

# SEISMOLOGICAL BULLETIN

KING'S COLLEGE OBSERVATORY, ABERDEEN

JANUARY, 1960

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	18.1 mm.	E-W	1.11.58
E		1 lb.	10 sec.	20 : 1	150	19.0 mm.	N-S	1.11.58

  

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	Jan 2	E E N	eL M M F	13 09 - 14 15 26 15 30 -	25 18	4 4.5		N E U.S.C.G.S.: South Atlantic	
2	7	NE E N	e M M F	14 26 - 29 16 29 55 55 -	18 18	4.5 4.5		U.S.C.G.S.: Sandwich Islands	
3	9	N E E N	i i i M F	04 15 20 15 58 18 58 19 18 25 -	19	2.5	+ + +	U.S.C.G.S.: 37°N, 29°E	
4	11	NE	LM	03 57 - ) 04 15 - )				U.S.C.G.S.: 16°N, 96 <sup>1</sup> / <sub>2</sub> °E? Very slight	
5	13	E E E NE E N E NE E N E E	i iP iPP iSKS iSKKS i i L M <sub>1</sub> M <sub>1</sub> M <sub>2</sub> M <sub>2</sub> F <sup>2</sup>	15 53 00 53 51 57 17 16 04 08 04 38 05 09 06 41 10 16 17 35 21 26 22 14 33 21 34 06 18 34 -	20 20 20 18	192 189 82 111	92.9° 10320Km	- + + - + + - + + - + + - +	U.S.C.G.S.: 16°S, 72°W N 53m 58s N 04m 35s
6	15	NE N NE N E	eSSS L M M F	10 05 00 14 17 17 - 24 35 25 00 11 22 -	19 19	17 24.5	- +	U.S.C.G.S.: 15°S, 75°W	



## KING'S COLLEGE OBSERVATORY, ABERDEEN

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
7	Jan 23	N E N E NE NE N E	i i iPS e L M <sub>1</sub> M <sub>2</sub> M <sub>2</sub> F <sup>2</sup>	05 02 43 04 42 09 57 16 00 39 - 46 22 52 12 52 22 06 02 -		4 7 4		N E - - + +	U.S.C.G.S.: 4°S, 127 <sup>1</sup> / <sub>2</sub> °E
8	23	E E NE E N	i i L M M F	08 07 00 11 58 30 20 44 32 46 00 53 -		2.5 2		+ -	U.S.C.G.S.: 4°S, 127 <sup>1</sup> / <sub>2</sub> °E
9	23	NE E N E	e M <sub>1</sub> M <sub>1</sub> M <sub>2</sub> F <sup>2</sup>	18 57 06 19 02 16 04 36 10 05 18 -	20 20 20	3 3 3			U.S.C.G.S.: 4°S, 127 <sup>1</sup> / <sub>2</sub> °E
10	24	NE N N E E N	L M <sub>1</sub> M <sub>2</sub> M <sub>1</sub> M <sub>2</sub> M <sub>3</sub> F <sup>3</sup>	05 27 10 39 14 44 08 47 18 52 45 06 29 02 41 -	20 17 20 16 17	5.5 4 5.5 3.5 4			U.S.C.G.S.: 15 <sup>1</sup> / <sub>2</sub> °S, 179°W By path > 180°
11	25	N	LM	17 47 - -55 -					U.S.C.G.S.: 16°S, 179°W
12	31	NE	LM	05 57 - 06 20 -					U.S.C.G.S.: 33 <sup>1</sup> / <sub>2</sub> °N, 134 <sup>1</sup> / <sub>2</sub> °E Hidden by large micro- seisms and shaking of building.

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FEBRUARY, 1960

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No.	Date	Compt.	Phase	Time G.M.T.			Period sec.	Ampl. $\mu$	$\Delta^\circ$ km.	Dir <sup>n</sup> of Motion	Remarks Time of origin
				h.	m.	s.					
1	Feb. 4	N E N E E N E NE N E N E	iPKP i iSKP ePPP iSKS i i L M <sub>1</sub> M <sub>1</sub> e <sub>1</sub> e M <sub>2</sub> M <sub>2</sub> F	04	05	29	30 30 25 25	19 9	123° 13660km	N - + + + - +	U.S.C.G.S.: 4 <sup>1</sup> / <sub>2</sub> °S, 153 <sup>1</sup> / <sub>2</sub> °E
					05	39					
					08	06					
					09	50					
					12	34					
					21	04					
					23	29					
					45	15					
					51	44					
					53	40					
					05 02	45					
					09	45					
					47	05					
					47	15					
2	4	E N E N E	eL M <sub>1</sub> M <sub>1</sub> M <sub>2</sub> M <sub>2</sub> F	17	35	15	20 20 18 15	5.5 5.5 4.5 5			U.S.C.G.S.: 39°, 143°E
					38	18					
					42	33					
					44	00					
					45	22					
3	8	E N E E N E	e eL L M <sub>1</sub> M <sub>1</sub> M <sub>2</sub> F	13	36	15	20 20 18	13.5 13.5 13.5			U.S.C.G.S.: 58°S, 67°W
					41	25					
					45	-					
					56	58					
					57	33					
					14 00	58					
					38	-					
4	10	NE E E NE E N N E N N E N E N E	e,i i ePP e,i iPPP eSKS eSKKS ePS iSS iSSS L L M <sub>1</sub> M <sub>1</sub> M <sub>2</sub> M <sub>2</sub> F	00	15	28	27 27 25 22	24.5 29 22 20		+ + - + + - - - + - + - - +	U.S.C.G.S.: 4°S, 128°E
					16	20					
					18	13					
					18	50					
					20	08					
					24	18					
					25	23					
					26	38					
					31	48					
					35	53					
					48	-					
					50	15					
					55	03					
					57	16					
01 00	08										
01	03										
54	-										



## KING'S COLLEGE OBSERVATORY, ABERDEEN

No.	Date	Compt.	Phase	Time G.M.T.			Period sec.	Ampl. μ	Δ° km.	Dir <sup>n</sup> of Motion	Remarks Time of origin	
				h.	m.	s.						
5	Feb 19	E	iPPP	10	48	30	20	16.5		N E + +	U.S.C.G.S.: 36°N, 70 <sup>1</sup> / <sub>2</sub> °E Badly obscured by microseisms N 57m 00s	
		N	iS		51	52						+ +
		NE	i		54	05						- +
		NE	iSS		56	50						- -
		E	L		11	06						20
		E	M		09	00						
		E	F		17	-						
6	21	E	i	08	21	45	20	13.5		- + - +	U.S.C.G.S.: 36°N, 4 <sup>1</sup> / <sub>2</sub> °E	
		N	i		22	30						
		E	e		24	20						
		E	M		25	32						15
		N	M		27	31						
		N	F		38	-						
7	23	E	eLM	00	45	-					B.C.I.S.: 39 <sup>1</sup> / <sub>4</sub> °N, 20 <sup>1</sup> / <sub>2</sub> °E very slight	
8	23	N	eS	07	43	48	13	4		+ + - - - -	U.S.C.G.S.: 39°N, 20°E	
		E	e		43	59						
		E	i		45	28						
		NE	e		48	18						
		N	M		52	14						13
		E	M		52	18						
		E	F		08	10	-					
9	24	N	e	22	42	20	25	6.5		- + - +	U.S.C.G.S.: 77 <sup>1</sup> / <sub>2</sub> °S, 156°E Obscured by microseisms	
		E	e		42	40						
		N	M		47	28						
		E	M		56	05						25
			F		23	00						-
10	29	N	e	23	47	09	15	18		- + - - + - - + + - - -	U.S.C.G.S.: 30°N, 9°W iE 51m 04s Agadir Earthquake	
		E	i		49	05						
		E	i		50	32						
		N	iS		50	39						
		N	i		51	01						
		E	iSS		51	54						
		E	i		53	35						
		E	L		54	14						
		E	M		56	48						15
		N	L		58	40						
	M <sub>1</sub>		24	00	24	15	16					
	M <sub>2</sub>		03	50	13	11.5						
	F		50	-								
1	March 2	E	iSS	22	05	24	11	3		+ + + +	U.S.C.G.S.: 50°N, 31°W	
		N	e		06	34						
		E	i		07	15						
		NE	M		08	05						
		E	F		18	-						
2	4	E	L	16	32	40	12				B.C.I.S.: 72°N, 0°	
		NE	M		34	00						
			F		36	-						
3	5	NE	iSKKS	14	15	01	15			+ + - - - -	U.S.C.G.S.: 1°N, 129°E eN 28m 28s	
		E	eS		15	37						
		E	i		16	10						
		E	iPPS		19	00						
		E	eSS		23	10						
		E	eSSS		27	20						

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No.	Date	Compt.	Phase	Time G.M.T.			Period sec.	Ampl. μ	Δ° km.	Dir <sup>n</sup> of Motion	Remarks Time of origin
				h.	m.	s.					
	March								N E		
	5	(contd.)									
		NE	eL	14	37	-					
		E	M <sub>1</sub>	47	24	25	74				
		N	M <sub>1</sub>	47	35	25	57				
		E	M <sub>2</sub>	49	29	25	74				
		N	M <sub>2</sub>	50	27	27	54				
		F		15	50	-					
4	5	E	e	16	04	10			+		
		E	M	13	05	15	2			Very slight.	
		F	F	17	-	-				No readable effect on N-	
5	6	E	e	04	40	10			+	U.S.C.G.S.: 24°N, 108°W	
		NE	i, e	43	00				+ -		
		N	i	54	39				+	Slight effect, and no	
		E	i	56	49				+	definite maxima	
		N	i	05	03	00			-		
		F	F	30	-	-					
6	7	E	e	06	24	24			+	U.S.C.G.S.: 52°N, 153°E	
		N	i	35	53				+	Very slight effect	
		F	F	55	-	-					
7	8	N	iPP	16	55	38			-	U.S.C.G.S.: 16 <sup>1</sup> / <sub>2</sub> °S, 168 <sup>1</sup> / <sub>2</sub> °E	
		N	iSKP	56	15				-		
		E	i	57	12				+		
		N	iPPS	17	08	00			+	No definite maxima.	
		E	iSS	13	38				+	Obscured by microseisms.	
		E	iSSS	19	20				+		
		F	F	18	22	-					
8	12	NE	eS	12	02	37			-	U.S.C.G.S.: 42°N, 21°E	
		N	e	04	09				-		
		E	i	06	34				+		
		E	M	07	27	10	9				
		N	M	08	56	11	9				
		F	F	25	-	-					
9	12	E	i	20	52	07		125°	+	U.S.C.G.S.: 6°S, 152°E	
		N	eSKP	52	52				-		
		E	iPPP	53	50			13890 Km	+		
		N	iSKS	56	27				-		
		N	ePS	21	01	32			+		
		N	eSS	08	12				-		
		E	eSSS	13	07				-		
		NE	L	33	-						
		N	M	41	17	20	2.5				
		E	M	47	12	20	2.5				
		F	F	22	06	-					
10	20	NE	iP	17	19	41		78.5°	+	U.S.C.G.S.: 40°N, 143 <sup>1</sup> / <sub>2</sub> °E	
		NE	i	20	07				+		
		N	iPP	22	38			8720 Km	-	Ei 22m 06s	
		E	iPPP	24	03				+	Ni 24m 31s	
		E	eS	29	26				+		
		NE	i	29	37				+		
		N	iPS	29	56				+		
		NE	i	31	05				+		
		N	iSS	34	46				-		
		E	iSSS	37	46				+		
		E	L	42	-						
		E	M <sub>1</sub>	46	21	35	636				
		N	L	48	-						

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No	Date	Compt.	Phase	Time G.M.T. h. m. s.	Period sec.	Ampl. "	$\Delta^\circ$ km.	Dir <sup>n</sup> of Motion	Remarks Time of origin
	March							N E	
	20	(contd.)							
		N	M	17 56 06	17	220			
		E	M <sub>2</sub>	56 56	18	378			
			F	20 35 -					
11	21	E	e	01 01 50				+	U.S.C.G.S.: 39 <sup>1</sup> / <sub>2</sub> N, 143 <sup>0</sup> E
		E	L	11 -					Light failed on N-S.
		E	M	22 19	20	11			Confused by shaking of
			F	02 15 -					building.
12	23	E	i	00 40 38			79.5 <sup>0</sup>	+	U.S.C.G.S.: 39 <sup>1</sup> / <sub>2</sub> N, 143 <sup>0</sup> E
		N	i	41 01			8835 Km	+	
		NE	iS	45 41				-	
		N	i	46 51				-	
		E	iSS	50 49				-	eN 51m 11s
		N	iSSS	54 11				+	
		E	M <sub>1</sub>	01 02 07	40	122			
		NE	L	07 -					
		N	M	10 50	20	71			
		E	M <sub>2</sub>	11 15	19	94			
			F	02 33 -					
13	23	E	iS	22 44 51			79.5 <sup>0</sup>	-	U.S.C.G.S.: 39 <sup>1</sup> / <sub>2</sub> N, 143 <sup>0</sup> E
		E	eSS	50 01				+	
		E	e	23 00 -			8835 Km	+	
		E	L	08 00					N-S compt. too faint.
		E	M <sub>1</sub>	10 26	20	13.5			
		E	M <sub>2</sub>	15 11	25	6.5			
			F <sup>2</sup>	43 -					
14	28	E	i	00 32 52				+	U.S.C.G.S.: 77 <sup>0</sup> / <sub>2</sub> N, 82 <sup>0</sup> W
		NE	iS	35 46				-	
		E	e	37 40				+	
		N	e	48 28				+	No definite max. on N-S
		E	M <sub>1</sub>	51 34	20	4			
		E	L	01 00 30					
		E	M <sub>2</sub>	08 12	16	3.5			
			F	13 -					
15	28	E	e	20 55 55				+	
		E	M	57 30	15	3			
		N	LM	58 -)					
				21 02 -)					
16	29	NE	i, eSKP	06 53 51			139.5 <sup>0</sup>	+	U.S.C.G.S.: 17 <sup>0</sup> S, 167 <sup>0</sup> E
		N	i	59 02				+	eE 59m 21s
		N	iSKKS	07 00 16			15500 Km	+	
		E	ePPS	05 40				+	
		NE	e	12 35				-	
		E	eSSS	16 32				+	iN 16m 22s
		E	M	30 20	50				
		NE	L	38 -					
		E	M	42 52	21	9			
		N	M	43 06	22	10			
			F	09 00 -					
17	29	E	i	12 31 30				+	
		E	M	39 00	20	8			
		N	M	41 20	12	8			
			F	52 -					

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				h.	m.	s.							
March													
18	29	E	e	23	23	-	20	2.5		N E	U.S.C.G.S.: 6°S, 147°E		
		N	LM										
		E	M	26	20								
			F	30	-								
19	30	N	i	13	02	58	13	2.5		+			
		E	e		04	00							
		E	M		05	37						15	2.5
		N	F		07	23							
				13	-								
20	31	N	e	20	29	10	16	3.5		-			
		E	e		34	-							
		N	M		39	12						15	3
		E	M		40	08							
			F	59	-								

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## SEISMOLOGICAL BULLETIN

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APRIL - JUNE 1960

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1	Apr. 1	NE E N	e M M F	14 43 30 46 26 47 06 56 -	20 16	5.5 3.5		N E	U.S.C.G.S.: 49°N, 129 <sup>1</sup> / <sub>2</sub> °W
2	2	NE	LM	06 51 - 55 -					U.S.C.G.S.: 18 <sup>1</sup> / <sub>2</sub> °N, 143°E Very slight
3	24	E N NE N E E	iSKS i i iPPS eSS iSSS F	03 45 30 47 10 48 54 51 09 55 08 58 14 04 11 -			107.5° 11945 Km	- + - -	U.S.C.G.S.: 6°S, 113 <sup>1</sup> / <sub>2</sub> °E Deep focus
4	24	E E NE E E N	eS iSS L M M F	12 30 20 34 18 40 - 43 08 45 50 47 55 13 06 -	22 20	8 11		- + -	U.S.C.G.S.: 20°N, 54 <sup>1</sup> / <sub>2</sub> °E Iran shock
5	29	N N N N N N	ePP iSKS ePPS eL M <sub>1</sub> M <sub>2</sub> F <sup>2</sup>	19 51 08 57 13 20 01 05 25 20 30 28 38 25 56 -	25 25	6.5 4	108° 12000 Km	- + -	U.S.C.G.S.: 0°, 122°E No E-W record available
6	30	N N	e M F	05 00 - 07 00 16 -	20	2.5			U.S.C.G.S.: 0°, 122°E No E-W record
7	May 11	E E E NE E	eS e iSS M M F	19 03 24 08 22 12 07 35 57 37 02 20 04 -	20 25	2.5 6.5	114.5° 12720 Km	- + +	U.S.C.G.S.: 3°S, 131°E Very slight effect on N-S



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				h.	m.	s.												
8	May 12	E	iP	22	44	32	15	1.5	77.6° 8620 Km	N E + + + - + - + - - -	U.S.C.G.S.: 77 <sup>1</sup> / <sub>2</sub> ° N, 81° W 54m 27s							
		N	i		44	47												
		NE	iS		54	23												
		E	eSS		59	22												
		N	e	23	00	57												
		N	eSSS		03	17												
9	13	E	M		25	07	20	2.5	66.8° 7420 Km	+ + - + - + + - + +	U.S.C.G.S.: 55° N, 161 <sup>1</sup> / <sub>2</sub> ° W							
		N	F		55	-												
		NE	i	16	18	07												
		NE	iS		26	57												
		NE	i		27	17												
		NE	i, e		28	18												
10	15	N	e		35	07	15	1.5	85° 9445 Km	- + + + - - + + - + + +	U.S.C.G.S.: 24° N, 121 <sup>1</sup> / <sub>2</sub> ° E							
		NE	M		45	07												
		N	M		46	07												
		N	F	17	31	-												
		N	ePP	13	46	07												
		N	ePS		54	22												
11	18	N	eSSS	14	03	45	22	23	85° 9445 Km	+ + - + + + - - + + - + - + + + + + + + + +	U.S.C.G.S.: 29° N, 130° E							
		NE	M		21	02												
		N	F		31	-												
		NE	eP	06	47	46												
		NE	ePP		50	56												
		N	e		56	16												
		NE	i, eSKS		57	57												
		N	iS		58	16												
		N	iSKKS		58	22												
		E	eSS	07	04	16												
		N	eSSS		07	46												
		NE	L		16	-												
12	19	E	M <sub>1</sub>		22	53	15	1.5	+ -	U.S.C.G.S.: 36° N, 71° E								
		N	M <sub>1</sub>		25	22												
		N	M <sub>2</sub>		28	18												
		E	M <sub>2</sub>		31	35												
		N	F <sub>2</sub>	08	25	-												
		E	F		48	-												
13	19	NE	iS	02	23	06	20	8	+ -	U.S.C.G.S.: 17° S, 66° E								
		NE	eSS		27	05												
		E	e		35	16												
		N	L		38	46												
		N	M		45	13												
		N	F		48	-												
14	20	E	eP	10	25	33	20	5	151° 16780 Km	+ - + + - - - - + + + + + + + + + + + +	U.S.C.G.S.: 28° S, 167 <sup>1</sup> / <sub>2</sub> ° E							
		N	e		29	45												
		NE	eSKS		35	21												
		N	i		39	50												
		N	i		44	16												
		NE	L	11	08	-												
		N	M		18	16												
		N	M		18	56												
		E	F	12	07	-												
		14	20	E	ePKP <sub>1</sub>	11						32	23	20	11	151° 16780 Km	+ + + + - - - - + + + +	U.S.C.G.S.: 28° S, 167 <sup>1</sup> / <sub>2</sub> ° E
				N	iPKP <sub>2</sub>							32	51					
				E	ePP							35	58					
E	e				42	16												
N	eSKKS				42	56												
N	e				52	26												
14	20	NE	L	12	36	-	20	11	151° 16780 Km	+ + + + - - - - + + + +	U.S.C.G.S.: 28° S, 167 <sup>1</sup> / <sub>2</sub> ° E							
		E	M		43	54												
		E	M		44	06												
		N	F	13	48	-												



# KING'S COLLEGE OBSERVATORY, ABERDEEN

No	Date	Compt.	Phase	Time G.M.T.			Period sec.	Ampl. #	$\Delta^\circ$ km.	Dir <sup>n</sup> of Motion	Remarks Time of origin
				h.	m.	s.					
15	May 21	E N	e LM	06	50	45			N E +	U.S.C.G.S.: 37 <sup>1</sup> / <sub>2</sub> <sup>o</sup> N, 21 <sup>o</sup> E	
		E E	e M F		55 59	40 00	15	1.5			
				07	07	-					
16	21	E N	e LM	09	13	05				U.S.C.G.S.: 15 <sup>1</sup> / <sub>2</sub> <sup>o</sup> N, 121 <sup>1</sup> / <sub>2</sub> <sup>o</sup> E	
		E	F		15	50	15	1.5			
					25	-					
17	21	NE E NE NE NE NE E N E E N	eP iPP iPPP iSKS iS iPS iSS iSSS L M M F	10	17	36			112 <sup>o</sup> 12445 Km	- - + - - - - + - + + + - + + - - - - + - - + + +	U.S.C.G.S.: 37 <sup>1</sup> / <sub>2</sub> <sup>o</sup> S, 73 <sup>1</sup> / <sub>2</sub> <sup>o</sup> W Chilean shock  E 30m 00s N 37m 36s E 41m 46s
				11	07	-	16	818			
					08	00	16	473			
				17	15	-					
18	22	I NE	i, ePP	10	49	55				+ +	U.S.C.G.S.: 38 <sup>o</sup> S, 73 <sup>1</sup> / <sub>2</sub> <sup>o</sup> W
19	22	II NE II E II NE II NE II E II NE II E II NE II E II E II N	iPP iSKS iS iPS i iSS iSSS i L M M F	10	52	10			112.2 <sup>o</sup> 12465	- - - + - + - - + - - + - + + + + + - + - +	U.S.C.G.S.: 37 <sup>1</sup> / <sub>2</sub> <sup>o</sup> S, 73 <sup>o</sup> W N 58m 21s  N 03m 06s
				11	00	00					
					01	46					
					02	52					
					07	52					
					11	36					
					19	56					
					28	-					
					36	51	20	90			
					37	32	22	72			
				17	00	-					
20	22	E NE NE E NE NE N E E E N N N	eP e, iPP i iPPP iSKS iPS iSS iSSS L M M <sub>1</sub> M <sub>2</sub> F	19	10	40			112.0 <sup>o</sup> 12445 Km	- - - + - - - - + + + + + - - - - - - - - - - - - - - -	U.S.C.G.S.: 38 <sup>o</sup> S, 73 <sup>1</sup> / <sub>2</sub> <sup>o</sup> W N 10m 54s Chilean shock
					15	15					
					15	30					
					17	35					
					21	28					
					24	52					
					30	40					
					34	55					
				20	00	-					
					19	10	16	1000			
					19	51	22.5	1896			
					29	-	16	913			
				09	00	-					
22		E N E N	M M M M	23	15	-	3 min	1.5mm			
					-	35					
				23	21	-	3 min	1.55mm			
					-	33					
				23	49	-	3 min	.5mm			
					24	30					
				24	21	-	3 min	.5mm			
					-	28					



## KING'S COLLEGE OBSERVATORY, ABERDEEN

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
May 23			Recurrence of Maxima					N E	
		E	M	01 29 55	18	9			This period includes a series of after shocks
		N	M	03 36 05	18	11			
		E	M	03 52 13	20	5.5			
		N	M	04 00 15	16	3.5			
		N	M	06 16 50	20	5.5			
		E	M	06 17 07	20	8			
21	23	E	LM	10 55 - ) 11-00 - )					Uncertain through shaking of building.
		E	LM	11 44 - ) 12 05 - )					
		N	LM	11 46 - 12 00 -					
22	24	NE	iSKP	15 10 06				- +	U.S.C.G.S.: 44 <sup>1</sup> / <sub>2</sub> °S, 167 <sup>1</sup> / <sub>2</sub> °E
		E	i	16 00				- -	
		N	i	17 00				- -	
		N	i	20 45				+ +	
		NE	i, ePSKS	22 11				+ +	
		N	i	24 06				- -	
		E	e	30 05				- -	
		N	e	34 42				- -	
		N	L	16 07 30				- -	
		E	L	10 15				- -	
		N	M	20 00	25	9		- -	
		E	M	20 40	20	11		- -	
			F	17 16 -				- -	
23	25	NE	e	10 11 25				+ +	U.S.C.G.S.: 45°S, 76°W Off Chilean coast
		N	i	21 10				- +	
		NE	e	24 15				- +	
		NE	L	31 -				- +	
		N	M <sub>1</sub>	37 55	22	26		- -	
		E	M <sub>1</sub>	38 00	20	22		- -	
		E	M <sub>2</sub>	42 30	18	22		- -	
		N	M <sub>2</sub>	42 48	18	27		- -	
			F	11 06 -				- -	
24	26	NE	iP	05 15 12			22.2°	+ -	U.S.C.G.S.: 40°N, 20°E Albanian Shock
		N	iPPP	15 52			2465Km	- -	
		NE	iS	19 10				- +	
		NE	i	20 15				- +	
		N	i	21 30				- -	
		E	i	22 07				- -	
		NE	L	23 30				- -	
		E	M	25 01	12	39		- -	
		N	M	25 04	15	37		- -	
			F	06 03 -				- -	
25	29	NE	iPS	08 08 20				+ +	U.S.C.G.S.: 38°S, 72 <sup>1</sup> / <sub>2</sub> °W
		N	e	30 05				+ +	
		E	L	34 50				- -	
		E	M	43 35	20	16		- -	
		N	M	44 25	20	13.5		- -	
			F	09 18 -				- -	
26	31	N	e	03 39 00					U.S.C.G.S.: 46 <sup>1</sup> / <sub>2</sub> °W
		N	i	45 50	20	2.5		- -	
			F	04 11 -				- -	



## KING'S COLLEGE OBSERVATORY, ABERDEEN

No.	Date	Compt.	Phase	Time G.M.T.			Period sec.	Ampl. μ	Δ° km.	Dir <sup>n</sup> of Motion	Remarks Time of origin
				h.	m.	s.					
27	May 31	E	e	11	16	55				N E	U.S.C.G.S.: 18°N, 62°W
		NE	i		17	50				- -	
		NE	e, iS		20	19				+ +	
		N	L		28	10					
		N	M <sub>1</sub>		32	00	20				
		E	M <sub>1</sub>		32	52	20	9.5			
28	June 1	N	e	06	05	45				- -	U.S.C.G.S.: 38°S, 73°W
		E	M		07	55	20	2.5			
		E	M		08	05	20	2.5			
29	2	E	e	06	54	55				+ +	U.S.C.G.S.: 46 <sup>1</sup> / <sub>2</sub> °S, 74°W
		N	e	07	02	55				- -	
		NE	M		08	00	17	3 )E			
30	2		F		14	-					
		NE	i, ePPP	08	10	52				- -	U.S.C.G.S.: 5 <sup>1</sup> / <sub>2</sub> °S, 151 <sup>1</sup> / <sub>2</sub> °E
		N	e		16	50				+ +	
		N	eSS		24	54					
		E	e		27	05				- -	
		N	L		56	-					
N	M		05	16	20	5					
31	4	E	e	09	07	20	19	5			
		E	F		45	-					
		E	e	11	06	48				+ +	U.S.C.G.S.: 39 <sup>1</sup> / <sub>2</sub> °N, 30 <sup>1</sup> / <sub>2</sub> °W N-S record uncertain through shaking of building.
E	e		14	33				+ +			
E	M		18	52	15	1.5					
32	6	N	iS	01	38	30				+ +	U.S.C.G.S.: 41°N, 125°W
		E	ePS		39	05				- +	
		NE	eSSS		46	48				- -	
		E	e		50	00				- -	
		NE	L		56	-					
		N	M		02	02	23	15	8		
33	6	E	M		03	05	14	7			
		E	F		37	-					
		NE	iPP	06	15	53			118.5°	+ +	U.S.C.G.S.: 45 <sup>1</sup> / <sub>2</sub> °S, 73 <sup>1</sup> / <sub>2</sub> °W N 17m 03s
		E	iSKP		17	14			13165 Km	- -	
		NE	iSKS		21	37				- -	
		E	iSKKS		22	38				+ +	
		NE	iPPS		26	40				+ -	
		E	i		33	48				- +	
		E	L		53	55					
		N	L		57	45					
E	M		07	05	20	16	73				
N	M		06	30	17	50					
34	8		F	09	44	-					
		N	i	16	30	48				+ -	U.S.C.G.S.: 35°N, 35°W
		E	eS		31	23				+ -	
		NE	i		33	45					
		N	M		36	08	18	9			
E	M		36	20	18	10					
35	9		F	17	10	-					
		E	e	17	56	00				- -	U.S.C.G.S.: 38°N, 26°W

## KING'S COLLEGE OBSERVATORY, ABERDEEN

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	
35	June 9	(contd.)						N E		
		E	i	17 57 28				+	No N-S record available	
		E	i	18 00 26				+		
		E	M	03 04	10	3				
			F	44 -						
36	10	E	M	21 52 50	12	1			U.S.C.G.S.: 15 <sup>1</sup> / <sub>2</sub> °S, 174°W	
		N	e	22 27 50						
		N	M	32 45	17	2				
			F	36 -						
37	11	N	iPP	15 35 27			128.5°	-	U.S.C.G.S.: 9°S, 152 <sup>1</sup> / <sub>2</sub> °E	
		E	iSKP	36 19			14280 Km	+		
		NE	i	36 44				-		
		E	iPPP	37 45				-		
		E	iPPS	46 27				-	eN 46m 21s	
		E	iSS	52 08				+		
		E	L	16 12 00						
		N	M <sub>1</sub>	19 20	25	9				
		E	M <sub>1</sub>	19 45	25	11				
		E	M <sub>2</sub>	26 15	20	8				
		N	M <sub>2</sub>	28 04	25	6				
			F	Lost in succeeding shock						
38	11	NE	iSKP	17 00 15			128.5°	-	U.S.C.G.S.: 9 <sup>1</sup> / <sub>2</sub> °S, 152 <sup>1</sup> / <sub>2</sub> °E	
		N	eS	05 43			14280 Km	-		
		E	e	07 36				+		
		N	ePS	09 16				-		
		NE	L	41 30						
		E	M <sub>1</sub>	52 10	25	9				
		E	M <sub>2</sub>	18 01 06	18	13				
		N	M	01 14	19	5				
			F	19 06 -						
39	12	E	LM	08 24 -					U.S.C.G.S.: 36°S, 98°W	
				-41 -					No effect on N-S compt.	
40	20	N	ePP	02 20 29			112.5°	-	U.S.C.G.S.: 38°S, 73 <sup>1</sup> / <sub>2</sub> °W	
		N	i	20 45			12500 Km	+		
		N	eSKS	26 42				+	E-W record too faint	
		N	iPS	30 09				+	to analyse	
		N	iPPS	31 29				+		
		N	iSS	36 16				+		
		N	iSSS	40 23				-		
		N	L	59 30						
		N	M	03 06 21	20	68.5				
			F	05 08 -						
41	20	NE	iPP	13 19 08			113.5°	+	U.S.C.G.S.: 39 <sup>1</sup> / <sub>2</sub> °S, 73°W	
		NE	i	19 24			12610 Km	+		
		E	eSKS	24 53				+	iN 25m 21s	
		E	eSKKS	26 18				-		
		NE	iPS	29 02				+		
		E	ePPS	29 55				-		
		N	iSS	34 56				+	iE 35m 13s	
		NE	e, iSSS	39 04				+		
		E	L	55 00						
		N	L	56 08						
		N	M	14 02 47	22	69				
		E	M	05 07	19	71.5				
			F	15 56 -						

## KING'S COLLEGE OBSERVATORY, ABERDEEN

No.	Date	Compt.	Phase	Time G.M.T.			Period sec.	Ampl. μ	Δ° km.	Dir <sup>n</sup> of Motion	Remarks Time of origin
				h.	m.	s.					
42	June 25	E N N E E	eS e eSS e M F	14	15	33	12	1		N E +	U.S.C.G.S.: $67\frac{1}{2}^{\circ}\text{N}$ , $72\frac{1}{2}^{\circ}\text{W}$ Very slight
						43					
						53					
						26					
						48					
43	25	N E E N NE E N E E	e e e e e L L M M F	15	05	43	19	3.5		+ + +	U.S.C.G.S.: $28^{\circ}\text{S}$ , $68^{\circ}\text{W}$ Very slight
						26					
						00					
				16	06	18	20	2.5	- - -		
						38					
						03					
				18	58	-					
						58					
						-					
44	25	N	LM	20	28	- )					
						-21					44

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JULY - SEPTEMBER 1960

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	18.1 mm.	E-W	1.11.58
E		1 lb.	10 sec.	20 : 1	150	18.1 mm.	N-S	1.11.58

  

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	July 1	E N E	i L LM	08 11 40 36 - 49 - -57-				N E -	U.S.C.G.S.: 56°N, 165°E
2	2	NE	LM	12 55 - -13 05 -					U.S.C.G.S.: 56°S, 27°W
3	3	N E N NE NE N E E E N N E	iP i i iPP iS iPS i iSS eSSS L M M F	20 32 18 32 40 33 09 35 02 41 44 42 23 42 53 46 02 49 53 21 06 00 10 57 12 44 22 11 -			72° 8100Km	+ + - + + - + + -	U.S.C.G.S.: 50 <sup>1</sup> / <sub>2</sub> N, 177°W T <sub>0</sub> = 20h 20m 51s
4	5	E E E E	i i i M F	14 26 46 30 02 34 51 40 48 42	12	2		+ -	N-S very faint ? seismic
5	6	E E E	i e M F	05 30 43 37 00 44 11 06 02 -	10			+ -	U.S.C.G.S.: 36 <sup>1</sup> / <sub>2</sub> N, 70 <sup>1</sup> / <sub>2</sub> E N-S record missing
6	9	E N E	e LM M F	01 30 25 34 - -44 - 39 06 51 -	15	1.5			U.S.C.G.S.: 25 <sup>1</sup> / <sub>2</sub> N, 125 <sup>1</sup> / <sub>2</sub> E
7	10	E E NE N E N	ePP ePPP e, iSKKS iS i ePPS	00 22 38 24 39 29 40 30 06 31 26 31 56			95.5 10610 Km	- - - - +	U.S.C.G.S.: 0°, 98°E T <sub>0</sub> = 00h 05m 21s



## KING'S COLLEGE OBSERVATORY, ABERDEEN

No.	Date	Compt.	Phase	Time G.M.T.			Period sec.	Ampl.	$\Delta^\circ$ km.	Dir <sup>n</sup> of motion	Remarks Time of origin	
				h.	m.	s.						
7	July 10 (cont.)	E	eSS	00	36	06	22 17	6.5 8		N E		
		N	eSSS	40	53							
		NE	L	01	01	-						
		N	M	08	04							
		E	M	10	10							
			F	58	-							
8	13	NE	e	06	45	45	10 12	< 1 1				
		N	M	47	00							
		E	M	47	55							
			F	07	08	-						
9	13	E	ePS	06	24	40	18 20	3.5 2.5		-	U.S.C.G.S.: 53 <sup>10</sup> 2S, 17 <sup>10</sup> 2E	
		E	e	31	50							
		E	e	35	35							
		E	L	48	-							
		N	L	52	-							
		N	M	57	50							
		N	M	58	06							
	F	09	32	-								
10	13	E	eP	13	06	11	10	3.5	24.4 <sup>0</sup> 2710 Km	-	U.S.C.G.S.: 41 <sup>10</sup> N, 23 <sup>10</sup> 2E	
		E	iS	10	29							
		E	iSS	11	06							
		E	i	11	56							
		E	e	15	02							
		E	M	17	54							
			F	lost in overlap								
11	14	E	eL	11	22	00	20	2.5			U.S.C.G.S.: 5 <sup>0</sup> N, 127 <sup>10</sup> 2 <sup>0</sup> E	
		E	M	30	00							
			F	41	-							
12	16	N	e	18	04	40	20	2.5		+	U.S.C.G.S.: 21 <sup>10</sup> 2 <sup>0</sup> N, 14 <sup>0</sup> 3E	
		E	e	06	40							
		E	eL	16	35							
		E	M	34	30							
			F	58	-							
13	16	N	e	21	41	10			-		U.S.C.G.S.: 65 <sup>10</sup> 2 <sup>0</sup> N, 167 <sup>10</sup> 2 <sup>0</sup> W	
			F	56	-							
14	16	N	e	22	15	20	15	1.5		-	U.S.C.G.S.: 65 <sup>10</sup> 2 <sup>0</sup> N, 167 <sup>10</sup> 2 <sup>0</sup> W	
		E	L	31	10							
		N	M	32	40							
			F	46	-							
15	17	N	eSS	05	32	20	14	1.5		-	U.S.C.G.S.: 36 <sup>0</sup> N, 69 <sup>0</sup> E	
		E	i	35	32							
		E	L	43	35							
		N	LM	43	-							
				-52	-							
		E	M	47	10							
	F	59	-									
16	17	E	eP	12	00	25	25	4		+	U.S.C.G.S.: 10 <sup>10</sup> 2 <sup>0</sup> N, 62 <sup>0</sup> W	
		E	e	01	40							
		E	e	10	25							
		E	eSS	13	26							
		E	L	26	20							
		E	M	29	30							
			F	58	-							





# SEISMOLOGICAL BULLETIN

## KING'S COLLEGE OBSERVATORY, ABERDEEN

No.	Date	Compt.	Phase	Time G.M.T.			Period sec.	Ampl. $\mu$	$\Delta^\circ$ km.	Dir <sup>n</sup> of Motion	Remarks Time of origin
				h.	m.	s.					
17	July 18	E	e	02	44	35			N	E	U.S.C.G.S.: $4\frac{1}{2}^\circ$ S, $151^\circ$ E No effect on N-S
		E	L		52	40				+	
		E	M	03	00	35	20	2.5			
			F		09	-					
18	20	E	e	22	26	20				+	U.S.C.G.S.: $20\frac{1}{2}^\circ$ S, $169^\circ$ E No N-S record available
		E	e		29	20		4		+	
		E	M		42	30	20				
			F	23	03	-					
19	22	N	e	06	43	33				-	
		E	i		45	05				+	
		E	M		46	23	17	3			
		N	M		46	43	15	1.5			
			F		52	-					
20	24	E	e	10	16	07				+	U.S.C.G.S.: $56^\circ$ N, $164^\circ$ E Early portion lost during changing of chart
		NE	eL		22	40				-	
		NE	M		32	40	15	2.5			
			F	11	11	-					
21	25	N	eP	03	52	02				+	U.S.C.G.S.: $53^\circ$ N, $163^\circ$ E $67^\circ$ 7445 Km
		E	e		56	32				-	
		NE	iS	04	00	55				+	
		N	iPS		01	32				+	
		N	eSS		05	27				+	
		E	M		15	37	20	13.5			
		N	M		19	32	19	7			
			F	05	50	-					
22	25	NE	iP	11	22	57				+	U.S.C.G.S.: $54^\circ$ N, $159^\circ$ E 7410 Km N 25m 27s No definite max. in surface waves.
		N	i		23	43				+	
		E	iPP		25	22				+	
		NE	iS		31	48				-	
		NE	i		32	35				-	
		E	iSS		36	13				+	
		E	iSSS		38	37				+	
		E	i		39	45				-	
		N	M		52	42	15	6			
		E	M	12	00	52	16	7			
			F	13	20	-					
23	27	E	e	11	04	25				+	U.S.C.G.S.: $44.7^\circ$ S, $75.1^\circ$ W
		N	M		12	30	17	3			
		E	M		12	35	20	5.5			
			F		37	-					
24	29	N	iPP	00	47	18				+	U.S.C.G.S.: $19\frac{1}{2}^\circ$ S, $170\frac{1}{2}^\circ$ E $142^\circ$ 15780 Km
		N	i		48	16				-	
		E	iPPP		50	06				-	
		N	iSKS		50	34				-	
		E	SKKS		53	06				-	
		E	PSKS		56	18				-	
		NE	eL	01	36	20					
		N	M		48	18	18	2			
		E	M		54	30	18	2			
			F	02	37	-					
25	29	NE	iP	17	43	00				+	$77.5^\circ$ 8610 Km
		E	i		44	25				+	
		NE	iPP		46	35				-	
		NE	i, e		48	28				+	
		NE	iS		53	30				-	



## KING'S COLLEGE OBSERVATORY, ABERDEEN

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
July									
25	29	(contd)						N E	
		NE	iPS	17 54 07				+ +	
		NE	iSS	58 54				- -	
		NE	eSSS	18 02 10				+ -	
		E	eL	08 40					
		N	M <sub>1</sub>	15 32	28	58			
		E	M <sub>1</sub>	15 47	23	32			
		NE	M <sub>2</sub>	22 44	E 17	30			
					N 18	29			
			F	19 32 -					
26	31	NE	iPP	03 16 40			125°	- +	U.S.C.G.S.: 5.6°S, 150°E
		NE	eSKP	18 05			13890 Km	+ +	T <sub>0</sub> = 03h 55m 52s
		NE	i	22 00				+ +	
		E	iPS	26 31				- +	iN 26m 23s
		NE	i	29 05				- -	
		NE	eSS	33 25				- -	
		N	eSSS	38 30				-	
		NE	eL	58 -					
		N	M <sub>1</sub>	04 05 23	22	20			
		E	M <sub>1</sub>	07 18	20	27			
		E	M <sub>2</sub>	13 17	20	36			
		N	M <sub>2</sub>	13 27	20	22			
			F <sub>2</sub>	05 30 -					
27	31	E	eL	08 10 15					U.S.C.G.S.: 6°S, 150°E
		N	eL	14 20					
		E	M	22 25	20	4			
		N	M	22 32	20	2.5			
28	31	E	e	15 13 25				+ +	U.S.G.S.: 43.6°S, 74.3°W
		N	e	15 20				-	
		N	e	18 15				+ +	Effects very slight
		E	e	21 25					
		N	eL	55 15					
		E	M	16 02 30	16	2			
		N	M	06 25	20	2.5			
			F	35 -					
AUGUST									
29	1	N	e	02 36 35				+ +	U.S.C.G.S.: 27.9°N, 54.2°E
		E	eS	36 42				-	
		E	e	40 28				+ +	
		NE	L	50 25					
		N	M	54 30	15	1.5			
		E	M	57 17	15	2.5			
			F	03 11 -					
30	2	N	eL	06 19 10					U.S.C.G.S.: 22.2°S, 171.5°E
		N	M	26 25	12	1			Very slight
			F	37 -					
31	4	N	eP	07 46 10			71.7°	+ +	U.S.C.G.S.: 51.4°N, 179.1°E
		N	iS	55 34			7965 Km	-	
		N	iPS	56 14				+ +	No E-W record available
		N	iSS	08 00 34				- -	
		N	e	04 10				+ +	
		N	L	09 15					
		N	M	19 40	17	10			
			F	09 25 -					
32	5	N	LM	23 06 -					
				-25 -					



# SEISMOLOGICAL BULLETIN

## KING'S COLLEGE OBSERVATORY, ABERDEEN

No.	Date	Compt.	Phase	Time G.M.T.			Period sec.	Ampl. μ	Δ° km.	Dir <sup>n</sup> of Motion		Remarks Time of origin
				h.	m.	s.						
August												
33	9	NE	eP	07	51	04			72.5°	N	E	U.S.C.G.S.: 40°N, 126.6°W eE 53m 05s
		N	ePP		53	34		8055 Km	-	-		
		NE	ePPP		55	19			+	+		
		NE	eS	08	00	14			+	+		
		N	ePS		00	46			+	-		
		E	i		01	02				-		
		NE	eSS		04	59			-	+		
		NE	L		13	20						
		E	M		22	00	15	29				
		N	M		23	27	15	19				
			F	09	30	-						
34	9	N	i	17	06	06			147.5	+	+	U.S.C.G.S.: 24.5°S, 177.1°W
		E	ePKP		06	14				+	+	
		N	i		06	38			16390Km	+		
		E	ePP		10	10					-	
		E	e		14	30					-	
		N	eSKKS		16	24				-		
		E	e		48	04					-	
		N	eL	18	04	04						
		E	eL		07	00						
		N	M		17	36	16	2				
		E	M		20	24	17	3				
			F	19	05	-						
35	13	N	ePP	07	26	04			78.8°	+	+	U.S.C.G.S.: 40.6°N, 142°E eN 38m 30s
		NE	eS		33	06		8755Km	+	+		
		E	eSS		38	24				+	+	
		N	M	08	02	06	15	1.5				
		E	M		02	38	15	1.5				
			F		20	-						
36	13	NE	iPP	14	34	30			113.6°	+	+	U.S.C.G.S.: 39.7°S, 74.8°W iE 36m 53s iN 41m 34s
		N	iPPP		36	48			12620Km	-	-	
		NE	iSKS		40	20				-	-	
		E	iSKKS		41	28				-	+	
		NE	iPS		44	08				+	+	
		NE	iPPS		45	35				-	-	
		NE	eSS		50	00				-	+	
		E	e		53	38					+	
		NE	L	15	08	35					+	
		N	M		18	55	18	18				
		E	M		21	00	18	25				
			F	17	17	-						
37	14	E	Traces	23	08	30						U.S.C.G.S.: 36.0°N, 69.3°E
					-11	-						
38	20	E	iS	20	33	10				+	+	U.S.C.G.S.: 35.6°S, 15.4°W
		N	i		33	17				+	+	
		N	e		38	06						
		E	eSS		39	07					+	
		E	M		48	06	30	6				
		N	M	21	03	40	15	1.5				
			F		10	-						
39	20	E	e	21	37	-				+		
		E	LM		59	-)						
				22	11	-)						
			N		08	-)						
					-16	-						



## KING'S COLLEGE OBSERVATORY, ABERDEEN

No.	Date	Compt.	Phase	Time G.M.T.			Period sec.	Ampl. μ	Δ° km.	Dir <sup>n</sup> of Motion	Remarks Time of origin
				h.	m.	s.					
August											
40	23	NE NE E	L e M F	14	34	30 25 20 -	20	2.5		N E - -	U.S.C.G.S.: 0.9°N, 26.0°W
41	24	NE E	L M F	00	00	- 14 35 20 -	15	1.5			Very slight
42	24	E NE E E NE	iS iPS iSS L M F	02	04	00 20 46 - 18 - 28 10 55 -	20	2.5		+ + +	U.S.C.G.S.: 56.3°N, 163.8°E
43	25	NE	LM	10	10	- ) 12 30 - )					? Seismic
44	25	N E N N N E	iS i e L M M F	18	03	24 30 18 10 11 23 54 -	17 16	2 1		- +	U.S.C.G.S.: 52.7°N, 169.6°W
45	26	E E N	L M LM	01	14	25 13 - -32 -	20	2.5			U.S.C.G.S.: 37.8°S, 73.2°W
46	27	E N E N	eS eSS M M F	10	28	30 00 00 00 52 -	10 10	1 1		+ -	U.S.C.G.S.: 34.4°N, 26.3°E
SEPTEMBER											
47	1	E NE N NE E E E NE N E N	e e, iS iPS i, e iSS eSSS e L M <sub>1</sub> M <sub>1</sub> M <sub>2</sub> M <sub>2</sub> F <sup>2</sup>	15	56	20 36 05 12 03 17 51 - 12 22 03 07 10 -	20 20 17 14	5 2.5 5 3		+ - + - - + +	U.S.C.G.S.: 56.1°N, 153.7°W T <sub>0</sub> = 15h 37m 17s
48	2	NE NE E	e M M F	14	25	- 16 11 42 -	20 20	2.5 4			U.S.C.G.S.: 28.7°N, 98.3°E
49	2	E N NE E NE N E	eS ePS eSSS L LM M M F	22	23	16 56 31 31 - 45 - 21 11 - 32 -	17 15	4 3		+ -	U.S.C.G.S.: 52.0°N, 171.4°W

## KING'S COLLEGE OBSERVATORY, ABERDEEN

No	Date	Compt.	Phase	Time G.M.T.			Period sec.	Ampl. μ	Δ° km.	Dir <sup>n</sup> of Motion	Remarks Time of origin
				h.	m.	s.					
	Sept.										
50	4	N E N E N E N	iS e eSS L L M M F	00 00 13 31 32 36 37 01	07 08 16 06 06 14 30 08						
						19 18	4 2				U.S.C.G.S.: 44.6°N, 149.1°E
51	6	E E	e LM	17 17 -56	48 14 30 30						No N-S record available
52	9	E NE E	i e M F	16 16 27 28 35	27 01 34 00 -	12	2.5				
53	9	E NE E	e e M F	20 20 12 13 18	10 01 14 16 -	14	3				U.S.C.G.S.: 71.7°N, 1.3°W
54	17	NE NE N N E	iS e L M M F	08 08 37 42 55 56 09	26 06 10 50 00 07 06	17 17	4 3				U.S.C.G.S.: 49.4°N, 155.2°E
55	17	N N	i i F	21 21 28 36	24 50 20 -						U.S.C.G.S.: 20.9°S, 174.5°W No E-W record available
56	19	E E E E E E E E N	iPP i eSKS eSKKS iPS eSS L M M F	03 03 04 04 04 09 29 39 42 05	56 02 55 00 20 45 55 50 06 08 08			93.1° 10345 Km			U.S.C.G.S.: 15.5°N, 120°E T <sub>0</sub> = 03h 39m 10s N-S plate fogged
57	19	E N NE N N N N NE E N	iP ePP i iS iPS i eSS L M M F	19 19 16 23 23 24 27 28 38 43 49 20	13 15 10 02 24 35 32 37 - 07 06 28			80.9° 8990 Km			
58	22	N E NE E E N	iS e L M M F	05 05 06 06 17 19 55	57 48 57 05 20 15 51 -						U.S.C.G.S.: 3.4°S, 29.1°E

## KING'S COLLEGE OBSERVATORY, ABERDEEN

No.	Date	Compt.	Phase	Time G.M.T.			Period sec.	Ampl. μ	Δ° km.	Dir <sup>n</sup> of Motion		Remarks Time of origin	
				h.	m.	s.							
59	Sept. 22	NE	eS	09	25	07			65.5° 7280 Km	N	E	U.S.C.G.S.: 3.3°S, 29.1°E eN 29m 45s	
		NE	iPS		25	47				+	+		
		E	iSS		29	21				-	+		
		NE	L		37	-				+	-		
		E	M <sub>1</sub>		44	33	15	29					
		N	M <sub>1</sub>		46	20	15	14.5					
		E	M <sub>2</sub>		49	38	12	23					
			F <sup>-</sup>	11	27	-							
60	29	NE	i, ePP	11	36	04				-	-	U.S.C.G.S.: 18.9°N, 144.7°E	
		E	eSKS		43	06					+		
		E	eS		44	02					-		
		E	i		45	52					+		
		N	e		47	00				+			
		E	L		12	05	-						
		E	M		18	28	16	2.5					
			F	45	-								
61	30	NE	e	07	02	06				-	+		
		N	M		10	00	20	2.5					
		E	M		10	10	20	5.5					
			F	33	-								
62	30	NE	e	21	01	00				-	-	?Seismic	
		NE	e, i		35	46				-	-		
		E	M		40	10	15	1.5					
			F		50	-							

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A. E. M. Geddes.

D. J. Jellgott's Rm.



# 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.

OCTOBER - DECEMBER 1960

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	18.1 mm.	E-W	4.11.60
E	1 lb.	10 sec.	20 : 1	150	18.1 mm.	N-S	4.11.60

No.	Date	Compt.	Phase	Time G.M.T.			Period sec.	Ampl. "	$\Delta^\circ$ km.	Dir <sup>n</sup> of Motion	Remarks Time of origin
				h.	m.	s.					
1	Oct. 1	E NE N	i e,i i F	05	37	50 57 05 -			N E + + -	B.C.I.S.: 35.5°N, 26.5°E Effects very slight	
2	1	N N N E	e iS L LM	16	26	55 10 10 - ) - )			- -	U.S.C.G.S.: 52.2°N, 172.6°W	
		N	M	16	54	50	25	4			
3	2	NE	LM	08	39	- -				U.S.C.G.S.: 39°S, 91.6°W	
4	2	E N	LM LM	12	57	- ) - ) - ) - )				U.S.C.G.S.: 38.7°S, 91.5°W	
5	6	E E NE E NE N E	iP iPP iS iSS L M M F	19	59	24 39 39 09 24 50 30 -		17.7° 1965Km	+ - - - + -	U.S.C.G.S.: 58.2°N, 31.6° T <sub>0</sub> = 19h 55m 20s	
6	7	E E NE E N E	eP i eiS L M M F	03	19	18 28 28 35 56 21 -		17.3° 1920Km	+ - + -	U.S.C.G.S.: Repeat of preceding T <sub>0</sub> = 03h 15m 21s	
							13 14	4 8.5			
7	7	NE E NE NE N E N N NE	iPP iSKP iSKS i,e iPPS i eSS i L	15	38	39 24 09 59 05 08 00 09 10		118.4° 13155 Km	+ - + + + + - +	U.S.C.G.S.: 7.4°S, 130.7° iN 40m 30s	



KING'S COLLEGE OBSERVATORY, ABERDEEN

No.	Date	Compt.	Phase	Time G.M.T.			Period sec.	Ampl. μ	Δ° km.	Dir <sup>n</sup> of Motion	Remarks Time of origin
				h.	m.	s.					
7	Oct. 7	contd.							N E		
		N	M <sub>1</sub>	16	18	04	30	25			
		E	M <sub>1</sub>	18	06		35	64			
		E	M <sub>2</sub>	20	46		30	56			
		N	M <sub>2</sub>	25	09		25	26			
			F	44	-						
8	8	NE	iP	06	03	48					
		NE	i	05	50			74.9° 8320 Km	- -	U.S.C.G.S.: 40°N, 129.7°E Deep focus 0.1R	
		N	iPP	06	47				+		
		N	iPPP	08	47				+	T <sub>0</sub> = 05h 53m 10s	
		NE	iS	12	34				- +		
		E	iPS	14	34				- -	iN 14m 09s	
		E	i	16	34				+ +	eN 16m 25s	
		NE	eSSS	21	46				+ +		
		NE	L	31	54						
		E	M	40	04		15	6.5			
		N	M	40	24		15	5.5			
			F	07	31						
9	8	E	eS	21	03	14					
		N	iPS	03	59			85.3° 9480 Km	+ +	U.S.C.G.S.: 7.9°N, 92.9°E	
		N	i	06	19				+ +	iE 06m 26s	
		E	i	09	29				+ +		
		E	L	27	20						
		E	M	34	14		20	2.5			
		N	M	35	09		20	2.5			
			F	22	04						
10	9	E	iPP	09	15	21					
		N	e	15	49			76° 8445 Km	- +	U.S.C.G.S.: 40.8°N, 141.2°E	
		E	ePPP	17	01				- -	T <sub>0</sub> = 09h 00m 41s	
		E	i	19	02				+ -	eN 18m 54s	
		NE	iS	22	10				+ -		
		NE	iSS	27	14				+ +		
		E	eSSS	30	29				+ +		
		E	L	37	09						
		N	M	43	04		25	6.5			
		E	M	44	13		21	9			
			F	10	25						
11	13	N	i	15	03	53					
		N	iPP	06	07			67.6° 7490 Km	+ -	U.S.C.G.S.: 54.8°N, 161.2°E	
		N	e	07	49				- -	T <sub>0</sub> = 15h 52m 36s	
		NE	iS	12	27				- +		
		NE	iPS	12	54				- -		
		NE	i	13	29				- +		
		N	iSS	17	05				+ +		
		E	e	20	54				+ +		
		N	L	33	30						
		E	M	41	08		18	13			
		N	M	42	02		16	9			
			F	16	20						
12	14	N	eP	21	30	38					
		N	i	31	56			71.1° 7900 Km	+ +	U.S.C.G.S.: 51.7°N, 172.1°W	
		N	iPPP	34	48				+ +		
		E	e	37	15				- -		
		NE	iS	39	47				- -		
		NE	i	40	36				+ +		
		NE	e, i	47	59				+ +		
		N	L	54	00						
		E	L	22	02	00					





## KING'S COLLEGE OBSERVATORY, ABERDEEN

No.	Date	Compt.	Phase	Time G.M.T. h. m. s.	Period sec.	Ampl. "	$\Delta^\circ$ km.	Dir <sup>n</sup> of Motion	Remarks Time of origin	
12	Oct. 14	contd.						N E		
		N	M	22 02 45	16	9				
		E	M <sub>1</sub>	08 41	20	16.5				
		E	M <sub>2</sub>	12 50	15	13				
			F	Lost in succeeding shock						
13	14	E	iP	22 59 56			19.0°	-	U.S.C.G.S.: 55.5°N, 35.2°W	
		NE	iS	23 03 26			2110 Km	+	T <sub>o</sub> = 22h 55m 41s	
		E	M	07 10	15	14.5				
		N	M	07 26	10	9				
			F	41 -						
14	14	E	e	23 56 -				+		
		N	e	24 00 45				-		
			F	10 -						
15	15	E	iP	01 58 23			19.0°	-	U.S.C.G.S.: 55.6°N, 35.6°W	
		N	iS	02 01 53			2110 Km	+	T <sub>o</sub> = 01h 54m 08s	
		E	L	02 51	15	3				
		E	M	04 22	13	2.5				
		N	M	04 50						
			F	23 -						
16	17	E	e	22 56 45				-	U.S.C.G.S.: 14.6°N, 92.8°W	
		E	L	59 50						
		E	M	04 00	15	1.5			Very slight effect on N-S	
			F	17 -						
17	22	N	i	08 44 55				-	U.S.C.G.S.: 10.3°S, 161.2°E	
		N	e	55 35				+	No E-W record available	
		N	L	09 24 -						
		N	M	38 48	24	4				
			F	53						
18	23	N	e	06 40 48				-	U.S.C.G.S.: 31.2°N, 40.7°W	
		N	e	44 53				+		
		NE	e	50 48				-	Phases doubtful:	
		E	e	55 33				+	Building shaking.	
			F	07 07 -						
19	27	N	iP	15 42 45			14.3°	+	B.C.I.S.: 71°N, 6°W	
		NE	eS	45 40			1590 Km	+		
		E	M	47 57	15	6				
		N	M	48 03	12	2				
			F	56 -						
20	28	NE	iP	04 22 07			14.6°	-	U.S.C.G.S.: 71.3°N, 8.6°W	
		E	i	22 35			1620 Km	+	Jan Mayen Is.	
		NE	e, iS	24 57				-	T <sub>o</sub> = 04h 18m 39s	
		N	eSS	25 25				+		
		E	L	26 10						
		E	M	27 37	15	37				
		N	M	28 58	11	17.5				
			F	05 45 -						
21	28	N	iP	07 50 00				+	U.S.C.G.S.: 71.3°N, 8.4°W	
		N	e	52 40				+	After shock of No. 20	
		E	e	53 10				-		
		E	L	54 45						
		E	M	55 45	15	3				
		N	M	56 52	12	2				
			F	08 15 -						

## KING'S COLLEGE OBSERVATORY, ABERDEEN

No.	Date	Compt.	Phase	Time G.M.T.			Period sec.	Ampl. "	$\Delta^\circ$ km.	Dir <sup>n</sup> of Motion	Remarks Time of origin
				h.	m.	s.					
22	Oct 28	N	iP	13	29	20			68.3 <sup>o</sup>	N E	U.S.C.G.S.: 52 <sup>o</sup> N, 157.4 <sup>o</sup> E T <sub>o</sub> = 13h 18m 21s
		NE	ipP		29	35			7590Km	+ -	
		NE	iS		38	20				+ +	
		NE	iPS		39	09				- -	
		E	i		39	52				- +	
		NE	eSSS		46	15				- -	
		NE	L	14	02	40					
		N	M		08	47	15	3			
23	28	E	M		08	55	15	2			
		E	F		40	-					
		NE	e, iS	22	52	10			83.0 <sup>o</sup>	+ -	U.S.C.G.S.: 34.6 <sup>o</sup> N, 141.1 <sup>o</sup> E
		E	eSS		57	40			9220Km	- +	
		NE	e	23	04	45				- +	
		E	e		11	25				+ +	
		NE	L		18	-					
E	M		24	00	18	4.5					
N	M		26	15	15	3					
24	29	N	e	04	44	45				+ -	U.S.C.G.S.: 15.4 <sup>o</sup> N, 46.4 <sup>o</sup> W
		E	M		46	05	15	1.5			
		F		48	-						
25	29	E	iP	13	30	37			24.4 <sup>o</sup>	- -	2710Km
		N	i		33	57				- -	
		NE	eS		34	55				+ +	
		NE	e		35	45				- +	
		E	M		39	05	11	1			
		N	M		39	55	11	1			
26	30	NE	e, i	08	37	02				- -	
		N	e		40	20				+ -	
		E	e		41	45				+ +	
		E	M		45	55	10	1			
		N	M		46	15	10	1			
		F		55	-						
27	30	NE	eSKS	12	38	49			99.0 <sup>o</sup>	- -	11,000Km N 39m 36s T <sub>o</sub> = 12h 14m 37s
		NE	e, iSKS		39	40				+ -	
		NE	e		40	34				+ +	
		N	ePPS		41	54				- -	
		NE	eSS		46	29				- +	
		E	eSSS		50	50				- -	
		N	L	13	00	29					
		N	M <sub>1</sub>		05	44	20	2.5			
		E	M <sub>1</sub>		05	49	20	4			
		E	M <sub>2</sub>		13	54	20	2.5			
28	30	E	M <sub>2</sub>		14	31	17	4			
		F		55	-						
		NE	i, eSKS	21	56	46				+ +	U.S.C.G.S.: 22.8 <sup>o</sup> S, 68.0 <sup>o</sup> W
		N	i		57	30					
E	e		59	02							
F		22	05	-							

KING'S COLLEGE OBSERVATORY, ABERDEEN

No	Date	Compt.	Phase	Time GMT. h. m. s.	Period sec.	Ampl. μ	Δ° km.	Dir <sup>n</sup> of Motion	Remarks Time of origin
29	Nov. 1	E N E E E	i i i L M F	06 36 43 37 18 42 03 52 - 07 05 00 07 -	15	1.0		N E - + +	U.S.C.G.S.: 11.1°S, 12.7°W Phases doubtful through shaking of building.
30	1	N N E NE E N E N E	i i iSS e, iSSS i L M M <sub>1</sub> M <sub>2</sub> M <sub>2</sub> F	09 12 41 20 42 21 21 25 30 28 40 40 25 50 55 53 58 55 23 58 31 11 10 -	19 17 18 17	27 24 33 32	113° 12555Km	+ + + +	U.S.C.G.S.: 38.4°S, 74.4°W
31	2	E N	LM LM	18 35 - -44 - 36 - -51 -					U.S.C.G.S.: 10.9°S, 164.9°W Obscured by microseisms
32	5	NE N NE E NE NE E	iP e iS i i M <sub>1</sub> M <sub>2</sub> M <sub>2</sub> F	20 25 58 26 51 30 14 30 34 31 45 36 15 39 06 39 33 21 02 -	15 10 10	2 1 1.5	24.3 2700Km	+ - + + + +	U.S.C.G.S.: 39.3°N, 20.5°E T <sub>0</sub> = 20h 20m 42s
33	6	N E N E E N	iS i e e M M F	04 58 25 58 37 05 15 26 21 36 29 41 29 48 54 -	15 16	1.5 2		- - +	U.S.C.G.S.: 53.0°N, 159.8°E
34	6	E N E N	e e M M F	07 39 30 42 35 47 40 49 56 08 27 -	16 15	3 1.5		+ -	U.S.C.G.S.: 31°S, 177.7°W
35	6	N E NE N E	e e L M M F	22 39 40 45 35 52 - 55 56 56 00 23 15 -	15 18	4 4.5		- +	U.S.C.G.S.: 52.7°N, 168°W
36	9	N N N NE E E E N	i i i i, e i L M M F	03 42 12 48 00 48 37 54 40 58 10 04 10 - 22 10 25 50 05 04 -	20 17	5.5 4		+ + + - - -	U.S.C.G.S.: 60.7°S, 24.8°W



## KING'S COLLEGE OBSERVATORY, ABERDEEN

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
37	Nov 9	E N N N E	e L M M F	11 09 50 10 05 18 40 22 56 23 05 56 -	21 20	55 33		N E +	U.S.C.G.S.: 32.7°N, 103.4°E
38	9	E E	e M F	20 51 - 59 05 21 20 -	20	2.5			U.S.C.G.S.: 23.2°S, 70.6°W No definite phase on N-S
39	13	E NE N E NE N E	i e i i L M M F	06 56 39 07 05 55 14 13 15 13 33 10 40 43 44 46 54 -	20 20	1.5 2.5		- - +	U.S.C.G.S.: 1.4°N, 127.2°E Effects slight: phases doubtful
40	13	NE E N NE NE E N E N E N E N	iP i iPP iS iPS i iSS i iSSS L M <sub>1</sub> M <sub>2</sub> M F	09 31 58 33 47 34 30 41 18 42 04 45 13 46 03 47 48 48 57 54 38 10 06 58 11 23 11 33 12 13 -	17 15 15	38 32 18	71.9° 7990Km	+ + + + + + + + + + - - -	N 09h 31m 54s U.S.C.G.S.: 51.1°N, 168.8 N 41m 14s T <sub>0</sub> = 09h 20m 36s
41	20	E N E NE E N E N E E	eP ePPP e i, eSKKB iS iPS eSS i M L M F	22 15 01 20 32 24 37 25 47 26 09 26 54 32 04 32 18 43 34 54 15 23 00 46 25 16 -	30 62		89.6° 9955Km	+ - + - + - - +	Ne 15m 31s U.S.C.G.S.: 6.8°S, 80.7° T <sub>0</sub> = 22h 02m 05s
42	22	E E N	e M <sub>2</sub> M <sub>2</sub> F	07 20 29 24 39 30 45 40 -	15 15				
43	22	N E N E	e e M M F	13 28 52 30 32 34 32 40 38 43 03 52 -	18 4.5 2.5				U.S.C.G.S.: 35.9°S, 52.3
44	23	N E E	iPKP <sub>1</sub> iPKP <sub>2</sub> i	14 32 09 32 19 33 45			147° 16335Km	+ - +	U.S.C.G.S.:

No	Date	Compt.	Phase	Time G.M.T.			Period sec.	Ampl. $\mu$	$\Delta^\circ$ km.	Dir <sup>n</sup> of Motion	Remarks Time of origin
				h.	m.	s.					
44	Nov 23	contd	eSKP	15	36	00				N E	
		N	e	15	12	43				-	Phases doubtful
		E	eL	21	45					+	
		N	M <sub>1</sub>	34	33		22	16			
		N	M	38	36		20	11			
		E	M <sub>2</sub>	39	53		20	19			
			F	16	39	-					
45	24	N	iPKP	07	12	38			147°	-	U.S.C.G.S.: 24.2°S, 176.1°W
		N	iPP	15	39				16335Km	-	
		N	i	18	04					-	
		N	iSKKS	22	43					+	T <sub>0</sub> = 06h 52m 50s
		N	iPSKS	26	18					+	
		N	iPPS	28	45					-	Obscured by microseisms on E-W
		E	i	33	39					+	
		N	iSS	34	53					-	
		N	iSSS	40	06					+	
		N	i	44	43					+	
		E	i	52	05					+	
		N	eL	08	01	48					
		E	L	09	23						
		E	M <sub>1</sub>	20	05		19	49			
		E	M <sub>2</sub>	23	35		18	49			
		N	M	34	21		16	31			
			F	09	33	-					
46	December 1	N	iS	21	09	15			65.5°	-	U.S.C.G.S.: 48.8°N, 129.3°W
		E	i	11	15						
		E	iSSS	16	05				7280Km	+	
		N	L	21	10					+	
		E	N	24	34		20	27			
		N	M	25	39		19	22			
			F	45	-						
47	2	E	iPP	09	28	42			99°	-	U.S.C.G.S.: 24.5°S, 69.9°W
		E	iSKS	35	25				11000Km	+	iN 35m 31s
		NE	iPS	37	34					+	
		E	iSS	43	05					+	iN 43m 09s
		N	eSSS	46	30					-	T <sub>0</sub> = 09h 11m 05s
		N	L	52	40					-	
		E	M	10	05	20	18	227			
		N	M	06	00		18	89			
			F	11	10	-					
48	3	E	iP	04	34	47			63°	+	U.S.C.G.S.: 42.8°, 104.5°E
		E	i	39	47				7000 Km	-	
		N	iS	43	26					+	T <sub>0</sub> = 04h 24m 27s
		NE	iSSS	50	02					+	
		NE	L	57	30					-	
		N	M	05	04	18	14	100			
		E	M	04	44		15	150			
			F	45	-						
49	6	E	e	09	45	10					U.S.C.G.S.: 21.4°S, 69°W
		E	M	48	22		20	14			No readable effect on N-S
			F	54	-						

KING'S COLLEGE OBSERVATORY, ABERDEEN

No.	Date	Compt.	Phase	Time G.M.T.			Period sec.	Ampl. μ	Δ° km.	Dir <sup>n</sup> of Motion	Remarks Time of origin		
				h.	m.	s.							
50	13	E	i	08	02	14			169.5° 18835 Km	N	E	U.S.C.G.S.: 52.1°S, 160.9°E  T <sub>0</sub> = 07h 35m 59s iN 22m 57s	
		E	iSKS		02	48							
		E	i		03	19							
		N	iSKKS		07	43							
		NE	iPSKS		11	42							
		NE	i		13	50							
		E	iSS		22	31							
		NE	iSSS		28	57							
		N	e		45	00							
		E	e		51	00							
		E	L		09	06	40						
		N	L		08	35							
		E	M <sub>1</sub>		15	53	20	36					
		N	M <sub>1</sub>		16	19	20	27					
N	M <sub>2</sub>		25	49	18	24							
E	M <sub>2</sub>		28	36	18	42							
			F	59	-								
51	15	N	iS	00	17	32			107° 11890 Km	+			
		N	iPPS		19	58							
		N	eSSS		29	42							
		NE	eL		42	35							
		N	M		51	42	25	13					
		E	M		58	02	25	13					
			F	01	10	-							
52	16	N	eS	18	30	25				+		U.S.C.G.S.: 43.8°N, 28.9°W	
		E	iSS		30	32							
		N	i		33	12							
		E	i		34	12							
			F	42	-								
53	18	NE	eL	19	14	25						U.S.C.G.S.: 8.5°N, 125.9°E	
		N	M		16	42	25	4					
		E	M		17	26	25	4					
			F		29	-							
54	22	N	Traces	03	40	-						U.S.C.G.S.: 9.8°N, 94.2°E	
					57	-							
55	27	NE	LM	11	12	-	20	4				U.S.C.G.S.: 41.3°N, 124.9°E	
					-19	-							
56	29	N	i	11	41	10							
		E	e		42	30							
		E	M		44	05	20	14					
		N	M		44	35	20	14					
			F		51	-							

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