DURHAM UNIVERSITY OBSERVATORY

READINGS FROM SEISMOGRAMS, JANUARY 1957.

Time of horizontal components of earth displacement from Milne-Shaw seismographs recording North and East components: free period 12 sec., damping ratio 20 : 1, magnification 250.

Times of vertical component of motion from Wilson-Lamison seismometer free period 1 sec., G.E. galvanometer free period 3.4 sec.

Position:- latitude 54°46'N, longitude 01°35'W, height above M.S.L. 103 metres.

Date	Phase and component	Time G.M.T.	Period Sec.	Amplitude microns	Distance degrees	Time of origin H
		Corrections and additions to earlier lists				
1956						
Nov. 20	?Z	23 26 44				
	?Z	23 31 11				
Nov. 21	?NE	07 45 30				
Nov. 25	Delete entries for 15 12 33 and 15 12 38					
	Insert PZ	15 24 37				
	Z	15 26 01				
Nov. 26	iPZ	23 49 34				
Nov. 28	iPZ	19 38 53				
	iZ	19 39 39				
	SZ	19 47 58			69	19 27 48
Nov. 29	?Z	09 28 38				
	?Z	09 29 24				
Dec. 18	Z	02 44 56				
Dec. 19	?Z	08 01 56				
Dec. 19	?Z	10 19 13				
Dec. 20	Z	11 19 59				
	Z	11 20 13				
Dec. 25	Identifications wrong					
1957						
Jan. 2	iEZ	00 49 42				
	iEZ	00 49 53				
Jan. 2	iPZ	00 50 54				
	iZ	00 53 42				
	iSNEZ	01 00 22			73	00 39 24
	iNE	01 01 05				
	ME	01 30	19	15		
Jan. 2	PNZ	02 29 09				
	SNZ	02 38 32			72.5	02 17 45
	ScSE	02 39 23				
	NE	02 39 32				
	ME	03 09	16	26		

DURHAM UNIVERSITY OBSERVATORY

READINGS FROM SEISMOGRAMS, JANUARY 1957 continued.

Date	Phase and component	Time G.M.T.	Period Sec.	Amplitude microns	Distance degrees	Time of origin H
Jan. 2	Z	03 24 25				
	MN	04 04	17	16		
Jan. 2	Z	04 00 17				
	Z	04 06 35				
	Z	04 15 00				
	ME	04 40	19	41		
Jan. 2	Z	11 03 08				
	ME	11 40	16	5		
Jan. 3	iNEZ	12 16 14	Artificial			
Jan. 3	iPNEZ	12 59 02				
	ipPNE	13 01 02				
	iPPZ	13 02 00				
	iNE	13 03 40				
	iNEZ	13 03 44				
	iSNEZ	13 07 48	8	44	74	12 48 30
	iNE	13 08 18				
Jan. 5	iNEZ	12 45 20	Artificial			
Jan. 9	?Z	08 12 03				
	?Z	08 13 03				
	?Z	08 16 17				
	?E	08 20 55				
	MN	08 41	16	7		
Jan. 11	MN	05 24				
Jan. 15	iNEZ	16 04 49	?Seismic			
	iNEZ	16 07 41	?Seismic			
Jan. 18	ME	21 15				
Jan. 19	iZ	05 35 13				

2 February 1957.

DURHAM UNIVERSITY OBSERVATORY

READINGS FROM SEISMOGRAMS, FEBRUARY, 1957

Time of horizontal components of earth displacement from Milne-Shaw seismographs recording North and East components; free period 12 sec., damping ratio 20 : 1, magnification 250.

Time of vertical component of motion from Wilson-Lamison seismometer free period 1 sec., G.E. galvanometer free period 3.4 sec.

Position:- latitude 54°46'N, longitude 01°35'W, height above M.S.L. 103 metres.

Date	Phase and component	Time G.M.T.	Period Sec.	Amplitude microns	Distance degrees	Time of origin H
		Corrections and additons to earlier lists				
1956						
Aug. 15	E	05 43 47				
Aug. 15	Delete	12 05 43				
Aug. 17	N	01 30 58				
Aug. 17	N	02 03 35				
Aug. 20	E	05 47 00				
	E	05 56 53				
Dec. 8	Z	16 21 56				
	N	16 29 57				
	E	16 30 46				
1957						
Jan. 23	Z	17 32 00				
	NEZ	17 35 30				
	E	17 36 07				
Jan. 25	Z	03 48 19				
	Z	03 48 28				
	E	03 57 40				
Feb. 3	MNE	18 13	15	9		
Feb. 5	E	04 58 28				
	Z	04 58 32				
Feb. 6	iNEZ	17 52 45	Artificial			
Feb. 6	MN	21 14	14	9		
Feb. 10	Z	05 54 09				
	Z	05 54 15				
	MN	06 05				
Feb. 10	iNEZ	15 27 49	Artificial			

DURHAM UNIVERSITY OBSERVATORY

READINGS FROM SEISMOGRAMS. FEBRUARY, 1957 continued

Date	Phase and component	Time G.M.T.	Period Sec.	Amplitude microns	Distance degrees	Time of origin H
Feb. 10	Z	22 46 26				
	E	22 58 39				
Feb. 10	Z	23 04 46				
	NE	23 15 36				
	ME	23 38	15	7		
Feb. 11	MN	02 12	19	27		
Feb. 11	eZ	15 43 35				15 43 00
	PnNEZ	15 43 37			Epicentre 52°50'N	
	SnNEZ	15 44 02			01°21'W	
Feb. 13	ePnZ	00 00 19				23 59 42
	eE	00 00 40			Epicentre as above	
	SnNEZ	00 00 45				
Feb. 13	MN	01 28				
Feb. 16	iNZ	11 30 18	Artificial			
Feb. 18	ME	15 11				
Feb. 19	iPZ	07 49 16				
	PPZ	07 49 51				
	PPPZ	07 50 07				
	SEZ	07 53 42			25	07 43 50
	ME	07 58	17	21		
Feb. 20	iPNEZ	04 45 35				
	PPZ	04 46 06				
	iSNEZ	04 49 19			21	04 40 58
	SSZ	04 50 05				
	ME	04 53	12	8		
Feb. 20	iNEZ	15 29 23	Artificial			
Feb. 23	EZ	20 38 43				
	E	20 38 51				
	N	20 49 21				
	E	20 49 25				
	NE	20 49 40				
	MN	21 23	14	87		
Feb. 25	EZ	00 21 52				

28 February, 1957.

DURHAM UNIVERSITY OBSERVATORY

CORRECTIONS TO READINGS FROM SEISMOGRAMS, MARCH 1957.

Readings from two Milne-Shaw (horizontal) seismographs recording North and East components respectively. T = 12 secs., damping ratio 20 : 1, magnification 250.

Position:- latitude 54°46'N, longitude 01°35'W, height above M.S.L. 103 metres.

Date	Phase and component	Time G.M.T.	Period sec.	Amplitude microns	Distance degrees	Time of origin H
Mar. 12	PZ	07 40 23			74°.5	07 28 46 (USCGS)
Mar. 12	iPE	07 49 57			74°.5	07 39 17 (USCGS)
	iSE	59 32				
Mar. 13	PZ	02 59 59			75°	02 48 20 (USCGS)
	SE	03 09 37				
Mar. 16	iPZ	02 45 46			74°.5	02 34 12 (USCGS)
	iSE	55 21				
Mar. 17	PZ	22 56 06			73°.5	22 44 44 (USCGS)
	SE	23 05 34				

Mar. 19 delete ?Z 13 01 37 and ?Z 13 02 19

10 December 1957

DURHAM UNIVERSITY OBSERVATORY

READINGS FROM SEISMOGRAMS, MARCH, 1957.

Time of horizontal components of earth displacement from Milne-Shaw seismographs recording North and East components; free period 12 sec., damping ratio 20 : 1, magnification 250.

Time of vertical component of motion from Wilson-Lamison seismometer free period 1 sec., G.E. galvanometer free period 3.4 sec.

Position :- latitude 54°46'N, longitude 01°35'W, height above M.S.L. 103 metres.

Date	Phase and component	Time G.M.T.	Period Sec.	Amplitude microns	Distance degrees	Time of origin H
		Additions and Corrections to earlier lists				
1956 Sept. 6	ePNE	11 52 26	delete 11 52 34			
Sept. 20	ePN	23 13 11	delete iE 22 59 15			
1957 Jan. 2	Z	11 01 00				
Feb. 19	SZ	07 53 20	delete S before 07 53 42			
Feb. 23	PEZ	20 39 05	delete Z before 20 38 43			

There have been no recordings by the NS instrument Feb.26 to Mar.24 inclusive.

Feb. 28	iEZ	17 00 29	Artificial			
Mar. 2	?Z	00 38 04				
	?E	00 38 23				
	PEZ	00 38 30				
	Z	00 38 39				
	Z	00 38 50				
	E	00 43 45				
	SE	00 47 24			68	00 27 25
	SKSE	00 48 28				
	SSE	00 51 50				
	SSSE	00 54 55				
	ME	01 08	18	7		
Mar. 2	iEZ	11 36 41	Artificial			
Mar. 3	Z	15 05 42	?Seismic			
Mar. 3	Z	15 11 23	?Seismic			
Mar. 5	PZ	12 31 25				
	iSEZ	12 37 15			37	12 24 10
	ME	12 42	18	13		
Mar. 7	iEZ	14 33 12	Artificial			
Mar. 8	ePEZ	12 19 15				
	iEZ	12 19 21				
	iSE	12 23 19			23	12 14 15
	iZ	12 23 29				
	iZ	12 26 13				
	ME	12 36	10	125		

READINGS FROM SEISMOGRAMS, MARCH, 1957 continued (2)

Date	Phase and component	Time G.M.T.	Period Sec.	Amplitude microns	Distance degrees	Time of origin H
Mar. 8	PZ	23 40 11				
	EZ	23 40 22				
	EZ	23 40 31				
	EZ	23 40 34				
	E	23 40 49				
	Z	23 40 58				
	E	23 44 11				
	SEZ	23 44 16			23	23 35 11
	iE	23 49 31				
	iE	23 50 39				
	ME	23 56	11	10		
Mar. 9	ePZ	14 34 02				
	iPZ	14 34 23				
	iZ	14 34 31				
	PPE	14 36 57				
	PPPE	14 38 41				
	Z	14 43 36				
	SZ	14 43 47			73	14 22 36
	E	14 43 52				and 14 22 57
	E	14 43 59				
	SKSE	14 44 19				
	SSE	14 48 42				
	ME	15 23	16	480		
Mar. 9	PZ	20 50 47				
	SE	21 00 09			72	20 39 23
	SKSE	21 01 08				
	ME	21 25	20	85		
Mar. 10	PZ	03 17 30				
	SE	03 27 06			75	03 05 52
Mar. 10	PZ	03 20 31				
	SE	03 29 51			72	03 09 10
	ME	03 59	18	20		
Mar. 10	PZ	11 32 23				
	ME	12 11				
Mar. 10	Z	15 38 21				
	E	15 48 07				
	ME	16 17	16	12		
Mar. 11	PZ	03 24 21				
	E	03 34 09				
	ME	04 05	17	33		
Mar. 11	PEZ	10 10 14				
	SE	10 19 32			72	09 58 54
	ME	10 47	17	70		
Mar. 11	PZ	15 07 01				
	SE	15 16 30			73	14 55 30
	ME	15 49	17	45		
Mar. 12	iE	07 49 57				
	iZ	07 50 58				
	iE	07 59 32				
	ME	08 24	15	10		
Mar. 12	eZ	11 56 33				
	iPZ	11 56 38				
	iSE	12 06 12			74	11 45 02
	ME	12 44	20	65		

DURHAM UNIVERSITY OBSERVATORY

READINGS FROM SEISMOGRAMS. MARCH, 1957, continued (3)

Date	Phase and component	Time G.M.T.	Period Sec.	Amplitude microns	Distance degrees	Time of origin H
Mar. 13	?PZ	03 00 07				
	?SE	03 09 37			74	02 48 35
	ME	03 38	16	6		
Mar. 13	iZE	13 58 02	Artificial			
Mar. 13	iPZ	15 53 46				
	SE	16 03 28			76	15 42 02
	ME	16 31	20	17		
Mar. 13	ePZ	20 10 46				
	iZ	20 11 51				
	ME	20 47	18	8		
Mar. 14	iPZ	14 59 31				
	iPcPE	14 59 42				
	iSE	15 09 09			75	14 47 51
	iE	15 09 23				
	ME	15 44	19	125		
Mar. 15	iPZ	03 03 38				
	iSE	03 12 59			72	02 52 16
	ME	03 42	15	9		
Mar. 16	iPZ	02 46 09				
	iSE	02 55 21			70	02 34 56
	ME	03 30	16	36		
Mar. 16	iEZ	11 31 49	Artificial			
Mar. 17	PZ	22 53 26				
	SE	23 03 10			76	22 41 39
	ME	23 29	18	15		
Mar. 19	?Z	13 01 37				
	?Z	13 02 19				
	iPZ	13 02 40				
	E	13 10 20				
	SE	13 12 08			73	12 51 10
	SKSE	13 12 52				
	SSE	13 14 09				
	ME	13 43	18	20		
Mar. 19	iEZ	13 59 04	Artificial			
Mar. 22	iPZ	14 32 27				
	iSEZ	14 41 43			71	14 21 10
	iSSE	14 45 20				
	ME	15 06	19	47		
Mar. 23	ME	06 19	24	8		
Mar. 24	?Z	08 17 26				
	ME	09 02	18	11		
Mar. 24	ME	11 57				
Mar. 25	MNE	22 12				
Mar. 26	iNEZ	15 36 35	Artificial			
Mar. 28	?Z	20 16 36				
	?E	20 27 01				
	ME	20 58	16	2		

DURHAM UNIVERSITY OBSERVATORY

READINGS FROM SEISMOGRAMS, MARCH, 1957, continued (4)

Date	Phase and component	Time G.M.T.	Period Sec.	Amplitude microns	Distance degrees	Time of origin H
Mar. 28	eZ	22 31 04				
	E	22 35 00				
	ME	22 41	10	3		
Mar. 29	iPN	05 21 48				
	iPZ	05 21 52				
	iSNE	05 31 00			70	05 10 44
	iSKSNE	05 31 08				
	MN	05 48	26	40		
Mar. 29	PZ	23 01 17				
	SNE	23 11 20			69	22 50 14
	ME	23 41	20	3		
Mar. 30	iNEZ	11 28 54	Artificial			
Mar. 31	iNEZ	15 13 29				

2 April 1957

DURHAM UNIVERSITY OBSERVATORY

READINGS FROM SEISMOGRAMS, APRIL, 1957.

Time of horizontal components of earth displacement from Milne-Shaw seismographs recording North and East components; free period 12 sec., damping ratio 20 : 1, magnification 250.

Time of vertical component of motion from Wilson-Lamison seismometer free period 1 sec., G.E. galvanometer free period 3.4 sec.

Position :- latitude 54°46'N, longitude 01°35'W, height above M.S.L. 103 metres.

Date	Phase and component	Time G.M.T.	Period Sec.	Amplitude microns	Distance degrees	Time of origin H
April 4	iNEZ	14 10 46	Artificial			
April 5	eZ	02 59 30				
	eZ	03 01 28				
	eN	03 09 20				
	MN	03 39	22	9		
April 5	iZ	07 50 06				
	iZ	07 50 12				
	iZ	07 50 22				
	iZ	07 50 34				
April 6	iZ	11 35 32	Artificial			
	iNE	11 35 35				
April 7	?Z	10 28 32				
	ME	11 19	20	7		
April 7	iZ	15 00 04	Artificial			
	iNE	15 00 07				
April 9	iZ	00 40 20				
	NE	00 40 25				
	NE	00 46 33				
	NE	00 46 50				
	NE	00 49 50				
April 10	iPZ	05 24 25				
	eSNE	05 34 34			81	05 12 12
	iSKSNE	05 34 40				
	ME	06 02	20	4		
April 10	iPNEZ	11 40 57				
	PcPZ	11 41 29				
	PPNE	11 43 29				
	PcSE	11 45 30				
	iSNE	11 49 52			67	11 30 05
	SKSN	11 50 55				
	ScSE	11 50 58				
	ME	12 06	30	100		
	MN	12 13	20	110		
April 13	eNZ	03 58 18				
	eEZ	04 04 19				
	ME	04 21	22	5		
April 13	Z	08 53 37				
	Z	08 54 34				
April 13	iNEZ	11 30 30	Artificial			
April 14	iPEZ	07 22 27				
	eSE	07 30 56				
	iSNE	07 30 58			63	07 12 05
	MN	07 48	20	28		
	MN	07 54	12	21		

DURHAM UNIVERSITY OBSERVATORY

READINGS FROM SEISMOGRAMS, APRIL, 1957 continued (2)

Date	Phase and component	Time G.M.T.	Period Sec.	Amplitude microns	Distance degrees	Time of origin H
April 14	PZ	19 37 29				
	iZ	19 37 33				
	iZ	19 40 29				
	ME	20 36	20	63		
April 14	iPZ	21 10 47				
April 15	iPZ	21 44 37				
	iSN	21 54 07			74	21 33 05
	ME	22 21	20	2		
April 16	iPEZ	04 17 10				
	eEZ	04 19 17				
	iEZ	04 20 26				
	iEZ	04 21 16				
	iE	04 21 29				
	iZ	04 23 41				
	iZ	04 23 55				
	iNE	04 26 52				
	iZ	04 29 53				
	iE	04 30 57				
	iNE	04 35 35				
April 17	Z	08 27 20				
	Z	08 28 07				
April 17	MN	14 16				
April 19	Z	15 56 30				
April 19	iPNZ	22 30 58				
	PcPZ	22 31 23				
	Z	22 33 34				
	PPN	22 33 46				
	PPPZ	22 35 33				
	iSNZ	22 40 27			73.5	22 19 26
	SKSN	22 41 16				
	PPSN	22 41 27				
	SSN	22 45 28				
	MN	23 11	14	17		
April, 20	MN	13 43	23	5		
April 21	iPNEZ	21 23 58				
	iN	21 33 24				
	iSNE	21 33 29			74	21 12 24
	SKSN	21 34 07				
	ScSE	21 34 10				
	ME	21 53	18	42		
April 23	ME	23 02	16	1		
April 24	iPNEZ	19 56 54				
	PcPZ	19 19 13				
	PcPNE	19 19 16				
	Z	19 20 07				
	NEZ	19 20 28				
	iSEZ	19 20 43			28	19 10 00
	PcSZ	19 22 51				
	SSSZ	19 22 24				
	ME	19 26	17	90		

DURHAM UNIVERSITY OBSERVATORY

READINGS FROM SEISMOGRAMS. APRIL, 1957 continued (3)

Date	Phase and component	Time G.M.T.	Period Sec.	Amplitude microns	Distance degrees	Time of origin H
April 25	iPNEZ	02 31 22				
	iZ	02 34 41				
	iSNE	02 36 11			28	02 25 28
	iN	02 36 29				
	MN	02 42	12	160		
April 26	iZ	06 35 44				
	iZ	06 39 30				
	iZ	06 39 51				
	ME	06 50	16	10		
April 26	iNEZ	14 03 14	Artificial			
April 26	iNEZ	14 07 37	Artificial			
April 27	iNEZ	10 35 51	Artificial			
April 28	iNEZ	01 42 15				
	NEZ	01 48 27				
	NE	01 51 24				
	ME	02 27	20	7		
April 28	iZ	15 00 25				
	iZ	15 07 50				
	MN	15 39	15	2		
April 29	iZ	14 29 18)	Artificial			
	iNE	14 29 20)				
April 29	ME	21 59	24	2		
April 30	?Z	07 36 14				
	ME	04 13	20	10		
	ME	04 20	12	6		
May 2	ePZ	10 54 06				
	iZ	10 54 16				
	iZ	10 54 29				
May 2	iPZ	11 40 44				
May 2	iPZ	11 50 26				
	ME	11 58	19	10		
May 2	iZ	21 55 10				
	iNE	22 01 08				
May 4	iZ	10 25 16)	Artificial			
	iE	10 25 19)				

DURHAM UNIVERSITY OBSERVATORY

READINGS FROM SEISMOGRAMS, MAY, 1957

Time of horizontal components of earth displacement from Milne-Shaw seismographs recording North and East components; free period 12 sec., damping ratio 20 : 1, magnification 250.

Time of vertical component of motion from Wilson-Lamison seismometer free period 1 sec., G.E. galvanometer free period 3.4 sec.

Position :- latitude 54°46'N, longitude 01°35'W, height above M.S.L. 103 metres.

Date	Phase and component	Time G.M.T.	Period Sec.	Amplitude microns	Distance degrees	Time of origin H
ADDITIONS AND CORRECTIONS TO EARLIER LISTS						
1956 Oct. 8	iPZ	15 15 29)				
	PKPN	15 19 25)	in place of identifications given in October 1956 list.			
Oct. 19	SNZ	21 07 14	ditto		ditto	
Oct. 24	iSE	15 05 11				
Oct. 26	ePKPZ	23 09 43				
Oct. 29	delete	16 12 38	and insert			
	Z	16 24 15				
Oct. 30	E	00 14 24				
	E	00 17 12				
Oct. 31	PZ	14 31 13				
	SZ	14 38 17				
1957 Mar. 12	Z	07 40 29				
April 13	eN	04 04 04				
April 24	delete	19 56 54	and replace by			
		19 15 54				
April 26	N	06 43 12				
	N	06 43 51				
April 28	E	15 10 08				
May 2	PZ	04 02 04				
	PPZ	04 03 11				
	SE	04 07 10			31	03 55 48
	ME	04 13	20	10		
	ME	04 20	12	6		
May 2	ePZ	10 54 06				
	iZ	10 54 16				
	iZ	10 54 29				
May 2	iPZ	11 40 44				
May 2	iPZ	11 50 26				
	ME	11 58	19	10		
May 2	iZ	21 55 10				
	iNE	22 01 08				
May 4	iZ	10 25 16)	Artificial			
	iE	10 25 19)				

DURHAM UNIVERSITY OBSERVATORY

READINGS FROM SEISMOGRAMS. MAY. 1957 continued (1)

Date	Phase and component	Time G.M.T.	Period Sec.	Amplitude microns	Distance degrees	Time of origin H
May 4	Z	10 44 39				
	ME	11 09	17	2		
May 5	iNEZ	14 03 46	Artificial			
May 11	iZ	09 46 34)	Artificial			
	iE	09 46 36)				
May 12	Z	05 45 35				
	MN	05 53				
May 12	Z	11 39 21				
	E	11 48 18				
	E	11 48 46				
	E	11 54 35				
	ME	12 42	20	6		
May 18	MN	06 24				
May 20	Z	02 10 33				
	NE	02 12 27				
	N	02 17 40				
	MN	02 42	15	2		
May 21	?Z	01 25 11				
	N	01 29 58				
	NE	01 35 52				
	NE	01 36 42				
	MN	02 02	38	24		
May 21	iZ	11 48 33				
	iNEZ	11 48 39				
May 21	Z	13 29 22				
	E	13 33 20				
	N	13 37 19				
May 22	iPNE	13 41 36				
	iN	13 41 42				
	PcPN	13 41 52				
	SNE	13 51 19			76	13 29 50
	SKSN	13 51 56				
	SSN	13 56 15				
	ME	14 22	14	2		
May 23	iNEZ	12 41 00	Artificial			
May 24	iPZ	02 49 44				
	iZ	02 50 02				
	iSN	02 59 33			77	02 37 52
	iSE	02 59 36				
	ME	03 19	22	5		
May 24	Z	03 55 37				
	N	04 05 21				
	ME	04 25	20	2		
May 25	iNEZ	10 35 18	Artificial			
May 25	iNEZ	13 59 53	Artificial			

DURHAM UNIVERSITY OBSERVATORY

READINGS FROM SEISMOGRAMS. MAY, 1957 continued (2)

Date	Phase and component	Time G.M.T.	Period Sec.	Amplitude microns	Distance degrees	Time of origin H
May 26	ePEZ	06 39 04				
	iNEZ	06 39 11				
	PPPNEZ	06 39 51				
	N	06 42 25				
	PcPZ	06 42 42				
	iSE	06 43 29			25	06 33 39
	iE	06 43 47				
	ME	06 57	12	220		
May 26	iPZ	09 42 10				
	SE	09 46 33			25	09 36 45
	E	09 46 41				
	N	09 46 53				
	SSNE	09 47 42				
	ME	09 54	19	23		
May 27	iPZ	11 07 05				
	Z	11 07 18				
	PPZ	11 07 50				
	PPPZ	11 07 57				
	SNE	11 11 26			25	11 01 45
	NE	11 11 43				
	ScSNE	11 18 21				
	ME	11 19	12	9		
May 28	ePZ	06 03 06				
	iZ	06 03 26				
	iSE	06 12 26			72	05 51 45
	ME	06 38	15	1		
May 29	?Z	10 29 52				
	MN	10 39	12	1		
May 29	iNEZ	14 44 23	Artificial			
May 29	iPEZ	18 44 33				
	iZ	18 44 59				
	SEZ	18 48 40			23	18 39 28
May 30	iPNZ	00 38 35				
	iZ	00 38 47				
	iZ	00 38 55				
	iNE	01 00 43				
	ME	01 46	20	2		
May 30	iNEZ	12 58 58	Artificial			
May 31	E	02 17 04)	No N or Z			
	E	02 38 44)	record.			
May 31	NE	22 19 31)	No Z			
	N	22 38 22)	record.			

DURHAM UNIVERSITY OBSERVATORY, ENGLAND

Position:- 54°46'N 01°35'W, height above M.S.L. 103 metres

SEISMOLOGICAL BULLETIN FOR AUGUST 1957

Instruments:- Milne-Shaw free period 12 sec, damping ratio 20:1, magnification 250, recording N and E component displacements.
Wilson-Lamison seismometer free period 1 sec. coupled to G.E. galvanometer free period 3.4 sec, recording vertical component of velocity.

No.	Date	Phase and component	Time G.M.T.	Period sec.	Amplitude microns and direction	Epicentral distance	Notes
1	4	eSSE	01 16 27				
		MN	01 41	24	2	122°	H 00 39 12 (USCGS)
		MN	01 55	15	1		
2	4	iPEZ	06 18 53		- -	82°	H 06 06 33
		iSNE	29 08		- -		
		SSE	34 29		+		
		SSSE	37 59		-		
3	4	iPEZ	14 28 34		- -	81°	H 14 16 18 (USCGS)
		SE	38 45		-		
4	4	iPPN	21 27 24		+	105°	H 21 08 51 (USCGS)
		SKSNE	33 49		+ -		
		PSNE	36 30		- +		
		MN	22 11	18	9		
5	7	iPKPZ	19 59 26		-	145°	H 19 39 48 (BCIS)
6	8	PZ	01 18 30		-	30°	H 01 12 12 (BCIS)
		eSN	23 19				
7	8	ePZ	22 43 37			65°	H 22 33 05 (USCGS)
		eXE	51 59				
		eSE	52 19				
		ME	23 05				
8	9	ePKPZ	02 48 10			118°	H 02 29 20 (USCGS)
		iPPZ	49 26		-		
		iSKSE	55 07		-		
		ME	03 31	22	1		
		ME	03 43	18	2		
		ME	03 51	19	1		
9	11	iPKPZ	21 57 32		+	143°	H 21 38 05 (USCGS)
10	14	iPE	02 50 06		+	26°	H 02 44 30 (BCIS).
		eSE	54 39				
		MN	03 01				
11	15	ME	21 45				
12	16/17	PZ	23 44 51		-	93°	H 23 31 42 (USCGS)
		XZ	48 22		+		
		XZ	48 29		+		
		PPNEZ	48 38		- + +		
		iSKSE	55 26		-		
		iSNE	55 46		+ +		
		iXNE	00 01 38		- +		
		MN	00 23	20	7		

No.	Date	Phase and component	Time G.M.T.	Period sec.	Amplitude microns and direction	Epicentral distance	Notes
13	18	XN	08 56 35		-	99°.5	H 08 36 58 (USCGS)
		XZ	59 23		+		
		SKSE	09 01 25		+		
		SKSN	01 31		-		
		SSE	09 19		-		
		MN	09 32	18	22		
14	18	PZ	21 54 07		+	72°.5	H 21 42 42 (BCIS)
		PN	54 09		-		
		PPPNEZ	58 39		- - -		
		SN	22 03 30		-		
		SKSNE	04 14		- -		
		MN	22 26	22	11		
		MN	22 33	16	8		
15	19	ePKPZ	11 54 04			135°.5	H 11 34 42 (BCIS)
		ePPZ	56 51				
16	19	PZ	21 43 13		-	71°.5	H 21 31 54 (BCIS)
17	20	eXNE	06 50 25			131°	H 06 27 00 (BCIS)
		MNE	07 41				
18	20	PKPZ	12 21 29		-	135°.5	H 12 01 58 (BCIS)
		PPE	24 23		-		
		SKSE	28 25		-		
		eXNE	41 29				
		MNE	13 11	22			
		MN	13 30	19			
		MN	14 04				
19	23	eXE	02 21 19				No N or Z record
		eXE	34 28				
		ME	03 06	25			H 02 00 05 (USCGS)
20	23	MN	12 39	16	3		No Z record
21	26	eXZ	11 40 32				H 11 28 50 (USCGS)
		eXZ	42 03				
		eXN	52 01				
		iSN	52 47		+		
		XE	59 40		+		
		ME	12 16	20	5		
22	26	eXZ	14 09 22				H 13 58 48 (USCGS)
		eXZ	09 59				
		iXN	21 58		-		
		ME	14 47	20	5		
23	27	eXN	12 00 46				
		eXE	12 01 11				
24	30	eXZ	16 20 14				
		eXE	22 04				
		eXE	30 32				
		eXE	38 12				
		MN	16 51	12	2		
25	31	eXZ	11 59 01				
		eXN	12 00 37				
		eXE	06 33				
		MN	12 39	12	1		

DURHAM UNIVERSITY OBSERVATORY, ENGLAND

Position:- 54°46'N 01°35'W, height above M.S.L. 103 metres.

SEISMOLOGICAL BULLETIN FOR SEPTEMBER 1957

Instruments:- Milne-Shaw free period 12 sec, damping ratio 20:1, magnification 250, recording N and E component displacements.
Wilson-Lamison seismometer free period 1 sec, coupled to G.E. galvanometer free period 3.4 sec, recording vertical component of velocity.

No.	Date	Phase and component	Time G.M.T.	Period sec.	Amplitude microns and direction	Epicentral distance	Notes
1	1	iPZ	12 59 02		-	52°	H 12 49 55 (USCGS)
2	1-2	ePPZ	00 18 14			104°	H 23 59 54 (USCGS)
3	2	ePKPZ	10 06 01			141°	H 09 46 30 (USCGS)
4	2	iPNZ	14 31 31		+ -	74°	H 14 20 13 (USCGS)
		iSN	41 14		+		
5	2	iPZ	21 36 32		-	52°	H 21 27 36 (USCGS) .03 deep
		ipPZ	37 16		-		
		iXE	40 51		-		
		iSN	43 34		+		
		isSE	44 51		+		
		NE	48 24		- -		
		XE	48 41		-		
		XN	47 28		+		
6	3	iPN	20 28 06		-		
		eN	30 15				
		MN	20 34	11	1		
7	4	MN	05 49				
8	6	eXZ	05 05 23			73°.5	H 04 54 37 (USCGS)
		eXZ	06 10				
		eXN	15 27				
9	7	ePZ	07 00 10			74°	H 06 48 36 (USCGS)
		eSE	09 30				
10	7	eXNEZ	10 09 21			74°	H 10 06 47 (USCGS)
		eXNE	20 40				
		MN	10 55				
11	9	iXE	00 36 20		-	130°	H 00 13 30 (USCGS) No Z record
		MN	01 34	22	3		
12	11	ePKPZ	23 41 46			141°	H 23 22 09 (USCGS)
13	12	ePN	00 39 35			72°	H 00 28 02 (USCGS)
		eXZ	39 45				
		ME	01 15	14			
14	15	iPKPZ	19 02 08		-	128°	H 18 42 20 (USCGS)
		iSKSE	08 42		+		
15	19	iXZ	17 35 10		+		
		MN	17 45				

DURHAM UNIVERSITY OBSERVATORY, ENGLAND

SEISMOLOGICAL BULLETIN FOR SEPTEMBER 1957 sheet 2

No.	Date	Phase and component	Time G.M.T.	Period sec.	Amplitude microns and direction	Epicentral distance	Notes
16	20	eXZ	23 18 44				
17	21	ePZ	20 23 25			29°	H 20 17 23
		eSN	28 20				
18	24	iPZ	08 36 01		-	107°	H 08 21 05 (USCGS)
		iPPZ	40 00		+		
		iSKSE	46 15		+		
		iXN	47 34		-		
		iPSNE	49 25		+ -		
		iPPSE	50 12		+		
		iSSE	54 26		+		
		MN	09 26	26	200		
19	25	ePNZ	05 57 33			33°.5	H 05 50 56 (USCGS)
		ePPZ	58 45				
		iPcPZ	06 00 13		+		
		iSN	03 05		-		
		MN	06 06	14	17		
20	25	iSSE	17 10 13		+	107°	H 16 36 37 (USCGS)
		MN	17 36	25	4		
21	27	MN	05 17	20	2	111°	H 04 08 23 (USCGS) No Z record
22	28	ePN	00 39 13			89°	H 00 27 31 (USCGS) .08 deep
		ePZ	39 27				
		epPNZ	41 16				
		iSN	49 29		+		
		isSN	52 38		+		
		eSSN	55 27				
23	28	iPKPNZ	14 38 35		+ -	150°	H 14 20 00 (USCGS) .10 deep
		iXN	39 15		+		
		iXN	39 34		+		
		iXN	40 00		-		
		iXNZ	41 13		- -		
		isPKPZ	42 01		-		
		iPPNZ	42 27		+ +		
		iXE	50 01		+		
		iSSE	15 00 07		+		
		isPKPN	42 03		+		
24	29	iPKPEZ	08 32 12		+ +	151°	H 08 12 22 (USCGS) .10 deep
		ipPKPZ	34 25		+		

15 November 1957

DURHAM UNIVERSITY OBSERVATORY, ENGLAND

Position:- 54°46'N 01°35'W, height above M.S.L. 103 metres.

SEISMOLOGICAL BULLETIN FOR OCTOBER 1957

Instruments:- Milne-Shaw free period 12 sec, damping ratio 20:1, magnification 250, recording N and E component displacements.
Wilson-Lamison seismometer free period 1 sec, coupled to G.E. galvanometer free period 3.4 sec, recording vertical component of velocity.

No.	Date	Phase and component	Time G.M.T.	Period sec.	Amplitude microns and direction	Epicentral distance	Notes
1	2	ePZ	12 38 14			65°	H 12 27 55 (USCGS)
		eXEZ	38 24				
		epPZ	38 31				
		iSN	47 14		-		
		isSN	47 41		-		
		ME	13 01	20			
2	2	eXZ	21 09 06				
3	4	ePEZ	05 36 43			65°	H 05 26 09 (USCGS) .01 deep
		ipPZ	36 50		-		
		epPN	36 50				
		eXNE	37 25				
		iSNE	45 24		- -		
		isSN	45 52		-		
		iSSE	49 34		-		
		MN	06 03	20	11		
4	5	iSN	00 16 30		-	73°	H 23 55 45 (USCGS)
5	5	ePNE	11 42 44			29°	H 11 36 46 (USCGS)
		eSN	47 27				
		MN	11 56				
6	5	iXE	22 49 55		-	50°	H 22 40 44 (USCGS)
		iXE	57 03		+		
7	6	eXNZ	09 08 35				
		MN	09 20	12	2		
8	6	eXZ	21 37 45				
9	7	MN	14 11	15	1		
10	8	eXZ	07 05 08				
11	10	ePNZ	19 05 13			71°	H 18 53 59 (USCGS)
12	12	ePZ	19 11 36			110°	H 18 57 02 (USCGS)
		ePKPZ	15 31				
		ePSN	25 28				
13	13	ePZ	04 30 39			72°	H 04 19 17 (USCGS)
		ePcPZ	31 00				
		eSN	40 07				
		MN	05 08	18	6		
14	13	ePKPZ	20 55 17			164°	H 20 33 01 (USCGS)
		eSSN	21 18 19				
15	15	ePZ	04 14 08			78°.5	H 04 02 07 (USCGS)
		eXZ	14 37				

DURHAM UNIVERSITY OBSERVATORY, ENGLAND

SEISMOLOGICAL BULLETIN FOR OCTOBER 1957 sheet 2

No.	Date	Phase and component	Time G.M.T.	Period sec.	Amplitude microns and direction	Epicentral distance	Notes
16	15	ePKPNZ	06 14 50			157°	H 05 55 21 (USCGS) .025 deep
17	17	iPE	14 33 38		+	19°	H 14 29 18 (USCGS) No Z record
18	17	iPE	14 41 51		+	19°	H 14 37 36 (USCGS) No Z record
19	18	ePN	01 55 31			22°	H 01 50 50 (USCGS)
		iXE	56 28		-		
		eSN	59 26				
20	19	iPZ	18 41 53		-	91°	H 18 28 50 (USCGS)
		ePNE	41 56				
		iXZ	42 18		+		
		iPPE	45 30		-		
		iSKSN	52 17		-		
		iSE	53 01		-		
		MN	19 19	20	60		
		MN	19 26	15	80		
21	19	ePNEZ	21 53 42			77°.5	H 21 41 59 (USCGS) .025 deep
		iSE	22 03 19		-		
		eSKSZ	03 37				
22	20	ePN	12 13 53			54°	H 12 04 22 (USCGS)
		iPPN	15 55		+		
		iSNE	21 31		- -		
		MN	12 28	17	11		
23	21	ePKPZ	00 36 23			137°	H 00 17 25 (USCGS) .017 deep
		ePPZ	39 13				
24	23	ePZ	06 08 18			72°	H 05 56 52 (USCGS)
		ePPZ	11 09				
		iXN	18 34		+		
		MN	06 45	18	6		
25	24	ePKPZ	00 37 07			141°	H 00 17 37 (USCGS)
		ePPZ	40 17				
26	24	ePZ	02 38 25			26°	H 02 33 09 (BCIS)
27	24	ePZ	21 56 17			81°	H 21 44 28 (USCGS)
		MN	22 25	20	9		
28	25	ePZ	01 55 24			91°	H 01 42 32 (USCGS)
		eSNE	02 06 29				
29	25	ePZ	04 49 09			74°	H 04 37 35 (USCGS)
		ePPZ	51 04				
30	25	ePZ	06 31 52			91°	H 06 19 06 (USCGS)
		eSN	43 23				

DURHAM UNIVERSITY OBSERVATORY, ENGLAND

SEISMOLOGICAL BULLETIN FOR OCTOBER 1957 sheet 3

No.	Date	Phase and conponent	Time G.M.T.	Period sec.	Amplitude microns and direction	Epicentral distance	Notes
31	25	ePZ	10 15 08			74°.5	H 10 03 32 (USCGS)
		iSNE	24 30		- -		
		iSKSN	25 10		+		
		ME	10 47	20	10		
32	27	ePZ	22 43 41			69°.5	H 22 32 25 (USCGS)
		ePPZ	46 08				
33	30	ePZ	01 48 35			28°	H 01 43 02 (BCIS)
		eSZ	53 31				
		MN	01 59	12	5		
34	30	ePZ	07 36 17			28°	H 07 30 24 (BCIS)
		MN	07 46	19	6		
35	31	ePNZ	10 20 06			79°	H 10 08 00
		eXNZ	20 24				
		iSN	30 08		+		
		MN	11 00	15	5		

11 December 1957

DURHAM UNIVERSITY OBSERVATORY, ENGLAND

Position:- 54°46'N 01°35'W, height above M.S.L. 103 metres.

SEISMOLOGICAL BULLETIN FOR NOVEMBER 1957.

Instruments:- Milne-Shaw free period 12 sec, damping ratio 20:1, magnification 250, recording N and E component displacements. Wilson-Lamison seismometer free period 1 sec, coupled to G.E. galvanometer free period 3.4 sec, recording vertical component of velocity.

No.	Date	Phase and component	Time G.M.T.	Period sec.	Amplitude microns and direction	Epicentral distance	Notes
1	2	ePZ	18 49 37			137°.5	H 18 30 24 (USCGS)
		ePPZ	52 36				
		eSKSN	56 39				
2	10	ePKPZ	02 57 23				
		eXNZ	57 52				
		eXN	58 57				
		eXNZ	03 02 18				
3	10	ePKPNZ	05 47 43				
		eXZ	49 33				
4	10	eXZ	19 33 24			86°	H 19 20 05 (USCGS)
		iSKSN	43 09		+		
		iSN	43 31		+		No E record
5	13	ePKPZ	17 42 43			160°.5	H 17 22 41 (USCGS)
		eXNEZ	43 15				
		ePPN	47 05				
		eSKSE	49 35				
		iXN	57 05		-		
		ME	17 52	21	9		
6	15	ePZ	08 06 27			103°	H 07 52 25 (USCGS)
		eXNE	16 48				
		iXE	16 58				
		MN	08 52	19	2		
7	15	iPN	16 41 58		-	74°	H 16 30 29 (USCGS)
		iSNE	51 20		- -		
		iSKSNE	52 00		- -		
		MN	17 19	19	2		
8	16	ePN	02 00 40			75°	H 01 48 48 (USCGS)
		eSN	10 10				
9	17	ePNZ	06 08 50			75°	H 05 57 48 (USCGS) .06 deep
10	20	iPN	12 51 46		-	71°.5	H 12 40 23 (USCGS)
		ePZ	51 47				
		iSN	13 01 01		+		
		iSKSN	01 43		+		
		MN	13 36	20	17		
11	23	ME	00 37	25			
12	23	ePZ	01 09 43			73°	H 00 58 33 (USCGS)
		eSN	19 05				
13	25	eXZ	19 08 23				
		ME	19 38	18			

DURHAM UNIVERSITY OBSERVATORY, ENGLAND

SEISMOLOGICAL BULLETIN FOR NOVEMBER 1957 sheet 2

No.	Date	Phase and component	Time G.M.T.	Period sec.	Amplitude microns and direction	Epicentral distance	Notes
14	25	eXZ	20 43 12				
		MN	21 14				
15	25	iPZ	22 49 21		-	107°	H 22 35 00 (USCGS)
		iXE	59 18		+		
		iXE	23 03 07		-		
		MN	23 40	18	4		
16	26	iPZ	05 24 39		-	108°	H 05 10 00 (USCGS)
		ME	06.11	.22	2		
17	26	ePZ	08 20 24			23°	H 08 15 22 (BCIS)
		ME	08 30				
18	26	ePZ	11 47 08			74°	H 11 35 34 (USCGS)
		eSN	56 32				
		ME	12 27				
19	26	ePZ	11 55 05			23°	H 11 50 02 (BCIS)
		ME	12 05				
20	27	ePZ	03 13 05			23°	H 03 08 03 (BCIS)
		iSE	17 11		-		
		ME	03 23	6	4		
21	29	iPE	22 32 43		-	93°	H 22 19 38 (USCGS) .04 deep No Z record
		ipPNE	33 36		+ +		
		iXN	37 15		-		
		iXE	37 19		+		
		iSKSNE	42 50		+ +		
		iSN	43 20		-		
		isSNE	44 55		+ +		
		iSSE	48 06		-		
		ME	23 07	19	70		
22	30	eXZ	02 11 07				
23	30	eXZ	22 08 46				
		ME	22 46	15	2		

30 January 1958

DURHAM UNIVERSITY OBSERVATORY, ENGLAND

Position:- 54°46'N 01°35'W, height above M.S.L. 103 metres.

SEISMOLOGICAL BULLETIN FOR DECEMBER 1957

Instruments:- Milne-Shaw free period 12 sec, damping ratio 20:1, magnification 250, recording N and E component displacements.
Wilson-Lamison seismometer free period 1 sec, coupled to G.E. galvanometer free period 3.4 sec, recording vertical component of velocity.

No.	Date	Phase and component	Time G.M.T.	Period sec.	Amplitude microns and direction	Epicentral distance	Notes
1	1	ePZ	01 12 15			76°	H 01 00 26 (USCGS)
		MN	02 00	18	2		
2	1	ePZ	01 20 35			76°	H 01 09 00 (USCGS)
3	2	ePE	12 52 48			18°	H 12 48 50 (BCIS)
		ME	12 59				
4	3	ePZ	21 57 41			73°	H 21 46 18 (USCGS)
5	4	iPNEZ	03 47 58	in minute break		61°	H 03 37 45 (USCGS)
		iPPZ	50 16		+		
		iSNE	56 16		+ +		
		iXNE	56 20		+ +		
		MN	04 16	15	370		
		MZ	04 18	11			
6	4	MN	12 00	12	2		
7	4	ePN	13 30 29			62°	H 13 20 08 (USCGS)
		eSN	38 18				
		MN	13 55	20	3		
8	9	eSE	01 40 39			95°	H 01 16 09 (USCGS)
9	10	MN	15 51	22	20		
10	13	iPEZ	01 43 40		- -	76°	H 01 31 57 (USCGS) .02 deep
		iSE	53 24.		-		
11	13	iPZ	01 52 32		+	40°	H 01 44 59 (USCGS)
		iXEZ	52 33		- -		
		iXE	53 24		-		
		iPPZ	54 00		+		
		iXE	54 03		-		
		iPPPZ	54 25		+		
		iPcPEZ	54 43		+ +		
		iXNZ	55 06		- -		
		iSEZ	58 29		+ -		
		iSSE	02 01 19		-		
		ME	02 15	12	80		
12	13	MN	21 15	16	5		
13	16	iPZ	17 38 45		-	66°.5	H 17 27 47 (USCGS)
		eSN	47 35				
		MN	18 04	20	8		

DURHAM UNIVERSITY OBSERVATORY, ENGLAND

SEISMOLOGICAL BULLETIN FOR DECEMBER 1957 sheet 2

No.	Date	Phase and component	Time G.M.T.	Period sec.	Amplitude microns and direction	Epicentral distance	Notes
14	17	iPZ	05 22 16		-	80°	H 05 10 11 (USCGS)
		iXE	30 53		-		
		iXN	31 54		-		
		iSN	32 20		-		
		ME	06 03	12	9		
15	17	iPKPNEZ	14 09 25		- - -	136°.5	H 13 50 05 (USCGS)
		iPPEZ	12 10		+ -		
		iXNE	12 13		+ -		
		iXZ	12 55		+		
		iPKSNE	13 04		+ +		
		iXE	15 37		+		
		iXN	16 20		+		
		iXNEZ	16 50		+ - -		
		MN	14 57	25	85		
16	23	iPZ	12 40 27		-	32°	H 12 34 03 (USCGS)
		iPPZ	41 32		-		
		iSE	45 25		-		
		MN	12 48	15	21		
17	25	iPZ	16 36 51		-	65°	H 16 26 01 (USCGS)
18	27	ME	07 59				
19	28	ME	15 23				
20	31	iPZ	10 25 37		-	19°	H 10 21 22
		iXN	27 58		+		
		iSN	29 02		+		
		MN	10 31	15	8		
21	31	MN	12 08				
22	31	MN	13 16	18	2		
23	31	iPKPZ	14 48 21		-		
		iPKPZ	49 28		-		
		iPPZ	53 19		-		
		MN	16 09	22	3		

31 January 1958