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

Seismograph Report XXXIV

1 January 1964 – 30 June 1964

Code – SCP

B. F. Howell, Jr., Director
R. C. Bubeck, Graduate Assistant
A. Durazzo, Graduate Assistant
S. C. Merdler, Graduate Assistant

Locality: The station is located in a vault in the College of Mineral Industries storage shed. The instruments are mounted on a concrete pillar separated from the foundations and set on sub-soil. The geographic coordinates are:

ϕ = 40° 48' 35.5" N λ = 77° 52' 09.8" W H = 353 m

The geocentric coordinates are:

ϕ = 40° 37' N λ = 77° 52' W

Height above sphere of equal volume = -1.63 km

Please address all communications to:

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

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In January 1962, the old State College Observatory was replaced by a new one equipped by the Advanced Research Projects Agency of the U. S. Department of Defense through the U. S. Coast and Geodetic Survey under the VELA-Uniform program. The new instruments were put into use on January 19, 1962 and were in continuous operation throughout the first six months of 1964 except for interruptions to change records and to make minor adjustments. One instrument remains in operation at the old site to operate a visible recorder. The present setup is temporary until 1965, when the observatory will move to a permanent location 100 yards from the location of the old observatory.

The instrument calibrations were checked on June 13, 1964 and found to be:

Component	Seismometer Period	Galvanometer Period	Overall damping (overshoot ratio) $A/A_{Reverse}$	Sensitivity
SPN	1 sec.	0.78 sec.	48	100,000
SPE	1 sec.	0.77 sec.	57	100,000
SPZ	1 sec.	0.72 sec.	58	100,000
LPN	30 sec.	100 sec.	critical	750
LPE	30 sec.	100 sec.	critical	750
LPZ	30 sec.	100 sec.	critical	750

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 are filed with the U. S. Coast and Geodetic Survey in Washington, D. C. Copies of individual seismograms may be obtained from them. 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.

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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 SHORT PER NS	EW	Z	LONG PER NS	EW	Z	REMARKS
05 JAN 64	18-42-34.5	IP							
06 JAN	23-57-23.2	IP	S	E	U				
08 JAN	10-06-02.5	IP							
12 JAN	06-10-08.2	IP	S	E	U				
16 JAN	16-22-12.0	IP	N	E	U				
18 JAN	22-41-19.5	IP	N	W	U				
20 JAN	17-27-11.4	IP	N	E	D				
24 JAN	23-03-32.2	IP	*	*	U	-	-	-	
26 JAN	09-19-06.7	IP	N	W	U				
28 JAN	14-22-31.1	IP	S	E	U				
31 JAN	04-25-47.8	IP	N	W	D				
03 FEB 64	08-59-20	EP	*	*	U				
04 FEB	18-45-53.7	IP	N	W	D				
06 FEB	13-16-26.9	IP	S	E	U				
	15-39-15.5	IP	N	W	D				
08 FEB	11-28-38.7	IP	S	W	D				
10 FEB	17-47-35.3	IP	N	E	D				
	19-37-12.3	IP	N	E	D				
11 FEB	00-23-46.5	IP	N	E	U				
13 FEB	19-46-47.5	IP	N	*	U				
	20-06-50.0	IP	N	W	D				
14 FEB	16-48-36.8	IP	*	*	D				
18 FEB	09-33-13	EP	*	*	*				
21 FEB	14-08-29.1	IP	N	E	U				
24 FEB	17-15-55.0	IP	N	E	U				
	18-55-31.8	IP	N	E	U				
	21-29-24.4	IP	N	E	U				
02 MRH 64	06-02-25	EP	N	W	U				
	12-45-08.9	IP	N	E	U				
15 MRH	22-39-49	EP	S	W	U				
16 MRH	08-56-58.4	IP	S	W	U				
18 MRH	04-48-34.0	IP	N	E	U				
20 MRH	07-03-19.8	IP	S	*	D				
	17-58-55.8	IP	*	E	U				
	19-03-43.1	IP	N	W	D				
	23-58-19.2	IP	N	E	U				
21 MRH	04-00-51.1	IP	N	*	U				
	15-14-23.6	IP	*	*	U				
28 MRH	03-44-35.3	IP							
	14-54-56.5	IP							
	16-53-00.5	IP							
	20-37-33.4	IP							
	23-55-01.3	IP							
29 MRH	01-01-48.8	IP							
	01-18-06.2	IP							
	01-57-11.6	IP							
	03-15-45.9	IP							
	04-20-31.6	IP							
	05-29-48.6	IP							
	05-46-37.4	IP							

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DATE	GMT OF FIRST MOTION	TYPE OF ONSET	OBSERVABLE ON SHORT PER NS	SHORT PER EW	SHORT PER Z	LONG PER NS	LONG PER EW	LONG PER Z	REMARKS
	06-13-38.5	IP							
	10-16-29.6	IP							
	11-52-33.9	IP							
	12-05-15.5	IP							
29 MRH	17-01-35.4	IP							
30 MRH	02-11-29.5	IP							
	07-17-50.2	IP							
	11-57-29.5	IP							
	12-14-01.7	IP							
	12-46-36.2	IP							
	13-12-24.2	IP							
	22-29-45.4	IP	N	*	U				
31 MRH	00-00-07.8	IP	*	*	U				
	04-28-35.9	IP	N	*	U				
	04-54-44.8	IP	N	*	D				
	08-49-15.2	IP	N	*	U				
	09-08-41.3	IP	N	*	U				
01 APR 64	00-09-30.8	IP	N	E	U				
	03-14-08.6	IP	N	E	U				
	03-31-58.3	IP	N	E	U				
	05-41-19.6	IP	*	E	U				
	06-48-08.6	IP	N	E	U				
	08-17-43.8	IP	N	E	U				
	19-52-09.1	IP	N	E	U				
	19-57-07.8	IP	N	E	U				
	20-21-41.6	IP	N	E	U				
	22-58-42.6	IP	N	E	U				
02 APR	01-45-00.8	IP	*	*	U				
	09-13-29.9	IP	N	E	U				
	10-16-44.0	IP	*	*	U				
	11-49-42.5	IP	N	E	U				
	13-37-01.5	IP	*	*	U				
	16-15-42.1	IP	*	*	U				
	18-33-42.1	IP	N	*	U				
	20-18-04.9	IP	N	*	U				
	22-42-41.2	IP	*	E	U				
03 APR	00-46-06.9	IP	N	E	U				
	04-31-50.9	IP	N	E	U				
	08-46-51.0	IP	N	E	U				
	08-54-53.5	IP	N	E	U				
	22-57-00.9	IP	S	E	U				
04 APR 64	04-43-19.1	IP	S	E	U				
04 APR 64	07-02-19.0	IP	N	E	U				
04 APR 64	09-19-44.0	IP	S	E	U				
04 APR 64	17-55-03.9	IP	S	W	U				
04 APR 64	19-40-39.2	IP	*	E	D				
04 APR 64	20-10-06.9	IP	N	W	D				
05 APR	01-31-05.4	IP	*	W	U				
	01-50-35.1	IP	N	*	U				
	02-44-28.7	IP	*	*	D				

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DATE	GMT OF FIRST MOTION	TYPE OF ONSET	OBSERVABLE ON SHORT PER NS	EW	Z	LONG PER NS	EW	Z	REMARKS
	17-49-35.1	IP	N	*	U				
	19-36-39.0	IP	S	E	U				
06 APR	10-50-51.9	IP	*	*	U				
	17-44-15.6	IP	S	E	D				
07 APR	01-52-20.5	IP	N	E	U				
	04-43-53.1	IP	N	E	U				
	13-37-08.1	IP	N	E	U				
	18-11-05.5	IP	S	E	D				
	19-37-07.6	IP	N	E	D				
08 APR	00-45-09.0	IP	N	E	U				
	11-10-34.2	IP	N	E	U				
	14-24-11.9	IP	N	-	-				
	19-41-40.7	IP	N	E	U				
10 APR	01-16-38.2	IP	N	E	U				
	19-14-19.3	IP	S	W	U				
	21-52-54.5	IP	N	W	D				
11 APR	09-32-36.0	IP	*	*	U				
	12-25-24.1	IP	*	*	U				
	23-19-42.1	IP							
12 APR	01-33-18.6	IP	N	W	D				
	09-43-32.7	IP							
	11-29-35.0	IP							
	12-45-00.5	IP							
	12-56-43.1	IP							
	14-44-13.3	IP							
	17-30-17.0	IP	*	*	U				
13 APR	12-33-40.8	IP	*	*	U				
	14-13-39.8	IP	*	E	D				
	14-41-16.8	IP	N	W	D				
	16-22-50.5	IP	*	*	D				
	21-34-23.1	IP	S	E	D				
	21-51-21	EP	*	*	*				
14 APR	16-03-29.6	IP	S	*	D				
	17-08-01.3	IP	*	*	D				
	22-41-15.9	IP	N	*	U				
	23-04-15.4	IP	N	E	U				
15 APR	08-32-03.1	IP	*	*	U				
	15-39-40	EP	*	*	*				
16 APR	03-28-19.0	IP	N	W	D				
	19-35-45.6	IP	*	E	D				
17 APR	04-25-10.3	IP	*	*	U				
	04-58-08.3	IP	*	*	U				
	09-17-49.5	IP	N	W	D				
18 APR	20-17-15.3	IP	*	*	U				
19 APR	05-25-19	EP	*	*	*				
	18-59-35.4	IP	*	*	U				
20 APR	03-42-55.5	IP	N	E	D				
	12-04-59.5	IP	N	E	U				
	15-41-42	EP	N	E	U				
	15-48-46.9	IP	*	E	D				

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DATE	GMT OF FIRST MOTION	TYPE OF ONSET	OBSERVABLE ON SHORT PER NS	SHORT PER EW	SHORT PER Z	LONG PER NS	LONG PER EW	LONG PER Z	REMARKS
	16-41-40	EP	N	E	U				
21 APR	05-09-51.5	IP	N	E	U				
	16-45-51	EP	N	E	U				
22 APR	18-20-32.2	IP	N	E	U				
	18-44-41.8	IP	N	E	U				
23 APR	03-52-10.0	IP	*	*	*				
	10-51-36.8	IP	*	*	*				
	15-05-09.6	IP	N	W	D				
24 APR	03-59-14.7	IP	N	W	U				
	06-15-06	EP	*	*	*				
	14-46-15.4	IP	N	E	U				
25 APR	09-51-42.3	IP	*	*	U				
26 APR	14-18-52.0	IP	S	W	U				
27 APR	07-04-00.2	IP	*	*	D				
	16-02-54	EP	*	*	*				
28 APR	12-43-04.8	EP	N	E	U				
	17-52-06.4	IP	N	E	U				
	21-26-51	EP	*	*	*				
29 APR	04-32-31.1	IP	*	E	U				
30 APR	14-49-06.8	IP	N	E	U				
	17-48-39	EP	*	*	*				
01 MY 64	00-26-05	EP	*	*	U				
01 MY 64	03-21-38.7	IP	N	E	U				
01 MY 64	06-10-07.6	IP	N	E	U				
02 MY 64	16-23-23.2	IP	N	E	U				
02 MY 64	17-17-07.7	IP	*	*	U				
04 MY 64	12-13-29.4	IP	N	E	U				
06 MY 64	15-35-23.4	IP	S	W	U				
06 MY 64	20-25-58.2	IP	S	E	U				
07 MY 64	08-11-24.6	IP							
08 MY 64	15-29-09.8	IP	N	E	U				
08 MY 64	16-30-43.1	IP	*	E	U				
08 MY 64	21-56-07	EP	*	*	*				
08 MY 64	23-50-49	EP	*	*	*				
09 MY 64	02-12-35.0	IP	*	*	U				
12 MY 64	06-45-33.9	IP	S	E	U				
12 MY 64	11-55-53.2	IP	*	*	U				
12 MY 64	17-03-58	EP	*	*	*				
12 MY 64	18-25-30	EP	*	*	*				
13 MY 64	14-02-22	EP	*	*	U	-	-	-	
13 MY 64	16-12-51	EP	*	*	*	-	-	-	
13 MY 64	16-58-16	EP	*	*	*	-	-	-	
16 MY 64	14-53-32.7	IP	S	E	U	-	-	-	
17 MY 64	00-58-20.9	IP	*	*	U	*	*	U	
17 MY 64	04-51-07	EP	N	W	D	-	-	-	
17 MY 64	19-32-52.6	IP	N	E	U	N	E	U	
18 MY 64	01-18-31	EP	*	*	*	-	-	-	
19 MY 64	10-51-51.8	IP	S	E	U	-	-	-	
19 MY 64	23-11-24.0	IP	*	*	*	*	*	U	
20 MY 64	05-40-47.1	IP	N	E	D	-	-	-	

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DATE	GMT OF FIRST MOTION	TYPE OF ONSET	OBSERVABLE ON SHORT PER NS	SHORT PER EW	SHORT PER Z	LONG PER NS	LONG PER EW	LONG PER Z	REMARKS
21 MY 64	15-44-50.2	IP	S	E	U	-	-	-	
21 MY 64	22-37-45.9	IP	S	*	D	*	*	D	
25 MY 64	20-03-41	EP	*	*	U	-	-	-	
26 MY 64	11-13-16.8	IP	*	W	U	*	W	U	
27 MY 64	11-12-51.4	IP	*	*	D	-	-	-	
28 MY 64	16-26-40.1	IP	*	*	D	-	-	-	
29 MY 64	03-43-11.0	IP	N	E	U	-	-	-	
29 MY 64	10-25-54.5	IP	N	E	U	-	-	-	
30 MY 64	03-11-31.8	IP	S	E	U	-	-	-	
30 MY 64	22-43-21.5	IP	*	*	U	-	-	-	
31 MY 64	00-53-16.1	IP	S	E	U	S	E	U	
31 MY 64	10-39-22.7	IP	*	E	U	-	-	-	
02 JNE 64	16-17-35.4	IP	*	*	D	-	-	-	
05 JNE	09-58-52.5	IP	*	RF	U	-	-	-	
	22-15-38.2	IP	S	RF	U	-	-	-	
07 JNE	20-21-49.4	IP	*	*	D	-	-	-	
08 JNE	04-33-01.7	IP	N	*	U	-	-	-	
15 JNE	00-24-47.6	IP	*	*	D	-	-	-	
	22-58-11	EP	*	*	U	-	-	-	
16 JNE	04-15-00.8	IP	N	E	U	S	E	U	
	07-06-24.8	IP	*	*	U	-	-	-	
	07-28-11.8	IP	*	*	U	-	-	-	
	19-00-39.9	IP	N	W	D	-	-	-	
	19-59-52.4	IP	N	E	U	-	-	-	
	20-03-58	EP	-	*	D	-	-	-	
	22-28-18.8	IP	N	E	U	-	-	-	
17 JNE	14-43-41.8	IP	N	E	D	-	-	-	
17 JNE	16-01-31.0	IP	N	W	D	-	-	-	
	18-13-51	EP	*	*	U	-	-	-	
	20-45-53.5	IP	*	*	U	-	-	-	
21 JNE	01-44-58.6	IP	*	*	U	-	-	-	
23 JNE	01-39-17.2	IP	RF	E	U	S	E	U	
	16-35-09.1	IP	RF	E	U	-	-	-	
24 JNE	13-10-51	EP	*	E	U	-	-	-	
	14-14-12.1	IP	*	E	U	-	-	-	
	17-44-29.6	IP	N	W	D	-	-	-	
	18-16-23.0	IP	*	E	U	-	-	-	
25 JNE	11-31-29.1	IP	N	E	D	-	-	-	
28 JNE	13-10-31	EP	*	*	U	*	*	U	
	17-31-00	EP	*	*	*	*	*	U	
	18-32-17.8	IP	*	E	D	-	-	-	
	19-17-40.4	IP	N	E	D	*	*	D	
29 JNE	04-59-00	EP	*	*	*	*	*	*	
	07-30-07.7	IP	RF	E	U	*	E	U	
30 JNE	14-05-30	EP	*	*	*	*	*	U	
	16-00-11.9	IP	*	*	U	-	-	-	
	18-02-14.3	IP	*	E	U	-	-	-	
	20-20-23.2	IP	N	E	U	-	-	-	
	21-34-58.0	IP	N	*	U	-	-	-	

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We acknowledge with thanks receipt of the following bulletins and other publications between 5 March 1964 and 4 January 1965:

Antartic, Seis. Bull., Oct.-Dec. 1963, Jan.-Mar. 1964, Jul-Sept. 1964.
Arkansas, Seis. Bull., XII, Jan.-Mar. 1963, XII, Apr.-June 1963.
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Berkeley, Calif., Bull. Seis. St. Vol. 31, No. 3 and 4, July-Dec. 1961; Vol. 32, No. 1 and 2, Jan.-June 1962.
Bergen (Norway), Seis. Bull., July 1959-Dec. 1960, 1960-1962.
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Copenhagen (Denmark), Bull. of Seis. Sta: Nord, July-Dec. 1960; Scoresbysund, Jan.-June 1961; Kobenhaven, Jan.-Dec. 1961.
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Edinburgh (Scotland), Seis. Bull., 1962.
Genova (Italy), Bol. Geomagnetic, July-Sept. 1963.
Granada (Spain), Bol. Seis. Prov., Jan.-Oct. 1964.
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Melbourne (Australia), Seis. Bull., June 1964, Final 1962.
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Minneapolis, Minnesota, Univ., Seis. Bull., July-Dec. 1963.
Montreal (Canada), Bull. de Gphys., May 1964, Jan.-July 1964.
Morgantown, W. Vir., Univ., Seis. Report, Jan.-June 1964.
New Zealand, Seis. Report, 1959.
Oregon, Univ., Seis. Bull, July 1963-March 1964.
Quetta (Pakistan), Seis. Bull., Oct. 1961.
Palisades, New York, Columbia Univ., Seis. Bull.,Jan.-June 1963.
Papua and New Guinea, Seis. Obs., Feb., April 1958.
Paris (France), IUGG, Oct. 1964; Stat. Sis., April 1963.
Pasadena, Calif., Pasadena Prel. Bull., Dec. 1963-Oct. 1964.
La Plata (Argentina), Bo. Sis., Jan. 1956, May 1956.
Prague (Czekoslovackia) Seis. Bull. Sta., 1955, '56, '57.
Rabaul Volcan. Obs., March 1958, May-Dec. 1958.
Reykjavik (Iceland), Seis. Bull., 1960-62.
Rome (Italy), Bol. Micr., Dec. 1962-Feb. 1963; Bol. Sis. Def., March-Nov. 1963.

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St. Maur-Garchy (France), Oct. 1963-Jan. 1964.
Salt Lake City, Utah, Univ., Seis. Bull., July 1962-June 1963.
Seattle, Washington, Univ., Seis. Bull., 1958.
Strasbourg (France)Bul. Mensuel, Oct.-Dec. 1961, Jan.-Mar. 1962, Jan.-Feb. 1963; Bull. Sis., Sept.-Dec. 1963, Jan.-Aug. 1964.
Stuttgart (Germany), Seis. Jahresbericht, 1963.
Tananarive (Madagascar), Sis. Bull., April-Dec. 1962.
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U.S.C.G.S., Seis. Bull., Jan.-Mar. 1960, July-Dec. 1962; Antarctic Feb. 1963, Apr.-June 1964; Prelim. Det. Ep. 14-64 to 78-64, 80-64, 83-64 to 90-64, 92-64 to 99-64.
Wellington (New Zealand), Amberley Obs., 1961.
Zurich (Switzerland), Jahresbericht, 1961.

The Geophysical Laboratory
203-209 Mineral Sciences Building
University Park, Pennsylvania, U.S.A., 16802
B. F. Howell, Jr., Director
4 January 1965

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

Seismograph Report XXXV

1 July 1964 – 31 December 1964

Code – SCP

B. F. Howell, Jr., Director
R. C. Bubeck, Graduate Assistant

Locality: The station is located in a vault in the College of Mineral Industries storage shed. The instruments are mounted on a concrete pillar separated from the foundations and set on sub-soil. The geographic coordinates are:

$\phi = 40^{\circ}\ 48'\ 35.5''$ N $\lambda = 77^{\circ}\ 52'\ 09.8''$ W H = 353 m

The geocentric coordinates are:

$\phi = 40^{\circ}\ 37'$ N $\lambda = 77^{\circ}\ 52'$ W

Height above sphere of equal volume = -1.63 km

Please address all communications to:

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

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Component	Seismometer Period	Galvanometer Period	Overall damping (overshoot ratio) $A/A_{Reverse}$	Sensitivity
SPN	1 sec.	0.78 sec.	48	100,000
SPE	1 sec.	0.77 sec.	57	100,000
SPZ	1 sec.	0.72 sec.	58	100,000
LPN	30 sec.	100 sec.	critical	750
LPE	30 sec.	100 sec.	critical	750
LPZ	30 sec.	100 sec.	critical	750

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 are filed with the U.S. Coast and Geodetic Survey in Washington, D. C. Copies of individual seismograms may be obtained from them. 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.

International Seismological Centre From the ISC collection scanned by SISMOS

DATE	GMT OF FIRST MOTION	TYPE OF ONSET	OBSERVABLE ON SHORT PER NS	EW	Z	LONG PER NS	EW	Z	REMARKS
01 JLY 64	03-15-04.7	IP	RF	E	U	-	-	-	
	09-59-14.3	IP	RF	E	U	-	-	-	
	14-44-15.3	IP	N	E	U	-	-	-	
	15-27-06.7	IP	S	W	D	-	-	-	
	22-58-42.5	IP	S	W	D	*	*	D	
02 JLY	01-27-20.9	IP	N	E	U	N	*	U	
	06-45-06.2	IP	N	E	U	-	-	-	
	17-24-40.8	IP	*	*	U	*	*	U	
03 JLY	16-58-56.9	IP	N	E	U	-	-	-	
	22-43-38.6	IP	N	E	U	-	-	-	
04 JLY	12-23-25.1	IP	S	E	D	-	-	-	
05 JLY	03-22-44.3	IP	S	E	U	*	*	U	
	19-14-11.5	IP	N	W	U	*	*	U	
	23-48-31.6	IP	N	*	U	*	*	U	
06 JLY	02-20-45.0	IP	N	W	U	N	*	U	
	07-28-09.6	IP	N	E	U	*	W	U	
07 JLY	07-04-28.2	IP	RF	*	D	-	-	-	
	17-09-28.4	IP	N	W	U	-	-	-	
08 JLY	08-04-49	EP	RF	*	U	-	-	-	
	12-14-27	EP	RF	W	U	N	W	U	
09 JLY	11-51-31	EP	*	*	U	*	W	U	
	16-59-22.1	IP	*	*	D	-	-	-	
11 JLY	09-52-34.4	IP	RF	E	U	-	-	-	
	20-33-55.5	IP	S	E	U	*	*	U	
	21-14-06.6	IP	*	*	U	-	-	-	
12 JLY	01-58-45.2	IP	*	*	U	-	-	-	
14 JLY	10-00-34.4	IP	RF	E	U	-	-	-	
	12-54-23.5	IP	RF	E	U	-	-	-	
	14-09-42.5	IP	RF	W	D	-	-	-	
	23-07-22	EP	RF	*	D	-	-	-	
15 JLY	07-36-10.9	IP	RF	E	U	-	-	-	
16 JLY	18-45-58.6	IP	RF	E	U	-	-	-	
	20-15-29.1	IP	RF	E	U	-	-	-	
17 JLY	02-45-41.0	IP	RF	W	U	N	W	U	
	04-52-55.7	IP	RF	*	D	-	-	-	
	15-26-06.3	IP	RF	E	U	-	-	-	
	19-55-13.3	IP	RF	E	U	-	-	-	
	23-07-15.8	IP	RF	E	D	-	-	-	
18 JLY	03-52-00.8	IP	RF	E	D	-	-	-	
	11-23-14.0	IP	RF	*	U	-	-	-	
	20-43-49.6	IP	RF	*	U	-	-	-	
	23-44-25.4	IP	RF	E	U	N	E	U	
20 JLY	18-56-31.1	IP	RF	E	U	*	E	U	
21 JLY	01-16-03	EP	RF	E	U	S	E	U	
	07-07-51.2	IP	RF	*	U	-	-	-	
	10-06-57.6	IP	RF	*	D	-	-	-	
22 JLY	13-15-14.8	IP	RF	E	U	-	-	-	
	14-42-22.7	IP	RF	E	U	-	-	-	
	16-15-44.4	IP	RF	E	D	-	-	-	
	17-43-16.8	IP	RF	E	U	-	-	-	

International Seismological Centre From the ISC collection scanned by SISMOS

DATE	GMT OF FIRST MOTION	TYPE OF ONSET	OBSERVABLE ON SHORT PER NS	SHORT PER EW	SHORT PER Z	LONG PER NS	LONG PER EW	LONG PER Z	REMARKS
23 JLY	00-55-16.2	IP	*	E	U	-	-	-	
	09-51-35.1	IP	*	E	U	-	-	-	
	14-27-38.0	IP	*	E	U	-	-	-	
	19-16-31.2	IP	N	W	D	-	-	-	
	19-24-39.5	IP	*	E	U	-	-	-	
	21-51-18.1	IP	*	E	U	-	-	-	
24 JLY	01-30-30.4	IP	N	E	U	-	-	-	
	01-45-35.1	IP	N	*	U	-	-	-	
	07-03-06.0	IP	S	E	U	S	E	RF	
	08-24-51.0	IP	N	E	U	N	E	RF	
	17-15-03.2	IP	N	E	U	*	E	RF	
25 JLY	19-42-09.3	IP	N	E	U	N	E	U	
27 JLY	16-09-40	E	*	*	*	-	-	-	
	16-46-33	E	*	*	*	-	-	-	
	17-36-43	E	*	*	*	-	-	-	
	18-12-02	E	*	*	*	-	-	-	
	18-45-16	E	*	E	*	-	-	-	
	19-24-33	E	*	*	*	-	-	-	
	20-07-58	E	*	*	*	-	-	-	
	21-36-30	E	*	*	*	-	-	-	
	22-55-58	E	N	*	*	-	-	-	
	23-12-51	E	*	*	*	-	-	-	
28 JLY	13-56-33	E	*	E	*	-	-	-	
	16-03-22	E	*	*	*	-	-	-	
	17-02-21	E	*	*	*	-	-	-	
	18-16-05	E	*	*	*	-	-	-	
	18-24-07	E	*	*	*	-	-	-	
	18-59-39	E	*	*	*	-	-	-	
	20-17-25	E	*	*	*	-	-	-	
	21-58-29	E	*	*	*	*	*	*	
29 JLY	00-29-33	E	*	-	*	-	-	-	
	13-17-08.6	IP	*	E	U	-	-	-	
30 JLY	05-22-14.9	IP	N	*	U	N	-	U	
	14-10-10.8	IP	S	W	D	-	-	-	
	15-57-23	EP	*	E	*	-	-	-	
	16-28-27	E	*	*	*	-	-	-	
	17-30-05	E	*	*	*	-	-	-	
	19-27-16	E	*	*	*	-	-	-	
	21-02-21.9	IP	S	*	U	-	-	-	
31 JLY	04-17-32	E	-	-	-	-	-	-	
	06-11-02	E	*	*	*	S	E	U	
	16-40-07.8	IP	*	E	U	-	-	-	
	18-33-24	E	*	*	*	-	-	-	
	23-29-04.3	IP	N	E	U	-	-	-	
	23-55-00.5	IP	*	*	U	*	*	*	
01 AUG 64	15-19-22	E	*	*	*	-	-	-	
	17-58-29	E	-	E	*	-	-	-	
	18-43-43.2	IP	*	W	*	-	-	-	
02 AUG	03-13-12	E	-	-	*	-	-	-	
	08-44-54.0	IP	*	*	D	*	*	D	

International Seismological Centre From the ISC collection scanned by SISMOS

DATE	GMT OF FIRST MOTION	TYPE OF ONSET	OBSERVABLE ON SHORT PER NS	EW	Z	LONG PER NS	EW	Z	REMARKS
03 AUG	01-53-18.5	IP	S	E	D	S	E	D	
04 AUG	16-09-42	E	*	E	*	–	–	–	
	16-33-15.9	IP	*	E	U	–	–	–	
	17-36-43.3	IP	N	E	U	–	–	–	
05 AUG	11-25-40	E	–	–	–	*	E	U	
	16-31-49.7	IP	N	W	U	–	–	–	
	18-50-32.9	IP	N	W	D	–	–	–	
	19-07-55.0	IP	N	W	U	–	–	–	
	22-35-23.3	IP	*	W	D	S	*	D	
	22-58-59	E	*	*	*	–	–	–	
06 AUG	07-31-30.3	IP	*	*	U	–	–	–	
	18-33-35.0	IP	N	*	U	N	*	*	
07 AUG	05-46-11	EP	N	*	*	*	*	*	
	08-27-01	E	*	*	*	–	–	–	
08 AUG	01-09-41	E	*	*	*	–	–	–	
	02-14-12.1	IP	N	E	U	–	–	–	
	15-51-11.8	IP	N	E	U	*	*	U	
	20-10-30	EP	*	*	*	*	*	*	
09 AUG	01-23-30	E	*	*	*	–	–	–	
10 AUG	01-15-20	EP	*	W	*	S	W	*	
	07-44-32	EP	*	*	*	–	–	–	
	12-57-22	E	*	E	*	–	–	–	
	14-00-17.9	IP	N	W	U	–	–	–	
	15-15-47.3	IP	*	*	U	–	–	–	
	15-21-35	EP	S	E	U	–	–	–	
	15-44-02	E	*	*	*	–	–	–	
	17-05-30.1	IP	N	W	U	–	–	–	
	18-33-05	EP	*	*	*	–	–	–	
	19-15-30	E	*	*	*	–	–	–	
	22-00-37	E	*	*	*	–	–	–	
	23-15-22	E	*	*	*	–	–	–	
11 AUG	13-04-18	E	*	*	*	–	–	–	
	14-40-17.9	IP	*	*	U	–	–	–	
	16-03-02.6	IP	*	E	U	–	–	–	
	17-56-07	EP	*	*	*	–	–	–	
	18-01-51	E	*	*	*	–	–	–	
	20-44-12	E	*	*	*	–	–	–	
	22-09-48.1	IP	S	E	U	–	–	–	
12 AUG	07-03-45	E	*	*	*	–	–	–	
	17-50-30.9	IP	N	W	D	–	–	–	
13 AUG	00-49-23	EP	*	*	U	*	*	*	
	13-46-34	EP	N	*	D	–	–	–	
	14-55-32	E	*	*	*	–	–	–	
	16-25-28.8	IP	*	E	D	–	–	–	
	18-10-55.5	IP	*	E	D	–	–	–	
	20-01-03	EP	*	*	*	–	–	–	
14 AUG	13-03-08	E	*	*	*	–	–	–	
	13-35-06.9	IP	N	*	D	–	–	–	
	14-01-06.0	IP	S	E	U	–	–	–	
	15-28-04.0	IP	*	*	U	–	–	–	

International Seismological Centre From the ISC collection scanned by SISMOS

DATE	GMT OF FIRST MOTION	TYPE OF ONSET	OBSERVABLE ON SHORT PER NS	SHORT PER EW	SHORT PER Z	LONG PER NS	LONG PER EW	LONG PER Z	REMARKS
	19-01-45	E	*	*	*	-	-	-	
	20-35-29	EP	N	E	*	-	-	-	
	23-49-32.0	I	*	*	D	-	-	*	
15 AUG	03-53-42.3	IP	N	E	U	*	*	U	
	14-15-10	E	*	*	*	-	-	-	
	18-18-32	EP	N	*	*	-	-	-	
	18-24-49	E	*	*	*	-	-	-	
	19-03-42.1	IP	*	*	U	-	-	-	
	20-02-33.5	IP	S	E	U	-	-	-	
	21-42-23	E	*	*	*	-	-	-	
16 AUG	01-35-38	E	*	*	*	-	-	-	
	19-08-24	EP	*	*	*	-	-	-	
	20-11-31.2	IP	*	*	U	-	-	-	
17 AUG	00-29-31	E	*	*	*	-	-	-	
	09-13-44	E	-	*	*	-	-	*	
	14-35-58	EP	*	E	*	-	-	-	
	15-06-55.3	IP	N	*	U	-	-	-	
	15-21-35	E	*	*	*	-	-	-	
	15-39-20	E	-	-	-	*	*	*	
	16-49-39.9	IP	*	*	U	-	-	-	
	17-30-35	E	*	*	*	-	-	-	
	18-42-25	E	*	*	*	-	-	-	
	19-15-58	E	*	*	*	-	-	-	
	19-42-59	EP	N	*	D	-	-	-	
18 AUG	00-35-16.9	IP	S	E	D	-	-	*	
	04-55-53.3	IP	N	W	U	N	W	U	
	05-24-14	EP	*	*	*	-	-	-	
	18-15-32	E	*	*	*	-	-	-	
	20-55-17.8	IP	*	*	U	-	-	-	
	21-41-07	E	*	*	*	-	-	-	
19 AUG	01-46-23	E	*	*	*	-	-	-	
	03-12-03.1	IP	*	*	D	-	-	-	
	09-46-33	EP	*	*	*	*	*	*	
	13-22-51.2	IP	*	*	D	-	-	-	
	14-42-51	E	*	*	*	-	-	-	
	15-10-48.9	IP	S	E	U	-	-	-	
	16-06-00	E	-	-	-	*	*	*	
	17-45-06.1	IP	N	W	D	-	-	-	
	18-04-09	E	*	*	*	*	*	*	
20 AUG	02-09-10	E	*	*	*	-	-	-	
	02-16-57.9	IP	S	W	U	-	-	-	
	04-04-03	E	*	*	*	*	*	*	
	08-43-51.8	IP	*	W	U	-	-	-	
	17-14-29	E	*	*	*	-	-	-	
	17-57-40	E	*	*	*	-	-	-	
	19-08-33.4	IP	*	W	U	-	-	-	
	19-14-52.3	IP	*	*	U	-	-	-	
	19-42-49	EP	*	*	U	-	-	-	
	21-22-35	E	*	*	*	-	-	-	
	21-49-15	EP	N	*	U	-	-	-	

International Seismological Centre From the ISC collection scanned by SISMOS

DATE	GMT OF FIRST MOTION	TYPE OF ONSET	OBSERVABLE ON SHORT PER NS	SHORT PER EW	SHORT PER Z	LONG PER NS	LONG PER EW	LONG PER Z	REMARKS
	23-50-31.2	IP	S	W	D	-	-	-	
21 AUG	03-37-52.3	IP	N	E	U	-	-	-	
	15-25-33	E	*	E	*	-	-	-	
	16-14-08	E	*	*	*	-	-	-	
	16-28-06	E	*	*	*	-	-	-	
	16-59-08	E	*	E	*	-	-	-	
	20-02-06	EP	*	E	*	*	*	*	
	20-35-58.8	IP	N	E	D	-	-	-	
	20-39-11.9	IP	*	E	U	-	-	-	
	23-10-25	E	*	*	*	-	-	-	
	23-24-36	E	*	*	*	-	-	-	
22 AUG	00-18-43.8	IP	*	*	U	-	-	-	
	03-19-02	E	*	*	*	*	*	*	
	15-25-07.9	IP	*	*	U	-	-	-	
	17-11-15.7	IP	*	*	U	-	-	-	
	17-34-37	EP	*	E	U	*	*	*	
	18-53-41	E	*	*	*	-	-	-	
	21-20-10	E	*	*	*	-	-	-	
	21-52-41	E	*	*	*	-	-	-	
23 AUG	15-55-40	E	-	-	-	*	*	*	
	17-28-40	E	-	-	-	-	*	*	
	22-48-51	E	*	*	*	-	-	-	
24 AUG	07-06-01.1	IP	N	*	U	-	-	-	
	08-36-03	EP	*	*	U	-	-	-	
	10-45-00.5	IP	N	E	U	-	-	-	
	11-32-09.4	IP	N	E	U	-	-	-	
	14-23-10.6	IP	*	E	U	-	-	-	
	14-58-23	E	N	*	*	-	-	-	
	20-04-21	EP	N	*	U	-	-	-	
	20-34-05.4	IP	*	E	U	-	-	-	
	20-50-46.4	IP	*	E	U	-	-	-	
	21-43-43	E	*	*	*	-	-	-	
	22-05-29.2	IP	S	E	D	-	-	-	
	22-26-04.5	IP	*	E	D	*	*	*	
25 AUG	11-23-43	E	*	*	*	*	*	*	
	13-57-24.9	IP	N	*	D	N	*	D	
	14-46-04	E	*	E	*	-	-	-	
	16-05-18.0	IP	N	W	D	-	-	-	
	18-21-32	E	*	E	*	-	-	-	
	18-56-26.8	IP	N	*	D	-	-	-	
	19-18-08	E	N	E	*	-	-	-	
	23-32-07	E	*	*	*	-	-	-	
26 AUG	03-25-28.0	IP	N	E	U	*	*	*	
	05-52-20.5	IP	*	*	U	-	-	-	
	13-10-43.2	IP	N	W	D	-	-	-	
	15-22-33	E	*	*	*	-	-	-	
	15-46-11	E	*	*	*	-	-	-	
	16-40-32	EP	*	E	U	-	-	-	
	17-09-32.8	IP	N	W	D	-	-	-	
	17-45-12.5	IP	N	*	U	-	-	-	

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DATE	GMT OF FIRST MOTION	TYPE OF ONSET	OBSERVABLE ON SHORT PER NS	SHORT PER EW	SHORT PER Z	LONG PER NS	LONG PER EW	LONG PER Z	REMARKS
	17-55-57.8	IP	-	-	U	-	-	-	
	22-09-03.5	IP	*	*	U	-	-	-	
	23-22-03	E	*	*	*	-	-	-	
	23-53-53	EP	N	E	U	-	-	-	
27 AUG	02-17-51	EP	N	E	*	-	-	-	
	06-26-42.0	IP	*	*	U	-	-	-	
	08-45-30	E	-	-	-	*	*	*	
	10-01-22	EP	N	*	U	-	-	-	
	10-14-01	E	*	*	*	*	*	*	
	12-16-44	EP	*	*	*	-	-	-	
	15-16-33	EP	N	E	*	-	-	-	
	17-36-36.3	IP	N	W	U	-	-	-	
	18-31-52	E	*	E	*	-	-	-	
	19-44-01	E	*	*	*	-	-	-	
	20-13-36.1	IP	N	E	U	-	-	*	
	20-45-53	E	*	*	*	-	-	-	
	21-02-12.1	IP	N	E	U	-	-	-	
	21-27-07	EP	S	*	U	-	-	-	
	22-42-21	EP	*	W	D	-	-	-	
28 AUG	13-15-09.3	IP	N	E	U	-	-	-	
	14-42-51.9	IP	*	*	U	-	-	-	
	19-35-16	E	*	*	*	-	-	-	
	21-16-22.6	IP	N	E	U	-	-	-	
	21-38-25	EP	N	E	U	-	-	-	
	22-39-39	EP	N	E	*	-	-	-	BLAST
29 AUG	15-02-17.8	IP	N	E	-	-	-	-	
	16-59-12	EP	*	*	U	-	-	-	
	17-19-07.4	IP	*	E	U	-	-	-	
	17-25-54	EP	*	E	*	-	-	-	
	19-34-58.5	IP	N	W	D	-	-	-	
	20-23-20	E	N	W	*	-	-	-	
30 AUG	15-26-53.5	IP	N	*	D	-	-	-	
	20-45-05	E	*	*	*	-	-	-	
	21-42-18.9	IP	N	E	U	-	-	-	
31 AUG	02-26-32	E	*	*	*	*	*	*	
	16-27-42	E	*	W	*	-	-	-	
	16-45-52	E	*	*	*	-	-	-	
	17-53-46	E	*	E	*	-	-	-	
	18-11-52.8	IP	N	W	D	-	-	-	
	18-48-50.6	IP	N	*	D	-	-	-	
	19-55-23	EP	N	E	U	-	-	-	
	20-04-10	E	-	-	-	*	*	*	
	20-39-23	E	*	E	*	-	-	-	
	22-08-55	E	*	*	*	-	-	-	
	22-54-48	E	*	E	*	-	-	-	
	23-30-33.9	IP	N	E	U	-	-	-	
	23-43-15.9	IP	N	W	D	-	-	-	
01 SEP 64	13-51-30	E	*	*	-	-	-	*	
	14-02-54.7	IP	N	W	D	*	*	*	

International Seismological Centre From the ISC collection scanned by SISMOS

DATE	GMT OF FIRST MOTION	TYPE OF ONSET	OBSERVABLE ON SHORT PER NS	SHORT PER EW	SHORT PER Z	LONG PER NS	LONG PER EW	LONG PER Z	REMARKS
	14-18-20	E	*	*	-	*	*	*	
	16-30-07.2	IP	*	-	U	-	-	-	
	17-27-01.0	IP	N	-	D	-	*	*	
	18-21-43.6	IP	*	-	U	-	-	-	
01 SEP 64	21-03-54	E	*	-	*	-	-	-	
	21-26-03	E	*	-	*	-	-	-	
	23-52-03.0	IP	*	-	U	-	-	-	
02 SEP 64	14-26-37.5	IP	S	-	U	-	-	-	
	14-57-17	EP	N	-	*	-	-	-	
	16-38-24.9	IP	N	E	D	-	-	-	
	20-31-56.3	IP	*	E	U	-	-	-	
	21-54-34.9	IP	N	E	U	-	-	-	
	22-55-33	E	N	*	*	-	-	-	BLAST
03 SEP	05-50-24	E	-	-	-	*	*	*	
	12-21-45.8	IP	N	E	U	-	-	-	
	17-48-06	E	-	-	-	-	-	*	
	18-05-04.8	IP	N	E	U	-	-	-	
	19-17-55.7	IP	N	E	U	-	-	-	
	20-57-35	EP	N	E	U	-	-	-	
	21-21-00.4	IP	N	E	U	-	-	-	
	21-25-41.5	IP	*	*	U	*	*	*	
	21-41-23.4	IP	N	E	U	-	-	-	
	22-19-10	E	*	*	*	-	-	-	BLAST
	23-45-45.2	IP	*	*	U	-	-	-	
	23-58-06	E	-	-	-	*	*	*	
04 SEP	03-37-30	EP	N	E	D	-	*	D	
	03-51-16	EP	-	-	-	*	*	*	
	09-47-01.9	IP	N	E	D	-	-	-	
	09-56-23.7	IP	*	*	U	-	-	-	
	10-05-30	E	-	-	-	*	*	*	
	10-53-40.5	IP	*	*	U	*	*	*	
04 SEP 64	14-13-33.5	IP	N	E	U	-	-	-	
	14-57-33	E	N	*	*	-	-	-	
	18-06-47.3	IP	S	E	U	-	-	-	
	18-48-22.2	IP	*	E	U	-	-	-	
	19-39-53.3	IP	*	E	U	-	-	-	
	19-41-19.7	IP	*	E	U	-	-	-	
	21-34-42	E	N	*	*	-	-	-	
	21-45-44	E	*	*	*	-	-	-	BLAST
05 SEP	03-12-49.8	IP	*	*	D	*	*	D	
	12-46-22	E	-	-	*	-	-	*	
	13-34-28.7	IP	N	W	D	-	-	-	
	17-28-24.3	IP	N	*	U	-	-	-	
	22-49-05	E	*	*	U	-	-	-	BLAST
06 SEP	17-06-22	EP	N	W	D	-	-	-	
	17-25-06	E	*	*	*	-	-	-	
	17-45-15.2	IP	N	E	D	-	-	-	
	19-38-26	E	-	-	-	*	*	*	
	20-05-19.8	IP	*	*	U	-	-	-	
	21-15-15	E	*	*	*	-	-	-	

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DATE	GMT OF FIRST MOTION	TYPE OF ONSET	OBSERVABLE ON SHORT PER NS	SHORT PER EW	SHORT PER Z	LONG PER NS	LONG PER EW	LONG PER Z	REMARKS
	21-32-10	E	-	-	-	*	*	*	
	22-06-58	E	*	*	*	-	-	-	
07 SEP 64	02-56-31.9	IP	N	W	U	-	-	-	
	07-50-54.9	IP	N	W	U	-	-	-	
	08-11-14	E	-	-	-	*	*	*	
	12-19-40	E	-	-	-	*	*	*	
	14-33-25.2	IP	N	*	U	*	*	*	
	17-23-47	EP	*	E	*	-	-	-	
	17-58-22	E	-	*	*	-	-	-	
	18-27-21	E	*	*	*	-	-	-	
	20-21-18.4	IP	*	E	U	-	-	-	
	21-11-51.8	IP	N	E	U	-	-	-	
08 SEP	08-17-11	E	-	-	*	-	-	-	
	19-00-43	EP	*	*	*	-	-	-	
	22-47-15	E	*	*	*	-	-	-	
09 SEP	19-14-25	EP	*	*	U	-	-	-	
	19-27-52	EP	*	E	U	-	-	-	
	20-09-55	E	*	*	*	-	-	-	
	20-36-42	E	*	*	*	-	-	-	
	23-12-33	E	*	*	*	-	-	-	
10 SEP	14-28-37	E	*	E	*	-	-	-	
	15-02-26	EP	*	E	*	-	-	-	
	15-04-07	EP	S	E	U	-	-	-	
	17-44-07	EP	*	*	U	-	-	-	
	18-43-57.5	IP	N	W	U	-	-	-	
	21-33-58.6	IP	*	E	U	-	-	-	
	23-23-09	E	*	*	*	-	-	-	BLAST
	23-28-50.0	IP	*	E	U	-	-	-	
11 SEP	02-11-26.8	IP	N	E	U	-	-	-	
	04-34-33	EP	*	*	*	-	-	-	
	13-32-42	EP	*	E	*	-	-	-	
	17-00-04.6	IP	N	E	U	-	-	-	
	17-31-22.2	IP	*	E	U	-	-	-	
	20-18-36.5	IP	N	*	U	-	-	-	
	21-44-53.9	IP	N	E	U	-	-	-	
	22-35-39	E	*	E	*	-	-	-	
12 SEP	07-04-26	E	-	-	-	-	-	*	
	13-02-29.8	IP	N	*	D	-	-	-	
	13-43-49.7	IP	N	W	D	-	-	-	
	16-06-03.5	IP	*	E	U	-	-	-	
	17-58-32	EP	*	W	*	-	-	-	
	18-15-22	EP	*	*	*	-	-	-	
	18-44-33.0	IP	N	W	D	-	-	-	
	19-31-50.5	IP	N	*	D	-	-	-	
	20-00-52	EP	*	E	*	-	-	-	
	21-22-45	EP	*	*	*	-	-	-	
	22-26-39	EP	*	*	*	N	E	D	
13 SEP	15-23-22.0	IP	*	E	U	-	-	-	
15 SEP	11-54-12	E	*	*	*	-	-	-	
	14-08-34.8	IP	*	E	U	-	-	-	

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DATE	GMT OF FIRST MOTION	TYPE OF ONSET	OBSERVABLE ON SHORT PER NS	SHORT PER EW	SHORT PER Z	LONG PER NS	LONG PER EW	LONG PER Z	REMARKS
	15-20-17.1	IP	*	*	U	-	-	-	
	15-48-40	EP	*	*	*	*	-	*	
	17-41-36.3	IP	S	*	U	-	-	-	
	18-31-29	EP	*	*	*	-	-	-	
15 SEP 64	18-36-06.8	IP	*	*	U	-	-	-	
	19-13-43.2	IP	S	*	D	-	-	-	
15 SEP 64	19-55-39.9	IP	*	E	D	-	-	-	
	20-54-09.6	IP	N	*	U	-	-	-	
16 SEP	00-00-23.4	IP	*	E	D	-	-	-	
	01-58-53.6	IP	*	*	D	*	E	*	
	15-26-09.2	IP	*	*	U	-	-	-	
	16-29-37	EP	*	*	*	-	-	-	
	17-30-10.0	IP	*	*	U	-	-	-	
16 SEP 64	17-50-15	EP	*	*	*	-	-	-	
	18-21-23.5	IP	*	E	U	-	-	-	
	19-02-31.1	IP	*	*	U	-	-	-	
	20-12-15	EP	N	E	*	-	-	-	
	21-32-16.3	IP	*	E	U	-	-	-	
	21-46-14.0	IP	*	*	U	-	-	-	
	22-30-10.3	IP	N	*	U	*	*	U	
17 SEP	15-08-46.4	IP	*	E	D	*	*	*	
	16-29-54.6	IP	N	E	U	*	*	*	
	20-04-05	E	*	*	*	-	-	-	
	21-42-15.1	IP	*	*	U	-	-	-	
	21-08-55.1	IP	N	W	U	-	-	-	
18 SEP	13-25-29	E	*	*	*	*	*	U	
	13-59-31.3	IP	*	E	U	-	-	-	
	15-55-51.6	IP	*	*	U	-	-	-	
	16-56-22.0	IP	*	W	U	-	-	-	
	20-46-18	EP	N	W	*	-	-	-	
	22-45-12.4	IP	*	*	U	-	-	-	
	23-59-56.1	IP	-	*	U	-	-	-	
19 SEP	03-32-12.1	IP	*	*	U	-	-	-	
	05-14-13	EP	*	*	*	*	*	U	
	12-28-38.1	IP	*	-	U	-	-	-	
	15-45-26	E	*	E	*	-	-	-	
	16-34-10	E	*	E	*	-	-	-	
	19-03-02.0	IP	*	E	U	-	-	-	
	19-13-02	EP	*	*	U	-	-	-	
	20-40-50.6	IP	*	*	U	-	-	-	
	20-56-21.6	IP	N	E	D	-	-	-	
20 SEP	15-32-10.9	IP	N	E	D	-	-	-	
	15-37-42	EP	N	*	*	-	-	-	
21 SEP	19-22-49.5	IP	N	E	U	-	-	-	
	19-26-22	E	*	*	*	-	-	-	
	19-58-38.7	IP	*	E	U	-	-	-	
	21-23-42	EP	*	W	U	-	-	-	
	22-31-10	E	*	*	*	-	-	-	
22 SEP	13-15-10	E	*	*	*	-	-	-	
	15-56-06	E	*	*	*	-	-	-	

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DATE	GMT OF FIRST MOTION	TYPE OF ONSET	OBSERVABLE ON SHORT PER NS	SHORT PER EW	SHORT PER Z	LONG PER NS	LONG PER EW	LONG PER Z	REMARKS
	17-03-18.5	IP	*	*	U	-	-	-	
	17-17-01.2	IP	*	*	U	-	-	-	
	19-57-35	E	*	W	*	-	-	-	
	21-11-51.2	IP	N	W	D	-	-	-	
	23-06-08	E	*	*	*	-	-	-	
23 SEP 64	05-09-26.7	IP	N	E	D	*	*	*	
23 SEP 64	16-16-51.6	IP	S	*	D	-	-	-	
23 SEP 64	17-13-21.6	IP	*	*	U	-	-	-	
23 SEP 64	18-16-11	E	*	E	D	-	-	-	
23 SEP 64	18-37-33	E	*	*	*	-	-	-	
23 SEP 64	19-18-13	E	*	*	*	-	-	-	
23 SEP 64	20-25-53	E	*	*	*	-	-	-	
23 SEP 64	21-58-51.1	IP	*	*	D	-	-	-	
24 SEP 64	13-34-54	E	*	*	RF	-	-	-	
24 SEP 64	14-17-34	E	-	-	RF	*	*	*	
24 SEP 64	20-05-41	E	*	*	*	-	-	-	BLAST
24 SEP 64	22-02-50.5	IP	S	W	U	-	-	-	
25 SEP 64	02-12-18	E	*	*	*	-	-	-	
25 SEP 64	03-09-10.8	IP	N	W	D	-	-	-	
25 SEP 64	05-16-57.3	IP	*	*	D	-	-	-	
25 SEP 64	14-16-10	E	*	*	*	-	-	-	
25 SEP 64	22-37-30	E	S	E	*	-	-	-	
25 SEP 64	23-02-35	E	*	W	*	-	-	-	
26 SEP 64	00-06-55	E	*	E	*	-	-	-	
26 SEP 64	02-16-52	E	*	W	*	-	-	-	
26 SEP 64	03-36-14	E	N	E	*	-	-	-	
26 SEP 64	13-49-49	E	*	*	*	-	-	-	
26 SEP 64	18-15-02	E	*	*	*	-	-	-	
26 SEP 64	18-18-49	E	*	*	*	-	-	-	
26 SEP 64	19-44-54	E	*	*	*	-	-	-	BLAST
26 SEP 64	20-40-18	E	*	E	*	-	-	-	
26 SEP 64	21-39-19	E	*	*	*	-	-	-	
26 SEP 64	22-40-08.7	IP	S	E	U	-	-	-	
26 SEP 64	23-53-52	E	-	-	-	-	-	*	
27 SEP 64	15-44-02.0	IP	*	*	U	-	-	-	
27 SEP 64	15-59-39.9	IP	*	*	U	-	-	-	
27 SEP 64	16-10-06	E	-	-	-	*	*	*	
27 SEP 64	18-03-24	E	*	*	*	-	-	-	
27 SEP 64	21-27-25	E	*	W	U	-	-	-	BLAST
28 SEP 64	05-15-28.7	IP	*	*	U	-	-	-	
28 SEP 64	05-34-44	E	-	-	-	*	*	*	
28 SEP 64	13-08-21	E	*	*	*	-	-	-	
28 SEP 64	15-40-12	E	*	*	*	-	-	-	
28 SEP 64	15-54-11	E	*	*	*	-	-	-	
28 SEP 64	16-08-51	E	*	E	*	-	-	*	
28 SEP 64	17-44-42	E	*	E	*	-	-	-	
28 SEP 64	18-16-55.4	IP	*	*	U	-	-	-	
28 SEP 64	18-56-59	E	*	*	*	-	-	*	
28 SEP 64	19-42-44	E	*	*	*	-	-	-	
28 SEP 64	19-50-13.5	IP	*	E	D	-	-	-	

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28 SEP 64	19-56-22	E	*	E	*	-	-	-	
28 SEP 64	22-18-43.9	IP	*	E	U	-	-	-	BLAST
28 SEP 64	23-33-01.2	IP	*	*	D	-	-	-	
29 SEP 64	14-53-30	E	-	-	-	*	*	*	
29 SEP 64	20-18-12.4	IP	N	E	D	-	-	-	
29 SEP 64	21-41-39.6	IP	*	E	D	-	-	-	
29 SEP 64	22-08-40.6	IP	*	E	D	-	-	-	
29 SEP 64	22-22-58.9	IP	S	W	D	-	-	-	
29 SEP 64	22-43-51	E	*	*	*	-	-	-	
30 SEP 64	00-07-47	E	*	*	*	-	-	-	
30 SEP 64	04-51-31	E	-	-	*	-	-	-	
30 SEP 64	16-10-19	E	*	*	*	-	-	-	
30 SEP 64	16-42-56.0	IP	N	E	D	-	-	-	
30 SEP 64	18-20-54.2	IP	*	*	D	-	-	-	
30 SEP 64	19-40-01.2	IP	N	E	D	-	-	-	
30 SEP 64	21-39-27.4	IP	*	*	U	-	-	-	
30 SEP 64	21-42-54	E	*	*	*	-	-	-	
30 SEP 64	23-04-12	E	*	*	*	-	-	-	
01 OCT 64	01-04-06	E	-	*	*	-	-	-	
01 OCT 64	16-31-05	E	*	E	*	-	-	-	
01 OCT 64	18-48-45	E	-	-	-	-	*	*	
01 OCT 64	19-44-25.6	IP	*	*	D	-	-	-	
01 OCT 64	21-44-41.8	IP	N	E	U	-	-	-	
01 OCT 64	21-56-08.2	IP	*	W	D	-	-	-	
01 OCT 64	22-20-22	E	*	*	*	-	-	-	
01 OCT 64	23-00-21.0	IP	S	E	U	-	-	-	
02 OCT 64	01-10-52.2	IP	-	-	D	-	-	-	
02 OCT 64	01-37-35	E	-	-	-	-	-	*	
02 OCT 64	02-59-43.2	IP	*	E	U	-	-	-	
02 OCT 64	14-45-40	E	-	-	*	-	-	*	
02 OCT 64	16-00-57.6	IP	*	*	D	-	-	-	BLAST
02 OCT 64	18-20-05	E	*	*	*	-	-	-	
02 OCT 64	19-20-16	E	*	*	*	-	-	-	
02 OCT 64	22-13-57.8	IP	*	*	U	-	-	-	
02 OCT 64	22-28-26.3	IP	*	*	U	-	-	-	
02 OCT 64	22-31-43.4	IP	*	E	D	-	-	-	
03 OCT 64	00-10-04.4	IP	*	*	U	-	-	-	BLAST
03 OCT 64	02-57-42	E	*	*	*	*	*	*	
03 OCT 64	15-46-35.5	IP	S	*	D	-	-	-	
03 OCT 64	16-46-34	E	*	E	*	-	-	-	
03 OCT 64	17-29-35	E	N	W	*	-	-	-	
03 OCT 64	17-49-48.0	IP	*	E	D	-	-	-	
03 OCT 64	18-38-21	E	*	*	*	-	-	-	
03 OCT 64	18-57-16	E	*	*	*	-	-	-	
03 OCT 64	19-30-03	E	*	E	*	-	-	-	
03 OCT 64	20-36-47	EP	*	*	D	-	-	-	
03 OCT 64	20-44-50	E	*	*	*	-	-	-	
03 OCT 64	22-45-46	E	*	W	*	-	-	-	
04 OCT 64	03-00-38.8	IP	-	*	U	-	-	-	
05 OCT 64	14-40-14.9	IP	N	W	D	-	-	-	

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05 OCT 64	16-14-22	E	*	*	*	-	-	-	
05 OCT 64	18-29-23	E	*	*	*	-	-	-	
05 OCT 64	18-40-04	E	S	*	*	-	-	-	
05 OCT 64	18-55-23	E	S	*	*	-	-	-	
05 OCT 64	20-19-29.2	IP	*	W	D	-	-	-	BLAST
06 OCT 64	03-12-14.3	IP	*	W	D	-	-	-	
06 OCT 64	07-30-03.7	IP	*	*	D	-	-	-	
06 OCT 64	07-46-35	E	-	-	-	*	*	*	
06 OCT 64	14-41-40.0	IP	*	W	U	-	-	-	
06 OCT 64	14-43-02.8	IP	N	W	D	*	*	D	
06 OCT 64	21-40-12	E	*	E	*	-	-	-	
07 OCT 64	00-56-46	E	S	*	*	-	-	-	
07 OCT 64	03-36-56.8	IP	S	E	U	-	-	-	
07 OCT 64	14-39-11	E	*	*	*	-	-	-	
07 OCT 64	15-58-38.0	IP	N	E	D	-	-	-	
07 OCT 64	19-50-16	E	*	E	*	-	-	-	
07 OCT 64	20-04-14.8	IP	*	E	D	-	-	-	
07 OCT 64	21-40-15.5	IP	*	W	D	-	-	-	
08 OCT 64	14-59-42.1	IP	N	W	D	-	-	-	
08 OCT 64	15-57-21	EP	S	W	D	-	-	-	
08 OCT 64	16-01-20	E	*	*	*	-	-	-	
08 OCT 64	17-11-19.6	IP	*	E	D	-	-	-	
08 OCT 64	18-31-14.4	IP	N	*	D	-	-	-	
08 OCT 64	21-44-14.5	IP	S	W	D	-	-	-	
08 OCT 64	23-03-39.2	IP	*	*	U	-	-	-	
09 OCT 64	02-40-31	E	*	*	*	-	-	-	
09 OCT 64	14-30-41	EP	*	*	*	-	-	-	
09 OCT 64	14-53-31	EP	S	E	*	-	-	-	
09 OCT 64	15-35-03	EP	*	*	*	-	-	-	
09 OCT 64	16-12-36	EP	*	*	*	-	-	-	
09 OCT 64	16-57-41	EP	*	*	*	-	-	-	
09 OCT 64	18-44-31.2	IP	N	E	U	-	-	-	
09 OCT 64	19-23-58.6	IP	*	E	U	-	-	-	
09 OCT 64	19-33-13.0	IP	N	E	U	-	-	-	
09 OCT 64	20-24-10	E	-	-	-	*	*	*	
09 OCT 64	21-59-38.5	IP	*	*	D	-	-	-	
09 OCT 64	22-24-20	E	-	-	-	-	-	*	
10 OCT 64	02-10-01.2	IP	S	*	D	-	-	-	
10 OCT 64	03-34-41.5	IP	N	W	U	-	-	-	
10 OCT 64	08-32-35	EP	*	*	*	-	-	-	
10 OCT 64	13-21-30	EP	*	*	*	-	-	-	
10 OCT 64	13-45-15.4	IP	*	*	U	-	-	-	
10 OCT 64	18-37-04.8	IP	*	*	U	-	-	-	
10 OCT 64	19-47-02.2	IP	*	*	U	*	*	*	
10 OCT 64	20-01-50	EP	*	*	*	*	*	*	
10 OCT 64	20-14-53	EP	*	*	*	-	-	-	
10 OCT 64	22-36-32.0	IP	*	*	U	-	-	-	
11 OCT 64	10-17-50	EP	*	E	U	-	-	-	
11 OCT 64	10-40-10	EP	-	-	-	-	*	*	
11 OCT 64	14-29-07.4	IP	*	*	U	-	-	-	

International Seismological Centre From the ISC collection scanned by SISMOS

DATE	GMT OF FIRST MOTION	TYPE OF ONSET	OBSERVABLE ON SHORT PER NS	SHORT PER EW	SHORT PER Z	LONG PER NS	LONG PER EW	LONG PER Z	REMARKS
11 OCT 64	20-29-19	EP	*	*	*	-	-	-	
11 OCT 64	21-34-16	EP	*	*	*	*	*	*	
12 OCT 64	14-44-01	EP	*	*	*	-	-	-	
12 OCT 64	15-59-36	E	*	*	*	-	-	-	
12 OCT 64	22-07-31.2	IP	*	*	D	-	-	-	
12 OCT 64	22-13-23.5	IP	*	*	D	-	-	-	BLAST
12 OCT 64	22-17-34	E	-	-	-	N	E	D	
12 OCT 64	22-40-07	E	*	*	*	-	-	-	
13 OCT 64	03-38-03	E	*	*	*	-	-	-	
13 OCT 64	19-50-35	E	*	*	*	-	-	-	
13 OCT 64	20-55-18.9	IP	S	*	D	-	-	-	
13 OCT 64	21-00-26	EP	*	*	*	-	-	-	
13 OCT 64	21-55-35.6	IP	*	*	D	-	-	-	
13 OCT 64	22-30-57	E	*	*	*	-	-	-	
14 OCT 64	04-00-45	E	-	-	-	*	*	*	
14 OCT 64	15-33-12	E	*	*	*	-	-	-	
14 OCT 64	19-49-01	E	*	*	*	-	-	-	
14 OCT 64	20-09-52	E	*	*	*	-	-	-	
14 OCT 64	21-18-22.6	IP	*	*	D	-	-	-	
14 OCT 64	22-46-41	E	*	*	*	-	-	-	
15 OCT 64	02-25-54.5	IP	-	-	D	-	-	-	
15 OCT 64	03-36-41.4	IP	S	E	U	-	-	-	
15 OCT 64	15-01-37.9	IP	S	E	U	-	-	-	
15 OCT 64	15-13-56	EP	N	*	*	-	-	-	
15 OCT 64	15-57-13	EP	*	*	*	-	-	-	
15 OCT 64	20-39-23.9	IP	*	*	U	*	E	*	
15 OCT 64	21-08-29	EP	*	*	*	-	-	-	
15 OCT 64	22-29-59	E	*	*	*	-	-	-	BLAST
15 OCT 64	23-08-28.1	IP	*	*	U	*	*	*	
16 OCT 64	07-12-12.4	IP	N	*	U	N	E	U	
16 OCT 64	08-31-02.1	IP	*	*	U	*	*	*	
16 OCT 64	09-30-48	EP	*	*	*	*	*	*	
16 OCT 64	14-37-31	EP	*	*	*	-	-	-	
16 OCT 64	17-29-03.6	IP	S	E	U	-	-	-	
16 OCT 64	17-48-24.3	IP	-	W	D	-	-	-	
16 OCT 64	18-17-30	EP	*	E	*	-	-	-	
16 OCT 64	18-33-26	EP	*	*	*	-	-	-	
16 OCT 64	23-03-39.2	IP	*	W	D	-	-	-	
17 OCT 64	02-06-07	EP	*	*	*	-	-	-	BLAST
17 OCT 64	02-08-17.3	IP	N	*	D	-	-	-	
17 OCT 64	02-24-20	EP	-	-	-	*	*	*	
17 OCT 64	10-02-15	E	*	*	*	-	-	-	
17 OCT 64	14-08-52.7	IP	*	E	U	-	-	-	
17 OCT 64	14-18-02	EP	*	*	*	-	-	-	
17 OCT 64	15-02-20	E	-	-	-	*	*	*	
17 OCT 64	16-37-22	EP	*	*	*	-	-	-	
17 OCT 64	17-37-04	EP	*	*	*	-	-	-	
17 OCT 64	17-42-49.5	IP	*	E	U	-	-	-	
17 OCT 64	17-49-08.8	IP	*	*	D	-	-	-	
17 OCT 64	17-57-45	EP	*	*	U	-	-	-	

International Seismological Centre From the ISC collection scanned by SISMOS

DATE	GMT OF FIRST MOTION	TYPE OF ONSET	OBSERVABLE ON SHORT PER NS	EW	Z	LONG PER NS	EW	Z	REMARKS
17 OCT 64	18-52-31	EP	*	*	*	-	-	-	
17 OCT 64	22-29-25	EP	*	*	*	-	-	-	BLAST
18 OCT 64	12-50-45.8	IP	N	*	U	N	W	D	
18 OCT 64	17-09-29	E	*	*	*	-	-	-	
18 OCT 64	18-46-03	EP	*	*	*	-	-	-	
18 OCT 64	21-27-33	EP	*	*	*	-	-	-	BLAST
19 OCT 64	00-12-04.2	IP	N	*	D	-	-	-	
19 OCT 64	15-59-20	EP	*	E	*	-	-	-	
19 OCT 64	16-21-16	EP	*	E	*	-	-	-	
19 OCT 64	16-38-12.4	IP	*	*	U	-	-	-	
19 OCT 64	17-58-25.0	IP	*	E	U	-	-	-	
19 OCT 64	18-30-47	EP	*	*	*	-	-	-	
19 OCT 64	18-35-14	EP	*	*	*	-	-	-	
19 OCT 64	18-59-58.3	IP	N	*	U	-	-	-	
19 OCT 64	19-04-59	EP	*	*	*	-	-	-	
19 OCT 64	19-09-39.7	IP	N	*	U	-	-	-	
19 OCT 64	20-27-58	EP	*	*	*	-	-	-	
19 OCT 64	21-23-21	EP	*	E	*	-	-	-	
19 OCT 64	22-19-48	EP	*	*	*	-	-	-	BLAST
20 OCT 64	14-27-54	EP	*	*	*	-	-	-	
20 OCT 64	15-16-17.3	IP	*	*	U	-	-	-	
20 OCT 64	15-26-16.9	IP	N	E	U	-	-	-	
20 OCT 64	15-55-18	EP	*	*	*	-	-	-	
20 OCT 64	16-56-20	EP	*	*	*	-	-	-	
20 OCT 64	18-20-11	EP	*	*	*	-	-	-	
20 OCT 64	19-12-08.7	IP	S	*	U	-	-	-	
20 OCT 64	19-32-37.9	IP	N	W	U	-	-	-	
20 OCT 64	20-01-27	EP	*	*	*	-	-	-	
20 OCT 64	20-11-40	EP	*	*	*	-	-	-	
20 OCT 64	20-41-46.3	IP	N	E	U	-	-	-	
20 OCT 64	22-00-46	EP	*	*	*	-	-	-	BLAST
20 OCT 64	22-36-25	EP	*	*	*	-	-	-	
21 OCT 64	02-04-21.8	IP	*	E	U	-	-	-	
21 OCT 64	07-43-54.2	IP	*	E	U	-	-	-	
21 OCT 64	07-48-32	EP	*	*	*	*	E	U	
21 OCT 64	14-59-04.9	IP	N	*	D	-	-	-	
21 OCT 64	15-28-32	EP	*	*	*	-	-	-	
21 OCT 64	15-59-57.5	IP	N	E	U	-	-	-	
21 OCT 64	16-46-05	EP	*	E	*	-	-	-	
21 OCT 64	20-05-40	EP	S	*	*	-	-	-	
21 OCT 64	20-45-15	EP	*	*	*	-	-	-	
21 OCT 64	22-08-37	EP	*	*	*	-	-	-	BLAST
21 OCT 64	23-00-10	EP	*	*	*	-	-	-	
21 OCT 64	23-28-24	EP	-	-	-	S	*	U	
22 OCT 64	01-48-48.1	IP	N	*	D	-	-	-	
22 OCT 64	05-30-32	EP	*	*	*	-	-	-	
22 OCT 64	15-50-45	EP	*	*	*	-	-	-	
22 OCT 64	15-55-55	EP	*	*	*	-	-	-	
22 OCT 64	16-03-07	E	*	*	*	-	-	-	SALMON
22 OCT 64	16-44-43	EP	*	*	*	-	-	-	

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DATE	GMT OF FIRST MOTION	TYPE OF ONSET	OBSERVABLE ON SHORT PER NS	EW	Z	LONG PER NS	EW	Z	REMARKS
22 OCT 64	17-55-35.0	IP	N	W	D	-	-	-	
22 OCT 64	18-03-33	EP	*	*	*	-	-	-	
22 OCT 64	19-20-15.7	IP	N	E	U	-	-	-	
22 OCT 64	20-29-37	EP	*	*	*	-	-	-	
22 OCT 64	21-44-31	EP	*	*	*	-	-	-	
22 OCT 64	21-51-56	EP	*	*	*	-	-	-	BLAST
22 OCT 64	23-14-15	EP	*	*	*	-	-	-	
22 OCT 64	23-25-42	EP	*	*	*	-	-	-	
23 OCT 64	02-01-54.3	IP	N	E	U	N	*	U	
23 OCT 64	13-04-40	EP	*	*	*	-	-	-	
23 OCT 64	16-30-49	EP	*	*	*	-	-	-	
23 OCT 64	16-53-39.4	IP	N	W	D	-	-	-	
23 OCT 64	17-09-02.0	IP	N	W	U	-	-	-	
23 OCT 64	17-40-12	EP	*	*	*	-	-	-	
23 OCT 64	17-47-03	EP	*	*	*	-	-	-	
23 OCT 64	18-19-01	EP	*	*	*	-	-	-	
23 OCT 64	19-15-45	EP	*	*	*	-	-	-	
23 OCT 64	19-57-18	EP	*	*	*	-	-	-	
23 OCT 64	20-21-02.9	IP	*	E	U	-	-	-	
23 OCT 64	21-00-15.9	IP	N	E	U	-	-	-	
23 OCT 64	21-17-40	EP	*	*	*	-	-	-	
23 OCT 64	21-52-10	EP	-	-	-	*	*	*	
23 OCT 64	22-06-39	EP	*	*	*	-	-	-	BLAST
24 OCT 64	03-33-23.9	IP	S	E	U	-	-	-	
24 OCT 64	07-03-10	EP	-	-	-	*	*	*	
24 OCT 64	16-25-05	EP	*	E	*	-	-	-	
24 OCT 64	17-05-08	EP	*	*	*	-	-	-	
24 OCT 64	17-31-17	EP	*	E	*	-	-	-	
24 OCT 64	18-21-19.7	IP	N	*	U	-	-	-	
24 OCT 64	18-33-56	EP	*	*	*	-	-	-	
24 OCT 64	20-08-14	EP	*	*	*	-	-	-	
24 OCT 64	21-53-13	E	*	*	*	-	-	-	
25 OCT 64	03-50-19.1	IP	*	*	U	-	-	-	
25 OCT 64	06-33-30	EP	*	*	*	-	-	-	
25 OCT 64	18-09-07	EP	*	*	*	-	-	-	
25 OCT 64	21-12-06	EP	*	*	*	-	-	-	BLAST
25 OCT 64	23-04-25.0	IP	N	*	U	-	-	-	
26 OCT 64	13-46-02	EP	*	E	*	-	-	-	
26 OCT 64	14-41-35.0	IP	*	*	U	-	-	-	
26 OCT 64	15-09-57	EP	*	*	*	-	-	-	
26 OCT 64	17-01-46	EP	*	*	*	-	-	-	
26 OCT 64	17-19-38.0	IP	*	*	U	-	-	-	
26 OCT 64	18-24-43	EP	*	*	*	-	-	-	
26 OCT 64	18-51-55.9	IP	N	E	U	-	-	-	
26 OCT 64	19-18-50	EP	*	*	*	-	-	-	
26 OCT 64	19-30-05	EP	*	E	*	-	-	-	
26 OCT 64	19-35-48.3	IP	N	W	U	-	-	-	
26 OCT 64	20-41-31.4	IP	*	*	D	-	-	-	
26 OCT 64	21-23-04	EP	*	*	*	-	-	-	
26 OCT 64	22-13-36	EP	*	*	*	-	-	-	

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DATE	GMT OF FIRST MOTION	TYPE OF ONSET	OBSERVABLE ON SHORT PER NS	SHORT PER EW	SHORT PER Z	LONG PER NS	LONG PER EW	LONG PER Z	REMARKS
26 OCT 64	23-00-37	EP	N	*	*	-	-	-	BLAST
27 OCT 64	11-54-24.4	IP	S	W	U	-	-	-	
27 OCT 64	14-24-12	EP	*	*	*	-	-	-	
27 OCT 64	15-16-15	EP	*	*	*	-	-	-	
27 OCT 64	17-59-51	EP	*	*	*	-	-	-	
27 OCT 64	18-04-13	EP	*	*	*	-	-	-	
27 OCT 64	19-19-11.2	IP	N	*	U	-	-	-	
27 OCT 64	19-48-48.4	IP	N	*	U	-	-	-	
27 OCT 64	19-51-04.6	IP	N	*	U	-	-	-	
27 OCT 64	20-02-26	EP	*	*	*	-	-	-	
27 OCT 64	20-25-33	EP	*	W	*	-	-	-	
27 OCT 64	20-49-20	EP	*	*	*	-	-	-	
27 OCT 64	21-10-54	EP	*	*	*	-	-	-	
27 OCT 64	21-14-19.2	IP	*	*	U	-	-	-	
27 OCT 64	21-27-55.8	IP	N	E	U	-	-	-	
27 OCT 64	21-38-42	EP	*	*	*	-	-	-	
27 OCT 64	21-45-55	EP	*	*	*	-	-	-	
27 OCT 64	21-47-37	EP	*	*	*	-	-	-	BLAST
27 OCT 64	23-43-46	EP	-	-	-	*	*	*	
28 OCT 64	00-33-17	EP	*	-	*	-	-	-	
28 OCT 64	01-40-23.5	IP	*	*	U	-	-	-	
28 OCT 64	03-08-12.8	IP	*	*	U	-	-	-	
28 OCT 64	03-16-52.9	IP	N	*	U	-	-	-	
28 OCT 64	06-14-04	EP	*	*	*	-	-	-	
28 OCT 64	12-27-08.2	IP	*	*	U	-	-	-	
28 OCT 64	15-30-32	EP	*	*	*	-	-	-	
28 OCT 64	16-40-10.0	IP	*	E	U	-	-	-	
28 OCT 64	17-58-30	E	*	*	*	-	-	-	
28 OCT 64	18-19-08	E	*	*	*	-	-	-	
28 OCT 64	18-34-48	E	*	*	*	-	-	-	
28 OCT 64	19-07-25	E	*	*	*	-	-	-	
28 OCT 64	19-32-16	E	*	*	*	-	-	-	
28 OCT 64	21-03-20	E	*	*	*	-	-	-	
28 OCT 64	22-13-14.9	IP	*	*	D	-	-	-	
28 OCT 64	22-50-48	EP	*	*	*	-	-	-	
29 OCT 64	15-59-42.6	IP	N	E	U	-	-	-	
29 OCT 64	17-10-46.6	IP	N	W	D	-	-	-	
29 OCT 64	17-43-35	E	*	*	*	-	-	-	
29 OCT 64	18-10-15.6	IP	*	E	U	-	-	-	
29 OCT 64	18-19-50	E	*	*	*	-	-	-	
29 OCT 64	19-32-36	E	*	*	*	-	-	-	
29 OCT 64	19-45-15	E	N	*	*	-	-	-	
29 OCT 64	20-03-02	E	*	*	*	-	-	-	
29 OCT 64	20-13-38.9	IP	N	E	U	-	-	-	
29 OCT 64	20-43-22.8	IP	*	*	U	-	-	-	
29 OCT 64	20-51-11	E	*	*	*	-	-	-	
29 OCT 64	21-00-38.9	IP	*	E	U	-	-	-	
29 OCT 64	21-22-01.3	IP	*	W	D	-	-	-	
29 OCT 64	21-40-10.9	IP	*	*	U	-	-	-	
29 OCT 64	21-58-41	E	*	*	*	-	-	-	

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DATE	GMT OF FIRST MOTION	TYPE OF ONSET	OBSERVABLE ON SHORT PER NS	EW	Z	LONG PER NS	EW	Z	REMARKS
29 OCT 64	22-36-00.6	IP	*	*	*	-	-	-	
29 OCT 64	23-50-36	E	*	*	*	-	-	-	BLAST
30 OCT 64	00-25-34.8	IP	N	E	U	-	-	-	
30 OCT 64	02-41-48	E	-	-	-	*	*	*	
30 OCT 64	02-56-50	E	*	*	*	-	-	-	
30 OCT 64	15-13-03	E	*	*	*	-	-	-	
30 OCT 64	15-39-42	E	*	*	*	-	-	-	
30 OCT 64	17-20-59	E	*	*	*	-	-	-	
30 OCT 64	17-39-40	E	-	-	-	*	*	*	
30 OCT 64	18-03-51	E	*	*	*	-	-	-	
30 OCT 64	18-15-19.3	IP	*	*	U	-	-	-	
30 OCT 64	19-01-16	E	*	*	*	-	-	-	
30 OCT 64	20-05-42.0	I	*	E	RF	-	-	-	
30 OCT 64	20-19-21	E	*	*	RF	-	-	-	
30 OCT 64	20-27-58	E	*	*	RF	-	-	-	
30 OCT 64	20-45-47	E	*	*	RF	-	-	-	
30 OCT 64	21-26-16	E	*	*	RF	-	-	-	
30 OCT 64	22-09-12	E	*	*	RF	-	-	-	
30 OCT 64	22-31-07	E	*	*	RF	-	-	-	
31 OCT 64	00-08-32	E	*	*	RF	-	-	-	
31 OCT 64	16-43-53	E	*	*	*	-	-	-	
31 OCT 64	16-47-23	E	*	*	*	-	-	-	
31 OCT 64	16-53-51.1	I	*	E	U	-	-	-	
31 OCT 64	17-00-35	E	*	*	*	-	-	-	
31 OCT 64	17-48-12	E	*	*	*	-	-	-	
31 OCT 64	19-49-24	E	*	*	*	-	-	-	
31 OCT 64	20-10-58	E	*	*	*	-	-	-	
31 OCT 64	20-46-48	E	*	*	*	-	-	-	
31 OCT 64	21-36-07	E	*	*	*	-	-	-	
31 OCT 64	21-53-09	E	*	*	*	-	-	-	BLAST
01 NOV 64	05-15-22	E	-	-	-	*	*	*	
01 NOV 64	05-57-23.3	IP	*	*	U	-	-	-	
01 NOV 64	12-45-11.5	IP	*	*	U	-	-	-	
01 NOV 64	12-48-26.3	IP	*	E	U	-	-	-	
01 NOV 64	17-58-30	E	-	*	*	-	-	-	
01 NOV 64	21-19-21	E	*	*	*	-	-	-	
01 NOV 64	21-22-34	E	*	*	*	-	-	-	
02 NOV 64	06-59-04.0	IP	S	E	D	-	-	-	
02 NOV 64	07-11-30	E	-	-	-	*	*	*	
02 NOV 64	09-37-35	E	*	*	*	-	-	-	
02 NOV 64	15-22-25	E	*	*	*	-	-	-	
02 NOV 64	18-07-21	E	*	*	*	-	-	-	
02 NOV 64	18-55-32	E	*	*	*	-	-	-	
02 NOV 64	19-09-43	E	*	*	*	-	-	-	
02 NOV 64	20-41-46	E	*	*	*	-	-	-	
02 NOV 64	21-26-23	E	*	*	*	-	-	-	
02 NOV 64	21-34-05	E	*	*	*	-	-	-	
02 NOV 64	21-51-06	E	*	*	*	-	-	-	
02 NOV 64	22-11-50	E	*	*	*	-	-	-	
03 NOV 64	04-35-50	E	*	*	*	-	-	-	

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DATE	GMT OF FIRST MOTION	TYPE OF ONSET	OBSERVABLE ON SHORT PER NS	EW	Z	LONG PER NS	EW	Z	REMARKS
03 NOV 64	13-02-01	E	*	*	*	-	-	-	
03 NOV 64	15-08-10	E	*	*	*	-	-	-	
03 NOV 64	17-05-15	E	*	*	*	-	-	-	
03 NOV 64	17-10-17.7	IP	*	*	U	-	-	-	
03 NOV 64	17-57-22	E	*	*	*	-	-	-	
03 NOV 64	18-13-16	E	*	*	*	-	-	-	
03 NOV 64	18-36-04	E	*	*	*	-	-	-	
03 NOV 64	18-42-29	E	*	*	*	-	-	-	
03 NOV 64	18-45-53	E	*	*	*	-	-	-	
03 NOV 64	19-18-38	E	*	*	*	-	-	-	
03 NOV 64	19-24-52	E	*	*	*	-	-	-	
03 NOV 64	19-29-45	E	*	*	*	-	-	-	
03 NOV 64	19-40-29	E	*	*	*	-	-	-	
03 NOV 64	19-59-51	E	*	*	*	-	-	-	
03 NOV 64	21-08-54	E	*	*	*	-	-	-	
03 NOV 64	21-17-32	E	*	*	*	-	-	-	
03 NOV 64	21-43-07	E	*	*	*	-	-	-	
03 NOV 64	21-52-54	E	*	*	*	-	-	-	
03 NOV 64	22-40-04	E	*	*	*	-	-	-	
03 NOV 64	23-08-12	E	*	*	*	-	-	-	BLAST
04 NOV 64	02-21-27.3	IP	*	*	D	-	-	-	
04 NOV 64	14-03-29	E	*	*	*	-	-	-	
04 NOV 64	15-36-26	E	*	*	*	-	-	-	
04 NOV 64	17-07-11	E	*	*	*	-	-	-	
04 NOV 64	18-08-59	E	*	*	*	-	-	-	
04 NOV 64	18-30-16	E	*	*	*	-	-	-	
04 NOV 64	19-07-03.0	IP	*	E	D	-	-	-	
04 NOV 64	19-29-52	E	*	*	*	-	-	-	
04 NOV 64	20-07-10	E	*	*	*	-	-	-	
04 NOV 64	20-19-08.9	IP	N	E	U	-	-	-	
04 NOV 64	20-36-27.1	IP	*	*	U	-	-	-	
04 NOV 64	22-17-40	E	*	*	*	-	-	-	
04 NOV 64	22-42-09	E	*	*	*	-	-	-	BLAST
04 NOV 64	23-13-20	E	*	*	*	-	-	-	
05 NOV 64	02-28-03	E	*	*	*	-	-	-	
05 NOV 64	03-28-22.2	I	N	E	U	-	-	-	
05 NOV 64	08-52-05	E	*	*	*	-	-	-	
05 NOV 64	14-55-02.5	I	N	W	U	-	-	-	
05 NOV 64	20-17-38	E	*	*	*	-	-	-	
05 NOV 64	20-25-10	E	*	*	*	-	-	-	
05 NOV 64	21-52-02.0	I	N	E	U	-	-	-	
05 NOV 64	22-31-34.1	I	N	*	U	-	-	-	
05 NOV 64	22-38-22	E	*	*	*	-	-	-	BLAST
06 NOV 64	00-00-52	E	-	*	*	-	-	-	
06 NOV 64	07-11-13	E	-	*	*	-	-	-	
06 NOV 64	07-29-30	E	*	*	*	-	-	-	
06 NOV 64	10-05-54.7	I	*	*	U	-	-	-	
06 NOV 64	10-35-10	E	-	-	-	*	*	*	
06 NOV 64	13-37-26.9	I	N	E	U	-	-	-	
06 NOV 64	14-13-16	E	*	*	*	-	-	-	

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DATE	GMT OF FIRST MOTION	TYPE OF ONSET	OBSERVABLE ON SHORT PER NS	SHORT PER EW	SHORT PER Z	LONG PER NS	LONG PER EW	LONG PER Z	REMARKS
06 NOV 64	15-07-55	E	*	E	*	-	-	-	
06 NOV 64	17-22-25	EP	*	E	*	-	-	-	
06 NOV 64	18-59-52	E	*	*	*	-	-	-	
06 NOV 64	19-26-45	E	*	*	*	-	-	-	
06 NOV 64	19-35-23	E	*	*	*	-	-	-	
06 NOV 64	19-36-16.3	IP	*	W	U	-	-	-	
06 NOV 64	20-00-14	E	*	*	*	-	-	-	
06 NOV 64	20-20-21	E	*	*	*	-	-	-	
06 NOV 64	20-42-26.2	IP	*	W	D	-	-	-	
06 NOV 64	20-57-05	E	*	*	*	-	-	-	
06 NOV 64	22-25-15.8	IP	N	*	U	-	-	-	
06 NOV 64	22-36-44	E	*	*	*	-	-	-	
06 NOV 64	22-48-26	E	*	*	*	-	-	-	BLAST
07 NOV 64	00-46-15	E	*	*	*	-	-	-	
07 NOV 64	14-47-47	E	*	*	*	-	-	-	
07 NOV 64	15-01-41	E	*	*	*	-	-	-	
07 NOV 64	16-28-26	E	*	*	*	-	-	-	
07 NOV 64	19-47-46	E	*	*	*	-	-	-	
07 NOV 64	21-21-46	E	*	*	*	-	-	-	
07 NOV 64	23-44-46	E	*	*	*	-	-	-	BLAST
08 NOV 64	00-02-35	E	*	*	*	-	-	-	
08 NOV 64	03-03-15	E	-	-	*	*	*	*	
08 NOV 64	10-46-49	E	-	-	*	-	-	-	
08 NOV 64	13-32-55	E	*	*	*	-	-	-	
08 NOV 64	16-51-24	E	-	-	*	-	-	-	
08 NOV 64	18-42-46	E	*	*	*	-	-	-	
08 NOV 64	19-37-50	E	*	*	*	-	-	-	
08 NOV 64	21-32-45	E	-	*	*	-	-	-	
08 NOV 64	21-41-53	E	*	*	*	-	-	-	BLAST
09 NOV 64	05-03-20	E	*	-	*	-	-	-	
09 NOV 64	16-08-21	E	*	*	*	-	-	-	
09 NOV 64	17-00-21.9	I	N	W	RF	-	-	-	
09 NOV 64	17-26-48.9	IP	N	*	RF	-	-	-	
09 NOV 64	18-56-12.5	E	*	*	RF	-	-	-	
09 NOV 64	19-58-02.9	IP	N	E	RF	-	-	-	
09 NOV 64	21-00-58	E	*	*	RF	-	-	-	
09 NOV 64	21-09-17	E	*	*	RF	-	-	-	
09 NOV 64	21-20-32	E	*	*	RF	-	-	-	
09 NOV 64	21-35-21	E	*	*	RF	-	-	-	
09 NOV 64	21-47-30.1	IP	N	*	RF	-	-	-	
09 NOV 64	23-00-01	E	*	*	RF	-	-	-	BLAST
09 NOV 64	23-17-14.3	I	*	E	RF	-	-	-	
10 NOV 64	14-15-37.2	I	N	*	RF	-	-	-	
10 NOV 64	14-28-29.5	I	*	E	RF	-	-	-	
10 NOV 64	15-03-02.1	I	*	E	RF	-	-	-	
10 NOV 64	18-33-16	E	*	*	*	-	-	-	
10 NOV 64	18-36-40	E	*	*	*	-	-	-	
10 NOV 64	18-47-47	E	*	*	*	-	-	-	
10 NOV 64	19-24-10.9	I	*	E	U	-	-	-	
10 NOV 64	20-01-17	E	*	*	*	-	-	-	

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DATE	GMT OF FIRST MOTION	TYPE OF ONSET	OBSERVABLE ON SHORT PER NS	SHORT PER EW	SHORT PER Z	LONG PER NS	LONG PER EW	LONG PER Z	REMARKS
10 NOV 64	20-58-40	E	*	*	*	-	-	-	
10 NOV 64	21-07-33	E	*	*	*	-	-	-	
11 NOV 64	00-15-52	E	*	*	*	-	-	-	
11 NOV 64	04-34-28.4	IP	N	E	U	-	-	-	
11 NOV 64	08-09-38.7	IP	N	E	U	*	*	*	
11 NOV 64	15-03-32	E	*	E	*	-	-	-	
11 NOV 64	19-51-49	E	*	*	RF	*	*	*	
11 NOV 64	20-22-43	E	*	*	RF	-	-	-	
11 NOV 64	20-59-54	E	*	*	RF	-	-	-	
11 NOV 64	21-18-42.7	IP	N	E	RF	-	-	-	
11 NOV 64	21-24-04	E	*	*	RF	-	-	-	
11 NOV 64	21-31-04	E	*	*	RF	-	-	-	
11 NOV 64	21-39-06	E	*	*	RF	-	-	-	
11 NOV 64	22-44-11	E	*	*	RF	-	-	-	
11 NOV 64	23-12-32	E	*	*	RF	-	-	-	BLAST
12 NOV 64	06-23-45	E	-	-	RF	*	*	*	
12 NOV 64	13-31-13	E	*	*	RF	-	-	-	
12 NOV 64	19-06-05	E	*	*	*	-	-	-	
12 NOV 64	19-54-18	E	*	*	*	-	-	-	
12 NOV 64	20-05-54	E	*	*	*	-	-	-	
12 NOV 64	20-18-35	E	*	E	*	-	-	-	
12 NOV 64	21-12-21	E	*	E	*	-	-	-	
12 NOV 64	21-45-02.2	IP	N	E	U	-	-	-	
12 NOV 64	22-01-46	E	*	*	*	-	-	-	
12 NOV 64	22-11-01.7	IP	*	E	U	-	-	-	
12 NOV 64	22-19-02	E	*	*	*	-	-	-	
12 NOV 64	23-11-35.7	I	*	W	*	-	-	-	
13 NOV 64	00-01-31	E	-	*	*	-	-	-	
13 NOV 64	00-15-40	E	*	*	*	-	-	-	
13 NOV 64	01-29-33	E	*	*	*	-	-	-	
13 NOV 64	08-08-33	E	*	*	*	-	-	-	
13 NOV 64	14-56-35	E	*	*	*	-	-	-	
13 NOV 64	20-06-21.7	IP	N	E	U	-	-	-	
13 NOV 64	22-23-35	E	*	*	*	-	-	-	BLAST
13 NOV 64	22-53-03	E	-	-	-	-	-	*	
14 NOV 64	03-15-12.0	IP	*	E	U	-	-	-	
14 NOV 64	12-59-14	E	*	*	*	-	-	-	
14 NOV 64	13-05-05	E	-	-	-	*	*	*	
14 NOV 64	14-09-20	E	*	*	*	-	-	-	
14 NOV 64	14-39-05	E	*	*	*	-	-	-	
14 NOV 64	18-32-42	E	*	*	*	-	-	-	
14 NOV 64	19-47-24	E	*	*	*	-	-	-	
14 NOV 64	20-22-19	E	*	*	*	-	-	-	
14 NOV 64	20-26-30	E	*	*	*	-	-	-	
14 NOV 64	21-47-02	E	*	*	*	-	-	-	BLAST
15 NOV 64	18-38-50	E	*	*	*	-	-	-	
15 NOV 64	19-53-44	E	*	*	*	-	-	-	
16 NOV 64	00-09-17	E	-	-	*	-	-	-	
16 NOV 64	02-07-06	E	*	*	*	-	-	-	
16 NOV 64	02-29-23.9	IP	N	E	U	-	-	-	

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DATE	GMT OF FIRST MOTION	TYPE OF ONSET	OBSERVABLE ON SHORT PER NS	EW	Z	LONG PER NS	EW	Z	REMARKS
16 NOV 64	03-05-25	E	-	-	-	*	*	*	
16 NOV 64	06-12-47	E	-	*	*	-	-	-	
16 NOV 64	08-39-41.1	I	*	*	U	-	-	-	
16 NOV 64	11-54-53	E	*	*	*	-	-	-	
16 NOV 64	13-39-48	E	*	*	*	-	-	-	
16 NOV 64	16-26-02	E	*	*	*	-	-	-	
16 NOV 64	17-44-00.3	I	*	*	U	-	-	-	
16 NOV 64	18-15-44	E	*	*	*	-	-	-	
16 NOV 64	18-40-29	E	*	*	*	-	-	-	
16 NOV 64	19-06-28	E	*	*	*	-	-	-	
16 NOV 64	19-25-28	E	*	*	*	-	-	-	
16 NOV 64	19-49-37	E	*	*	*	-	-	-	
16 NOV 64	19-58-09.4	I	N	E	U	-	-	-	
16 NOV 64	21-28-34	E	*	*	*	-	-	-	
17 NOV 64	08-34-34.9	I	*	E	U	*	*	*	
17 NOV 64	14-44-51.3	IP	N	*	U	-	-	-	
17 NOV 64	15-34-54	E	N	E	*	-	-	-	
17 NOV 64	16-44-42	E	*	*	*	-	-	-	
17 NOV 64	18-59-42	E	*	*	*	-	-	-	
17 NOV 64	19-16-47.5	I	*	*	U	-	-	-	
17 NOV 64	19-38-09	E	*	*	*	-	-	-	
17 NOV 64	19-46-46.8	I	N	W	U	-	-	-	
17 NOV 64	19-50-25.0	I	N	*	U	-	-	-	
17 NOV 64	19-59-16	E	-	-	-	-	-	*	
17 NOV 64	20-36-31	E	*	*	*	-	-	-	
17 NOV 64	20-44-34	E	*	*	*	-	-	-	
17 NOV 64	20-48-44	E	*	*	*	-	-	-	
17 NOV 64	21-53-27	E	*	*	*	-	-	-	
17 NOV 64	22-05-33.6	I	N	*	D	-	-	-	
17 NOV 64	22-26-12	E	*	*	*	-	-	-	
18 NOV 64	03-18-16	E	*	*	*	-	-	-	
18 NOV 64	05-13-09	E	*	*	*	-	-	-	
18 NOV 64	13-32-12	E	*	*	*	-	-	-	
18 NOV 64	15-13-08	E	-	-	-	*	*	*	
18 NOV 64	16-56-22	E	*	*	*	-	-	-	
18 NOV 64	18-29-55	E	*	*	*	-	-	-	
18 NOV 64	19-07-02	E	*	*	*	-	-	-	
18 NOV 64	19-10-16.4	I	*	*	*	-	-	-	
18 NOV 64	19-49-37	E	*	*	*	-	-	-	
18 NOV 64	20-05-23	E	*	*	*	-	-	-	
18 NOV 64	20-39-55	E	*	*	*	-	-	-	
18 NOV 64	21-13-55	E	*	*	*	-	-	-	
18 NOV 64	21-23-26	E	*	*	*	-	-	-	
18 NOV 64	21-44-54	E	*	*	*	-	-	-	
18 NOV 64	21-54-40	E	*	*	*	-	-	-	
18 NOV 64	21-58-43	E	*	*	*	-	-	-	
18 NOV 64	22-53-34	E	*	*	*	-	-	-	BLAST
18 NOV 64	23-17-08	E	-	-	-	*	*	*	
19 NOV 64	00-47-25.0	I	N	E	D	-	-	-	
19 NOV 64	12-24-03	E	*	*	*	-	-	-	

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DATE	GMT OF FIRST MOTION	TYPE OF ONSET	OBSERVABLE ON SHORT PER NS	SHORT PER EW	SHORT PER Z	LONG PER NS	LONG PER EW	LONG PER Z	REMARKS
19 NOV 64	14-24-07	E	*	*	*	-	-	-	
19 NOV 64	16-23-52	E	*	*	*	-	-	-	
19 NOV 64	18-50-15	E	*	*	*	-	-	-	
19 NOV 64	19-04-10	E	*	*	*	-	-	-	
19 NOV 64	19-11-19.8	IP	N	W	D	-	-	-	
19 NOV 64	20-36-07.8	I	N	*	*	-	-	-	
19 NOV 64	20-39-10.9	IP	N	*	D	-	-	-	
19 NOV 64	20-48-21	E	*	*	*	-	-	-	
19 NOV 64	21-10-25	E	N	*	*	-	-	-	
19 NOV 64	21-48-32	E	*	*	*	-	-	-	
19 NOV 64	22-29-39	E	*	*	*	-	-	-	
19 NOV 64	23-34-55	E	*	*	*	-	-	-	BLAST
19 NOV 64	23-38-03	E	*	*	*	-	-	-	
19 NOV 64	23-54-09.4	I	*	*	U	*	E	U	
20 NOV 64	14-29-08	E	*	E	*	-	-	-	
20 NOV 64	16-40-39	E	*	E	*	-	-	-	
20 NOV 64	16-55-45	E	*	*	*	-	-	-	
20 NOV 64	17-08-23	E	*	*	*	-	-	-	
20 NOV 64	17-11-25	E	*	*	*	-	-	-	
20 NOV 64	17-14-03.1	I	*	*	D	-	-	-	
20 NOV 64	18-02-12.0	I	*	W	U	-	-	-	
20 NOV 64	20-43-45.0	I	N	E	D	-	-	-	
20 NOV 64	21-02-22.8	I	N	*	D	-	-	-	
20 NOV 64	23-16-20.1	I	N	W	D	-	-	-	
20 NOV 64	23-45-37	E	*	*	*	-	-	-	
21 NOV 64	00-15-42	E	-	-	-	*	*	*	
21 NOV 64	07-39-21	E	*	*	*	-	-	-	
21 NOV 64	11-05-36	E	N	*	*	-	-	-	
21 NOV 64	18-15-24	E	*	*	*	-	-	-	
21 NOV 64	20-56-10	E	*	*	*	-	-	-	
22 NOV 64	00-17-32	E	-	-	-	-	-	*	
22 NOV 64	06-05-29.9	I	-	-	D	-	-	-	
22 NOV 64	16-03-58	E	*	*	*	-	-	-	
22 NOV 64	16-22-10	E	*	*	*	-	-	-	
23 NOV 64	04-36-58.1	I	*	-	U	-	-	-	
23 NOV 64	15-46-12	E	*	*	*	-	-	-	
23 NOV 64	16-01-27	E	*	*	*	-	-	-	
23 NOV 64	17-05-33	E	*	*	*	-	-	-	
23 NOV 64	17-19-18	E	*	*	*	-	-	-	
23 NOV 64	17-21-00	E	*	*	*	*	*	*	
23 NOV 64	20-20-28	E	*	*	*	-	-	-	
23 NOV 64	20-30-10.9	I	*	E	U	-	-	-	
23 NOV 64	20-46-47	E	*	*	*	-	-	-	
23 NOV 64	21-45-55.5	I	N	*	U	-	-	-	
23 NOV 64	22-16-44	E	*	*	*	-	-	-	
24 NOV 64	00-32-27	E	*	*	*	-	-	-	
24 NOV 64	11-00-59.3	I	*	E	U	-	-	-	
24 NOV 64	12-59-48	E	*	*	*	*	*	U	
24 NOV 64	13-09-27	E	-	-	*	-	-	-	
24 NOV 64	14-28-12	E	*	E	*	-	-	-	

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24 NOV 64	16-22-48	E	*	*	*	-	-	-	
24 NOV 64	16-36-41	E	*	*	*	-	-	-	
24 NOV 64	16-45-27	E	*	*	*	-	-	-	
24 NOV 64	18-23-52	E	*	*	*	-	-	-	
24 NOV 64	19-29-06	E	*	*	*	-	-	-	
24 NOV 64	20-34-35	E	*	*	*	-	-	-	
24 NOV 64	21-00-02	E	*	*	*	-	-	-	
24 NOV 64	21-56-49	E	N	*	*	-	-	-	
24 NOV 64	22-21-21	E	*	*	*	-	-	-	
24 NOV 64	22-22-58.7	I	N	*	U	-	-	-	
24 NOV 64	22-41-25	E	*	*	*	-	-	-	
25 NOV 64	02-51-16	E	*	*	*	-	-	-	
25 NOV 64	09-45-07.7	I	*	*	U	-	-	-	
25 NOV 64	15-37-50	E	-	*	*	-	-	-	
25 NOV 64	16-16-22	E	N	*	*	-	-	-	
25 NOV 64	16-17-53	E	N	*	*	-	-	-	
25 NOV 64	16-51-07	E	*	*	*	-	-	-	
25 NOV 64	17-31-03	E	*	*	*	-	-	-	
25 NOV 64	18-03-10	E	*	*	*	-	-	-	
25 NOV 64	19-40-29	E	*	*	*	-	-	-	BLAST
25 NOV 64	19-44-44	E	*	*	*	-	-	-	
25 NOV 64	19-48-21	E	*	E	*	-	-	-	
25 NOV 64	20-15-26	E	*	*	*	-	-	-	
25 NOV 64	20-46-49	E	*	*	*	-	-	-	
25 NOV 64	21-02-33.8	I	*	*	U	-	-	-	
25 NOV 64	22-10-09.1	I	N	E	U	-	-	-	
25 NOV 64	22-54-20	E	*	*	*	-	-	-	
26 NOV 64	01-34-33	E	*	*	*	-	-	-	
26 NOV 64	04-34-31	E	N	*	*	-	-	-	
26 NOV 64	10-50-40	E	-	-	-	-	*	*	
26 NOV 64	19-24-35	E	N	*	*	-	-	-	
26 NOV 64	20-25-25	E	*	*	*	-	-	-	BLAST
27 NOV 64	07-55-31.9	I	N	W	D	-	-	-	
27 NOV 64	16-57-49	E	*	*	*	-	-	-	
27 NOV 64	17-56-00	E	*	*	*	-	-	-	
27 NOV 64	18-02-04	E	*	*	*	-	-	-	
27 NOV 64	18-50-05	E	*	*	*	-	-	-	
27 NOV 64	19-31-35	E	*	*	*	-	-	-	
27 NOV 64	20-50-37	E	*	*	*	-	-	-	
27 NOV 64	21-18-56	E	*	*	*	-	-	-	BLAST
27 NOV 64	21-37-40	E	*	*	*	-	-	-	
28 NOV 64	02-59-37.3	I	*	E	U	-	-	-	
28 NOV 64	13-57-07	E	*	*	*	-	-	-	
28 NOV 64	16-39-43	E	N	*	*	-	-	-	
28 NOV 64	16-49-24.3	I	S	E	D	-	-	-	
28 NOV 64	16-57-20.0	I	*	*	D	-	-	-	
28 NOV 64	18-29-18	E	*	*	*	-	-	-	
28 NOV 64	18-31-08	E	*	*	*	-	-	-	
28 NOV 64	19-45-35	E	*	*	*	-	-	-	
28 NOV 64	19-53-06	E	*	*	*	-	-	-	

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DATE	GMT OF FIRST MOTION	TYPE OF ONSET	OBSERVABLE ON SHORT PER NS	SHORT PER EW	SHORT PER Z	LONG PER NS	LONG PER EW	LONG PER Z	REMARKS
28 NOV 64	20-31-30.1	I	N	*	U	-	-	-	
28 NOV 64	21-16-32	E	*	*	*	-	-	-	BLAST
28 NOV 64	21-39-11	E	*	*	*	-	-	-	
28 NOV 64	22-00-41.9	I	*	W	D	-	-	-	
28 NOV 64	22-31-58	E	*	*	*	-	-	-	
28 NOV 64	23-27-37	E	*	*	*	-	-	-	
28 NOV 64	23-56-32	E	-	*	*	-	-	-	
29 NOV 64	09-17-37	E	*	*	*	-	-	-	
29 NOV 64	17-29-00	E	*	*	*	-	-	-	
29 NOV 64	19-01-12	E	*	W	*	-	-	-	
29 NOV 64	21-17-36	E	*	*	*	-	-	-	BLAST
30 NOV 64	00-36-26	E	*	*	*	-	-	-	
30 NOV 64	12-46-51	E	*	*	*	*	*	*	
30 NOV 64	15-59-21	E	*	*	*	-	-	-	
30 NOV 64	16-23-45	E	*	E	*	-	-	-	
30 NOV 64	16-40-30	E	*	*	*	-	-	-	
30 NOV 64	16-54-14	E	*	E	*	-	-	-	
30 NOV 64	17-46-34	E	*	*	*	-	-	-	
30 NOV 64	22-50-35	E	-	*	*	-	-	-	
30 NOV 64	22-53-33	E	*	*	*	-	-	-	BLAST
01 DEC 64	13 33 40.	E	*	*	*	-	-	-	
01 DEC 64	18 34 29.	E	*	*	*	-	-	-	
01 DEC 64	18 52 15.	E	*	*	*	-	-	-	
01 DEC 64	20 43 25.	E	*	*	*	-	-	-	
01 DEC 64	23 13 39.	E	*	*	*	-	-	-	BLAST
02 DEC 64	03 13 13.4	I	N	*	U	-	-	-	
02 CEC 64	08 34 46.	E	-	-	-	*	*	*	
02 DEC 64	13 28 13.	E	*	*	*	-	-	-	
02 DEC 64	18 17 28.0	I	*	W	D	-	-	-	
02 DEC 64	18 35 41.	E	*	*	*	-	-	-	
02 DEC 64	19 27 03.	E	*	*	*	-	-	-	
02 DEC 64	21 28 33.	E	*	*	*	-	-	-	
02 DEC 64	22 02 13	E	*	*	*	-	-	-	
02 DEC 64	22 48 50.	E	*	*	*	-	-	-	BLAST
03 DEC 64	13 22 16.	E	*	*	*	-	-	-	
03 DEC 64	16 58 49.5	I	*	E	U	-	-	-	
03 DEC 64	18 09 53.	E	*	*	*	-	-	-	
03 DEC 64	19 13 27.	E	*	E	*	-	-	-	BLAST
03 DEC 64	19 22 25.	E	*	*	*	-	-	-	
03 DEC 64	19 32 13.5	I	N	W	U	-	-	-	BLAST
03 DEC 64	19 40 51.	E	*	*	*	-	-	-	
03 DEC 64	19 58 18.	E	*	*	*	-	-	-	
03 DEC 64	20 38 18.	E	*	*	*	-	-	-	
03 DEC 64	20 50 32.	E	*	*	*	-	-	-	
03 DEC 64	20 57 21.	E	*	*	*	-	-	-	
03 DEC 64	21 39 48.7	I	N	*	U	-	-	-	
03 DEC 64	22 15 25.	E	*	*	*	-	-	-	
03 DEC 64	22 46 24.	E	*	*	*	-	-	-	
04 DEC 64	15 47 22.	E	-	-	-	*	*	*	
04 DEC 64	16 27 43.	E	*	*	*	-	-	-	

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DATE	GMT OF FIRST MOTION	TYPE OF ONSET	OBSERVABLE ON SHORT PER NS	SHORT PER EW	SHORT PER Z	LONG PER NS	LONG PER EW	LONG PER Z	REMARKS
04 DEC 64	21 30 38.9	I	*	*	U	-	-	-	
04 DEC 64	21 42 26.1	I	N	W	D	-	-	-	
04 DEC 64	22 30 28.2	I	*	E	U	-	-	-	
04 DEC 64	23 01 07.	E	*	*	*	-	-	-	BLAST
04 DEC 64	23 18 13.	E	*	*	*	-	-	-	
04 DEC 64	23 55 51.	E	*	*	*	-	-	-	
05 DEC 64	03 03 09.3	I	*	*	U	-	-	-	BLAST
05 DEC 64	14 54 11.	E	*	E	*	-	-	-	
05 DEC 64	15 24 43.	E	*	*	*	-	-	-	
05 DEC 64	17 56 21.	E	*	*	*	-	-	-	
05 DEC 64	18 48 11.	E	*	*	*	-	-	-	
05 DEC 64	19 58 12.	E	-	-	*	-	-	-	
05 DEC 64	20 40 16.	E	*	E	*	-	-	-	
05 DEC 64	21 26 53.7	I	N	*	U	-	-	-	
05 DEC 64	22 30 45.	E	*	*	*	-	-	-	
05 DEC 64	22 52 27.	E	*	*	*	-	-	-	
06 DEC 64	09 09 06.	E	-	-	-	*	*	*	
06 DEC 64	21 17 32.	E	*	*	*	-	-	-	BLAST
07 DEC 64	09 17 36.0	I	*	*	U	-	-	-	
07 DEC 64	09 56 16.	E	-	-	-	-	*	*	
07 DEC 64	17 03 57.8	I	N	E	U	-	-	-	
07 DEC 64	18 00 06.	E	*	-	*	-	-	-	
07 DEC 64	18 41 58.	E	*	*	*	-	-	-	
07 DEC 64	18 51 44.	E	*	E	*	-	-	-	
07 DEC 64	18 59 32.9	I	*	*	U	-	-	-	
07 DEC 64	19 07 26.	E	-	-	-	-	*	*	
07 DEC 64	19 50 52.0	I	N	*	U	-	-	-	BLAST
07 DEC 64	19 55 33.9	I	N	W	U	-	-	-	
07 DEC 64	21 34 57.	E	*	*	*	-	-	-	
07 DEC 64	22 18 50.	E	*	*	*	-	-	-	
07 DEC 64	22 29 02.	E	*	*	*	-	-	-	BLAST
08 DEC 64	04 18 03.0	I	S	*	D	-	-	-	
08 DEC 64	04 37 24.8	I	N	E	U	-	-	-	BLAST
08 DEC 64	16 20 24.	E	N	E	*	-	-	-	
08 DEC 64	17 20 23.3	E	N	E	U	-	-	-	
08 DEC 64	18 36 26.	E	-	-	-	-	-	*	
08 DEC 64	19 15 07.7	I	N	E	U	-	-	-	
08 DEC 64	19 19 30.	E	*	*	*	-	-	-	
08 DEC 64	19 46 04.	E	*	E	*	-	-	-	
08 DEC 64	20 03 48.3	I	N	E	U	-	-	-	
08 DEC 64	20 15 55.	E	*	E	*	-	-	-	
08 DEC 64	20 58 35.	E	*	*	*	-	-	-	
08 DEC 64	22 51 03.	E	*	*	*	-	-	-	
09 DEC 64	13 45 53.5	I	S	E	D	-	-	-	
09 DEC 64	15 08 58.	E	*	E	*	-	-	-	
09 DEC 64	15 26 29.8	I	*	*	U	-	-	-	
09 DEC 64	16 54 13.	E	*	*	*	-	-	-	
09 DEC 64	17 59 45.	E	*	*	*	-	-	-	
09 DEC 64	18 30 46.1	I	N	*	U	-	-	-	
09 DEC 64	18 56 07.	E	*	*	*	-	-	-	

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DATE	GMT OF FIRST MOTION	TYPE OF ONSET	OBSERVABLE ON SHORT PER NS	SHORT PER EW	SHORT PER Z	LONG PER NS	LONG PER EW	LONG PER Z	REMARKS
09 DEC 64	19 32 43.1	I	*	W	U	-	-	-	BLAST
09 DEC 64	21 10 38.	E	N	*	*	-	-	-	
09 DEC 64	21 25 30.	E	*	*	*	-	-	-	
09 DEC 64	21 30 16.	E	*	*	*	-	-	-	
09 DEC 64	21 39 09.	E	*	*	*	-	-	-	
09 DEC 64	23 46 50.	E	*	*	*	-	-	-	
10 DEC 64	15 00 24.7	I	N	*	U	-	-	-	
10 DEC 64	15 24 14.1	I	N	*	U	*	*	U	
10 DEC 64	19 27 38.	E	*	*	*	-	-	-	
10 DEC 64	23 13 28.2	I	N	E	U	-	-	-	
11 DEC 64	13 09 19.	E	*	*	*	-	-	-	
11 DEC 64	19 16 14.	E	*	E	RF	-	RF	-	
11 DEC 64	23 20 33.	E	*	*	RF	-	RF	-	
12 DEC 64	02 40 09.5	I	N	W	RF	-	RF	-	BLAST
12 DEC 64	18 22 55.	E	*	*	*	-	-	-	
12 DEC 64	20 43 03.1	I	N	E	U	-	-	-	
12 DEC 64	21 58 38.	E	*	*	*	-	-	-	BLAST
13 DEC 64	00 42 40.	E	*	*	*	-	-	-	
13 DEC 64	00 59 50.	E	*	*	*	*	*	*	
13 DEC 64	19 41 14.	E	N	E	*	-	-	-	
14 DEC 64	02 28 22.	E	-	-	-	*	*	*	
14 DEC 64	19 36 01.	E	-	-	-	*	*	*	
14 DEC 64	20 38 34.	E	*	*	*	-	-	-	BLAST
14 DEC 64	23 39 34.	E	*	*	*	-	-	-	
15 DEC 64	12 19 14.1	I	N	E	U	*	*	U	
15 DEC 64	15 55 23.	E	*	-	*	-	-	-	
15 DEC 64	17 44 21.9	I	S	E	U	-	-	-	
15 DEC 64	19 07 48.4	I	N	E	D	-	-	-	
15 DEC 64	19 19 54.	E	*	*	*	-	-	-	BLAST
15 DEC 64	21 06 26.	E	*	*	*	-	-	-	
15 DEC 64	21 40 06.	E	*	*	*	-	-	-	
15 DEC 64	22 50 00.	E	*	*	*	-	-	-	BLAST
16 DEC 64	04 14 07.	E	*	*	*	-	-	-	
16 DEC 64	14 35 39.	E	N	E	*	-	-	-	
16 DEC 64	16 21 26.	E	*	E	*	-	-	-	
16 DEC 64	17 45 09.1	IP	*	E	U	-	-	-	
16 DEC 64	18 28 20.	E	*	E	*	-	-	-	
16 DEC 64	20 41 35.	E	*	W	*	-	-	-	
16 DEC 64	21 37 07.4	I	S	E	U	-	-	-	
16 DEC 64	23 30 08.	E	*	*	*	-	-	-	BLAST
17 DEC 64	04 37 36.9	I	N	E	U	-	-	-	
17 DEC 4	05 31 05.9	I	*	*	U	-	-	-	
17 DEC 64	15 49 05.	E	*	*	*	-	-	-	
17 DEC 64	17 53 50.8	I	N	*	U	-	-	-	
17 DEC 64	18 41 15.	E	N	E	*	-	-	-	
17 DEC 64	19 29 42.	E	*	*	*	-	-	-	
17 DEC 64	21 20 44.	E	N	*	*	-	-	-	
17 DEC 64	22 52 52.	E	*	*	*	-	-	-	BLAST
17 DEC 64	23 20 55.5	I	*	E	U	-	-	-	
17 DEC 64	23 55 19.3	I	N	*	U	-	-	-	

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DATE	GMT OF FIRST MOTION	TYPE OF ONSET	OBSERVABLE ON SHORT PER NS	SHORT PER EW	SHORT PER Z	LONG PER NS	LONG PER EW	LONG PER Z	REMARKS
18 DEC 64	00 16 04.	E	-	-	-	*	*	*	
18 DEC 64	19 20 00.9	I	*	E	U	-	-	-	
18 DEC 64	19 33 17.	E	*	*	*	-	-	-	
18 DEC 64	19 43 13.	E	*	E	*	-	-	-	
18 DEC 64	21 55 07.5	I	N	*	U	-	-	-	
19 DEC 64	19 14 44.9	I	N	E	U	-	-	-	
19 DEC 64	19 30 24.5	I	*	*	U	-	-	-	
19 DEC 64	20 34 08.9	I	N	W	U	-	-	-	
19 DEC 64	21 36 12.1	I	N	W	U	-	-	-	
20 DEC 64	17 04 37.	E	*	*	*	-	-	-	
20 DEC 64	17 14 57.	E	*	*	*	-	-	-	
20 DEC 64	21 09 02.	E	N	*	*	-	-	-	
21 DEC 64	16 25 19.1	I	N	W	U	-	-	-	
21 DEC 64	16 47 49.	E	*	W	*	-	-	-	
21 DEC 64	18 40 23.1	I	*	*	U	-	-	-	
21 DEC 64	19 43 52.	E	*	*	*	-	-	-	
21 DEC 64	23 37 23.	E	*	*	*	-	-	-	BLAST
22 DEC 64	00 02 57.6	I	N	*	U	-	-	-	
22 DEC 64	00 32 52.3	I	*	*	D	-	-	-	
22 DEC 64	05 23 06.	E	-	-	-	*	*	*	
22 DEC 64	08 06 16.6	IP	N	E	U	*	*	*	
22 DEC 64	15 06 25.3	I	S	E	U	-	-	-	
22 DEC 64	16 29 54.	E	*	*	*	-	-	-	
22 DEC 64	18 00 55.	E	*	*	*	-	-	-	
22 DEC 64	18 33 38.	E	*	*	*	-	-	-	
22 DEC 64	19 55 28.0	I	N	E	-	-	-	-	
22 DEC 64	20 15 32.3	I	N	E	-	-	-	-	
22 DEC 64	21 11 07.2	EP	*	*	*	*	*	*	
22 DEC 64	21 29 47.9	IP	S	*	U	-	-	-	
22 DEC 64	21 59 55.9	I	N	*	U	-	-	-	
22 DEC 64	22 01 29.2	IP	N	*	U	-	-	-	
22 DEC 64	22 51 58.	E	*	*	*	-	-	-	
23 DEC 64	15 07 24.3	I	S	E	U	-	-	-	
23 DEC 64	16 35 19.3	I	N	E	U	-	-	-	
23 DEC 64	18 57 34.8	IP	*	E	U	-	-	-	
23 DEC 64	20 50 43.1	IP	N	E	U	-	-	-	
24 DEC 64	03 17 23.	E	N	*	RF	-	-	-	BLAST
24 DEC 64	03 22 40.	E	N	W	RF	-	-	-	BLAST
24 DEC 64	17 12 23.4	I	*	E	U	-	-	-	
24 DEC 64	18 06 18.3	I	N	E	U	-	-	-	
24 DEC 64	18 20 38.7	I	N	E	U	-	-	-	
24 DEC 64	19 27 43.	E	*	*	*	-	-	-	
24 DEC 64	19 43 22.	E	-	-	-	-	*	*	
24 DEC 64	21 19 17.	E	*	E	*	-	-	-	
24 DEC 64	22 15 00.	E	N	*	*	-	-	-	
25 DEC 64	16 45 24.	E	-	-	-	-	-	*	
25 DEC 64	21 09 37.	E	*	*	*	-	-	-	BLAST
26 DEC 64	08 22 40.1	I	*	*	U	*	*	*	
26 DEC 64	14 42 03.9	IP	S	E	U	-	*	U	
26 DEC 64	20 53 06.	E	*	*	*	-	-	-	

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DATE	GMT OF FIRST MOTION	TYPE OF ONSET	OBSERVABLE ON SHORT PER NS	SHORT PER EW	SHORT PER Z	LONG PER NS	LONG PER EW	LONG PER Z	REMARKS
26 DEC 64	21 27 45.	E	*	*	*	-	-	-	BLAST
26 DEC 64	23 59 05.0	I	*	E	D	-	-	-	
27 DEC 64	21 13 35.9	I	*	*	D	-	-	-	BLAST
27 DEC 64	22 17 19.5	I	N	*	U	-	-	-	
28 DEC 64	16-27-41	E	N	*	*	-	-	-	
28 DEC 64	17-14-06.0	I	*	*	D	-	-	-	
28 DEC 64	20-02-43.0	I	N	*	*	-	-	-	
28 DEC 64	21-11-35.5	I	N	*	U	-	-	-	
28 DEC 64	21-56-49	E	*	*	*	-	-	-	BLAST
28 DEC 64	20-02-43.0	I	N	*	*	-	-	-	
28 DEC 64	21-11-35.5	I	N	*	U	-	-	-	
28 DEC 64	21-56-49	E	*	*	*	-	-	-	BLAST
29 DEC 64	00-54-47.2	I	*	*	U	-	-	-	
29 DEC 64	01-50-35	E	*	*	*	-	-	-	
29 DEC 64	06-45-31.3	I	*	*	U	-	-	-	
29 DEC 64	06-49-34.2	I	*	*	U	-	-	-	
29 DEC 64	10-20-03.7	I	*	*	U	-	-	-	
29 DEC 64	15-42-25.3	I	N	W	U	-	-	-	
29 DEC 64	00-54-47.2	I	*	*	U	-	-	-	
29 DEC 64	01-50-35	E	*	*	*	-	-	-	
29 DEC 64	06-45-31.3	I	*	*	U	-	-	-	
29 DEC 64	06-49-34.2	I	*	*	U	-	-	-	
29 DEC 64	10-20-03.7	I	*	*	U	-	-	-	
29 DEC 64	15-42-25.3	I	N	W	U	-	-	-	
29 DEC 64	18-54-42.4	IP	S	W	D	-	-	-	BLAST
29 DEC 64	18-55-22.1	IP	N	W	D	-	-	-	BLAST
29 DEC 64	19-24-04.0	IP	S	W	U	-	-	-	BLAST
29 DEC 64	19-26-59.0	I	*	*	*	-	-	-	
29 DEC 64	20-54-09	E	*	E	U	-	-	-	
30 DEC 64	16-45-39	IP	S	E	U	-	-	-	BLAST
30 DEC 64	17-02-11.5	I	*	*	D	-	-	-	
30 DEC 64	18-54-46.5	I	N	E	D	-	-	-	
30 DEC 64	19-03-45	E	*	E	U	-	-	-	
30 DEC 64	20-03-39	IP	N	*	U	-	-	-	BLAST
30 DEC 64	20-22-53	E	*	E	U	-	-	-	
30 DEC 64	21-12-40	E	*	*	*	-	-	-	
31 DEC 64	19-53-47	E	*	*	*	-	-	-	
31 DEC 64	20-11-06.7	I	S	RF	U	-	-	-	
31 DEC 64	20-19-57	E	*	*	*	-	-	-	
31 DEC 64	20-25-39.7	I	*	*	U	-	-	-	
31 DEC 64	22-43-42	E	*	*	*	-	-	-	BLAST

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We acknowledge with thanks receipt of the following bulletins and other publications between 5 January 1965 and 12 October 1965:

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12 October 1965