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DATE	GMT OF FIRST MOTION					TYPE OF ONSET	OBSERVABLE ON									REMARKS
							SP			LP						
							NS	EW	Z	NS	EW	Z				
26 DEC 67	09	36	55.0			I	-	*	D	*	*	*				
26 DEC 67	22	35	05			E	*	*	*	*	*	*				
27 DEC 67	02	38				E	-	-	-	*	*	*				
27 DEC 67	05	10				E	-	-	-	*	*	*				
27 DEC 67	09	28	05.0			I	S	E	D	S	E	D				
28 DEC 67	05	33	26.0			I	*	*	D	*	*	*				
28 DEC 67	22	20	20			E	-	-	-	N	W	U				
30 DEC 67	04	29	44.0			I	*	E	D	*	*	*				
02 JAN 68	00	40	03.0			I	*	-	D	*	*	*				
02 JAN 68	22	55	18.4			I	N	E	U	-	-	-				
03 JAN 68	04	18	29.0			I	*	*	D	*	*	*				
03 JAN 68	07	46	37.0			I	*	*	D	-	-	-				
03 JAN 68	10	26	21.0			I	N	*	D	-	*	-				
04 JAN 68	01	07	56			E	*	*	D	-	-	*				
06 JAN 68	00	26	32			E	*	*	*	RF	RF	RF				
06 JAN 68	19	32	54			E	N	E	D	RF	RF	RF				
06 JAN 68	23	38	22.6			IP	N	*	D	*	*	*				
07 JAN 68	10	15	22			E	*	*	D	RF	RF	RF				
08 JAN 68	18	54	16			E	*	*	U	-	-	-				
08 JAN 68	20	30	57			E	*	*	U	-	-	-				
08 JAN 68	22	43				E	RF	RF	RF	*	*	*				
11 JAN 68	09	44	30.8			E	*	*	U	RF	RF	RF				
11 JAN 68	07	23				E	RF	RF	RF	-	*	*				
13 JAN 68	16	17	29			I	*	*	D	*	*	D				
14 JAN 68	12	44	22			E	*	*	*	*	*	*				
14 JAN 68	17	53	20.0			I	*	*	U	*	*	*				
15 JAN 68	01	44	57			E	*	-	*	*	*	*				
15 JAN 68	02	12	02.0			I	*	*	U	*	*	*				
16 JAN 68	16	53	40.5			I	*	*	D	*	*	*				
19 JAN 68	06	23	29.0			I	*	*	D	*	*	*				
19 JAN 68	14	52	02			E	-	-	D	-	-	-				
19 JAN 68	18	21	04.8			IP	N	E	U	-	-	-				
19 JAN 68	20	45				E	-	-	-	*	*	*				
19 JAN 68	22	26	51			E	*	*	U	-	-	-				
20 JAN 68	21	39	35.0			I	*	*	D	-	-	-				
20 JAN 68	21	47	52.0			I	*	*	D	-	-	-				
21 JAN 68	01	40	10			I	*	*	U	-	-	-				
21 JAN 68	16	53	48			E	*	*	*	*	E	D				
21 JAN 68	23	50	25.0			E	*	*	D	*	*	*				
22 JAN 68	03	15				E	*	*	*	*	*	*				
23 JAN 68	16	17	00.0			I	*	*	D	*	*	*				
24 JAN 68	10	07	44			E	-	-	*	-	-	-				
24 JAN 68	11	32	32.0			I	-	-	U	-	-	-				
25 JAN 68	05	05	15.0			I	*	*	U	*	*	*				
25 JAN 68	12	37	15			E	*	*	*	*	*	*				
28 JAN 68	01	58	00			E	-	-	*	-	-	-				
28 JAN 68	08	53	18			E	-	-	*	-	-	-				
29 JAN 68	05	13	21.2			I	*	*	D	-	-	-				
29 JAN 68	09	52				E	-	-	-	*	*	*				
29 JAN 68	10	31	46.7			I	-	-	U	S	E	U				

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DATE		GMT OF FIRST MOTION				TYPE OF ONSET	OBSERVABLE ON						REMARKS	
							NS	SP			LP			
29	JAN	68	10	31	47.6	I	S	E	*	S	E	U		
29	JAN	68	16	55	31	E	*	*	U	*	*	*		
29	JAN	68	21	01	14	E	*	*	U	-	-	-		
30	JAN	68	01	42	55	E	*	*	U	-	-	-		
30	JAN	68	03	14	27	E	*	*	U	-	-	-		
30	JAN	68	04	02	53.0	IP	E	N	D	-	-	-		
30	JAN	68	20	22	58.4	I	*	*	D	*	*	*		
31	JAN	68	02	13	42.5	I	S	E	D	*	*	*		
01	FEB	68	08	05	11	E	-	-	*	-	-	-		
01	FEB	68	13	00	05	E	*	*	*	-	-	-		
03	FEB	68	05	42	27.2	I	W	N	D	*	*	*		
03	FEB	68	15	46	20	E	*	*	*	-	-	-		
04	FEB	68	09	23	06	E	-	-	*	-	-	-		
04	FEB	68	11	13	35	E	-	-	*	-	-	-		
04	FEB	68	11	37	25	E	-	-	*	-	-	-		
06	FEB	68	11	30	27	E	*	*	U	-	-	-		
06	FEB	68	22	55	08.5	I	*	*	U	*	*	*		
07	FEB	68	08	42	30	E	*	*	*	*	*	*		
10	FEB	68	01	36	50	E	-	-	*	-	-	-		
10	FEB	68	10	12	20.0	I	*	*	U	-	-	-		
12	FEB	68	06	00		E	-	-	-	*	*	*		
12	FEB	68	06	03	35	E	*	*	*	*	*	*		
12	FEB	68	10	30	05.9	I	*	E	D	*	*	*		
14	FEB	68	23	54	34	E	*	*	*	-	-	-		
15	FEB	68	02	52	57	E	*	*	D	-	-	-		
19	FEB	68	22	57	18.5	I	*	*	U	N	E	U		
20	FEB	68	02	27	20.0	I	N	*	U	*	*	*		
20	FEB	68	05	14	51.0	I	*	*	U	*	*	*		
21	FEB	68	06	28	38	E	*	-	*	-	-	-		
21	FEB	68	15	36	08	E	*	*	*	*	*	*		
21	FEB	68	16	52	20	E	-	-	-	*	*	*		
21	FEB	68	19	40	36	E	-	-	*	RF	RF	RF		
21	FEB	68	21	18	22	E	*	*	*	-	-	-		
21	FEB	68	21	25	31	E	-	-	*	-	-	-		
21	FEB	68	21	29	11	E	-	-	*	-	-	-		
22	FEB	68	17	57	28.0	I	*	*	U	*	*	*		
23	FEB	68	08	23	24.0	I	*	*	D	*	*	*		
23	FEB	68	09	42	56.5	I	*	*	U	-	-	-		
25	FEB	68	18	18	49.5	I	*	E	U	*	*	*		
26	FEB	68	09	39	54.0	I	*	*	U	-	-	-		
26	FEB	68	10	50	08	E	*	*	*	-	-	-		
26	FEB	68	11	05		E	-	-	-	*	-	*		
26	FEB	68	11	08	58.6	I	*	*	D	*	*	*		
27	FEB	68	05	38	46	E	-	-	*	-	-	-		
28	FEB	68	12	21	08.4	I	*	*	U	*	*	*		
28	FEB	68	15	09	42	E	*	*	*	-	-	-		
29	FEB	68	15	42	45	E	*	*	*	-	-	-		
02	MAR	68	03	21	50	E	-	-	*	-	-	-		
03	MAR	68	23	16		E	*	*	*	*	*	*		
05	MAR	68	00	31	48	E	*	*	D	-	-	-		

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DATE		GMT OF FIRST MOTION				TYPE OF ONSET	OBSERVABLE ON							REMARKS
							SP			LP				
							NS	EW	Z	NS	EW	Z		
05	MAR	68	00	40	33	E	*	*	U	-	-	-		
05	MAR	68	18	35	42.0	I	*	*	D	*	*	*		
05	MAR	68	19	44	39.5	I	N	*	D	*	*	*		
07	MAR	68	07	29	52	E	*	*	U	*	*	*		
07	MAR	68	13	41	12.5	I	*	*	D	*	*	*		
08	MAR	68	05	39	27	E	*	*	*	-	-	-		
09	MAR	68	08	44	15.4	I	*	*	U	-	-	-		
10	MAR	68	04	00	03	E	*	*	U	-	-	-		
10	MAR	68	07	22	36	E	*	*	*	-	-	-		
10	MAR	68	07	30	09.5	I	*	*	D	-	-	-		
11	MAR	68	08	40	28.3	I	*	-	U	-	-	-		
12	MAR	68	09	38	02.8	I	N	W	U	-	-	-		
14	MAR	68	10	15	26	E	*	*	D	-	-	-		
14	MAR	68	19	42		E	-	-	-	*	*	*		
15	MAR	68	07	32		E	-	-	-	*	*	*		
17	MAR	68	20	33	36.7	I	-	-	U	*	*	*		
19	MAR	68	02	25	16	E	*	*	*	*	*	*		
19	MAR	68	07	59	40	E	-	-	-	*	*	*		
20	MAR	68	06	30	43.9	I	E	N	U	-	-	-		
20	MAR	68	12	24	01	E	-	-	*	-	-	-		
21	MAR	68	11	41	51	I	-	-	U	-	-	-		
22	MAR	68	02	05	52.2	I	S	E	D	-	-	-		
22	MAR	68	15	06	09.5	I	E	-	U	-	-	-		
22	MAR	68	21	17	09	E	*	*	D	-	-	-		
24	MAR	68	02	57	18	E	*	*	D	-	-	-		
24	MAR	68	17	19	21.5	I	S	*	D	*	*	*		
25	MAR	68	16	37	57.0	I	N	*	U	*	*	*		
26	MAR	68	01	00	32.5	I	N	E	D	N	*	D		
27	MAR	68	22	55	49	E	-	-	*	-	-	-		
28	MAR	68	01	13	27.5	I	N	E	U	*	*	*		
28	MAR	68	07	51	28.2	I	*	*	U	-	-	-		
28	MAR	68	12	52	45	E	*	*	*	-	-	-		
29	MAR	68	20	37	43	E	*	*	*	-	-	-		
01	APR	68	00	56	00	E	*	*	*	S	E	U		
01	APR	68	07	39		E	-	-	-	*	*	*		
03	APR	68	16	35	46	E	*	*	U	-	-	-		
06	APR	68	22	59	02.5	I	*	*	U	*	*	*		
07	APR	68	04	51	13.0	I	*	*	U	*	*	*		
07	APR	68	05	25	01	E	*	*	*	*	*	*		
09	APR	68	02	35	24	EP	E	*	U	E	*	U		
10	APR	68	08	56		E	-	-	*	*	*	*		
10	APR	68	10	59		E	*	-	*	*	*	*		
11	APR	68	03	55	45	E	*	*	D	-	-	-		
11	APR	68	06	58	46	E	-	-	U	-	-	-		
13	APR	68	01	20	43	EP	*	*	U	-	-	-		
14	APR	68	14	31	28	E	*	*	*	-	-	-		
15	APR	68	07	56	06	E	S	*	D	-	-	*		
19	APR	68	05	18	23	E	*	*	*	-	-	-		
19	APR	68	08	55		E	-	-	-	*	*	*		
20	APR	68	10	36	50	E	-	-	-	*	*	*		

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DATE		GMT OF FIRST MOTION			TYPE OF ONSET	OBSERVABLE ON						REMARKS	
						SP			LP				
						NS	EW	Z	NS	EW	Z		
20	APR	68	12	39	10	E	-	-	-	-	-	*	
21	APR	68	08	47	13	E	*	*	*	-	-	-	
21	APR	68	09	35	08.2	I	N	*	U	-	-	-	
23	APR	68	17	50		E	-	-	-	*	*	*	
23	APR	68	20	37	48.2	I	N	W	D	N	W	D	
24	APR	68	08	29	37.8	I	*	E	U	-	-	*	
25	APR	68	21	53	04	E	*	*	*	*	*	*	
26	APR	68	01	07		E	-	-	-	*	*	*	
26	APR	68	01	28	50.7	I	*	*	D	*	*	*	
26	APR	68	03	11	24.0	I	-	E	U	-	-	-	
26	APR	68	13	26	19	E	-	-	U	-	-	-	
26	APR	68	15	06	10.2	I	S	E	U	-	E	U	
26	APR	68	17	54	13	E	*	*	*	*	*	*	
28	APR	68	04	29	42	E	*	*	U	-	-	-	
29	APR	68	17	14	27	E	*	*	U	-	-	-	
29	APR	68	22	34	42	E	*	*	*	-	-	-	
30	APR	68	01	54	16	E	-	-	*	-	-	-	
01	MAY	68	00	03	18.5	I	*	*	U	*	*	*	
02	MAY	68	05	34	37.5	IP	S	E	D	S	E	D	
02	MAY	68	23	44	11	E	*	*	*	-	-	-	
06	MAY	68	14	43	36	I	N	*	U	*	*	*	
07	MAY	68	09	07	02	I	S	E	D	*	*	*	
08	MAY	68	12	11		E	-	-	-	*	*	*	
08	MAY	68	12	24	20.0	I	S	E	U	S	E	U	
08	MAY	68	22	00	13	E	-	-	*	-	-	-	
08	MAY	68	22	24		E	-	-	*	-	-	-	
09	MAY	68	03	10	03	E	*	*	U	-	-	-	
09	MAY	68	13	00	46	E	-	-	*	-	-	*	
09	MAY	68	16	55	51.0	I	N	E	U	-	-	-	
09	MAY	68	18	09	04	E	*	*	*	-	-	-	
10	MAY	68	09	31	14.7	I	*	*	D	-	-	-	
11	MAY	68	13	40	23	I	S	*	D	-	-	-	
11	MAY	68	15	52	39	E	*	*	*	-	-	-	
16	MAY	68	01	02	00	E	*	*	*	S	E	U	
16	MAY	68	06	43	26	E	-	-	*	-	-	-	
16	MAY	68	06	49	51.2	I	N	*	D	-	-	-	
16	MAY	68	08	02	01.5	E	*	*	*	-	-	-	
16	MAY	68	08	33	11	E	*	*	D	-	-	-	
16	MAY	68	09	11	14	E	*	*	D	-	-	-	
16	MAY	68	10	52	00.5	IP	*	*	D	N	W	D	
16	MAY	68	12	22	34	E	*	*	D	-	-	-	
16	MAY	68	16	26	51.0	I	*	*	D	*	*	*	
16	MAY	68	17	41	12.5	I	*	*	D	*	*	*	
16	MAY	68	18	56	21.2	I	*	*	U	-	*	*	
16	MAY	68	19	29	46.1	I	*	*	U	*	*	*	
16	MAY	68	20	35	14.0	I	*	*	U	*	*	*	
16	MAY	68	23	18	00.8	I	*	*	U	*	*	U	
17	MAY	68	13	15	35.5	I	S	W	D	-	-	-	
17	MAY	68	16	14	45	E	-	-	*	-	-	-	
17	MAY	68	18	30	15	E	-	-	*	-	-	-	

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DATE	GMT OF FIRST MOTION					TYPE OF ONSET	OBSERVABLE ON						REMARKS
							NS	SP	Z	NS	LP	Z	
17 MAY 68	23	06	45			E	*	*	*	-	-	-	
18 MAY 68	06	01	09.0			I	*	*	D	-	-	-	
18 MAY 68	08	08	27			E	-	-	*	-	-	-	
19 MAY 68	09	17	43			E	*	*	U	-	-	-	
19 MAY 68	09	48	27			E	-	-	*	-	-	-	
19 MAY 68	22	29	47.5			I	*	*	D	*	*	*	
20 MAY 68	03	29	21.6			*	*	U	D	*	*	*	
20 MAY 68	10	46	18.1			I	*	*	U	*	*	U	
20 MAY 68	12	05	33.0			I	N	E	U	*	*	*	
20 MAY 68	20	24	28			E	*	*	*	-	-	-	
20 MAY 68	21	22	15.2			I	*	*	U	*	*	U	
21 MAY 68	00	32	05			E	*	*	U	-	-	-	
21 MAY 68	04	24	24.1			I	N	*	U	-	-	-	
21 MAY 68	08	32	31.1			E	N	*	U	N	*	U	
21 MAY 68	11	13	16			E	*	*	*	-	-	-	
21 MAY 68	11	16	26			E	*	*	*	-	-	-	
22 MAY 68	11	04	51.1			I	N	*	D	*	*	*	
22 MAY 68	19	42	29			E	*	*	*	*	*	NR	
22 MAY 68	07	54	52			E	*	*	*	-	-	NR	
23 MAY 68	17	40	30			E	-	-	-	*	*	*	
23 MAY 68	17	43	18			E	*	*	*	*	*	*	
24 MAY 68	14	19	24			E	*	*	*	*	*	*	
24 MAY 68	16	02	19.3			I	N	W	D	*	*	*	
24 MAY 68	21	48	21			E	*	*	*	-	-	-	
25 MAY 68	12	06				E	-	-	*	-	-	-	
28 MAY 68	13	43	20			I	-	-	-	*	*	U	
28 MAY 68	13	46	21			E	*	*	*	*	*	*	
28 MAY 68	22	41	00.5			I	S	*	U	*	*	*	
30 MAY 68	00	52	25			E	-	-	-	*	-	-	
30 MAY 68	00	55				E	-	-	-	-	*	*	
30 MAY 68	17	52	24.2			I	*	*	D	-	-	-	
30 MAY 68	19	14	45			E	*	*	*	-	-	-	
30 MAY 68	20	02	10			E	-	-	-	*	*	*	
01 JUN 68	10	44	50			E	*	*	U	-	-	-	
02 JUN 68	08	37	23.4			I	-	*	U	-	-	-	
03 JUN 68	09	36	27.5			I	*	*	D	-	-	-	
04 JUN 68	22	26	06			E	*	*	*	-	-	-	
04 JUN 68	22	35	53			E	*	*	*	-	-	-	
05 JUN 68	15	30	35										
05 JUN 68	15	30	35			E	*	*	U	-	-	-	
05 JUN 68	23	16	35			E	*	*	U	-	-	-	
07 JUN 68	12	16	54.0			I	*	*	D	*	*	D	
07 JUN 68	21	16	54.0										
07 JUN 68	21	50	18			E	-	-	*	-	-	*	
08 JUN 68	00	50	31.3			E	-	-	U	-	-	-	
08 JUN 68	05	42	28.2			I	*	*	U	-	-	U	
08 JUN 68	07	35	02			E	*	*	*	-	-	-	
08 JUN 68	21	07	43.0			I	*	*	U	-	-	-	
08 JUN 68	23	43	10			E	*	*	*	-	-	*	
09 JUN 68	01	09				E	-	-	*	-	-	-	

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DATE		GMT OF FIRST MOTION				TYPE OF ONSET	OBSERVABLE ON							REMARKS
							SP			LP				
							NS	EW	Z	NS	EW	Z		
09 JUN 68		03	07	37	E	*	*	*	-	-	-			
09 JUN 68		10	27	24.3	I	N	*	U	-	-	*			
10 JUN 68		12	50	12.8	I	N	W	D	*	*	*			
11 JUN 68		05	58	12.6	IP	N	E	U	N	*	U			
11 JUN 68		10	43	44.6	IP	*	*	U	-	-	-			
11 JUN 68		11	49	13	E	*	*	*	-	-	-			
12 JUN 68		13	54	49.9	I	*	NR	U	*	*	*			
12 JUN 68		22	10	48.0	I	*	*	U	*	*	*			
13 JUN 68		21	23	42.0	I	*	*	U	*	*	*			
14 JUN 68		12	29	49.5	I	*	*	D	*	*	*			
14 JUN 68		13	35	19.0	I	*	*	U	*	*	*			
15 JUN 68		23	46	25.0	I	*	-	D	*	*	*			
15 JUN 68		14	06	09.5	I	*	E	U	*	*	*			
15 JUN 68		20	06	05.8	I	*	*	D	*	*	*			
16 JUN 68		01	14	15	E	*	*	*	-	-	-			
16 JUN 68		03	55	05	E	-	-	-	*	*	*			
16 JUN 68		05	21		E	-	-	-	*	*	*			
17 JUN 68		12	05	58.0	I	*	*	U	S	*	U			
17 JUN 68		15	02	40	E	-	-	*	*	*	U			
17 JUN 68		17	45	00	E	-	-	*	*	*	U			
17 JUN 68		22	13	44	E	-	-	*	*	*	U			
18 JUN 68		00	16	44	E	-	-	*	*	*	U			
18 JUN 68		02	30	48	E	-	-	*	N	*	U			
18 JUN 68		04	01	00	E	-	-	*	N	*	U			
18 JUN 68		05	35	08	E	-	-	*	*	*	*			
18 JUN 68		07	21	00	E	-	-	*	*	*	U			
18 JUN 68		09	04	12	E	-	-	*	*	*	U			
18 JUN 68		10	38	20	E	-	-	*	*	*	U			
18 JUN 68		12	35	40	E	-	-	*	S	*	U			
19 JUN 68		08	21	58.9	I	N	*	U	N	*	U			
19 JUN 68		09	14	12.0	I	*	*	U	*	*	*			
19 JUN 68		15	13	40	E	-	-	-	*	*	D			
19 JUN 68		16	55	38	E	-	-	-	*	*	D			
19 JUN 68		17	16	08	E	*	-	*	-	-	-			
19 JUN 68		20	10	34.5	I	S	*	D	S	*	D			
19 JUN 68		22	19	22	E	-	-	-	*	*	U			
19 JUN 68		23	47	23	E	*	*	U	*	*	U			
20 JUN 68		01	40	44	E	-	-	-	*	*	D			
20 JUN 68		02	47	02.4	I	N	*	U	N	*	U			
20 JUN 68		05	03	30	E	-	-	-	*	*	U			
20 JUN 68		04	38	18	E	*	*	*	-	-	-			
20 JUN 68		07	20	50	E	-	-	-	-	-	*			
20 JUN 68		09	19	32	E	-	-	-	-	-	*			
20 JUN 68		12	22	28	E	-	-	-	-	-	*			
21 JUN 68		00	34	33.3	I	*	*	U	*	*	*			
21 JUN 68		01	30	39.3	I	S	*	D	-	-	-			
22 JUN 68		01	25	30	E	*	*	*	-	-	-			
22 JUN 68		04	10	44	E	*	-	*	-	-	-			
22 JUN 68		09	54	40	E	-	-	-	-	-	*			
23 JUN 68		01	31	43	E	-	-	*	-	-	-			

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DATE	GMT OF FIRST MOTION					TYPE OF ONSET	OBSERVABLE ON							REMARKS
							SP			LP				
							NS	EW	Z	NS	EW	Z		
23 JUN 68	09	29	43			E	*	*	U	-	-	-		
23 JUN 68	17	02	35.8			I	*	*	D	*	*	*		
24 JUN 68	20	23	32			E	*	*	U	-	-	-		
25 JUN 68	01	27	10			E	-	-	*	-	-	*		
25 JUN 68	06	57	38			E	*	*	U	-	-	-		
26 JUN 68	01	49	12			E	*	*	*	*	*	*		
26 JUN 68	05	02	10.6			I	*	*	D	-	-	-		
26 JUN 68	10	36	44.7			I	*	*	U	*	*	*		
27 JUN 68	22	33	21.1			I	*	*	U	-	-	-		
28 JUN 68	12	28	11.5			I	*	W	U	-	-	-		
28 JUN 68	12	37				E	-	-	-	*	*	*		
29 JUN 68	06	27	43			E	*	*	U	-	-	-		
29 JUN 68	19	29	05.7			E	-	-	*	-	-	*		
30 JUN 68	20	28	02.3			I	*	*	U	*	*	*		

We acknowledge with thanks receipt of the following bulletins and other publications between 1 May 1967 to 30 June 1968:

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The Geophysical Laboratory
Department of Geology and Geophysics
201-218 Mineral Sciences Building
University Park, Pa., U.S.A. 16802
S. S. Alexander, Director
23 July 1968

THE PENNSYLVANIA STATE UNIVERSITY
EARTH & MINERAL SCIENCES EXPERIMENT STATION
DEPARTMENT OF GEOLOGY & GEOPHYSICS
GEOPHYSICAL LABORATORY
Project B-130

Seismograph Report XL

1 July 1968 - 31 May 1971

Code - SCP

S. S. Alexander, Director

G. M. Lundquist, Graduate Assistant

R. S. Pekarik, Undergraduate

R. L. Rothman, Graduate Assistant

D. E. Siskind, Graduate Assistant

Locality: The station is located in the basement of Deike Building. The instruments are mounted on concrete pillar separated from the foundations and set on bedrock (limestone). The geographic coordinates are:

$\phi = 40^{\circ} 47.65'N = 77^{\circ} 51.95'W$ $H = +352$ m

The geocentric coordinates are:

$\phi = 40^{\circ} 36'N = 77^{\circ} 52'W$ $H = +1m$

Please address all communications to:

Geophysical Laboratory
207 Mineral Sciences Building
University Park, Pennsylvania, U.S.A., 16802

JUL 9 1971

The State College Observatory is equipped with world wide standard VELA-Uniform instruments. These were in continuous operation throughout the period covered by this report except for interruptions to change records and to make repairs and adjustments. The instruments were last calibrated on November 16, 1966. The constants were:

<u>Component</u>	<u>Seismo- meter Period (sec)</u>	<u>Galvano- meter Period (sec)</u>	<u>Damping ratio</u>	<u>Sensitivity</u>
SPN	1.0	0.79	17	50,000
SPE	1.0	0.78	17	50,000
SPZ	1.0	0.75	17	50,000
LPN	15.0	100.	critical	1,500
LPE	15.0	100.	critical	1,500
LPZ	15.0	100.	critical	1,500

Events marked "LOCAL" are short-duration, high-frequency events with P-S times of 20 seconds or less. Most of these are quarry blasts in Pennsylvania and adjoining states. Only the larger of the many such events recorded daily are reported, and many of the reported events not so labeled are of this nature.

The time is controlled by a crystal clock which is checked daily against radio station WWV. Time corrections have been applied to all readings reported on this bulletin.

The recorded seismograms are filed with the Environmental Science Services Administration, Environmental Data Service, National Geophysical Data Center, Federal Building,

Asheville, North Carolina 28801, U.S.A. Copies of individual seismograms may be obtained from them in a variety of forms. The original records are returned after approximately six months and kept on permanent file in our Geophysical Laboratory.

The list which follows shows the earliest observed motion of each earthquake recorded and lists the components on which the earthquake is observable. Where readable, the direction of first motion is indicated by the following symbols:

N and S = North and South

E and W = East and West

U and D = Up and Down

i means readable to 0.1 sec on at least 1 trace

e means not readable to 0.1 sec.

RF means record failure. No seismogram exists for this earthquake on this component.

* means earthquake recorded by this component, direction of first motion not read (no implication that it is unreadable)

- means seismogram exists but body waves not strongly or not clearly recorded. Surface waves may be clearly recorded.

DATE	GMT OF FIRST MOTION					TYPE OF ONSET	OBSERVABLE ON SHORT PER LONG PER									REMARKS
							NS	EW	Z	NS	EW	Z				
01 JUL 68	04	14	07.1			I	*	*	U	-	-	-				
01 JUL 68	10	58	34.6			I	*	*	U	*	*	U				
02 JUL 68	03	50	55.8			I	N	*	U	S	W	D				
02 JUL 68	18	59	12			E	-	-	*	-	-	-				
03 JUL 68	01	27	03.6			I	*	*	*	*	*	*				
04 JUL 68	16	27	28			E	*	*	*	-	-	-			LOCAL	
04 JUL 68	21	59	29			E	*	*	U	*	*	D				
05 JUL 68	00	52	00.5			I	N	E	U	*	*	*				
05 JUL 68	07	26	17.1			I	-	-	D	-	-	-				
05 JUL 68	11	41	26.3			I	N	*	D	S	E	U				
06 JUL 68	19	45				E	*	*	*	-	-	-				
07 JUL 68	01	18	51			E	-	-	D	-	-	-				
07 JUL 68	23	12	45.2			I	*	*	U	*	*	*				
07 JUL 68	23	56	33.5			I	N	*	U	*	*	*				
08 JUL 68	16	54	18			E	-	-	D	-	-	-				
08 JUL 68	17	52	57.5			I	-	-	U	-	-	-				
12 JUL 68	00	57	43.0			I	S	*	D	*	*	D				
12 JUL 68	04	09	35.2			I	*	*	D	*	*	*				
12 JUL 68	09	31	41.0			I	*	*	D	*	*	*				
12 JUL 68	16	14				E	*	*	*	-	-	-				
13 JUL 68	06	57	23.4			I	*	*	D	-	-	-				
13 JUL 68	16	29	05			E	*	*	*	-	-	-				
14 JUL 68	04	01	09			E	*	*	*	-	-	*				
14 JUL 68	11	09	33			E	-	-	U	-	-	-				
14 JUL 68	21	35	45			E	*	*	*	*	RF	*				
16 JUL 68	13	27	06			E	-	-	U	-	RF	-				
17 JUL 68	05	42	43			E	*	*	*	*	RF	*				
17 JUL 68	06	28	29.0			I	N	*	U	*	RF	*				
19 JUL 68	05	15	35.6			I	*	*	U	*	*	*				
21 JUL 68	00	29	42			E	*	*	D	-	-	*				
21 JUL 68	01	53	42			E	*	*	*	-	-	-				
21 JUL 68	06	28	42			E	*	*	U	-	-	-				
21 JUL 68	17	48	00			E	*	*	*	*	*	*				
22 JUL 68	00	26	50			E	*	*	*	*	*	*				
23 JUL 68	18	34	36			E	*	*	*	*	*	*				
23 JUL 68	23	15	44			E	*	*	*	*	*	*				
24 JUL 68	04	13	17			E	*	*	*	*	*	*				
24 JUL 68	08	27	25.0			I	*	*	U	*	*	*				
24 JUL 68	09	41	13.5			I	*	*	U	-	-	-				
25 JUL 68	07	41	47.9			I	*	*	U	*	*	*				
25 JUL 68	11	03	09.0			I	*	*	U	*	*	U				
26 JUL 68	06	40	03			E	*	*	*	*	*	*				
26 JUL 68	14	08	39			E	S	*	D	-	-	-				
26 JUL 68	17	20	09.5			I	*	*	U	-	-	-				
27 JUL 68	02	57	50			E	*	*	*	-	-	*				
28 JUL 68	18	44	33.7			I	*	-	D	*	*	*				
28 JUL 68	21	23	44			E	*	*	*	*	*	D				
29 JUL 68	10	00				E	*	*	*	*	*	*				
30 JUL 68	00	11	18			E	-	-	*	-	-	-				
30 JUL 68	00	11	29			E	*	*	U	*	*	U				

DATE	GMT OF FIRST MOTION					TYPE OF ONSET	OBSERVABLE ON SHORT PER LONG PER									REMARKS
							NS	EW	Z	NS	EW	Z				
30 JUL 68	02	32	44			E	-	-	*	-	-	-				
30 JUL 68	20	47	15.3			I	*	*	U	N	*	U				
01 AUG 68	20	34	40			E	*	*	*	S	E	U				
02 AUG 68	14	12	46.2			I	N	E	U	N	RF	U				
03 AUG 68	05	09	00			E	*	*	*	*	*	D				
03 AUG 68	06	43	54.5			I	*	*	D	*	*	*				
04 AUG 68	12	00	19			E	*	*	U	-	-	U				
05 AUG 68	16	30	53.5			I	*	*	U	-	-	D				
05 AUG 68	16	47	03			E	*	*	*	-	-	-				
06 AUG 68	03	29	50			E	*	*	D	*	RF	*				
07 AUG 68	08	12	59.9			I	S	*	U	*	*	*				
09 AUG 68	03	19	20.5			I	*	*	U	*	*	D				
10 AUG 68	02	23	18			E	-	-	-	-	E	U				
10 AUG 68	02	25	56			P	*	*	*	*	*	D				
10 AUG 68	02	28	40			P	*	*	*	*	*	*				
10 AUG 68	04	24	50			E	*	*	*	-	-	-				
10 AUG 68	06	10	42			E	*	*	*	-	-	-				
10 AUG 68	08	29	45			E	*	*	*	-	-	-				
11 AUG 68	02	51	19.0			IP	S	E	D	-	RF	D				
11 AUG 68	12	47	49.0			IP	S	E	U	-	RF	*				
11 AUG 68	20	19	40			E	*	*	*	*	*	*				
12 AUG 68	20	44	48			E	*	*	D	-	-	-				
13 AUG 68	03	12	03			E	*	*	*	-	-	-				
13 AUG 68	06	35	20			E	-	-	*	-	-	-				
13 AUG 68	22	39	44.8			I	*	*	D	-	-	-				
14 AUG 68	08	44	58.9			I	*	*	U	*	*	U				
14 AUG 68	22	29	50			E	-	-	-	-	-	D				
14 AUG 68	22	33	32			E	*	*	*	*	*	*				
15 AUG 68	02	41	42.5			E	*	*	U	-	-	-				
15 AUG 68	05	02	06			E	*	*	*	-	-	-			LOCAL	
15 AUG 68	07	09	32			E	-	-	*	-	-	-				
16 AUG 68	18	29	57.8			I	N	*	U	RF	*	U				
16 AUG 68	21	30	54			E	*	*	U	-	-	*				
17 AUG 68	03	10	50			E	*	*	*	-	-	-				
17 AUG 68	04	19	37			E	*	*	*	RF	*	*				
18 AUG 68	06	03	13			E	-	-	*	-	-	-				
18 AUG 68	18	28				E	-	-	-	*	-	*				
18 AUG 68	18	38	20			E	*	*	*	*	E	*				
20 AUG 68	00	39	51			E	S	*	U	-	-	-				
21 AUG 68	18	16	40			E	-	-	-	-	*	*				
22 AUG 68	14	11	12.0			I	*	*	U	*	*	*				
23 AUG 68	22	46	32.7			IP	S	E	D	*	RF	D				
23 AUG 68	23	24	33.1			I	*	*	U	-	-	-				
28 AUG 68	21	01	10.3			I	*	*	D	*	*	*				
29 AUG 68	22	51	10.3			I	S	E	U	*	*	*				
31 AUG 68	11	01	08			E	*	*	*	*	*	*				
01 SEPT 68	04	59	22			E	*	*	*	-	-	*				
01 SEPT 68	07	40	55			E	*	*	*	*	*	*				
01 SEPT 68	19	16	29			E	*	*	*	-	-	-				
03 SEPT 68	08	31	44.0			I	*	*	U	*	*	*				

DATE	GMT OF FIRST MOTION			TYPE OF ONSET	OBSERVABLE ON SHORT PER LONG PER									REMARKS
	NS	EW	Z		NS	EW	Z	NS	EW	Z				
03 SEPT	6815	42	15.3	I	N	W	U	*	*	*				
05 SEPT	6802	55	38.0	I	*	*	U	-	*	*				
06 SEPT	6814	06	07.0	IP	N	*	D	*	*	*				
06 SEPT	6814	15	47	E	*	*	*	*	*	*	U			
06 SEPT	6814	18	00	E	*	*	*	*	*	*	*			
07 SEPT	6817	50	18	E	*	*	U	-	-	-				
08 SEPT	6802	30	57	E	-	-	*	-	-	-				
08 SEPT	6815	31	28.5	I	*	*	D	*	*	*				
09 SEPT	6800	43	54.5	I	*	*	D	*	*	*				
09 SEPT	6805	03	17	E	*	*	*	*	*	*	*			
09 SEPT	6818	37	19	E	*	*	U	-	-	-				
10 SEPT	6823	20	17	E	*	*	*	*	*	*	*			
11 SEPT	6818	39	03.0	I	N	*	U	RF	*	D				
12 SEPT	6823	01	31.5	I	*	*	D	*	-	*				
13 SEPT	6807	36	44.0	I	*	*	U	*	*	*				
14 SEPT	6801	45	10	E	*	*	*	-	-	*				
14 SEPT	6814	02	04	E	-	-	*	-	-	*				
15 SEPT	6805	07	50	E	-	*	*	-	-	*				
15 SEPT	6811	03	15	E	*	*	U	-	*	*				
16 SEPT	6814	14	32.4	I	*	*	U	*	*	*				
17 SEPT	6811	19	20	E	*	*	*	RF	-	*				
20 SEPT	6800	06	30.0	IP	N	E	U	N	E	U				
21 SEPT	6813	19	54.2	IP	S	E	U	S	E	U				
22 SEPT	6821	44	40	E	*	*	*	*	*	*				
22 SEPT	6822	03	21.9	I	S	*	U	*	*	*				
23 SEPT	6805	18		E	*	*	*	*	*	*				
25 SEPT	6810	44	19.9	I	*	*	U	N	E	U				
26 SEPT	6808	26	31.0	I	*	*	D	-	-	-				
26 SEPT	6818	17		E	*	*	*	*	*	*				
27 SEPT	6804	17	59.5	I	*	*	U	*	*	*				
27 SEPT	6818	01	17	E	*	*	U	-	-	-				
27 SEPT	6819	05	09.1	I	*	*	*	-	-	-				
27 SEPT	6819	25	48	E	*	*	*	*	RF	*				
27 SEPT	6822	41	48	E	*	*	*	-	-	-				
28 SEPT	6814	07	51.1	I	*	*	U	*	RF	*				
29 SEPT	6803	55	48.7	I	*	*	U	-	-	-				
29 SEPT	6819	23	48	E	*	*	*	-	-	-				
29 SEPT	6820	04	21	E	-	-	U	-	-	-				
03 OCT	68	10	25 05.7	I	-	*	D	-	-	-				
03 OCT	68	11	19 01	E	*	*	*	-	-	-				
04 OCT	68	07	11 13	E	-	-	*	*	RF	*				
07 OCT	68	15	30 18.8	I	*	*	U	-	-	-				
07 OCT	68	15	30 36.7	I	*	*	*	-	-	-				
07 OCT	68	19	33 31	I	*	*	*	N	W	D				
08 OCT	68	15	03 53.6	I	*	*	D	*	*	*				
10 OCT	68	15	24 35	E	*	*	*	*	*	*				
11 OCT	68	02	43 05	E	*	*	*	*	-	*				
12 OCT	68	02	26 28	E	-	-	*	-	-	-				
12 OCT	68	08	02 15	E	*	*	*	-	-	-				
14 OCT	68	03	18 56.0	I	*	*	D	*	*	*				

DATE	GMT OF FIRST MOTION					TYPE OF ONSET	OBSERVABLE ON SHORT PER LONG PER									REMARKS
							NS	EW	Z	NS	EW	Z				
15 OCT 68	02	29	50			E	*	*	*	-	-	-				
16 OCT 68	02	00	33			E	*	*	*	*	*	*				
22 OCT 68	06	48	00			E	*	-	*	-	-	-				
23 OCT 68	02	13	49			E	*	*	*	*	*	*				
23 OCT 68	13	45	40.0			I	*	*	U	-	-	-				
23 OCT 68	21	23	49.2			I	*	*	D	*	*	D				
24 OCT 68	01	01	19			E	-	-	U	-	-	-				
24 OCT 68	01	39	44.7			I	*	*	D	-	-	-				
24 OCT 68	16	10	19			E	*	*	*	*	*	*				
24 OCT 68	17	45	50			E	*	*	*	*	*	*				
24 OCT 68	22	47	49.0			I	*	*	U	-	-	-				
25 OCT 68	11	49	12.0			I	*	*	D	*	*	*				
28 OCT 68	23	51	09			E	-	-	*	*	-	*				
29 OCT 68	22	24	43.5			I	*	*	U	*	*	*				
31 OCT 68	09	25	27.0			I	*	*	U	*	*	*				
01 NOV 68	00	13	03			E	*	-	D	-	-	-				
01 NOV 68	04	02	21			E	*	*	*	*	*	*				
01 NOV 68	10	31	15			E	*	*	*	-	-	-				
01 NOV 68	23	35	58			E	*	*	*	-	-	-				
04 NOV 68	09	25	13.2			I	N	*	D	*	*	*				
07 NOV 68	00	56	10			E	*	*	*	-	-	-				
07 NOV 68	10	12	27.1			I	S	W	U	*	-	*				
09 NOV 68	17	03	43.3			IP	S	W	D	*	W	*				
09 NOV 68	20	49	55			E	*	*	*	-	-	-				
09 NOV 68	23	31	07.5			I	*	*	U	-	-	-				
13 NOV 68	18	54	50			E	-	-	*	-	-	*				
15 NOV 68	00	15	44.4			I	*	*	U	*	*	*				
16 NOV 68	03	39	45			E	-	-	*	*	*	*				
17 NOV 68	00	22	13.7			I	*	N	D	*	*	D				
17 NOV 68	07	52	30			E	*	-	*	-	-	*				
17 NOV 68	10	47	58			E	-	-	*	-	-	-				
17 NOV 68	13	36	56			E	*	*	*	-	-	-				
19 NOV 68	00	15	34.3			I	S	*	D	-	-	-				
20 NOV 68	22	30	53			E	-	-	*	-	-	-				
21 NOV 68	07	25	44.8			I	*	*	D	-	-	-				
24 NOV 68	21	33	02.1			I	S	*	U	*	*	*				
25 NOV 68	13	56				E	-	-	*	-	-	*				
28 NOV 68	14	42	08			E	*	*	*	*	*	*				
01 DEC 68	13	24	01.8			I	*	*	D	*	*	*				
03 DEC 68	19	46	23.7			I	*	*	U	-	-	-				
05 DEC 68	08	04	07.5			I	RF	*	U	-	-	-				
05 DEC 68	09	51	37			E	RF	*	U	-	-	-				
07 DEC 68	15	51	55			E	*	*	*	-	-	-				
07 DEC 68	15	57	39			E	*	*	U	-	-	-				
07 DEC 68	19	35	29			E	*	*	*	-	-	-				
07 DEC 68	20	47	55.6			E	-	-	D	-	-	-				
10 DEC 68	09	13	28.5			E	-	-	*	-	-	-				
10 DEC 68	09	13	31.8			I	*	*	*	-	-	-				
14 DEC 68	10	10	07			E	*	*	*	*	*	*				
15 DEC 68	02	25	16.0			I	N	W	D	-	-	-				

DATE	GMT OF FIRST MOTION					TYPE OF ONSET	OBSERVABLE ON SHORT PER LONG PER									REMARKS
							NS	EW	Z	NS	EW	Z				
15 DEC 68	02	39	29			E	*	*	*	-	-	-				
16 DEC 68	03	14	05			E	*	*	*	-	-	-				
17 DEC 68	12	10	52			E	S	E	U	N	*	D				
19 DEC 68	15	27	27.8			I	S	*	U	-	-	-				
19 DEC 68	16	30	11.0			I	N	E	U	*	*	*				
22 DEC 68	16	53	31.3			I	*	*	D	*	*	*				
29 DEC 68	17	42	26.8			I	N	*	U	*	*	*				
30 DEC 68	07	11	51.8			I	*	W	U	*	*	*				
01 JAN 69	23	36	40			E	*	*	*	-	-	-				
03 JAN 69	03	29	32			E	*	*	*	-	-	-				
03 JAN 69	05	24	03			E	*	*	*	-	-	-				
03 JAN 69	11	25	05			E	*	*	*	-	-	*				
03 JAN 69	13	38	48			E	*	*	*	*	*	*				
05 JAN 69	13	41				E	-	-	-	*	-	*				
05 JAN 69	13	45	27.8			I	N	*	D	*	*	*				
06 JAN 69	09	30	33.1			I	*	*	U	*	*	*				
06 JAN 69	15	57	45			E	*	*	*	-	-	-				
06 JAN 69	20	28	37			E	*	*	*	-	-	-				
14 JAN 69	23	24	07.0			I	*	*	U	RF	*	*				
18 JAN 69	03	20	30			E	*	*	*	-	-	*				
18 JAN 69	04	09	10.5			E	*	*	*	-	-	-				
19 JAN 69	07	14	20.2			I	S	E	U	S	E	U				
19 JAN 69	18	59	50			E	*	*	*	*	*	*				
19 JAN 69	19	09	27.6			I	S	E	U	*	*	*				
20 JAN 69	14	31	23.7			I	S	E	U	*	*	*				
20 JAN 69	19	28				E	*	*	*	-	-	-				
21 JAN 69	08	12	50			E	-	*	*	RF	*	*				
22 JAN 69	00	53	43.7			I	*	*	U	*	*	*				
24 JAN 69	02	50	32.0			I	*	*	U	*	*	*				
25 JAN 69	05	38	24			E	-	*	*	-	-	*				
25 JAN 69	13	32	22.2			I	*	*	U	-	-	-				
26 JAN 69	15	16	48.7			I	*	*	U	*	*	*				
28 JAN 69	13	52	06			E	*	*	*	-	-	-				
30 JAN 69	10	45	36			E	-	-	-	-	-	*				
31 JAN 69	01	03	15			E	-	*	*	-	-	*				
31 JAN 69	04	21	49			E	*	-	*	-	-	-				
02 FEB 69	10	03	01			E	*	*	*	-	-	*				
03 FEB 69	19	24	03			E	-	-	*	-	-	*				
03 FEB 69	21	57	45			E	-	-	-	-	-	*				
03 FEB 69	22	00	46.9			I	*	*	U	*	*	U				
04 FEB 69	04	19	07.0			I	S	*	U	*	*	*				
10 FEB 69	23	15	31.5			I	*	*	U	*	*	*				
11 FEB 69	22	34	38			E	*	*	*	*	*	*				
12 FEB 69	15	51	07.2			I	-	-	U	-	-	-				
13 FEB 69	03	02	02			E	*	*	*	-	-	-				
13 FEB 69	01	46	01			E	*	*	*	-	-	-				
14 FEB 69	13	16	50			E	S	*	D	-	-	*				
15 FEB 69	11	22	02			E	*	*	*	*	*	*				
16 FEB 69	19	02				E	*	*	*	*	*	*				
20 FEB 69	10	14	41			E	-	-	*	-	-	*				