

THE PENNSYLVANIA STATE UNIVERSITY
MINERAL INDUSTRIES EXPERIMENT STATION
DEPARTMENT OF GEOLOGY AND GEOPHYSICS
GEOPHYSICAL LABORATORY
Project B-130

Seismograph Report XXXVIII

26 October 1966 - 30 April 1967

Code - SCP

B. F. Howell, Jr., Director

G. D. Cline Graduate Assistant

C. A. Newton, Graduate Assistant

W. E. Rankin, Graduate Assistant

S. K. Yiu, 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 = +1 m

Please address all communications to:

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

JUN 12 1967

DATE			GMT OF FIRST MOTION	TYPE OF ONSET	OBSERVABLE ON						REMARKS
					SHORT		PER		LONG		
					NS	EW	Z	NS	EW	Z	
03	JAN	67	05-36-58.6	IP	*	*	U	-	-	-	
03	JAN	67	06-05-28.0	E	-	-	-	*	*	*	
03	JAN	67	22-21-00.0	E	-	-	-	*	*	*	
04	JAN	67	06-10-23.5	I	RF	W	U	-	-	-	
04	JAN	67	20-22-25.7	I	RF	*	U	-	-	-	
04	JAN	67	21-23-08.0	E	*	*	*	-	-	-	
04	JAN	67	21-34-35.9	I	S	W	U	-	-	-	BLAST
05	JAN	67	00-27-44.3	IP	*	*	U	*	*	U	
05	JAN	67	19-39-40.5	I	*	*	D	-	-	-	LOCAL
05	JAN	67	20-32-16.0	E	*	*	*	-	-	-	BLAST
06	JAN	67	00-16-59.1	IP	*	*	U	*	*	*	
06	JAN	67	00-16-59.1	IP	*	*	U	*	*	*	
06	JAN	67	22-12-31.0	E	*	*	*	-	-	-	
07	JAN	67	17-38-00.0	E	-	-	-	*	*	*	
07	JAN	67	19-30-10.0	E	*	*	*	-	-	-	
08	JAN	67	05-14-06.0	IP	*	*	D	*	*	*	
08	JAN	67	18-08-28.0	E	*	*	*	-	-	-	
09	JAN	67	16-15-17.2	IP	S	W	U	-	-	-	
09	JAN	67	18-15-20.7	I	*	*	D	-	-	-	
09	JAN	67	19-24-01.6	IP	S	*	U	-	-	-	
09	JAN	67	19-41-28.0	IP	S	W	*	-	-	-	
09	JAN	67	21-59-57.2	IP	S	*	U	-	-	-	LOCAL
10	JAN	67	15-57-16.4	I	*	*	U	-	-	-	LOCAL
10	JAN	67	18-59-02.0	I	*	*	D	-	-	-	LOCAL
10	JAN	67	21-34-20.3	I	*	*	U	-	-	-	LOCAL
11	JAN	67	16-15-03.8	IP	N	*	U	N	E	*	
11	JAN	67	19-49-56.5	IP	N	W	D	-	-	-	
11	JAN	67	21-30-24.5	EP	S	E	*	-	-	-	LOCAL
11	JAN	67	21-39-30.8	IP	N	E	D	-	-	-	
11	JAN	67	22-08-56.2	IP	N	E	U	-	-	-	
12	JAN	67	17-07-07.0	E	*	*	*	-	-	-	
12	JAN	67	21-29-43.2	I	S	*	U	-	-	-	BLAST
13	JAN	67	19-48-23.9	IP	*	E	D	-	-	-	BLAST
13	JAN	67	20-17-54.0	EP	*	*	*	-	-	-	
13	JAN	67	20-45-31.0	EP	S	E	*	-	-	-	
13	JAN	67	21-28-28.2	IP	S	E	U	-	-	-	LOCAL
14	JAN	67	12-15-46.5	I	N	*	U	-	-	-	
14	JAN	67	15-11-33.2	IP	S	W	U	-	-	-	
14	JAN	67	19-22-11.4	IP	N	W	U	-	-	-	
16	JAN	67	05-40-00.0	E	-	-	-	*	*	*	
16	JAN	67	07-21-36.0	I	S	*	D	-	-	-	
16	JAN	67	12-10-00.0	E	-	-	-	*	*	*	
16	JAN	67	15-57-32.8	I	S	E	U	-	-	-	LOCAL
16	JAN	67	18-49-12.5	I	*	W	D	-	-	-	
16	JAN	67	19-04-41.8	I	*	*	D	-	-	-	
16	JAN	67	19-41-00.5	IP	*	E	D	-	-	-	
17	JAN	67	01-18-04.5	IP	S	E	D	S	W	D	
17	JAN	67	12-12-44.0	IP	N	*	D	*	E	U	
17	JAN	67	16-33-38.0	E	*	*	U	-	-	-	BLAST
17	JAN	67	19-19-14.0	E	*	*	*	-	-	-	LOCAL

DATE	GMT OF FIRST MOTION		TYPE OF ONSET	OBSERVABLE ON						REMARKS
				SHORT PER			LONG PER			
				NS	EW	Z	NS	EW	Z	
17 JAN 67	21-30-30.5	IP	S	W	U	-	-	-	-	LOCAL
17 JAN 67	21-57-45.8	IP	*	*	D	-	-	-	-	LOCAL
18 JAN 67	05-46-53.0	EP	S	E	D	*	*	D		
18 JAN 67	08-28-20.6	IP	S	*	D	-	*	*		
18 JAN 67	10-50-27.0	EP	*	*	D	-	-	-		
18 JAN 67	17-46-00.0	E	*	*	U	-	-	-		
18 JAN 67	18-11-29.6	IP	S	W	D	-	-	-		BLAST
18 JAN 67	18-56-13.2	I	*	*	D	-	-	-		
19 JAN 67	17-57-33.6	I	*	E	D	-	-	-		
19 JAN 67	19-19-13.4	I	S	W	D	-	-	-		
19 JAN 67	19-48-43.5	I	N	*	D	-	-	-		
19 JAN 67	21-30-08.0	IP	S	W	D	-	-	-		LOCAL
19 JAN 67	21-37-02.0	IP	*	W	D	-	-	-		BLAST
19 JAN 67	22-03-05.0	E	N	E	*	-	-	-		BLAST
20 JAN 67	02-10-29.8	I	N	E	U	S	E	U		
20 JAN 67	21-43-28.0	I	*	E	U	-	-	-		
21 JAN 67	03-25-00.0	E	-	-	-	*	*	*		
21 JAN 67	21-29-53.6	IP	N	*	D	-	-	-		BLAST
21 JAN 67	21-44-00.0	E	*	*	*	-	-	-		
22 J 67	10-39-44.0	E	-	*	D	*	*	*		
22 JAN 67	20-12-10.6	I	S	E	U	-	-	-		BLAST
23 JAN 67	19-25-55.8	I	*	E	D	-	-	-		
23 JAN 67	20-32-18.0	I	*	*	D	-	-	-		
23 JAN 67	21-29-12.5	I	N	*	U	-	-	-		
24 JAN 67	03-18-35.8	I	N	*	U	-	-	-		
24 JAN 67	09-39-57.5	I	*	*	U	-	-	-		
24 JAN 67	13-51-23.0	I	*	W	D	-	-	-		
24 JAN 67	16-18-04.5	I	S	W	U	-	-	-		BLAST
24 JAN 67	21-30-34.2	I	N	E	U	-	-	-		BLAST
24 J 67	22-42-39.0	E	*	E	*	-	-	-		BLAST
25 JAN 67	02-03-25.0	IP	N	W	U	*	*	U		
25 JAN 67	18-57-56.6	I	*	W	D	-	-	-		
25 JAN 67	20-46-56.0	I	*	W	D	-	-	-		
25 JAN 67	21-30-49.8	IP	S	E	D	-	-	-		LOCAL
26 JAN 67	16-16-30.0	I	N	*	U	*	*	*		
26 JAN 67	17-23-56.2	I	N	W	D	-	-	-		
26 JAN 67	17-44-43.5	IP	N	W	D	-	*	*		
26 JAN 67	19-20-03.0	E	*	*	*	-	-	-		BLAST
26 JAN 67	21-41-12.2	IP	*	E	D	-	-	-		LOCAL
26 JAN 67	23-09-02.0	IP	*	E	D	*	*	*		BLAST
27 JAN 67	17-42-17.0	E	*	*	*	-	-	-		BLAST
28 JAN 67	14-03-02.4	IP	S	*	U	S	E	U		ES=14-
29 JAN 67	16-41-25.7	IP	*	*	U	*	*	*		PREVIO
29 JAN 67	17-52-03.0	EP	*	*	*	*	*	*		PREVIO
29 JAN 67	21-29-03.1	IP	*	*	U	-	-	-		
30 JAN 67	21-31-22.5	I	S	*	U	-	-	-		BLAST
31 JAN 67	13-44-55.0	IP	N	*	D	*	*	*		
31 JAN 67	20-58-57.4	IP	N	W	U	-	-	-		BLAST
31 JAN 67	21-12-19.4	IP	S	W	U	-	-	-		LOCAL
31 JAN 67	21-50-22.3	IP	*	W	D	-	-	-		BLAST

Seismological Centre

DATE	GMT OF		TYPE	OBSERVABLE ON						REMARKS
	FIRST	MOTION		OF	SHORT			PER LONG PER		
			ONSET	NS	EW	Z	NS	EW	Z	
01 FEB 67	20-56-46		I	*	W	D	-	-	-	
02 FEB 67	06-44-00.0		E	*	*	*	*	*	*	
02 FEB 67	14-16-41.5		I	*	*	D	-	-	-	
02 FEB 67	20-21-21		IP	N	E	D	-	-	-	BLAST
02 FEB 67	22-34-34.5		IP	*	W	D	-	-	-	
03 FEB 67	13-06-43.2		I	*	W	D	-	-	-	
03 FEB 67	21-21-55.0		E	*	*	*	-	-	-	
04 FEB 67	17-12-59.0		I	S	W	*	-	-	-	
04 FEB 67	21-27-10.3		I	S	W	*	-	-	-	
05 FEB 67	19-07-33.9		I	*	*	U	-	-	-	
06 FEB 67	03-35-09.1		IP	N	E	U	-	-	-	
07 FEB 67	15-02-14.7		IP	N	W	D	-	-	-	
09 FEB 67	14-19-36.1		I	*	*	U	-	-	-	
09 FEB 67	15-32-01.0		IP	N	W	U	N	W	U	BOLIVIA
09 FEB 67	19-28-17.5		I	RF	*	*	-	-	-	
09 FEB 67	19-51-48.0		I	*	*	U	-	-	-	
09 FEB 67	21-31-58.5		IP	N	E	D	-	-	-	BLAST
10 FEB 67	21-42-43.2		I	S	E	U	-	-	-	BLAST
11 FEB 67	02-51-30.5		IP	*	*	D	-	-	-	
11 FEB 67	14-14-05.0		I	*	*	D	-	-	-	
11 FEB 67	21-32-00.0		E	*	*	*	-	-	-	BLAST
12 FEB 67	19-41-17.4		I	*	*	U	-	-	-	
13 FEB 67	10-34-02.6		IP	N	*	U	-	-	-	
13 FEB 67	14-18-35.7		IP	N	*	U	-	-	-	
14 FEB 67	21-08-10.0		IP	S	*	D	-	-	-	
14 FEB 67	21-34-53.5		I	N	E	D	-	-	-	BLAST
14 FEB 67	23-20-46.1		IP	S	W	U	*	*	U	
14 FEB 67	21-40-25.4		IP	S	E	D	-	-	-	
15 FEB 67	16-19-13.5		IP	S	E	D	S	W	RF	
16 FEB 67	16-49-51.5		IP	*	E	U	-	-	-	
16 FEB 67	17-38-54.6		I	N	E	D	-	-	-	BLAST
16 FEB 67	17-56-41.0		I	*	*	D	-	-	-	
16 FEB 67	21-34-55.0		IP	S	W	U	-	-	-	BLAST
17 FEB 67	10-30-00.0		E	-	-	-	*	*	*	BEGINNING NOT KNOWN
17 FEB 67	21-36-04.6		I	*	E	U	-	-	-	BLAST
18 FEB 67	10-28-28.0		EP	*	*	*	-	-	-	
18 FEB 67	13-00-29.0		E	*	*	*	-	-	-	
18 FEB 67	17-57-28.3		I	*	*	U	-	-	-	
18 FEB 67	19-24-04.1		I	*	*	D	-	-	-	
19 FEB 67	22-34-09.7		IP	*	RF	U	S	*	U	
19 FEB 67	23-47-21.0		E	*	RF	*	-	-	-	
21 FEB 67	18-33-55.0		I	*	E	D	-	-	-	
21 FEB 67	20-00-46.5		E	*	*	U	-	-	-	
22 FEB 67	04-17-20.0		E	*	*	*	-	*	*	
22 FEB 67	04-21-23.		E	*	*	*	*	*	*	
22 FEB 67	18-57-55.1		I	*	*	U	-	-	-	LOCAL
22 FEB 67	19-47-21.0		E	*	*	*	-	-	-	LOCAL
22 FEB 67	21-01-55.0		E	*	*	*	-	-	-	LOCAL
24 FEB 67	23-07-49.4		I	*	*	U	-	-	-	BLAST
25 FEB 67	12-08-36.0		E	*	*	*	-	-	-	

DATE	GMT OF FIRST MOTION		TYPE OF ONSET	OBSERVABLE ON						REMARKS
				SHORT PER			LONG PER			
				NS	EW	Z	NS	EW	Z	
25 FEB 67	20-50-29.0	IP	N	W	U	-	-	-		
26 FEB 67	02-18-44.0	E	*	*	*	-	-	-		
27 FEB 67	19-56-25.5	I	S	E	U	-	-	-		
27 FEB 67	21-07-26.6	I	N	E	D	-	-	-		BLAST
27 FEB 67	22-04-45.0	E	*	*	*	-	-	-		BLAST
28 FEB 67	11-20-07.0	IP	N	W	U	-	-	-		
28 FEB 67	19-06-26.0	I	*	*	D	-	-	-		LOCAL
28 FEB 67	20-55-03.0	E	*	*	*	-	-	-		LOCAL
28 FEB 67	21-49-04.3	I	*	*	D	-	-	-		LOCAL
01 MAR 67	18-44-16.0	E	*	*	*	-	-	-		LOCAL
01 MAR 67	19-03-13.0	E	*	*	*	-	-	-		LOCAL
01 MAR 67	21-11-48.0	E	*	*	*	-	-	-		LOCAL
01 MAR 67	22-09-01.0	E	*	*	*	-	-	-		LOCAL
02 MAR 67	02-55-03.7	IP	S	E	D	*	*	*		
02 MAR 67	16-06-35.5	IP	N	W	U	-	-	-		
02 M 67	18-29-37.0	IP	N	W	D	-	-	-		
02 M 67	21-29-59.5	IP	N	*	U	-	-	-		BLAST
03 MAR 67	16-25-26.0	E	*	*	*	-	-	-		
03 MAR 67	19-40-44.0	E	*	*	*	-	-	-		
03 MAR 67	20-18-07.0	E	*	*	*	-	-	-		
04 MAR 67	18-09-39.0	IP	N	E	D	N	E	D		
04 MAR 67	19-26-11.2	I	*	W	D	-	-	-		
04 MAR 67	20-12-32.6	I	*	*	U	-	-	-		
10 MAR 67	19-12-01.0	I	S	W	D	-	-	-		
10 MAR 67	23-04-14.6	IP	N	E	U	-	-	-		BLAST
11 MAR 67	09-09-39.0	E	-	-	-	S	E	D		
11 MAR 67	14-50-36.0	IP	N	W	U	N	*	U		
11 MAR 67	14-54-49.0	ES	*	*	*	N	E	U		
13 MAR 67	20-33-02.6	IP	S	E	D	-	-	-		BLAST
13 MAR 67	21-01-51.0	IP	S	E	D	-	-	-		BLAST
13 MAR 67	21-31-56.8	IP	S	W	U	-	-	-		BLAST
14 MAR 67	03-15-35.0	EP	N	W	*	-	-	-		
14 MAR 67	08-00-00.0	S	-	-	-	*	*	*		
15 MAR 67	19-12-59.0	E	*	*	*	-	-	-		LOCAL
15 MAR 67	21-08-52.5	I	*	*	D	-	-	-		LOCAL
16 MAR 67	13-06-00.0	E	-	-	-	*	*	*		
17 MAR 67	21-41-06.5	I	*	*	U	-	-	-		BLAST
19 MAR 67	01-30-05.0	IP	N	E	U	-	-	-		
19 MAR 67	04-14-02.0	IP	S	*	U	S	*	U		
20 MAR 67	10-59-06.7	IP	*	*	U	-	-	-		
20 MAR 67	13-44-01.5	IP	*	*	U	*	*	*		
20 MAR 67	13-53-19.4	I	*	*	U	-	-	-		
20 M 67	14-04-33.5	I	*	*	U	-	-	-		
20 MAR 67	21-16-19.5	I	*	E	U	-	-	-		
20 MAR 67	22-26-06.8	IP	S	W	U	-	-	-		
21 MAR 67	18-18-15.8	IP	N	E	U	*	-	*		
23 MAR 67	15-59-58.0	I	*	*	D	-	-	-		
23 MAR 67	19-25-25.5	IP	S	W	U	-	-	-		
24 MAR 67	09-18-50.0	IP	S	W	D	*	*	D		
24 MAR 67	18-08-55.4	I	S	W	U	-	-	-		BLAST

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ES 02 55 20

DATE	GMT OF FIRST MOTION		TYPE OF ONSET	OBSERVABLE ON						REMARKS
				SHORT PER			LONG PER			
				NS	EW	Z	NS	EW	Z	
24 MAR 67	22-27-15.9	I	S	W	U	-	-	-	-	BLAST
25 MAR 67	14-57-14.7	I	*	*	U	-	-	-	-	LOCAL
25 MAR 67	19-08-39.0	E	*	*	*	-	-	-	-	LOCAL
25 MAR 67	20-50-05.3	I	*	*	U	-	-	-	-	LOCAL
25 MAR 67	23-00-22.8	IP	*	*	U	*	*	*	*	
27 MAR 67	00-05-39.0	I	*	*	U	-	-	-	-	
27 MAR 67	08-34-34.6	I	N	E	U	-	-	-	-	
27 MAR 67	09-46- .	E	-	-	-	*	*	*	*	
27 MAR 67	21-33-27.7	I	S	W	U	-	-	-	-	
28 MAR 67	16-38-25.0	E	*	*	*	-	-	-	-	LOCAL
28 MAR 67	19-58-10.0	E	*	*	*	-	-	-	-	LOCAL
29 MAR 67	16-15-52.7	E	*	*	U	-	-	-	-	LOCAL
29 MAR 67	18-55-24.5	E	*	*	D	-	-	-	-	BLAST
29 MAR 67	19-19-21.9	E	*	*	D	-	-	-	-	BLAST
29 MAR 67	21-19-29.7	E	*	*	D	-	-	-	-	BLAST
29 MAR 67	22-08-20.5	E	*	*	U	-	-	-	-	BLAST
29 MAR 67	22-10-02.3	E	*	*	U	-	-	-	-	BLAST
30 MAR 67	02-27-45.8	EP	N	W	*	N	-	-	D	
30 MAR 67	21-36-25.4	IP	S	W	U	-	-	-	-	BLAST
31 MAR 67	16-08-14.3	I	S	W	U	-	-	-	-	BLAST
31 MAR 67	21-35-14.0	E	*	*	*	-	-	-	-	BLAST
01 APR 67	06-06-43.7	IP	*	*	U	*	*	*	U	
01 APR 67	10-50-07.6	IP	*	*	D	*	*	*	*	
01 APR 67	12-35-33.5	IP	*	*	U	*	*	*	U	
01 APR 67	16-08-14.0	E	N	*	*	-	-	-	-	LOCAL
01 APR 67	21-29-26.0	E	S	E	D	-	-	-	-	LOCAL
02 APR 67	18-35-20.5	I	*	W	D	-	-	-	-	LOCAL
02 APR 67	18-40- .	E	-	-	-	*	*	*	*	
03 APR 67	09-07- .	E	-	-	-	*	*	*	*	
03 APR 67	13-50- .	E	-	-	-	*	*	*	*	
03 APR 67	18-57-10.5	IP	*	W	U	-	-	-	-	
03 APR 67	21-29-03.5	IP	N	E	D	-	-	-	-	BLAST
04 APR 67	17-04-27.0	E	*	*	*	-	-	-	-	
04 APR 67	20-23-33.0	E	*	*	*	-	-	-	-	
04 APR 67	21-00-16.4	I	*	*	U	-	-	-	-	
05 APR 67	03-28- .	E	-	-	-	*	*	*	*	
05 APR 67	04-02-34.0	E	*	*	*	-	-	-	-	
05 APR 67	20-28-35.0	E	S	E	D	-	-	-	-	
05 APR 67	21-27-15.8	E	*	*	D	-	-	-	-	LOCAL
06 APR 67	15-40-02.0	IP	*	W	D	-	-	-	-	
06 APR 67	20-43-30.0	IP	N	E	D	-	-	-	-	BLAST
07 APR 67	19-38 58.	E	*	*	*	-	-	-	-	LOCAL
07 APR 67	22-28-23.0	I	*	*	U	-	-	-	-	LOCAL
07 APR 67	22-47-31.5	I	N	W	U	-	-	-	-	LOCAL
07 APR 67	23-07-24.	E	*	*	*	-	-	-	-	LOCAL
08 APR 67	05-41-28.	E	*	*	*	-	-	-	-	
08 APR 67	21-29-24.8	I	N	E	D	-	-	-	-	LOCAL
09 APR 67	16-46-30.	E	*	*	*	-	-	-	-	LOCAL
10 APR 67	16-59-57.	E	-	-	-	*	*	*	*	
10 APR 67	17-49-58.	E	-	-	-	*	*	*	*	

DATE		GMT OF FIRST MOTION	TYPE OF ONSET	OBSERVABLE ON						REMARKS
				SHORT			LONG			
				NS	EW	Z	NS	EW	Z	
10 APR 67	19-09-21.	E	*	*	*	-	-	-		
10 APR 67	19-33-26.	E	N	W	D	-	-	-		
10 APR 67	20-06-18.7	IP	N	E	D	-	-	-		
11 APR 67	12-45-20.	E	*	*	*	-	-	-		
11 APR 67	16-47-59.	I	N	*	D	-	-	-		
11 APR 67	21-35-31.5	IP	S	W	U	-	-	-		BLAST
12 APR 67	00-12-09.	I	S	E	D	-	-	-		
12 APR 67	04-50-37.	E	*	*	*	*	*	*		
12 APR 67	05-10-54.	I	*	*	D	*	*	*		
13 APR 67	14-56- .	E	-	-	-	*	*	*		
13 APR 67	19-05-31.	E	*	*	*	-	-	-		LOCAL
13 APR 67	20-21-27.3	I	*	*	U	-	-	-		LOCAL
13 APR 67	21-37-18.2	I	S	*	U	-	-	-		BLAST
14 APR 67	15-54-35.5	IP	S	W	U	-	-	-		BLAST
14 APR 67	18-06-21.4	IP	N	W	D	-	-	-		
14 APR 67	20-05-47.2	I	N	*	D	*	*	*		
14 APR 67	21-38-06.2	IP	N	E	D	-	-	-		BLAST
18 APR 67	16-35-29.	I	N	RF	RF	-	-	-		LOCAL
18 APR 67	21-35-40.	I	S	RF	RF	-	-	-		BLAST
19 APR 67	21-15-14.3	I	*	*	U	-	-	-		
19 APR 67	22-02-03.2	IP	S	E	D	-	-	-		
19 APR 67	22-06-02.	E	*	*	*	-	-	-		
20 APR 67	00-20-18.	E	*	*	*	-	-	-		
20 APR 67	21-37-11.2	IP	S	E	U	-	-	-		BLAST
21 APR 67	21-31-26.8	I	S	*	U	-	-	-		BLAST
23 APR 67	22-31-59.	E	*	*	*	-	-	-		
24 APR 67	12-04-41.8	I	*	*	U	-	-	-		
24 APR 67	18-26-03.	E	*	*	D	-	-	-		LOCAL
25 APR 67	21-38-44.8	IP	S	W	U	-	-	-		BLAST
26 APR 67	21-38-01.5	I	S	W	U	-	-	-		BLAST
27 APR 67	09-10- .	E	-	-	-	*	*	*		
28 APR 67	20-34-26.	I	*	*	*	-	-	-		LOCAL
28 APR 67	22-51-51.7	I	*	*	*	-	-	-		BLAST
29 APR 67	04-06-57.	I	*	*	U	-	-	-		
29 APR 67	18-33-53.5	I	S	*	U	-	-	-		
29 APR 67	18-46-02.	E	*	*	*	-	-	-		
29 APR 67	21-31-42.8	IP	S	W	U	-	-	-		BLAST
30 APR 67	16-34-16.4	I	*	*	U	*	*	*		

We acknowledge with thanks receipt of the following bulletins and other publications between 1 December 1966 and 10 May 1967:

- Ankara, Turkey, Weekly readings, 44-52, 1966; Nos. 1-13, 1967.
- Athens, Greece, Prel. Bull. Aug-Dec, 1966; Jan. 1967; Seis. Inst. Bull. No. 13 - 1962.
- Berkeley, California, Seis. Bull. Vols. 34(2) to 34(4).
- Caracas, Venezuela, Bull. Seis. Mens., May-Dec, 1966.
- Cine, Turkey, Weekly readings, 44-52, 1966; 1-13, 1967.
- Cleveland, Ohio, John Carrol Univ., Seis. Bull. 1965.
- Edinburgh, Scotland, Bull. Internat'l. Seis. Cen. Vol. 1, No. 1-2, Jan-Feb, 1964.
- Erzurum, Turkey, Weekly Seis. readings, 46-52, 1966; 1, 1967.
- I.R.S.A.C., V. 10, nr. 2; V. 11, nr. 1-2.
- Jerusalem, Seis. Bull., May, 1966; Sept-Dec, 1965.
- Istanbul, Turkey, Weekly readings, 45-52, 1966; 1-14, 1967; Prel. Seis. Readings, Oct, 1966.
- Japan, Jr. of Geom. and Geol., Vol. 18, Nos. 3-4, 1966.
- Kakioka, Japan, Mag. Obs, Obs. on Geomag. Earth current and night Airglow during Internat'l. years of Quiet Sun, 1964-1965; Geomag. Kanoya 1960; Geomag. No. 41, 1961; Geomag. Memabetsu 1961, No. 44.
- Kastamonu, Turkey, Weekly readings, 44-52, 1966; 1-13, 1967.
- Ksara, Seis. Annales April-Dec, 1964.
- Lamont Geol. Obs., Columbia Univ., Catalog of Data, Jan, 1967.
- Lisboa, Portugal, Seis. Bull. Annee XXI-No. 3, May-June, 1966.
- Ljubljana, Yugoslavia, Prel. Seis. Bull. Jan-June, 1966.
- Lwiro, Africa, Prel. Bull. Oct, 1966, Mar, 1967; Seis. Sta. Vol. 11(1).
- Manila, Phillippines, No. 207-209, Aug-Oct, 1966.
- Mexico, Inst. Geofis. Seis. Servicia, Jul-Dec, 1966.
- Montreal, Canada, Bull de Geophys. No. 20, Dec, 1966.
- Morgantown, W.Va., Seis. Rpt. XXXI, Jul-Dec, 1966.
- Moscow, Russia, Seis. Bull. 7-9, 1965; Obs. Calib. 1965; Moscow, World Data Center, Catalog of Pubs. between Jan, 1964 to Jun, 1966; Cat. of Seis. and Gravity, Jan-June, 1966; Catalog of Pubs., Jan-June, 1966; Results of Researches on the Internat'l. Geophysical Projects, 1966.
- Ottawa, Canada, Seis. Bull, Jan-Dec, 1965-1.
- Palisades, N.Y., Lamont Geol. Obs., Seis. Bull, 1964.
- Pasadena, California, Prel. Bull. Nos. 169-173, Oct, 1966 to Feb, 1967.
- Raman, Turkey, Weekly readings 46-50, 1966.
- Romania, Editura Aca., Seria Geofizica 2 Tomo/4, 1966; Serie de Geophysique - Tome 10(2), 1966.
- Rome, Italy, Bull. Seis. Def. Apr-Sept, 1965; Gennaio, 1966.
- Salt Lake City, Utah, Univ. of, Seis. Bull. 64, Oct-Dec, 1964; Jan-Mar, 1965, Cont. No. 83.
- San Calixto, Bolivia, Seis. Bull, May-June, 1965.
- Strasbourg, France, Bull. Mensuel, Mar-Apr. 1964; Bull. Seis. Jun-Oct, 1966.

Sydney, Australia, Riverview College, Seis. Bull. 1962-63;
Jan-Dec, 1965; Geophysical Obs. Rpt. Vol. 14, No. 7-9,
July-Nov, 1966.

Toyko, Japan, Seis. Bull. Aug-Dec, 1965; Papers in Meteorol-
ogy and Geophysics, Vol. XVII - No. 1, Oct, 1966.

U.S.C.G.S., Antarctic Seis. Bull. Apr-Sept, 1966; Bull. 301
(Jan, 1966); Prel. Det. Epr. 77-66 to 96-66, 1-67 to
3-67, 5-67 to 11-67, 13-67 to 27-67.

Wellington, New Zealand, Seis. Rpt. 1962-E-143; Mag. Results
for 1962; Dept. of Sci. and Industrial Res. Geophys.
Div.

The Geophysical Laboratory
Department of Geology and Geophysics
201-218 Mineral Sciences Building
University Park, Pa., U.S.A., 16802
B. F. Howell, Jr., Director
19 May 1967

THE PENNSYLVANIA STATE UNIVERSITY
MINERAL INDUSTRIES EXPERIMENT STATION
DEPARTMENT OF GEOLOGY AND GEOPHYSICS
GEOPHYSICAL LABORATORY
Project B-130

Seismograph Report XXXIX

1 May 1967 - 30 June 1968

Code - SCP

S. S. Alexander, Director

R. C. Bubeck, Graduate Assistant

G. M. Lundquist, Graduate Assistant

D. E. Siskind, Graduate Assistant

S. K. Yiu, 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 = +1 m

Please address all communications to:

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

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" and "BLAST" 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 signals are recorded automatically on the SPN component.

The recorded seismograms through 22 July 1967 are filed

with the U. S. Coast and Geodetic Survey in Washington, D. C. Copies of individual seismograms through that date may be obtained from them. Records subsequent to 22 July 1967 have been kept on file in our Geophysical Laboratory.

The list which follows shows the earliest observed motion of each earthquake recorded and lists the components on which this 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.

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DATE	GMT OF FIRST MOTION		TYPE OF ONSET	OBSERVABLE ON						REMARKS
				NS	EW	Z	NS	EW	Z	
01 MAY 67	07-20-21.1		IP	*	E	D	*	*	D	
01 MAY 67	19-10-37.2		IP	*	*	D	-	-	-	L
02 MAY 67	14-32-25.		IP	N	W	U	-	-	-	L
02 MAY 67	14-39-39.3		IP	S	E	D	-	-	-	L
02 MAY 67	20-26-50.2		I	*	*	D	-	-	-	
02 MAY 67	20-33-19.		IP	S	W	U	-	-	-	B
03 MAY 67	17-15-30.		E	*	*	*	-	-	-	L
03 MAY 67	20-39-10.4		I	*	*	U	-	-	-	B
03 MAY 67	20-53-50.8		I	*	*	U	-	-	-	B
03 MAY 67	21-16-21.1		I	*	*	U	-	-	-	L
04 MAY 67	16-03-19.8		I	*	W	D	-	-	-	
04 MAY 67	18-36-08.		E	*	*	*	-	-	-	
04 MAY 67	18-46-30.5		I	*	E	D	-	-	-	
04 MAY 67	18-59-55.		I	S	E	D	-	-	-	
04 MAY 67	20-34-27.		IP	S	E	U	-	-	-	B
05 MAY 67	02-16-04.		IP	S	W	D	-	-	-	L
05 MAY 67	16-01 .		E	-	-	-	*	*	*	
05 MAY 67	17-57-57.0		IP	*	*	U	-	-	-	
05 MAY 67	20-19-41.0		IP	S	W	D	-	-	-	B
06 MAY 67	14-05-39.4		IP	S	*	D	*	W	*	
06 MAY 67	20-24-46.2		I	N	*	*	-	-	-	L
07 MAY 67	15-54-35.0		I	*	*	U	-	-	-	L
08 MAY 67	14-45-44.		I	RF	*	D	-	RF	RF	L
09 MAY 67	13-04- .		E	RF	-	-	*	RF	RF	
09 MAY 67	16-22-28.2		I	RF	RF	D	-	-	-	
09 MAY 67	20-33-26.5		IP	N	RF	U	-	-	-	B
10 M 67	16-45-59.0		I	*	*	U	-	-	-	L
10 MAY 67	20-48-22.0		IP	N	E	U	-	-	-	
12 MAY 67	15-15-28.0		IP	S	W	D	*	*	*	
12 MAY 67	16 53 14		E	*	*	*	-	-	-	L
12 MAY 67	18 02 03		E	*	*	*	-	-	-	L
12 MAY 67	19 12 14		E	*	*	*	-	-	-	
12 MAY 67	19 20 28		E	*	*	*	-	-	-	
12 MAY 67	19 28 23		E	*	*	*	-	-	-	L
12 MAY 67	20 23 16		E	*	*	*	-	-	-	L
12 MAY 67	20 45 21		E	*	*	*	-	-	-	
12 MAY 67	21 04 21		E	*	*	*	-	-	-	B
13 MAY 67	05 27 39.4		IP	S	W	D	*	*	*	
14 MAY 67	18 15 23		E	*	*	*	-	-	-	L
14 MAY 67	22 30 43		E	*	*	*	-	-	-	L
15 MAY 67	08 24 55.1		IP	*	*	U	-	-	-	
16 MAY 67	14 07 06.8		I	N	E	D	-	-	-	
16 MAY 67	20 36 45.0		IP	N	E	U	-	-	-	B
17 MAY 67	20 39 26.4		I	N	E	U	-	-	-	B
17 MAY 67	20 49 32.6		I	N	E	D	-	-	-	B
18 MAY 67	11 35 24.9		IP	*	*	U	-	-	-	
18 MAY 67	15 49 45.0		IP	*	W	D	-	-	-	
18 MAY 67	20 33 08.5		I	N	E	D	-	-	-	B
19 MAY 67	18 02 03.2		IP	*	E	D	-	-	-	L
19 MAY 67	19 34 47		E	*	*	*	-	-	-	

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DATE	GMT CF			TYPE	OBSERVABLE CN			REMARKS			
	FIRST MOTION				NS	EW	Z				
19 MAY 67	20	25	25.3	IP	S	E	U	-	-	-	
19 MAY 67	20	46	11.6	IP	*	E	U	-	-	-	B
19 MAY 67	21	08	23.2	IP	S	*	U	-	-	-	L
20 MAY 67	15	06	07.8	IP	*	E	D	-	-	-	
21 MAY 67	07	24	21.0	IP	*	*	U	*	*	*	
21 MAY 67	19	04	13.7	IP	*	*	U	*	*	*	
22 MAY 67	06	28	31.5	I	*	*	U	-	-	-	
22 MAY 67	19	07	13	I	*	*	*	-	-	-	L
22 MAY 67	19	23	25.3	I	*	*	U	-	-	-	L
22 MAY 67	20	41	47.6	I	N	W	D	-	-	-	B
22 MAY 67	21	05	34.2	I	*	E	D	-	-	-	B
22 MAY 67	21	10	35	E	*	*	*	-	-	-	B
22 MAY 67	23	17	42.5	IP	S	*	D	-	-	-	B
23 MAY 67	14	06	10.5	IP	S	W	D	-	-	-	
23 MAY 67	19	11	24.2	I	S	E	U	-	-	-	
23 MAY 67	20	15	25	I	S	W	D	-	-	-	L
23 MAY 67	21	32	49.1	I	*	W	D	-	-	-	B
24 MAY 67	14	53	05	E	RF	*	*	RF	RF	-	L
24 MAY 67	20	42	53	E	RF	*	*	RF	RF	-	B
24 MAY 67	22	20	34	E	RF	*	*	RF	RF	-	B
24 MAY 67	23	52	23	E	RF	*	*	RF	RF	-	L
25 MAY 67	13	40	27	E	RF	*	*	RF	RF	-	L
25 MAY 67	20	36	57.0	I	S	E	D	-	-	-	B
25 MAY 67	21	00	11	E	*	*	*	-	-	-	
26 MAY 67	20-44	-45.2		IP	N	E	D	-	-	-	B
26 MAY 67	20-52	-33.		I	S	W	U	-	-	-	
27 MAY 67	15-09	-26.9		U	RF	E	D	-	-	-	L
27 MAY 67	16-09	-32.		E	*	*	*	-	-	-	L
27 MAY 67	17-33	-53.6		IP	S	*	U	-	-	-	
27 MAY 67	21-36	-56.5		I	N	E	U	-	-	-	L
29 MAY 67	12-38	-49.		E	*	*	*	-	-	-	L
29 MAY 67	19-38	-58.5		IP	S	E	U	-	-	-	
29 MAY 67	21-14	-24.3		I	N	*	U	-	-	-	
30 MAY 67	23-28	-23.0		I	*	E	D	-	-	-	L
31 MAY 67	20-43	-41.0		I	N	E	D	-	-	-	B
01 JUN 67	03-46	-01.3		IP	N	E	U	-	-	-	
02 JUN 67	14-38	-13.8		IP	S	W	U	-	-	-	B
02 JUN 67	17-58	-34.		I	S	*	U	-	-	-	
02 JUN 67	20-33	-12.2		IP	N	E	RF	-	-	-	
03 JUN 67	15-39	-16.5		IP	S	W	U	-	-	-	B
03 JUN 67	18-53	-43.2		IP	S	W	U	-	-	-	B
04 JUN 67	09-17	-34.5		IP	S	E	D	-	-	-	
04 JUN 67	16-39	-41.8		I	N	W	D	-	-	-	
04 JUN 67	19-10	-25.		I	S	*	U	-	-	-	
04 JUN 67	20-30	-12.8		IP	S	W	U	-	-	-	B
05 JUN 67	13-24	-21.		E	*	*	*	-	-	-	B
05 JUN 67	15-04	-25.		E	*	*	*	-	-	-	B
05 JUN 67	16-17	-10.0		I	N	W	D	-	-	-	
05 JUN 67	20-07	-21.8		IP	S	E	U	-	-	-	
05 JUN 67	20-51	-15.5		IP	S	E	D	-	-	-	B

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DATE	GMT OF FIRST MOTION			TYPE OF ONSET	OBSERVABLE ON						REMARKS
					SP			LP			
					NS	EW	Z	NS	EW	Z	
06 JUN 67	14-46-43.8			I	*	*	D	-	-	-	B
06 JUN 67	19-56-27.			E	*	*	*	-	-	-	L
07 JUN 67	07-12-44.0			I	*	*	D	*	*	*	
07 JUN 67	17-31-34.2			I	S	W	D	-	-	-	B
07 JUN 67	20-39-33.			E	S	W	*	-	-	-	B
07 JUN 67	20-42-09.0			I	S	E	D	-	-	-	B
08 JUN 67	16-00-21.			E	*	*	*	-	-	-	B
08 JUN 67	19-27-18.4			I	*	*	U	-	-	-	L
08 JUN 67	20-29-26.3			I	*	*	U	-	-	-	B
10 JUN 67	05-26-27.2			IP	S	E	U	*	*	*	
10 JUN 67	05-45-55.			E	*	*	*	-	-	-	
10 JUN 67	19-49-03.3			I	*	*	D	-	-	-	B
10 JUN 67	20-19-05.			E	*	*	*	-	-	-	B
10 JUN 67	22-48-14.			E	*	*	*	-	-	-	L
11 JUN 67	01-52-17.6			IP	*	*	U	-	-	-	
12 JUN 67	00-12-11.5			IP	S	E	D	*	*	D	
12 JUN 67	03-02-36.5			IP	*	W	D	*	*	*	
12 JUN 67	15-57-14.7			I	*	*	*	-	-	-	L
12 JUN 67	20-35-03.0			I	N	E	D	-	-	-	B
12 JUN 67	23-34-54.0			I	N	*	D	*	*	*	
13 JUN 67	19-09-31.6			IP	S	W	U	-	-	-	
13 JUN 67	19-09-59.6			IS	*	*	*	*	*	*	
13 JUN 67	20-37-29.6			IP	S	W	D	-	-	-	
14 JUN 67	03-23-44.4			I	S	*	D	-	-	-	
14 JUN 67	05-55-02.			E	-	-	-	*	*	*	
14 JUN 67	08-18-06.8			E	*	*	*	*	*	*	
14 JUN 67	22-14-31.			E	*	*	*	-	-	-	
14 JUN 67	18-04-25.6			I	*	*	U	-	-	-	L
15 JUN 67	16 58 14			E	*	*	*	-	-	-	L
15 JUN 67	20 28 20.4			I	*	*	D	-	-	-	B
15 JUN 67	21 02 50			E	*	*	*	-	-	-	L
15 JUN 67	21 38 21.3				*	*	D	-	-	-	L
16 JUN 67	06 22 52			E	*	*	*	-	-	-	
16 JUN 67	20 30 28.0			I	*	*	D	-	-	-	B
17 JUN 67	01 05 28			E	*	*	*	*	*	*	
17 JUN 67	05 17 18.0			I	*	*	U	*	*	*	
17 JUN 67	18 04 44.0			I	*	*	U	-	-	-	
17 JUN 67	19 01 57			E	*	*	*	-	-	-	L
17 JUN 67	20 30 52			E	*	*	*	-	-	-	B
19 JUN 67	17 02 36.7			IP	N	E	U	*	*	*	
19 JUN 67	20 53 49.0			E	*	*	*	-	-	-	
20 JUN 67	07 48 38.0			I	*	*	U	*	*	*	
20 JUN 67	17 15 23			E	*	*	*	-	-	-	
20 JUN 67	18 02 09			E	*	*	*	-	-	-	B
20 JUN 67	19 43 16			E	*	E	*	-	-	-	
20 JUN 67	21 32 43			E	*	*	*	-	-	-	
21 JUN 67	02 28 00			E	-	-	-	-	*	*	
21 JUN 67	06 57 52			E	-	-	-	*	*	U	
21 JUN 67	13 37 22			E	*	*	*	-	-	-	
21 JUN 67	16 37 10			E	-	-	-	*	*	*	

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DATE		GMT OF FIRST MOTION				TYPE OF ONSET	OBSERVABLE ON						REMARKS
							NS	SP EW	Z	NS	LP EW	Z	
21 JUN 67	18 13 08	E	*	*	*	*	*	*	*	*	*	*	
21 JUN 67	18 21 20	E	*	*	*	-	-	-	-	-	-	-	L
21 JUN 67	19 26 15	E	*	*	*	-	-	-	-	-	-	-	L
21 JUN 67	20 19 37	E	*	*	*	-	-	-	-	-	-	-	L
21 JUN 67	20 28 24.0	I	*	E	U	-	-	-	-	-	-	-	L
21 JUN 67	21 24 40	E	*	*	*	-	-	-	-	-	-	-	L
21 JUN 67	21 35 34	E	*	E	*	-	-	-	-	-	-	-	L
22 JUN 67	14 57 31	E	*	*	*	-	-	-	-	-	-	-	L
22 JUN 67	15 19 58.6	I	*	W	U	-	-	-	-	-	-	-	L
22 JUN 67	15 47 08	E	-	*	*	-	-	-	-	-	-	-	L
22 JUN 67	17 13 03.1	I	*	E	*	-	-	-	-	-	-	-	L
22 JUN 67	17 27 42.1	I	*	E	U	-	-	-	-	-	-	-	L
22 JUN 67	18 14 20	E	*	*	*	-	-	-	-	-	-	-	L
22 JUN 67	19 08 58	E	*	*	*	-	-	-	-	-	-	-	L
22 JUN 67	19 35 29	E	*	*	*	-	-	-	-	-	-	-	L
22 JUN 67	19 51 09	E	*	*	*	-	-	-	-	-	-	-	L
22 JUN 67	19 53 56	E	*	*	*	-	-	-	-	-	-	-	L
22 JUN 67	26 06 10	E	*	*	*	*	*	*	*	*	*	*	
22 JUN 67	20 35 37	E	*	*	*	-	-	-	-	-	-	-	L
22 JUN 67	20 46 55.0	I	*	*	U	-	-	-	-	-	-	-	L
22 JUN 67	21 22 21	E	*	*	*	-	-	-	-	-	-	-	L
22 JUN 67	21 46 31	E	*	*	*	-	-	-	-	-	-	-	L
23 JUN 67	01 05 44	E	-	-	-	*	*	*	*	*	*	*	
23 JUN 67	06 08 44	E	-	-	-	*	*	*	*	*	*	*	
23 JUN 67	12 02 51	E	*	*	*	-	-	-	-	-	-	-	L
23 JUN 67	12 16 13	E	*	*	*	-	-	-	-	-	-	-	L
24 JUN 67	07 57 42.6	I	*	*	D	*	*	*	*	*	*	*	
24 JUN 67	12 26 21.5	I	*	*	U	-	-	-	-	-	-	-	L
24 JUN 67	18 17 28	E	*	*	*	-	-	-	-	-	-	-	L
25 JUN 67	16 18 38	E	*	*	*	-	-	-	-	-	-	-	
25 JUN 67	23 37 40	E	-	-	*	*	*	*	*	*	*	*	
26 JUN 67	02 29 02.9	I	*	*	U	*	E	U					
26 JUN 67	15 11 58.8	I	S	W	U	-	-	-	-	-	-	-	L
26 JUN 67	18 57 05.6	I	N	W	D	-	-	-	-	-	-	-	
26 JUN 67	19 34 05	E	*	*	*	-	-	-	-	-	-	-	
26 JUN 67	23 20 10.5	I	*	W	D	-	-	-	-	-	-	-	
27 JUN 67	18 59 22	E	*	*	*	-	-	-	-	-	-	-	L
27 JUN 67	20 39 28	E	*	*	*	-	-	-	-	-	-	-	L
27 JUN 67	21 22 14	E	*	*	*	-	-	-	-	-	-	-	B
28 JUN 67	01 22 26.7	I	*	*	U	-	-	-	-	-	-	-	
28 JUN 67	15 00 01.7	I	S	*	D	-	-	-	-	-	-	-	
28 JUN 67	15 37	E	-	-	-	*	*	*	*	*	*	*	
28 JUN 67	15 57 06.9	I	*	*	U	-	-	-	-	-	-	-	L
28 JUN 67	17 53 32.7	I	*	*	D	-	-	-	-	-	-	-	L
28 JUN 67	20 38 08	E	*	*	*	-	-	-	-	-	-	-	B
28 JUN 67	21 45 25.1	I	*	*	U	-	-	-	-	-	-	-	B
29 JUN 67	02 59 48	E	*	*	*	-	-	-	-	-	-	-	
29 JUN 67	04 45 44.5	I	*	*	U	-	-	-	-	-	-	-	
29 JUN 67	12 02 23.5	I	*	*	D	-	-	-	-	-	-	-	
29 JUN 67	18 55 41	E	*	*	*	-	-	-	-	-	-	-	L

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DATE	GMT OF FIRST MOTION					TYPE OF ONSET	OBSERVABLE ON							REMARKS
							SP			LP				
							NS	EW	Z	NS	EW	Z		
29 JUN 67	19	30	32.0	I	S	E	U	-	-	-			L	
30 JUN 67	11	48	45.3	I	*	*	U	-	-	-				
30 JUN 67	14	38	48	E	*	*	*	-	-	-			L	
30 JUN 67	14	55	06	E	*	*	*	-	-	-			L	
01 JUL 67	15	21	48.6	I	*	*	U	-	-	-			L	
01 JUL 67	16	07	30	E	*	*	*	-	-	-				
01 JUL 67	19	20	12	E	*	*	*	-	-	-			B	
01 JUL 67	19	41	14.0	I	N	E	U	-	-	-			L	
01 JUL 67	20	31	52.0	I	S	*	U	-	-	-			L	
01 JUL 67	20	43	58	E	*	*	*	-	-	-				
01 JUL 67	21	31	34	E	*	*	*	-	-	-				
01 JUL 67	23	19	16.7	I	N	W	D	N	W	D				
02 JUL 67	07	22	55	E	*	*	*	*	*	*				
02 JUL 67	10	18	15	E	*	*	*	-	-	-				
03 JUL 67	18	25	23	E	*	*	*	-	-	-				
03 JUL 67	19	36	15	E	*	*	*	-	-	-				
03 JUL 67	18	25	23	E	*	*	*	-	-	-				
03 JUL 67	19	36	15	E	*	*	*	-	-	-				
04 JUL 67	14	28	51.5	I	*	*	U	*	E	U				
04 JUL 67	18	43	58.4	I	*	E	U	-	*	-				
04 JUL 67	23	54	50.5	I	*	*	U	S	E	U				
05 JUL 67	01	04	45	E	*	*	*	-	-	-				
05 JUL 67	04	12	18	E	*	*	*	-	-	-				
05 JUL 67	22	10	33.6	I	S	E	U	-	-	-			L	
06 JUL 67	05	14	29.2	I	*	*	U	*	*	*				
06 JUL 67	13	52	23.0	I	S	E	U	S	E	U				
06 JUL 67	17	00	48.0	I	*	*	U	-	-	-			L	
06 JUL 67	17	10	40	E	*	*	*	-	-	-				
06 JUL 67	18	37	40	E	*	*	*	*	*	*				
06 JUL 67	19	27	30	E	*	*	*	-	-	-				
06 JUL 67	21	27	41	E	*	*	*	-	-	-				
06 JUL 67	21	51	06.5	I	N	E	D	-	-	-				
07 JUL 67	14	23	21	E	*	*	*	-	-	-			L	
08 JUL 67	14	44	09.5	I	*	*	U	-	-	-			L	
08 JUL 67	16	57	25	E	*	*	*	-	-	-			L	
08 JUL 67	18	20	49	E	*	*	*	-	-	-			L	
08 JUL 67	19	21	35	E	*	*	*	-	-	-			L	
08 JUL 67	21	03	45	E	*	*	*	-	-	-			L	
08 JUL 67	22	07	00	E	*	*	*	-	-	-				
09 JUL 67	21	38	05.6	I	*	*	U	-	-	-				
10 JUL 67	12	20	01.6	I	S	W	D	-	-	-				
10 JUL 67	17	22	05	I	*	E	D	-	-	-				
11 JUL 67	21	47	23.7	I	*	*	U	-	-	-			B	
12 JUL 67	01	57	54.0	I	*	*	U	-	-	-				
12 JUL 67	10	41	18.5	IP	S	E	D	-	-	-				
12 JUL 67	21	07	14.2	I	*	*	*	*	*	U				
12 JUL 67	22	36	15.1	I	*	*	U	-	-	-				
13 JUL 67	14	29	09.8	I	N	W	U	-	-	-				
13 JUL 67	18	48	24.2	I	*	*	D	-	-	-			B	
14 JUL 67	03	28	19.8	IP	S	W	D	*	*	*				

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DATE		GMT OF FIRST MOTION				TYPE OF ONSET	OBSERVABLE ON						REMARKS
							SP			LP			
							NS	EW	Z	NS	EW	Z	
15	JUL	67	21	17	41.8	I	*	*	*	-	-	-	
16	JUL	67	13	53	41.8	I	*	*	D	*	*	*	
17	JUL	67	14	46	55.2	I	S	*	U	-	-	-	B
17	JUL	67	19	18	03.0	I	*	W	U	-	-	-	B
17	JUL	67	19	55	25.8	I	*	*	*	-	-	-	L
17	JUL	67	22	21	55	E	*	*	*	-	-	-	
18	JUL	67	15	41	48.6	I	N	W	*	-	-	-	
18	JUL	67	19	34	18.5	I	S	*	U	-	-	-	B
18	JUL	67	20	34	57.8	I	*	*	U	-	-	-	L
19	JUL	67	21	06	57	E	*	*	*	-	-	-	L
20	JUL	67	02	26	26	E	*	*	*	-	-	-	
20	JUL	67	09	11	40	E	-	*	*	-	-	-	
20	JUL	67	14	37	02	E	*	*	*	-	-	-	
20	JUL	67	14	45	39	E	-	-	-	*	*	*	
20	JUL	67	15	55	15	E	*	*	*	N	*	*	
20	JUL	67	17	10	13	E	*	*	*	-	-	-	L
20	JUL	67	21	10	00	E	*	*	*	-	-	-	L
21	JUL	67	09	17	15.0	I	*	*	U	-	-	-	
21	JUL	67	18	41	21	E	*	*	*	-	-	-	L
21	JUL	67	19	31	02.0	I	*	*	D	-	-	-	L
21	JUL	67	21	07	34	E	*	*	*	-	-	-	B
22	JUL	67	04	51		E	-	-	-	*	*	*	
22	JUL	67	15	55	09	E	*	*	*	-	-	-	
22	JUL	67	17	08	44.3	IP	N	E	D	N	E	D	
22	JUL	67	19	55	16	E	*	*	*	-	-	-	
22	JUL	67	20	20	10	E	*	*	*	-	-	-	L
24	JUL	67	07	58	45.3	IP	S	E	U	-	-	-	
24	JUL	67	16	21	38.9	I	N	E	U	-	-	-	L
24	JUL	67	18	30	04	E	-	-	-	*	*	-	
24	JUL	67	20	41	41	E	*	*	*	-	-	-	
24	JUL	67	23	27	54	E	*	*	*	-	-	-	
25	JUL	67	13	21	22	E	*	*	*	-	-	-	
25	JUL	67	19	03	50.3	I	S	W	D	-	-	-	B
26	JUL	67	09	14	05	E	*	*	*	*	*	*	
26	JUL	67	15	03	38	E	*	*	*	-	-	-	
26	JUL	67	17	10	18.1	I	*	*	U	-	-	-	L
26	JUL	67	19	05	20	E	*	*	*	*	*	*	
26	JUL	67	20	50	28	E	*	*	*	-	-	-	L
27	JUL	67	00	07	30	E	*	*	*	*	*	*	
27	JUL	67	00	20	01	E	*	*	*	-	-	-	
27	JUL	67	05	34	10	E	-	-	-	*	*	*	
27	JUL	67	12	41	00	E	-	-	-	*	-	*	
27	JUL	67	16	47	06	E	*	*	*	-	-	-	L
27	JUL	67	18	12	16	E	*	*	*	-	-	-	L
27	JUL	67	19	18	10	E	*	*	*	-	-	-	L
28	JUL	67	03	52	32.1	I	N	W	U	*	*	*	
28	JUL	67	20	26	24.6	I	*	*	U	-	-	-	
28	JUL	67	21	39	44.0	I	N	*	*	-	-	-	
29	JUL	67	10	30	56.6	I	S	*	D	S	*	D	
29	JUL	67	22	49	00	E	-	-	-	*	*	*	

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DATE		GMT OF FIRST MOTION				TYPE OF ONSET	OBSERVABLE ON							REMARKS
		TYPE OF					SP			LP				
							NS	EW	Z	NS	EW	Z		
30	JUL	67	00	06	24.1	I	S	*	D	S	*	D		
30	JUL	67	01	42	50.0	I	*	E	D	*	*	*		
30	JUL	67	08	53	30	E	-	-	-	*	*	*		
30	JUL	67	11	09	09	E	*	*	*	*	*	*		
30	JUL	67	13	55	40	E	-	-	*	*	*	*		
30	JUL	67	17	40	39	E	*	*	*	-	-	-	L	
31	JUL	67	12	28	40	E	*	*	*	-	-	-	L	
31	JUL	67	20	01	57	E	*	*	*	-	-	-	L	
01	AUG	67	01	22	57	E	*	*	*	*	*	*		
01	AUG	67	10	05	05	E	-	-	-	*	*	*		
01	AUG	67	15	36	41.6	I	S	W	U	-	-	-	L	
01	AUG	67	20	47	20	E	*	*	*	-	-	-	L	
02	AUG	67	00	55	30	E	*	*	*	-	-	-		
02	AUG	67	11	14	57	E	*	*	*	N	*	U		
02	AUG	67	14	14	35	E	*	*	*	*	*	*		
02	AUG	67	17	10	33	E	*	*	*	-	-	-		
02	AUG	67	20	10	42	E	*	*	*	-	-	-		
02	AUG	67	21	44	22.4	I	*	E	U	-	-	-	L	
03	AUG	67	01	04	20	E	-	-	-	*	*	*		
04	AUG	67	16	36	08	E	*	*	*	-	-	-	L	
04	AUG	67	17	31	18.0	I	*	*	D	-	-	-	L	
04	AUG	67	19	48	32.2	U	*	*	U	-	-	-	B	
04	AUG	67	23	38		E	-	-	-	*	*	*		
05	AUG	67	17	43	16	E	*	*	*	-	-	-	L	
05	AUG	67	18	43	49	E	*	*	*	-	-	-	L	
06	AUG	67	17	30	07.6	IP	*	*	U	-	-	-		
07	AUG	67	08	30	20	E	*	*	*	-	-	-		
07	AUG	67	11	23	33.2	IP	*	*	U	*	*	*		
07	AUG	67	22	16	55	E	*	*	*	-	-	-		
09	AUG	67	07	22	49.6	I	*	*	U	-	-	-		
09	AUG	67	08	39	14.7	I	*	*	D	-	-	-		
09	AUG	67	13	32	36	E	*	*	*	N	*	*		
09	AUG	67	17	31	05	E	*	*	*	-	-	-		
09	AUG	67	17	39	16.5	I	*	W	U	-	-	-		
09	AUG	67	20	04	27	E	*	*	*	-	-	-	L	
09	AUG	67	22	30	17.8	I	*	E	D	-	-	-		
10	AUG	67	11	32	42.4	I	*	*	U	*	*	*		
10	AUG	67	18	50	03	E	*	*	*	-	-	-	L	
11	AUG	67	12	32	21.0	IP	N	*	U	*	*	*		
11	AUG	67	20	32	43	E	*	*	*	-	-	-	L	
12	AUG	67	09	58	27	E	*	*	*	*	*	*		
12	AUG	67	13	23	30	E	-	-	-	*	*	*		
12	AUG	67	14	16	28.8	I	N	W	D	*	*	*		
12	AUG	67	21	59	49	E	*	*	*	-	-	-		
13	AUG	67	16	51	22	E	*	*	*	-	-	-		
13	AUG	67	20	19	49.5	IP	*	*	D	*	*	*		
13	AUG	67	22	17	24.9	IP	*	E	D	*	*	*		
13	AUG	67	22	34	01	E	*	*	*	-	-	-		
14	AUG	67	02	51	13.8	IP	*	*	U	-	-	-		
14	AUG	67	12	50	09.5	IP	*	*	U	-	-	-		

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DATE	GMT OF FIRST MOTION					TYPE OF ONSET	OBSERVABLE ON						REMARKS
							SP			LP			
							NS	EW	Z	NS	EW	Z	
14 AUG 67	13	46	06.0			I	S	E	U	-	-	-	L
14 AUG 67	19	21	15			E	*	E	U	-	-	-	
14 AUG 67	21	30	21			E	S	*	*	-	-	-	
15 AUG 67	03	28	56			E	*	*	*	*	*	*	
15 AUG 67	20	41	24			E	*	*	*	-	-	-	
16 AUG 67	16	11	57			E	*	*	*	-	-	-	L
16 AUG 67	20	09	17.4			I	*	W	U	-	-	-	L
16 AUG 67	20	40	46			E	*	*	*	-	-	-	L
17 AUG 67	14	30	05.0			I	*	E	U	-	-	-	
17 AUG 67	17	15	06			E	*	*	*	-	-	-	L
17 AUG 67	22	50	44.3			I	*	E	*	-	-	-	
18 AUG 67	05	59	03			E	*	*	*	-	-	-	
18 AUG 67	15	14	07			E	*	*	*	-	-	-	L
18 AUG 67	18	47	26.3			I	*	*	U	-	-	-	
18 AUG 67	19	56	53			E	*	*	*	-	-	-	L
18 AUG 67	20	41	15			E	*	*	*	-	-	-	B
18 AUG 67	21	55	04			E	*	*	*	-	-	-	
19 AUG 67	13	55	08			E	*	*	*	-	-	-	
19 AUG 67	15	47	03.2			IP	*	*	U	*	*	*	
21 AUG 67	00	16	35.2			I	*	*	D	-	-	-	
20 AUG 67	02	15	13			E	*	*	*	-	-	-	
20 AUG 67	20	08	04			I	*	*	D	*	*	*	
21 AUG 67	07	52	19.1			IP	*	*	U	*	*	U	
22 AUG 67	09	06	02			E	*	*	*	*	*	*	
22 AUG 67	10	08	48			E	*	*	*	-	-	-	
22 AUG 67	13	16	32			E	*	*	*	*	*	*	
23 AUG 67	09	30	16.3			I	*	*	U	*	*	*	
23 AUG 67	16	15	56			E	*	*	*	-	-	-	L
23 AUG 67	19	26	08.0			I	S	*	*	-	-	-	
24 AUG 67	03	33	56.5			I	*	*	U	-	-	-	
24 AUG 67	21	24	23.6			I	*	*	U	-	-	-	L
25 AUG 67	15	35	48			E	-	-	-	*	*	*	
25 AUG 67	18	37	28.4			I	*	*	D	-	-	-	L
26 AUG 67	00	51	40			E	*	*	*	*	*	*	
26 AUG 67	18	44	00			E	-	-	-	*	*	*	
27 AUG 67	13	14	47.1			IP	N	E	U	N	E	U	
27 AUG 67	15	27	14			E	*	*	*	-	-	-	
27 AUG 67	18	56	33			E	*	*	*	*	*	*	
28 AUG 67	15	25	20			E	*	*	*	*	*	*	
29 AUG 67	07	47	00			E	-	-	-	*	*	*	
29 AUG 67	11	47	20			E	-	-	-	*	*	*	
30 AUG 67	04	40	56			E	*	*	*	*	*	*	
30 AUG 67	11	52	42			E	-	-	-	*	*	*	
30 AUG 67	13	46	52			E	*	*	*	*	*	*	
30 AUG 67	15	08	37			E	*	*	*	-	-	-	
30 AUG 67	21	39	20.6			I	*	E	U	-	-	-	
01 SEP 67	17	54	53			E	*	*	*	-	-	-	L
01 SEP 67	19	36	13			E	*	*	*	-	-	-	B
01 SEP 67	22	54	24.4			I	*	*	U	-	-	-	
02 SEP 67	19	58	19			E	*	*	*	-	-	-	L

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DATE		GMT OF FIRST MOTION				TYPE OF ONSET	OBSERVABLE ON							REMARKS
							SP			LP				
							NS	EW	Z	NS	EW	Z		
02	SEP	67	20	01	34	E	*	*	*	-	-	-		
02	SEP	67	20	37	02	E	*	*	*	-	-	-		
03	SEP	67	11	39	22.4	I	*	*	D	-	-	-		
03	SEP	67	21	16	30.8	IP	N	E	U	N	E	U		
05	SEP	67	18	13	07.0	I	*	*	U	-	-	-	L	
05	SEP	67	19	10	03	E	*	*	*	-	-	-	L	
05	SEP	67	19	30	15	E	*	*	*	-	-	-	L	
05	SEP	67	20	36	51	E	*	*	*	-	-	-	L	
05	SEP	67	23	17	07	E	*	*	*	-	-	-	L	
06	SEP	67	07	49	09.0	I	*	*	U	-	-	-		
07	SEP	67	02	16	01	E	*	*	*	*	*	*		
07	SEP	67	07	34	20.3	IP	S	W	D	*	*	*		
07	SEP	67	17	07	14	E	*	*	*	-	-	-	L	
07	SEP	67	18	17	22	E	*	*	*	-	-	-	L	
07	SEP	67	18	52	04	E	*	*	*	-	-	-	L	
07	SEP	67	21	38	36.0	E	*	*	U	-	-	-	L	
08	SEP	67	09	10	33.0	IP	*	*	U	-	-	-		
08	SEP	67	17	46	17	E	*	*	*	-	-	-	L	
08	SEP	67	20	34	23	E	*	*	*	-	-	-	L	
08	SEP	67	20	42	04	E	*	*	*	-	-	-	L	
08	SEP	67	22	57	07	E	*	*	*	*	*	*		
09	SEP	67	10	16	56.7	IP	S	E	D	S	E	D		
09	SEP	67	17	08	12	E	-	-	-	N	E	*		
12	SEP	67	17	59	15	E	*	*	*	-	-	-		
12	SEP	67	19	42	27	E	*	E	*	-	-	-		
12	SEP	67	22	09	20	E	-	-	-	*	*	*		
13	SEP	67	18	52	04	E	*	*	*	-	-	-		
13	SEP	67	19	00	48	E	-	-	-	*	*	*		
13	SEP	67	20	36	12	E	*	*	*	-	-	-		
14	SEP	67	14	28	36	E	-	-	-	*	*	*		
14	SEP	67	16	15	06.7	I	*	E	U	-	-	-		
14	SEP	67	18	42	53.1	I	*	W	U	-	-	-		
14	SEP	67	20	36	29.3	I	*	E	U	-	-	-		
15	SEP	67	01	14	20	E	-	-	-	*	*	*		
15	SEP	67	11	35	20	E	-	-	-	*	*	*		
15	SEP	67	18	48	06.2	I	*	E	*	-	-	-		
15	SEP	67	19	31	59	E	*	*	*	-	-	-		
15	SEP	67	21	00	09	E	*	*	*	-	-	-		
16	SEP	67	04	37	02	E	-	-	-	*	*	*		
16	SEP	67	08	42	25.0	I	*	*	U	*	*	*		
16	SEP	67	17	46	11	E	*	*	*	-	-	-		
16	SEP	67	18	42	10	E	-	-	-	*	*	*		
16	SEP	67	20	23	54	E	*	*	*	-	-	-		
16	SEP	67	20	33	26	E	*	*	*	-	-	-	B	
17	SEP	67	01	23	45	E	*	*	*	-	-	-		
17	SEP	67	08	02	03.0	I	S	*	D	*	*	*		
17	SEP	67	17	05	07	E	*	*	*	*	*	*		
18	SEP	67	07	11	39	E	*	*	*	*	*	*		
18	SEP	67	15	09	47.2	I	S	*	U	-	-	-	L	
18	SEP	67	15	16	36.7	I	*	W	U	-	-	-	L	

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DATE		GMT OF FIRST MOTION				TYPE OF ONSET	OBSERVABLE ON						REMARKS
							SP			LP			
							NS	EW	Z	NS	EW	Z	
18 SEP 67		15	52	07		E	*	*	*	-	-	-	
18 SEP 67		16	05	16		E	-	-	-	*	*	*	
18 SEP 67		18	24	02		E	*	*	*	-	-	-	
19 SEP 67		11	08	48.5		I	*	*	U	*	*	*	
19 SEP 67		13	04	18		E	*	*	*	-	-	-	
19 SEP 67		15	14	25.5		I	N	*	*	-	-	-	
19 SEP 67		16	36	23.7		I	S	E	U	-	-	-	
19 SEP 67		17	49	19.0		I	N	E	D	-	-	-	
19 SEP 67		20	26	29		E	*	*	*	-	-	-	
19 SEP 67		20	43	05		E	*	*	*	-	-	-	
20 SEP 67		09	42	25		E	*	*	*	*	*	*	
20 SEP 67		19	35	30		E	-	-	-	*	*	*	
20 SEP 67		22	12	24.5		I	S	W	U	-	-	-	
21 SEP 67		00	18			E	-	-	-	*	*	*	
21 SEP 67		00	21			E	-	-	-	*	*	*	
22 SEP 67		08	18	55.6		I	S	W	D	*	*	*	
22 SEP 67		09	24	17.2		I	-	-	D	-	-	-	
22 SEP 67		10	30	33.0		I	*	*	U	*	*	*	
22 SEP 67		16	10	51.0		I	*	W	U	-	-	-	
22 SEP 67		21	50			E	-	-	-	*	*	*	
22 SEP 67		21	54	00.9		IP	S	W	U	-	-	*	
23 SEP 67		00	02	55		E	*	*	*	-	-	-	
23 SEP 67		00	21	30		E	-	-	-	*	*	*	
23 SEP 67		07	21	26		E	-	-	-	*	*	D	
25 SEP 67		04	13	30.5		I	S	*	D	-	-	-	
25 SEP 67		08	57	29.0		I	*	*	U	-	-	-	
25 SEP 67		09	02	30		E	*	*	*	*	*	*	
25 SEP 67		18	15	07		E	*	*	*	-	-	-	
25 SEP 67		20	56	25.2		I	N	E	U	-	-	-	
26 SEP 67		11	22	53.2		IP	N	W	U	-	-	-	
26 SEP 67		16	22	35.5		I	*	*	U	*	-	U	
26 SEP 67		16	31	48		E	*	*	*	*	E	*	
27 SEP 67		17	06	08.4		I	N	E	U	-	-	-	
27 SEP 67		17	16			E	*	*	*	*	*	*	
27 SEP 67		18	26	06.5		I	S	W	U	-	-	-	
28 SEP 67		03	10	39.0		IP	*	*	U	-	-	-	
28 SEP 67		03	33			E	-	-	-	*	*	*	
28 SEP 67		05	15	50.6		IP	N	W	D	-	-	-	
28 SEP 67		15	53	16.4		I	*	*	D	*	*	D	
29 SEP 67		05	25	03.5		I	*	*	D	*	*	*	
29 SEP 67		15	52	08		E	-	-	-	*	*	*	
30 SEP 67		02	16	52.0		I	S	E	U	-	-	-	
30 SEP 67		18	13	09.6		I	-	E	U	-	-	-	
02 OCT 67		16	05	52.0		I	S	-	D	-	-	-	
02 OCT 67		17	43	50.3		I	-	-	U	-	-	-	
02 OCT 67		22	50	55.5		I	N	E	U	-	-	-	
03 OCT 67		18	21	18.4		I	N	*	U	N	E	U	
04 OCT 67		01	57	22		E	*	*	*	-	-	-	
04 OCT 67		06	07	32.1		I	N	*	U	*	*	*	
04 OCT 67		09	10			E	-	-	-	*	*	*	

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DATE	GMT OF FIRST MOTION					TYPE OF ONSET	OBSERVABLE ON						REMARKS
							NS	SP		LP			
								EW	Z	NS	EW	Z	
04 OCT 67	10	24	50			E	*	*	*	*	*	*	
04 OCT 67	17	35	46			E	*	*	*	*	*	*	
04 OCT 67	17	11	55.4			I	S	E	D	-	-	-	
04 OCT 67	18	31	31.3			I	S	W	U	-	-	-	
05 OCT 67	09	49	55.0			I	N	W	U	-	-	-	
05 OCT 67	12	11	18.0			I	-	-	D	-	-	-	
06 OCT 67	20	56	52.4			I	*	*	D	-	-	-	
07 OCT 67	01	24	15.1			I	S	E	D	-	-	-	
07 OCT 67	08	39	00.5			I	*	*	U	-	-	-	
07 OCT 67	12	52	23.5			I	S	*	U	-	-	-	
07 OCT 67	22	20	36.3			I	*	*	U	-	-	-	
08 OCT 67	17	55				E	-	-	-	*	*	*	
09 OCT 67	08	42				E	-	-	-	*	*	*	
09 OCT 67	13	48	15			E	*	*	*	-	-	-	
09 OCT 67	14	20				E	*	*	*	-	-	-	
09 OCT 67	17	35	22			E	*	*	*	*	W	D	
11 OCT 67	20	36	22			E	*	*	D	-	-	-	
11 OCT 67	20	37	26			E	S	*	D	-	-	-	
12 OCT 67	07	00	12			E	-	-	-	*	*	*	
12 OCT 67	13	04	53.5			I	S	E	D	-	-	-	
12 OCT 67	18	50	49			E	*	-	-	-	-	-	
13 OCT 67	22	00	15.0			I	*	E	U	-	-	-	
13 OCT 67	22	28	25			E	-	-	-	*	*	*	
14 OCT 67	02	18	44			E	*	*	*	-	-	-	
14 OCT 67	03	36	52			E	*	*	*	-	-	-	
14 OCT 67	16	07	51.8			I	*	*	U	-	-	-	
14 OCT 67	18	18	43.3			I	*	*	D	-	-	-	
15 OCT 67	08	06	45.1			I	N	E	U	N	E	U	
15 OCT 67	23	58				E	-	-	-	*	*	*	
16 OCT 67	13	34	40			IP	*	*	U	*	*	*	
16 OCT 67	17	19	17			E	*	*	U	-	-	-	
17 OCT 67	05	16	49			E	-	-	D	-	-	-	
17 OCT 67	15	14				E	-	-	-	*	*	*	
17 OCT 67	19	53				E	-	-	-	*	*	*	
17 OCT 67	22	09				E	-	-	-	*	*	*	
18 OCT 67	01	20	25.5			I	S	*	D	*	*	D	
18 OCT 67	14	36	08.4			IP	-	E	U	-	-	-	
18 OCT 67	22	25	15			E	-	-	U	-	-	-	
20 OCT 67	01	37				E	-	-	-	*	*	*	
20 OCT 67	22	29	09			E	S	E	U	-	-	-	
21 OCT 67	02	46	15			E	*	*	U	-	-	-	
21 OCT 67	05	10	19.3			UP	S	W	U	-	-	-	
22 OCT 67	01	02	17			E	*	*	U	-	-	-	
22 OCT 67	19	03				E	-	-	-	*	*	*	
23 OCT 67	19	00	14			E	*	*	*	-	-	-	
23 OCT 67	19	12	46.8			I	*	W	U	-	-	-	
24 OCT 67	11	10	37			E	-	-	*	-	-	-	
25 OCT 67	01	14	01			E	*	*	*	*	*	*	
25 OCT 67	09	29	59			E	*	*	*	-	-	-	
25 OCT 67	10	01				E	-	-	-	*	*	*	

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DATE		GMT OF FIRST MOTION			TYPE OF ONSET	OBSERVABLE ON						REMARKS
						SP			LP			
						NS	EW	Z	NS	EW	Z	
25	OCT	67	15	41	E	*	*	*	*	*	*	
26	OCT	67	00	51	E	-	-	-	*	*	*	
26	OCT	67	12	30	E	*	*	*	*	*	*	
26	OCT	67	13	50	E	*	*	*	*	*	*	
26	OCT	67	18	26	E	-	-	-	*	*	*	
28	OCT	67	15	58	27	E	S	W	U	-	-	-
28	OCT	67	18	48	31	IP	-	-	*	-	-	-
28	OCT	67	21	01	26.8	I	*	*	*	-	-	-
29	OCT	67	03	40		E	-	-	-	*	-	*
30	OCT	67	19	54	03	E	*	*	*	-	-	-
31	OCT	67	20	20		E	-	-	-	*	-	*
31	OCT	67	21	36		E	-	-	-	*	*	*
01	NOV	67	05	36		E	-	-	-	*	*	*
01	NOV	67	18	03	52	E	*	*	D	-	-	-
01	NOV	67	19	18	14	E	*	*	D	-	-	-
02	NOV	67	03	43	27.6	I	*	*	D	-	-	-
03	NOV	67	08	24	16.5	I	-	-	D	*	*	*
03	NOV	67	21	14	36.2	I	*	*	U	-	-	-
04	NOV	67	02	20	47	E	*	-	-	-	-	-
04	NOV	67	16	34	42.7	I	S	-	D	-	-	-
05	NOV	67	14	31	08	E	-	-	*	-	-	-
06	NOV	67	06	08		E	-	-	-	*	*	*
07	NOV	67	03	45	45	E	-	-	-	*	*	*
08	NOV	67	03	16	16.7	I	S	E	D	S	*	D
08	NOV	67	07	12		E	-	-	-	*	*	*
08	NOV	67	17	20	18	E	*	*	*	-	-	*
08	NOV	67	19	45	36.0	I	E	N	U	-	-	-
09	NOV	67	02	37	09.2	I	*	*	U	-	-	-
09	NOV	67	07	56	44	E	-	-	*	-	-	-
09	NOV	67	23	56		E	-	-	-	*	*	*
10	NOV	67	18	38	24.2	I	N	W	D	-	-	-
11	NOV	67	22	24	22.2	I	N	W	U	-	-	-
12	NOV	67	02	39	47.5	I	-	-	U	-	-	-
12	NOV	67	10	51		E	*	*	*	*	*	*
14	NOV	67	05	47	17	E	*	*	*	-	-	-
15	NOV	67	21	43	01.4	I	N	W	U	*	*	*
17	NOV	67	05	05	09	E	*	*	*	*	*	*
18	NOV	67	12	22	53	E	*	*	*	-	-	-
19	NOV	67	15	44		E	-	-	-	*	*	*
22	NOV	67	15	02	49	E	*	*	D	-	-	-
22	NOV	67	16	10		E	-	-	-	*	*	-
22	NOV	67	16	42	27	E	*	*	U	-	-	-
23	NOV	67	08	50		E	-	-	-	-	-	*
23	NOV	67	13	50	42.2	I	S	W	U	*	*	*
26	NOV	67	03	13	30.1	I	*	*	U	-	-	-
26	NOV	67	08	19	53	E	-	-	*	-	-	-
27	NOV	67	04	34	28.5	I	*	RF	U	-	-	-
27	NOV	67	04	49	04.5	I	E	RF	U	*	*	*
27	NOV	67	05	14	03.0	I	E	RF	U	*	*	*
27	NOV	67	09	14		E	-	-	-	*	-	*

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		GMT OF FIRST MOTION				TYPE OF ONSET		OBSERVABLE ON SP LP						REMARKS
DATE							NS	EW	Z	NS	EW	Z		
28	NOV	67	03	32		E	*	*	*	-	-	-		
29	NOV	67	01	33	51	E	*	*	*	*	*	*		
30	NOV	67	07	35	00.0	I	*	*	D	-	-	-		
30	NOV	67	07	35	02.5	I	S	W	D	*	*	D		
30	NOV	67	18	14	03.5	I	*	*	U	*	*	*		
01	DEC	67	14	08	52.5	I	S	E	U	*	*	*		
02	DEC	67	00	37	30.9	I	*	*	U	-	-	-		
02	DEC	67	12	55	54.5	I	S	*	U	-	-	-		
04	DEC	67	09	01	40	E	-	-	-	*	*	*		
04	DEC	67	22	29		E	-	-	*	-	-	-		
05	DEC	67	09	15	35	I	S	W	U	-	-	-		
05	DEC	67	11	15	57	E	-	-	*	-	-	-		
05	DEC	67	17	58	50.0	I	*	E	U	*	*	*		
06	DEC	67	02	59	06.1	I	S	*	D	*	*	*		
07	DEC	67	22	02	49.5	I	S	*	U	-	-	-		
10	DEC	67	12	13	46.8	I	*	*	U	E	-	U		
12	DEC	67	16	19	56.5	I	*	*	U	-	-	-	L	
12	DEC	67	19	39	11	E	*	*	*	-	-	-	L	
12	DEC	67	22	49	47	E	*	*	*	-	-	-	L	
13	DEC	67	10	50	26.5	I	*	E	D	-	-	-		
13	DEC	67	18	16	08	E	*	*	*	-	-	-		
13	DEC	67	19	37	53	E	*	*	*	-	-	-	L	
13	DEC	67	20	03	17	E	-	-	-	*	*	*		
13	DEC	67	21	59	35.4	I	*	*	D	-	-	-	L	
14	DEC	67	18	36	43	E	*	*	*	-	-	-		
14	DEC	67	21	33	16	E	*	*	*	-	-	-	B	
14	DEC	67	23	28	40.3	I	*	*	U	-	-	-		
15	DEC	67	19	18	55	E	*	*	*	-	-	-	L	
16	DEC	67	03	27	05.9	I	*	*	U	-	-	-		
16	DEC	67	12	24	44	E	*	*	*	-	-	-		
16	DEC	67	20	01	01.3	I	*	*	D	-	-	-		
16	DEC	67	20	11	20	E	*	*	*	-	-	-	L	
16	DEC	67	20	47	08	E	*	*	*	-	-	-	L	
16	DEC	67	21	05	46.8	I	N	E	U	-	-	-		
17	DEC	67	19	14	02.2	I	N	E	U	-	-	-	L	
18	DEC	67	17	43		E	-	-	-	*	*	*		
20	DEC	67	11	53	26.4	I	*	*	U	*	*	*		
21	DEC	67	02	35	45.0	I	N	W	U	N	W	U		
21	DEC	67	08	00	13.9	I	N	W	U	*	*	*		
21	DEC	67	11	59	06.4	I	*	*	U	*	*	*		
21	DEC	67	18	44		E	-	-	-	*	*	*		
23	DEC	67	00	04		E	-	-	-	*	*	*		
23	DEC	67	13	42	08.5	I	N	E	D	*	*	*		
24	DEC	67	04	30	36.2	I	*	*	U	*	*	*		
24	DEC	67	08	46	10	E	*	*	*	*	*	*		
24	DEC	67	20	08	56.9	I	S	*	D	*	*	D		
24	DEC	67	21	38	17.5	I	S	E	D	*	*	*		
25	DEC	67	01	42	22.0	I	*	*	D	*	*	*		
25	DEC	67	11	51	50.0	I	*	*	D	*	*	*		
25	DEC	67	18	30		E	-	-	-	*	*	*		

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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				