DURHAM UNIVERSITY OBSERVATORY, ENGLAND

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

SEISMOLOGICAL BULLETIN FOR 1975 JANUARY

...instr... Wilson-Lamison seismometer free period 1 sec. coupled to G.E. galvanometer free period 3.4 sec., recording vertical component of velocity.

Milne-Shaw free period 12 sec., damping ratio 20:1, magnification 250, recording N and E components displacements.

		Time G.M.T.	Period sec.	Amplitude microns and direction	Epicentral distance	Notes
1		04 05 20			61°	H 02 55 12
		05 24		-		.01 deep
		05 38		+		(USCS)
2	SI	09 20 29		-	7...	H ... 59 00
	M	09 49				(USGS)
6		19 22 33		-	8... .5	H 19 09 53
						(USGS)
8	SI	02 23 02		+	10...	H 01 58 55
						.01 deep
						(USGS)
9		19 37 42		-	2... .5	H 19 2... 33
		41 52		+		(NCIS)
	M	19 48				
17	P	09 49 56		+	14...	H ... 30 42
						.02 deep
						(USGS)
18		09 10 57		+	14... .5	H ... 51 18
						(USGS)
19	P	08 12 01		-	5... .5	H ... 08 03
		12 55		+		
		15 36		+		
		20 05		+		
		20 25		-		
		22 04		-		
		23 57		-		
		08 41	20	185		
		08 40				
		02 20 27		+		
		30 11		-		

refiol = 16809

DURHAM UNIVERSITY OBSERVATORY, ENGLAND

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

SEISMOLOGICAL BULLETIN FOR 1975 FEBRUARY

...nstrument :- Wilson-Lamison seismometer free period 1 sec. coupled to G.E. galvanometer free period 3.4 sec., recording vertical component of velocity.

Milne-Shaw free period 12 sec., damping ratio 20:1, magnification 250, recording N and E component displacements.

Date	Phase and component	Time G.M.T.	Period sec.	Amplitude microns and direction	Epicentral distance	Notes
2	e Z	07 36 20			72°.5	H 07 .. 53 (USGS)
2	e Z	08 55 14			72°.5	H 08 .. 39 (USGS)
	i N	56 48		+		
	i N	58 30		-		
	i E	09 04 39		-		
	iSKN	05 19		+		
	i N	06 35		-		
	iSKE	09 32		-		
	N	09 39	16	105		
	Z	09 39	16			
	N	09 43	18	130		MLH 7.0
2	iPKPZ	16 10 13		+	142°.5	H 15 51 27 .07 deep (USGS)
2	iPZ	16 29 12		+	77°.5	H 16 17 24 .01 deep (USGS)
2	iPZ	19 24 07		-	58°.5	H 19 14 10 (USGS)
3	iPZ	01 14 58		+	77°.5	H 01 03 25 .03 deep (USGS)
	ipPZ	15 49				
4	iPZ	11 47 43		-	73°.5	H 11 36 07 (USGS)
	iPZ	47 50		-		
	iPPE	50 31		-		
	iPN	52 15		+		
	iSN	57 09		+		
	iSSE	12 01 56		+		
	iLQN	05 42		-		
	iLRE	11 39		-		
	MN	12 24	15	240		MLH 7.3
	MN	15 [illegible]	15	[illegible]		

Date	Phase and component	Time G.M.T.	Period sec.	Amplitude microns and direction	Epicentral distance	Notes
		05 10 46		-		
		06 03	22	16		04 44 (U)
		50				
		08				11 19 (U)
		19 14 38		-		
		07		-		21
		19 20	10	3		
		01 2 54		+		46
		05 17 39		+		56 ep
		05 42 27		-		00
		08 47 39		-		07
		5 27		-		
		5 12		-		
		5 32		+		
		09 0 27		-		
		09 2	20	33		
		22 2 39				38
		2 45		+		p
		2 49		-		
		2 24		-		
		2 24		-		
	S	40 14		-		
	S	48 42		-		
		03 09 26		-		9 p
		07 53 29		-		1
		04 56 01				
		05 01 42		-		
		14 47 59		-		
		18 34 0				
		30 51		-		
		19 01 0		+		

DURHAM UNIVERSITY OBSERVATORY, EN...

54°46'N, 01°35'W, height above M.S... 103 ...

SEISMOLOGICAL BULLETIN FOR 1975 M...

...ilson-Lamison seismometer free perio... 1 sec
...G.E. galvanometer free period 3.4 sec ... recor...
...omponent of velocity.

...lne-Shaw free period 12 sec., dampi... ...ratio...
...agnification 250, recording N and E ... ...compone...

Time G.M.T.	Period sec.	Amplitude micron and direction	Epicen... distan...
15 06 24			91°.
14 30 37			36°.
36 22			
09 57 09		-	51°.
00 41 02			113°
41 55		-	
47 41		-	
57 49		+	
01 32	20	15	
02 42	20		
10 46 23		-	144°
46 37		-	
49 59		+	
13 59 10		-	70°
02 50 05		-	145°
07 13 33		-	49°.
20 40			
07 34	20	20	
15 11 30		+	72°.
17 47 44		-	76°
08 51			18°.

	...and ...ponent	...ime ...M.T.	Period sec.	Amplitude micr... and direction
13	iPKPZ 1	05 02		+
	...PKPZ	05 26		+
	iPPZ	08 33		-
	...KSN	15 08		-
	MN 1	59	30	50
	MN 2	08	24	27
14	iPN 0	05 06		+
	iSE	08 20		+
14	ePZ 0	16 11		
16	ePZ 1	32 40		
17	iSE 0	20 36		-
	MN 0	25	15	10
17	ePZ 0	40 26		
	iSN	44 43		-
	ME 0	49	15	27
17	ME 2	23	20	3
18	iPZ 17	33 49		+
	eSE	44 05		
	iPSE	45 00		-
18	eSN 19	02 55		
	ME 19	21		
23	ePZ 07	45 32		
	iPcPZ	45 37		-
	ePPZ	49 15		
	iSKSE	56 09		-
	iSE	56 33		+
	iScSN	56 50		-
	iSS... 0...	02 05		-
	MS 08	23	20	160
	ME 08	32	12	43
	MZ 08	32	12	
24	ePZ 02	36 18		
24	iPZ 05	43 19		-

e .T.	Period sec.	Amplitude micron and direction	picentral distance
3 22		-	78°.5
5 21		+	99°.5
			65°.5
0 15		-	23°.5
0 18		+	
1 03		-	
4 25		+	
5 53		-	
9	16	150	
1	15	120	
	15		
42 03		-	67°
0 56		-	
5 15			
11	15	8	
46 17		+	58°
4 14		-	
10 20	15		
23 00 20		+	95°.5
01 32			
23 32	21	24	
01 50 12		-	87°
			89°.5
03 04 52			
03 44	20		
03 52	10		
10 42	10		55°
			148°
11 01 53			

HAM UNIVERSITY OBSERVATORY, EN

°46'N, 01°35'W, height above M.

SMOLOGICAL BULLETIN FOR 1975 J

s: n-Lamison seismometer free per
ometer free period 3.4 sec.,
n of velocity.
l e-Shaw free period 12 sec., da
ification 250, recording N and

			Time	Period sec.	Amplitude microns and direction	
		PKP	1 04			11 (US
4		KP	55			20 0 U
7		eP	43			19
		SKS	03			.01
		eS	38			(US
8		ePZ	24			09
		PPZ	32		-	U
		iS	18		-	
		ScS	48		-	
		SS	18		+	
		M		20	65	
		M		16	46	
		M	5	16		
8		iP	15		-	2 +
		PcP	46		-	.02 d
		PP	09		-	US
		iS	48		+	
		ScS	27		+	
		SS	37		-	
		SS	46		+	
		M		20	50	
8		iP	02		+	2
		PP	26		-	US
		S	38		-	
		ScS	39		-	
		SS	30			
		M		18	5	
9		eP	08			2

S)

Period sec.	Amplitude microns and direction
25	
16	
07	
18	
24	
28	+
38	
	-
07	+
19	5
	-
43	
59	+
	+
	-
	-
	+
	+
	+
	-

1975 July sheet 3

Phase	Component	Start	P	H.T.	Period sec.	Amplitude microns and direction	Notes
PKP	PZ	23	3	36			
PKP	PZ		3	39		-	19 5 (USC
PP			3	46		-	
SKS			3	02		-	
SKS			3	06		+	
MN		23	4		20	55	LH 7.
PKP	PZ		4	23		+	
ME		24			20	4	23 C (USC
PP	PZ	02		04		+	H 5. 02 C
PP				26		-	(USC
SKS	E			47		+	
PKP	PZ	02		58			
PP	Z			14		+	02 3
PP				08		-	USC
SKS				17		+	
SKS				37		-	
SN		3			20	17	6.
PP	F	3		06		-	3 2
							USC
				18			9 2
							USG
				32		+	1 4
				35		-	BDI
				09		-	
				18		+	
				20		+	
				43			3 0
							SG
	P			26		-	0 0
							9
							SG
				32		+	4
							SG
	P			13		+	1
				21			CI
				05		-	0
							G

	Period sec.	Amplitude microns and direction		
1		-		0
			2	10
0		-	.5	58
0	14			
				22
				15
0				13
	25	6		
				45
	12			20
				30
		+		27

... °, 01 55 W, height above M... re

SE... GICAL BULLETIN FOR 1975 AU...

tru... ...lso-I... ...on seismometer free period
...alvanom... free period 3.4 sec., recc... velocity.
...ompone... ...velocity.
...ine-Sh... ...ee period 12 sec., damping
...gnific... 250, recording N and E cc...

Pl... cc...	Time G.M.T.	Period sec.	Amplitude microns and direction	
	20 31			
	31		+	
	34			
	41			
	41			
	21 01	18	6	
	2		-	
	3		-	
	3		+	
	3		+	
	11 0...	15	8	
	21 10		-	
	12 2...			
	2...		+	
	12 5...	20		
	18 08 2			
	13 3			
	18 21			
	21 49 0		+	
	2... 29	20	5	
	15 14 3		-	
	3 5			
	20 30 5		-	
	33 1		+	
	17 11 2			
	17 59	20		
	06 54 51			

Period sec.	Amplitude micro... and direction	Epicen... dista...	...te...
		96°	25 de...
	+		...GS)
	+		
	+		
	-		
20			
			39
			...GS)
		86°	21
	-		...
	+		...S)
28	10		.8
15	5		
10		15°	06
			...S
	-	126°	
			...S)
			8
	+		...S)
	+		
	-		
	-		
	-		
	-		
	+		
18	20		
			...19)
	+		
	-		...de
			...GS)
	+	146°.5	24 7
			...de p
			...GS)
	-	156°	29
			...GS)
	+		57
			...de
			...GS)
	+	145°.5	13
			...de

pat...	...e and ...om...ponent	Period sec.	Amplitude mic... and directio...	Epicer... dista...
22	...PZ	23	-	79°.
	eSE	23		
	me	20		
23	eP...PZ	41		119°
23	...PZ	02	-	29°
	...XZ	12	+	
	...XZ	38	+	
	iPc...PZ	09	-	
	...E	04	+	
	iS...E	02	-	
	iS...N	12	-	
23	i...Z	21	-	70°
	ipPZ	56	-	
	...C	16	+	
	i...E	20	+	
23	...S	29	+	102°
	eS...N	24		
	...I		20	
23	eP...	07		150°
24	iP...	43	+	65°
24	...PKPPZ	29	-	132°.5
25	iP...	10	-	77°
25	eP...	11		93°.5
	SKS...	12	+	
	eS...	08		
	eSS...	09		
26	...PKP...	07	-	149°.5
	...PKP...	09	-	
27	...PKP...	46		149°
20	iP...	14	+	108°.5
29	...PKP...	16	+	162°

...T.	sec.	and directi...
35		
31		-

...NIVERSITY OBSERVATORY, EN...

...Po... io... - ..., 01°35'W, height above M... 103 m...

...S... GICAL BULLETIN FOR 1975 SE...

...nt - W... ls ... son seismometer free perio... 1 sec. c...
... g... lv ... r free period 3.4 sec., re...ring ver...
... c... mp... f velocity.
... M... ln... free period 12 sec., dampi...ratio 20:1
... m... gn... on 250, recording N and E

...se... d T... po... t G...

	Period sec.	Amplitude microns and direction	
N ...			+
E ...	20		
Z ...			+
N			
E ...	18		
...			-
...			+
...			-
...	10		6
...			
...	16		
...			-
...			+
...			-
...			-
...			-
...			+
...			+
...	20		72
...			+
...			-
...			

...sheet 2

...se and ...ponent	...me ...M.T.	Period sec.	Amplitude and direct	...pic ...dista...
iPZ	3 01		+	91°
iPZ	6 41		+	
iSN SE	3 37		-	
iSE	4 14		-	
iSSE	0 23		+	
ME	9	22	7	
iPZ	5 39		-	25°
iSE	0 09		-	
ME	5	20	2	
iPZ	9 53		-	72°
PKPZ	3 11		-	146°
PKPZ	7 13		+	116°
PKPZ	1 33		-	119°
ME		20		19°
iPZ	0 42		+	19°
eSE	1 18			
PKPZ	28		-	13°
iPZ	29		+	°
iSN	54		-	
eSE	13			0°
iPZ	20		+	°
iPZ	57		-	°
iSE	29		+	
iXE	27		-	114°
eXN	19			
ME		22		
MN		19		
iPZ	38		+	73°
eSE	31			

1975 September sheet 3

Pha... com...	...an... ...ent...	T.	Period sec.	Amplitude mi... and directi...	...on...
	PZ	08		-	1
	SE	18		-	(
i	SE	34		+	
	MN		17		1
					(
	PZ	38		-	0
	PZ	56		+	.
	SN	08		+	(
	SN	44		-	
i	PZ	25		-	0
	MN		19		(
		03		-	
			20		1
		58			(
		41		-	17
			20	17	(
			17	15	
		35		-	
	iP	07		-	
		26		-	
			25	20	
		07		-	
		15		-	

April,

M UNIVERSITY OBSERVATORY, E N

46'N, 01°35'W, height above

OGICAL BULLETIN FOR 1975 OC

Lamison seismometer free per
meter free period 3.4 sec.,
nt of velocity.

aw free period 12 sec., dam
cation 250, recording N and

e T.	Period sec.	Amplitude micro and direction
55		-
01		-
29		-
23		-
	20	55
12		-
17		+
4		-
1		-
	15	72
9		-
4		-
4		-
3		-
7		+
1		+
	20	28
6		+
3		-
2		-
1		+
3		-
3		+
6		-
4		

	ase a mpone	T G.	Period sec.	Amplitude microns and direction		Note
7	iP	13 28		+	57°	46
	ipP	28		-		
	N	13 4				
0	iPKI	06 0		+	147°	17
						e
0	iPKI	16 0		-	137	18
1	iPKI	14 5		+	150	1
	iPKI	5		-		
	iP	5		-		
	iSKS	15 02		+		
	iSKKS	0		-		
	cPPKI	0		+		
	iSKS	0		-		
	iS	1		-		
	N	16 0	20	145		
	N	16 0	20			
1	iPKP	15 14		+	149	0
1	I	19 1	20	5	121	0
3	iPKI	21 1		+	150	2
3	iPKI	22 3		-	150	3
8	iPK	03 57		-	149	4
6	e	13 3			63	0
7	iPKP	03 5		+	118	5
	iP	5		+		e
	iSK	5		-		
7	e	19 4				
	e	5				
	eScS	5				
		20 1	15	3		
8	3	09 0		-		0
0		23 4	20	10		

1975 October sheet 3

G.M.T.	Period sec.	Amplitude micr... and direction	Ep... d... al ...e	
35			9...	H 1...
33				(U...)
02				
	18	18		MLH
41		-	13...	H 2...
				(U...
	19	10	9...	H 2...
				(U...)
				MLH
23		-	9...	H 1...
	20	12		(U...
				MLH
39		+	0...	H 10
45		+		(U...
20		+		
	20	7		MLH
22				H 18
41		+		(U...
59		+		
	22	15		MLH
01		-		H 06
47		+		(U...
24		-		
02		-		
06		+		
	20	12		MLH
28		-	.5	H 14
36		+		(US...
09		+		
29		+		H 04
				(BC...
57			.5	H 05
				.01
				(USC...)
58		-		H 06
				(USC...
27		-		H 01
44		+		(USC...
29		+		
18		-		

te	Phase and component	T C	Period sec.	Amplitude micron... and direction	tr... nc...
	iPZ	12		-	o
	iPcPN			+	
	iP...Z			+	
	eS...E				
	i...E	08		+	o
	iSKSZ			-	
	iP...Z			-	
	iSK...E			+	
	i...N			-	
	iS...E	09		-	
	...N	09	20	260	
	e...Z	23			o

...t ...ril, 1977

M UNIVERSITY OBSERVATORY, E...

°46'N, 01°35'W, height above ... 103 metres

MOLOGICAL BULLETIN FOR 1975 N... R

n-Lamison seismometer free pe... sec. ple
nometer free period 3.4 sec., ... ding ver tica
nent of velocity.

-Shaw free period 12 sec., dam... ration 200:1,
fication 250, recording N and ... ponent displ...

	.T.	Period sec.	Amplitude micro... and direction		icentra... distanc...	
	31		-		71°	
	57					
	37		-			
	57					
P	21		-		106°	H
K	59		-			
	39		-			S
		25	36			MI
	41		-		143°.5	H
	58		+		142°	H
	52		+		20°.5	H
	54		-		87°.5	H
	05		-		87°.5	H
	04		-		100°	H
	38		-		135°	H
	33		+		105°.5	H
	06		-		59°.	H
	26		-		98°	H

1975 November sheet 2

	Phase and component		T.	Period sec.	Amplitude microns and direction	
11	iPZ	04	37		-	
	eSE		43			
1	ePE	0	42		+	
	eSE		34			
	ME	0		15		
12	iPZ	09	32		-	
	iXE		30		-	
1	iPZ	21	18		+	
	iSN		44		-	
12	ME	23		12		
1	PZ	03	16		+	
1	PZ	1	13		+	
13	MN	17		15		
15	PZ	1	53			
	PZ		58		-	
	iP PZ		03		+	
	SE		01		-	
	iS SE		18		+	
	e SE		26			
	MN	16		20	2	
15	PZ	20	12		-	
	e PE		23			
	iS SN	21	15		-	
	E		23		+	
	MN	21		19	12	
16	iP PZ	16	29		+	
19	iP PZ	03	31		-	
19	PZ	04	55		-	
19	iP PZ	06	29		+	

	Period sec.	Amplitude microns and direction		entral tance	
.T.					
48		+	2	.5	H 10 (US
02		-			H 07 (US
15		+	10	.5	H 14 (US
19		-			H 08 (US
	22				
37		+	14		H 14 .09 (US
38		-			H 20 (US
30		-			
40		-			
37			10		H 02 (US
13		-			
12					
16		-			
04		+			
	20	7			MLH 6.
	20	2	11		H 10 (US
					MLH 5.
36			10		H 13
02		+			(USG3)
26		-			
34		+			
44			10		H 14 (US
26		-			
24		+			
05		+			
44		+			
	22	180			MLH 7.
	22				
43		-		.5	H 20
13		-			(US
48		-			
23					
	19	8			MLH 5.

D... ...M UNIVERSITY OBSERVATORY, ENGLAND

Posi... ...on:-5... ...5'N, 01°35'W, height above M.S.L. 10...

SE... ...OLOGICAL BULLETIN FOR 1975 DECEMBER

In... ...ments: Wilso... ...amison seismometer free period 1 sec... ...G.E
galva... ...eter free period 3.4 sec., recordin...
compo... ...t of velocity.

Milne-... ...w free period 12 sec., damping rat...
magni... ...tion 250, recording N and E compon...

Da...	Phase	d	T...		Period	Amplitude microns	Epic...
	compone...	t	G...	T.	sec.	and direction	dis...
		Z	23	33		+	10
		N		43			
		Z	07	24		+	7
		Z	12	27			7
		Z	14	59		-	11
		Z		49		+	
		Z	20	11		+	
		E		24		-	
		Z	04	21			17
		Z	22	19		+	
		E	23	44		-	
		E		15		+	
		N	23		12	6	
		N	09	24		-	14
		N	10		25	11	
		Z	03	59			
		Z	18	17			
		Z	10	39			
		Z	16	04			

1973 December sheet 2

ate	ime G.M.T.	Period sec.	Amplitude microns and direction	Epicentral distance		
	05 05 27		+	46°	H	7
	02 50			00°	H	0
	36 36			32°	H	6
	43 58		-			
	17 59			7°	H	6
	56 02		-			
	06	13				
	04 06			15°	H	3
	40 25			22°	H	8
	14 38					
	17	11				
	18 19			00°	H	0
	52 02		-			
	59 10		-			
	00 14		-			
	10	22	12		MLH	
	01 09		-	29°	H	0
	03 24					
	11 31		-	72°	H	2
	12 24		-	35°	H	2
	04 41		+	71°	H	1
	13 19					
	6 44		+			
	2					
	12 54		+	22°	H	16
	7 04		-			
	2					
	13 22		-	14°	H	15
	15 38		+			
	9					
	7			14°	H	16

Phase and component	G	Period sec.	Amplitude microns and direction
N	17		
Z	20 1		+
Z	05 9		-
E	05		
Z	22 5		-
Z	2		+
E	4		-
E	22	10	2
Z	22 1		
E	4		-
Z	23 5		-
Z	6		+
Z	4		-
E	0		-
E	4		-
E	4		-
E	6		-
N	24	50	50
N	24	20	20
Z	16 8		+
Z	9		+
Z	7		-
N	0		+
N	17	20	140
Z	17	20	
Z	09 8		-
E	10		

May, 1 7