

# SEISMOLOGICAL BULLETIN

KING'S COLLEGE OBSERVATORY, ABERDEEN

JANUARY - MARCH, 1964

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	19.0mm.	E-W 1.10.63	
E	1 lb.	10 Sec.	20 : 1	150	18.1 mm.	N-S 1.10.63	

  

No.	Date	Compt.	Phase	Time G.M.T. h. m. s.	Period sec.	Ampl. "	Δ° km.	Direction of Motion	Remarks Time of origin	
1	Jan. 6	N	iSKS	00 11 21				N +	E U.S.C.G.S.: 52.3°S, 28.6°E	
		N	eSKKS	12 28						-
		N	ePPS	16 13						-
		N	eSS	21 23						+
		N	eSSS	25 08						+
		E	L	38 43						
		E	M	47 56						15 11
2	7	E	i	00 21 41				+	U.S.C.G.S.: 50.9°N, 157.3°E	
		NE	e	25 40						+
		E	L	32 30						
		NE	M	34 24						15 1.5
		E	M	35 13						17 4
3	9	E	e	19 05 47				+	U.S.C.G.S.: 45.5°N, 150.9°E	
		N	i	12 30						
		E	L	19 25						
		NE	M	20 07						20 5.5
		E	M	23 46						15 7
4	10	E	e	05 27 36				+	U.S.C.G.S.: 42.0°N, 142.6°E	
		NE	M	35 23						20 2.5
		E	M	35 45						20 4
			F	45 -						
5	15	N	ePP	21 52 19				+	U.S.C.G.S.: 29.1°N, 140.8°E	
		N	iSKKS	59 34						+
		N	i	22 05 34						+
		N	iSS	05 48						+
		N	eSSS	09 16						-
		N	eL	20 39						
		N	M	25 44						25 6.5
6	18	E	i	12 23 22				+	U.S.C.G.S.: 23.1°N, 120.5°E	
		E	eS	28 00						-
		N	iSKKS	28 05						+
		E	ePS	29 00						-
		NE	iSS	33 55						-
		N	iSSS	37 27						+
		NE	L	45 25						+
		N	M	53 13						20 170
		E	M	53 55						17 100
			F	13 44 -						

## 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		
7	23 ✓	E	i	00	16	03				N	E	U.S.C.G.S: 13.7°S, 165.9° E	
		E	iP		16	16					+		
		E	iPKP		18	53					+		
		N	ePP		21	46					+		
		E	iSKP		22	28					+		
		N	ePPP		24	36					+		
		N	e		26	46					-		
		N	eSKKS		28	23					+		
		N	eS		29	42					+		
		F	Indefinite										
8	28 ✓	N	i	14	19	30				-		U.S.C.G.S: 36.5°N, 70.9°E  No E-W record	
		N	ePP		20	20				+			
		N	iPPP		21	00				+			
		N	i		25	05				-			
		N	iPS		26	20				+			
		N	iSS		28	59				+			
		N	iSSS		30	40				-			
		N	L		35	00							
		N	M		42	25	16	18					
		F	15	10	-								
9	February 6 ✓	NE	iP	13	18	08		66.1° 7345Km		-	+	U.S.C.G.S: 55.7°N, 155.8° eE 20m 17s T <sub>0</sub> = 13h 07m 23s eE 31m 17s	
		N	ePP		20	37				+	+		
		NE	iS		26	56				+	+		
		NE	iPS		27	32				-	-		
		N	iSS		31	31				+	+		
		NE	iSSS		34	21				+	+		
		E	L		39	32							
		N	M		48	12	19	291					
		E	M		50	25	19	119					
		F	15	24	-								
10	12	N	iP	21	18	40		63.0° 7000Km		-		eE 31m 50s	
		E	e		26	35							
		N	iS		27	10				+			
		N	eSS		31	35				-			
		NE	L		43	-							
		E	M		48	33	18	9					
		N	M		50	45	20	7					
		F	59	-									
11	March 15 ✓	N	i	22	35	11		20.7° 2300 Km		-		U.S.C.G.S: 36.2°N, 7.6°W T <sub>0</sub> = 22h 30m 49s	
		NE	iP		35	26				+	+		
		E	iPPP		36	06					-		
		NE	iS		39	10				+	+		
		E	i		39	22					-		
		NE	iSS		40	06	N 11	52		+	-		
		NE	L		41	-							
		E	M		42	01	20	356					
		N	M		45	50	11	82					
		F	23	25	-								
12	21 ✓	E	iPKP	04	01	01		116.4° 12935Km		-	+	U.S.C.G.S: 6.4°S, 127.9°E	
		N	iSKP		03	44							
		E	iSKS		07	46					+		



## 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	
	March 21 (contd.)									N	E	
	✓	N	e	08	41					+	.	No definite max. on E-W
		E	iPS	11	54						-	
		N	ePPS	13	16					+		
		E	eSS	18	17						+	
		E	i	21	56						+	
		N	M	42	05	23	3.6					
			F	05	02	-						
13	24	N	i	03	43	05				-		Phases doubtful Wind effect E-W record missing
		N	e	50	35					-		
		N	e	04	19	40				+		
		N	e	23	40					-		
		N	i	43	04					-		
			F	05	05	-						
14	28	✓	iP	03	46	16				-		U.S.C.G.S: 61.1°N, 147.8°W Alaskan shock No E-W record obtained Light failed. ? Series of G waves 06h 04m - 06h 12m
		N	i	47	11			59.6°		-		
		N	i	51	06			6620 Km		-		
		N	iPS	55	01	15	806					
		N	M	04	09	21	15	1419				
			F	09	24	-						
			<u>Subsequent shocks</u>									
15	28	✓	iS	09	30	07				+	+	E 13 7.5 N 15 8
		NE	M	42	56							
			F	10	06	-						
16	28	✓	i	10	24	24				+	-	eN 24m 51s ? G waves 42m - 47m
		E	i	26	31						+	
		N	M	30	33	14	7					
		E	M	30	50	15	9.5					
			F	47	-							
17	28	✓	iS	10	54	52				+	-	iE 49m 23s
		E	iSS	59	03						+	
		N	e	11	03	26				+		
		N	M	15	30	14	10					
		E	M	20	36	15	9.5					
			F	12	15	-						
18	28	✓	iP	12	31	31				+	-	iE 49m 23s
		NE	iS	12	40	06				+	-	
		NE	i	41	08					+	+	
		N	i	47	48					-	+	
		NE	M	13	01	54	16	34.5				
			F	14	04	-						
19	28	✓	iP	15	01	28				-	+	eE 09m 51s
		NE	e, i	05	56					-	-	
		N	eS	09	41					-	+	
		N	M	22	12	20	14					
		E	M	22	59	15	16					
			F	16	20	-						

## 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	March 28 ✓	E	iP	20	39	23				N	E	
		NE	iPPP		43	00				+	-	iN 39m 17s
		E	iS		47	30				+	+	
		E	iPS		48	11				+	+	iN 47m 42s
		N	eSS		51	39				-	-	iE 50m 56s
		NE	M	21	07	18	E 15 N 12	13 9				
			F		56	-						
21	29 ✓	E	eP	06	23	46				-	+	iN 23m 56s
		E	i		25	16					+	
		NE	ePPP		27	06				+	+	
		E	eS		31	51				-	+	eN 32m 01s
		E	ePS		32	32					+	
		E	iSS		36	26				+	-	iN 37m 02s
		N	M		39	47	15	8				
		E	M		45	41	17	12				
			F	07	14	-						
22	29 ✓	E	eP	16	54	40					+	
		E	e		59	21				-	+	eN 59m 28s
		E	eS	17	02	53					+	
		E	e		08	56					+	
		N	e		10	31				-		
		NE	L		14	-						
		N	M		16	16	15	8				
		E	M		19	26	16	12.5				
			F	57	-							
23	30 ✓	NE	eP	02	28	53				-	+	
		E	i		32	21					-	
		NE	iS		37	26				-	-	
		E	i		38	41				-	-	iN 39m 11s
		E	L		47	30						
		E	M		53	47	25	48				
		N	M		59	49	20	50				
			F	04	20	-						
24	30 ✓	NE	eP	07	19	40				+	-	
		E	e		22	40					+	
		NE	e, iS		27	56				+	+	
		N	i		31	51				+		
		E	i		33	37					+	
		E	M		44	48	16	14.5				
		N	M		45	00	18	15.5				
			F	08	41	-						
25	30	E	iP	13	22	06					+	
		E	eS		30	15					+	
		N	e		31	26				-		
		NE	L		42	-						
		E	M		44	22	17	5				
		N	M		45	15	20	5.5				
			F	56	-							

# 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.				N	E	
	March									N	E	
26	30	NE N E	e i M F	14 11 14 13 18 13 46 25 -		17	3			- +	+	
27	30 ✓	NE E N E	eP eS M M F	16 28 41 37 06 49 56 51 58 17 30 -		15 16	5.6 3.5			+ -	- -	
28	31 ✓	E NE E E E N	e e eS e i M M F	09 18 26 20 27 25 43 29 22 33 54 40 31 41 20 10 09 -		16 16	24 13			- -	+ - + + -	eN 29m 54s

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# SEISMOLOGICAL BULLETIN

KING'S COLLEGE OBSERVATORY, ABERDEEN

APRIL - JUNE, 1964

Lat. 57°40' 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	<del>19.0</del> 18.1 mm.		E-W	1.10.63
E	1 lb.	10 Sec.	20 : 1	150	18.1 mm.		N-S	1.10.63

  

No.	Date	Compt.	Phase	Time G.M.T. h. m. s.	Period sec.	Ampl. "	$\Delta^\circ$ km.	Direction of Motion	Remarks Time of origin
1	April 2	NE E E NE NE E N N N E N	i,e i ePP e,iSKS iSKKS iPS iSS e L M M F	01 25 32				N E + + - - + - - - + - - - - - - - - - - - - -	U.S.C.G.S: 5.9°N, 95.7°E  eE 40m 37s
				26 13					
				29 15					
				35 15					
				35 29					
				36 54					
				41 27					
				46 27					
				52 52					
				02 07 45					
09 22									
03 53 -									
2	2	E NE E E E	eS e eSS L M F	22 52 48	10	1.5		+ + + + - - - - - -	U.S.C.G.S: 59.8°N, 144.3°W  Slight on N-S
				54 32					
				56 52					
				23 01 10					
				09 52					
3	3	N E NE N E	e e e i M F	09 10 30	13	2		- + + + - + - + - +	U.S.C.G.S: 59.6°N, 144.7°W
				12 33					
				15 22					
				21 58					
				29 25					
4	3	E E E NE NE E E E N E	eP e iPPP iS i,e eSSS L M M F	22 42 38	16	3.6	68.6° 7620Km	- + - - - + + + - - - - - - - - - - - -	U.S.C.G.S: 61.6°N, 147.6°W  eN 47m 15s T <sub>0</sub> = 22.31.37
				45 49					
				46 46					
				51 40					
				55 35					
				58 35					
				23 07 30					
				08 28					
				11 28					
				55 -					
5	4	E N NE NE E E N E	e eP e,iS eSS e L M M F	05 03 15	16	7	59.6° 6620Km	- + - + - + - + - + - + - + - + - +	U.S.C.G.S: 60.1°N, 146.7°W
				04 08					
				12 18					
				16 18					
				21 28					
				24 18					
				29 20					
				31 25					
				15 4					
				06 15 -					

## 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.				N	E		
6	April 4	(contd.)	N	e	09	06	27			N	E	U.S.C.G.S: 56.5°N, 152.6°W Early part lost during chart changing	
			E	e		12	44			+	+		
			NE	L		16	00						
			N	M		19	16	18	13				
			E	M		19	24	15	6.5				
			F	10	38	-							
7	4	NE	eP	17	56	49			64.2°	-	-	U.S.C.G.S: 56.3°N, 154.4°W T <sub>0</sub> = 17h 46m 17s	
		E	ePP		59	01			7135Km		+		
		N	ePPP	18	00	40				+	+		
		NE	iS		05	25				+	+		
		NE	iPS		05	57				-	+		
		NE	eSS		09	51				+	+		
		NE	i		12	49				+	+		
		N	L		17	35							
		E	M		25	27	18	40					
		N	M		26	02	22	88					
			F	20	06	-							
8	4	N	e	20	27	29				+	+	eE 27m 40s Very slight	
		N	e		34	24					-		
		E	M		41	21	17	2					
			F		55	-							
9	4	NE	e, iS	22	35	19				-	-	U.S.C.G.S: 59.4°N, 145.2°W	
		E	eSSS		41	44					+		
		E	M		53	05	15	4.7					
		N	M		54	31	18	4.5					
			F	23	21	-							
10	5	N	e	01	41	29				+	-	eE 41m 35s U.S.C.G.S: 56.2°N, 153.5°W	
		E	iS		43	28					-		
		N	eSS		49	25							
		E	i		50	04					+		
		E	eSSS		53	22					+		
		E	M	02	05	14	17	6					
			M		22	44	18	7					
			F	03	11	-							
11	8	N	iS	11	19	21				-		U.S.C.G.S: 45.8°N, 150.8°W No E-W available	
		N	e		24	44					+		
		N	L		31	-							
		N	M		46	22	18	4.5					
			F	12	06	-							
12	8	N	e	14	21	05				-		U.S.C.G.S: 35.1°N, 24.3°E Very slight	
		N	e		27	20					-		
			F		37	-							
13	8	N	e	19	52	22				-		U.S.C.G.S: 59.6°N, 147.0°W	
		NE	e		58	35				+	+		
		N	e	20	04	36					+		
		E	e		09	21					+		
		N	M		27	24	15	1.5					
			F	39	-								
14	11	E	e	16	10	05			16.7°		+	B.C.I.S: 40.0°N, 25.3°E	
		NE	iP		10	22			1855Km		+		
		N	i		11	20					+		
		NE	i, eS		13	26					+		
		NE	iSS		14	23					+		
		N	M		16	35	13	10					
		E	M		19	02	12	8					
			F	37	-								

## 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	
15	April 12	NE E N E N E	iS e e L M M F	01	43	45	17 17	18 12		-	-	U.S.C.G.S: 56.6°N, 152.2°W
					47	38					+	
					48	40					+	
					57	30						
				02	03	29						
16	13	NE N NE N E NE	eP e iS iSS L M F	08	37	27	12	E 29) N 21)		-	+	B.C.I.S: 45.3°N, 18.2°E iE 40m 19s
					38	29					-	
					39	50					-	
					40	10					-	
					41	18						
17	13	N NE E	i e i F	13	00	24				+	+	Slight: Phases doubtful
					01	44					-	
					06	39					+	
18	14	N N	e M F	23	30	16	20	11		+		U.S.C.G.S: 58.0°N, 152.6°W Very slight on E-W
					32	24						
					48	-						
19	15	E N E N	i L M M F	15	59	38	20 20	5.5 19		-		U.S.C.G.S: 56.5°N, 154.4°W Slight on E-W
				16	04	34						
					09	53						
					10	24						
20	16	N N	e M F	01	53	14	20	5.5		+		U.S.C.G.S: 37°N, 142.7°E No maximum on E-W
				02	05	-						
21	16	NE N N N NE E N	i, eP iPPP iS iSS L M M F	19	37	50	15 16	11 27	62.0° 6890 Km	+	+	U.S.C.G.S: 56.4°N, 152.9°W iE 46m 10s
					41	29					+	
					46	14					-	
					50	30					-	
				20	04	33						
				21	23	-						
22	17	E NE N E N E	iPP eS e eSSS L M M F	05	08	49	15 15	9 4.5		+	+	iN 08m 54s ? U.S.C.G.S: 56.4°N, 152.9°W
					16	19					+	
					16	34					+	
					21	32						
					26	-						
					30	19						
23	18	E N NE N E	e i L M M F	20	35	34	20 17	6.5 3		-		U.S.C.G.S: 15.4°S, 173.7°W
					35	40					+	
					52	40						
					56	34						
					59	39						
24	19	E E E	e L M F	15	04	30	20	2.5		+		U.S.C.G.S: 60.5°S, 58.3°W No M.S. record available
					15	25						
					30	30						
					55	-						



## 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.					
25	April 22	N	iS	09	54	30			18°	N E	U.S.C.G.S: 56.1°N, 34.9°W
		N	M		59	26	11	6	2000Km	-	
		E	M	10	01	04	11	6			
			F		13	-					
26	23	N	ePP	03	52	54			118°	+	U.S.C.G.S: 5.3°S, 134.0°E  No E-W record: Light failed
		N	i		53	04			13110Km	-	
		N	iPPP		55	29				+	
		N	iSKS		58	24				-	
		N	ePPS	04	03	59				-	
		N	iSS		09	09				+	
		N	eSSS		13	58				-	
		N	L		28	24					
		N	L		36	-					
		N	M <sub>1</sub>		43	30	22	14.5			
		N	M <sub>2</sub>		48	30	20	11			
			F <sup>2</sup>	06	17	-					
27	24	N	ePP	06	16	29			119°	+	U.S.C.G.S: 5.1°S, 144.2°E  Light failed on E-W
		N	e		16	52			13220Km	-	
		N	eSKP		17	29				-	
		N	ePPP		19	27				-	
		N	eSKS		21	46				+	
		N	eSKKS		23	19				+	
		N	eS		24	23				+	
		N	ePS		26	33				+	
		N	e		27	14				+	
		N	eSS		33	04				+	
		N	L		53	40					
		N	M	07	02	30	25	19			
			F		40	-					
28	27	N	e	07	58	17				-	U.S.C.G.S: 60.1°S, 151.0°E
		N	i	08	03	20				-	
		E	e		03	32				-	
		NE	e		15	20				+	
		N	L		25	-				+	
		N	M		29	25	20	11			
		E	M		38	20	20	11			
			F		54	-					
29	29	E	iP	04	26	28			25.1°	+	U.S.C.G.S: 39.3°N, 23.7°E  T <sub>0</sub> = 04.21.04
		E	i		27	07			2790Km	+	
		NE	iS		30	32				-	
		E	e		31	15				+	
		N	L		33	35				+	
		N	M		36	25	15	14.5			
		E	M		36	32	15	13			
			F		59	-					
30	29	E	iS	17	09	55				-	U.S.C.G.S: 39.2°N, 23.7°E
		E	i		11	32				-	
		N	e		13	40				+	
		NE	M		15	28	15	3			
			F		27	-					
31	MAY 2	NE	i, eP	16	22	45			75.2°	+	U.S.C.G.S: 45.5°N, 150.3°E  T <sub>0</sub> = 16h 11m 04s  eE 32m 35s
		N	i		23	31			8355Km	+	
		E	ePP		25	47				+	
		N	iS		32	23				-	
		N	ePS		32	55				+	
		N	eSS		37	40				+	
		E	eSSS		41	20				-	

## KING'S COLLEGE OBSERVATORY, ABERDEEN

No.	Date	Compt	Phase	Time G.M.T.			Period sec.	Ampl. "u"	$\Delta^\circ$ km.	Directions of Motion		Remarks Time of Origin
				h.	m.	s.				N	E	
31	MAY 2 (contd.)									N	E	
		E	L	16	47	50						
		E	M		57	35	20	22				
		N	M	17	00	48	20	19				
			F	18	10	-						
32	6	N	e	15	58	25				-	-	U.S.C.G.S:56.7°N,152.1°W
		E	e	16	08	05				-	-	Very slight
			F		25	-						
33	7	NE	iP	05	56	32			66.9°	+	-	U.S.C.G.S:4.0°S,34.9°E
		NE	i,ePP		59	13			7435Km	+	+	
		NE	e,iS	06	05	24				-	-	
		E	eSS		10	01				+	+	iN 10m 17s
		N	i		13	15				-	-	
		N	L		17	40						
		N	M		22	40	30	37.5				
		E	M		24	05	20	41				
			F	07	14	-						
34	7	NE	iP	08	10	10			77.0°	+	+	U.S.C.G.S:40.4°N,139.0°E
		NE	iPP		13	05			8555Km	+	+	T <sub>0</sub> = 07h 58m 19s
		NE	iS		19	58				-	-	
		E	iPS		20	43				-	+	eN 20m 50s
		E	iSS		25	05				-	-	
		N	iSSS		28	20				-	-	iE 28m 05s
		E	L		35	55						
		N	M		42	25	18	82				
		E	M		42	32	17	52				
			F	10	05	-						
35	7	NE	iP	20	24	45			77.4°	+	+	U.S.C.G.S:40.5°N,139.0°E
		N	iPP		27	38			8600Km	-	-	
		NE	ePPP		29	23				-	-	
		NE	iS		34	35				-	-	
		E	eSS		39	35				+	+	iN 39m 15s
		E	iSSS		42	35					+	
		E	L		49	56						
		NE	M		57	05	E 15	16				
							N 20	27				
			F	21	43	-						
36	12	N	ePPP	18	31	31			65.5°	-	-	U.S.C.G.S:56.6°N,152.4°W
		E	eS		36	15						
		NE	i		38	50			7285Km	-	+	
		NE	i		44	52				-	-	
		N	L		46	55						
		E	M		52	05	25	8.5				
		N	M		55	28	20	9.5				
	F	19	33	-								
37	13	N	i	06	48	25				+	+	
		E	e		50	04						
		N	M		53	35	20	8				
		E	M		58	40	18	8				
			F	07	34	-						

## 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.				N	E			
	MAY	(Contd.)												
38	16	E	ePP	16	32	20						U.S.C.G.S: 32.8°S, 178.3°W		
		N	e	33	17									
		NE	e	34	30									
		E	eSKKS	39	35									
		E	e	48	30									
		N	M	17	50	40	15	1.5						
		E	M	53	30	20	20	2.5						
			F	18	13	-								
39	17	NE	eS	01	08	35			59.5°	-	-	U.S.C.G.S: 59.4°N, 142.7°W		
		NE	i	13	55			6610Km	-	-				
		E	eSSS	15	58									
		N	i	16	35									
		NE	L	21	50									
		E	M	25	56	15	5.5							
		N	M	27	10	18	10							
			F	02	11	-								
40	17	D	eP	19	32	45			31.2°			U.S.C.G.S: 35.2°N, 35.9°W T <sub>0</sub> = 19h 26m 23s		
		N	ePP	33	45			3465Km	-					
		N	iPPP	34	19									
		NE	e, i	37	24									
		E	iS	37	55						eN 37m 50s			
		E	iSS	39	41						eN 39m 45s			
		N	M <sub>1</sub>	40	43	23	36							
		E	L	42	-									
		E	M	43	20	10	20							
		N	M <sub>2</sub>	46	55	10	9							
			F	20	45	-								
41	19	E	eP	23	16	11			87.5°			U.S.C.G.S: 0.7°S, 80.2°W		
		E	e	26	27			9720Km	-		iN 26m 34s			
		NE	iS	26	52									
		N	i	27	31									
		NE	e	37	43									
		E	L	45	25									
		N	M	53	26	15	1.5							
		E	M	53	38	20	5							
					F	24	24	-						
42	26	E	eP	11	13	56			98.5°			U.S.C.G.S: 56.2°S, 27.8°W		
		NE	e	14	25			10945Km	+					
		E	ePKP	17	54						eN 17m 21s			
		E	eSKP	20	06									
		E	iSKS	24	26						iN 24m 21s			
		E	i	25	06									
		N	iSKKS	25	34									
		E	eS	26	59									
		NE	iPS	28	27									
		E	M <sub>2</sub>	12	01	31	18	64						
N	M <sub>2</sub>	04	51	17	70									
			F	14	18	-								
43	30	E	eP	14	43	06						U.S.C.G.S: 36.2°N, 141.1°E		
		N	epP	43	56									
		N	ePPP	48	01									
		NE	e, iS	53	11									
		E	eSS	58	26									
		E	L	15	10	25								
		N	M	23	26	20	11							
		E	M	23	51	17	10							
			F	59	-									

## 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.						
	MAY (Contd.)								N	E		
44	31	NE	iP	00	52	27		74.6°	-	-	U.S.C.G.S: 43.5°N, 146.8°E	
		NE	e, iPP		55	16		3290Km	-	+		
		E	ePPP		57	06				+		
		NE	iS	01	02	02			-	-		
		N	ePS		02	41			-	-		
		NE	eSS		06	56			-	-		
		NE	L		17	20						
		N	M		21	11	26	70				
		E	M		24	24	25	48				
			F	02	38	-						
	JUNE											
45	10	NE	eSKS	22	41	13			-	-	U.S.C.G.S: 5.0°N, 127.4°E	
		NE	ePS		44	06			+	+		
		NE	e		45	48			-	-		
		E	iSS		50	20			-	+		eN 50m 27s
		N	eSSS		54	21			-			
		N	L	23	11	20						
		E	M		21	26	22	5				
		N	M		22	26	20	6				
			F		30	-						
46	14	E	iP	12	22	12		31.8°		+	U.S.C.G.S: 33.0°N, 33.5°E T <sub>o</sub> = 12h 15m 45s	
		E	ePP		23	13		3535Km		+		
		N	iS		27	26			-			
		N	eSS		29	16			+	+		eE 29m 21s
		E	L		34	45						
		N	M		36	26	20	9.5				
		E	M		40	00	15	11				
			F	13	30	-						
												Slight disturbances from 14h 38m - 14h 55m
47	15	E	eSKS	00	28	45				+	U.S.C.G.S: 5.4°N, 97°E	
		N	eS		29	36			-			
		NE	e, iPS		30	20			+	+		
		E	L		46	45				+		
		N	M <sub>1</sub>		58	55	20	4				
		N	M <sub>2</sub>	01	03	47	20	5.5				
		E	M		07	40	17	4				
			F		39	-						
48	16	NE	iP	04	13	54		80.4°	+	+	U.S.C.G.S: 39.3°N, 139.1°E T <sub>o</sub> + 04h 01m 44s	
		NE	iPP		16	52		8935Km	-	+		
		E	iPPP		18	47				-		
		E	iS		24	00			+	-		iN 24m 06s
		NE	iPS		24	51			-	+		
		N	iSS		29	10			+	+		
		E	iSSS		32	46			+	+		iN 32m 36s.
		N	L		38	45						
		N	M		50	36	13	164				
		E	M		53	-	13	273				
			F	08	35	-						
												Series of minor shocks from 04h 20m 20s

## 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.							
JUNE (Contd.)													
49	16	E	oP	11	31	15				N	E	U.S.C.G.S: 2.0°S, 141.1°E Slight effect.	
		NE	ePPP		38	25				+	+		
		F		12	04	-							
50	23	N	iP	01	38	21		73.4°		-		T = 01h 26m 51s. Light failed on E-W	
		N	ipP		38	50		8155Km		-			
		N	ePP		41	11				+			
		N	ePPP		42	50				-			
		N	iS		47	49				-			
		N	i		48	26				+			
		N	eSS		52	46				-			
		N	L	02	01	05							
		N	M		07	45	30	69					
		N	F		03	11	-						
51	30	E	iPP	14	05	21		108°		-		U.S.C.G.S: 0.8°S, 122.5°E	
		N	e		05	42		12,000m		-			
		E	i		10	21				-			
		E	eSKS		11	16				-			
		E	eSKKS		12	13				+			
		N	eS		13	00				-			
		E	ePS		14	44				+	-		eN 14m 58s.
		N	eSS		20	41				-	+		eE 20m 35s.
		NE	eSSS		25	17				-	+		
		N	L		39	45							
		N	M		45	27	25	35					
		E	M		48	10	25	65					
		E	F		17	08	-						

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# SEISMOLOGICAL BULLETIN

KING'S COLLEGE OBSERVATORY, ABERDEEN

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

JULY, 1964

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	19.0 mm.	E-W	1.10.63
E	1 lb.	10 Sec.	20 : 1	150	18.1 mm.	N-S	1.10.63

  

No.	Date	Compt.	Phase	Time G.M.T.			Period sec.	Ampl. "	Δ° km.	Direction of Motion		Remarks Time of origin
				h.	m.	s.				N	E	
JULY												
1	2	NE	Traces	01	55	40						U.S.C.G.S:60.1°N, 146.0°E
2	2	E	e	18	27	40				+		
		E	e		31	35				+		
		E	e		36	45				-	+	eN 36m 55s.
		N	M		38	45	17	2				Very slight on N-S.
		E	M		43	47	17	3				
			F		19	04						
3	4	E	eS	11	20	25				-		U.S.C.G.S:42.2°N, 23.6°E.
		NE	e		23	30				+	+	Whole effect slight.
		N	M		26	45	15	1.5				
		E	M		27	25	15	1.5				
			F		33	-						
4	4	E	e	14	43	29				-		No effect on N-S
		E	e		50	30				-		
			F		15	05						
5	5	N	e	19	20	34			77.4°	-		U.S.C.G.S:26.2°N, 110.2°W
		E	e		20	45			3600 Km	+		
		E	ePPP		24	38				-		
		NE	eS		29	45				-		
		N	e		30	50				-		
		N	eSS		34	50				-	+	eE 34m 45s.
		N	e		38	55				+		
		N	L		43	50						
		E	L		47	30						
		N	M		50	49	17	24				
		E	M		53	38	15	19				
			F		21	00						
6	5	NE	i,eP	23	47	45			75.5	+	+	U.S.C.G.S:44.8°N, 149.6°E
		N	ePP		50	35			8390 Km	+	-	eE 50m 30s.
		NE	eS		57	25				+	-	T <sub>0</sub> = 23h 36m 02s.
		N	eSS		24	02	35			+		
		E	L		12	20						
		N	M		21	55	18	10				
		E	M		22	30	18	10				
			F		25	40						



## 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.						
7	JULY 6 ✓	(Contd)	E	eP	02	26	42		76.2° 3465Km	N	E	U.S.C.G.S: 26.2°N, 110.2°W T <sub>o</sub> = 0.2h 14m 55s. eD 41m 40s.
			E	ePP	29	31						
			E	ePIP	31	15						
			NE	eiS	36	26						
			E	i	36	53						
			N	iSS	41	20						
			E	L	50	12						
			N	M	57	25	14	40				
E	M	59	43	15	48							
			F	05	13	-						
8	6 ?	NE	E	iP	06	34	11		79.0° 8780Km	+	-	U.S.C.G.S: 18.3°N, 100.4°W T <sub>o</sub> = 0.6h 22m 0.7s. iN 44m 44s.
			E	ipP	35	41						
			N	ippP	37	11						
			E	i	38	40						
			NE	iS	44	10						
			E	iPS	44	55						
			N	i	48	50						
			E	iSS	49	27						
			E	L	07	00	15					
			E	M	02	11	35	342				
N	M	05	03	32	186							
			F	10	30	-						
9	8 ✓	E	E	eS	12	23	27				+	U.S.C.G.S: 5.5°S, 129.8°E No N-S record available.
			E	ePPS	26	14						
			E	eSSS	35	59						
			E	e	46	10						
			E	L	52	45						
			E	M	58	14	25	11				
			F	13	17	-						
10	9	E	E	iPKP	17	59	14				-	U.S.C.G.S: 15.5°S, 167.6°E N-S record too faint to allow satisfactory measurement.
			E	i	59	38						
			E	iSKP	18	02	39					
			E	ippP	04	44						
			E	iSKS	05	56						
			E	i	07	48						
			E	iS	10	14						
			E	iPSKS	11	43						
			E	eSS	19	44						
			E	L	45	30						
N	M	51	35	18	18							
			F	20	11	-						
11	11	E	E	e	20	46	16				-	U.S.C.G.S: 59.7°N, 146.2°W
			E	e	53	17						
			E	M	21	03	41	15	1.5			
			F	23	-							
12	12 ✓	E	E	eL	02	24	32				+	U.S.C.G.S: 38.6°N, 139.2°E
			E	M	30	48	16	3.5				
			E	M	35	57	15	3				
			F	57	-							
13	13	N	E	e	16	30	28				+	U.S.C.G.S: 53.7°N, 35.2°W
			E	M	32	48	15	1.5				
			N	M	33	48	12	2.5				
			E	F	41	-						

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19-1872 NOTED: - Station closed temporarily owing to stru



# SEISMOLOGICAL BULLETIN

KING'S COLLEGE OBSERVATORY, ABERDEEN

OCTOBER - DECEMBER, 1964

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	19.0mm.	E-W 1.10.63			
E	1 lb.	10 Sec.	20 : 1	150	18.1 mm.	N-S 1.10.63			

  

No.	Date	Compt.	Phase	Time G.M.T. h. m. s.	Period sec.	Ampl. "	Δ° km.	Direction of Motion	Remarks Time of origin
	No record previous to 11th October, 1964							N E	
1	11	E	iSKS	21 40 03				-	U.S.C.G.S: 0.6°S, 121.7°E
		E	iSKKS	41 01				+	
		E	i	42 20				-	
		E	e	43 31				+	
		E	eSS	49 16				+	
		E	L	22 06 36					
		E	M <sub>1</sub>	14 57	22	11.5			
		E	M <sub>2</sub> F	21 20 43 -	21	10.5			
2	15	E	e	22 05 40				+	
		N	e	09 25				+	
		E	L	10 00					
		E	M	15 17	16	6			
		N	M F	18 30 46 -	16	4			
3	16	N	i	07 11 19			76.2° 8465km	+	U.S.C.G.S: 44.3°N, 149.5°E
		E	iP	11 26				+	
		NE	iS	21 10				-	
		NE	iPS	21 50				-	
		N	eSS	26 15				+	
		E	L	36 50					
		E	M	46 15	17	24			
		N	M F	46 49	16	16			
			Lost in succeeding shock						
4	16	N	e	08 29 35				+	
		E	e	29 45				-	
		NE	i	39 55				+	
		N	i	40 52				+	
		E	M	09 04 15	15	9.5			
		N	M F	05 25 10 34 -	17	10			
5	17	NE	e,i	09 57 05				-	U.S.C.G.S: 35.0°N, 25.4°E
		E	i	58 16				+	
		N	iSS	10 02 53				-	
		E	e	07 40				-	
		E	M F	10 45 17 -	14	1.5			



# 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.							
October (Contd.)													
6	18	E	ePP	12	52	01				N	E	U.S.C.G.S:7.0°S,124.0°E	
		N	i		53	08				+			
		E	i		55	51					-		
		NE	iS		59	54				+	-		
		NE	i		13	00	40				+		-
		NE	e,iPPS		02	41					-		+
		E	L		28	41							
		E	M		41	21		17	6				
7	21	N	M		42	05		20	8			U.S.C.G.S:28.1°N,93.8°E	
		N	F		14	10	-						
		NE	e,iP		23	20	29		69.5°	-	-		
		NE	ePP		22	42			7720Km	+	+		
		E	iPPP		24	46					-		
		NE	iS		29	36				+	+		
		E	iPS		30	30					-		
		N	i		30	48					+		
8	23	E	eSSS		37	06						U.S.C.G.S:19.8°N,56.0°W	
		NE	L		47	30							
		N	M		53	31		19	50				
		E	M		53	39		15	85				
		F			24	40	-						
		E	eP		02	05	24						+
		NE	iS		13	17					-		+
		NE	i		15	30							
9	27	N	eSS		16	52				+	-	U.S.C.G.S:14.5°N,29°W	
		N	iSSS		18	27				-			
		N	M		22	29		15	14.5		+		
		E	M		23	57		15	29				
		F			49	-							
		E	e		22	33	58						
		E	e		38	03							+
		N	L		40	48							+
10	1	E	M		48	53		17	4			U.S.C.G.S:3.1°N,128.1°E	
		N	M		51	30		17	5				
		F			23	09	-						
		NE	eSKS		12	50	54				-		-
		N	eSKKS		52	19					+		
		NE	eSS		13	00	26				-		+
		E	i		04	01							+
		E	L		19	49							
11	7	NE	M		23	46		25	5E } 4N }			U.S.C.G.S:49.0°S,163.7°E	
		E	M <sub>2</sub>		27	49		20	3				
		F			46	-							
		NE	e		19	37	30						
		N	e		41	46					+		-
		F			45	-					-		
		E	eL		04	10	41						+
		N	M		25	46		20	5.5				
12	8	E	M		33	41		16	3				
		E	F		49	-							

## 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	
November (Contd).												
13	17	N	ePS	08	45	32				-		U.S.C.G.S: 5.7°S, 150.7°E
		N	ePPS		46	34				-		
		E	i		49	14					+	
		N	iSSS		56	59				+		
		E	i	09	04	55						
		N	L		18	08						
		E	M		27	40				23	58	
14	19	N	e	23	56	13				+		U.S.C.G.S: 6°S, 150.8°E
		N	ePPP		57	36				+		
		N	iSKS	24	01	29				-		
		N	iPPS		06	05				+		
		N	iSS		11	53				-		
		N	e		21	36				+		
		N	L		37	40						
15	24	N	iSKS	13	04	59				+		U.S.C.G.S: 13.1°N, 124.7°E
		E	eSKKS		05	24					+	
		N	eS		06	04				-		
		E	ePS		06	14					+	
16	26	E	e	11	08	34					-	
		E	i		10	37					-	
		NE	L		14	10						
		E	M		16	26				15	16	
		N	M		16	38				15	24	
			F		26	-						
17	30	NE	e	13	12	30				-	+	U.S.C.G.S: 6.8°N, 94.8°E
		N	e		16	45				+		
		E	e		20	40					+	
		E	M		26	50				20	5.5	
18	10	NE	iP	15	21	23		96.0° 10655 Km		-	+	
		NE	i, eS		32	40				+	+	
		N	ePS		33	54				+		
		NE	eSS		38	59				-	-	
		NE	L		53	59						
		E	M	16	00	00				14	7	
		N	M		01	24				18	15	
	F		34	-								



## 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.				N	E	
	December	(Contd)										
19	✓ 22	E N NE N E N E N	eP iPP e eS e L M M F	05	04	02 15 59 40 45 41 58 05 -			20.1 <sup>o</sup> 1390Km	- + +	+ - +	
20	✓ 22	NE N E N N E	e e eS L M M F	21	31	30 50 58 15 15 39 -			22.0 <sup>o</sup> 244.5Km	- +	+ -	
A. E. M. Geddes												
Natural Philosophy Department, The University, Aberdeen, Scotland.												