

# SEISMOLOGICAL BULLETIN

*Carroll (Mrs.)*  
**(205)**

## KING'S COLLEGE OBSERVATORY, ABERDEEN

JANUARY • MARCH, 1962

Lat. 57°10' N. Long. 2°6' W. Height above M.S.L. 12M. Lithologic Foundation: Glacial deposit over boulder clay.

Instruments: Milne-Shaw Seismographs, Photographic Registrations, Two Components.

Compt.	Mass	To	Damping Ratio	Magnification	1" Tilt	Date from which constants apply	
N	1 lb.	10 sec.	20 : 1	150	19.1 mm	E-W 1.2.62. (Previous to Feb. old constants)	
E	1 lb.	10 sec.	20 : 1	150	18.1 mm.	N-S 1.2.62.	

  

Date	Compt.	Phase	Time G.M.T. h. m. s.	Period sec.	Ampl. "	Δ° km.	Dir <sup>n</sup> of Motion	Remarks Time of origin
1 1/2	E	iS	00 00 56	15	1.5		N E + + - +	U.S.C.G.S.: 52.4°N, 177.7°E
	E	i	02 41					
	E	iSS	05 34					
	E	i	10 28					
	E	L	27 38					
	E	M F	33 16 44 -					
2 2	NE	e, iS	12 32 36	13	3		- - - -	U.S.C.G.S.: 80.0°N, 24.3°E N 33m 46s
	NE	eSS	33 39					
	E	M	37 29					
	N	M F	37 46 49 -					
3 4	E	iPS	04 58 16	20	5		+ +	U.S.C.G.S.: 33.9°N, 135.2°E
	E	eSSS	05 06 31					
	E	e	09 46					
	E	L	17 16					
	E	M F	22 56 46 -					
4 7	E	iP	10 07 28	15 10 10	35 23 28		- - + +	U.S.C.G.S.: 43.5°N, 17.4°E. Early part on N-S lost during changing of charts.
	E	iPPP	07 52					
	E	eSS	11 34					
	E	i	12 00					
	E	L	13 30					
	E	M <sub>1</sub>	14 20					
	N	M <sub>2</sub>	16 32					
	E	F	18 49 32 -					
5 8	E	L	01 29 50	22	39		K	U.S.C.G.S.: 18.5°N, 70.5°W Obscured by microseisms.
	E	M	31 54					
	E	F	42 -					
6 11	E	iP	05 09 03	7 10	22 27		- -	U.S.C.G.S.: 43.5°N, 17.7°E. Obscured by microseisms.
	E	iPPP	09 37					
	E	L	14 31					
	E	M <sub>1</sub>	15 50					
	E	M <sub>2</sub>	18 40					
	E	F	27 -					
7 19	E	i	19 47 46	20	27.5		- - -	B.C.I.S.: 38½°N, 22.0°E. No definite max. on N-S. Obscured by microseisms.
	N	i	47 54					
	N	i	52 21					
	E	M	54 04					
	E	F	56 -					

## KING'S COLLEGE OBSERVATORY, ABERDEEN

No.	Date	Compt	Phase	Time G.M.T.			Period sec.	Ampl. $\mu$	$\Delta^\circ$ km.	Directions of Motion		Remarks Time of Origin
				h.	m.	s.				N	E	
8	Jan. 19	E N E  N	e i LM  LM	22	28	28 46 ) ) ) )			N	E	U.S.C.G.S.: 38.2°N, 22.1°E  Obscured by microseisms.	
9	26	E E N N NE	iP eS e L M F	08	23	28 08 38 25 48 -	16	22	27.1° 3010Km	- +	U.S.C.G.S.: 35.1°N, 22.7°E	
10	Feb. 3	E E N E E N	iS iPPS M <sub>1</sub> M <sub>1</sub> M <sub>2</sub> M <sub>2</sub> F	01	05	44 54 14 44 09 24 -		5.5 10 13.5 5.5		+	U.S.C.G.S.: 1.2°S, 137.8E	
11	14	E E E NE NE NE NE E E N E N	eP iPP iPPP iSKS iPS iPPS iSS i iSSS i L L M M F	06	50	46 26 41 36 54 10 11 41 28 06 41 56 06 34 16 -	18 20	138 104	112.5° 12500Km	- + + + + - - - + +	U.S.C.G.S.: 38.1°S, 73.1°W Chile	
12	20	N N N	e e M F	22	34	35 15 06 30	20	8		+	Shillong 26°N, 96°E ) E-W trace too faint ) to decipher )	
13	25	N N N	eSKS e e F	06	32	48 12 15 -				-	U.S.C.G.S.: 15.4°S, 167.8°E Very slight effect	
14	26	N N	eL e F	03	18	40 20 -					U.S.C.G.S.: 9.3°S, 152°E	
15	27	E N N N E	i i L M M F	13	27	26 37 00 34 20 -	18 18	11 5.5		-	U.S.C.G.S.: 37.4°S, 73.2°W  Chile	
16	Mar. 6	E E N	e e Traces	06	44	35 55 ) ) ) )				- +	U.S.C.G.S.: 13.7°N, 93.7°E	

M.D. 2782 19-182





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No.	Date	Compt	Phase	Time G.M.T.			Period sec.	Ampl. "	$\Delta^\circ$ km.	Directions of Motion	Remarks Time of Origin
				h.	m.	s.					
24	Mar. 26	N	eL	17	35	24	18	4.5		N E + +	U.S.C.G.S:40.6°,72.3°W No E-W record available
					41	39					
				X	43	29					
				N	45	54					
		N	L								
		N	M								
		N	F								
				51	-						
25	28	NE	Traces	14	37	-					U.S.C.G.S:19.4°,108.6°W
				-	49	-					
Natural Philosophy Department, University, Aberdeen.											
A. E. M. Geddes											

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KING'S COLLEGE OBSERVATORY, ABERDEEN

APRIL - JUNE, 1962

Lat. 57°10' N. Long. 2°6' W. Height above M.S.L. 12M. Lithologic Foundation: Glacial deposit over boulder clay.

Instruments: Milne-Shaw Seismographs, Photographic Registrations, Two Components.

Compt.	Mass	To	Damping Ratio	Magnification	1" Tilt	Date from which constants apply		
N	1 lb.	10 sec.	20 : 1	150	19.1mm.	E-W 1.2.62		
E	1 lb.	10 sec.	20 : 1	150	18.1 mm.	N-S 1.2.62		

  

No	Date	Compt.	Phase	Time G.M.T. h. m. s.	Period sec.	Ampl. μ	Δ° km.	Dir <sup>n</sup> of Motion	Remarks Time of origin	
1	Apr. 10	N	iP	21 42 29	16	22	24.5° 2720 Km	N E	No E-W records available during April and May U.S.C.G.S.: 37.9°N, 20.1°E T <sub>0</sub> = 21h, 37m 11s	
		N	i	42 50				-		
		N	iS	46 45				-		
		N	i	46 54				+		
		N	i	50 47				+		
		N	M	52 02				+		
		N	i	22 16 47						
		F	27 -							
2	11	N	eP	10 52 36			24.5° 2720 Km	-	B.C.I.S.: 38 <sup>1</sup> / <sub>4</sub> °N, 19 <sup>3</sup> / <sub>4</sub> °E	
		N	eS	57 10				+		
		N	e	59 31				-		
			F	11 02 -						
3	12	N	iP	01 04 56	27	59	80.2° 8910 Km	+	U.S.C.G.S.: 38.2°N, 142.3°E T <sub>0</sub> = 00h 52m 47s	
		N	i	06 53				-		
		N	ePP	08 01				+		
		N	iPPP	09 46				-		
		N	i	11 16				+		
		N	iS	15 01				-		
		N	iPS	15 51				+		
		N	eSS	20 21				-		
		N	eSSS	23 41				-		
		N	L	32 45				+		
		N	M <sub>1</sub>	36 58						
		N	L	38 56						
		N	M <sub>2</sub>	42 48				18		38
N	M <sub>3</sub>	45 38	15	22						
		F	03 54 -							
4	15	N	eS	19 03 37	20	2.5		+	U.S.C.G.S.: 2.9°S, 11.9°W	
		N	eSS	07 57				+		
		N	eSSS	09 54				+		
		N	L	22 -						
		N	M	26 47						
5	16	N	eP	13 32 48			87.1° 9680 Km		U.S.C.G.S.: 30.6°N, 140.6°E	
		N	ePP	36 48						
		N	eSKS	43 12						
		N	iS	43 28						
		N	e	47 40						
		N	F	57 -						

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No.	Date	Compt	Phase	Time G.M.T.			Period sec.	Ampl. μ	Δ° km.	Direction of Motion	Remarks Time of Origin
				h.	m.	s.					
6	Apr. 17	N N N N	e e L M F	11 42 44 48	39 28 44 13	31 - - -	15	1.5	N + +	E B.C.I.S.: 39°N, 181.4°E	
7	17	N N N N N	eS e e L M F	22 23	53 05	03 08 38 58 -	15	1.5	- - +	U.S.C.G.S.: 1.5°S, 14.9°W	
8	18	N N N N N N N	eSKS iSKKS i ePS eSS e L M F	19 20	38 38 39 39 45 46	09 32 00 50 00 58 40 53 -	20	2.5	+ + + + +	91.4° 10155 Km U.S.C.G.S.: 10.0°S, 79.0°W	
9	19	N N	e e F	23 24	47 52	38 38 -			- -	U.S.C.G.S.: 69.8°N, 138.6°E	
10	20	N N N N N N N	eP iS iPS iSS eSSS M <sub>1</sub> eL M <sub>2</sub> F	05 06	58 06	23 38 00 34 33 18 08 23 -	20 17	11 6	+ - + + -	62.1° 6900 Km U.S.C.G.S.: 20.6°N, 72.2°W	
11	23	N N N N N N N N N N	iP i iPP iS iPS i eSS i L M <sub>1</sub> M <sub>2</sub> F	06 07	09 10 12 19 20 21 24 29 34 41 44	57 22 48 39 17 25 37 47 41 37 37 -	25 23	22 33	- + + + - - + +	76.5° 8500 Km U.S.C.G.S.: 42.9°N, 143.4°E T <sub>0</sub> = 05h 58m 05s	
12	25	N N	i i F	04	51 53	57 29 -			+	U.S.C.G.S.: 45.3°N, 5.2°E	
13	25	N N N N N N	eP ePP iS i e L M F	15 16 17	59 02 09 10 15 31 39	37 32 47 52 32 - 44 -	18	4.5	+ + - + +	81.0° 9000 Km U.S.C.G.S.: 38.4°N, 142.5°E	

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No.	Date	Compt	Phase	Time G.M.T.			Period sec.	Ampl. μ	Δ° km.	Director: of Motion	Remarks Time of Origin
				h.	m.	s.					
14	Apr. 27	N	Traces	07 47 -)					N E	U.S.C.G.S.: 44.4°S, 74.8°W	
				08 06 -)							
15	28	N	iPPP	11 25 48					+	U.S.C.G.S.: 36.4°N, 26.6°E	
		N	eS	29 42					+		
		N	eSS	31 01					-		
		N	L	37 26							
		N	M	39 54	12	5.5					
			F	Lost in succeeding shock							
16	28	N	e	12 52 37					-	U.S.C.G.S.: 36.3°N, 26.7°E	
		N	eS	54 36					-		
		N	e	57 30					+		
		N	L	13 02 20							
		N	M	04 53	9	1.5					
			F	20 -							
17	30	N	eP	02 38 31				79.2°	+	U.S.C.G.S.: 38.8°N, 140.9°E	
		N	ePP	41 26				8790Km	-		
		N	eS	48 31					+		
		N	e	49 31					+	Deep focus	
		N	eSS	53 08					-		
		N	eSSS	56 51					-		
		N	L	03 08 53							
		N	M	11 48	18	2					
			F	42 -							
18	30	N	ePPS	16 51 31					-	U.S.C.G.S.: 17.9°S, 176.1°W	
		N	eSS	57 46					-		
		N	eSSS	17 02 26					+		
		N	L	24 36							
		N	M	32 51	20	2.5					
			F	43 -							
19	30	N	iP	23 54 10					-	B.C.I.S.: 73.7°N, 7.0°E	
		N	iPP	54 32					+		
		N	L	58 36							
		N	M	59 41							
			F	24 09 -							
20	May 6	N	Traces	12 30 -						U.S.C.G.S.: 20.8°S, 178.7°W	
				-35 -							
21	6	N	ePKP	19 19 26				122.4°	+	U.S.C.G.S.: 60.0°S, 32.8°W	
								13600Km			
		N	eSKP	22 08					+		
		N	ePPP	23 08					-	T <sub>0</sub> = 19h 00.3m	
		N	e	24 33					+		
		N	eSKS	25 53					-		
		N	iS	28 48					+		
		N	ePS	30 38					+		
		N	e	33 43					+		
		N	eSS	36 38					-		
		N	eSSS	40 58					+		
		N	L	57 -							
		N	M	20 03 55	20	2.5					
			F	21 25 -							

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No.	Date	Compt	Phase	Time G.M.T.			Period sec.	Ampl. μ	Δ° km.	Direction of Motion	Remarks Time of Origin
				h.	m.	s.					
22	May 7	N	iP	17	51	36			75.0°	N E	U.S.C.G.S.: 45.3°N, 146.7°E T <sub>0</sub> = 17h 39m 52s
		N	ePP		54	23			8335Km	+	
		N	iPPP		56	00				+	
		N	iS	18	01	03				-	
		N	eSS		06	08				-	
		N	eSSS		09	23				+	
		N	L		17	-					
		N	M <sub>1</sub>		25	59	18	11			
		N	M <sub>2</sub>		33	54	11	9			
		N	F <sup>2</sup>		19	20	-				
23	11	N	eP	14	24	01			88.0°	+	U.S.C.G.S.: 17.0°N, 99.7°W
		N	i		24	41			8890 Km	-	
		N	ePP		26	58				+	
		N	ePPP		28	54				+	
		N	iS		34	08				+	
		N	iPS		34	43				-	
		N	e		41	58				+	
		N	L		49	30					
		N	M		57	06	25	65			
		N	F		16	32	-				
24	21	N	iP	12	13	26			63.9°	+	U.S.C.G.S.: 37.3°N, 96.0°E T <sub>0</sub> = 12h 02m 56s
		N	i		13	31			7100Km	-	
		N	iPP		15	46				+	
		N	iPPP		17	14				-	
		N	iS		22	01				+	
		N	iPS		22	44				+	
		N	i		24	29				+	
		N	iSSS		28	26				-	
		N	L		32	-					
		N	M <sub>1</sub>		39	28	17	60			
N	M <sub>2</sub>		43	41	15	61					
N	F <sup>2</sup>		13	31	-						
25	21	N	iPKP	21	34	26			14.3°	+	U.S.C.G.S.: 20.0°S, 177.5°W Deep focus
		N	i		34	40			15890Km	+	
		N	iPP		37	41				-	
		N	i		39	18				+	
		N	iSKKS		44	26				+	
		N	iPSKS		47	26				+	
		N	L	22	22	-					
		N	M		34	06	20	13.5			
N	F		55	-							
26	22	N	Traces	08	34	-					U.S.C.G.S.: 10.2°S, 161.5°E
				09	00	-					
27	24	N	e	23	55	15					
				F	24	11	-				
28	25	N	e	00	57	05					U.S.C.G.S.: 58.6°N, 31.5°W
				M	58	48	11	2			
N	F	01	08	-							
29	25	N	M	01	15	54	13	1.5			U.S.C.G.S.: 59.0°N, 31.2°W
				F	20	-					
30	25	N	Traces	04	55	-					U.S.C.G.S.: 20.7°S, 174.3°W
				59	-						



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No.	Date	Compt	Phase	Time G.M.T.			Period sec.	Ampl. "	$\Delta^\circ$ km.	Director of Motion		Remarks Time of Origin
				h.	m.	s.						
31	May 30	N N N	eS eSSS M F	10 19 24 28	16 13 18 -	16	12	2.5	38.6° 4290 Km	- -	E	U.S.C.G.S.: 30.3°N, 42.4°W
32	31	N N N N N N N N N	e e ePP ePPP eSKS e e L M F	06 42 46 48 52 53 59 07 12 22 32 08	17 11 08 11 16 42 13 36 16 30 -	17	30	9		+ + + + + + + -		U.S.C.G.S.: 22.1°N, 142.6°E Phases doubtful through shaking of building
33	June 2	NE E N N E	i, eS e e M M F	12 59 59 13 04 04 18	35 24 34 30 34 -	35	15 14	2.5 3	65.5° 7280 Km	+ -	+ +	U.S.C.G.S.: 49.8°N, 129.8°W
34	2	E N N E	e e M M F	17 18 06 09 28	34 20 32 53 -	34	25 17	9 4		-	+	U.S.C.G.S.: 29.8°N, 130.6°E
35	3	N N N	ePP iS M F	15 17 26 16	33 48 23 -	33	16	5.5	46.6° 5180 Km	+ +		U.S.C.G.S.: 22.4°N, 45.2°W
36	4	N	M F	05 -44	00 -	00	18	4.5				U.S.C.G.S.: 43.0°N, 15.8°E
37	11	NE NE E NE E N	iP iS iSS L M M F	07 23 24 25 27 29 08	01 30 22 11 26 28 -	01	17 18	20 29	19.2° 2135 Km	- +	+ + +	U.S.C.G.S.: 43.5°N, 18.3°E T <sub>0</sub> = 07h 15m 41s
38	14	E E E E E	eS eSSS e L M F	08 19 22 31 35 Lost	02 03 10 05 05 in	02	15	1.5		+ - +		U.S.C.G.S.: 54.3°N, 169.1°E Two shocks: separation of phases doubtful
39	14	N N N	eS eSS e F	08 20 25 Lost	00 00 25 in	00				- - +		U.S.C.G.S.: 54.2°N, 169.3°E Lost in following shock
40	14	NE E	LM M F	08 09 04 22	- - 39 -	-	15	1.5				U.S.C.G.S.: 19.4°N, 65°W

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				h.	m.	s.						
41	June 14	N	eS	22	36	25				N	E	U.S.C.G.S.: 26.4°N, 126.5°E Early portion on E-W doubtful
		N	eSSS		44	35				-		
		N	eL		53	15				-		
		E	e	23	00	10				-		
		E	M <sub>1</sub>		03	16	20	2.5			+	
		E	M <sub>1</sub>		09	15	15	2.5				
		E	M <sub>2</sub>		10	15	15	3				
			F		25	-						
42	21	E	e	05	15	03					+	U.S.C.G.S.: 57.0°N, 82.6°W
		N	e		20	20				-		
		N	M		25	15	20	2.5				
		E	M		31	00	15	1.5				
		E	F		39	-						
43	23	NE	eSKS	10	07	53			87°	+	+	U.S.C.G.S.: 25.7°N, 128.5°E
		NE	iPPS		09	29			9665 Km	+	+	
		E	e		13	58				+	+	
		N	i		21	00				+	+	
		E	i		22	18					+	
		NE	L		28	30					+	
		E	M		32	24	25	39				
		N	M		34	06	22	20				
			F	11	15	-						
44	25	N	eP	11	22	56			86.4°	+	+	U.S.C.G.S.: 24.3°N, 122.6°E
		NE	e		23	09			9600 Km	-	+	
		NE	eS		33	32				-	-	
		E	ePS		34	41				-	+	
		NE	eSS		39	26				-	-	
		N	eSSS		43	18						
		E	L		57	-						
		E	M	12	06	18	17	50				
			M		06	32	16	34.5				
			F		57	-						
45	30	N	e	20	20	03				-		U.S.C.G.S.: 16.5°N, 122.0°E No E-W effect
		N	M		22	10	22	5				
			F		38	-						

Natural Philosophy Department,  
The University,  
Aberdeen.

A. E. M. Geddes.



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JULY - SEPTEMBER, 1962

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E		1 lb.	10 sec.	20 : 1	150	18.1 mm.	N-S	1.2.62

  

No.	Date	Compt.	Phase	Time G.M.T. h. m. s.	Period sec.	Ampl. "	Δ° km.	Dir <sup>n</sup> of Motion	Remarks Time of origin
1	July 1	E N E N E	e e e e M F	21 47 08 47 27 51 27 55 05 55 42 22 05 -	15	3		NE - - - - -	U.S.C.G.S.: 40.0°N, 75.4°E
2	3	E N E N E	i i eL eL M F	18 40 50 41 30 19 37 40 39 30 48 00 51 36 59 -	20 17	2.5 2		- +	U.S.C.G.S.: 56.3°S, 142.5°W
3	4	E E E E E	eP eS e eSS eSSS F	07 19 53 29 56 31 11 35 00 38 13 51 -			79.9° 8880 Km	+ + - + +	U.S.C.G.S.: 14.3°N, 93.2°W T <sub>0</sub> = 07h 07m 45s No N-S record No definite maximum
4	4	E E	L M F	08 07 32 09 11 19 -	15	1.5			U.S.C.G.S.: 54.5°N, 36.7°W No N-S record
5	6	NE E N N E	iS eSS e M M F	02 31 20 35 30 38 55 52 20 52 55 03 09 -	20 20	1.5 2.5		+ - + -	U.S.C.G.S.: 13.3°N, 58.0°E
6	6	N NE NE NE N N E E	e i, eP i, eS iSS L M M <sub>1</sub> M <sub>2</sub> F	09 20 13 21 33 25 44 26 55 29 30 30 50 31 00 34 06 10 18 -	13 13 13	13 13 14	23.6° 2620 Km	- - + + - - - -	U.S.C.G.S.: 38.0°N, 20.2°E
7	6	NE E N	iP iPP iPPP	23 14 15 16 10 17 21			50.7° 5635 Km	- - +	U.S.C.G.S.: 36.6°N, 70.4°E T <sub>0</sub> = 23h 05m 32s

# SEISMOLOGICAL BULLETIN

KING'S COLLEGE OBSERVATORY, ABERDEEN

No.	Date	Compt	Phase	Time G.M.T.			Period sec.	Ampl. "	Δ° km.	Direction of Motion		Remarks Time of Origin	
				h.	m.	s.							
July 7	6	N NE NE NE NE	iS iPS i iSS M <sub>1</sub>	21 22 23 25 26	11 32 44 18 27					N + - + +	E  - + +	Deep focus	
		N NE NE N	M <sub>2</sub> M <sub>2</sub> M <sub>3</sub> M <sub>3</sub> F	32 34 39 40 25	05 14 45 00 02								
8	7	E NE NE NE N	eS e eSS eL M M F	06 33 38 46 57 57 07	24 44 05 - 10 55 43						+	+	U.S.C.G.S.: 51.3°N, 178.6°E eN 37m 36s
9	10	E NE NE NE NE N	eP e eS e L M M F	10 11 15 16 21 23 23 33	38 56 48 54 00 15 58 -			23.5° 2610Km		+	+	+	U.S.C.G.S.: 38.4°N, 25.9°E
10	11	NE E NE E	e L M M F	01 33 39 40 02	27 - 24 50 -					+	-		U.S.C.G.S.: 31.8°N, 66.9°E
11	11	E NE NE	e L M M F	13 31 35 43 59	18 55 18 15 -								U.S.C.G.S.: 11.9°N, 122.1°E
12	13	NE E NE NE NE NE	e, i SKS i eS e L M <sub>1</sub> M <sub>1</sub> F	03 56 56 57 04 01 25 29 36 48	10 27 22 52 52 10 10 -					- - +	- -		U.S.C.G.S.: 10.2°N, 121.7°E eN 02m 02s
13	13	E NE NE NE E	e e L M M F	05 01 15 25 32 34 06 10	50 30 15 12 02 -					+	+		U.S.C.G.S.: 32.4°S, 179.7°W
14	14	E E	eL M F	20 18 23 30	53 53 -								U.S.C.G.S.: 40.3°N, 124.4°W No N-S record

## KING'S COLLEGE OBSERVATORY, ABERDEEN

No.	Date	Compt	Phase	Time G.M.T.			Period sec.	Ampl. μ	Δ° km.	Direction of Motion		Remarks Time of Origin
				h.	m.	s.						
15	July 16	E	Traces	07	20	-				N	E	U.S.C.G.S.: 28.2°N, 142.5°E No N-S record
16	17	N E NE N N E	eP iS i L M M F	17 18	32 41 42 02 09 12 20	12 57 17 02 26 05 -		76.5° 8500 Km	+ - +			U.S.C.G.S.: 43.1°N, 144.5°E iN 41m 52s
17	24	E E N E N E NE E	eP e i eS iPS eSSS L M F	21	20 23 27 30 30 38 48 54 22	13 25 48 13 53 13 45 13 -	17 17 18	3 3 4	79.2° 8800 Km	+ - + +		U.S.C.G.S.: 15.5°N, 92.5°W
18	25	E E E NE N E N NE E N	i,P i ePPP iS iPS eSS eSSS L M M F	04	48 50 53 58 58 05 04 10 13 13 06	53 13 03 00 38 53 48 - 12 44 -	22 20	26 11	69.5° 7720Km	+ + + + + - -		U.S.C.G.S.: 18.9°N, 81.1°W T <sub>0</sub> = 04h 37m 49s
19	26	NE NE E N NE E E NE N NE E N	iP i iPP i iS iPS iSS iSSS L M M <sub>1</sub> M <sub>2</sub> M <sub>2</sub> F	08	26 27 29 30 36 37 41 45 52 57 59 09 09 12	46 26 47 47 40 27 53 08 - 55 33 42 19 -	19 22 19 16	54 148 124 36	78.1° 8680Km	- + + - + - - - - - - -		U.S.C.G.S.: 7.5°N, 82.7°W  iN 37m 41s
20	30	NE NE E NE N E N E	iPP iPPP i iPS iPPS e M M F	17	37 39 41 46 48 18 25 30 20	00 45 37 45 22 40 45 40 -	20 19	18 25	119° 13220 13220Km	- - + + + +		U.S.C.G.S.: 3.3°S, 143.9°E  iN 41m 44s
21	30	NE NE NE N E N	iP i iS i i iPS	20	30 31 40 40 40 41	40 20 20 23 27 16	9 8	48 32	75.5° 8390 Km	- + + - - +		U.S.C.G.S.: 5.0°N, 76.3°W

## KING'S COLLEGE OBSERVATORY, ABERDEEN

No.	Date	Compt	Phase	Time G.M.T.			Period sec.	Ampl. μ	Δ° km.	Direction of Motion		Remarks Time of Origin	
				h.	m.	s.				N	E		
21	July 30	contd.	E	iSS	20	45	45			N	E	iN 45m 17m	
			E	iSSS		48	55			+	-		
			NE	L		57	-						-
			E	M	21	03	40	19	20				
			N	M		05	05	25	13				
			F	22	52	-							
22	31	N	e		06	00	45			+		U.S.C.G.S.: 18.8°N, 120.8°E	
			E	e		01	00				+		
			E	M		10	10	20	8				
			E	F		24	-						
23	31	NE	e		08	12	40			-		U.S.C.G.S.: 40.1°N, 143°E	
			E	M		18	50	17	6				
			N	M		23	10	20	16				
			N	F		27	-						
24	August 1	NE	ePP		04	57	17			+	-	U.S.C.G.S.: 32°S, 143.7°E	
			N	i		59	55			+			
			E	i	05	01	38						-
			NE	ePS		07	00				+		+
			N	eSS		13	40				-		-
			E	M		38	45	25	6.5				
			N	M		45	57	27	12				
	F	07	05	-									
25	3	N	iP		09	09	34			97°	+	U.S.C.G.S.: 23.2°S, 67.5°W	
			N	ePPP		15	32			10780Km	-		
			NE	iSKS		20	02				+		-
			N	iSKKS		20	47				+		
			N	iPS		22	22				-		
			NE	i		27	22				-		
			N	L		42	35						
			E	M		49	52	20	27				
N	M		50	12	20	5.5							
	F	10	50	-									
26	3	N	eSS		11	23	32			+		U.S.C.G.S.: 40.9°N, 73.3°E	
			E	e		26	02				+		
			N	L		29	25						
			N	M		35	22	12	2				
			E	M		35	42	12	2				
	F		51	-									
27	5	N	e		09	14	21			+		U.S.C.G.S.: 74.2°N, 52.5°E Nuclear explosion	
			N	i		19	36			-			
			N	L		24	10						
			E	M		29	29	17	4				
			N	M		29	36	15	3				
	F		37	-									
28	6	NE	i, eP		01	42	41			35.6°	+	U.S.C.G.S.: 32.0°N, 40.8°W	
			NE	iPPP		44	20			3955 Km	-		
			N	iS		48	20				+		
			E	iSS		51	07				-		
			N	M		55	55	10	6		+		
			E	M		56	50	12	8				
			E	F	02	41	-						

# SEISMOLOGICAL BULLETIN

## KING'S COLLEGE OBSERVATORY, ABERDEEN

No.	Date	Compt	Phase	Time G.M.T.			Period sec.	Ampl. "	$\Delta^\circ$ km.	Direction of Motion		Remarks Time of Origin	
				h.	m.	s.							
29	10	NE E NE E N	iP	21	07	56	12 13	7 6.5	17.4 <sup>o</sup> 1935 Km	N	E	U.S.C.G.S:49.4 <sup>o</sup> N, 27.9 <sup>o</sup> W eN 11m 36s	
			eS		11	16				+	+		
			L		12	25							
			M		15	21							
			M		17	41							
		F		42	-								
30	13	NE E N	iS	06	58	50				+	+	U.S.C.G.S:2.1 <sup>o</sup> N, 83.5 <sup>o</sup> W	
			eSS		07	04				10			-
			e		11	30					+		
			F		33	-							
31	17	E N E NE	i	05	27	05	E 24 N 23	9 7			+	U.S.C.G.S:10.6 <sup>o</sup> N, 121.6 <sup>o</sup> E	
			e		32	30					+		
			L		53	35							
			M		59	20							
			F		06	25				-			
32	19	N N N N N N	iS	18	42	51	15	18		+	+	U.S.C.G.S:44.6 <sup>o</sup> N, 81.7 <sup>o</sup> E No E-W record available	
			i		45	21					+		
			iSS		46	18					+		
			i		48	04							
			L		52	21							
			M		58	00							
		F		19	30	-							
33	21	NE NE NE	iP	18	13	34				+	+	U.S.C.G.S:41.5 <sup>o</sup> N, 15.4 <sup>o</sup> E Italian Earthquake	
			iS		17	09					+		
			e		19	10					+		
			F	Lost in following shock									
34	21	NE N E E N E	iP	18	24	05	10 10	56 65	18.7 <sup>o</sup> 2080Km	+	-	U.S.C.G.S:41.4 <sup>o</sup> N, 15.5 <sup>o</sup> E iN 27m 39s	
			i		26	26					-		
			iS		27	29					+		
			L		29	50							
			M		34	37							
			M		34	39							
		F		19	45	-							
35	21	NE E N E N N E E N	eSKS	21	31	05	18 18	4.5 4.5		+	+	U.S.C.G.S:28.7 <sup>o</sup> S, 176.8 <sup>o</sup> W SEE GALAPAGOS QUAKE	
			e		40	00					+		
			ePPS		41	05					+		
			e		46	05					+		
			iSS		47	26					+		
			e		22	02				10			-
			L		17	15							
			M		28	13							
M		30	00										
		F		23	22	-							
36	23	E E E E	eP	12	46	54			71.9 <sup>o</sup> 7990 Km		-	U.S.C.G.S:51.7 <sup>o</sup> N, 173.8 <sup>o</sup> E Very slight N-S rendered uncertain by vibration of building.	
			eS		56	14					-		
			e		13	01				18			+
			L		09	-							
			F		13	-							
37	23	N E E E N	i	19	49	38	20 15	4 1.5		+	-	U.S.C.G.S:15.6 <sup>o</sup> S, 172.2 <sup>o</sup> W Slight. Phases doubtful	
			i		54	09							
			e		20	03				28			
			M		07	13							
			M		12	03							
			F		18	-							

## KING'S COLLEGE OBSERVATORY, ABERDEEN

No.	Date	Compt	Phase	Time G.M.T.			Period sec.	Ampl. " "	$\Delta^\circ$ km.	Direction of Motion		Remarks Time of Origin
				h.	m.	s.						
38	August 25	E E N	e M Traces	20	10	00	18	2		N	E	U.S.C.G.S: 36.7°N, 1.6°E
39	26	E N E	L M M F	07	29	00	16 19	2 3.5				+ U.S.C.G.S: 34.0°N, 139.2°E
40	28	NE N E E E N E E E	iP iPP i i iS iSS i i M F	11	05	16	9	86	25.6° 2845 Km	-	+	U.S.C.G.S: 38.0°N, 23.1°E  iN 09m 35s  No definite maximum on N-S Grecian shock
41	29	NE E E N N E	eS e L L M M F	23	00	06	16 14	3.5 2		+	+	U.S.C.G.S: 34.1°N, 139.1°E
42	30	NE NE N E	iS L M M F	13	55	06	16 16	2 3.5		-	-	U.S.C.G.S: 41.8°N, 111.8°W
43	31	NE N E N	e e M M F	05	37	25	13 23	2.5 5		-	-	? Seismic
44	31	N E N N E N E	e e eS e L M M F	17	14	06	17 15	4 2.5		+	+	U.S.C.G.S: 51.4°N, 179.7°W eN 19m 20s eE 23m 25s
45	September 1	N NE NE N E N N E	eP iS e eSS e L M M F	03	57	35	18 17	4.5 3	69.7° 7745 Km	+	-	U.S.C.G.S: 51.3°N, 179.7°W



## KING'S COLLEGE OBSERVATORY, ABERDEEN

No.	Date	Compt	Phase	Time G.M.T.			Period sec.	Ampl. μ	Δ° km.	Direction of Motion	Remarks Time of Origin
				h.	m.	s.					
46	Sept. 1	N N N E N	iS eSS L M M F	08	11 16 27 41 43 55	48 53 18 08 03 -	15 18	1.5 2	N +	E	U.S.C.G.S.: 51.3°N, 179.9°E
47	1	N E N E N	e eSS e M M F	15	20 22 26 41 41 51	27 43 55 06 14 -	13 18	2.5 2.5	+	+	U.S.C.G.S.: 25.8°N, 65.3°E
48	1	NE NE NE NE NE E N E	iP iPP i iS iSS L M M F	19	28 29 30 34 37 41 46 49 23	20 53 48 59 30 - 07 43 05 -	18 13	389 168	+	-	41.9° 4655Km U.S.C.G.S.: 35.3°N, 49.7°E Persian Shock
49	4	E E N E N	iS eSS L M M F	23	11 13 16 23 23 38	36 56 50 10 16 -	15 15	1.5 2.5	+	-	U.S.C.G.S.: 39.9°N, 44.2°E
50	10	N N NE N E	eS i L M M F	09	44 46 52 57 58 10	16 28 25 50 50 04 -	15 15	2.5 3	+	-	U.S.C.G.S.: 35.0°N, 27.1°E
51	12	E E N N E E N N N E	eP iPP iS iPS eSS iSSS L M <sub>1</sub> M <sub>2</sub> M F	21	06 07 13 13 16 17 22 26 28 29 10	07 52 05 47 45 55 10 15 00 22 - -	22 25 17	59 52 44	+	-	U.S.C.G.S.: 36.5°N, 69.2°E iE 13m 00s
52	15	E N	M M F	08	22 22 24	50 55 -	15 15	1.5 1.5			U.S.C.G.S.: 74.4°N, 51.5°E Nuclear Explosion
53	15	NE NE N N N E N E N E	iP iS iPS iSS i eSSS L M M F	23	02 11 12 16 18 19 26 36 39 24	24 45 26 44 11 42 14 17 06 09 -	17 22	2 3	+	+	72.1° 8010 Km U.S.C.G.S.: 48.5°N, 156.8°E T <sub>0</sub> = 22h 50m 55s

# SEISMOLOGICAL BULLETIN

## KING'S COLLEGE OBSERVATORY, ABERDEEN

No.	Date	Compt	Phase	Time G.M.T.			Period sec.	Ampl. μ	Δ° km.	Direction of Motion		Remarks Time of Origin
				h.	m.	s.				N	E	
54	Sept. 18	NE	eP	00	40	57			79.4° 8820 Km	-	+	U.S.C.G.S: 7.5°N, 82.3°W iE 51m 02s iN 56m 02s
		E	iPP		43	50					+	
		N	iS		50	58					+	
		E	iPS		51	49					+	
		E	iSS		56	18					-	
		E	iSSS		59	25					-	
		N	M		01	04	13	20	30			
55	19	N	e	11	10	04				+	+	U.S.C.G.S: 73.8°N, 53.8°E
		E	e		13	48					+	
		E	L		18	11						
		N	M		21	21	15	3				
56	22	NE	iS	07	12	24				+	+	U.S.C.G.S: 26.5°N, 97.0°E eE 17m 34s eE 21m 02s
		N	eSS		17	04					+	
		N	eSSS		20	40					+	
		N	M		32	38	22	11.5				
		E	M		37	06	20	9.5				
F			08	18	-							

In September a series of seven explosions took place in Nova Zemlya, 74.2°N, 52.7°E. Average bearings.

Time intervals required by maximum effect to reach Aberdeen Station after explosion were:

	Arrival			Detonation			Time Interval	Period	Maximum Amp.		
	h.	m.	s.	h.	m.	s.	m. s.	sec.	μ		
8	10	38	55	-	10	18	03	20 52	12	1	
15	08	20	50	-	08	02	14	20 36	15	1.5	
16	11	19	48	-	10	59	11	20 37 (approx)	12	1	
18	08	49	42	-	08	29	03	20 39 (approx)	12	1	
19	11	21	21	-	11	00	56	20 25	15	3	
25	21	44	12	-	13	02	32	21 40 (Doubtful			
27	(	08	24	04	-	08	03	16	20 48	13	owing to shaking of building. 2.5N 2 E
			23	27					20 11	12	

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# SEISMOLOGICAL BULLETIN

KING'S COLLEGE OBSERVATORY, ABERDEEN

OCTOBER - DECEMBER, 1962

Lat. 57°10' N. Long. 2°6' W. Height above M.S.L. 12M. Lithologic Foundation: Glacial deposit over boulder clay.

Instruments: Milne-Shaw Seismographs, Photographic Registrations, Two Components.

Compt.		Mass	To	Damping Ratio	Magnification	1" Tilt	Date from which constants apply	
N	E	1 lb.	10 sec.	20 : 1	150	19.1mm.	E-W	1.2.62
		1 lb.	10 sec.	20 : 1	150	18.1 mm.	N-S	1.2.62

  

No.	Date	Compt.	Phase	Time G.M.T. h. m. s.	Period sec.	Ampl. μ	Δ° km.	Dir <sup>n</sup> of Motion	Remarks Time of origin
	Oct.							N E	
✓ 1	1	NE	Traces	15 58 - 16 03 -					U.S.C.G.S.: 5.5°N, 151.9°E
✓ 2	3	NE	L F	01 29 11 Lost in succeeding shock					U.S.C.G.S.: 40.6°N, 29.7°W
✓ 3	3	NE E N	L M M F	01 32 10 33 43 33 50 45 -	10 10	1.5 1			U.S.C.G.S.: 40.7°N, 29.7°W
✓ 4	4	N NE E	eS L M F	13 33 08 35.7 37 47 42 -	10	1		+	U.S.C.G.S.: 40.9°N, 29.5°W
✓ 5	4	E E E N	eS L M M F	19 56 07 20 01 10 03 45 04 40 13 -	16 10	2 1		+	U.S.C.G.S.: 38.3°N, 22.7°E
✓ 6	4	E	e F	23 19 18 26 -					Very slight: N-S component obliterated by shaking of building.
✓ 7	6	N N N	iS i M F	03 26 52 28 38 31 39 43 -	16	2		+	U.S.C.G.S.: 40.8°N, 29.5°W No E-W record on 6th
✓ 8	6	N N	eL M F	04 07 33 10 00 15 -	10	1			U.S.C.G.S.: 40.5°N, 29.5°W
✓ 9	6	N N N N N N	ePKP e eSKP e e M F	04 43 20 45 42 46 45 05 05 32 31 30 41 15 Lost in succeeding shock	20	5.5		- + + -	U.S.C.G.S.: 17.4°S, 167.7°E
✓ 10	6	N N N	eSSS e L	06 11 20 13 35 20 12				- +	

# SEISMOLOGICAL BULLETIN

KING'S COLLEGE OBSERVATORY, ABERDEEN

No.	Date	Compt	Phase	Time G.M.T.			Period sec.	Ampl. μ	Δ° km.	Directions of Motion		Remarks Time of Origin	
				h.	m.	s.							
10	Oct. 6 (contd)	N	M F	06	25 40	20 -	15	2.5		N	E		
11	7	N NE	e LM	10	01 02 05	20 20 00)				+		U.S.C.G.S.: 40.2°N, 29.2°W	
12	8	N N	eP eS F	05	19 23 37	28 40 -				-		U.S.C.G.S.: 40.5°N, 29.2°W Phases doubtful	
13	8	E N NE N N NE NE N NE	P iPP iS i iPS e L M <sub>1</sub> M <sub>1</sub> M <sub>2</sub> F	22	09 12 19 20 20 29 38 44 44 51	00 14 25 09 39 40 15 03 14 52					+	U.S.C.G.S.: 24.3°N, 121.7°E	
14	9	NE E E E N E E N	e eS eSSS e e L M M F	20	43 51 55 12 16 24 30 30 22	18 25 25 10 40 00 13 43 01					+		U.S.C.G.S.: 3.2°S, 148.2°E
15	13	NE N N E E N	i, e eS i L M M F	10	36 37 40 42 54 56 11	14 33 38 10 15 25 -						+	U.S.C.G.S.: 35.5°N, 49.8°E
16	16	N	LM	18	50 52	- -)							U.S.C.G.S.: 51.6°N, 175.8°W
17	22	N E N	e M M F	09	21 26 27 34	40 39 10 -							15 1.5 10 1.5
18	25	N	LM	21	40 58	30 -							U.S.C.G.S.: 61.4°S, 154.9°E Confused by large microseisms
19	November 3	E NE E N	iPP iPPP iSKKS eS F	03	32 34 39 40 48	10 52 15 09 -						+	U.S.C.G.S.: 10.3°S, 117.8°E



## SEISMOLOGICAL BULLETIN

KING'S COLLEGE OBSERVATORY, ABERDEEN

No.	Date	Compt	Phase	Time G.M.T.			Period sec.	Ampl. " "	$\Delta^\circ$ km.	Directions of Motion	Remarks Time of Origin
				h.	m.	s.					
20	Nov. 4	N E E N	eL e M M F	23	47	10	15 13	3 1		N E	U.S.C.G.S: 43.2°S, 75.6°W Phases doubtful
21	11	N E N	e M LM	11	28	20	20	2	-		U.S.C.G.S: 23.8°S, 69.4°E Slight disturbances
22	11	N E	M LM	12	06	40	20	1			U.S.C.G.S: 55.8°N, 113.1°E
23	11	E E N	eL M M F	23	14	20	18 18	2 2			U.S.C.G.S: 43.2°S, 76.0°W
24	16	N E E E N	e e L M M F	08	24	20	20 20	5.5 4	-	-	U.S.C.G.S: 32.3°S, 111.1°W
25	16	E N N NE NE	iS iS eSSS L M F	21	32	33	18	11 E) 15.5N)	-	-	U.S.C.G.S: 13.5°N, 93.2°E
26	23	E N	LM LM	01	24	05)				U.S.C.G.S: 15.1°S, 75.3°W	
27	26	E NE N E	e e M M F	05	57	20	10 10	1 1	+ +		U.S.C.G.S: 39.8°N, 77.2°E
28	30	E E E E N	eS ePS L M LM F	22	13	27	20	2	+ -		U.S.C.G.S: 17.4°N, 99.6°W
29	1	E E N	e M LM F	02	34	-	15	1			U.S.C.G.S: 52.4°N, 170.1°W

## KING'S COLLEGE OBSERVATORY, ABERDEEN

No.	Date	Comot	Phase	Time G.M.T.			Period sec.	Ampl. μ	Δ° km.	Directions of Motion		Remarks Time of Origin
				h.	m.	s.						
30	Dec. 2	N N N	e L M F	22	32	35 42 20 50 00 55 -	15	1.5		N -	E	U.S.C.G.S: 35.8°N, 50.1°E No effect on E-W record
31	7	NE E NE NE N	iS i iPS i L F	14	25	49 26 20 28 42 31 50 46 15 15 26 -				+	- + - -	U.S.C.G.S: 29.2°N, 139.2°E Phases doubtful through shaking of building
32	8	NE N E NE N E E	iS i ePS e eSSS L M F	21	49	33 50 20 52 22 53 40 22 00 24 13 24 24 20 36 -	20	5.5		- - - - +	- - - -	U.S.C.G.S: 25.8°S, 63.4°W Deep focus No definite max. on N-S
33	21	NE N NE E N N E E N	e, i iS i iSS iSSS i i M M F	09	02	34 03 24 04 02 07 26 10 40 21 06 25 09 30 36 31 30 10 54 -	15 15	19 32		+	+	U.S.C.G.S: 52.4°N, 168.5°W
34	22	NE N E E N E N	i, eS i e L L M M F	15	41	07 49 16 51 19 16 02 14 04 05 08 04 09 14 52 -	15 15	18 14.5		+	+	U.S.C.G.S: 52.5°N, 168.8°W
35	24	N N E N	eS M i M F	11	27	14 29 19 31 39 32 54 38 -	25 15	3 6.5		-	-	U.S.C.G.S: 73.6°N, 57.5°E Nuclear explosion
36	26	E N E E N E N	iS i iSS L i M M F	09	06	02 06 19 06 38 07 33 10 00 10 50 11 34 22 -	12 12	4 1.5		- -	- +	U.S.C.G.S: 39.3°N, 10.6°W
37	26	N N N N E NE NE	iP iPP i iS iPS eSS L	22	36	21 39 00 41 17 45 26 46 14 50 09 23 00 -		69.2° 7690Km		+	- - - - +	U.S.C.G.S: 53.9°N, 168.7°W T <sub>o</sub> = 22h 25m 16s iE 45m 21s

# KING'S COLLEGE OBSERVATORY, ABERDEEN

No.	Date	Compt	Phase	Time G.M.T.			Period sec.	Ampl. μ	Δ° km.	Directions of Motion		Remarks Time of Origin	
				h.	m.	s.				N	E		
✓ 37	Dec. 26 (contd.)	N E N E F	M <sub>1</sub> M <sub>1</sub> M <sub>2</sub> M <sub>2</sub> F	<del>23</del>	<del>04</del>	<del>34</del>	20	12		N	E		
				<del>07</del>	<del>19</del>	16	7						
				<del>12</del>	<del>40</del>	15	6.5						
				<del>14</del>	<del>24</del>	18	13						
				24	20	-							
x 38	29	N E NE N E	e e L M M F	11	18	09				+	+	U.S.C.G.S: 20.0°S, 69.9°W	
					18	19							
					26	-							
					31	24	20	4					
					32	24	21	7.5					
	56	-											
x 39	29	N E E NE E	e e L M M F	16	12	14				+	-		
					12	56							
					17	50							
					20	20	20	2.5					
					24	14	18	2					
	31	-											
✓ 40	31	E N E E	i I eSS LM	08	19	54				+	-	U.S.C.G.S: 52.5°N, 160.8°E Phases doubtful: building shaking.	
					20	24							
					25	34							
					30	-							
					34	-							

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