25 Km. $\Delta = 67^\circ$ H = 17 10 33.3
249	27	iP Z iS N	23 35 44 23 39 48	+4		+2		60.6S; 156.4E; h = 46 Km. $\Delta = 23^\circ$ H = 23 30 46.4

NOVEMBER

No.	Date 1961	Phase		Time (G.M.T.) h.m.s.	Amplitudes in M.M.			Per Sec.	Remarks
					A <sub>N</sub>	A <sub>E</sub>	A <sub>Z</sub>		
250	28	iP iS	Z NE	18 39 09 42 44 -3		-4		56.9S; 143.5E; h = 51 Km. $\Delta = 19^\circ$ H = 18 34 37.4	
251	29	iS iSS	E E	09 48 46 53 08				38.3S; 19.4W; h = 25 Km. $\Delta = 70^\circ$ H = 09 28 12.7	

DECEMBER

No.	Date 1961	Phase	Time (G.M.T.) h.m.s.	Amplitudes in M.M.			Per Sec.	Remarks
				A <sub>N</sub>	A <sub>E</sub>	A <sub>Z</sub>		
252	1	iP Z ipP Z iS E iSSS E	21 25 56 26 52 36 37 42 47			-2 -2 -4 +3	26.5N; 124.9E; h = 206 Km. Δ = 93° H = 21 13 04.1	
253	2	eL	13 47 ..					
254	3	iP	16 25 12				11.6S; 166.1E; h = 122 Km. Δ = 67° H = 16 14 31.4	
255	4	eL	06 09 2..					
256	4	eL	13 30 3..					
257	5	iP NEZ iS NE	13 05 51 09 39	-12	-21	+15	50.8S; 139.8E; h = 64 Km. Δ = 22° H = 13 01 04.7	
258	6	eL	06 27 3..					
259	6	iP Z iS NE iScS E	13 46 06 54 24 55 59	+2	-5	-6	23.5S; 176.0W; h = 18 Km. Δ = 62° H = 13 35 43.8	
260	6	iPP Z iX Z iX E	16 59 44 17 09 31 16 16			-2 -3	49.4N; 155.2E; h = 22 Km. Δ = 122° H = 16 39 31.5	
261	7	eL	00 53 3..					
262	8	eL	07 07 ..					
263	8	iS Z	09 56 27			-1	1.8S; 139.4E; h = 55 Km. Δ = 68° H = 09 36 24.9	
264	9	eL	03 21 ..					
265	9	iP NZ ipP Z i(PP) Z iS NE iSS Z iLq Z M Z	11 29 22 31 33 31 58 38 36 42 20 45 50 12 02 40	-4 -5	-13	+12	43.7S; 75.2W; h = 34 Km. Δ = 68° H = 11 18 08.9	
266	13	eL	11 55 3..					
267	13	eL	17 18 ..					
268	14	iP Z iS N iLq E	07 21 11 30 05 37 34	+4		+3 -4	3.1S; 140.9E; h = 44 Km. Δ = 68° H = 07 10 23.2	
269	17	iP Z iPP Z iX Z iS NE M N	22 17 01 22 56 20 48 23 00	+10 +10	-5	+5 +6	54.5S; 143.9E; h = 45 Km. Δ = 21° H = 22 12 32.3	

DECEMBER

No.	Date 1961	Phase	Time (G.M.T.) h.m.s.	Amplitudes in M.M.			Per Sec.	Remarks
				A <sub>N</sub>	A <sub>E</sub>	A <sub>Z</sub>		
270	18	eL	03 30 4..					
271	20	i(PP) iSKS iS ipS iX	Z N E E E	13 45 47 50 40 52 48 54 06 14 01 16	+3	-4 +4 -7	22	4.6N; 75.6W; h = 176 Km. Δ = 119° H = 13 25 34.4
272	21	eL	12 37 ..					
273	24	eL	03 14 ..					
274	24	iL	15 19 50					
275	24	iP iS	Z E	23 55 07 00 04 51		-5		38.3S; 74.6W; h = 31 Km. Δ = 76° H = 23 43 19.2
276	25	iP	Z	08 11 28			+1	3.7S; 127.7E; h = 47 Km. Δ = 64° H = 08 00 59.3
277	25	eL		09 43 ..				
278	25	iP iS	Z E	14 06 20 15 08			-1	20.4S; 173.7W h = 64 Km. Δ = 67° H = 13 55 38.8
279	26	iP isP iS	Z Z NE	04 34 15 36 50 41 48	+5		-2	5.5S; 110.7E; h = 566 Km. Δ = 60° H = 04 24 55.4
280	26	iP iS	E	06 25 36 32 09		-8	14	44.2S; 38.1E; h = 22 Km. Δ = 43° H = 06 17 30.6
281	27 28	iP iS M	Z N	23 56 05 00 02 28 13 40	+8 260		-6 17	41.2S; 175.7E; h = 57 Km. Δ = 44.5 H = 23 48 01.3
282	28	eL		22 52 ..				
283	29	iP isS	Z E	00 06 30 16 09			+1	12.4S; 166.3E; h = 100 Km. Δ = 67° H = 23 55 57.6
284	30	iPP i(SS)		01 01 28 17 44				52.3N; 177.7E; h = 52 Km. Δ = 131° H = 00 39 24.1