



**Idaho
National
Engineering
Laboratory**

INEL-95/0536-
Vol. 2

May 1996


Site-Specific Probabilistic Seismic Hazard Analyses for the Idaho National Engineering Laboratory

Volume 2 Appendices

MASTER

The peak accelerations and acceleration response spectra presented in this report are not to be used for the seismic design of facilities. The intent of this study is to provide supporting documentation for development of design response spectra and peak accelerations for the INEL Architectural and Engineering Standards.

 **Lockheed**
Idaho Technologies Company

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED 

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product or process disclosed, or represents that its use would not infringe privately owned rights. References herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

**Site-Specific Probabilistic Seismic Hazard Analyses
for the Idaho National Engineering Laboratory**

Volume 2 Appendices

Published May 1996

**Woodward-Clyde Federal Services
Geomatrix Consultants
and
Pacific Engineering and Analysis**

**Prepared for Lockheed Martin Idaho Technologies
Under Subcontract C92120278
and for the
U.S. Department of Energy
Assistant Secretary for Environmental Management
Under DOE Idaho Operations Office
Contract DE-AC07-94ID13223**



DISCLAIMER

Portions of this document may be illegible in electronic image products. Images are produced from the best available original document.

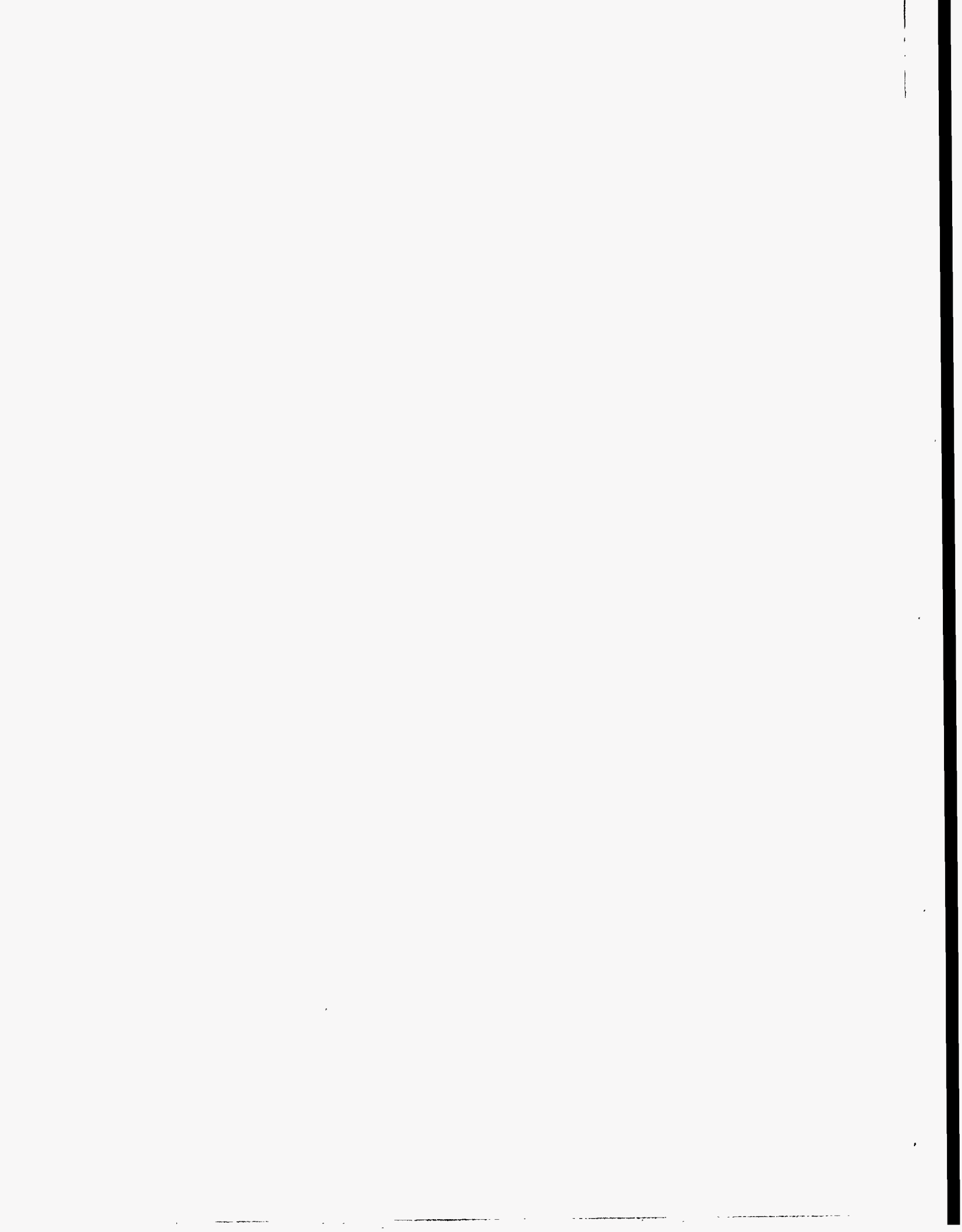


TABLE OF CONTENTS

VOLUME 2

LIST OF APPENDIXES

- APPENDIX A - HISTORICAL EARTHQUAKE CATALOGUE AND ANALYSES
APPENDIX B - INVERSION OF REGIONAL EARTHQUAKES AND BORAH
PEAK AFTERSHOCKS
APPENDIX C - BASIN AND RANGE AND OTHER EXTENSIONAL
EARTHQUAKE STRESS DROPS
APPENDIX D - BOREHOLE VELOCITY AND DAMPING MEASUREMENTS AT
ANL WEST D BOREHOLE ANL-1
APPENDIX E - SITE-SPECIFIC GEOLOGIC PROFILES

LIST OF TABLES FOR APPENDICES

- A-1 Earthquake Catalogue - Explanation and Abbreviations
B-1 Regional Earthquakes Used in Analysis
B-2 Borah Peak Aftershocks Used in Analysis
B-3 Source, Path, and Site Parameters from Inversion of Regional Earthquakes and Borah
Peak Aftershocks
C-1 1935 Helena and 1962 Cache Valley Earthquake Stress Drops
C-2 1980 Mammoth Lakes Aftershocks Used in Analyses
C-3 Stress Drop Estimates for 1980 Mammoth Lakes Aftershocks
C-4 1975 Oroville Aftershocks Used in Analyses
C-5 Stress Drop Estimates for 1975 Oroville Aftershocks
C-6 Stress Drops from Basin and Range Earthquakes
C-7 Statistics on Stress Drop Estimates

LIST OF FIGURES FOR APPENDICES

- A-1 Relationship Between M_L and M_w for Earthquakes Within the Study Region
A-2 Relationship Between M_s and M_w for Earthquakes Within the Study Region
A-3 Relationship Between M_D and M_L for Earthquakes Within the Study Region
A-4 Relationship Between M_u and M_L for Earthquakes Within the Study Region
A-5 Relationship Between m_b and M_L for Earthquakes Within the Study Region
A-6 Relationship Between I_o and M_L for Earthquakes Within the Study Region
A-7 Empirical Spatial and Temporal Windows to Identify Dependent Events
A-8 Earthquake Frequencies of Independent Events as a Function of Magnitude Interval and
Time Before the End of the Catalogue

TABLE OF CONTENTS (continued)

- A-9 Distributions of Seismograph Stations as a Function of Time and Specified Completeness Regions
- A-10 Equivalent Periods of Completeness, T_E , for the Two Completeness Regions and the Three Zonation Models
- B-1 Results of Spectral Inversion of Regional Earthquakes and Borah Peak Aftershocks
- C-1 Results of Spectral Inversion of 1935 Helena, MT Earthquakes
- C-2 Results of Spectral Inversion of 1962 Cache Valley, UT Earthquakes
- C-3 Results of Spectral Inversion of 1980 Mammoth Lake, CA Earthquakes
- C-4 Results of Spectral Inversion of 1975 Oroville, CA Aftershocks
- E-1 Shear-Wave Velocity Profile for ANL
- E-2 Shear-Wave Velocity Profile for ATR
- E-3 Shear-Wave Velocity Profile for CPP
- E-4 Shear-Wave Velocity Profile for NRF
- E-5 Shear-Wave Velocity Profile for PBF
- E-6 Shear-Wave Velocity Profile for RWMC
- E-7 Shear-Wave Velocity Profile for TAN

APPENDIX A

HISTORICAL EARTHQUAKE CATALOGUE AND ANALYSES

The identification of seismic sources is often based on a combination of geologic and tectonic considerations and patterns of observed seismicity; hence, a historical earthquake catalogue is important. A historical catalogue of earthquakes of approximate magnitude (M) 2.5 and greater for the time period 1850 through 1992 was compiled for the INEL region as defined in Figure 3-1. The primary data source used was the Decade of North American Geology (DNAG) catalogue for the time period from about 1800 through 1985 (Engdahl and Rinehart, 1988). A large number of felt earthquakes, especially prior to the 1970's, which were below the threshold of completeness established in the DNAG catalogue (Engdahl and Rinehart, 1991), were taken from the state catalogues compiled by Stover and colleagues at the National Earthquake Information Center (NEIC) and combined with the DNAG catalogue for the INEL region. The state catalogues were those of Idaho, Montana, Nevada, Utah, and Wyoming. NEIC's Preliminary Determination of Epicenters (PDE) and the state catalogues compiled by the Oregon Department of Geology and Mineral Industries (DOGAMI), and the University of Nevada at Reno (UNR) were also used to supplement the pre-1986 time period. A few events reanalyzed by Jim Zollweg (Boise State University, written communication, 1994) were also modified in the catalogue. In the case of duplicate events, the DNAG entry was preferred over the Stover *et al.* entry for the period 1850 through 1985. A few events from Berg and Baker (1963) were also added to the catalogue.

For the period 1986 through 1992, data sources for the catalogue were from agencies operating regional seismographic networks including the INEL, the Montana Bureau of Mines and Geology (MBMG), the University of Utah Seismograph Stations (UUSS) (including the Utah regional and Yellowstone networks), the U.S. Bureau of Reclamation (Jackson Lake network), Boise State University (BSU), and UNR. The UUSS and MBMG catalogues were the primary data sources. PDEs were also used to supplement this time period particularly for areas outside of any of the regional networks such as northeastern Nevada. Relocations and magnitudes of 119 earthquakes from the 1986 White Cloud Peaks earthquakes were also obtained from Jim Zollweg (BSU, written communication, 1993). Also an additional 16 earthquakes, generally from the Stover catalogues, which reportedly

occurred within or near the boundaries of the Snake River Plain, have also been added to the INEL catalogue.

In the case of duplicates, the preferred order was based on which network had the best seismographic coverage of the event. The quality of the 1986 to 1992 locations is variable. Many events were not well located because they were outside any of the regional networks (azimuthal gaps greater than 300°). This is particularly true of some of the MBMG locations. A few events have been retained in the INEL historical catalogue although they are of poor quality (root-mean-square errors) greater than 0.5 sec.

It should be noted that all of these catalogues are considered to be acceptable sources of historical information and thus we have assumed, for the most part, that all earthquake entries are valid. The investigation of any given event was beyond the scope of our study and we have adopted what we consider to be the most accurate entry in case of duplicates.

The seismicity contained in the historical catalogue is shown on Figure 3-1. A total of 5,821 events are contained in the catalogue. Table A-1 explains the column headings and abbreviations shown in the catalogue.

Uniform Magnitude Scale

The historical earthquake catalogue developed often contains multiple magnitude measures for each earthquake. The magnitude estimates were converted to a common scale, selected to be the Hanks and Kanamori (1979) moment magnitude scale. The M_w scale was selected because the attenuation relationships used to compute the hazard were defined in terms of this scale. The magnitude conversion was performed using the procedure developed by Veneziano and Van Dyck (1985) to explicitly account for the uncertainty in the true size of individual events and to develop unbiased earthquake recurrence estimates. Their procedure involves making an adjustment to the magnitude estimate for individual events, then applying the Weichert (1980) maximum likelihood technique to estimate the recurrence parameters for the adjusted magnitude data. The resulting rates were shown to be equivalent to those obtained by incorporating the uncertainty in event size explicitly into the maximum likelihood estimation procedure, and to provide an unbiased estimate of earthquake recurrence rates.

When the size of an event is defined in terms of measured moment magnitude, \hat{M}_w , the form of the adjustment is given by the expression:

$$M_w^* = E[M_w | \hat{M}_w] - \frac{1}{2} b \ln(10) \text{Var}[M_w | \hat{M}_w] \quad (\text{A-1})$$

where $E[M_w | \hat{M}_w]$ and $\text{Var}[M_w | \hat{M}_w]$ refer to the expected value and variance of the estimate of M_w from measured seismic moment and b is the Gutenberg and Richter b -value. When the size of the event is specified in terms of a vector of size measures X (such as intensity, felt area, or other magnitude scales), the form of the adjustment is given by the expression:

$$M_w^* = E[M_w | X] + \frac{1}{2} b \ln(10) \text{Var}[M_w | X] \quad (\text{A-2})$$

where $E[M_w | X]$ and $\text{Var}[M_w | X]$ refer to the expected value and variance of the estimate of moment magnitude from the vector X . Given n size measures for a given event, $E[M_w | X]$ and $\text{Var}[M_w | X]$ are given by

$$E[M_w | X] = \sum_{i=1}^n \frac{\text{Var}[M_w | X]}{\text{Var}[M_w | x_i]} E[M_w | x_i] + (n-1) b \ln(10) \text{Var}[M_w | X] \quad (\text{A-3})$$

$$\text{Var}[M_w | X] = \left[\sum_{i=1}^n \frac{1}{\text{Var}[M_w | x_i]} \right]^{-1} \quad (\text{A-4})$$

where $E[M_w | x_i]$ and $\text{Var}[M_w | x_i]$ refer to the expected value and variance of the estimate of M_w from an individual size measure x_i . The various size measures are discussed below.

Seismic Moment The catalogue contains 51 events with measured seismic moments. These values were converted to M_w using the Hanks and Kanamori (1979) relationship of $M_w = 2/3 \log M_0 - 10.7$. The standard error of M_w given the moment estimate \hat{M}_w was assumed to be 0.2, typical of the standard error in a given magnitude estimate.

Local Magnitude. The catalogue contains 1,579 events with reported values of M_L . Hanks and Kanamori (1979) defined M_w to be equivalent to M_L in the range of M_w 3 to $6\frac{1}{2}$ for California earthquakes. Doser and Smith (1982) evaluated the relationship between M_L , M_S and seismic moment for the Intermountain region. They found a significantly different relationship than 1:1 correspondence. However, in a more recent evaluation, Shemeta and Pechmann (1993) concluded that the relationship between M_L and seismic moment for the Intermountain region can be adequately represented by the relationship developed for California.

Figure A-1 shows the data from the study region for which both M_L and M_w are given (plot a) and where additional Intermountain data is given by Smith and Arabasz (1991) (plot b). Linear regression fits to the data (heavy dashed line) conform more to the assumption that M_L and M_w are equivalent than the relationship given by Doser and Smith (1982). (Also shown on Figures A-1 through A-6 are the 95% confidence interval on the regression relationship and a 1:1 correlation between the two magnitude measures.) For this study, we have adopted the California relationship between M_L and M_w as recommended by Shemeta and Pechmann (1993). In the range of M_L 3 to $6\frac{1}{2}$, $M_w = M_L$. For $M_L < 3$, the relationship $M_w = 0.8M_L + 0.6$ was used to reflect the difference in the M_L - M_w relationship observed in California for small magnitudes (Bakun, 1984). The standard error of the data shown on Figure A-1 is 0.19 magnitude units. This value was rounded to 0.2 for purposes of applying Equation A-3 to be consistent with typical standard errors for a magnitude estimate.

Surface Wave Magnitude The catalogue contains ten events with reported values of M_S . Figure A-2 shows the data from the study region for which both M_S and M_w are given (plot a) and additional Intermountain data given by Smith and Arabasz (1991) (plot b). Linear regression fits to the two data sets yield nearly identical relationships that are similar to the relationship given by Doser and Smith (1982). The relationship $M_w = 2.14 + 0.66M_S$ defined from the data shown on Figure A-2 was used to convert M_S magnitudes to M_w . The standard deviation of the data shown on Figure A-2 was 0.17. This value was rounded to 0.2 for purposes of applying Equation A-3 to be consistent with typical standard errors for a magnitude estimate.

Duration Magnitude The catalogue contains 3,296 events with reported values of M_D . The duration magnitude scale is usually defined to be consistent with M_L . Figure A-3 shows the data from the study region catalogue for which both M_D and M_L are reported. The 95-percent confidence interval for the regression line for $M_D > 2.5$ encompasses a 1:1 correlation. Therefore, it was assumed that M_D is equivalent to M_L and the M_L to M_w conversion given above was used. The standard deviation of the data shown on Figure A-3 is 0.31. Adding the variance in the conversion from M_L to M_w gives a total standard error for M_w given M_D of 0.36.

Unspecified Magnitude The catalogue contained 161 events with unspecified magnitudes, M_U . While there are a few events for which there are significant differences between M_U and M_L , most of the data indicates that the two magnitude measures are equivalent (Figure A-4). For this study, it was assumed that $M_U = M_L$. The scatter in the data shown on Figure A-4 together with the standard error in the $M_L - M_w$ conversion gives a total standard error for M_w given M_U of 0.36

Body Wave Magnitude The catalogue contains 433 events with reported m_b magnitudes. Figure A-5 shows the data from the catalogue for which both m_b and M_L are reported. The linear regression fit to the data indicates a significant difference from 1:1 correlation and the relationship $M_L = -0.16 + 0.95m_b$ was used to convert the m_b values to M_L and the M_L to M_w conversion given above was used. The standard deviation of the data shown on Figure A-5 is 0.53. Adding the variance in the conversion from M_L to M_w gives a total standard error for M_w given m_b of 0.56.

Epicentral Intensity The catalogue contains 1,167 events with reported values of I_0 . Figure A-6 shows the data from the catalogue for which both I_0 and M_L are reported. The linear relationship fitted to the data is very similar to the standard Gutenberg and Richter relationship of $M_L = \frac{2}{3}I_0 + 1$. The Gutenberg and Richter relationship was used to convert I_0 to M_L and the M_L to M_w conversion given above was used. The standard error of conversion of I_0 to M_w was set equal to 0.6, the standard error reported by Veneziano and Van Dyck (1985) for intensity-to-magnitude conversion. Their value is based on a much larger sample than the data shown on Figure A-6, and is therefore judged to be a better estimate of the variability in the conversion.

Felt Area Magnitude The catalogue contained three events with reported felt area magnitudes. These magnitudes were assumed to be equivalent to M_L and the standard error specified for conversion of I_0 to M_w was used to obtain the uniform magnitude.

Identification of Dependent Events

The mathematical formulation used in this (and most) seismic hazard analysis is based on an assessment of the frequency of occurrence of independent earthquakes. It has been shown that the inclusion of dependent events (e.g., foreshocks and aftershocks) in the analysis results in only a minor increase in the computed hazard (Mertz and Cornell, 1973; Veneziano and Van Dyck, 1985). For this study, dependent events in the earthquake catalogue were identified using the following procedure. The largest event in the catalogue was identified and a spatial and temporal window was specified based on three empirical criteria for the size of foreshock-aftershock sequences as a function of earthquake magnitude (Youngs *et al.*, 1987). All events falling within the window were flagged as dependent events. The next largest unflagged event was then selected and the process repeated down to the smallest magnitude event.

The three empirical criteria selected for use in identifying dependent events are shown in Figure A-7. Youngs *et al.* (1987) found that all three criteria performed well in identifying dependent events in the historical earthquake catalogue for the Wasatch Front in Utah. The three criteria were applied independently to the catalogue and events were flagged as dependent events if two of the three criteria identified them as dependent events. The total catalogue for the INEL region contains 5,821 events. After applying the criteria shown on Figure A-7, 2,059 independent events were identified.

Catalogue Completeness

Typically, estimation of earthquake recurrence frequencies requires specification of the time periods over which independent events of various magnitudes can be considered completely reported in the catalogue. These time periods, TC , can be estimated by plotting the observed frequency of occurrence of independent events in different magnitude intervals as a function of time before the end date of the catalogue (Figure A-8). If the earthquake occurrence rate is assumed to be stationary in time on a regional scale, then the point in time when the

observed frequency begins to steadily decrease with increasing time before the present represents the date before which the catalogue cannot be considered complete. This approach to evaluating catalogue completeness is similar to the method proposed by Stepp (1972). Recurrence calculations are then made using only data for the time periods of complete reporting.

As part of their analysis of eastern U.S. seismicity, Veneziano and Van Dyck (1985) developed a general procedure in which all of the data in the catalogue could be used to compute seismicity parameters. The basic component of their analysis is an estimation of the probability of detection of earthquakes as a function of magnitude, time, and recording region. Their approach involved estimating the probability of detection by people (i.e. intensity data and felt reports) and the probability of detection by instrumental networks as a function of time for the entire central and eastern U.S. and the adjacent portions of Canada. Veneziano and Van Dyck (1985) define an "equivalent period of completeness", TE , such that the rate of earthquake occurrence is equal to the total number of events in the catalogue divided by TE rather than the number of events in the period of complete reporting divided by TC . They also show that the two estimates of the true seismicity rate are equivalent.

Geomatrix Consultants (1995) present a simplified version of the Veneziano and Van Dyck (1985) procedure that estimates the probabilities of detection simultaneously with the recurrence parameters. Their procedure involves dividing the study area into one or more regions where the history of catalogue reporting can be considered uniform. One then divides the history of catalogue reporting into time intervals over which the probability of detection can be considered constant. The likelihood formulation of Weichert (1980) was modified to include the probabilities of detection in time interval and in each completeness region as variables along with the seismicity parameters for all of the source zones in the region. The likelihood function is then maximized using the entire catalogue of recorded seismicity.

Two completeness regions were defined for the INEL region. Smith and Arabasz (1991) present maps showing the distribution of seismographic stations in the Intermountain region as a function of time (Figure A-9). We have defined a central completeness zone that encompasses the relatively dense network of seismographic stations approximately between

longitudes 111°W and 113°W and a second zone outside of this area where there are few seismographic stations (Figure A-9). We then made estimates of the probability of detection for the three alternative models of areal source zonation described in Section 4.2. Figure A-10 compares the estimated equivalent periods of completeness obtained for the three source zonation models.

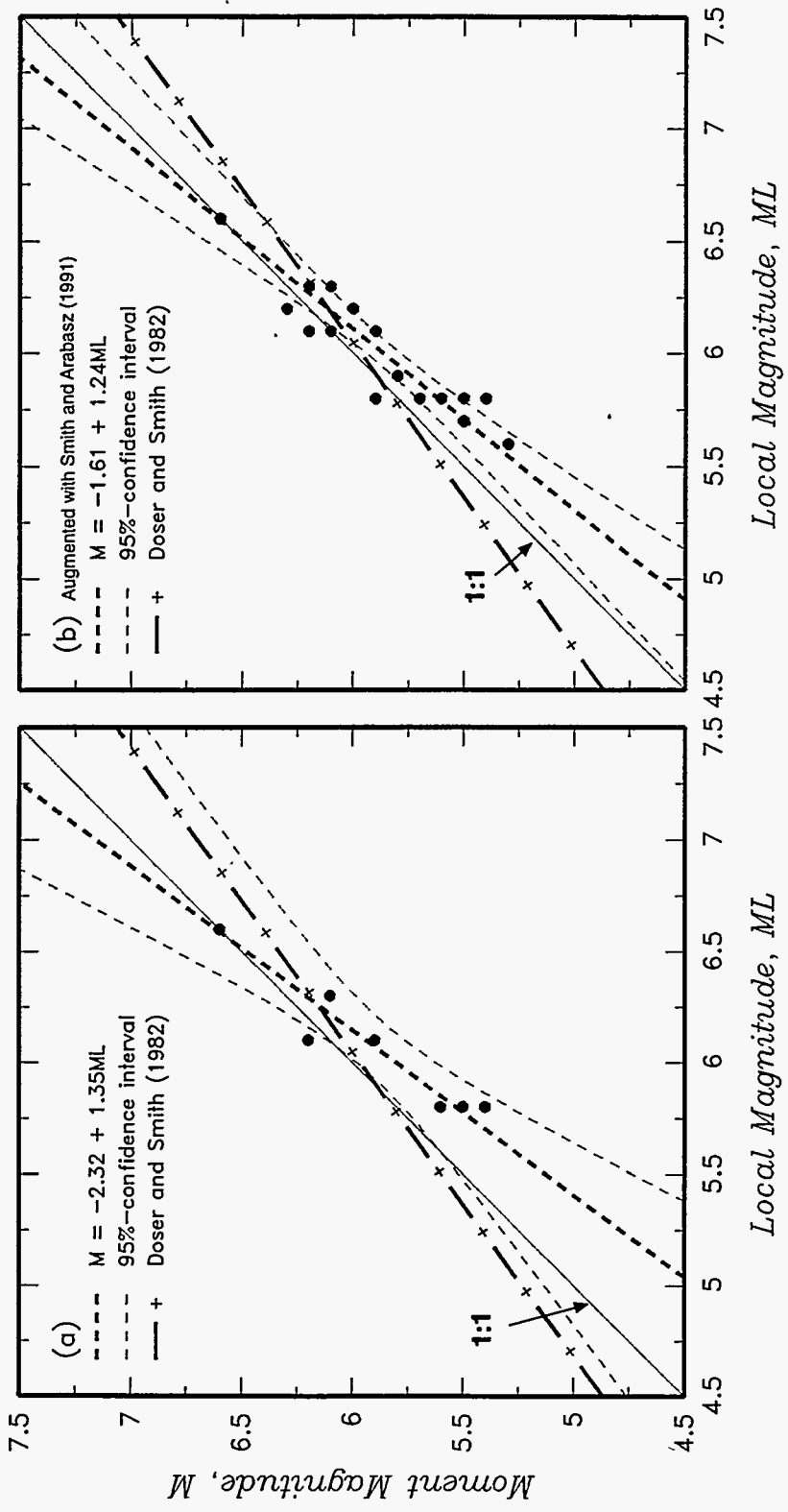
Recurrence Calculations

Recurrence parameters of a truncated exponential frequency magnitude distribution were fit to the data for each source zone or source zone combination using the maximum likelihood algorithm of Weichert (1980). The truncated exponential relationship is of the form

$$N(m) = \alpha(m^0) \frac{10^{-b(m-m^0)} - 10^{-b(m^*-m^0)}}{1 - 10^{-b(m^*-m^0)}} \quad (\text{A-4})$$

where $\alpha(m^0)$ is the annual frequency of occurrence of earthquakes of magnitude greater than a minimum magnitude, m^0 ; b is the Gutenberg-Richter b -value parameter; m^* is the maximum magnitude event that can occur on the source; and $N(m)$ is the annual frequency of occurrence of earthquakes of magnitude greater than m . The recurrence bias adjusted magnitudes, M_w^* , were used to compute the recurrence parameters.

The uncertainty in estimating seismicity parameters for the individual sources was modelled by developing a discrete distribution for the parameters based on the statistics of the fit of the truncated exponential model to the recorded data. Five values of $N(m^0)$ and five values of b were defined based on the uncertainty estimates obtained from the maximum likelihood fit to the data. These were then used to define 25 recurrence relationships that may have generated the observed data. The likelihood that the observed data were a product of the process defined by each of the recurrence relationships was computed using the likelihood formulation developed by Weichert (1980). These likelihoods were then normalized to define a discrete distribution for the seismicity parameters that is representative of the degree to which the data constrain the recurrence relationship for a source zone and accounts for the correlation between $N(m^0)$ and b .



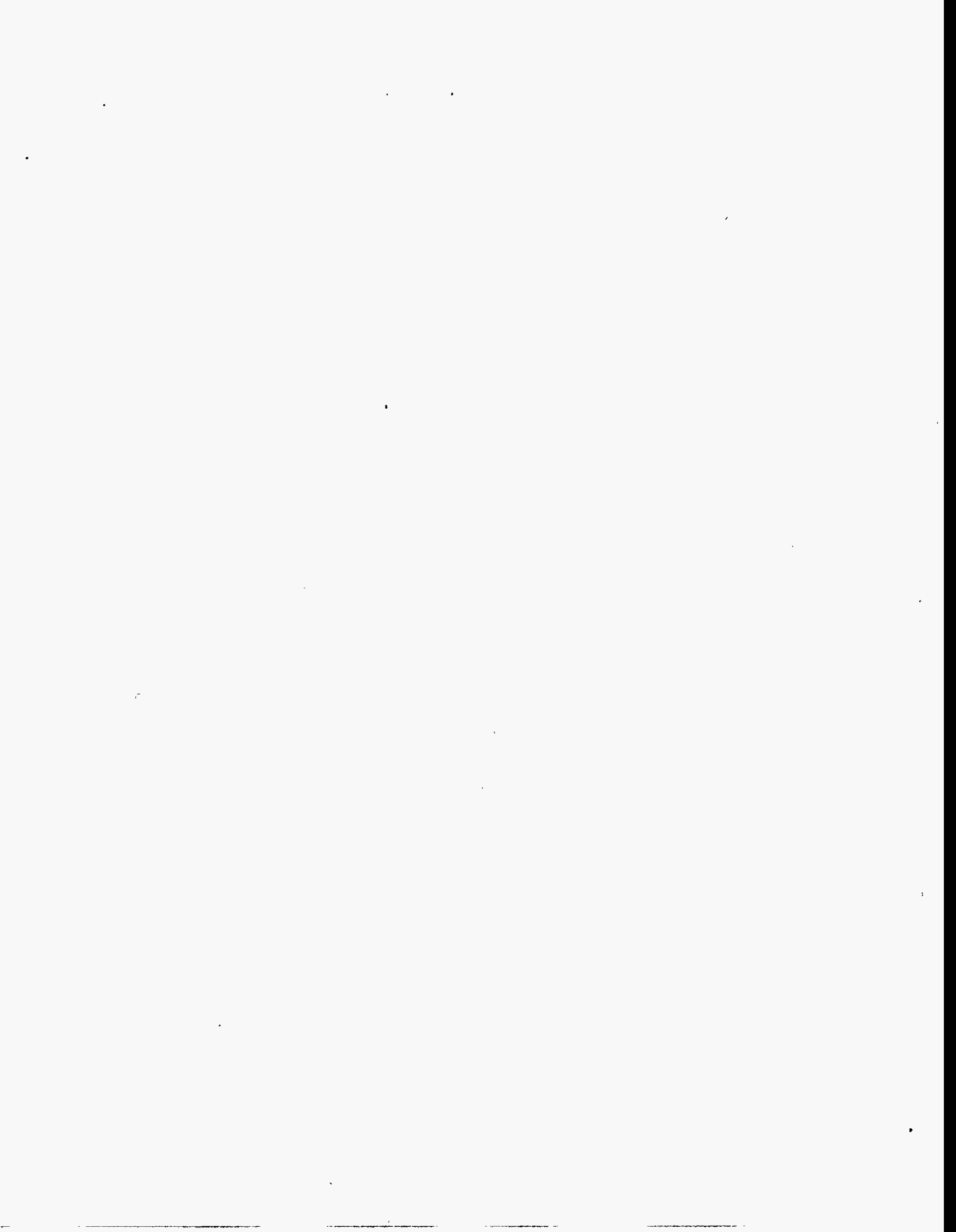
Project No. SK9455

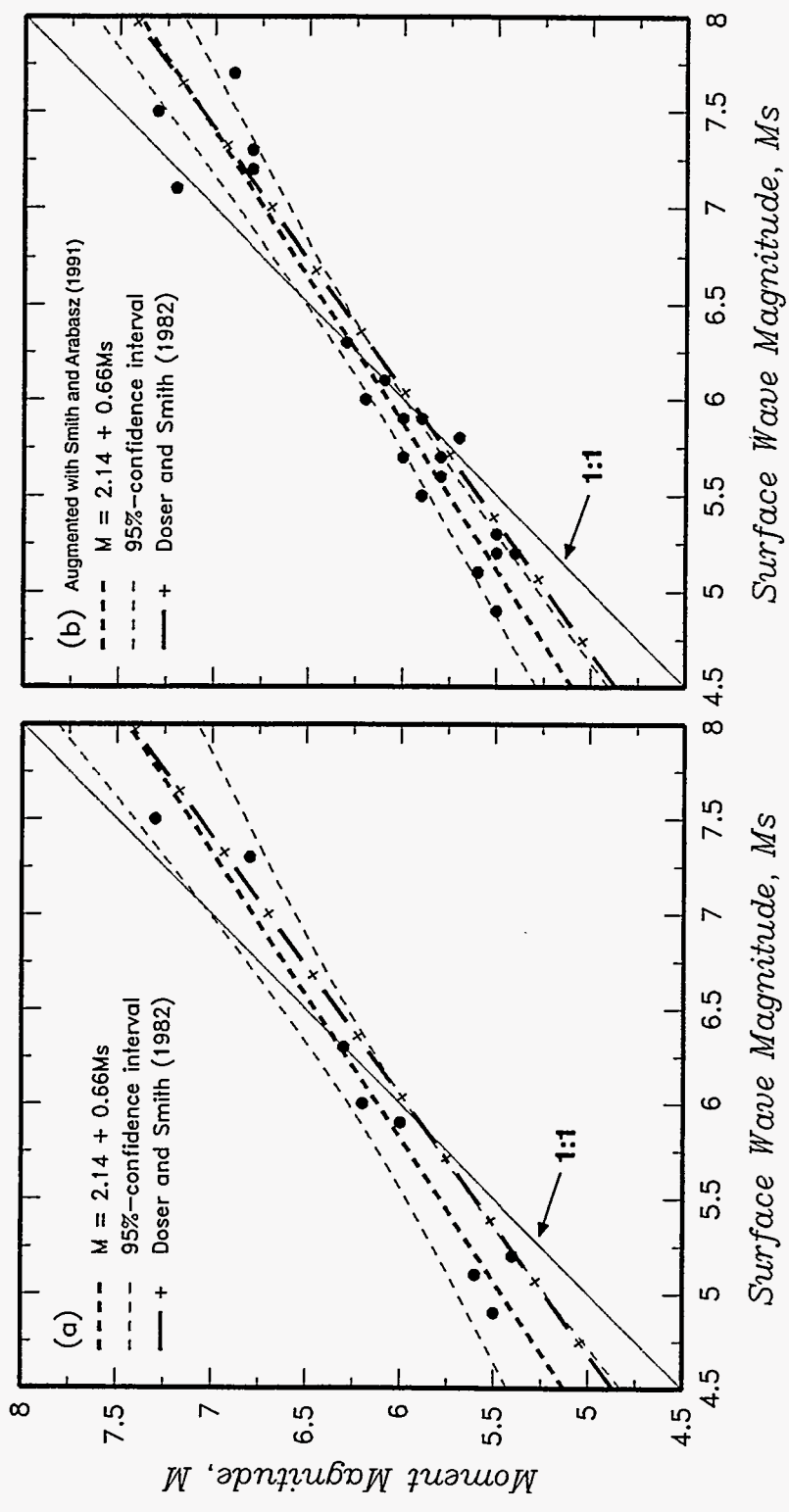
INEL - Probabilistic Analyses

Woodward-Clyde Federal Services

RELATIONSHIP BETWEEN M_L AND M_w FOR EARTHQUAKES WITHIN THE STUDY REGION

Figure A-1





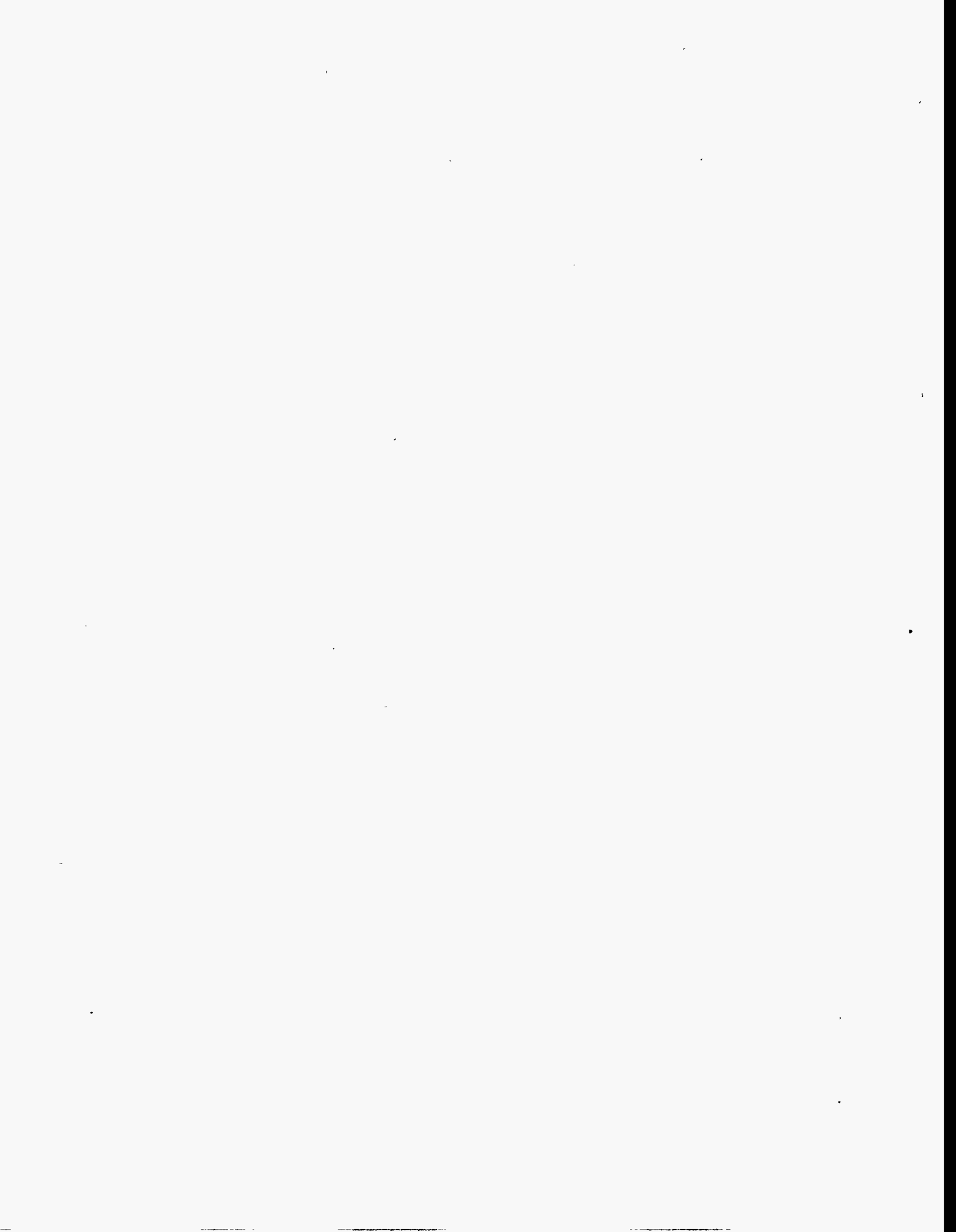
Project No.
SK9455

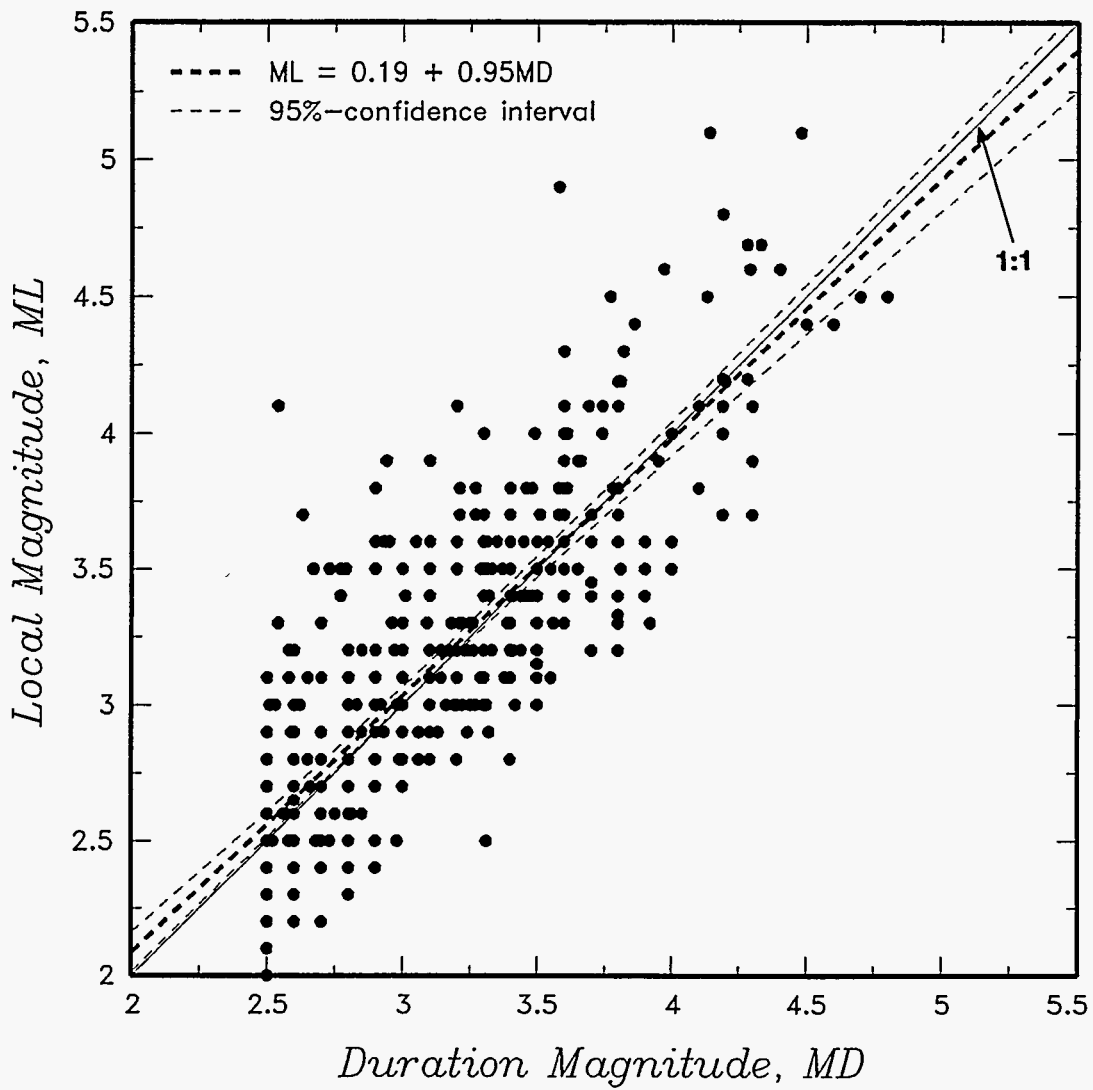
INEL - Probabilistic Analyses

Woodward-Clyde Federal Services

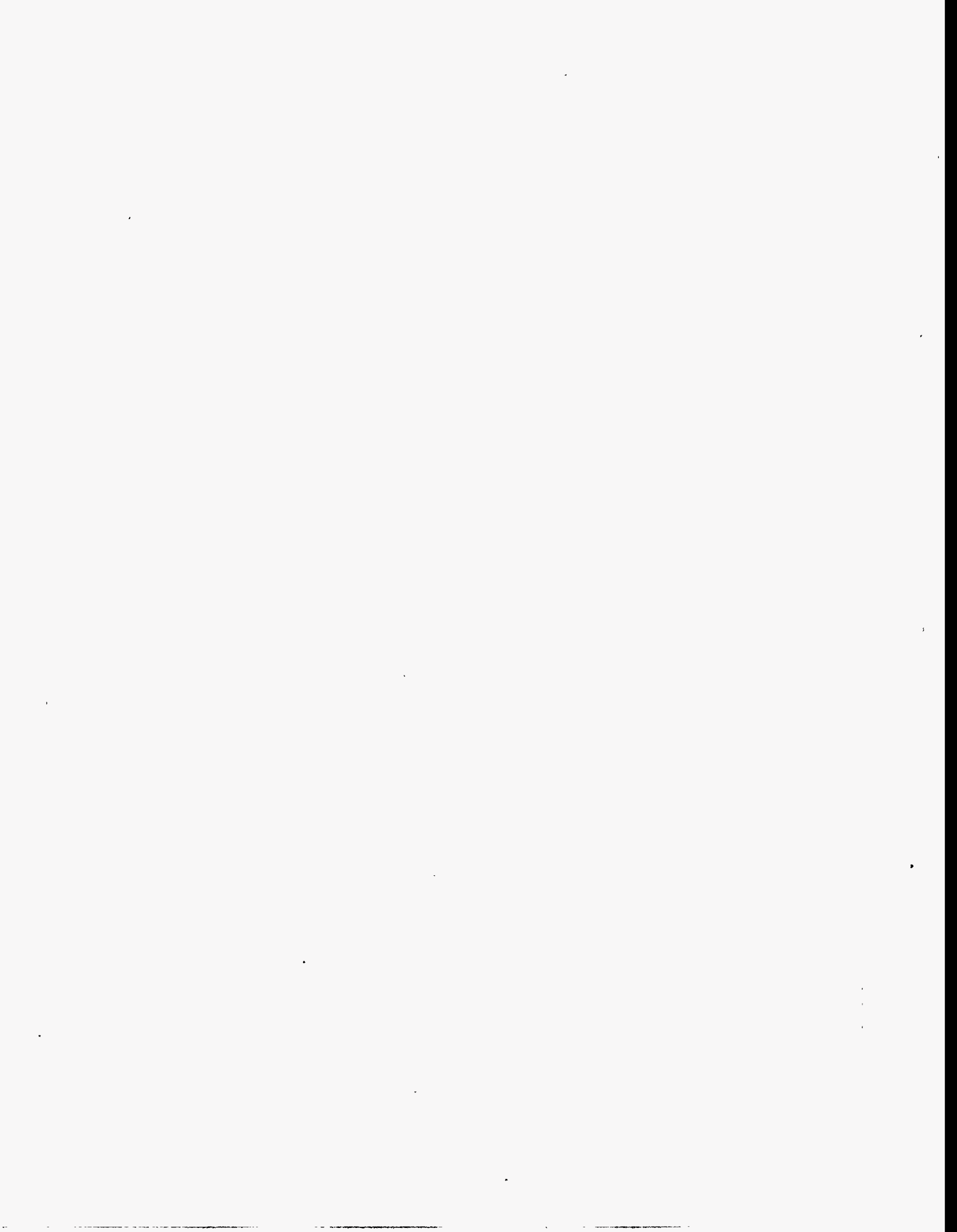
RELATIONSHIP BETWEEN
 M_s AND M_w FOR EARTHQUAKES
WITHIN THE STUDY REGION

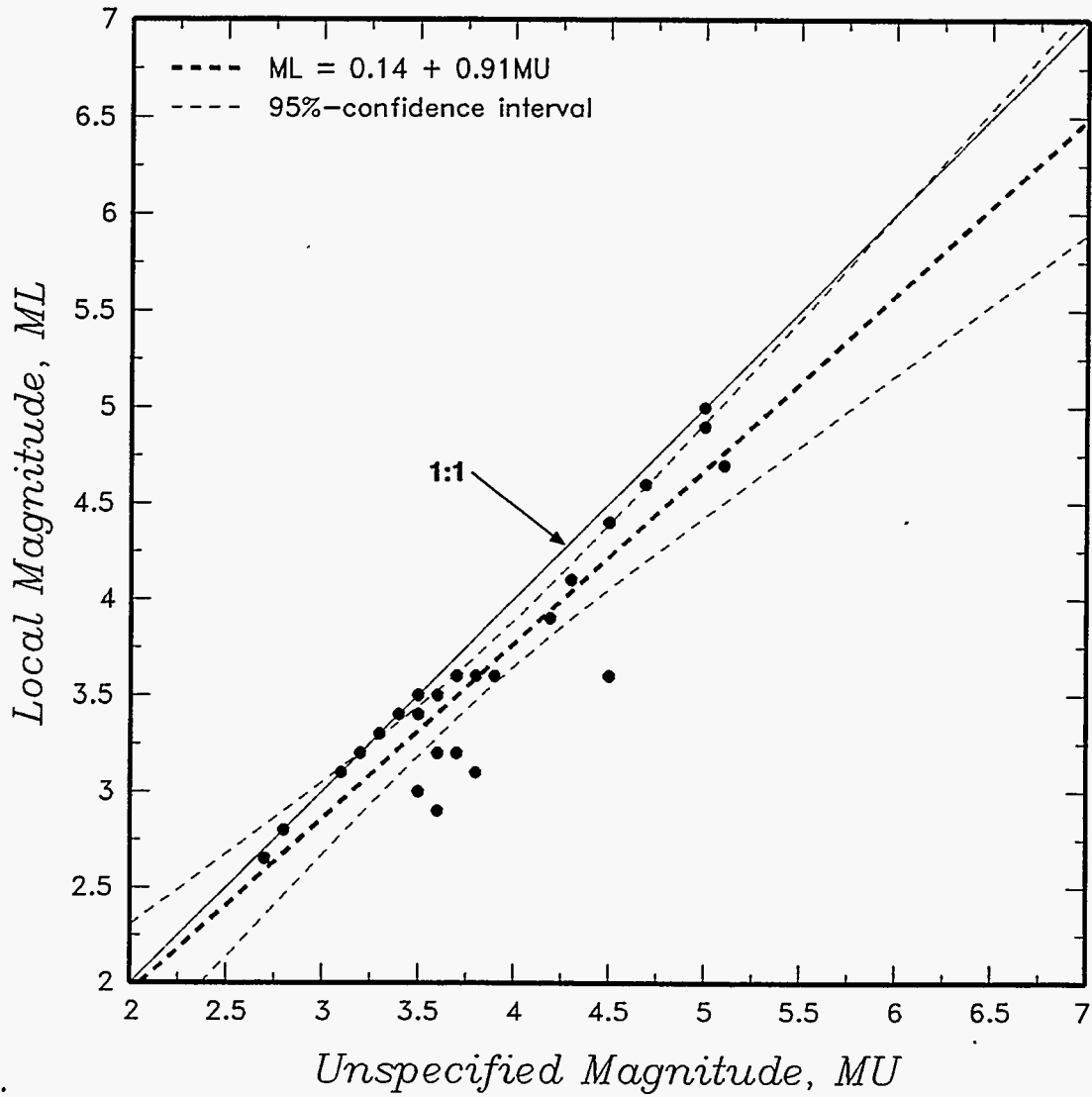
Figure
A-2



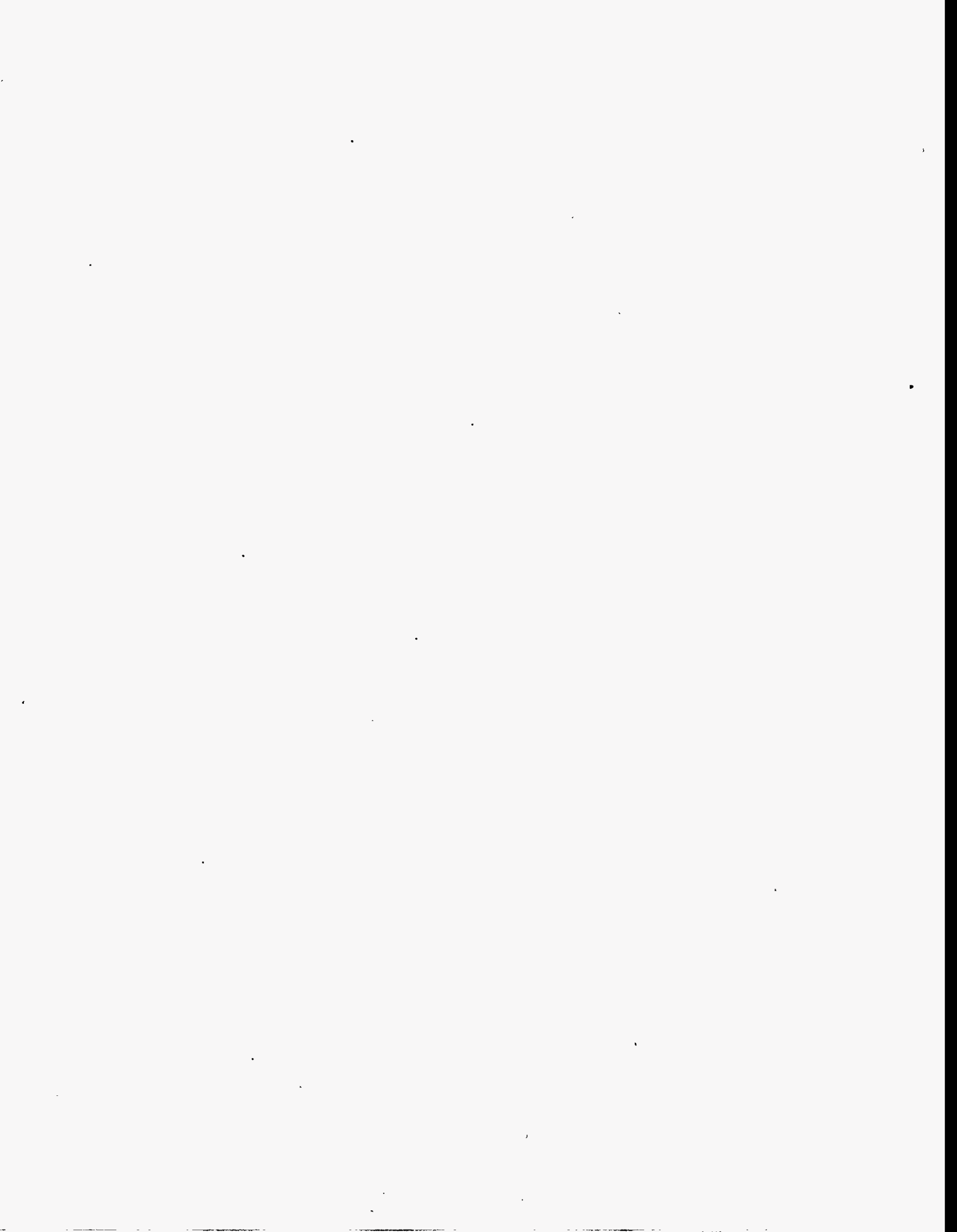


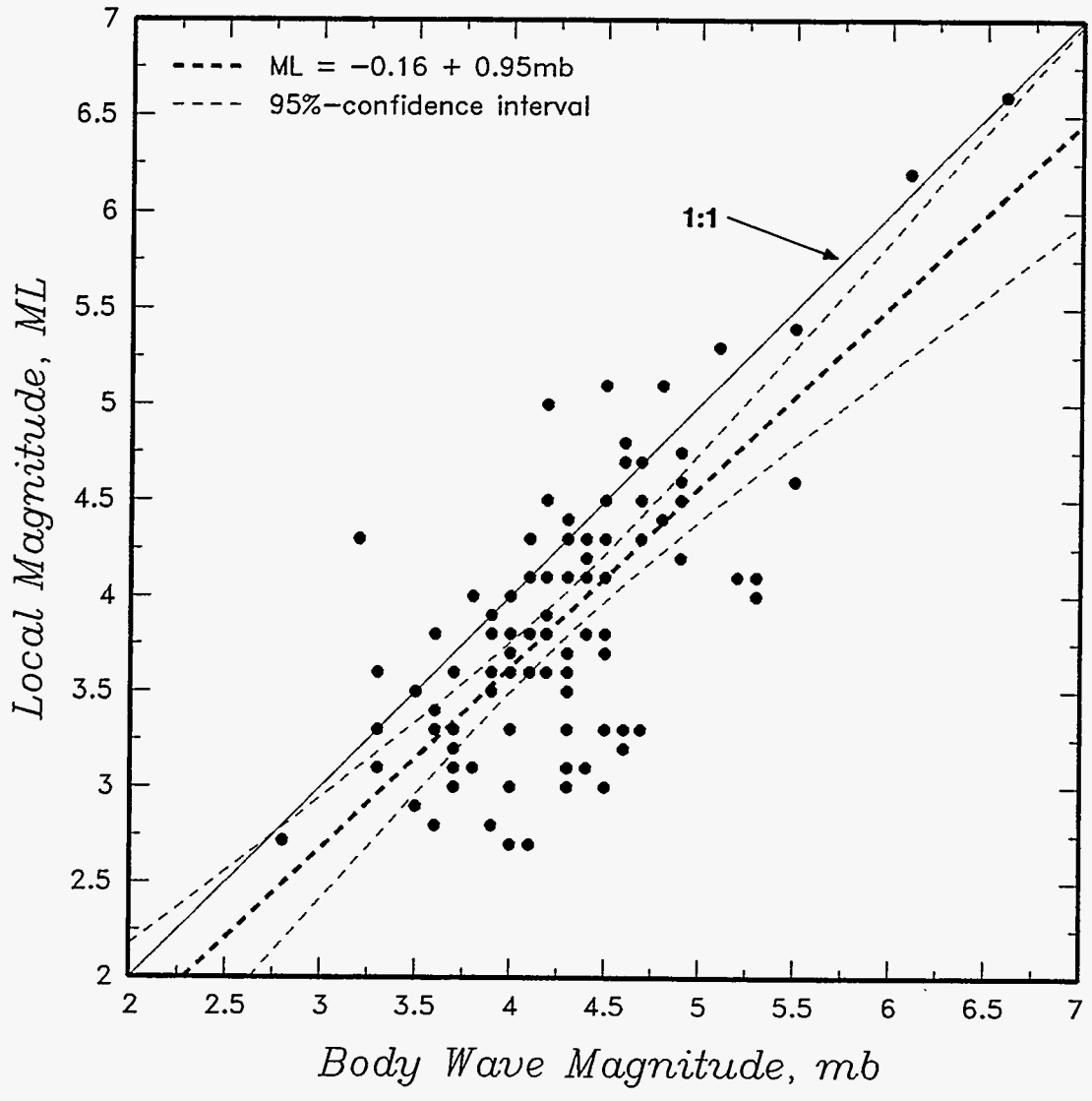
Project No. SK9455	INEL-Probabilistic Analyses	RELATIONSHIP BETWEEN M_D AND M_L FOR EARTHQUAKES WITHIN THE STUDY REGION	Figure A-3
Woodward-Clyde Federal Services			



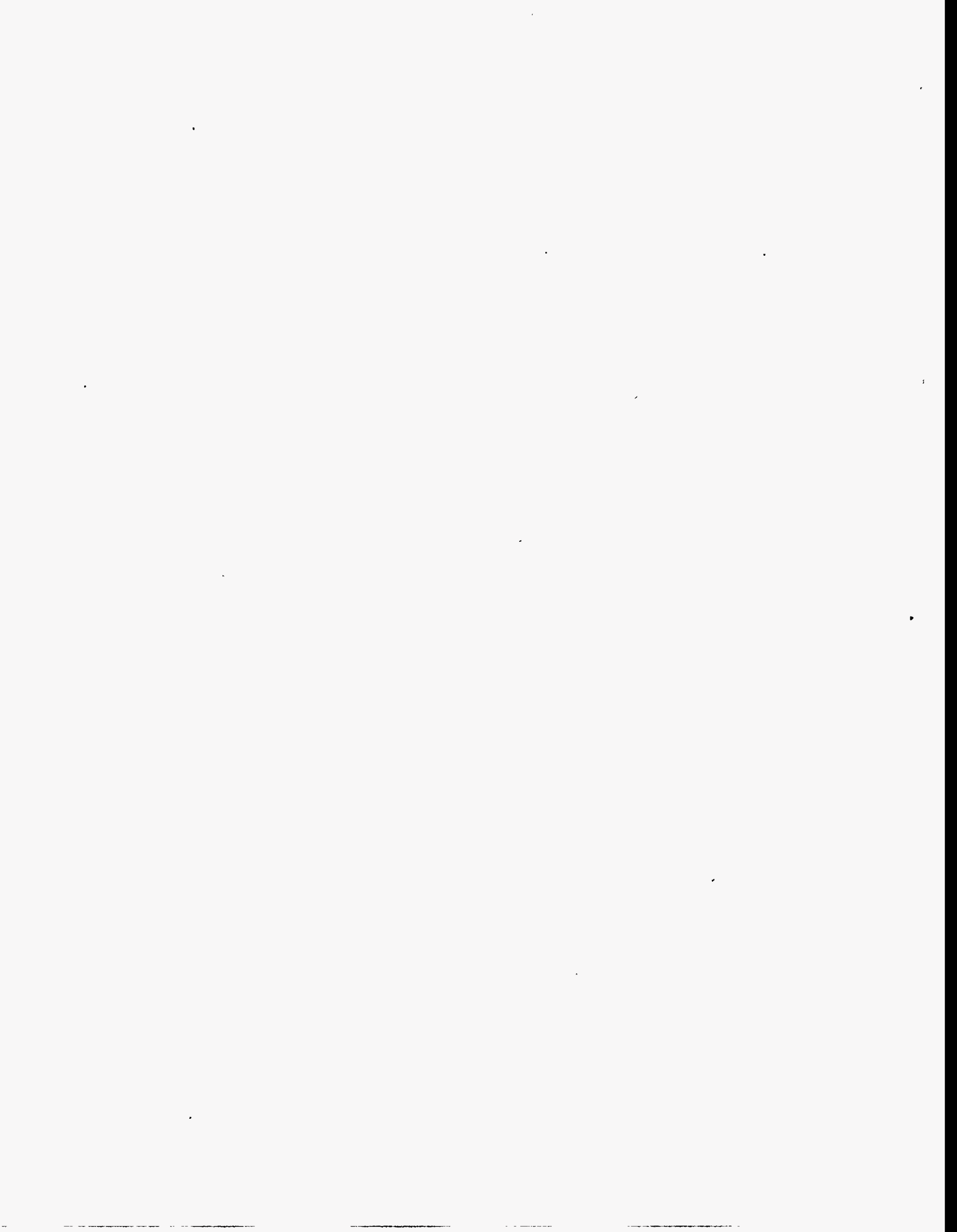


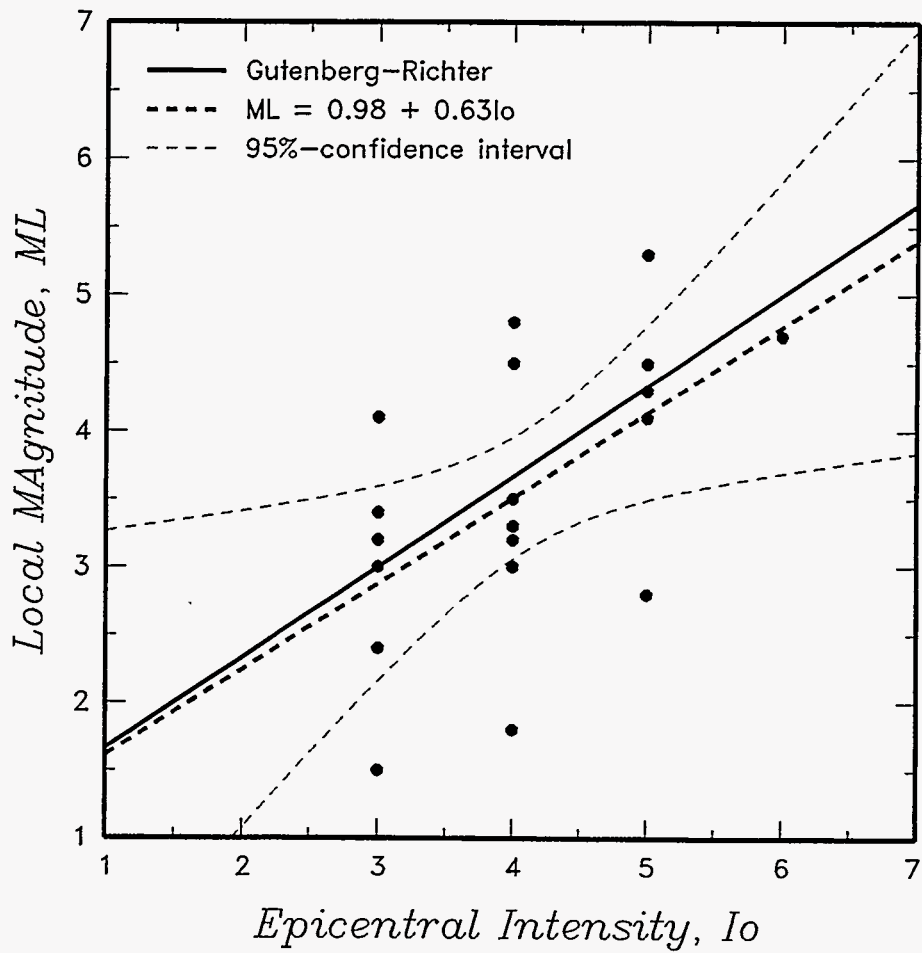
Project No. SK9455	INEL-Probabilistic Analyses	RELATIONSHIP BETWEEN M_U AND M_L FOR EARTHQUAKES WITHIN THE STUDY REGION	Figure A-4
Woodward-Clyde Federal Services			



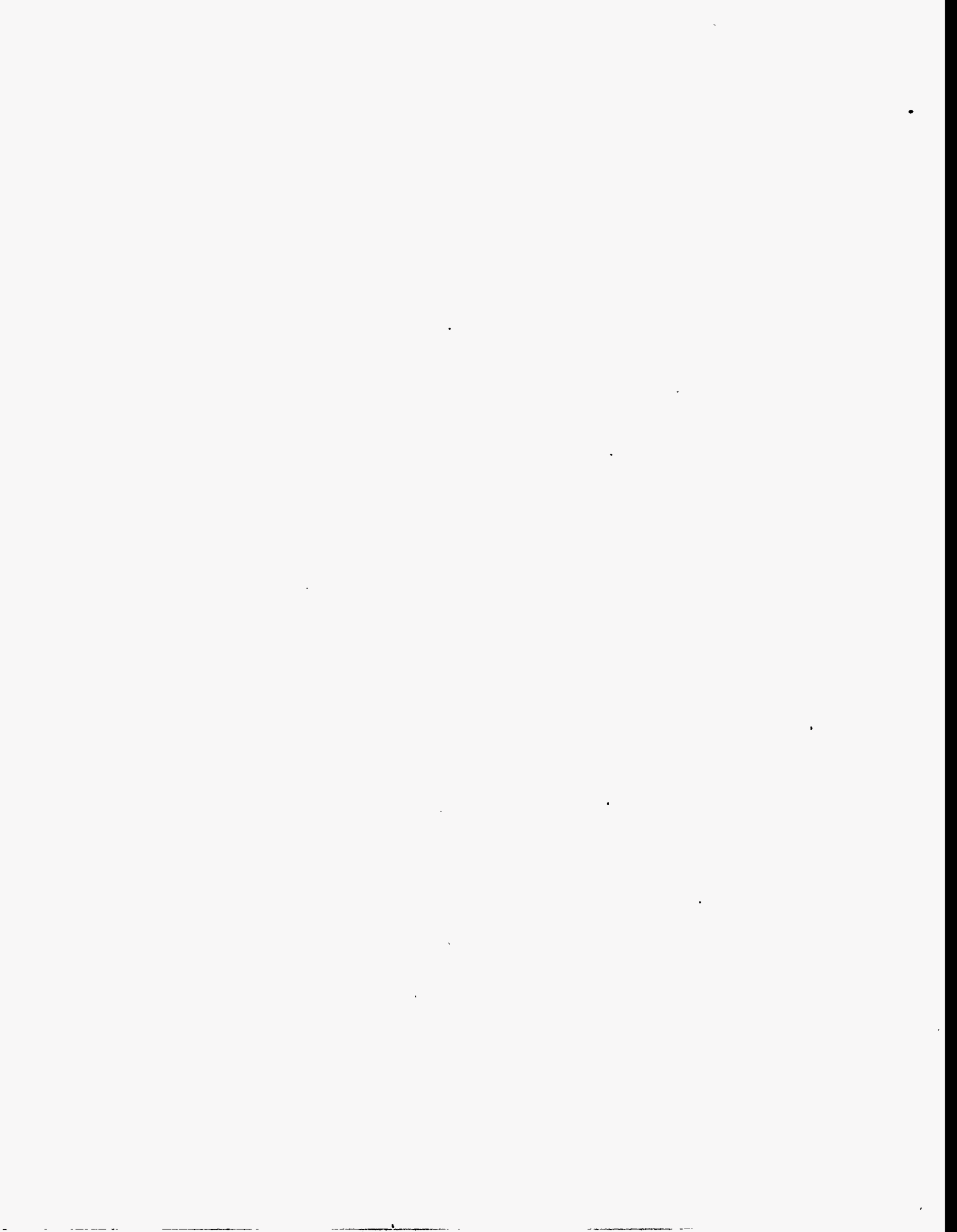


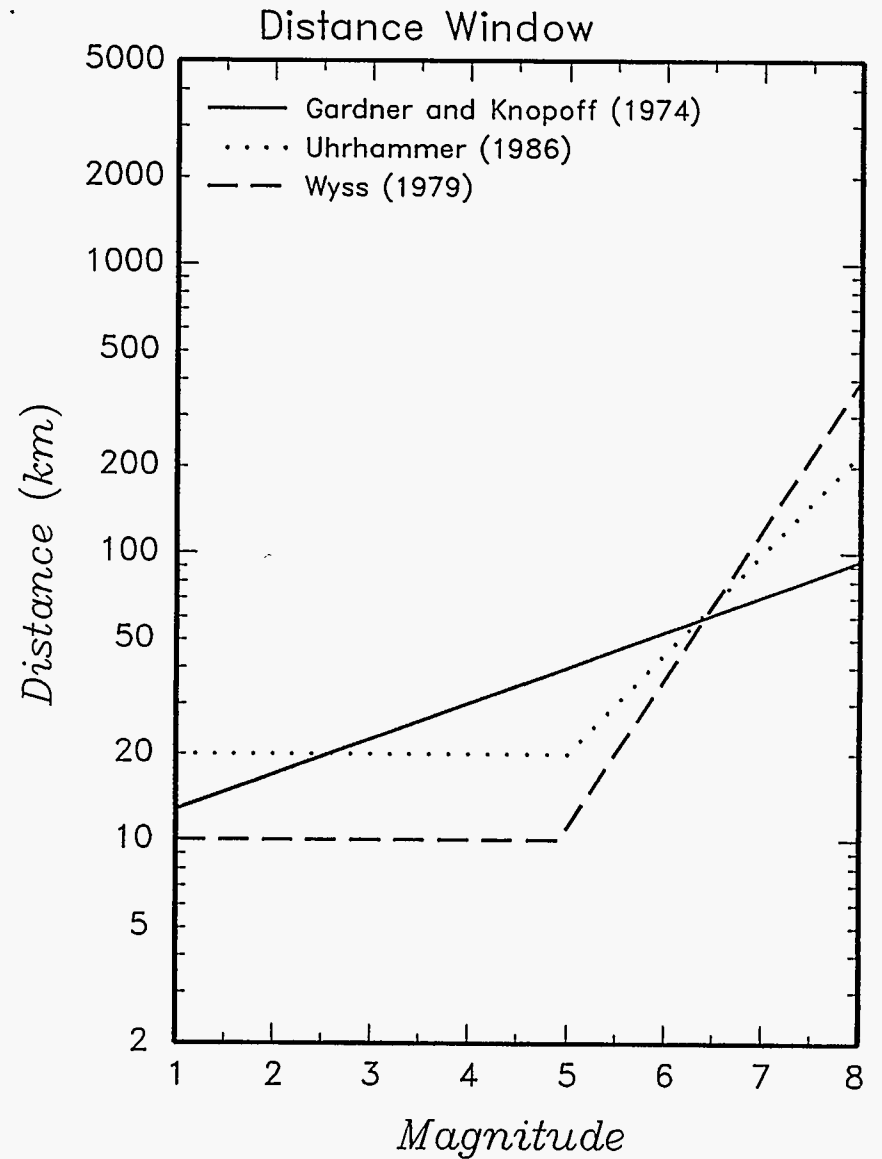
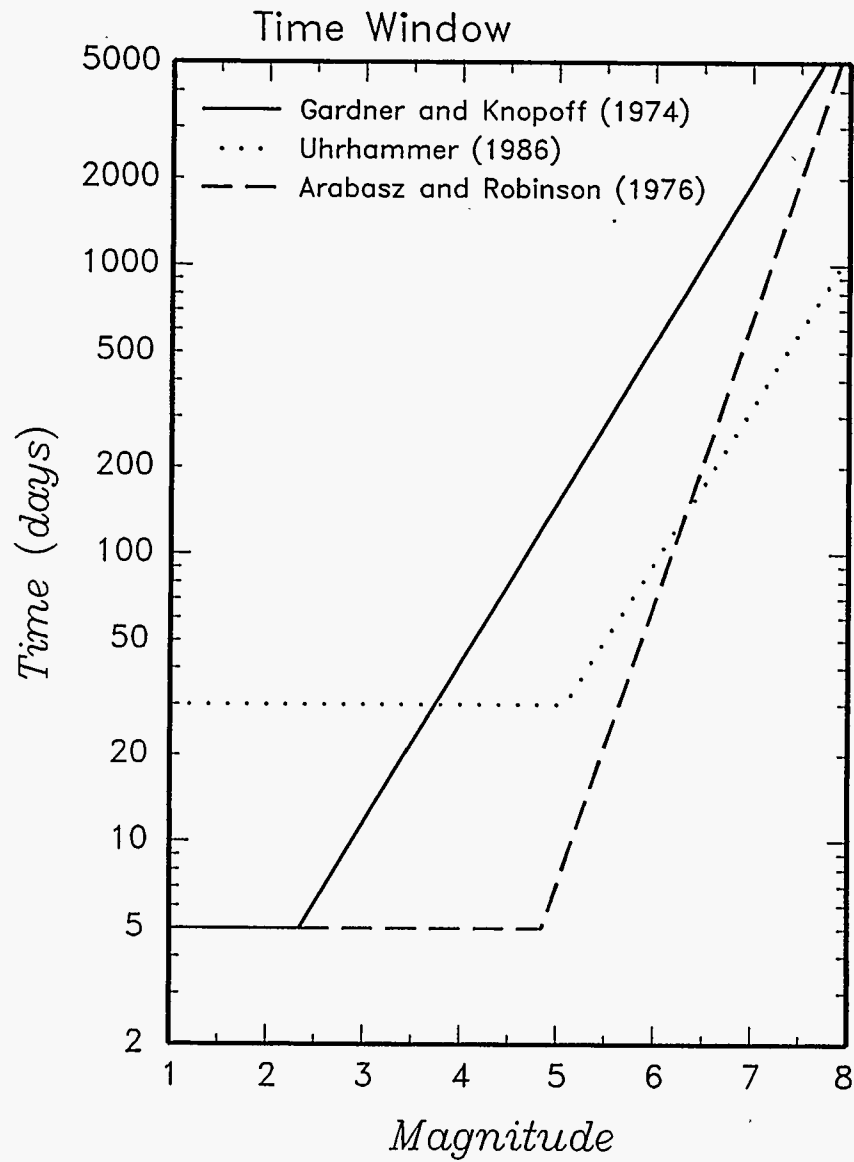
Project No. SK9455	INEL-Probabilistic Analyses	RELATIONSHIP BETWEEN m_b AND M_L FOR EARTHQUAKES WITHIN THE STUDY REGION	Figure A-5
Woodward-Clyde Federal Services			





Project No. SK9455	INEL-Probabilistic Analyses	RELATIONSHIP BETWEEN I_0 AND M_L FOR EARTHQUAKES WITHIN THE STUDY REGION	Figure A-6
Woodward-Clyde Federal Services			

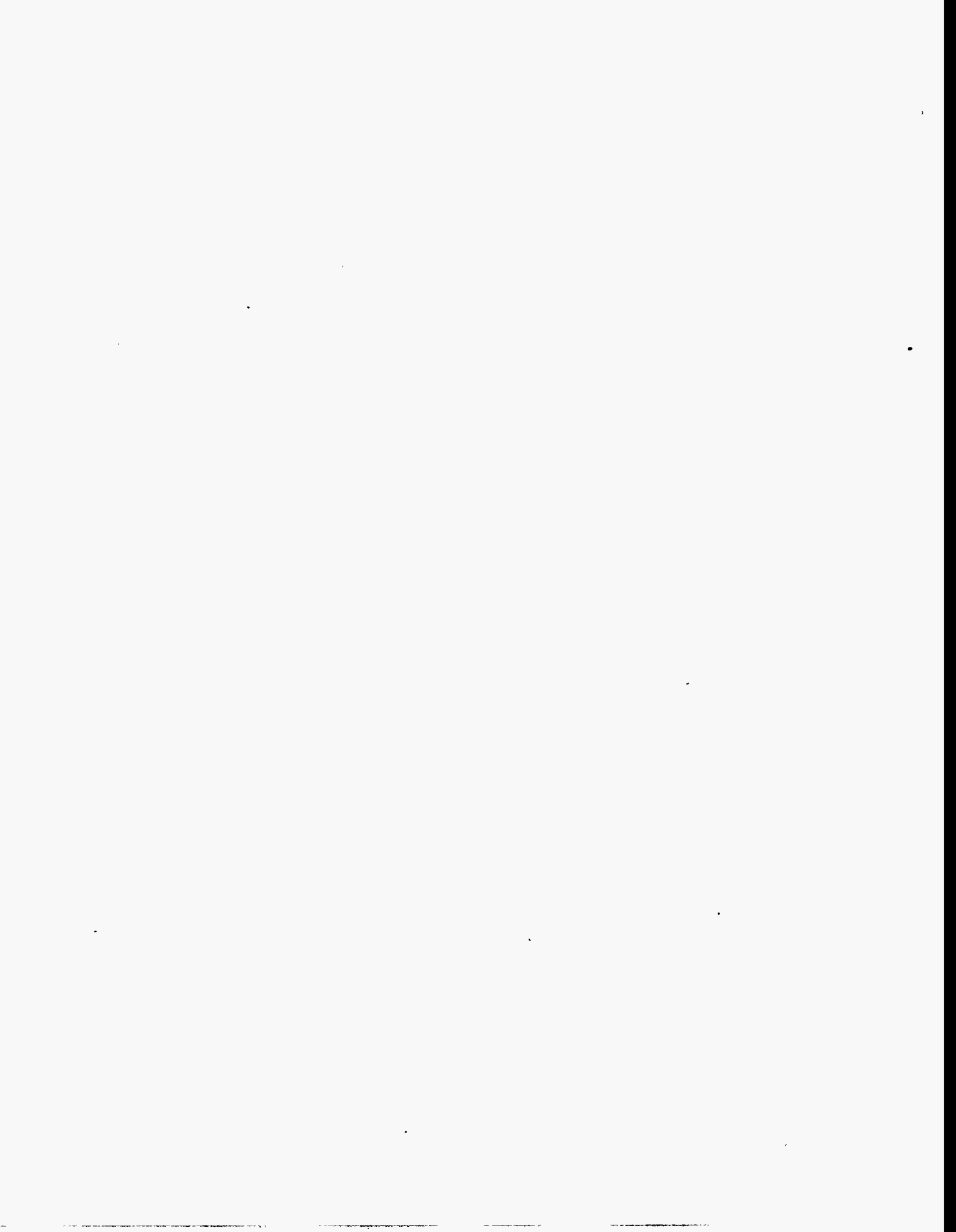


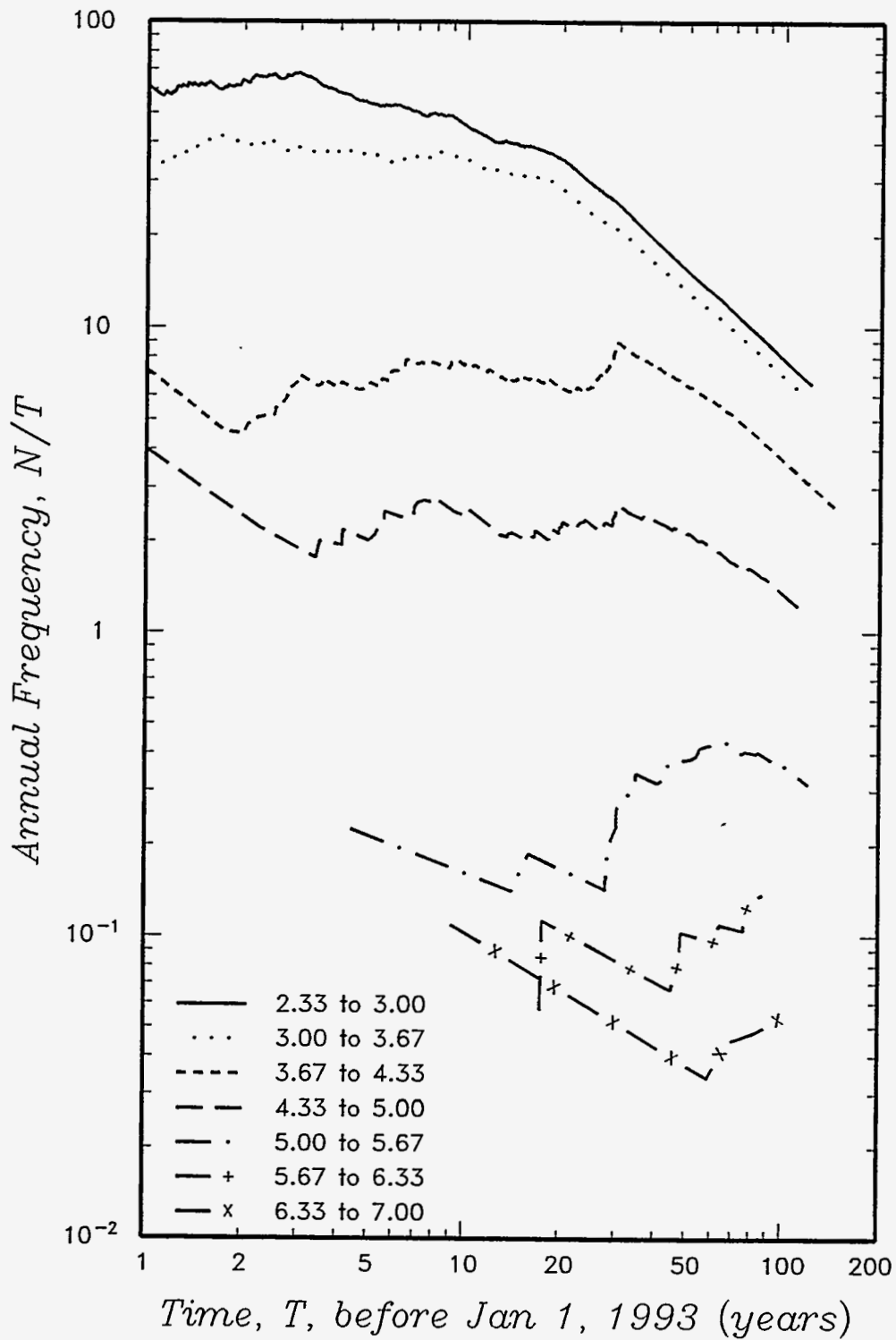


Project No. SK9455	INEL - Probabilistic Analyses
Woodward-Clyde Federal Services	

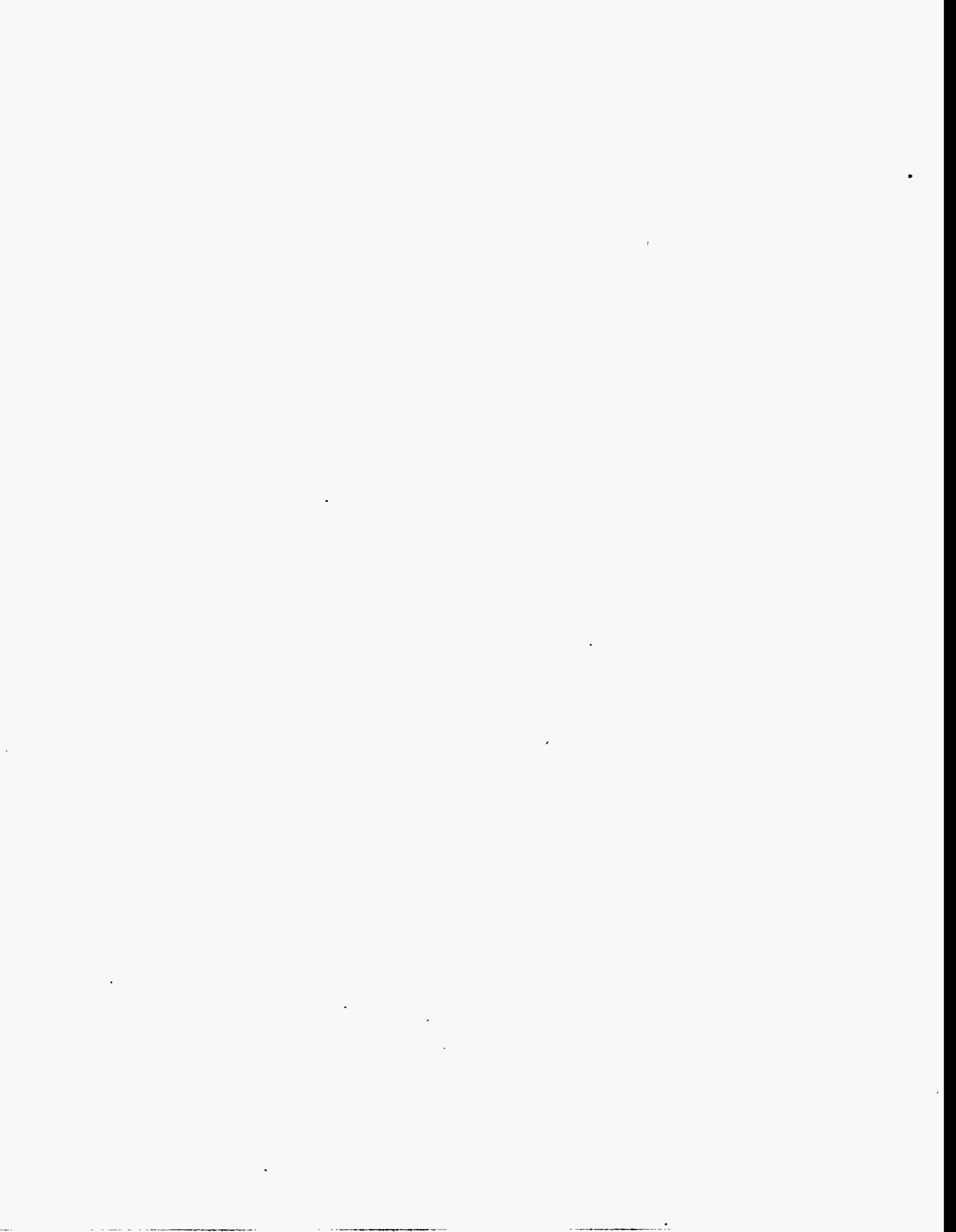
**EMPIRICAL SPATIAL AND
TEMPORAL WINDOWS
TO IDENTIFY DEPENDENT EVENTS**

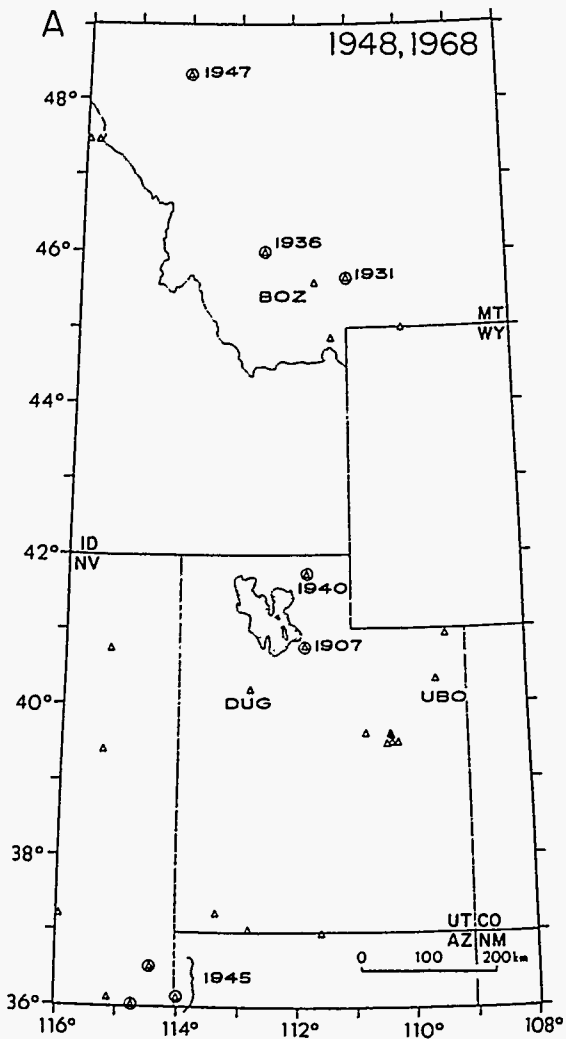
Figure
A-7



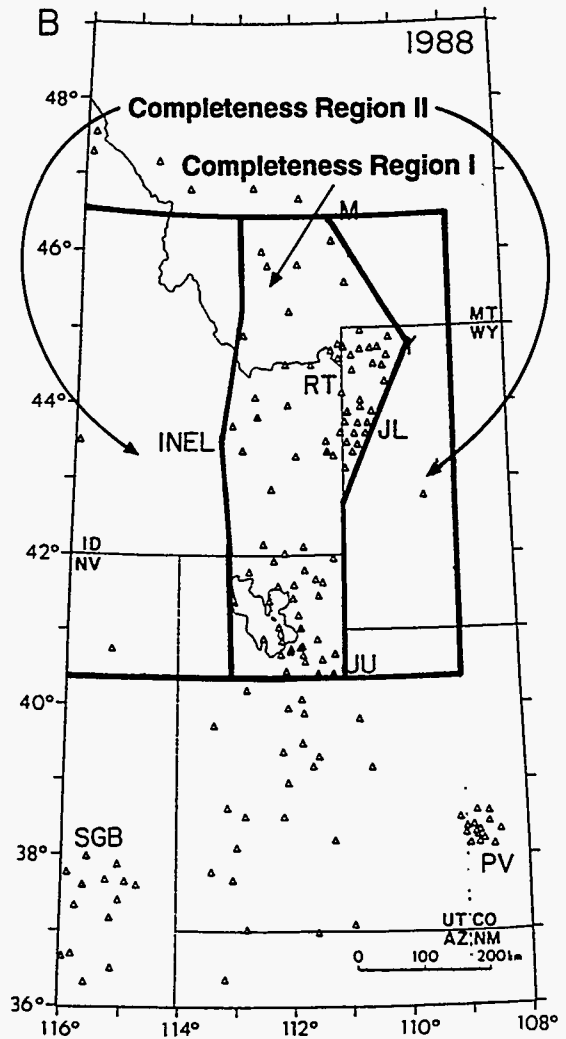


Project No. SK9455	INEL-Probabilistic Analyses	EARTHQUAKE FREQUENCIES OF INDEPENDENT EVENTS AS A FUNCTION OF MAGNITUDE INTERVAL AND TIME BEFORE THE END OF THE CATALOGUE	Figure A-8
Woodward-Clyde Federal Services			





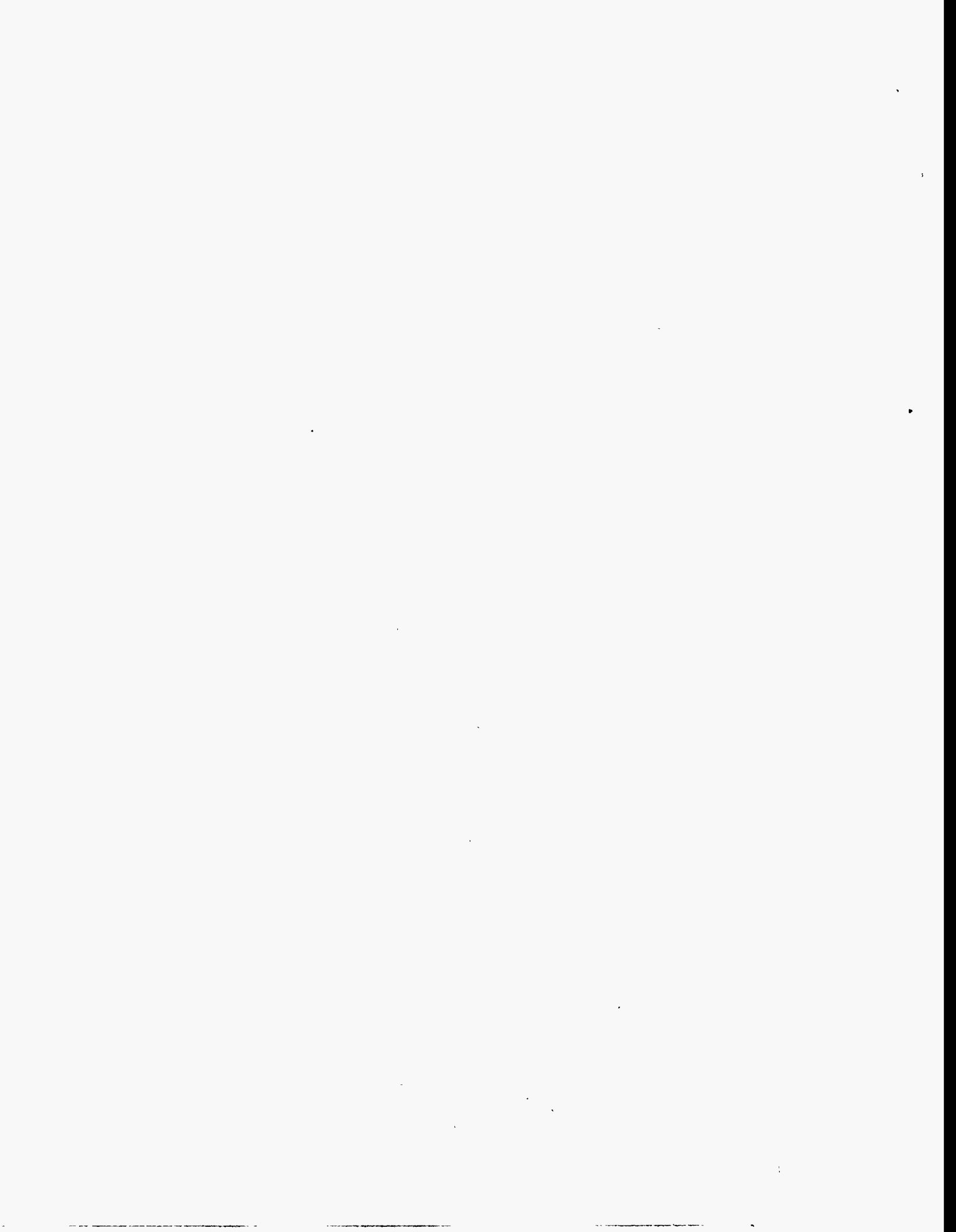
Stations operating in 1948 shown as circles with year of installation and in 1968 shown as triangles.

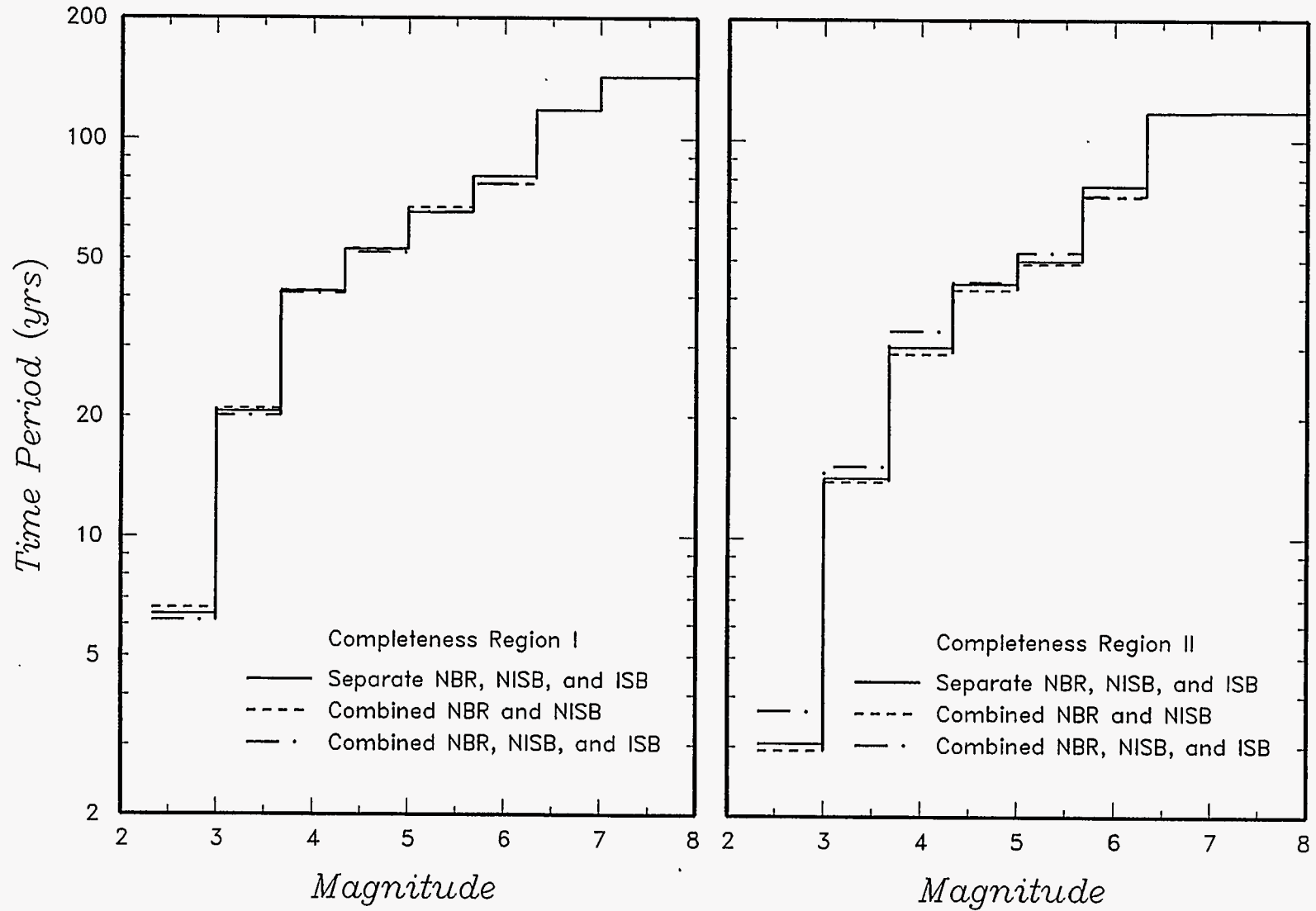


Stations operating in 1988.

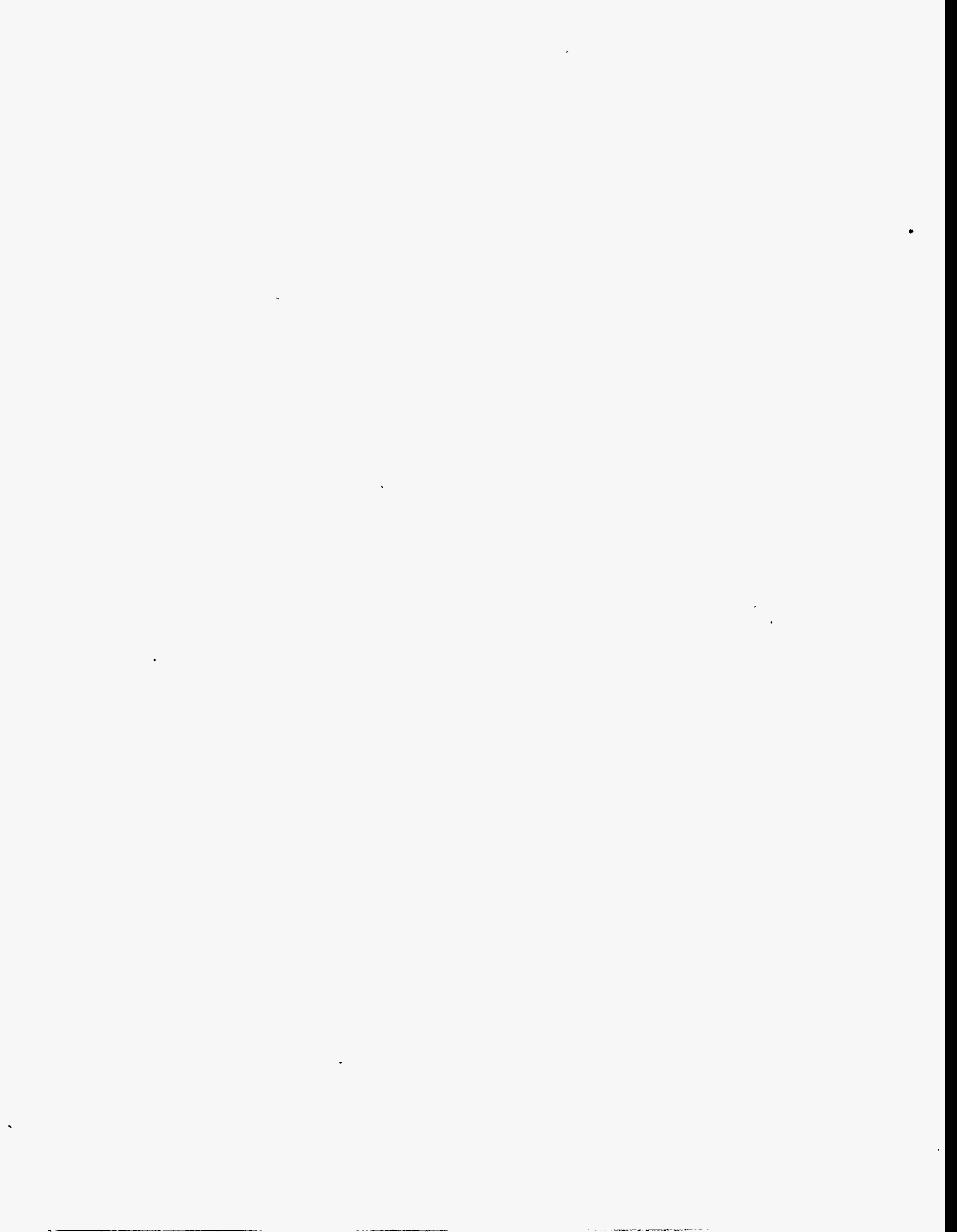
(Modified from Smith and Arabasz, 1991)

Project No. SK9455	INEL-Probabilistic Analyses	DISTRIBUTIONS OF SEISMOGRAPH STATIONS AS A FUNCTION OF TIME AND SPECIFIED COMPLETENESS REGIONS	Figure A-9
Woodward-Clyde Federal Services			





Project No. SK9455	INEL - Probabilistic Analyses	EQUIVALENT PERIODS OF COMPLETENESS, TE, FOR THE TWO COMPLETENESS REGIONS AND THE THREE ZONATION MODELS	Figure A-10
Woodward-Clyde Federal Services			



**TABLE A-1
EARTHQUAKE CATALOGUE
EXPLANATION AND ABBREVIATIONS**

Cat. No.	Catalogue number
Date	Year, month and day
Time (GMT)	Origin time in Greenwich Mean Time - hour, minute and second
Lat	Latitude in degrees
Long	Longitude in degrees
Depth	Depth in km
Mag 1 or Mag 2	Magnitudes
(After magnitude value, the scale and magnitude date source are specified)	

Magnitude scales:

FA	Felt Area
mb	Body-wave magnitude
MD,MC	Coda duration magnitude
MI	Intensity magnitude
ML	Local magnitude
Mn	Nuttli magnitude
Ms	Surface-wave magnitude
Mw	Moment magnitude
UK	Unknown scale

Magnitude data sources:

AEC	Atomic Energy Commission
BOLT	Bolt (1984)
BRK	University of California at Berkeley, California
BUT	Butte, Montana
CCN	USGS Central California Network
CDL	Carver <i>et al.</i> (1983)
CGS	U.S. Coast and Geodetic Survey
DOGAMI	Oregon Department of Geology and Mineral Industries
DEWEY	Dewey (1987)
EDS	Earthquake Data Summary, NOAA
EPB	Earth Physics Branch, Division of Seismology and Geothermal Studies, Department of Energy, Mines and Resources, Ottawa, Canada
EQH	Earthquake History of the United States
ERD	U.S. Energy Research Division Administration and U.S. Atomic Energy Commission
ERL	Environmental Research Laboratory (1971-1973)
ESO	Earthquake Studies Office, Montana Bureau of Mines and Geology

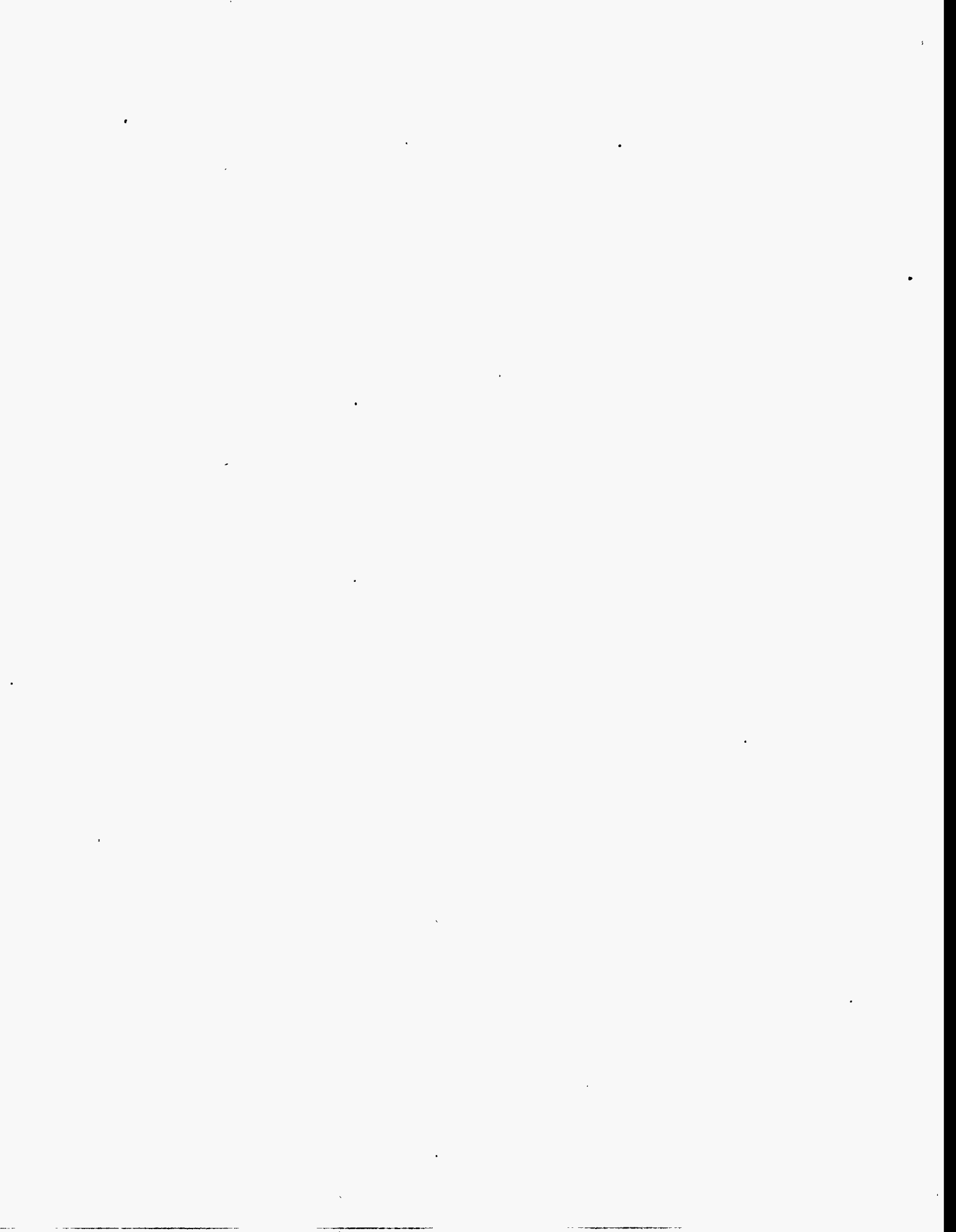
HAN	Hanford Catalogue, Woodward-Clyde Consultants
INEL	Idaho National Engineering Laboratory
ISC	International Seismological Centre
MAK	Unknown Abbreviation in DNAG Catalogue
MMT, MSL, MSO	Missoula, Montana
NEIC	National Earthquake Information Center, USGS
OSU	Oregon State University
OTT	Ottawa, Canada
PAS	Pasadena, California
RAS	Rasmussen (1966)
REN	Reno, Nevada
SEA	Seattle, Washington
SLC	Salt Lake City, Utah
SRA	Stover, Reagor, and Algermissen
UNR	University of Nevada, Reno
USBR	U.S. Bureau of Reclamation
USGS	National Earthquake Information Center
USE	U.S. Earthquakes, U.S. Coast and Geodetic Survey
USN	U.S. Network
UU	University of Utah
WCC	Woodward-Clyde Consultants
ZOLL	Jim Zollweg, Boise State University

Inten (MM)	Maximum Modified Mercalli intensity
Dist (km)	Source-to-site distance in km for CPP-668 Office Building
Data srce.	Data source for earthquake location and origin time

Data Source abbreviations:

BGBK	Berg and Baker (1963)
USBR	U.S. Bureau of Reclamation
DNAG	Decade of North American Geology
DOGAMI	Oregon Department of Geology and Mineral Industries
INEL	Idaho National Engineering Laboratory
MBMG	Montana Bureau of Mines and Geology
NEIC	National Earthquake Information Center
PDE	Preliminary Determination of Epicenters (NEIC)
SRA	Stover, Reagor, and Algermissen
UCGS	U.S. Coast and Geodetic Survey (U.S. Earthquakes)
UNR	University of Nevada, Reno
UU	University of Utah, Utah
ZOLL	Jim Zollweg, Boise State University

No. Arr.	Number of P- and S-wave arrival times
Azimuthal Gap	Azimuthal gap in seismographic coverage
DMIN (km)	Distance of the hypocenter to the nearest recording station
RMS (sec)	Root-mean-square error of the arrival times
Q	Quality of location (see data sources for description)
Std-Err	Standard error in km
Horiz	Horizontal
Vert	Vertical



Woodward-Clyde Federal Services EARTHQUAKE DATABASE SEARCH

5821 Events Selected Searched: 16 JAN 1996 File: NEWCAT4.rst By: WCC

SOURCE DATABASE:

Root name: NEWCAT4

Created: 16 JAN 1996 11:24

By: DHW

Original file: NEWCAT4.DP2 Type: ASCII Dump, new format (ver 2)

Hypoctr rec: 5821

Comment rec: 282

Time span: 1850 02 22 22:00:00.00 -> 1992 12 31 13:02:30.30

SEARCH PARAMETERS:

Time: 0001 JAN 01 -> 2100 DEC 31 Mag 1: -9.99 -> 9.99 Type: All
 Lat: 40.500 -> 46.500 Mag 2: -9.99 -> 9.99 Type: None
 Long: -117.000 -> -109.000 Intensity: 0 -> 12 Mode: 0
 Depth: .00 -> 999.00 Search Mode: DATABASE

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz Vert
1	1850 FEB 22	22:00:00.00	40.700	-111.800	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....
2	1872 MAR 27	07:52:00.00	40.700	-111.800	.00	.....	.....	II	...	SA	...	...	.....	.....	G	.....
3	1872 DEC 10	23:30:00.00	46.400	-112.500	.00	5.00FA	MMT	VI	...	SA	...	...	.....	.....	G	.....
4	1872 DEC 11	09:30:00.00	46.400	-112.500	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....
5	1872 DEC 11	13:35:00.00	46.400	-112.500	.00	.....	.....	V	...	SA	...	...	.....	.....	G	.....
6	1873 DEC 18	14:00:00.00	42.200	-111.400	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....
7	1873 DEC 27	03:00:00.00	41.000	-111.900	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....
8	1874 JUN 18	06:00:00.00	40.700	-111.800	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....
9	1874 JUN 18	07:00:00.00	40.700	-111.800	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....
10	1876 APR 06	00:00:00.00	42.000	-111.300	.00	.....	.....	II	...	SA	...	...	.....	.....	H	.....
11	1877 MAR 05	09:00:00.00	40.700	-111.800	.00	.....	.....	II	...	SA	...	...	.....	.....	G	.....
12	1878 JUL 21	12:00:00.00	40.700	-111.800	.00	.....	.....	II	...	SA	...	...	.....	.....	G	.....
13	1878 AUG 21	12:00:00.00	40.700	-111.800	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....
14	1878 SEP 07	19:00:00.00	40.700	-111.800	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....
15	1879 NOV 25	00:00:00.00	43.700	-116.000	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....
16	1879 NOV 26	00:00:00.00	43.800	-115.800	.00	.....	.....	II	...	SA	...	...	.....	.....	G	.....
17	1880 JUL 12	05:00:00.00	42.000	-112.200	.00	.....	.....	V	...	SA	...	...	.....	.....	G	.....
18	1880 SEP 17	06:27:00.00	40.700	-111.800	.00	.....	.....	V	...	SA	...	...	.....	.....	G	.....
19	1880 DEC 28	06:00:00.00	41.700	-113.100	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....
20	1884 NOV 10	08:50:00.00	42.000	-111.266	.00	6.30UK	UU	..	...	DG	...	...	.....	.....	.	.....
21	1884 NOV 10	09:10:00.00	42.000	-111.300	.00	.....	.....	II	...	SA	...	...	.....	.....	G	.....
22	1884 NOV 10	09:19:00.00	42.000	-111.300	.00	.....	.....	II	...	SA	...	...	.....	.....	G	.....
23	1884 NOV 10	09:48:00.00	42.000	-111.300	.00	.....	.....	II	...	SA	...	...	.....	.....	G	.....
24	1884 NOV 10	10:45:00.00	42.000	-111.300	.00	.....	.....	II	...	SA	...	...	.....	.....	G	.....
25	1884 NOV 11	08:55:00.00	42.000	-111.300	.00	.....	.....	II	...	SA	...	...	.....	.....	G	.....
26	1884 NOV 11	14:00:00.00	42.000	-111.300	.00	.....	.....	II	...	SA	...	...	.....	.....	G	.....
27	1884 NOV 12	08:50:00.00	42.000	-111.300	.00	.....	.....	II	...	SA	...	...	.....	.....	G	.....
28	1884 NOV 12	09:35:00.00	42.000	-111.300	.00	.....	.....	II	...	SA	...	...	.....	.....	G	.....
29	1884 NOV 12	12:05:00.00	42.000	-111.300	.00	.....	.....	II	...	SA	...	...	.....	.....	G	.....
30	1884 NOV 13	08:55:00.00	42.000	-111.300	.00	.....	.....	II	...	SA	...	...	.....	.....	G	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
31	1884 NOV 13	10:40:00.00	42.000	-111.300	.00			II	...	SA	...	...	.....	.....	G	.....	.....
32	1884 DEC 08	00:00:00.00	41.200	-112.000	.00			III	...	SA	...	...	.....	.....	G	.....	.....
33	1893 AUG 30	23:30:00.00	42.000	-112.700	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
34	1894 JUL 18	22:50:00.00	41.200	-112.000	.00			VI	...	SA	...	...	.....	.....	G	.....	.....
35	1894 DEC 24	12:00:00.00	43.600	-116.200	.00			III	...	SA	...	...	.....	.....	G	.....	.....
36	1894 DEC 24	14:00:00.00	43.600	-116.200	.00			III	...	SA	...	...	.....	.....	G	.....	.....
37	1894 DEC 24	15:10:00.00	43.600	-116.200	.00			V	...	SA	...	...	.....	.....	G	.....	.....
38	1895 SEP 06	19:20:00.00	46.000	-112.500	.00	5.00FA	MMT	V	...	SA	...	...	.....	.....	F	.....	.....
39	1896 OCT 03	15:50:00.00	41.700	-111.800	.00			III	...	SA	...	...	.....	.....	G	.....	.....
40	1897 NOV 04	09:29:00.00	45.000	-113.000	.00	6.40UK	MMT	..	...	DG	...	...	.....	.....	.	.....	.....
41	1899 DEC 13	13:50:00.00	40.700	-111.800	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
42	1901 JUL 26	22:20:00.00	40.800	-115.700	.....	5.00MD	UNR	..	...	UN	...	...	.....	.....	J	.....	.....
43	1901 AUG 11	16:00:00.00	40.700	-111.800	.00			III	...	SA	...	...	.....	.....	G	.....	.....
44	1902 JAN 05	01:14:00.00	42.200	-111.400	.00			III	...	SA	...	...	.....	.....	G	.....	.....
45	1902 AUG 04	01:30:00.00	46.500	-114.100	.00			V	...	SA	...	...	.....	.....	G	.....	.....
46	1903 JUL 23	08:34:00.00	41.100	-111.900	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
47	1904 AUG 04	03:00:00.00	45.500	-111.800	.00			V	...	SA	...	...	.....	.....	G	.....	.....
48	1905 NOV 11	21:26:00.00	42.900	-114.500	.00	6.30UK	WOOL	..	...	DG	...	...	.....	.....	.	.....	.....
49	1906 MAY 24	21:10:00.00	41.224	-111.959	.00	4.30UK	UU	..	...	DG	...	...	.....	.....	.	.....	.....
50	1906 OCT 06	00:20:00.00	43.500	-110.800	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
51	1906 OCT 19	02:06:00.00	42.500	-111.400	.00			V	...	SA	...	...	.....	.....	G	.....	.....
52	1908 DEC 27	00:00:00.00	45.200	-111.900	.00			VI	...	SA	...	...	.....	.....	G	.....	.....
53	1909 FEB 20	01:00:00.00	43.500	-112.000	.00			II	...	SA	...	...	.....	.....	G	.....	.....
54	1909 OCT 06	02:50:00.00	41.766	-112.666	.00	6.30UK	UU	..	...	DG	...	...	.....	.....	.	.....	.....
55	1909 OCT 26	09:00:00.00	43.800	-115.800	.00			II	...	SA	...	...	.....	.....	G	.....	.....
56	1909 NOV 17	06:30:00.00	41.744	-112.162	.00	4.30UK	UU	..	...	DG	...	...	.....	.....	.	.....	.....
57	1909 NOV 17	17:00:00.00	41.800	-112.700	.00			III	...	SA	...	...	.....	.....	G	.....	.....
58	1910 APR 19	08:30:00.00	46.000	-112.500	.00	5.40UK	MMT	V	...	SA	...	...	.....	.....	F	.....	.....
59	1910 MAY 22	14:28:00.00	40.749	-111.849	.00	5.70UK	UU	..	...	DG	...	...	.....	.....	.	.....	.....
60	1910 MAY 23	15:45:00.00	40.700	-111.800	.00			III	...	SA	...	...	.....	.....	G	.....	.....
61	1910 MAY 26	06:05:00.00	40.700	-111.800	.00			II	...	SA	...	...	.....	.....	G	.....	.....
62	1910 JUL 26	01:30:00.00	41.500	-109.300	.00	4.30UK	UU	..	...	DG	...	...	.....	.....	.	.....	.....
63	1913 APR 12	08:30:00.00	42.300	-112.000	.00			V	...	SA	...	...	.....	.....	G	.....	.....
64	1913 APR 12	08:40:00.00	42.300	-112.000	.00			III	...	SA	...	...	.....	.....	G	.....	.....
65	1913 OCT 14	23:00:00.00	45.200	-116.700	.00			VI	...	SA	...	...	.....	.....	H	.....	.....
66	1914 APR 08	16:06:00.00	40.983	-111.916	.00	4.30UK	UU	..	...	DG	...	...	.....	.....	.	.....	.....
67	1914 MAY 13	17:15:00.00	41.224	-111.959	.00	5.70UK	UU	..	...	DG	...	...	.....	.....	.	.....	.....
68	1915 MAR 15	03:35:00.00	42.300	-111.300	.00			V	...	SA	...	...	.....	.....	G	.....	.....
69	1915 MAR 31	18:30:00.00	42.900	-110.900	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
70	1915 MAY 08	16:10:00.00	44.900	-110.700	.00			V	...	SA	...	...	.....	.....	G	.....	.....
71	1915 JUL 30	18:50:00.00	41.744	-112.162	.00	4.30UK	UU	..	...	DG	...	...	.....	.....	.	.....	.....
72	1915 AUG 11	10:20:00.00	40.500	-112.650	.00	4.30UK	UU	..	...	DG	...	...	.....	.....	.	.....	.....
73	1915 OCT 02	23:39:00.00	40.700	-111.800	.00			II	...	SA	...	...	.....	.....	G	.....	.....
74	1915 OCT 03	01:48:00.00	40.700	-111.800	.00			III	...	SA	...	...	.....	.....	G	.....	.....
75	1915 OCT 04	12:00:00.00	41.900	-112.100	.00			III	...	SA	...	...	.....	.....	G	.....	.....
76	1915 OCT 17	03:06:00.00	44.300	-110.300	.00			II	...	SA	...	...	.....	.....	G	.....	.....
77	1915 NOV 17	21:35:00.00	40.800	-115.800	.....	4.30MD	UNR	..	...	UN	...	...	.....	.....	L	.....	.....
78	1916 APR 13	02:30:00.00	43.900	-115.900	.00			IV	...	SA	...	...	.....	.....	H	.....	.....
79	1916 APR 14	03:55:00.00	43.900	-115.900	.00			IV	...	SA	...	...	.....	.....	H	.....	.....
80	1916 APR 14	07:20:00.00	43.900	-115.900	.00			IV	...	SA	...	...	.....	.....	H	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
81	1916 APR 30	01:50:00.00	45.800	-115.400	.00			II	...	SA	...	...	...	...	G	.....	.....
82	1916 APR 30	03:15:00.00	43.600	-116.200	.00			III	...	SA	...	...	...	...	G	.....	.....
83	1916 MAY 13	02:26:00.00	43.700	-116.200	.00	5.30UK PAS		VII	...	SA	...	...	...	...	G	.....	.....
84	1916 MAY 14	05:30:00.00	45.800	-115.400	.00			III	...	SA	...	...	...	...	G	.....	.....
85	1916 MAY 26	06:36:00.00	43.800	-116.000	.00			V	...	SA	...	...	...	...	G	.....	.....
86	1916 AUG 03	14:21:00.00	41.500	-116.500	.00	5.80UK MAK		..	...	DG	...	...	...	...	.	.....	.....
87	1916 AUG 04	04:13:14.00	41.500	-117.000	.....	5.00MD UNR		..	...	UN	...	...	...	...	E	.....	.....
88	1916 SEP 10	02:57:00.00	43.500	-114.300	.00			V	...	SA	...	...	...	...	G	.....	.....
89	1916 OCT 11	05:47:00.00	41.500	-116.500	.....	5.00MD UNR		..	...	UN	...	...	...	...	E	.....	.....
90	1917 APR 20	04:30:00.00	44.000	-114.800	.00	4.30ML EPB		V	...	SA	...	...	...	...	F	.....	.....
91	1917 APR 23	03:50:00.00	46.000	-112.500	.00			IV	...	SA	...	...	...	...	G	.....	.....
92	1917 JUN 01	10:35:00.00	46.100	-116.400	.00			IV	...	SA	...	...	...	...	G	.....	.....
93	1917 DEC 12	11:50:00.00	43.000	-111.300	.00	5.30ML REN		V	...	SA	...	...	...	...	H	.....	.....
94	1918 NOV 16	12:45:00.00	41.900	-112.100	.00			III	...	SA	...	...	...	...	G	.....	.....
95	1920 FEB 02	00:45:00.00	44.800	-109.200	.00			III	...	SA	...	...	...	...	G	.....	.....
96	1920 SEP 18	20:10:00.00	41.510	-112.015	.00	4.30UK UU		..	...	DG	...	...	...	...	.	.....	.....
97	1920 SEP 18	21:05:00.00	41.500	-112.000	.00			V	...	SA	...	...	...	...	G	.....	.....
98	1920 SEP 19	13:50:00.00	41.510	-112.015	.00	4.30UK UU		..	...	DG	...	...	...	...	.	.....	.....
99	1920 NOV 20	04:35:00.00	41.510	-112.015	.00	4.30UK UU		..	...	DG	...	...	...	...	.	.....	.....
100	1920 NOV 20	05:40:00.00	41.500	-112.000	.00			V	...	SA	...	...	...	...	G	.....	.....
101	1920 DEC 17	09:55:00.00	41.500	-112.000	.00			IV	...	SA	...	...	...	...	G	.....	.....
102	1920 DEC 17	10:05:00.00	41.500	-112.000	.00			IV	...	SA	...	...	...	...	G	.....	.....
103	1921 DEC 06	12:30:00.00	42.800	-110.800	.00			III	...	SA	...	...	...	...	G	.....	.....
104	1922 JAN 24	17:00:00.00	43.300	-115.400	.00			II	...	SA	...	...	...	...	G	.....	.....
105	1922 FEB 19	21:00:00.00	43.000	-111.400	.00			IV	...	SA	...	...	...	...	G	.....	.....
106	1922 NOV 10	16:45:00.00	45.000	-110.700	.00			III	...	SA	...	...	...	...	G	.....	.....
107	1923 MAR 24	04:00:00.00	43.600	-110.600	.00			V	...	SA	...	...	...	...	G	.....	.....
108	1923 MAY 22	08:12:00.00	46.400	-112.700	.00			IV	...	SA	...	...	...	...	G	.....	.....
109	1923 MAY 22	08:18:00.00	46.400	-112.700	.00			IV	...	SA	...	...	...	...	G	.....	.....
110	1923 JUN 07	04:15:00.00	41.737	-111.830	.00	4.30UK UU		..	...	DG	...	...	...	...	.	.....	.....
111	1923 JUN 09	02:37:00.00	41.900	-111.800	.00			II	...	SA	...	...	...	...	G	.....	.....
112	1923 SEP 07	18:39:00.00	41.900	-111.800	.00			IV	...	SA	...	...	...	...	G	.....	.....
113	1924 JAN 11	23:30:00.00	45.000	-110.700	.00			III	...	SA	...	...	...	...	G	.....	.....
114	1924 JUL 20	14:15:00.00	44.500	-110.500	.00			III	...	SA	...	...	...	...	G	.....	.....
115	1924 NOV 25	07:10:00.00	42.500	-111.500	.00			V	...	SA	...	...	...	...	G	.....	.....
116	1925 MAY 31	14:55:00.00	46.400	-111.200	.00			IV	...	SA	...	...	...	...	F	.....	.....
117	1925 MAY 31	15:02:00.00	46.500	-110.900	.00			IV	...	SA	...	...	...	...	H	.....	.....
118	1925 JUN 28	01:21:06.00	46.000	-111.500	.00	6.75UK PAS		..	...	DG	...	...	...	...	.	.....	.....
119	1925 JUN 28	02:10:00.00	46.400	-111.200	.00	5.00MI SRA		..	...	DG	...	...	...	...	.	.....	.....
120	1925 JUN 28	03:35:00.00	46.400	-111.200	.00			V	...	SA	...	...	...	...	F	.....	.....
121	1925 JUN 28	04:20:00.00	46.400	-111.200	.00	5.00MI SRA		..	...	DG	...	...	...	...	.	.....	.....
122	1925 JUN 28	05:25:00.00	46.400	-111.200	.00			V	...	SA	...	...	...	...	F	.....	.....
123	1925 JUN 28	05:39:00.00	46.400	-111.200	.00			V	...	SA	...	...	...	...	F	.....	.....
124	1925 JUN 28	08:55:00.00	46.400	-111.200	.00			V	...	SA	...	...	...	...	F	.....	.....
125	1925 JUN 28	09:20:00.00	46.400	-111.200	.00			V	...	SA	...	...	...	...	F	.....	.....
126	1925 JUN 28	11:42:00.00	46.400	-111.200	.00			IV	...	SA	...	...	...	...	F	.....	.....
127	1925 JUN 28	12:14:00.00	46.400	-111.200	.00			IV	...	SA	...	...	...	...	F	.....	.....
128	1925 JUN 28	13:05:00.00	46.400	-111.200	.00			IV	...	SA	...	...	...	...	F	.....	.....
129	1925 JUN 28	22:31:50.00	46.400	-111.200	.00			V	...	SA	...	...	...	...	F	.....	.....
130	1925 JUN 29	01:12:36.00	46.400	-111.230	.00	6.30UK USE		..	...	DG	...	...	...	...	.	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz Vert
131	1925 JUN 29	09:25:00.00	46.400	-111.200	.00			V	..	SA	...	...	...	...	F	.....
132	1925 JUN 30	06:30:00.00	46.400	-111.200	.00			V	...	SA	...	...	...	...	F	.....
133	1925 JUN 30	18:13:00.00	46.400	-111.200	.00			III	...	SA	...	...	...	...	F	.....
134	1925 JUL 01	14:45:00.00	46.400	-111.200	.00			III	...	SA	...	...	...	...	F	.....
135	1925 JUL 02	09:50:00.00	46.400	-111.200	.00			IV	...	SA	...	...	...	...	F	.....
136	1925 JUL 02	10:48:00.00	46.400	-111.200	.00			IV	...	SA	...	...	...	...	F	.....
137	1925 JUL 02	15:15:00.00	46.400	-111.200	.00			III	...	SA	...	...	...	...	F	.....
138	1925 JUL 03	08:25:00.00	46.400	-111.200	.00			III	...	SA	...	...	...	...	F	.....
139	1925 JUL 03	09:30:00.00	46.400	-111.200	.00			IV	...	SA	...	...	...	...	F	.....
140	1925 JUL 04	06:00:00.00	46.400	-111.200	.00			III	...	SA	...	...	...	...	F	.....
141	1925 JUL 04	09:25:00.00	46.400	-111.200	.00			III	...	SA	...	...	...	...	F	.....
142	1925 JUL 04	11:00:00.00	46.400	-111.200	.00			III	...	SA	...	...	...	...	F	.....
143	1925 JUL 05	04:04:00.00	46.400	-111.200	.00			III	...	SA	...	...	...	...	F	.....
144	1925 JUL 05	05:20:00.00	46.400	-111.200	.00			III	...	SA	...	...	...	...	F	.....
145	1925 JUL 05	05:30:00.00	46.400	-111.200	.00			III	...	SA	...	...	...	...	F	.....
146	1925 JUL 05	09:10:00.00	46.400	-111.200	.00			III	...	SA	...	...	...	...	F	.....
147	1925 JUL 05	09:17:00.00	46.400	-111.200	.00			II	...	SA	...	...	...	...	F	.....
148	1925 JUL 05	09:40:00.00	46.400	-111.200	.00			III	...	SA	...	...	...	...	F	.....
149	1925 JUL 05	11:47:00.00	46.400	-111.200	.00			IV	...	SA	...	...	...	...	F	.....
150	1925 JUL 05	13:16:00.00	46.400	-111.200	.00			IV	...	SA	...	...	...	...	F	.....
151	1925 JUL 06	05:26:00.00	46.400	-111.200	.00			III	...	SA	...	...	...	...	F	.....
152	1925 JUL 06	15:10:00.00	46.400	-111.200	.00			IV	...	SA	...	...	...	...	F	.....
153	1925 JUL 07	06:46:00.00	46.400	-111.200	.00			III	...	SA	...	...	...	...	F	.....
154	1925 JUL 10	07:00:00.00	46.400	-111.200	.00			III	...	SA	...	...	...	...	F	.....
155	1925 JUL 10	13:27:00.00	46.000	-111.200	.00	5.00UK		..	...	DG	...	...	...	...	.	.....
156	1925 JUL 10	14:45:00.00	46.000	-111.200	.00	5.00MI EQH		..	...	DG	...	...	...	...	.	.....
157	1925 JUL 10	21:00:00.00	46.400	-111.200	.00			III	...	SA	...	...	...	...	F	.....
158	1925 JUL 20	08:25:00.00	46.400	-111.200	.00			III	...	SA	...	...	...	...	F	.....
159	1925 JUL 20	17:06:00.00	46.400	-111.200	.00			IV	...	SA	...	...	...	...	F	.....
160	1925 JUL 20	17:35:00.00	46.400	-111.200	.00			IV	...	SA	...	...	...	...	F	.....
161	1925 JUL 22	20:53:00.00	46.400	-111.200	.00			III	...	SA	...	...	...	...	F	.....
162	1925 JUL 24	21:55:00.00	46.400	-111.200	.00			III	...	SA	...	...	...	...	F	.....
163	1925 AUG 12	09:30:00.00	46.400	-111.200	.00			IV	...	SA	...	...	...	...	F	.....
164	1925 AUG 13	02:52:00.00	46.400	-111.200	.00			V	...	SA	...	...	...	...	G	.....
165	1925 AUG 13	03:10:00.00	46.400	-111.200	.00			V	...	SA	...	...	...	...	F	.....
166	1925 AUG 13	08:30:00.00	46.400	-111.200	.00			V	...	SA	...	...	...	...	F	.....
167	1925 AUG 13	10:30:00.00	46.400	-111.200	.00			II	...	SA	...	...	...	...	F	.....
168	1925 AUG 13	22:30:00.00	46.400	-111.200	.00			III	...	SA	...	...	...	...	F	.....
169	1925 AUG 29	15:45:00.00	46.400	-111.200	.00			II	...	SA	...	...	...	...	F	.....
170	1925 AUG 29	17:00:00.00	46.400	-111.200	.00			V	...	SA	...	...	...	...	F	.....
171	1925 AUG 29	18:10:00.00	46.400	-111.200	.00			IV	...	SA	...	...	...	...	F	.....
172	1925 SEP 03	09:00:00.00	46.400	-111.200	.00			III	...	SA	...	...	...	...	F	.....
173	1925 SEP 03	09:29:00.00	46.400	-111.200	.00			III	...	SA	...	...	...	...	F	.....
174	1925 SEP 03	19:00:00.00	43.500	-110.800	.00			IV	...	SA	...	...	...	...	G	.....
175	1925 SEP 06	15:00:00.00	46.400	-111.200	.00			III	...	SA	...	...	...	...	F	.....
176	1925 SEP 19	10:45:00.00	46.400	-111.200	.00			IV	...	SA	...	...	...	...	F	.....
177	1925 SEP 30	09:30:00.00	46.400	-111.200	.00			IV	...	SA	...	...	...	...	F	.....
178	1925 OCT 06	12:45:00.00	46.400	-111.200	.00			III	...	SA	...	...	...	...	F	.....
179	1925 OCT 18	09:40:00.00	46.400	-111.200	.00			IV	...	SA	...	...	...	...	F	.....
180	1925 NOV 06	16:16:00.00	44.500	-110.500	.00			III	...	SA	...	...	...	...	G	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Std-Err Vert
181	1925 DEC 01	08:30:00.00	41.200	-110.900	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
182	1926 JAN 24	21:55:00.00	46.400	-111.200	.00	.....	.....	III	...	SA	...	...	.....	.....	F	.....	.....
183	1926 MAY 03	00:00:00.00	40.700	-111.800	.00	.....	.....	II	...	SA	...	...	.....	.....	G	.....	.....
184	1926 MAY 15	22:00:00.00	46.400	-111.200	.00	.....	.....	III	...	SA	...	...	.....	.....	F	.....	.....
185	1926 MAY 28	21:10:00.00	46.000	-111.400	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
186	1926 MAY 31	12:20:00.00	46.400	-111.200	.00	.....	.....	V	...	SA	...	...	.....	.....	F	.....	.....
187	1926 MAY 31	12:25:00.00	46.000	-111.400	.00	.....	.....	V	...	SA	...	...	.....	.....	G	.....	.....
188	1926 JUL 28	04:25:00.00	42.000	-111.900	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
189	1926 JUL 29	18:50:00.00	42.000	-111.900	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
190	1926 JUL 31	23:26:00.00	44.600	-110.400	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
191	1926 DEC 13	00:44:00.00	46.100	-111.200	.00	5.40UK MMT	.....	..	...	DG	...	...	.....	.....	.	.....	.....
192	1927 MAR 30	18:43:00.00	46.000	-112.000	.00	.....	.....	IV	...	SA	...	...	.....	.....	F	.....	.....
193	1928 MAR 31	15:16:00.00	43.700	-110.700	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
194	1928 SEP 05	05:36:00.00	42.100	-115.200	.00	5.20UK MAK	.....	..	...	DG	...	...	.....	.....	.	.....	.....
195	1929 FEB 16	03:00:00.00	46.100	-111.300	.00	5.60UK MMT	.....	..	...	DG	...	...	.....	.....	.	.....	.....
196	1929 JUN 11	12:00:00.00	45.900	-111.300	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
197	1929 SEP 10	20:01:00.00	41.200	-116.800	.....	4.60MD UNR	.....	..	...	UN	...	...	.....	.....	F	.....	.....
198	1929 SEP 30	16:15:00.00	42.200	-111.200	.00	.....	.....	II	...	SA	...	...	.....	.....	G	.....	.....
199	1929 OCT 01	06:30:00.00	42.200	-111.200	.00	.....	.....	II	...	SA	...	...	.....	.....	G	.....	.....
200	1929 OCT 01	08:00:00.00	42.200	-111.200	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
201	1930 MAR 16	00:00:00.00	46.500	-112.000	.00	5.00UK USE	.....	..	...	DG	...	...	.....	.....	.	.....	.....
202	1930 JUN 12	09:15:00.00	42.600	-111.000	.00	5.80ML REN	.....	..	...	DG	...	...	.....	.....	.	.....	.....
203	1930 JUN 12	09:25:00.00	42.600	-111.000	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
204	1930 JUN 12	09:40:00.00	42.600	-111.000	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
205	1930 JUN 12	10:35:00.00	42.600	-111.000	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
206	1930 JUN 12	12:30:00.00	42.600	-111.000	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
207	1930 JUN 12	17:45:00.00	42.600	-111.000	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
208	1930 JUN 12	20:00:00.00	42.600	-111.000	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
209	1930 JUN 13	12:30:00.00	42.600	-111.000	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
210	1930 JUN 13	18:17:00.00	42.600	-111.000	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
211	1930 JUN 14	07:00:00.00	42.600	-111.000	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
212	1930 JUN 16	08:30:00.00	42.600	-111.000	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
213	1930 JUN 16	08:45:00.00	42.600	-111.000	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
214	1930 JUN 16	08:50:00.00	42.600	-111.000	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
215	1930 JUN 16	11:00:00.00	42.600	-111.000	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
216	1930 JUN 16	12:00:00.00	42.600	-111.000	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
217	1930 JUL 13	01:02:00.00	46.000	-112.000	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
218	1930 JUL 16	00:00:00.00	46.000	-111.400	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
219	1930 JUL 17	12:15:00.00	45.600	-110.600	.00	.....	.....	II	...	SA	...	...	.....	.....	G	.....	.....
220	1930 JUL 28	09:35:00.00	41.500	-109.300	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
221	1930 JUL 31	07:31:00.00	45.600	-110.600	.00	.....	.....	II	...	SA	...	...	.....	.....	G	.....	.....
222	1930 AUG 25	02:40:00.00	44.500	-110.500	.00	.....	.....	V	...	SA	...	...	.....	.....	G	.....	.....
223	1930 AUG 25	14:45:00.00	44.300	-110.600	.00	.....	.....	II	...	SA	...	...	.....	.....	G	.....	.....
224	1930 AUG 26	11:00:00.00	44.400	-110.800	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
225	1930 AUG 26	14:40:00.00	44.300	-110.600	.00	.....	.....	II	...	SA	...	...	.....	.....	G	.....	.....
226	1930 AUG 28	00:00:00.00	44.400	-110.800	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
227	1930 SEP 01	06:45:00.00	44.900	-110.700	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
228	1930 SEP 16	03:10:00.00	44.800	-110.700	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
229	1930 SEP 19	00:00:00.00	42.600	-111.000	.00	.....	.....	II	...	SA	...	...	.....	.....	G	.....	.....
230	1930 SEP 21	00:00:00.00	42.600	-111.000	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
231	1930 SEP 25	11:00:00.00	44.400	-110.800	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
232	1930 NOV 16	00:00:00.00	42.600	-111.000	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
233	1930 DEC 22	16:15:00.00	44.400	-110.800	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
234	1931 JAN 06	21:00:00.00	44.900	-116.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
235	1931 MAR 11	13:20:00.00	42.300	-111.300	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
236	1931 JUN 16	09:13:00.00	46.400	-111.200	.00	.....	.....	III	...	SA	...	...	.....	.....	F	.....	.....
237	1931 JUN 16	09:15:00.00	46.400	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	F	.....	.....
238	1931 AUG 25	02:40:00.00	44.200	-110.800	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
239	1931 AUG 25	14:45:00.00	44.300	-110.600	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
240	1931 AUG 26	11:00:00.00	44.300	-110.600	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
241	1931 AUG 27	00:00:00.00	44.300	-110.600	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
242	1932 JAN 26	07:00:00.00	43.500	-110.700	.00	.....	.....	III	...	SA	...	...	.....	.....	F	.....	.....
243	1932 JAN 26	10:13:00.00	43.600	-110.800	.00	5.00MI	EPB	..	...	DG	...	...	.....	.....	.	.....	.....
244	1932 JAN 27	00:00:00.00	43.500	-110.700	.00	.....	.....	III	...	SA	...	...	.....	.....	F	.....	.....
245	1932 JAN 27	04:00:00.00	43.500	-110.700	.00	.....	.....	III	...	SA	...	...	.....	.....	F	.....	.....
246	1932 JAN 27	08:00:00.00	43.500	-110.700	.00	.....	.....	III	...	SA	...	...	.....	.....	F	.....	.....
247	1932 JAN 28	01:00:00.00	43.500	-110.700	.00	.....	.....	IV	...	SA	...	...	.....	.....	F	.....	.....
248	1932 JAN 28	08:00:00.00	43.500	-110.700	.00	.....	.....	IV	...	SA	...	...	.....	.....	F	.....	.....
249	1932 JAN 28	23:00:00.00	43.500	-110.700	.00	.....	.....	IV	...	SA	...	...	.....	.....	F	.....	.....
250	1932 JAN 29	01:00:00.00	43.500	-110.700	.00	.....	.....	IV	...	SA	...	...	.....	.....	F	.....	.....
251	1932 MAR 21	19:35:00.00	45.300	-112.600	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
252	1932 JUN 06	11:00:00.00	42.800	-114.900	.00	.....	.....	II	...	SA	...	...	.....	.....	G	.....	.....
253	1932 JUN 08	21:30:00.00	42.600	-111.000	.00	.....	.....	II	...	SA	...	...	.....	.....	G	.....	.....
254	1932 NOV 11	10:00:00.00	40.500	-111.500	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
255	1932 DEC 21	08:00:00.00	42.600	-114.500	.00	.....	.....	II	...	SA	...	...	.....	.....	G	.....	.....
256	1933 APR 20	20:25:00.00	44.700	-116.100	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
257	1933 JUN 05	11:15:00.00	44.700	-111.100	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
258	1933 AUG 19	10:13:00.00	45.900	-111.300	.00	.....	.....	V	...	SA	...	...	.....	.....	G	.....	.....
259	1933 OCT 31	15:55:00.00	43.000	-111.300	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
260	1933 OCT 31	16:30:00.00	43.000	-111.300	.00	.....	.....	II	...	SA	...	...	.....	.....	G	.....	.....
261	1933 OCT 31	16:45:00.00	43.000	-111.300	.00	.....	.....	II	...	SA	...	...	.....	.....	G	.....	.....
262	1933 NOV 02	16:26:00.00	43.000	-111.300	.00	.....	.....	V	...	SA	...	...	.....	.....	G	.....	.....
263	1933 NOV 29	17:00:00.00	45.300	-111.900	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
264	1934 JAN 30	20:21:00.00	40.700	-111.800	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
265	1934 JAN 30	21:32:00.00	40.700	-111.800	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
266	1934 MAR 12	15:05:48.00	41.700	-112.800	.00	6.60mb	.....	..	...	DG	...	...	.....	.....	.	.....	.....
267	1934 MAR 12	17:29:00.00	41.500	-112.500	.00	4.80ML	REN	..	...	DG	...	...	.....	.....	.	.....	.....
268	1934 MAR 12	18:12:00.00	41.500	-112.500	.00	5.10ML	REN	..	...	DG	...	...	.....	.....	.	.....	.....
269	1934 MAR 12	18:20:12.00	41.700	-112.800	.00	6.10ML	REN	..	...	DG	...	...	.....	.....	.	.....	.....
270	1934 MAR 13	09:13:00.00	44.500	-110.500	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
271	1934 MAR 13	09:26:00.00	41.500	-112.500	.00	.....	.....	II	...	SA	...	...	.....	.....	G	.....	.....
272	1934 MAR 13	12:06:00.00	41.500	-112.500	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
273	1934 MAR 13	12:30:00.00	41.500	-112.500	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
274	1934 MAR 13	12:32:00.00	41.500	-112.500	.00	.....	.....	II	...	SA	...	...	.....	.....	G	.....	.....
275	1934 MAR 13	13:15:00.00	41.500	-112.500	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
276	1934 MAR 13	13:29:00.00	41.500	-112.500	.00	.....	.....	II	...	SA	...	...	.....	.....	G	.....	.....
277	1934 MAR 15	12:02:00.00	41.700	-112.800	.00	5.10ML	REN	..	...	DG	...	...	.....	.....	.	.....	.....
278	1934 MAR 15	13:47:00.00	41.700	-112.800	.00	4.80ML	REN	..	...	DG	...	...	.....	.....	.	.....	.....
279	1934 MAR 15	14:20:00.00	42.600	-112.200	.00	.....	.....	II	...	SA	...	...	.....	.....	H	.....	.....
280	1934 MAR 17	22:40:00.00	41.500	-112.500	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
281	1934 MAR 17	23:30:00.00	41.500	-112.500	.00			II	...	SA	...	...	...	...	H	.....	.....
282	1934 APR 07	02:16:00.00	41.500	-111.500	.00	5.50ML REN		..	...	DG	...	...	...	...	.	.....	.....
283	1934 APR 14	21:26:32.00	41.500	-112.500	.00	5.60ML REN		..	...	DG	...	...	...	...	.	.....	.....
284	1934 APR 28	09:30:00.00	42.500	-113.800	.00			IV	...	SA	...	...	...	...	H	.....	.....
285	1934 APR 28	10:00:00.00	42.500	-113.800	.00			III	...	SA	...	...	...	...	H	.....	.....
286	1934 APR 29	06:10:00.00	42.500	-113.800	.00			III	...	SA	...	...	...	...	H	.....	.....
287	1934 MAY 06	08:09:42.00	41.700	-112.800	.00	5.60ML REN		..	...	DG	...	...	...	...	.	.....	.....
288	1934 MAY 06	20:30:00.00	42.200	-112.300	.00			IV	...	SA	...	...	...	...	H	.....	.....
289	1934 MAY 20	11:30:00.00	44.500	-110.500	.00			IV	...	SA	...	...	...	...	G	.....	.....
290	1934 JUN 02	12:49:00.00	40.700	-111.800	.00			II	...	SA	...	...	...	...	G	.....	.....
291	1934 JUL 04	00:00:00.00	41.500	-112.500	.00			IV	...	SA	...	...	...	...	G	.....	.....
292	1934 NOV 23	23:40:00.00	43.000	-109.000	.00			V	...	SA	...	...	...	...	G	.....	.....
293	1935 MAY 30	05:00:00.00	41.900	-112.000	.00			II	...	SA	...	...	...	...	H	.....	.....
294	1935 JUN 04	17:09:00.00	40.700	-111.800	.00			II	...	SA	...	...	...	...	H	.....	.....
295	1935 JUL 09	10:59:00.00	40.700	-111.800	.00			IV	...	SA	...	...	...	...	H	.....	.....
296	1935 JUL 09	11:49:00.00	40.700	-111.800	.00			IV	...	SA	...	...	...	...	H	.....	.....
297	1935 JUL 09	12:05:00.00	40.700	-111.800	.00			IV	...	SA	...	...	...	...	H	.....	.....
298	1935 OCT 21	20:45:00.00	46.000	-112.500	.00			IV	...	SA	...	...	...	...	F	.....	.....
299	1935 OCT 31	15:00:00.00	46.400	-116.600	.00			II	...	SA	...	...	...	...	H	.....	.....
300	1935 NOV 01	04:45:00.00	45.500	-112.200	.00			V	...	SA	...	...	...	...	F	.....	.....
301	1935 NOV 01	06:00:00.00	46.500	-109.500	.00			III	...	SA	...	...	...	...	F	.....	.....
302	1935 NOV 06	08:12:00.00	40.700	-111.800	.00			II	...	SA	...	...	...	...	G	.....	.....
303	1936 JAN 14	18:05:00.00	42.200	-112.300	.00			II	...	SA	...	...	...	...	G	.....	.....
304	1936 JAN 15	04:40:00.00	44.000	-110.500	.00	5.00MI EPB		..	...	DG	...	...	...	...	.	.....	.....
305	1936 FEB 06	23:10:00.00	46.300	-114.100	.00			IV	...	SA	...	...	...	...	G	.....	.....
306	1936 SEP 07	23:30:00.00	44.700	-111.100	.00			III	...	SA	...	...	...	...	G	.....	.....
307	1936 OCT 24	09:00:00.00	42.900	-110.000	.00			III	...	SA	...	...	...	...	H	.....	.....
308	1936 OCT 24	12:34:00.00	42.900	-110.000	.00			III	...	SA	...	...	...	...	H	.....	.....
309	1937 APR 27	22:34:00.00	44.400	-110.800	.00			III	...	SA	...	...	...	...	G	.....	.....
310	1937 AUG 07	07:30:00.00	44.200	-110.600	.00			II	...	SA	...	...	...	...	G	.....	.....
311	1937 SEP 06	23:30:00.00	44.700	-111.100	.00			IV	...	SA	...	...	...	...	G	.....	.....
312	1937 SEP 16	04:27:00.00	44.600	-110.400	.00			IV	...	SA	...	...	...	...	G	.....	.....
313	1937 NOV 18	23:50:00.00	42.100	-113.900	.00	5.40ML REN		..	...	DG	...	...	...	...	.	.....	.....
314	1937 DEC 18	11:00:00.00	44.500	-116.000	.00			V	...	SA	...	...	...	...	F	.....	.....
315	1938 JAN 10	23:19:00.00	45.800	-111.300	.00			V	...	SA	...	...	...	...	F	.....	.....
316	1938 JUN 13	11:30:00.00	45.900	-111.300	.00			VI	...	SA	...	...	...	...	F	.....	.....
317	1938 JUN 14	05:32:00.00	45.900	-111.300	.00	5.00MI SRA		..	...	DG	...	...	...	...	.	.....	.....
318	1938 JUN 15	20:35:00.00	45.900	-111.300	.00			V	...	SA	...	...	...	...	F	.....	.....
319	1938 JUN 30	13:37:00.00	40.749	-111.849	.00	4.30UK UU		..	...	DG	...	...	...	...	.	.....	.....
320	1938 JUL 01	18:14:00.00	40.700	-111.800	.00			II	...	SA	...	...	...	...	G	.....	.....
321	1938 JUL 27	08:15:00.00	44.500	-115.200	.00			IV	...	SA	...	...	...	...	F	.....	.....
322	1938 JUL 27	08:30:00.00	44.500	-115.200	.00			IV	...	SA	...	...	...	...	F	.....	.....
323	1938 JUL 27	10:00:00.00	44.500	-115.200	.00			III	...	SA	...	...	...	...	F	.....	.....
324	1938 AUG 23	11:00:00.00	46.400	-112.700	.00			III	...	SA	...	...	...	...	G	.....	.....
325	1938 NOV 12	15:17:00.00	45.800	-111.300	.00			III	...	SA	...	...	...	...	F	.....	.....
326	1938 NOV 29	16:21:00.00	42.600	-111.000	.00			III	...	SA	...	...	...	...	G	.....	.....
327	1938 DEC 01	06:05:00.00	42.600	-111.000	.00			III	...	SA	...	...	...	...	G	.....	.....
328	1938 DEC 01	20:30:00.00	42.600	-111.000	.00			III	...	SA	...	...	...	...	G	.....	.....
329	1938 DEC 03	22:00:00.00	40.700	-111.800	.00			II	...	SA	...	...	...	...	G	.....	.....
330	1938 DEC 05	06:20:00.00	42.600	-111.000	.00			III	...	SA	...	...	...	...	G	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
331	1938 DEC 31	07:08:00.00	45.800	-111.100	.00			V	...	SA	...	...	...	...	G	.....	.....
332	1939 JAN 01	06:55:00.00	46.500	-110.900	.00			III	...	SA	...	...	...	...	G	.....	.....
333	1939 JAN 23	06:54:00.00	45.700	-111.000	.00			IV	...	SA	...	...	...	...	F	.....	.....
334	1939 MAR 28	04:10:00.00	45.600	-110.600	.00			IV	...	SA	...	...	...	...	F	.....	.....
335	1939 MAR 31	06:40:00.00	40.700	-111.800	.00			IV	...	SA	...	...	...	...	H	.....	.....
336	1939 MAY 11	23:40:00.00	45.900	-111.300	.00	5.00MI	OSU	..	...	DG	...	...	...	...	.	.....	.....
337	1939 MAY 12	00:00:00.00	46.000	-111.500	.00	5.00UK	USE	..	...	DG	...	...	...	...	.	.....	.....
338	1939 MAY 12	05:20:00.00	45.900	-111.300	.00			IV	...	SA	...	...	...	...	F	.....	.....
339	1939 OCT 22	23:00:00.00	43.500	-110.800	.00			III	...	SA	...	...	...	...	G	.....	.....
340	1939 OCT 23	01:40:00.00	44.600	-110.400	.00			III	...	SA	...	...	...	...	G	.....	.....
341	1939 NOV 02	06:00:00.00	43.500	-110.800	.00			IV	...	SA	...	...	...	...	G	.....	.....
342	1940 JAN 18	10:00:00.00	45.700	-111.000	.00			II	...	SA	...	...	...	...	F	.....	.....
343	1940 FEB 29	04:47:00.00	41.700	-111.800	.00			II	...	SA	...	...	...	...	G	.....	.....
344	1940 MAR 28	19:55:00.00	42.900	-112.500	.00			II	...	SA	...	...	...	...	G	.....	.....
345	1940 MAY 22	05:20:00.00	45.600	-112.700	.00			IV	...	SA	...	...	...	...	G	.....	.....
346	1940 MAY 22	05:50:00.00	45.600	-112.700	.00			IV	...	SA	...	...	...	...	G	.....	.....
347	1940 MAY 24	11:50:00.00	44.400	-110.800	.00			III	...	SA	...	...	...	...	G	.....	.....
348	1940 MAY 24	12:10:00.00	44.400	-110.800	.00			III	...	SA	...	...	...	...	G	.....	.....
349	1940 MAY 24	12:25:00.00	44.400	-110.800	.00			III	...	SA	...	...	...	...	G	.....	.....
350	1940 MAY 24	15:55:00.00	44.400	-110.800	.00			III	...	SA	...	...	...	...	G	.....	.....
351	1940 OCT 22	23:00:00.00	43.500	-110.800	.00			III	...	SA	...	...	...	...	G	.....	.....
352	1940 NOV 02	06:00:00.00	43.500	-110.800	.00			III	...	SA	...	...	...	...	G	.....	.....
353	1940 DEC 23	21:50:29.00	46.500	-112.500	.00			VI	...	SA	...	...	...	...	F	.....	.....
354	1941 FEB 28	03:28:00.00	44.800	-112.400	.00			IV	...	SA	...	...	...	...	D	.....	.....
355	1941 JUN 20	15:20:00.00	41.700	-111.800	.00			III	...	SA	...	...	...	...	G	.....	.....
356	1941 DEC 23	17:48:00.00	44.800	-117.000	.00	.00	.00	IV	...	BB	...	...	...	...	.	.....	.....
357	1941 DEC 23	22:20:00.00	44.800	-117.000	.00	.00	.00	IV	...	BB	...	...	...	...	.	.....	.....
358	1942 FEB 16	00:18:00.00	45.300	-116.200	.00			IV	...	SA	...	...	...	...	F	.....	.....
359	1942 MAR 02	21:30:00.00	44.300	-114.400	.00			IV	...	SA	...	...	...	...	F	.....	.....
360	1942 APR 18	05:45:42.00	41.500	-112.300	.00	4.30UK	UU	..	...	DG	...	...	...	...	.	.....	.....
361	1942 APR 18	18:15:00.00	42.200	-112.300	.00			IV	...	SA	...	...	...	...	F	.....	.....
362	1942 MAY 01	22:50:00.00	44.700	-110.500	.00			IV	...	SA	...	...	...	...	G	.....	.....
363	1942 AUG 05	21:34:00.00	44.400	-110.600	.00			V	...	SA	...	...	...	...	G	.....	.....
364	1942 SEP 25	14:50:00.00	44.600	-110.400	.00			IV	...	SA	...	...	...	...	G	.....	.....
365	1942 NOV 01	15:10:00.00	44.800	-111.300	.00			IV	...	SA	...	...	...	...	F	.....	.....
366	1942 NOV 01	15:40:00.00	44.800	-111.300	.00			IV	...	SA	...	...	...	...	F	.....	.....
367	1942 NOV 01	15:41:06.00	44.800	-111.300	.00			IV	...	SA	...	...	...	...	D	.....	.....
368	1942 NOV 01	15:45:00.00	44.800	-111.300	.00			II	...	SA	...	...	...	...	F	.....	.....
369	1943 FEB 03	11:15:00.00	44.400	-110.800	.00			IV	...	SA	...	...	...	...	G	.....	.....
370	1943 FEB 03	15:16:19.00	44.500	-111.000	.00			IV	...	SA	...	...	...	...	D	.....	.....
371	1943 FEB 22	11:30:00.00	40.700	-112.000	.00			II	...	SA	...	...	...	...	F	.....	.....
372	1943 FEB 22	12:30:00.00	40.700	-112.000	.00			II	...	SA	...	...	...	...	F	.....	.....
373	1943 FEB 22	14:20:08.00	40.700	-112.080	.00	5.00UK	UU	..	...	DG	...	...	...	...	.	.....	.....
374	1943 FEB 23	04:50:00.00	40.700	-112.000	.00			III	...	SA	...	...	...	...	D	.....	.....
375	1943 APR 10	22:42:00.00	40.700	-112.080	.00	4.30UK	UU	..	...	DG	...	...	...	...	.	.....	.....
376	1943 APR 10	23:42:00.00	40.700	-112.000	.00			IV	...	SA	...	...	...	...	G	.....	.....
377	1943 APR 11	20:32:00.00	40.700	-112.000	.00			IV	...	SA	...	...	...	...	G	.....	.....
378	1943 APR 14	09:53:00.00	46.400	-117.000	.00			V	...	SA	...	...	...	...	G	.....	.....
379	1943 AUG 04	00:00:00.00	44.900	-116.900	.00	.00	.00	III	...	BB	...	...	...	...	.	.....	.....
380	1944 JUL 12	19:30:23.00	44.500	-115.500	.00	6.10UK	PAS	..	...	DG	...	...	...	...	.	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
381	1944 JUL 13	11:00:00.00	44.500	-115.500	.00			IV	...	SA	...	...	...	...	F	.....	.....
382	1944 JUL 25	00:00:00.00	46.100	-116.400	.00			IV	...	SA	...	...	...	...	G	.....	.....
383	1944 JUL 27	00:48:18.00	44.700	-115.200	.00			V	...	SA	...	...	...	...	D	.....	.....
384	1944 SEP 20	03:00:00.00	44.900	-116.900	.00	.00	.00	IV	...	BB	...	...	...	...	.	.....	.....
385	1944 OCT 03	02:27:42.00	44.200	-109.200	.00			III	...	SA	...	...	...	...	D	.....	.....
386	1944 OCT 03	02:30:00.00	44.200	-109.200	.00			V	...	SA	...	...	...	...	F	.....	.....
387	1944 OCT 03	02:36:00.00	44.200	-109.200	.00			III	...	SA	...	...	...	...	F	.....	.....
388	1944 OCT 08	10:40:00.00	42.600	-111.000	.00			IV	...	SA	...	...	...	...	G	.....	.....
389	1944 OCT 25	10:25:00.00	44.700	-110.500	.00			III	...	SA	...	...	...	...	G	.....	.....
390	1945 FEB 14	03:01:15.00	44.700	-115.400	.00	6.00mb		..	...	DG	...	...	...	...	.	.....	.....
391	1945 FEB 21	00:15:00.00	45.500	-109.400	.00			IV	...	SA	...	...	...	...	G	.....	.....
392	1945 APR 22	00:32:00.00	44.700	-110.500	.00			V	...	SA	...	...	...	...	G	.....	.....
393	1945 APR 22	01:10:00.00	44.600	-110.400	.00			III	...	SA	...	...	...	...	G	.....	.....
394	1945 APR 22	16:29:00.00	44.600	-110.400	.00			III	...	SA	...	...	...	...	G	.....	.....
395	1945 APR 23	17:28:00.00	44.600	-110.400	.00			III	...	SA	...	...	...	...	G	.....	.....
396	1945 APR 23	17:31:00.00	44.600	-110.400	.00			V	...	SA	...	...	...	...	G	.....	.....
397	1945-APR 23	20:24:00.00	44.600	-110.300	.00			IV	...	SA	...	...	...	...	G	.....	.....
398	1945 APR 23	20:58:00.00	44.600	-110.300	.00			IV	...	SA	...	...	...	...	G	.....	.....
399	1945 APR 23	21:13:00.00	44.600	-110.300	.00			IV	...	SA	...	...	...	...	G	.....	.....
400	1945 APR 24	15:20:00.00	44.600	-110.300	.00			V	...	SA	...	...	...	...	G	.....	.....
401	1945 APR 24	20:46:00.00	44.600	-110.300	.00			III	...	SA	...	...	...	...	G	.....	.....
402	1945 APR 24	21:37:00.00	44.600	-110.300	.00			III	...	SA	...	...	...	...	G	.....	.....
403	1945 APR 24	21:53:00.00	44.600	-110.300	.00			III	...	SA	...	...	...	...	G	.....	.....
404	1945 APR 24	22:16:00.00	44.600	-110.300	.00			III	...	SA	...	...	...	...	G	.....	.....
405	1945 APR 25	04:25:00.00	44.600	-110.300	.00			III	...	SA	...	...	...	...	G	.....	.....
406	1945 JUN 23	14:00:00.00	42.300	-110.200	.00			III	...	SA	...	...	...	...	G	.....	.....
407	1945 JUL 20	00:30:00.00	43.800	-115.500	.00			III	...	SA	...	...	...	...	H	.....	.....
408	1945 SEP 18	21:39:00.00	40.600	-116.500	.00	5.10UK PAS		..	...	DG	...	...	...	...	.	.....	.....
409	1945 NOV 28	20:39:00.00	46.000	-112.500	.00			IV	...	SA	...	...	...	...	G	.....	.....
410	1946 FEB 19	21:15:00.00	41.500	-113.300	.00			II	...	SA	...	...	...	...	H	.....	.....
411	1946 FEB 20	03:00:00.00	41.500	-113.300	.00			II	...	SA	...	...	...	...	H	.....	.....
412	1946 MAY 06	02:30:00.00	41.730	-112.130	.00	4.30UK UU		..	...	DG	...	...	...	...	.	.....	.....
413	1946 OCT 25	16:53:00.00	40.700	-112.100	.00			IV	...	SA	...	...	...	...	G	.....	.....
414	1947 JAN 08	19:37:00.00	44.100	-110.600	.00			IV	...	SA	...	...	...	...	G	.....	.....
415	1947 MAR 07	14:14:00.00	40.700	-111.800	.00			IV	...	SA	...	...	...	...	G	.....	.....
416	1947 MAR 28	11:02:00.00	40.700	-111.900	.00			V	...	SA	...	...	...	...	G	.....	.....
417	1947 SEP 25	01:34:30.00	44.300	-115.400	.00	4.70ML REN		VI	...	SA	...	...	...	...	C	.....	.....
418	1947 OCT 31	23:23:00.00	44.600	-111.200	.00			V	...	SA	...	...	...	...	F	.....	.....
419	1947 NOV 01	17:53:00.00	45.600	-113.400	.00			IV	...	SA	...	...	...	...	G	.....	.....
420	1947 NOV 23	09:46:05.00	44.800	-112.000	.00	6.30ML EPB		..	...	DG	...	...	...	...	.	.....	.....
421	1947 DEC 17	12:38:00.00	46.500	-112.000	.00			V	...	SA	...	...	...	...	D	.....	.....
422	1948 FEB 12	09:54:00.00	46.000	-111.400	.00			IV	...	SA	...	...	...	...	F	.....	.....
423	1948 FEB 24	02:39:04.00	43.500	-111.000	.00	5.00MI USE		..	...	DG	...	...	...	...	.	.....	.....
424	1948 MAY 16	06:45:00.00	46.000	-111.500	.00			V	...	SA	...	...	...	...	G	.....	.....
425	1948 JUL 20	00:00:00.00	44.500	-110.000	.00			IV	...	SA	...	...	...	...	G	.....	.....
426	1948 SEP 24	16:05:00.00	41.500	-109.300	.00			IV	...	SA	...	...	...	...	G	.....	.....
427	1948 NOV 09	23:23:00.00	44.400	-110.800	.00			IV	...	SA	...	...	...	...	G	.....	.....
428	1948 NOV 10	07:47:00.00	44.400	-110.800	.00			IV	...	SA	...	...	...	...	G	.....	.....
429	1949 JAN 09	06:10:00.00	43.700	-115.700	.00			III	...	SA	...	...	...	...	F	.....	.....
430	1949 MAR 07	06:50:00.00	40.749	-111.849	.00	5.00UK UU		..	...	DG	...	...	...	...	.	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
431	1949 MAR 07	06:54:00.00	40.700	-111.800	.00			II	...	SA	...	...	.....	.....	G	.....	.....
432	1949 MAR 07	07:09:00.00	40.700	-111.800	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
433	1949 MAR 07	08:06:00.00	40.700	-111.800	.00			II	...	SA	...	...	.....	.....	G	.....	.....
434	1949 MAR 07	08:16:00.00	40.700	-111.800	.00			II	...	SA	...	...	.....	.....	G	.....	.....
435	1949 MAR 15	20:53:11.00	44.800	-116.600	.00			III	...	SA	...	...	.....	.....	E	.....	.....
436	1949 AUG 12	02:05:00.00	44.600	-110.400	.00			III	...	SA	...	...	.....	.....	G	.....	.....
437	1949 OCT 03	21:00:00.00	42.700	-111.500	.00			III	...	SA	...	...	.....	.....	F	.....	.....
438	1949 NOV 18	19:11:00.00	40.700	-112.000	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
439	1949 NOV 19	18:45:00.00	41.100	-112.000	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
440	1950 JAN 02	19:53:04.00	41.500	-112.000	.00	4.30ML REN		..	...	DG	...	...	.....	.....	.	.....	.....
441	1950 JAN 18	01:55:31.00	40.500	-110.500	.00	5.30UK PAS		..	...	DG	...	...	.....	.....	.	.....	.....
442	1950 APR 10	17:25:00.00	44.700	-109.500	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
443	1950 JUN 27	19:20:00.00	44.400	-110.800	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
444	1950 JUN 28	04:31:04.00	44.750	-110.500	.00	5.00MI USE		..	...	DG	...	...	.....	.....	.	.....	.....
445	1950 JUN 28	22:15:00.00	44.500	-110.500	.00			III	...	SA	...	...	.....	.....	G	.....	.....
446	1950 JUN 28	22:20:00.00	44.500	-110.500	.00			III	...	SA	...	...	.....	.....	G	.....	.....
447	1950 JUN 28	22:30:00.00	44.500	-110.500	.00			III	...	SA	...	...	.....	.....	G	.....	.....
448	1950 JUN 29	04:15:00.00	44.500	-110.500	.00			III	...	SA	...	...	.....	.....	G	.....	.....
449	1950 JUN 29	05:00:00.00	44.500	-110.500	.00			III	...	SA	...	...	.....	.....	G	.....	.....
450	1950 JUN 29	06:30:00.00	44.500	-110.500	.00			III	...	SA	...	...	.....	.....	G	.....	.....
451	1950 JUN 29	13:15:00.00	44.500	-110.500	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
452	1950 JUL 21	19:23:00.00	41.700	-111.800	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
453	1950 OCT 18	09:30:00.00	44.500	-116.000	.00	4.30ML EPB		V	...	SA	...	...	.....	.....	F	.....	.....
454	1950 DEC 04	15:00:00.00	45.200	-111.700	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
455	1950 DEC 04	15:20:00.00	45.200	-111.700	.00			III	...	SA	...	...	.....	.....	G	.....	.....
456	1951 FEB 21	17:09:56.00	43.000	-110.000	.00			III	...	SA	...	...	.....	.....	D	.....	.....
457	1951 AUG 06	00:37:15.00	46.000	-112.500	.00			V	...	SA	...	...	.....	.....	F	.....	.....
458	1952 APR 22	16:54:42.50	46.200	-111.400	.00	5.00UK USE		..	...	DG	...	...	.....	.....	.	.....	.....
459	1952 APR 22	19:22:00.00	46.300	-112.300	.00			IV	...	SA	...	...	.....	.....	H	.....	.....
460	1952 APR 25	00:00:00.00	45.000	-109.900	.00			III	...	SA	...	...	.....	.....	H	.....	.....
461	1952 APR 29	16:55:00.00	45.700	-110.200	.00			III	...	SA	...	...	.....	.....	H	.....	.....
462	1952 MAY 02	10:30:00.00	45.700	-110.200	.00			IV	...	SA	...	...	.....	.....	H	.....	.....
463	1952 MAY 30	03:15:00.00	46.200	-111.400	.00			V	...	SA	...	...	.....	.....	F	.....	.....
464	1952 JUL 23	19:28:00.00	40.700	-111.800	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
465	1953 MAR 15	15:30:00.00	43.800	-111.000	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
466	1953 MAY 24	02:54:29.00	40.500	-111.500	.00	4.30UK UU		..	...	DG	...	...	.....	.....	.	.....	.....
467	1953 JUN 04	17:02:50.00	44.500	-110.500	.00			IV	...	SA	...	...	.....	.....	D	.....	.....
468	1953 JUN 04	19:24:32.00	44.500	-110.500	.00			IV	...	SA	...	...	.....	.....	D	.....	.....
469	1953 AUG 14	19:47:00.00	46.100	-111.400	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
470	1953 AUG 15	11:45:00.00	46.400	-111.300	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
471	1953 AUG 15	15:35:00.00	46.400	-111.300	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
472	1953 AUG 15	15:36:00.00	46.100	-111.400	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
473	1953 AUG 15	15:40:00.00	46.100	-111.400	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
474	1953 AUG 16	15:37:00.00	40.800	-112.000	.00			III	...	SA	...	...	.....	.....	G	.....	.....
475	1953 AUG 16	16:00:00.00	40.800	-112.000	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
476	1953 AUG 16	16:36:00.00	40.800	-112.000	.00			III	...	SA	...	...	.....	.....	G	.....	.....
477	1954 JAN 29	06:20:00.00	46.000	-111.400	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
478	1954 MAR 09	11:58:00.00	40.700	-111.800	.00			II	...	SA	...	...	.....	.....	G	.....	.....
479	1954 JUL 04	07:40:00.00	44.900	-110.800	.00			V	...	SA	...	...	.....	.....	D	.....	.....
480	1954 JUL 04	16:32:50.00	44.900	-110.800	.00			V	...	SA	...	...	.....	.....	D	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Std-Err Vert
481	1954 SEP 10	19:50:21.00	44.900	-110.700	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
482	1954 OCT 31	02:50:00.00	42.400	-111.300	.00	.....	.....	IV	...	SA	...	...	.....	.....	F	.....	.....
483	1954 NOV 01	07:45:00.00	41.700	-111.800	.00	.....	.....	IV	...	SA	...	...	.....	.....	F	.....	.....
484	1955 JAN 24	22:30:00.00	43.600	-116.200	.00	.....	.....	III	...	SA	...	...	.....	.....	F	.....	.....
485	1955 JAN 26	14:00:00.00	43.600	-116.200	.00	.....	.....	III	...	SA	...	...	.....	.....	F	.....	.....
486	1955 FEB 02	19:23:00.00	40.783	-111.933	.00	4.30UK UU	.....	..	...	DG	...	...	.....	.....	.	.....	.....
487	1955 MAY 12	22:57:00.00	40.913	-111.877	.00	4.30UK UU	.....	..	...	DG	...	...	.....	.....	.	.....	.....
488	1955 JUN 01	04:56:00.00	45.900	-111.300	.00	.....	.....	V	...	SA	...	...	.....	.....	G	.....	.....
489	1955 JUN 25	05:00:00.00	41.000	-111.700	.00	.....	.....	IV	...	SA	...	...	.....	.....	F	.....	.....
490	1956 FEB 12	03:00:00.00	40.500	-109.500	.00	.....	.....	IV	...	SA	...	...	.....	.....	F	.....	.....
491	1956 FEB 12	04:15:00.00	40.500	-109.500	.00	.....	.....	III	...	SA	...	...	.....	.....	F	.....	.....
492	1956 MAR 24	03:30:00.00	44.600	-110.400	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
493	1956 MAR 30	07:16:10.00	44.900	-110.700	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
494	1956 AUG 07	04:05:52.00	44.500	-115.000	.00	4.10ML EPB	.....	V	...	SA	...	...	.....	.....	D	.....	.....
495	1956 AUG 18	00:52:16.00	44.000	-115.500	.00	4.40ML EPB	.....	..	...	SA	...	...	.....	.....	D	.....	.....
496	1956 OCT 03	20:21:40.00	41.500	-110.000	.00	.....	.....	IV	...	SA	...	...	.....	.....	D	.....	.....
497	1956 NOV 16	08:26:10.00	41.030	-116.000	.....	4.70MD UNR	.....	..	...	UN	...	...	.....	.....	B	.....	.....
498	1956 NOV 26	03:12:00.00	44.600	-110.400	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
499	1956 DEC 12	11:35:00.00	44.600	-110.400	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
500	1956 DEC 21	16:33:00.00	44.600	-110.400	.00	.....	.....	V	...	SA	...	...	.....	.....	G	.....	.....
501	1956 DEC 21	16:48:00.00	44.600	-110.400	.00	.....	.....	V	...	SA	...	...	.....	.....	G	.....	.....
502	1957 MAY 17	17:41:13.00	45.700	-112.800	.00	.....	.....	V	...	SA	...	...	.....	.....	F	.....	.....
503	1957 MAY 18	21:58:50.00	45.600	-112.700	.00	.....	.....	IV	...	SA	...	...	.....	.....	F	.....	.....
504	1957 MAY 25	07:31:04.00	45.600	-112.700	.00	.....	.....	III	...	SA	...	...	.....	.....	F	.....	.....
505	1957 JUN 02	09:00:00.00	45.600	-112.700	.00	.....	.....	IV	...	SA	...	...	.....	.....	F	.....	.....
506	1957 JUN 02	11:57:20.00	45.500	-111.800	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
507	1957 JUL 07	16:30:00.00	44.800	-110.700	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
508	1957 AUG 22	06:40:00.00	44.600	-110.400	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
509	1957 SEP 01	10:30:00.00	44.800	-110.600	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
510	1957 NOV 03	17:38:22.00	42.500	-111.000	.00	.....	.....	IV	...	SA	...	...	.....	.....	D	.....	.....
511	1958 FEB 13	22:52:00.00	40.500	-111.500	.00	.....	.....	VI	...	SA	...	...	.....	.....	C	.....	.....
512	1958 APR 28	20:59:23.00	44.400	-110.800	.00	.....	.....	V	...	SA	...	...	.....	.....	G	.....	.....
513	1958 APR 28	21:20:20.00	44.400	-110.800	.00	.....	.....	V	...	SA	...	...	.....	.....	G	.....	.....
514	1958 APR 28	21:22:22.00	44.400	-110.800	.00	.....	.....	V	...	SA	...	...	.....	.....	G	.....	.....
515	1958 APR 28	21:57:00.00	44.400	-110.800	.00	.....	.....	V	...	SA	...	...	.....	.....	G	.....	.....
516	1958 MAY 23	06:49:47.00	44.500	-116.000	.00	.....	.....	IV	...	SA	...	...	.....	.....	D	.....	.....
517	1958 MAY 28	09:46:00.00	46.500	-113.000	.00	5.00UK USE	.....	..	...	DG	...	...	.....	.....	.	.....	.....
518	1958 MAY 28	12:00:00.00	46.500	-113.000	.00	.....	.....	III	...	SA	...	...	.....	.....	F	.....	.....
519	1958 MAY 28	16:45:54.00	46.500	-113.000	.00	.....	.....	VI	...	SA	...	...	.....	.....	D	.....	.....
520	1958 JUL 13	05:35:00.00	44.400	-110.800	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
521	1958 AUG 01	15:27:00.00	46.500	-113.000	.00	.....	.....	IV	...	SA	...	...	.....	.....	F	.....	.....
522	1958 SEP 27	03:15:00.00	44.400	-110.800	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
523	1958 SEP 27	03:17:00.00	44.400	-110.800	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
524	1958 SEP 27	03:24:00.00	44.400	-110.800	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
525	1959 JAN 04	07:22:54.00	42.100	-111.200	.00	4.30UK RAS1	.....	..	...	DG	...	...	.....	.....	.	.....	.....
526	1959 JAN 04	12:00:00.00	42.300	-111.400	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
527	1959 JAN 28	00:14:33.00	44.400	-110.800	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
528	1959 AUG 10	01:45:00.00	44.800	-110.900	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
529	1959 AUG 18	06:37:15.00	44.820	-111.070	.00	7.70ML BOLT	.....	..	...	DG	34	...	.....	.....	.	.....	.....
530	1959 AUG 18	07:56:18.00	45.000	-110.500	.00	6.50UK BRK	.....	..	...	DG	...	...	.....	.....	.	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Std-Err Vert
531	1959 AUG 18	07:58:00.00	44.800	-111.200	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
532	1959 AUG 18	08:13:00.00	44.800	-111.200	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
533	1959 AUG 18	08:41:50.00	44.800	-110.700	.00	6.00UK	BRK	.....	..	DG	...	...	.....	.....	.	.....	.....
534	1959 AUG 18	08:43:00.00	44.800	-111.200	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
535	1959 AUG 18	11:03:52.00	44.800	-111.100	.00	5.63UK	BRK	.....	..	DG	...	...	.....	.....	.	.....	.....
536	1959 AUG 18	15:26:05.00	44.870	-110.720	.00	6.50UK	PAS	.....	..	DG	...	...	.....	.....	.	.....	.....
537	1959 AUG 18	15:30:00.00	44.800	-111.200	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
538	1959 AUG 18	15:36:00.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
539	1959 AUG 18	16:05:00.00	44.800	-111.200	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
540	1959 AUG 18	17:25:00.00	44.800	-111.200	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
541	1959 AUG 18	17:50:00.00	44.800	-111.200	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
542	1959 AUG 18	20:50:00.00	44.800	-111.200	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
543	1959 AUG 18	21:54:00.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
544	1959 AUG 18	22:00:00.00	44.800	-111.200	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
545	1959 AUG 18	22:12:00.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
546	1959 AUG 19	00:37:00.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
547	1959 AUG 19	04:04:03.00	44.900	-111.630	.00	6.00UK	BRK	.....	..	DG	...	...	.....	.....	.	.....	.....
548	1959 AUG 19	19:06:29.00	45.000	-111.400	.00	5.00UK	BRK	.....	..	DG	...	...	.....	.....	.	.....	.....
549	1959 AUG 19	19:43:47.00	45.000	-110.500	.00	5.00UK	BRK	.....	..	DG	...	...	.....	.....	.	.....	.....
550	1959 AUG 19	21:45:57.40	44.773	-111.606	5.00	4.70UK	BRK	.....	..	SA	...	...	.....	.....	B	.....	.....
		Felt															
551	1959 AUG 20	10:59:11.00	45.000	-111.000	.00	.....	.....	V	...	SA	...	...	.....	.....	D	.....	.....
552	1959 AUG 20	19:11:27.00	45.000	-111.000	.00	5.00UK	BRK	.....	..	DG	...	...	.....	.....	.	.....	.....
553	1959 AUG 22	13:30:00.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	H	.....	.....
554	1959 AUG 23	08:40:00.00	44.800	-111.200	.00	5.00MI	SRA	.....	..	DG	...	...	.....	.....	.	.....	.....
555	1959 AUG 23	23:31:00.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	H	.....	.....
556	1959 AUG 26	10:29:00.00	44.800	-111.200	.00	.....	.....	II	...	SA	...	...	.....	.....	H	.....	.....
557	1959 AUG 27	08:35:00.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	H	.....	.....
558	1959 AUG 27	23:33:00.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	H	.....	.....
559	1959 AUG 30	07:50:00.00	44.800	-111.200	.00	.....	.....	V	...	SA	...	...	.....	.....	G	.....	.....
560	1959 SEP 04	19:09:48.00	45.000	-111.500	.00	.....	.....	IV	...	SA	...	...	.....	.....	D	.....	.....
561	1959 SEP 04	19:18:00.00	45.900	-112.100	.00	.....	.....	V	...	SA	...	...	.....	.....	G	.....	.....
562	1959 SEP 05	05:10:00.00	44.800	-111.200	.00	.....	.....	III	...	SA	...	...	.....	.....	H	.....	.....
563	1959 SEP 05	12:10:00.00	44.800	-111.200	.00	5.00MI	SRA	.....	..	DG	...	...	.....	.....	.	.....	.....
564	1959 SEP 06	04:33:00.00	44.800	-111.200	.00	5.00MI	USN	.....	..	DG	...	...	.....	.....	.	.....	.....
565	1959 SEP 07	11:39:30.00	45.000	-111.000	.00	5.00MI	EPB	.....	..	DG	...	...	.....	.....	.	.....	.....
566	1959 SEP 08	07:09:48.00	45.000	-111.500	.00	.....	.....	III	...	SA	...	...	.....	.....	D	.....	.....
567	1959 SEP 11	11:05:33.00	44.500	-112.000	.00	4.10ML	EPB	.....	..	SA	...	...	.....	.....	E	.....	.....
568	1959 SEP 13	19:49:34.80	44.722	-111.127	5.00	.....	.....	VI	...	SA	...	...	.....	.....	B	.....	.....
569	1959 SEP 13	20:20:00.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	H	.....	.....
570	1959 SEP 14	09:34:51.10	44.770	-111.147	5.00	.....	.....	IV	...	SA	...	...	.....	.....	B	.....	.....
571	1959 SEP 14	13:36:12.00	45.000	-111.000	.00	5.00MI	EPB	.....	..	DG	...	...	.....	.....	.	.....	.....
572	1959 SEP 19	21:53:37.30	44.828	-111.192	5.00	.....	.....	IV	...	SA	...	...	.....	.....	B	.....	.....
573	1959 SEP 24	18:55:09.00	45.000	-111.000	.00	5.00MI	EPB	.....	..	DG	...	...	.....	.....	.	.....	.....
574	1959 SEP 25	12:40:00.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	H	.....	.....
575	1959 SEP 26	09:04:00.00	44.800	-111.200	.00	.....	.....	V	...	SA	...	...	.....	.....	H	.....	.....
576	1959 SEP 28	08:05:41.00	44.780	-111.486	5.00	.....	.....	V	...	SA	...	...	.....	.....	B	.....	.....
577	1959 SEP 30	01:36:00.00	44.794	-111.039	5.00	.....	.....	V	...	SA	...	...	.....	.....	B	.....	.....
578	1959 SEP 31	03:50:00.00	45.600	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	H	.....	.....
579	1959 OCT 06	09:45:00.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	H	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
580	1959 OCT 06	11:37:21.70	44.657	-111.900	5.00	.....	.....	IV	...	SA	...	...	.....	.....	B	.....	.....
581	1959 OCT 07	03:00:00.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	H	.....	.....
582	1959 OCT 07	03:02:00.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	H	.....	.....
583	1959 OCT 12	12:45:00.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	H	.....	.....
584	1959 OCT 13	04:10:00.00	44.800	-111.200	.00	.....	.....	II	...	SA	...	...	.....	.....	H	.....	.....
585	1959 OCT 15	19:00:00.00	45.200	-112.600	.00	.....	.....	IV	...	SA	...	...	.....	.....	H	.....	.....
586	1959 OCT 15	20:25:00.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	H	.....	.....
587	1959 OCT 15	21:03:00.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	H	.....	.....
588	1959 OCT 16	16:18:00.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	H	.....	.....
589	1959 OCT 18	12:08:33.00	44.800	-111.200	.00	.....	.....	V	...	SA	...	...	.....	.....	G	.....	.....
590	1959 OCT 18	12:13:05.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
591	1959 OCT 19	09:00:04.00	44.800	-111.200	.00	.....	.....	V	...	SA	...	...	.....	.....	G	.....	.....
592	1959 OCT 19	10:12:34.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
593	1959 OCT 19	13:49:55.00	44.800	-111.200	.00	.....	.....	V	...	SA	...	...	.....	.....	G	.....	.....
594	1959 OCT 19	20:47:18.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
595	1959 OCT 19	21:47:12.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
596	1959 OCT 19	23:53:26.00	44.800	-111.200	.00	.....	.....	III	...	SA	...	...	.....	.....	H	.....	.....
597	1959 OCT 20	00:01:23.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
598	1959 OCT 20	01:34:16.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
599	1959 OCT 20	03:43:00.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	H	.....	.....
600	1959 OCT 20	04:05:00.00	44.800	-111.200	.00	.....	.....	III	...	SA	...	...	.....	.....	H	.....	.....
601	1959 OCT 20	06:36:53.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
602	1959 OCT 21	21:06:02.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
603	1959 OCT 23	00:29:31.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	H	.....	.....
604	1959 OCT 23	03:40:00.00	44.800	-111.200	.00	.....	.....	III	...	SA	...	...	.....	.....	H	.....	.....
605	1959 OCT 23	05:05:34.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	H	.....	.....
606	1959 OCT 23	05:40:00.00	44.800	-111.200	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
607	1959 OCT 23	07:31:26.00	44.800	-111.200	.00	.....	.....	II	...	SA	...	...	.....	.....	H	.....	.....
608	1959 OCT 23	08:30:00.00	44.800	-111.200	.00	.....	.....	III	...	SA	...	...	.....	.....	H	.....	.....
609	1959 OCT 23	23:32:30.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
610	1959 OCT 25	04:09:31.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
611	1959 OCT 25	06:45:23.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
612	1959 OCT 27	10:53:28.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
613	1959 OCT 27	10:59:19.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
614	1959 OCT 27	11:05:42.00	44.800	-111.200	.00	.....	.....	III	...	SA	...	...	.....	.....	H	.....	.....
615	1959 OCT 28	05:04:24.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
616	1959 OCT 28	05:09:30.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
617	1959 OCT 28	05:32:00.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
618	1959 OCT 28	06:47:49.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
619	1959 OCT 29	09:34:56.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
620	1959 OCT 29	09:35:00.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
621	1959 OCT 30	00:26:26.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
622	1959 OCT 30	01:40:50.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
623	1959 OCT 30	04:07:25.00	44.800	-111.200	.00	.....	.....	III	...	SA	...	...	.....	.....	H	.....	.....
624	1959 OCT 30	04:10:51.00	44.800	-111.200	.00	.....	.....	II	...	SA	...	...	.....	.....	H	.....	.....
625	1959 OCT 30	12:10:00.00	44.800	-111.200	.00	.....	.....	II	...	SA	...	...	.....	.....	H	.....	.....
626	1959 OCT 31	04:10:00.00	44.800	-111.200	.00	.....	.....	II	...	SA	...	...	.....	.....	H	.....	.....
627	1959 OCT 31	06:00:27.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
628	1959 OCT 31	20:30:13.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
629	1959 NOV 01	01:53:32.00	44.800	-111.200	.00	.....	.....	II	...	SA	...	...	.....	.....	H	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
630	1959 NOV 01	01:55:02.00	44.800	-111.200	.00			II	...	SA	...	...	...	...	H	.....	.....
631	1959 NOV 01	05:07:31.00	44.800	-111.200	.00			IV	...	SA	...	...	...	...	H	.....	.....
632	1959 NOV 01	12:13:10.00	44.500	-111.000	.00			III	...	SA	...	...	...	...	D	.....	.....
633	1959 NOV 01	23:03:25.00	45.000	-111.000	.00			V	...	SA	...	...	...	...	D	.....	.....
634	1959 NOV 02	05:58:59.00	44.800	-111.200	.00			IV	...	SA	...	...	...	...	H	.....	.....
635	1959 NOV 02	06:20:27.00	44.800	-111.200	.00			III	...	SA	...	...	...	...	H	.....	.....
636	1959 NOV 02	06:22:30.00	44.800	-111.200	.00			III	...	SA	...	...	...	...	H	.....	.....
637	1959 NOV 02	09:30:00.00	44.800	-111.200	.00			III	...	SA	...	...	...	...	H	.....	.....
638	1959 NOV 02	15:58:01.00	44.800	-111.200	.00			IV	...	SA	...	...	...	...	H	.....	.....
639	1959 NOV 03	10:03:00.00	44.500	-115.500	.00	5.00MI HAN		..	...	DG	...	...	...	...	-	.....	.....
640	1959 NOV 03	17:03:08.00	44.800	-111.200	.00	5.00MI SRA		..	...	DG	...	...	...	...	-	.....	.....
641	1959 NOV 05	04:41:55.00	44.800	-111.200	.00			V	...	SA	...	...	...	...	G	.....	.....
642	1959 NOV 06	18:35:00.00	44.800	-111.200	.00			III	...	SA	...	...	...	...	H	.....	.....
643	1959 NOV 10	08:45:00.00	44.800	-111.200	.00			III	...	SA	...	...	...	...	H	.....	.....
644	1959 NOV 10	08:55:00.00	44.800	-111.200	.00			III	...	SA	...	...	...	...	H	.....	.....
645	1959 NOV 10	21:40:00.00	44.800	-111.200	.00			III	...	SA	...	...	...	...	H	.....	.....
646	1959 NOV 12	20:00:00.00	44.800	-111.200	.00			II	...	SA	...	...	...	...	H	.....	.....
647	1959 NOV 15	22:58:19.00	44.800	-111.200	.00			III	...	SA	...	...	...	...	H	.....	.....
648	1959 NOV 15	23:55:00.00	44.800	-111.200	.00			IV	...	SA	...	...	...	...	G	.....	.....
649	1959 NOV 16	07:10:00.00	44.800	-111.200	.00			IV	...	SA	...	...	...	...	G	.....	.....
650	1959 NOV 16	11:00:00.00	44.800	-111.200	.00			IV	...	SA	...	...	...	...	G	.....	.....
651	1959 NOV 16	13:00:00.00	44.800	-111.200	.00			II	...	SA	...	...	...	...	H	.....	.....
652	1959 NOV 16	20:33:10.00	44.800	-111.200	.00			IV	...	SA	...	...	...	...	G	.....	.....
653	1959 NOV 16	22:26:21.00	44.800	-111.200	.00			IV	...	SA	...	...	...	...	G	.....	.....
654	1959 NOV 16	22:34:17.00	44.800	-111.200	.00			IV	...	SA	...	...	...	...	G	.....	.....
655	1959 NOV 16	22:34:35.00	44.800	-111.200	.00			IV	...	SA	...	...	...	...	G	.....	.....
656	1959 NOV 17	03:49:34.00	44.800	-111.200	.00			IV	...	SA	...	...	...	...	G	.....	.....
657	1959 NOV 17	10:56:33.00	44.800	-111.200	.00			IV	...	SA	...	...	...	...	G	.....	.....
658	1959 NOV 18	05:39:00.00	44.800	-111.200	.00			III	...	SA	...	...	...	...	G	.....	.....
659	1959 NOV 18	08:16:30.00	44.800	-111.200	.00			IV	...	SA	...	...	...	...	G	.....	.....
660	1959 NOV 19	12:14:00.00	45.700	-111.000	.00			IV	...	SA	...	...	...	...	G	.....	.....
661	1959 NOV 19	21:30:00.00	45.600	-111.200	.00			II	...	SA	...	...	...	...	G	.....	.....
662	1959 NOV 21	08:00:00.00	44.800	-111.200	.00			IV	...	SA	...	...	...	...	G	.....	.....
663	1959 NOV 21	14:00:00.00	44.800	-111.200	.00			IV	...	SA	...	...	...	...	G	.....	.....
664	1959 NOV 22	06:05:00.00	45.700	-111.000	.00			III	...	SA	...	...	...	...	G	.....	.....
665	1959 NOV 23	10:15:00.00	44.800	-111.200	.00			III	...	SA	...	...	...	...	G	.....	.....
666	1959 NOV 23	17:00:00.00	44.800	-111.200	.00			IV	...	SA	...	...	...	...	G	.....	.....
667	1959 NOV 24	04:00:00.00	44.800	-111.200	.00			II	...	SA	...	...	...	...	G	.....	.....
668	1959 NOV 25	05:15:00.00	44.800	-111.200	.00			III	...	SA	...	...	...	...	G	.....	.....
669	1959 NOV 26	22:30:00.00	44.800	-111.200	.00			IV	...	SA	...	...	...	...	G	.....	.....
670	1959 NOV 27	08:30:00.00	44.800	-111.200	.00			IV	...	SA	...	...	...	...	G	.....	.....
671	1959 NOV 27	08:40:00.00	44.800	-111.200	.00			III	...	SA	...	...	...	...	G	.....	.....
672	1959 NOV 27	08:54:00.00	44.800	-111.200	.00			III	...	SA	...	...	...	...	G	.....	.....
673	1959 NOV 27	09:38:00.00	44.800	-111.200	.00			III	...	SA	...	...	...	...	G	.....	.....
674	1959 NOV 27	13:30:00.00	44.800	-111.200	.00			II	...	SA	...	...	...	...	G	.....	.....
675	1959 NOV 29	22:25:30.00	44.800	-111.200	.00			IV	...	SA	...	...	...	...	G	.....	.....
676	1959 NOV 29	22:33:01.00	44.800	-111.200	.00			IV	...	SA	...	...	...	...	G	.....	.....
677	1959 NOV 30	09:54:00.00	44.800	-111.200	.00			IV	...	SA	...	...	...	...	G	.....	.....
678	1959 NOV 30	14:49:00.00	44.800	-111.200	.00			IV	...	SA	...	...	...	...	G	.....	.....
679	1959 DEC 01	00:00:00.00	44.800	-111.200	.00			IV	...	SA	...	...	...	...	G	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
680	1959 DEC 01	01:13:43.00	46.400	-112.000	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
681	1959 DEC 01	03:00:00.00	44.800	-111.200	.00	.....	.....	II	...	SA	...	...	.....	.....	G	.....	.....
682	1959 DEC 03	06:04:34.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
683	1959 DEC 03	06:41:43.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
684	1959 DEC 04	20:56:47.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
685	1959 DEC 05	03:10:00.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
686	1959 DEC 05	03:15:00.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
687	1959 DEC 05	09:15:00.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
688	1959 DEC 06	01:53:33.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
689	1959 DEC 07	06:30:00.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
690	1959 DEC 07	06:50:00.00	44.800	-111.200	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
691	1959 DEC 08	06:01:17.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
692	1959 DEC 08	07:14:25.00	44.800	-111.200	.00	.....	.....	V	...	SA	...	...	.....	.....	G	.....	.....
693	1959 DEC 08	14:44:01.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
694	1959 DEC 08	21:15:00.00	44.800	-111.200	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
695	1959 DEC 09	05:45:00.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
696	1959 DEC 10	01:00:00.00	44.800	-111.200	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
697	1959 DEC 10	01:40:00.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
698	1959 DEC 10	02:00:00.00	44.800	-111.200	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
699	1959 DEC 10	13:45:00.00	44.800	-111.200	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
700	1959 DEC 10	14:03:01.00	44.500	-111.000	.00	.....	.....	IV	...	SA	...	...	.....	.....	D	.....	.....
701	1959 DEC 11	08:40:00.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
702	1959 DEC 11	13:38:00.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
703	1959 DEC 12	06:22:33.00	44.800	-111.200	.00	.....	.....	V	...	SA	...	...	.....	.....	G	.....	.....
704	1959 DEC 12	13:30:00.00	44.800	-111.200	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
705	1959 DEC 12	17:39:31.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
706	1959 DEC 12	17:46:55.00	44.800	-111.200	.00	.....	.....	V	...	SA	...	...	.....	.....	G	.....	.....
707	1959 DEC 13	01:41:51.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
708	1959 DEC 13	07:50:20.00	45.000	-110.500	.00	.....	.....	V	...	SA	...	...	.....	.....	D	.....	.....
709	1959 DEC 13	07:52:00.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
710	1959 DEC 13	07:57:04.00	44.800	-111.200	.00	.....	.....	V	...	SA	...	...	.....	.....	G	.....	.....
711	1959 DEC 13	07:59:46.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
712	1959 DEC 13	08:05:10.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
713	1959 DEC 13	08:54:53.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
714	1959 DEC 13	10:15:00.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
715	1959 DEC 13	11:39:31.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
716	1959 DEC 13	14:20:00.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
717	1959 DEC 13	18:48:00.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
718	1959 DEC 14	02:53:39.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
719	1959 DEC 14	06:35:00.00	44.800	-111.200	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
720	1959 DEC 14	07:19:51.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
721	1959 DEC 14	13:34:03.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
722	1959 DEC 14	14:04:49.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
723	1959 DEC 14	16:30:00.00	44.800	-111.200	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
724	1959 DEC 14	18:30:00.00	44.800	-111.200	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
725	1959 DEC 15	09:09:00.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
726	1959 DEC 15	09:35:36.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
727	1959 DEC 15	09:38:23.00	45.000	-111.000	.00	.....	.....	IV	...	SA	...	...	.....	.....	D	.....	.....
728	1959 DEC 15	09:41:19.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
729	1959 DEC 15	12:40:00.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
730	1959 DEC 15	15:16:48.00	44.800	-111.200	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
731	1959 DEC 15	16:45:00.00	44.800	-111.200	.00			III	...	SA	...	...	.....	.....	G	.....	.....
732	1959 DEC 15	16:47:00.00	44.800	-111.200	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
733	1959 DEC 17	07:00:00.00	44.800	-111.200	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
734	1959 DEC 17	12:45:00.00	44.800	-111.200	.00			III	...	SA	...	...	.....	.....	G	.....	.....
735	1959 DEC 18	08:50:00.00	44.800	-111.200	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
736	1959 DEC 18	09:11:55.00	45.500	-111.000	.00			IV	...	SA	...	...	.....	.....	D	.....	.....
737	1959 DEC 18	09:30:00.00	44.800	-111.200	.00			III	...	SA	...	...	.....	.....	G	.....	.....
738	1959 DEC 18	13:35:00.00	44.800	-111.200	.00			III	...	SA	...	...	.....	.....	G	.....	.....
739	1959 DEC 18	19:00:00.00	44.800	-111.200	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
740	1959 DEC 20	06:40:00.00	44.800	-111.200	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
741	1959 DEC 23	10:05:00.00	44.800	-111.200	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
742	1959 DEC 25	06:40:00.00	44.800	-111.200	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
743	1959 DEC 25	14:20:00.00	44.870	-111.580	.00			IV	...	SA	...	...	.....	.....	D	.....	.....
744	1959 DEC 29	08:00:00.00	44.800	-111.200	.00			III	...	SA	...	...	.....	.....	G	.....	.....
745	1959 DEC 29	17:00:00.00	44.800	-111.200	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
746	1959 DEC 30	19:50:00.00	44.900	-111.580	.00			IV	...	SA	...	...	.....	.....	D	.....	.....
747	1960 JAN 02	04:09:35.00	45.000	-111.500	.00			III	...	SA	...	...	.....	.....	D	.....	.....
748	1960 JAN 02	10:40:00.00	44.900	-110.700	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
749	1960 JAN 03	00:17:05.00	45.000	-111.500	.00			IV	...	SA	...	...	.....	.....	D	.....	.....
750	1960 JAN 03	09:57:32.00	44.500	-111.500	.00	4.50ML EPB		IV	...	SA	...	...	.....	.....	D	.....	.....
751	1960 JAN 03	11:03:07.00	44.900	-110.700	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
752	1960 JAN 03	19:40:48.00	44.500	-111.000	.00			IV	...	SA	...	...	.....	.....	D	.....	.....
753	1960 JAN 03	20:37:48.00	45.000	-111.000	.00			IV	...	SA	...	...	.....	.....	D	.....	.....
754	1960 JAN 03	21:58:10.00	44.900	-110.700	.00			III	...	SA	...	...	.....	.....	G	.....	.....
755	1960 JAN 04	15:09:33.00	44.700	-111.100	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
756	1960 JAN 05	04:03:34.00	44.500	-111.500	.00	4.50ML EPB		V	...	SA	...	...	.....	.....	D	.....	.....
757	1960 JAN 09	04:26:00.00	44.900	-110.700	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
758	1960 JAN 10	13:00:00.00	45.500	-111.800	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
759	1960 JAN 11	11:28:43.00	44.700	-111.100	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
760	1960 JAN 12	09:15:00.00	45.500	-111.800	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
761	1960 JAN 14	03:44:01.00	45.500	-111.800	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
762	1960 JAN 18	12:42:55.00	45.600	-111.200	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
763	1960 JAN 20	06:50:00.00	44.900	-110.700	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
764	1960 JAN 20	07:15:00.00	44.900	-110.700	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
765	1960 JAN 20	11:23:00.00	44.900	-110.700	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
766	1960 JAN 21	22:37:28.00	44.500	-110.500	.00	5.00MI EPB		..	...	DG	...	...	.....	.....	.	.....	.....
767	1960 JAN 22	14:50:00.00	44.900	-110.700	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
768	1960 JAN 23	15:03:20.00	45.000	-111.500	.00			IV	...	SA	...	...	.....	.....	D	.....	.....
769	1960 JAN 23	15:33:28.00	44.700	-111.100	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
770	1960 JAN 23	16:05:37.00	44.700	-111.100	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
771	1960 JAN 23	19:18:52.00	44.700	-111.100	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
772	1960 JAN 23	19:20:14.00	44.700	-111.100	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
773	1960 JAN 25	14:14:45.00	45.500	-111.700	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
774	1960 JAN 25	14:14:48.00	45.500	-111.700	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
775	1960 JAN 25	19:31:08.00	44.900	-110.700	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
776	1960 JAN 25	19:34:00.00	44.900	-110.700	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
777	1960 JAN 27	07:15:00.00	45.500	-111.800	.00			III	...	SA	...	...	.....	.....	G	.....	.....
778	1960 JAN 29	13:22:46.00	44.700	-111.100	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
779	1960 JAN 29	21:39:01.00	44.700	-111.100	.00			IV	...	SA	...	...	.....	.....	G	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
780	1960 FEB 01	09:16:29.00	44.700	-111.100	.00			IV	...	SA	...	...	...	...	G	.....	.....
781	1960 FEB 01	12:51:23.00	45.500	-111.800	.00			III	...	SA	...	...	...	...	G	.....	.....
782	1960 FEB 02	22:25:00.00	44.700	-111.100	.00			IV	...	SA	...	...	...	...	G	.....	.....
783	1960 FEB 03	18:30:00.00	45.500	-111.800	.00			IV	...	SA	...	...	...	...	G	.....	.....
784	1960 FEB 16	03:23:00.00	44.900	-110.700	.00			IV	...	SA	...	...	...	...	G	.....	.....
785	1960 FEB 16	03:34:00.00	44.900	-110.700	.00			IV	...	SA	...	...	...	...	G	.....	.....
786	1960 FEB 16	06:50:00.00	44.900	-110.700	.00			IV	...	SA	...	...	...	...	G	.....	.....
787	1960 FEB 16	09:00:00.00	44.900	-110.700	.00			IV	...	SA	...	...	...	...	G	.....	.....
788	1960 FEB 17	16:52:35.00	45.000	-111.000	.00			IV	...	SA	...	...	...	...	D	.....	.....
789	1960 FEB 18	01:43:27.00	45.000	-110.500	.00			IV	...	SA	...	...	...	...	D	.....	.....
790	1960 FEB 19	00:30:40.00	44.900	-111.600	.00			IV	...	SA	...	...	...	...	G	.....	.....
791	1960 FEB 21	02:27:09.00	44.900	-111.600	.00			IV	...	SA	...	...	...	...	G	.....	.....
792	1960 FEB 23	09:00:00.00	44.700	-111.100	.00			IV	...	SA	...	...	...	...	G	.....	.....
793	1960 FEB 24	05:23:00.00	44.900	-110.700	.00			IV	...	SA	...	...	...	...	G	.....	.....
794	1960 FEB 24	10:10:00.00	44.900	-110.700	.00			IV	...	SA	...	...	...	...	G	.....	.....
795	1960 FEB 28	05:30:00.00	44.700	-111.100	.00			III	...	SA	...	...	...	...	G	.....	.....
796	1960 FEB 28	07:40:00.00	44.700	-111.100	.00			IV	...	SA	...	...	...	...	G	.....	.....
797	1960 FEB 28	09:37:10.00	45.000	-111.500	.00			IV	...	SA	...	...	...	...	D	.....	.....
798	1960 MAR 01	07:16:00.00	44.900	-110.700	.00			IV	...	SA	...	...	...	...	G	.....	.....
799	1960 MAR 04	12:07:06.00	44.900	-111.600	.00			IV	...	SA	...	...	...	...	G	.....	.....
800	1960 MAR 08	14:10:46.00	44.500	-111.000	.00			IV	...	SA	...	...	...	...	D	.....	.....
801	1960 MAR 08	14:13:45.00	44.500	-111.000	.00			IV	...	SA	...	...	...	...	D	.....	.....
802	1960 MAR 11	05:45:00.00	44.900	-110.700	.00			IV	...	SA	...	...	...	...	G	.....	.....
803	1960 MAR 11	06:10:00.00	44.900	-110.700	.00			IV	...	SA	...	...	...	...	G	.....	.....
804	1960 MAR 13	10:30:00.00	44.900	-110.700	.00			IV	...	SA	...	...	...	...	G	.....	.....
805	1960 MAR 17	04:40:00.00	44.900	-110.700	.00			IV	...	SA	...	...	...	...	G	.....	.....
806	1960 MAR 17	12:35:00.00	44.900	-110.700	.00			IV	...	SA	...	...	...	...	G	.....	.....
807	1960 MAR 20	07:19:25.00	45.500	-111.800	.00			III	...	SA	...	...	...	...	G	.....	.....
808	1960 MAR 20	10:00:00.00	44.900	-110.700	.00			IV	...	SA	...	...	...	...	G	.....	.....
809	1960 MAR 20	19:15:33.00	44.900	-111.600	.00			III	...	SA	...	...	...	...	G	.....	.....
810	1960 MAR 21	02:50:00.00	44.900	-110.700	.00			IV	...	SA	...	...	...	...	G	.....	.....
811	1960 MAR 21	04:15:00.00	44.900	-110.700	.00			IV	...	SA	...	...	...	...	G	.....	.....
812	1960 MAR 23	03:15:13.00	44.500	-111.000	.00	5.00MI EPB		..	...	DG	...	...	...	...	.	.....	.....
813	1960 MAR 27	02:20:00.00	44.900	-110.700	.00			II	...	SA	...	...	...	...	G	.....	.....
814	1960 MAR 27	02:35:00.00	44.900	-110.700	.00			II	...	SA	...	...	...	...	G	.....	.....
815	1960 MAR 31	19:22:20.00	44.700	-111.100	.00			IV	...	SA	...	...	...	...	G	.....	.....
816	1960 APR 01	01:30:00.00	44.700	-111.100	.00			II	...	SA	...	...	...	...	G	.....	.....
817	1960 APR 01	04:50:07.00	44.700	-111.100	.00			III	...	SA	...	...	...	...	G	.....	.....
818	1960 APR 03	10:00:00.00	44.900	-110.700	.00			IV	...	SA	...	...	...	...	G	.....	.....
819	1960 APR 03	10:15:00.00	44.900	-110.700	.00			IV	...	SA	...	...	...	...	G	.....	.....
820	1960 APR 03	11:30:00.00	44.900	-110.700	.00			IV	...	SA	...	...	...	...	G	.....	.....
821	1960 APR 04	04:10:00.00	44.900	-110.700	.00			IV	...	SA	...	...	...	...	G	.....	.....
822	1960 APR 04	06:00:00.00	44.900	-110.700	.00			IV	...	SA	...	...	...	...	G	.....	.....
823	1960 APR 05	12:38:38.00	44.700	-111.100	.00			IV	...	SA	...	...	...	...	G	.....	.....
824	1960 APR 06	18:52:19.00	44.700	-111.100	.00			IV	...	SA	...	...	...	...	G	.....	.....
825	1960 APR 07	06:55:00.00	44.700	-111.100	.00			IV	...	SA	...	...	...	...	G	.....	.....
826	1960 APR 07	10:12:55.00	44.700	-111.100	.00			IV	...	SA	...	...	...	...	G	.....	.....
827	1960 APR 07	11:55:04.00	44.700	-111.100	.00			III	...	SA	...	...	...	...	G	.....	.....
828	1960 APR 08	14:33:11.00	44.700	-111.100	.00			IV	...	SA	...	...	...	...	G	.....	.....
829	1960 APR 10	07:57:09.00	45.500	-111.700	.00			IV	...	SA	...	...	...	...	G	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
830	1960 APR 10	07:57:13.00	45.500	-111.700	.00			III	...	SA	...	...	.....	.....	G	.....	.....
831	1960 APR 10	13:16:22.00	45.500	-111.700	.00			II	...	SA	...	...	.....	.....	G	.....	.....
832	1960 APR 10	13:22:51.00	45.500	-111.700	.00			II	...	SA	...	...	.....	.....	G	.....	.....
833	1960 APR 11	05:54:46.00	44.700	-111.100	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
834	1960 APR 11	05:58:12.00	44.700	-111.100	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
835	1960 APR 11	06:01:27.00	44.700	-111.100	.00			III	...	SA	...	...	.....	.....	G	.....	.....
836	1960 APR 11	10:21:29.00	44.700	-111.100	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
837	1960 APR 13	10:40:42.00	44.900	-110.700	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
838	1960 APR 13	14:35:08.00	44.700	-111.100	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
839	1960 APR 16	14:21:59.00	44.900	-111.600	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
840	1960 APR 17	11:23:12.00	44.900	-111.600	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
841	1960 APR 17	12:00:00.00	44.900	-110.700	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
842	1960 APR 18	04:10:00.00	44.900	-110.700	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
843	1960 APR 18	04:55:00.00	44.900	-110.700	.00			III	...	SA	...	...	.....	.....	G	.....	.....
844	1960 APR 19	06:40:00.00	44.900	-110.700	.00			II	...	SA	...	...	.....	.....	G	.....	.....
845	1960 APR 19	09:43:27.00	44.900	-111.600	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
846	1960 APR 21	03:52:38.00	45.500	-111.800	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
847	1960 APR 21	17:49:30.00	45.000	-111.000	.00			V	...	SA	...	...	.....	.....	D	.....	.....
848	1960 APR 21	17:57:55.00	45.000	-111.000	.00			V	...	SA	...	...	.....	.....	D	.....	.....
849	1960 APR 23	08:06:25.00	44.800	-111.200	.00			III	...	SA	...	...	.....	.....	G	.....	.....
850	1960 APR 25	03:10:00.00	44.900	-110.700	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
851	1960 APR 26	00:39:03.00	44.700	-111.100	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
852	1960 APR 26	11:32:50.00	44.700	-111.100	.00			III	...	SA	...	...	.....	.....	G	.....	.....
853	1960 APR 26	11:53:10.00	44.700	-111.100	.00			III	...	SA	...	...	.....	.....	G	.....	.....
854	1960 APR 26	11:55:06.00	44.700	-111.100	.00			III	...	SA	...	...	.....	.....	G	.....	.....
855	1960 APR 26	12:04:25.00	44.700	-111.100	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
856	1960 APR 27	01:17:00.00	44.700	-111.100	.00			III	...	SA	...	...	.....	.....	G	.....	.....
857	1960 APR 27	04:32:30.00	44.500	-111.000	.00			V	...	SA	...	...	.....	.....	D	.....	.....
858	1960 APR 27	08:00:00.00	44.900	-110.700	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
859	1960 APR 27	08:10:00.00	44.900	-110.700	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
860	1960 APR 27	11:20:00.00	44.700	-111.100	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
861	1960 MAY 05	03:39:50.00	46.000	-111.500	.00			IV	...	SA	...	...	.....	.....	D	.....	.....
862	1960 MAY 05	09:07:00.00	44.900	-110.700	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
863	1960 MAY 05	09:10:00.00	44.900	-110.700	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
864	1960 MAY 05	09:20:00.00	44.900	-110.700	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
865	1960 MAY 05	10:15:00.00	44.900	-110.700	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
866	1960 MAY 05	10:18:00.00	44.900	-110.700	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
867	1960 MAY 05	11:30:00.00	44.900	-110.700	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
868	1960 MAY 05	12:18:00.00	44.900	-110.700	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
869	1960 MAY 05	16:45:00.00	44.900	-110.500	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
870	1960 MAY 09	23:45:53.00	44.500	-111.500	.00	4.10ML EPB		III	...	SA	...	...	.....	.....	D	.....	.....
871	1960 MAY 15	10:47:47.00	44.700	-111.100	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
872	1960 MAY 15	11:34:48.10	44.758	-111.187	5.00			IV	...	SA	...	...	.....	.....	B	.....	.....
873	1960 MAY 16	02:09:21.00	44.700	-111.100	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
874	1960 MAY 16	03:33:22.00	44.700	-110.500	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
875	1960 MAY 16	08:25:00.00	44.900	-110.700	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
876	1960 MAY 16	10:30:00.00	44.900	-110.700	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
877	1960 MAY 16	16:15:00.00	44.700	-111.100	.00			III	...	SA	...	...	.....	.....	G	.....	.....
878	1960 MAY 17	22:04:34.00	44.900	-111.600	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
879	1960 MAY 20	17:53:59.70	44.649	-110.840	5.00			IV	...	SA	...	...	.....	.....	B	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
880	1960 MAY 20	18:36:06.00	45.000	-111.500	.00	.....	.....	IV	...	SA	...	...	.....	.....	D	.....	.....
881	1960 MAY 20	18:42:22.00	45.000	-111.500	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
882	1960 MAY 20	18:55:00.00	44.700	-110.500	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
883	1960 MAY 20	20:40:58.00	44.700	-110.500	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
884	1960 MAY 21	06:45:00.00	44.600	-110.900	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
885	1960 MAY 23	09:03:42.00	44.700	-110.500	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
886	1960 MAY 23	09:47:06.00	44.700	-110.500	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
887	1960 MAY 23	10:16:25.00	44.700	-110.500	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
888	1960 MAY 23	10:19:07.00	44.700	-110.500	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
889	1960 MAY 23	20:20:00.00	44.700	-111.100	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
890	1960 MAY 24	04:20:11.00	44.700	-111.100	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
891	1960 JUN 02	07:32:22.00	44.800	-111.200	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
892	1960 JUN 06	03:45:00.00	44.900	-110.700	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
893	1960 JUN 06	04:55:00.00	44.900	-110.700	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
894	1960 JUN 06	19:00:00.00	45.000	-111.600	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
895	1960 JUN 07	07:10:00.00	44.900	-110.700	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
896	1960 JUN 07	07:50:00.00	44.900	-110.700	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
897	1960 JUN 07	11:25:00.00	44.900	-110.700	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
898	1960 JUN 07	20:30:38.00	46.000	-112.500	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
899	1960 JUN 08	09:04:59.00	44.700	-111.100	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
900	1960 JUN 09	11:19:06.00	44.989	-111.660	5.00	.....	.....	IV	...	SA	...	...	.....	.....	B	.....	.....
901	1960 JUN 10	01:50:00.00	44.900	-110.700	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
902	1960 JUN 10	20:01:14.00	44.800	-111.200	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
903	1960 JUN 13	14:59:44.30	44.780	-111.020	5.00	.....	.....	IV	...	SA	...	...	.....	.....	B	.....	.....
904	1960 JUN 13	18:00:00.00	44.900	-110.700	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
905	1960 JUN 15	08:05:00.00	44.900	-110.700	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
906	1960 JUN 20	05:59:57.00	44.700	-110.500	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
907	1960 JUN 21	15:27:13.00	44.900	-111.600	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
908	1960 JUN 22	13:05:44.00	44.900	-111.600	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
909	1960 JUN 27	12:09:21.00	44.600	-110.400	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
910	1960 JUN 28	00:00:00.00	44.600	-110.400	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
911	1960 JUN 30	08:54:26.00	44.800	-110.900	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
912	1960 JUN 30	09:01:13.00	44.800	-110.900	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
913	1960 JUN 30	09:18:40.00	44.800	-110.900	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
914	1960 JUL 08	07:28:07.00	44.500	-111.500	.00	4.80ML EPB	.....	IV	...	SA	...	...	.....	.....	D	.....	.....
915	1960 JUL 16	21:51:15.00	44.900	-111.600	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
916	1960 JUL 18	23:17:30.00	44.500	-110.500	.00	.....	.....	IV	...	SA	...	...	.....	.....	D	.....	.....
917	1960 JUL 19	04:50:00.00	44.800	-110.900	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
918	1960 JUL 24	08:05:00.00	42.500	-111.400	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
919	1960 JUL 24	08:25:00.00	42.500	-111.400	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
920	1960 JUL 28	17:00:00.00	44.800	-110.900	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
921	1960 AUG 07	16:27:16.20	42.400	-111.500	.00	5.00UK UU	.....	..	...	DG	...	...	.....	.....	.	.....	.....
922	1960 AUG 07	18:43:00.00	44.800	-110.400	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
923	1960 AUG 07	19:20:15.10	42.500	-111.400	49.00	.....	.....	IV	...	SA	...	...	.....	.....	C	.....	.....
924	1960 AUG 08	09:27:26.00	42.400	-111.500	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
925	1960 AUG 10	06:30:00.00	44.900	-110.700	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
926	1960 AUG 10	07:41:35.30	42.500	-111.500	18.00	.....	.....	V	...	SA	...	...	.....	.....	C	.....	.....
927	1960 AUG 17	20:45:00.00	44.700	-111.100	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
928	1960 AUG 19	08:30:00.00	44.800	-110.900	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
929	1960 AUG 20	08:01:54.30	42.300	-111.300	41.00	.....	.....	V	...	SA	...	...	.....	.....	C	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
930	1960 AUG 20	10:11:40.90	42.500	-111.600	51.00	.....	.....	III	...	SA	...	...	.....	.....	C	.....	.....
931	1960 AUG 20	11:01:59.00	42.400	-111.500	49.00	.....	.....	III	...	SA	...	...	.....	.....	C	.....	.....
932	1960 AUG 28	09:30:00.00	44.800	-110.900	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
933	1960 SEP 29	10:32:21.00	44.900	-111.300	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
934	1960 OCT 24	02:39:16.00	44.900	-110.700	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
935	1960 NOV 01	21:57:11.00	44.900	-111.600	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
936	1960 NOV 01	22:26:52.70	45.300	-111.200	38.00	.....	.....	IV	...	SA	...	...	.....	.....	D	.....	.....
937	1960 NOV 03	15:07:08.00	44.900	-111.600	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
938	1960 DEC 04	08:08:34.00	44.900	-110.400	.00	.....	.....	III	...	SA	...	...	.....	.....	D	.....	.....
939	1960 DEC 18	11:52:59.00	45.400	-111.500	.00	.....	.....	IV	...	SA	...	...	.....	.....	D	.....	.....
940	1961 JAN 17	06:50:42.00	44.700	-111.100	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
941	1961 FEB 22	10:15:00.00	44.900	-111.300	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
942	1961 FEB 22	11:00:00.00	44.900	-111.300	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
943	1961 FEB 23	03:12:54.50	45.000	-111.700	25.00	.....	.....	IV	...	SA	...	...	.....	.....	D	.....	.....
944	1961 FEB 23	17:45:00.00	44.900	-111.300	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
945	1961 FEB 23	18:30:00.00	44.900	-111.300	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
946	1961 FEB 24	21:30:00.00	44.900	-111.300	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
947	1961 FEB 26	20:30:00.00	44.900	-111.300	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
948	1961 FEB 26	21:30:00.00	44.900	-111.300	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
949	1961 MAR 10	06:00:00.00	44.900	-111.300	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
950	1961 MAR 10	19:30:00.00	44.900	-111.300	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
951	1961 MAR 13	19:28:08.00	44.900	-111.300	.00	.....	.....	V	...	SA	...	...	.....	.....	G	.....	.....
952	1961 APR 07	05:50:40.60	44.800	-112.000	25.00	.....	.....	V	...	SA	...	...	.....	.....	D	.....	.....
953	1961 APR 08	06:28:11.00	45.900	-111.300	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
954	1961 APR 08	06:28:28.00	45.900	-111.300	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
955	1961 JUN 16	15:51:00.00	44.600	-110.900	.00	.....	.....	II	...	SA	...	...	.....	.....	G	.....	.....
956	1961 JUN 26	13:05:00.00	44.900	-111.600	.00	.....	.....	V	...	SA	...	...	.....	.....	G	.....	.....
957	1961 JUN 29	11:45:00.00	44.700	-110.500	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
958	1961 JUL 12	21:35:00.00	44.400	-110.800	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
959	1961 JUL 29	21:05:00.00	44.400	-110.800	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
960	1961 JUL 29	21:15:00.00	44.400	-110.800	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
961	1961 JUL 29	21:23:00.00	44.400	-110.800	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
962	1961 JUL 29	21:45:00.00	44.400	-110.800	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
963	1961 JUL 29	21:51:00.00	44.400	-110.800	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
964	1961 JUL 29	21:57:00.00	44.400	-110.800	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
965	1961 JUL 29	21:58:00.00	44.400	-110.800	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
966	1961 JUL 29	22:14:00.00	44.400	-110.800	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
967	1961 JUL 29	22:38:00.00	44.400	-110.800	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
968	1961 JUL 29	22:40:00.00	44.400	-110.800	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
969	1961 JUL 29	23:15:00.00	44.400	-110.800	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
970	1961 JUL 29	23:56:00.00	44.400	-110.800	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
971	1961 SEP 11	03:15:00.00	44.900	-110.700	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
972	1961 SEP 11	05:20:00.00	44.900	-110.700	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
973	1961 SEP 11	06:15:00.00	44.900	-110.700	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
974	1961 OCT 26	23:59:00.00	44.400	-110.800	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
975	1961 OCT 27	00:01:00.00	44.400	-110.800	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
976	1961 OCT 27	00:02:00.00	44.400	-110.800	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
977	1961 NOV 01	06:55:00.00	44.900	-110.700	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
978	1961 NOV 02	06:00:00.00	45.500	-111.800	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
979	1961 NOV 05	09:53:08.30	45.000	-111.000	25.00	.....	.....	IV	...	SA	...	...	.....	.....	D	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
980	1961 NOV 26	20:30:36.00	45.300	-111.900	.00			III	...	SA	...	...	.....	.....	G	.....	.....
981	1961 DEC 03	20:15:00.00	44.900	-111.300	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
982	1961 DEC 04	01:41:18.00	45.300	-111.900	.00			V	...	SA	...	...	.....	.....	G	.....	.....
983	1961 DEC 04	03:24:50.00	45.300	-111.900	.00			V	...	SA	...	...	.....	.....	G	.....	.....
984	1961 DEC 04	04:35:08.00	44.700	-111.100	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
985	1961 DEC 04	08:19:53.00	45.300	-111.900	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
986	1961 DEC 04	11:00:00.00	45.300	-111.900	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
987	1961 DEC 04	13:00:00.00	45.300	-111.900	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
988	1962 JAN 05	05:17:47.00	45.200	-111.700	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
989	1962 JAN 18	14:32:13.00	44.700	-111.100	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
990	1962 FEB 08	23:13:17.00	44.900	-111.600	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
991	1962 FEB 25	17:17:38.90	45.200	-111.200	25.00	4.33MI CGS		..	...	DG	8	...	.....	.....	.	.....	.....
992	1962 MAR 10	20:12:35.70	44.733	-116.217	.00	2.60 DOGMI	.00	..	...	DO	...	...	.....	.....	.	.....	.....
993	1962 MAR 11	19:25:14.10	44.683	-116.117	.00	2.70 DOGMI	.00	..	...	DO	...	...	.....	.....	.	.....	.....
994	1962 MAR 19	23:53:35.00	45.200	-111.700	.00			III	...	SA	...	...	.....	.....	G	.....	.....
995	1962 MAR 25	05:05:00.00	45.300	-111.900	.00			III	...	SA	...	...	.....	.....	G	.....	.....
996	1962 APR 03	22:57:56.60	44.900	-111.600	.00			III	...	SA	...	...	.....	.....	G	.....	.....
997	1962 APR 05	12:09:17.80	44.900	-111.600	.00			III	...	SA	...	...	.....	.....	G	.....	.....
998	1962 APR 07	06:07:29.30	44.900	-111.600	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
999	1962 APR 11	19:28:24.00	44.900	-111.600	.00			III	...	SA	...	...	.....	.....	G	.....	.....
1000	1962 APR 21	03:41:42.00	44.700	-112.700	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
1001	1962 MAY 31	01:22:13.00	44.900	-111.600	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
1002	1962 JUL 14	13:00:00.00	45.000	-111.100	.00			III	...	SA	...	...	.....	.....	G	.....	.....
1003	1962 JUL 15	11:59:21.90	45.000	-110.200	25.00			III	...	SA	...	...	.....	.....	D	.....	.....
1004	1962 AUG 18	04:18:06.80	44.983	-116.817	.00	2.70 DOGMI	.00	..	...	DO	...	...	.....	.....	.	.....	.....
1005	1962 AUG 24	05:00:00.00	43.800	-111.100	.00			III	...	SA	...	...	.....	.....	F	.....	.....
1006	1962 AUG 26	12:15:00.00	44.700	-110.500	.00	4.33MI OSU		..	...	DG	...	...	.....	.....	.	.....	.....
1007	1962 AUG 26	13:22:00.00	44.700	-110.500	.00	4.33MI SRA		..	...	DG	...	...	.....	.....	.	.....	.....
1008	1962 AUG 30	13:35:24.41	42.035	-111.741	7.00	5.70mb		..	...	DG	25	...	.....	.....	.	.....	.....
1009	1962 AUG 30	22:51:15.60	41.730	-111.860	20.00	3.80ML UU		..	...	DG	...	...	.....	.....	.	.....	.....
1010	1962 AUG 31	01:00:00.00	42.000	-111.700	.00	3.67MI SRA		..	...	DG	...	...	.....	.....	.	.....	.....
1011	1962 AUG 31	10:33:32.20	42.130	-111.970	20.00	3.90ML UU		..	...	DG	...	...	.....	.....	.	.....	.....
1012	1962 SEP 05	03:00:00.00	42.000	-111.700	.00	4.33MI SRA		..	...	DG	...	...	.....	.....	.	.....	.....
1013	1962 SEP 05	16:04:27.78	40.715	-112.088	7.00	5.20ML UU		..	...	DG	...	...	.....	.....	.	.....	.....
1014	1962 SEP 07	00:00:00.00	42.000	-111.700	.00			IV	...	SA	...	...	.....	.....	F	.....	.....
1015	1962 SEP 07	23:19:14.00	41.100	-116.800	.00	4.60ML EPB		..	...	DG	...	...	.....	.....	.	.....	.....
1016	1962 SEP 09	14:38:08.92	41.846	-111.769	7.00	3.10ML UU		..	...	DG	7	...	.....	.....	.	.....	.....
1017	1962 SEP 14	13:16:54.94	42.117	-111.713	7.00	2.80ML UU		..	...	DG	8	...	.....	.....	.	.....	.....
1018	1962 SEP 24	15:25:00.00	44.900	-111.600	.00			III	...	SA	...	...	.....	.....	G	.....	.....
1019	1962 OCT 06	09:28:17.40	43.600	-110.800	33.00			IV	...	SA	...	...	.....	.....	D	.....	.....
1020	1962 OCT 09	11:50:00.00	44.900	-110.700	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
1021	1962 OCT 15	15:45:00.00	44.900	-110.700	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
1022	1962 OCT 18	17:00:00.00	44.900	-110.700	.00			IV	...	SA	...	...	.....	.....	G	.....	.....
1023	1962 OCT 18	18:03:18.50	44.300	-115.300	33.00			III	...	SA	...	...	.....	.....	D	.....	.....
1024	1962 OCT 18	18:56:32.30	44.600	-116.000	33.00			III	...	SA	...	...	.....	.....	E	.....	.....
1025	1962 OCT 18	20:31:07.10	44.300	-115.300	33.00			III	...	SA	...	...	.....	.....	D	.....	.....
1026	1962 OCT 19	03:45:00.00	44.215	-114.940	.00	.00	.00	III	...	UE	...	...	.....	.....	.	.....	.....
1027	1962 OCT 19	10:43:25.00	44.600	-115.600	33.00			III	...	SA	...	...	.....	.....	D	.....	.....
1028	1962 OCT 27	22:07:05.00	44.167	-116.467	.00	3.00 DOGMI	.00	..	...	DO	...	...	.....	.....	.	.....	.....
1029	1962 NOV 14	11:12:38.20	44.983	-116.817	.00	2.50 DOGMI	.00	..	...	DO	...	...	.....	.....	.	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
1030	1963 JAN 06	18:07:43.50	44.654	-112.274	9.00	4.30Mn DW	.....	..	...	DG	21	...	.....	.....	.	.....	.....
1031	1963 JAN 09	19:25:21.00	44.900	-111.600	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
1032	1963 JAN 09	19:40:16.00	44.900	-111.600	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
1033	1963 JAN 09	19:46:29.00	44.900	-111.600	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
1034	1963 JAN 24	14:15:00.00	44.900	-110.700	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
1035	1963 JAN 27	15:24:43.80	44.190	-114.528	11.00	4.80Mn DW	.....	..	...	DG	31	...	.....	.....	.	.....	.....
1036	1963 JAN 30	05:50:59.50	45.000	-110.800	33.00	4.33MI CGS	.....	..	...	DG	8	...	.....	.....	.	.....	.....
1037	1963 JAN 30	13:13:46.00	44.900	-110.700	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
1038	1963 FEB 01	16:38:56.10	44.197	-114.486	8.00	4.40Mn DW	.....	..	...	DG	13	...	.....	.....	.	.....	.....
1039	1963 FEB 01	17:30:00.00	44.300	-114.500	.00	.....	.....	III	...	SA	...	...	.....	.....	F	.....	.....
1040	1963 FEB 01	18:15:00.00	44.300	-114.500	.00	.....	.....	III	...	SA	...	...	.....	.....	F	.....	.....
1041	1963 FEB 05	11:00:00.00	44.300	-114.500	.00	.....	.....	III	...	SA	...	...	.....	.....	F	.....	.....
1042	1963 FEB 05	19:30:00.00	44.300	-114.500	.00	.....	.....	IV	...	SA	...	...	.....	.....	F	.....	.....
1043	1963 FEB 16	03:01:41.00	46.100	-111.000	33.00	4.50mb	.....	..	...	DG	21	...	.....	.....	.	.....	.....
1044	1963 FEB 25	18:45:16.50	42.600	-109.200	33.00	4.30mb	.....	..	...	DG	14	...	.....	.....	.	.....	.....
1045	1963 MAR 05	01:30:38.70	42.600	-111.300	33.00	.....	.....	III	...	SA	...	...	.....	.....	E	.....	.....
1046	1963 MAR 07	14:55:00.00	45.000	-111.100	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
1047	1963 MAR 08	08:35:48.90	44.800	-110.200	33.00	3.80Mb NEIC	.....	VI	...	SA	...	...	.....	.....	D	.....	.....
1048	1963 MAR 09	12:43:50.00	45.900	-111.300	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
1049	1963 MAR 20	11:38:31.30	44.800	-110.700	33.00	4.10mb	.....	..	...	DG	9	...	.....	.....	.	.....	.....
1050	1963 MAR 20	12:32:24.50	44.700	-110.600	33.00	4.00mb	.....	..	...	DG	15	...	.....	.....	.	.....	.....
1051	1963 MAR 22	04:34:42.90	44.800	-110.500	34.00	4.10mb	.....	..	...	DG	23	...	.....	.....	.	.....	.....
1052	1963 MAR 27	07:22:09.40	44.300	-110.700	33.00	4.19mb	.....	..	...	DG	18	...	.....	.....	.	.....	.....
1053	1963 APR 02	13:40:13.40	44.800	-110.700	33.00	4.40mb	.....	..	...	DG	8	...	.....	.....	.	.....	.....
1054	1963 APR 02	15:29:42.60	44.700	-110.500	33.00	4.00mb	.....	..	...	DG	...	...	.....	.....	.	.....	.....
1055	1963 APR 03	09:55:12.60	45.100	-109.800	33.00	3.90Mb NEIC	.....	..	...	SA	...	...	.....	.....	D	.....	.....
1056	1963 APR 04	15:36:26.00	42.320	-111.050	7.00	3.10ML UU	.....	..	...	SA	...	...	.....	.....	C	.....	.....
1057	1963 APR 16	05:34:34.60	44.800	-110.400	33.00	3.70Mb NEIC	.....	..	...	SA	...	...	.....	.....	D	.....	.....
1058	1963 APR 18	10:43:16.90	44.800	-110.300	33.00	4.33MI CGS	.....	..	...	DG	5	...	.....	.....	.	.....	.....
1059	1963 APR 18	14:59:12.60	45.000	-111.000	.00	.....	.....	III	...	SA	...	...	.....	.....	D	.....	.....
1060	1963 APR 18	17:32:44.00	44.900	-110.700	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
1061	1963 APR 27	04:53:50.90	44.800	-110.300	33.00	4.40mb	.....	..	...	DG	11	...	.....	.....	.	.....	.....
1062	1963 APR 27	13:39:33.90	45.000	-111.400	33.00	4.00mb	.....	..	...	DG	8	...	.....	.....	.	.....	.....
1063	1963 MAY 11	02:55:59.00	45.000	-110.400	33.00	4.30UK USE	.....	..	...	DG	6	...	.....	.....	.	.....	.....
1064	1963 MAY 11	16:07:00.00	45.500	-111.500	.00	4.33MI OSU	.....	..	...	DG	...	...	.....	.....	.	.....	.....
1065	1963 MAY 11	23:06:33.50	44.900	-111.600	.00	4.33MI USN	.....	..	...	DG	...	...	.....	.....	.	.....	.....
1066	1963 MAY 14	00:52:41.50	45.200	-111.700	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
1067	1963 MAY 25	04:18:00.00	43.300	-114.800	.00	.....	.....	IV	...	SA	...	...	.....	.....	F	.....	.....
1068	1963 MAY 30	00:45:14.00	44.900	-111.600	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
1069	1963 JUN 06	02:54:00.00	43.300	-114.800	.00	.....	.....	IV	...	SA	...	...	.....	.....	F	.....	.....
1070	1963 JUN 06	19:40:00.00	44.500	-110.500	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
1071	1963 JUN 06	19:47:02.00	44.500	-110.500	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
1072	1963 JUN 06	19:47:34.00	44.500	-110.500	.00	4.33MI OSU	.....	..	...	DG	...	...	.....	.....	.	.....	.....
1073	1963 JUN 06	20:11:06.00	44.500	-110.500	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
1074	1963 JUN 06	20:32:15.00	44.500	-110.500	.00	4.33MI SRA	.....	..	...	DG	...	...	.....	.....	.	.....	.....
1075	1963 JUN 10	20:40:00.00	45.400	-112.100	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
1076	1963 JUN 15	13:15:50.60	45.000	-110.600	33.00	4.10mb	.....	..	...	DG	8	...	.....	.....	.	.....	.....
1077	1963 JUN 21	15:43:21.90	45.500	-111.800	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
1078	1963 JUN 21	21:45:00.00	45.500	-111.800	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
1079	1963 JUN 25	15:51:49.60	44.000	-110.000	33.00	4.19mb	.....	..	...	DG	18	...	.....	.....	.	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz Vert
1080	1963 JUN 30	05:35:00.00	45.500	-111.800	.00			III	...	SA	...	...	...	...	G	.....
1081	1963 JUL 19	19:26:33.10	44.900	-110.600	33.00			III	...	SA	...	...	...	...	D	.....
1082	1963 JUL 19	20:56:45.40	44.800	-110.600	33.00	3.40Mb	NEIC	.....	..	SA	...	...	...	...	D	.....
1083	1963 JUL 20	10:41:02.50	45.100	-111.300	33.00	3.40Mb	NEIC	.....	..	SA	...	...	...	...	D	.....
1084	1963 JUL 29	16:40:15.00	45.100	-110.700	.00			III	...	SA	...	...	...	...	G	.....
1085	1963 JUL 29	16:40:25.00	45.100	-110.700	.00			III	...	SA	...	...	...	...	G	.....
1086	1963 JUL 29	16:41:00.00	45.100	-110.700	.00			III	...	SA	...	...	...	...	G	.....
1087	1963 AUG 02	09:45:42.00	43.400	-114.500	33.00			IV	...	SA	...	...	...	...	C	.....
1088	1963 AUG 03	01:23:16.70	44.900	-115.400	33.00	4.00mb		.....	..	DG	5	...	...	...	.	.....
1089	1963 AUG 06	05:20:32.00	45.100	-111.400	33.00	3.70Mb	NEIC	.....	..	SA	...	...	...	...	D	.....
1090	1963 AUG 08	09:54:37.40	44.900	-111.100	.00			IV	...	SA	...	...	...	...	D	.....
1091	1963 AUG 08	23:53:21.00	44.900	-111.000	33.00	4.00mb		.....	..	DG	7	...	...	...	.	.....
1092	1963 AUG 14	12:30:02.44	41.621	-112.070	7.00	3.70mb		.....	..	DG	7	...	...	...	.	.....
1093	1963 AUG 16	07:00:58.87	41.661	-112.163	7.00	3.60mb		.....	..	DG	6	...	...	...	.	.....
1094	1963 AUG 17	05:09:07.42	41.562	-112.132	7.00	3.50mb		.....	..	DG	5	...	...	...	.	.....
1095	1963 SEP 06	22:19:35.20	44.300	-114.700	33.00	4.10mb		.....	..	DG	5	...	...	...	.	.....
1096	1963 SEP 07	19:25:00.00	44.900	-116.800	.00			IV	...	SA	...	...	...	...	F	.....
1097	1963 SEP 07	20:30:00.00	44.900	-111.600	.00			IV	...	SA	...	...	...	...	G	.....
1098	1963 SEP 09	10:45:17.40	44.400	-114.700	15.00	4.30ML	OTT	.....	..	DG	6	...	...	...	.	.....
1099	1963 SEP 09	19:07:16.20	44.300	-114.700	15.00	3.80Mb	NEIC	.....	..	SA	...	...	...	...	C	.....
1100	1963 SEP 09	19:10:35.30	44.300	-114.800	15.00	4.10mb		.....	..	DG	6	...	...	...	.	.....
1101	1963 SEP 10	02:17:09.30	44.300	-114.700	15.00	4.30mb		.....	..	DG	7	...	...	...	.	.....
1102	1963 SEP 10	03:33:23.20	44.300	-114.700	15.00	4.10mb		.....	..	DG	7	...	...	...	.	.....
1103	1963 SEP 11	00:12:27.20	44.300	-114.700	15.00	4.40mb		.....	..	DG	9	...	...	...	.	.....
1104	1963 SEP 11	02:08:44.80	44.300	-114.700	15.00	4.90mb		.....	..	DG	59	...	...	...	.	.....
1105	1963 SEP 11	02:25:04.70	44.300	-114.800	15.00	3.60Mb	NEIC	.....	IV	SA	...	...	...	...	C	.....
1106	1963 SEP 11	02:31:39.90	44.300	-114.700	15.00	4.19mb		.....	..	DG	9	...	...	...	.	.....
1107	1963 SEP 11	03:45:33.60	44.400	-114.800	15.00	4.10mb		.....	..	DG	9	...	...	...	.	.....
1108	1963 SEP 11	09:42:04.70	44.300	-114.700	15.00	4.00mb		.....	..	DG	9	...	...	...	.	.....
1109	1963 SEP 11	12:29:29.20	44.300	-114.700	15.00	3.80Mb	NEIC	.....	..	SA	...	...	...	...	C	.....
1110	1963 SEP 11	18:21:52.20	44.200	-114.700	15.00	3.80Mb	NEIC	.....	..	SA	...	...	...	...	C	.....
1111	1963 SEP 11	18:24:28.60	44.300	-114.700	15.00	4.10mb		.....	..	DG	7	...	...	...	.	.....
1112	1963 SEP 11	20:34:53.90	44.300	-114.700	15.00	3.50Mb	NEIC	.....	..	SA	...	...	...	...	C	.....
1113	1963 SEP 12	06:23:50.60	44.300	-114.700	15.00	4.69Mn	DW	.....	..	DG	37	...	...	...	.	.....
1114	1963 SEP 12	06:53:00.90	44.200	-114.500	33.00	4.10mb		.....	..	DG	5	...	...	...	.	.....
1115	1963 SEP 12	08:01:21.60	44.400	-114.700	15.00	4.30mb		.....	..	DG	10	...	...	...	.	.....
1116	1963 SEP 12	09:01:09.00	44.400	-114.800	15.00	3.60Mb	NEIC	.....	III	SA	...	...	...	...	C	.....
1117	1963 SEP 12	09:19:04.80	44.300	-114.800	15.00	3.70Mb	NEIC	.....	..	SA	...	...	...	...	C	.....
1118	1963 SEP 12	11:16:47.30	44.400	-114.700	15.00	4.30mb		.....	..	DG	10	...	...	...	.	.....
1119	1963 SEP 12	12:28:22.60	44.300	-114.700	15.00	4.19mb		.....	..	DG	10	...	...	...	.	.....
1120	1963 SEP 12	20:15:06.30	44.400	-114.800	15.00	4.00mb		.....	..	DG	9	...	...	...	.	.....
1121	1963 SEP 14	05:04:09.30	44.300	-114.800	15.00	3.80Mb	NEIC	.....	..	SA	...	...	...	...	C	.....
1122	1963 SEP 14	05:07:14.30	44.400	-114.800	15.00	3.60Mb	NEIC	.....	..	SA	...	...	...	...	C	.....
1123	1963 SEP 14	15:58:02.10	44.300	-114.800	15.00	4.40Mn	DW	.....	..	DG	27	...	...	...	.	.....
1124	1963 SEP 14	16:06:49.30	44.300	-114.700	33.00	3.90Mb	NEIC	.....	..	SA	...	...	...	...	C	.....
1125	1963 SEP 14	16:25:11.30	44.300	-114.700	15.00	4.30mb		.....	..	DG	5	...	...	...	.	.....
1126	1963 SEP 14	16:39:41.70	44.400	-114.700	15.00	4.00mb		.....	..	DG	13	...	...	...	.	.....
1127	1963 SEP 14	16:55:40.60	44.300	-114.600	15.00	3.90Mb	NEIC	.....	III	SA	...	...	...	...	C	.....
1128	1963 SEP 14	17:16:34.70	44.300	-114.800	15.00	3.80Mb	NEIC	.....	..	SA	...	...	...	...	C	.....
1129	1963 SEP 14	17:50:06.90	44.400	-114.700	15.00	4.00mb		.....	..	DG	7	...	...	...	.	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Std-Err Vert
1130	1963 SEP 14	18:48:56.40	44.300	-114.800	15.00	3.80Mb NEIC	.....	III	...	SA	...	...	.....	.....	C	.....	.....
1131	1963 SEP 15	05:34:57.90	44.300	-114.700	15.00	3.90Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....	.....
1132	1963 SEP 15	16:51:01.80	44.300	-114.800	15.00	4.10mb	.....	..	...	DG	8	...	.....	.....	C	.....	.....
1133	1963 SEP 15	19:14:09.50	44.200	-114.800	15.00	3.70Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....	.....
1134	1963 SEP 16	12:06:14.00	44.300	-114.700	15.00	4.19mb	.....	..	...	DG	16	...	.....	.....	.	.....	.....
1135	1963 SEP 17	05:36:15.40	44.300	-114.800	15.00	4.10mb	.....	..	...	DG	9	...	.....	.....	.	.....	.....
1136	1963 SEP 17	12:22:54.90	44.400	-114.700	15.00	3.60Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....	.....
1137	1963 SEP 18	00:16:05.90	44.300	-114.800	15.00	3.70Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....	.....
1138	1963 SEP 18	04:45:07.50	45.000	-111.300	33.00	3.10Mb NEIC	.....	..	...	SA	...	...	.....	.....	D	.....	.....
1139	1963 SEP 18	21:03:50.70	44.400	-114.800	15.00	3.80Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....	.....
1140	1963 SEP 19	03:02:05.90	44.500	-114.700	15.00	3.90Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....	.....
1141	1963 SEP 19	10:59:57.00	44.400	-114.800	15.00	3.40Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....	.....
1142	1963 SEP 20	11:09:37.00	44.300	-114.800	15.00	3.80Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....	.....
1143	1963 SEP 20	11:41:20.10	44.400	-114.700	15.00	3.70Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....	.....
1144	1963 SEP 21	09:58:57.50	44.300	-114.800	15.00	3.90Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....	.....
1145	1963 SEP 21	12:29:25.80	43.700	-114.700	33.00	3.50Mb NEIC	.....	..	...	SA	...	...	.....	.....	D	.....	.....
1146	1963 SEP 22	00:50:36.10	44.300	-114.700	15.00	4.19mb	.....	..	...	DG	16	...	.....	.....	.	.....	.....
1147	1963 SEP 22	00:56:10.50	44.300	-114.800	15.00	4.19mb	.....	..	...	DG	4	...	.....	.....	.	.....	.....
1148	1963 SEP 22	06:30:01.70	44.300	-114.800	15.00	3.60Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....	.....
1149	1963 SEP 22	09:56:44.00	43.300	-111.600	33.00	3.70Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....	.....
1150	1963 SEP 22	14:55:01.20	44.400	-114.800	15.00	4.10mb	.....	..	...	DG	6	...	.....	.....	.	.....	.....
1151	1963 SEP 22	15:41:19.00	44.400	-114.800	15.00	4.00mb	.....	..	...	DG	6	...	.....	.....	.	.....	.....
1152	1963 SEP 22	17:06:07.10	43.200	-111.200	33.00	3.90Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....	.....
1153	1963 SEP 22	21:13:32.60	44.300	-114.800	15.00	3.90Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....	.....
1154	1963 SEP 22	21:32:17.00	43.200	-111.400	33.00	3.40Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....	.....
1155	1963 SEP 23	01:30:32.70	43.200	-111.300	33.00	3.50Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....	.....
1156	1963 SEP 23	10:21:03.60	44.400	-114.800	15.00	3.60Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....	.....
1157	1963 SEP 23	12:17:08.60	44.400	-114.800	15.00	3.90Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....	.....
1158	1963 SEP 24	06:31:50.50	44.800	-111.000	33.00	3.10Mb NEIC	.....	IV	...	SA	...	...	.....	.....	D	.....	.....
1159	1963 SEP 24	06:35:52.10	44.900	-111.000	33.00	4.69mb	.....	..	...	DG	6	...	.....	.....	.	.....	.....
1160	1963 SEP 28	19:08:02.70	43.300	-111.300	33.00	3.70Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....	.....
1161	1963 SEP 29	05:58:23.70	43.400	-111.400	33.00	3.60Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....	.....
1162	1963 OCT 03	07:10:00.00	44.300	-114.400	.00	.....	.....	IV	...	SA	...	...	.....	.....	F	.....	.....
1163	1963 OCT 07	21:30:30.00	44.800	-114.400	33.00	3.50Mb NEIC	.....	IV	...	SA	...	...	.....	.....	C	.....	.....
1164	1963 OCT 11	23:09:53.10	43.400	-111.100	30.00	4.30mb	.....	..	...	DG	7	...	.....	.....	.	.....	.....
1165	1963 OCT 12	06:58:25.70	43.300	-110.900	30.00	3.90Mb NEIC	.....	..	...	SA	...	...	.....	.....	D	.....	.....
1166	1963 OCT 12	21:59:01.90	43.100	-111.100	33.00	3.90Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....	.....
1167	1963 OCT 12	22:34:01.60	43.100	-111.300	33.00	3.90Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....	.....
1168	1963 OCT 13	17:55:47.10	43.200	-111.200	30.00	3.70Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....	.....
1169	1963 OCT 15	15:15:10.60	44.300	-114.800	33.00	3.90Mb NEIC	.....	IV	...	SA	...	...	.....	.....	C	.....	.....
1170	1963 OCT 16	15:36:32.10	44.300	-114.800	30.00	4.19mb	.....	..	...	DG	11	...	.....	.....	.	.....	.....
1171	1963 OCT 17	01:22:07.70	44.400	-114.700	30.00	4.69mb	.....	..	...	DG	7	...	.....	.....	.	.....	.....
1172	1963 OCT 24	09:52:37.40	44.400	-114.800	33.00	3.80Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....	.....
1173	1963 OCT 26	20:20:14.50	43.100	-111.200	37.00	4.30mb	.....	..	...	DG	15	...	.....	.....	.	.....	.....
1174	1963 OCT 27	15:58:49.90	44.200	-114.800	30.00	3.60Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....	.....
1175	1963 OCT 29	05:39:33.00	43.100	-111.600	33.00	4.00mb	.....	..	...	DG	5	...	.....	.....	.	.....	.....
1176	1963 OCT 31	08:08:52.00	43.000	-111.300	33.00	3.00Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....	.....
1177	1963 NOV 03	18:26:02.00	43.100	-111.300	33.00	4.19mb	.....	..	...	DG	6	...	.....	.....	.	.....	.....
1178	1963 NOV 05	03:44:39.70	43.100	-111.200	33.00	3.90Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....	.....
1179	1963 NOV 28	03:14:02.40	44.300	-114.800	33.00	3.50Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
1180	1963 DEC 09	01:45:18.20	43.600	-110.100	33.00	4.00mb		..	...	DG	17	...	.....	.....	.	.....	.....
1181	1963 DEC 09	05:39:25.70	44.900	-110.300	33.00	3.70Mb NEIC		..	...	SA	...	...	.....	.....	D	.....	.....
1182	1963 DEC 14	12:55:07.90	43.600	-110.300	33.00	4.10mb		..	...	DG	11	...	.....	.....	.	.....	.....
1183	1963 DEC 14	18:46:37.70	44.500	-114.800	33.00	3.90Mb NEIC		..	...	SA	...	...	.....	.....	C	.....	.....
1184	1963 DEC 17	04:30:00.00	44.900	-110.700	.00	4.33MI SRA		..	...	DG	...	...	.....	.....	.	.....	.....
1185	1963 DEC 17	09:30:00.00	44.900	-111.000	.00	.....		III	...	SA	...	...	.....	.....	G	.....	.....
1186	1963 DEC 17	10:15:00.00	44.900	-111.000	.00	.....		III	...	SA	...	...	.....	.....	G	.....	.....
1187	1963 DEC 17	13:15:00.00	44.900	-111.000	.00	.....		III	...	SA	...	...	.....	.....	G	.....	.....
1188	1963 DEC 17	13:18:00.00	44.900	-111.000	.00	.....		III	...	SA	...	...	.....	.....	G	.....	.....
1189	1963 DEC 17	13:30:00.00	44.900	-111.000	.00	.....		IV	...	SA	...	...	.....	.....	G	.....	.....
1190	1963 DEC 20	13:00:50.30	44.900	-111.700	33.00	4.30mb		..	...	DG	23	...	.....	.....	.	.....	.....
1191	1963 DEC 21	19:00:00.00	45.100	-110.700	.00	.....		IV	...	SA	...	...	.....	.....	G	.....	.....
1192	1963 DEC 22	02:50:29.80	44.400	-114.600	33.00	4.40mb		..	...	DG	6	...	.....	.....	.	.....	.....
1193	1963 DEC 22	05:44:37.90	44.200	-114.500	33.00	4.10mb		..	...	DG	9	...	.....	.....	.	.....	.....
1194	1963 DEC 23	00:15:01.40	44.400	-114.800	33.00	5.10mb		..	...	DG	11	...	.....	.....	.	.....	.....
1195	1963 DEC 23	00:28:59.10	44.200	-114.400	33.00	3.80Mb NEIC		..	...	SA	...	...	.....	.....	C	.....	.....
1196	1963 DEC 24	05:05:04.50	44.900	-110.700	.00	.....		IV	...	SA	...	...	.....	.....	G	.....	.....
1197	1963 DEC 24	17:54:19.80	44.800	-111.200	33.00	4.69mb		..	...	DG	7	...	.....	.....	.	.....	.....
1198	1963 DEC 25	20:04:10.20	44.200	-114.500	33.00	3.70Mb NEIC		..	...	SA	...	...	.....	.....	C	.....	.....
1199	1963 DEC 27	11:10:00.00	44.900	-110.700	.00	.....		IV	...	SA	...	...	.....	.....	G	.....	.....
1200	1963 DEC 28	08:22:19.30	44.800	-110.900	33.00	4.30mb		..	...	DG	9	...	.....	.....	.	.....	.....
1201	1963 DEC 30	03:28:53.10	44.400	-110.300	33.00	4.00mb		..	...	DG	6	...	.....	.....	.	.....	.....
1202	1963 DEC 30	21:30:00.00	44.900	-110.700	.00	.....		III	...	SA	...	...	.....	.....	G	.....	.....
1203	1963 DEC 31	10:15:00.00	44.900	-110.700	.00	.....		III	...	SA	...	...	.....	.....	G	.....	.....
1204	1964 JAN 04	13:00:00.00	44.900	-110.700	.00	.....		IV	...	SA	...	...	.....	.....	G	.....	.....
1205	1964 JAN 04	14:00:00.00	44.900	-110.700	.00	.....		IV	...	SA	...	...	.....	.....	G	.....	.....
1206	1964 JAN 05	00:00:00.00	44.900	-110.700	.00	.....		III	...	SA	...	...	.....	.....	G	.....	.....
1207	1964 JAN 05	13:57:16.72	41.261	-109.146	7.00	3.90mb		..	...	DG	11	...	.....	.....	.	.....	.....
1208	1964 JAN 06	13:15:00.00	44.900	-110.700	.00	.....		IV	...	SA	...	...	.....	.....	G	.....	.....
1209	1964 JAN 06	19:35:08.50	44.300	-114.600	15.00	4.69mb		..	...	DG	22	...	.....	.....	.	.....	.....
1210	1964 JAN 07	00:00:00.00	44.900	-110.700	.00	.....		III	...	SA	...	...	.....	.....	G	.....	.....
1211	1964 JAN 09	03:10:56.20	44.300	-114.600	15.00	4.50mb		..	...	DG	19	...	.....	.....	.	.....	.....
1212	1964 JAN 09	11:11:54.30	44.300	-114.800	15.00	3.60Mb NEIC		..	...	SA	...	...	.....	.....	C	.....	.....
1213	1964 JAN 09	18:14:47.00	44.900	-110.700	.00	.....		IV	...	SA	...	...	.....	.....	G	.....	.....
1214	1964 JAN 09	19:36:45.70	44.900	-110.700	.00	.....		IV	...	SA	...	...	.....	.....	G	.....	.....
1215	1964 JAN 11	06:00:00.00	44.900	-110.700	.00	.....		IV	...	SA	...	...	.....	.....	G	.....	.....
1216	1964 JAN 12	00:00:00.00	44.900	-110.700	.00	.....		IV	...	SA	...	...	.....	.....	G	.....	.....
1217	1964 JAN 13	04:24:56.30	44.900	-111.600	.00	.....		III	...	SA	...	...	.....	.....	G	.....	.....
1218	1964 JAN 14	05:05:12.00	44.900	-110.700	.00	.....		IV	...	SA	...	...	.....	.....	G	.....	.....
1219	1964 JAN 14	19:00:00.00	44.900	-110.700	.00	.....		III	...	SA	...	...	.....	.....	G	.....	.....
1220	1964 JAN 15	02:30:00.00	44.900	-110.700	.00	.....		IV	...	SA	...	...	.....	.....	G	.....	.....
1221	1964 JAN 15	17:30:00.00	44.900	-110.700	.00	.....		IV	...	SA	...	...	.....	.....	G	.....	.....
1222	1964 JAN 17	00:00:00.00	44.900	-110.700	.00	.....		III	...	SA	...	...	.....	.....	G	.....	.....
1223	1964 JAN 18	00:00:00.00	44.900	-110.700	.00	.....		IV	...	SA	...	...	.....	.....	G	.....	.....
1224	1964 JAN 18	22:16:19.70	44.483	-116.733	.00	2.50 DOGMI	.00	..	...	DO	...	...	.....	.....	.	.....	.....
1225	1964 JAN 19	00:00:00.00	44.900	-110.700	.00	.....		IV	...	SA	...	...	.....	.....	G	.....	.....
1226	1964 JAN 21	00:00:00.00	44.900	-110.700	.00	.....		III	...	SA	...	...	.....	.....	G	.....	.....
1227	1964 JAN 22	21:10:58.80	44.300	-114.800	33.00	3.90Mb NEIC		..	...	SA	...	...	.....	.....	C	.....	.....
1228	1964 JAN 23	03:04:49.70	44.400	-114.500	33.00	4.10mb		..	...	DG	6	...	.....	.....	.	.....	.....
1229	1964 JAN 28	12:57:07.90	43.200	-111.400	41.00	4.19mb		..	...	DG	10	...	.....	.....	.	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
1230	1964 FEB 03	05:55:44.30	43.200	-111.100	30.00	4.10mb				DG	19						
1231	1964 FEB 06	08:02:26.40	42.060	-112.200	7.00	2:40ML UU		III		SA					B		
1232	1964 FEB 06	11:13:33.15	42.076	-112.326	7.00	2.60ML UU				DG	11						
1233	1964 FEB 08	06:22:09.10	44.400	-114.500	30.00	4.30mb				DG	26						
1234	1964 FEB 20	03:29:36.10	44.400	-114.700	30.00	3.70Mb NEIC				SA					D		
1235	1964 FEB 28	01:09:43.10	43.600	-110.200	30.00	3.80Mb NEIC				SA					D		
1236	1964 MAR 24	03:00:00.00	44.900	-110.700	.00			II		SA					G		
1237	1964 MAR 24	11:10:00.00	44.900	-110.700	.00			IV		SA					G		
1238	1964 MAR 27	00:00:00.00	44.400	-110.800	.00			III		SA					G		
1239	1964 MAR 28	02:36:00.00	45.500	-111.800	.00	4.33MI USN				DG							
1240	1964 MAR 28	09:55:00.00	44.400	-110.800	.00			IV		SA					G		
1241	1964 MAR 28	10:35:00.00	44.400	-110.800	.00			IV		SA					G		
1242	1964 MAR 28	11:15:00.00	44.400	-110.800	.00			III		SA					G		
1243	1964 APR 07	15:31:32.50	45.000	-111.600	33.00	3.20Mb NEIC		IV		SA					D		
1244	1964 APR 17	06:53:43.60	44.100	-114.300	33.00	3.60Mb NEIC		IV		SA					D		
1245	1964 APR 21	12:11:32.90	44.200	-114.300	33.00	3.60Mb NEIC				SA					D		
1246	1964 MAY 02	03:24:24.10	43.600	-110.400	33.00	4.00mb				DG	8						
1247	1964 MAY 03	22:31:45.20	44.900	-111.900	33.00	4.10mb				DG	10						
1248	1964 MAY 19	06:23:38.70	45.000	-112.700	33.00	3.80Mb NEIC				SA					D		
1249	1964 MAY 19	21:46:56.50	44.900	-112.700	33.00	4.30mb				DG	8						
1250	1964 MAY 20	02:21:26.40	45.000	-112.800	33.00	4.00mb				DG	7						
1251	1964 MAY 22	12:11:46.11	41.934	-112.088	7.00	2.50MD UU				DG	7						
1252	1964 JUN 05	04:52:04.30	43.200	-111.300	33.00	3.70Mb NEIC				SA					D		
1253	1964 AUG 04	03:08:18.70	41.426	-111.769	7.00	2.50MD UU				DG	3						
1254	1964 AUG 13	21:51:01.70	46.500	-112.200	15.00	4.10mb				DG	7						
1255	1964 AUG 18	05:18:42.00	43.180	-112.300	6.00	4.10mb				DG	6						
1256	1964 AUG 18	08:47:18.20	45.100	-110.500	33.00	4.19mb				DG	12						
1257	1964 AUG 24	10:18:58.50	45.000	-111.400	33.00	4.30mb				DG	7						
1258	1964 SEP 08	00:27:55.50	44.300	-114.800	33.00	3.90Mb NEIC				SA					C		
1259	1964 SEP 17	22:17:20.00	42.800	-110.800	33.00	4.00mb				DG							
1260	1964 SEP 22	06:52:10.00	44.400	-114.800	15.00	4.30mb				DG	8						
1261	1964 OCT 02	10:39:33.00	44.800	-111.400	33.00	3.80Mb NEIC				SA					D		
1262	1964 OCT 18	18:33:20.80	41.725	-111.729	7.00	4.30mb				DG	35						
1263	1964 OCT 21	07:38:31.00	44.800	-111.600	33.00	5.80mb				DG	90						
1264	1964 OCT 21	07:45:00.00	45.300	-111.900	.00			III		SA					G		
1265	1964 OCT 21	10:00:00.00	45.300	-111.900	.00			II		SA					G		
1266	1964 OCT 21	20:02:20.50	44.800	-111.600	33.00	3.90Mb NEIC		IV		SA					D		
1267	1964 OCT 22	19:45:00.00	44.600	-112.300	.00			II		SA					G		
1268	1964 NOV 04	16:48:00.00	44.900	-111.300	.00			IV		SA					G		
1269	1964 NOV 13	23:09:53.80	44.800	-111.000	10.00	4.10mb				DG	9						
1270	1964 NOV 17	10:11:00.10	44.600	-110.900	33.00	3.90Mb NEIC				SA					D		
1271	1964 NOV 18	10:26:42.50	44.390	-114.670	5.00	3.60Mb NEIC				SA					C		
1272	1964 NOV 24	03:01:07.70	45.300	-111.700	10.00	3.90Mb NEIC		IV		SA					D		
1273	1964 NOV 24	05:07:00.00	45.500	-111.800	.00			II		SA					G		
1274	1964 DEC 21	21:38:47.30	45.200	-112.700	33.00	3.50Mb NEIC				SA					D		
1275	1964 DEC 21	21:54:58.00	44.900	-112.700	44.00	3.90Mb NEIC		IV		SA					D		
1276	1964 DEC 22	10:28:46.70	44.900	-112.500	33.00	4.30mb				DG	21						
1277	1964 DEC 22	15:45:28.30	45.400	-112.200	33.00	4.00mb				DG	8						
1278	1964 DEC 24	21:54:58.00	44.900	-112.700	.00	3.90Mb NEIC		IV		SA					D		
1279	1964 DEC 24	22:51:34.70	44.700	-110.800	33.00	4.00mb				DG	9						

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
1280	1965 JAN 06	02:01:20.70	44.772	-112.746	10.00	5.10mb				DG	54						
1281	1965 JAN 07	00:45:00.00	46.000	-112.500	.00			II		SA					G		
1282	1965 JAN 13	03:40:54.50	45.000	-112.600	33.00	3.80Mb NEIC			V	SA					D		
1283	1965 JAN 13	03:44:23.30	44.863	-112.817	5.00	3.80Mb NEIC			V	SA					A		
1284	1965 JAN 25	04:43:38.70	41.390	-111.320	20.00	2.50UK SLC				DG	3						
1285	1965 JAN 25	12:24:19.20	45.500	-110.300	33.00	4.00mb				DG	7						
1286	1965 JAN 27	09:49:18.96	41.697	-111.999	7.00	2.70UK SLC				DG	5						
1287	1965 FEB 19	17:35:21.00	44.700	-110.100	22.00	4.00mb				DG	19						
1288	1965 MAR 27	23:17:38.70	42.600	-111.600	33.00			III		SA					C		
1289	1965 APR 02	05:19:24.77	42.370	-111.467	7.00	4.50mb				DG	11						
1290	1965 APR 06	14:46:01.20	45.600	-111.900	33.00	3.70Mb NEIC			V	SA					D		
1291	1965 APR 07	21:06:43.00	44.400	-114.800	33.00	3.80Mb NEIC				SA					C		
1292	1965 APR 15	08:22:47.50	44.900	-110.300	33.00	3.10Mb NEIC				SA					D		
1293	1965 APR 18	19:05:34.10	44.300	-114.500	33.00	3.50Mb NEIC				SA					C		
1294	1965 APR 27	18:51:29.58	41.757	-112.861	7.00	2.50ML UU				DG	8						
1295	1965 MAY 01	01:47:05.46	40.725	-111.588	7.00	2.70UK SLC				DG	3						
1296	1965 MAY 11	01:50:25.41	40.966	-111.519	7.00	4.10mb				DG	7						
1297	1965 MAY 11	18:17:24.00	44.700	-111.000	33.00	4.19mb				DG	30						
1298	1965 MAY 12	10:16:06.90	45.300	-111.200	15.00	3.60Mb NEIC				SA					D		
1299	1965 MAY 15	13:04:11.30	44.300	-110.000	33.00	3.60Mb NEIC				SA					D		
1300	1965 MAY 16	17:36:14.70	44.800	-111.400	15.00	4.19mb				DG	11						
1301	1965 MAY 23	19:15:07.20	45.000	-113.100	33.00	3.90Mb NEIC				SA					D		
1302	1965 MAY 28	11:04:54.64	41.549	-112.053	7.00	3.50UK SLC				DG	4						
1303	1965 JUN 01	09:42:03.50	44.700	-110.900	33.00	3.90Mb NEIC				SA					D		
1304	1965 JUN 03	21:06:51.00	45.200	-110.900	33.00	4.19mb				DG	8						
1305	1965 JUL 09	12:19:05.70	45.200	-111.600	33.00			III		SA					D		
1306	1965 JUL 15	07:01:41.60	44.900	-111.700	33.00	4.19mb				DG							
1307	1965 JUL 24	12:21:58.20	45.100	-112.900	33.00	4.10mb				DG							
1308	1965 JUL 29	04:02:42.20	44.300	-114.700	33.00	4.40mb				DG	22						
1309	1965 JUL 29	08:25:52.70	43.200	-111.800	33.00	4.00mb				DG							
1310	1965 JUL 31	02:31:42.40	42.360	-110.390	7.00	2.80ML UU				SA					B		
1311	1965 AUG 06	15:39:49.20	44.700	-109.800	33.00	3.90Mb NEIC				SA					D		
1312	1965 AUG 12	13:45:43.80	45.000	-112.800	33.00	3.40Mb NEIC				SA					D		
1313	1965 AUG 17	07:09:30.56	41.843	-112.641	7.00	2.50MD UU				DG							
1314	1965 AUG 22	17:54:33.30	42.300	-110.600	33.00	3.30Mb NEIC				SA					D		
1315	1965 AUG 23	01:03:05.80	42.500	-111.300	33.00	3.60Mb NEIC				SA					D		
1316	1965 AUG 29	03:00:19.70	45.700	-111.600	17.00	3.70Mb NEIC				SA					D		
1317	1965 SEP 10	22:03:35.80	40.700	-112.500	20.00	2.60UK SLC				DG	3						
1318	1965 SEP 13	15:58:54.30	45.200	-114.800	33.00	3.60Mb NEIC				SA					C		
1319	1965 SEP 13	21:18:34.40	45.400	-111.800	25.00	3.60Mb NEIC				SA					D		
1320	1965 OCT 08	19:34:59.40	44.800	-111.100	1.00	5.00mb USE				DG	36						
1321	1965 OCT 08	20:05:00.00	44.700	-111.100	.00			III		SA					G		
1322	1965 OCT 09	19:30:00.00	44.700	-111.100	.00			III		SA					G		
1323	1965 OCT 10	22:39:10.00	44.800	-111.800	33.00	4.10mb				DG	23						
1324	1965 OCT 27	16:38:54.09	42.043	-110.400	7.00	2.50MD UU				DG							
1325	1965 OCT 29	16:52:50.28	41.319	-113.387	7.00	3.70UK SLC				DG	11						
1326	1965 OCT 29	18:51:51.49	41.020	-113.473	7.00	2.60UK SLC				DG	6						
1327	1965 NOV 02	08:45:57.50	44.800	-114.200	33.00	3.60Mb NEIC				SA					D		
1328	1965 NOV 03	10:09:02.50	44.900	-111.800	26.00	3.90Mb NEIC				SA					D		
1329	1965 NOV 03	12:07:55.50	45.200	-111.900	14.00	4.50mb				DG							

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Std-Err Vert
1330	1965 NOV 03	12:11:10.60	45.200	-111.900	8.00	3.70mb NEIC	.....	III	...	SA	...	...	.....	.....	D	.....	.....
1331	1965 NOV 04	02:27:53.00	44.600	-112.900	33.00	3.70mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....	.....
1332	1965 NOV 07	16:41:47.40	44.900	-117.000	5.00	4.30mb	.....	..	...	DG	...	...	.....	.....	.	.....	.....
1333	1965 NOV 22	22:53:13.70	45.100	-114.500	33.00	3.70mb NEIC	.....	..	...	SA	...	...	.....	.....	D	.....	.....
1334	1965 NOV 30	04:10:00.00	45.600	-112.700	.00	.....	.....	III	...	SA	...	...	.....	.....	G	.....	.....
1335	1965 DEC 24	10:05:04.60	42.800	-110.700	33.00	3.90mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....	.....
1336	1966 FEB 11	20:36:26.20	42.150	-111.360	33.00	3.50mb NEIC	.....	III	...	SA	...	...	.....	.....	C	.....	.....
1337	1966 FEB 12	09:52:38.50	42.300	-111.200	33.00	3.20mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....	.....
1338	1966 FEB 25	14:57:00.50	44.700	-116.100	33.00	3.50mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....	.....
1339	1966 MAR 07	18:09:42.60	46.300	-111.500	13.00	4.80mb	.....	..	...	DG	60	...	.....	.....	.	.....	.....
1340	1966 MAR 17	11:47:47.41	41.661	-111.560	7.00	4.60ML UU	.....	..	...	DG	52	...	.....	.....	.	.....	.....
1341	1966 JUN 10	19:45:47.90	43.100	-111.100	33.00	3.70mb NEIC	.....	..	...	SA	...	...	.....	.....	D	.....	.....
1342	1966 JUN 11	05:35:51.80	43.100	-111.200	20.00	3.30ML UU	.....	..	...	SA	...	...	.....	.....	C	.....	.....
1343	1966 JUN 11	10:19:27.40	43.200	-111.100	33.00	3.40mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....	.....
1344	1966 JUN 14	15:41:29.10	41.500	-110.600	33.00	2.60UK	.....	..	...	DG	...	...	.....	.....	.	.....	.....
1345	1966 JUN 23	00:46:42.40	44.900	-111.300	33.00	3.70mb NEIC	.....	..	...	SA	...	...	.....	.....	D	.....	.....
1346	1966 JUL 12	21:04:13.80	42.210	-110.680	7.00	2.50MD UU	.....	..	...	SA	...	...	.....	.....	C	.....	.....
1347	1966 SEP 19	10:06:42.50	45.900	-111.200	7.00	4.00mb	.....	..	...	DG	25	...	.....	.....	.	.....	.....
1348	1966 SEP 26	00:00:00.00	44.700	-111.100	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
1349	1966 OCT 08	15:29:53.80	43.200	-111.000	33.00	4.40mb	.....	..	...	DG	12	...	.....	.....	.	.....	.....
1350	1966 OCT 09	04:38:24.50	44.800	-111.100	16.00	3.90mb NEIC	.....	..	...	SA	...	...	.....	.....	D	.....	.....
1351	1966 OCT 09	19:41:49.00	44.900	-111.100	.00	4.19mb	.....	..	...	DG	14	...	.....	.....	.	.....	.....
1352	1966 OCT 11	07:30:04.50	44.900	-111.100	22.00	4.00mb	.....	..	...	DG	19	...	.....	.....	.	.....	.....
1353	1966 OCT 11	09:00:00.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	F	.....	.....
1354	1966 OCT 11	11:38:50.70	44.900	-111.100	16.00	4.50mb	.....	..	...	DG	24	...	.....	.....	.	.....	.....
1355	1966 OCT 11	11:48:11.00	44.700	-111.100	.00	4.33MI SRA	.....	..	...	DG	...	...	.....	.....	.	.....	.....
1356	1966 OCT 11	16:30:39.90	44.809	-111.296	5.00	3.90mb NEIC	.....	..	...	SA	...	...	.....	.....	A	.....	.....
		Felt															
1357	1966 OCT 11	16:39:51.10	44.900	-111.200	20.00	3.90mb NEIC	.....	IV	...	SA	...	...	.....	.....	D	.....	.....
1358	1966 OCT 11	16:58:06.00	44.800	-111.400	33.00	.....	.....	IV	...	SA	...	...	.....	.....	D	.....	.....
1359	1966 OCT 11	17:10:00.00	44.700	-111.100	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
1360	1966 OCT 11	17:20:00.00	44.700	-111.100	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
1361	1966 OCT 11	17:41:49.90	44.800	-111.200	33.00	.....	.....	IV	...	SA	...	...	.....	.....	D	.....	.....
1362	1966 OCT 11	17:52:31.10	44.800	-111.200	8.00	4.60mb	.....	..	...	DG	17	...	.....	.....	.	.....	.....
1363	1966 OCT 11	23:02:29.20	44.900	-111.300	15.00	.....	.....	IV	...	SA	...	...	.....	.....	D	.....	.....
1364	1966 OCT 12	06:35:00.00	44.800	-111.200	.00	.....	.....	IV	...	SA	...	...	.....	.....	G	.....	.....
1365	1966 OCT 22	17:16:26.40	40.600	-116.300	32.00	4.30mb	.....	..	...	DG	36	...	.....	.....	.	.....	.....
1366	1966 OCT 27	17:15:11.00	43.200	-111.000	33.00	3.70mb NEIC	.....	..	...	SA	...	...	.....	.....	D	.....	.....
1367	1966 NOV 03	20:24:15.66	42.001	-110.534	7.00	2.80ML UU	.....	..	...	DG	...	...	.....	.....	.	.....	.....
1368	1966 NOV 05	02:23:10.80	44.500	-111.100	33.00	3.60mb NEIC	.....	..	...	SA	...	...	.....	.....	D	.....	.....
1369	1966 NOV 12	06:00:41.39	41.740	-112.617	7.00	2.60MD UU	.....	..	...	DG	...	...	.....	.....	.	.....	.....
1370	1966 NOV 14	14:30:49.88	41.745	-112.730	7.00	3.20ML UU	.....	..	...	DG	16	...	.....	.....	.	.....	.....
1371	1966 NOV 18	22:12:17.69	42.025	-110.406	7.00	2.50MD UU	.....	..	...	DG	...	...	.....	.....	.	.....	.....
1372	1966 NOV 23	07:42:23.90	44.900	-111.300	33.00	3.70mb NEIC	.....	..	...	SA	...	...	.....	.....	D	.....	.....
1373	1966 DEC 27	07:02:56.90	45.200	-113.300	33.00	3.80mb NEIC	.....	..	...	SA	...	...	.....	.....	D	.....	.....
1374	1966 DEC 30	03:51:40.30	44.900	-117.000	10.00	4.19mb	.....	..	...	DG	10	...	.....	.....	.	.....	.....
1375	1966 DEC 31	03:37:00.00	45.000	-111.100	.00	.....	.....	II	...	SA	...	...	.....	.....	G	.....	.....
1376	1967 JAN 10	11:52:50.50	44.847	-111.500	5.00	3.80mb NEIC	.....	IV	...	SA	...	...	.....	.....	A	.....	.....
1377	1967 JAN 21	00:18:16.00	44.740	-109.770	33.00	3.60mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....	.....
1378	1967 FEB 09	13:16:57.40	46.240	-111.370	19.00	3.90mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Std-Err Vert
1379	1967 FEB 16	19:21:35.19	41.273	-113.333	7.00	4.00mb				DG	30						
1380	1967 MAR 05	05:40:24.20	41.284	-111.645	7.00	3.50mb				DG	13						
1381	1967 MAR 10	02:20:33.25	42.052	-110.292	7.00	3.70mb				DG	16						
1382	1967 MAR 10	05:34:58.70	40.760	-111.970	7.00	2.10MD UU		IV		SA					A		
1383	1967 MAR 25	05:21:48.70	44.740	-112.040	33.00	3.90Mb NEIC				SA					C		
1384	1967 MAR 28	20:31:35.40	45.160	-109.900	33.00	3.60Mb NEIC				SA					C		
1385	1967 APR 08	21:42:13.80	42.870	-111.310	33.00	4.19mb				DG	9						
1386	1967 MAY 01	07:37:47.30	43.510	-111.710	33.00	3.20Mb NEIC				SA					D		
1387	1967 MAY 20	12:30:47.00	44.753	-111.918	5.00	3.80Mb NEIC				SA					A		
1388	1967 JUN 26	22:31:02.80	43.000	-111.000	33.00	4.00mb				DG	7						
1389	1967 JUL 21	15:27:57.49	41.264	-113.298	7.00	3.60ML UU				DG	18						
1390	1967 JUL 25	08:23:54.50	44.400	-114.800	33.00	3.80Mb NEIC				SA					C		
1391	1967 JUL 28	04:09:58.00	44.800	-111.300	33.00	4.00mb				DG	19						
1392	1967 JUL 28	11:33:11.40	44.900	-111.300	33.00	4.19mb				DG	17						
1393	1967 AUG 13	08:36:15.80	44.200	-114.700	33.00	3.80Mb NEIC				SA					C		
1394	1967 AUG 13	13:35:38.40	44.100	-114.800	33.00	3.80Mb NEIC				SA					C		
1395	1967 AUG 18	21:28:23.80	42.360	-110.360	7.00	2.70MD UU				SA					A		
1396	1967 AUG 29	20:21:56.85	41.919	-110.580	7.00	2.50MD UU				DG							
1397	1967 SEP 02	10:04:07.17	41.163	-111.532	7.00	2.70MD UU				DG	13						
1398	1967 SEP 11	04:10:46.50	43.000	-111.000	33.00	3.50Mb NEIC				SA					C		
1399	1967 SEP 22	07:39:53.92	41.345	-113.366	7.00	3.10ML UU				DG							
1400	1967 SEP 23	00:30:17.30	44.200	-114.700	33.00	3.70mb ISC	3.90Mb NEIC			SA					C		
1401	1967 SEP 24	04:46:48.54	40.707	-112.102	7.00	3.70UK				DG							
1402	1967 SEP 24	05:00:28.58	40.707	-112.098	7.00	3.70mb				DG	10						
1403	1967 OCT 10	00:00:00.00	46.400	-117.000	.00				IV	SA					F		
1404	1967 NOV 11	11:17:02.60	44.000	-114.500	10.00	4.10mb EDS				DG	22						
1405	1967 NOV 17	07:12:57.70	43.900	-114.300	33.00	3.50Mb NEIC				SA					C		
1406	1967 DEC 06	14:37:57.80	44.200	-114.300	33.00	3.60Mb NEIC				SA					C		
1407	1967 DEC 07	13:33:22.49	41.286	-111.737	7.00	4.30mb				DG	23						
1408	1967 DEC 07	16:41:27.80	40.800	-117.000	33.00	3.80Mb NEIC				PE	8						
1409	1967 DEC 09	19:35:44.00	41.624	-111.743	7.00	2.70MD UU				DG	16						
1410	1967 DEC 22	00:16:49.30	42.420	-111.430	7.00	2.50ML UU				SA					C		
1411	1967 DEC 23	16:34:14.70	44.000	-114.400	33.00	4.00Mn DW				DG	21						
1412	1967 DEC 23	17:07:20.90	43.900	-114.400	33.00	3.70Mb NEIC				SA					C		
1413	1968 JAN 02	14:09:44.10	43.900	-114.300	33.00	3.60Mb NEIC				SA					C		
1414	1968 JAN 10	23:58:01.00	44.600	-115.000	33.00	3.50Mb NEIC				SA					C		
1415	1968 JAN 11	07:46:18.40	44.000	-114.400	33.00	4.00mb				DG	22						
1416	1968 JAN 16	06:09:22.40	42.800	-111.600	22.00	3.90Mb NEIC				SA					B		
1417	1968 JAN 18	16:13:26.16	41.121	-110.426	7.00	2.60MD UU				DG							
1418	1968 JAN 28	10:34:32.90	44.400	-110.600	33.00	3.80Mb NEIC				SA					C		
1419	1968 FEB 03	16:31:12.70	45.781	-112.799	5.00	3.90Mb NEIC				SA					A		
1420	1968 FEB 05	17:08:31.30	46.200	-111.400	5.00	3.80Mb NEIC				SA					C		
1421	1968 FEB 06	14:29:33.40	45.800	-112.000	33.00	3.70Mb NEIC				SA					C		
1422	1968 FEB 20	06:34:26.44	41.727	-110.611	7.00	3.70mb				DG	13						
1423	1968 FEB 21	11:38:52.90	44.400	-115.300	33.00	3.60Mb NEIC				SA					C		
1424	1968 MAR 07	04:17:06.80	42.210	-112.780	7.00	3.00ML UU				SA					C		
1425	1968 MAR 28	04:48:08.47	41.327	-113.468	7.00	2.70MD UU				DG	9						
1426	1968 APR 28	05:22:37.00	44.300	-114.500	33.00	4.00mb				DG	13						
1427	1968 APR 29	20:13:11.40	44.200	-114.600	33.00	3.80Mb NEIC				SA					C		
1428	1968 MAY 17	21:46:34.20	42.139	-110.464	7.00	2.80ML UU				DG							

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz Vert
1429	1968 JUN 14	21:11:15.33	41.931	-110.478	7.00	3.00ML UU	.....	..	...	DG	...	...	.....	.....	.	.....
1430	1968 JUL 20	11:36:23.70	44.000	-114.400	33.00	3.10Mb NEIC	.....	IV	...	SA	...	...	.....	.....	D	.....
1431	1968 JUL 30	12:41:05.00	42.260	-110.600	7.00	2.50MD UU	.....	..	...	SA	...	...	.....	.....	C	.....
1432	1968 AUG 01	09:52:38.10	45.030	-111.620	31.00	3.90Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....
1433	1968 AUG 12	00:00:00.00	44.300	-114.800	.00	.....	.....	IV	...	SA	...	...	.....	.....	F	.....
1434	1968 AUG 13	00:00:00.00	44.300	-114.800	.00	.....	.....	IV	...	SA	...	...	.....	.....	F	.....
1435	1968 AUG 14	00:00:00.00	44.300	-114.800	.00	.....	.....	IV	...	SA	...	...	.....	.....	F	.....
1436	1968 AUG 30	13:23:35.60	44.230	-115.010	33.00	3.70Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....
1437	1968 AUG 30	18:42:25.90	44.320	-114.890	33.00	3.50Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....
1438	1968 NOV 14	17:56:17.58	42.037	-110.427	7.00	2.60MD UU	.....	..	...	DG	...	...	.....	.....	.	.....
1439	1968 NOV 16	03:51:22.40	43.660	-110.210	33.00	3.90Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....
1440	1968 NOV 29	17:43:00.00	44.200	-114.400	.00	.....	.....	IV	...	SA	...	...	.....	.....	F	.....
1441	1968 DEC 18	11:33:45.50	44.350	-110.860	33.00	3.50Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....
1442	1969 JAN 23	23:10:33.03	40.727	-111.632	7.00	2.50MD UU	.....	..	...	DG	...	...	.....	.....	.	.....
1443	1969 FEB 05	02:00:35.41	42.014	-110.509	7.00	2.50MD UU	.....	..	...	DG	...	...	.....	.....	.	.....
1444	1969 FEB 16	11:29:53.10	40.800	-111.800	7.00	2.00MD UU	.....	IV	...	SA	...	...	.....	.....	A	.....
1445	1969 FEB 16	21:07:18.20	46.150	-112.550	21.00	3.60Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....
1446	1969 FEB 25	11:11:09.70	43.870	-111.050	33.00	3.60Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....
1447	1969 MAR 08	08:26:18.20	45.020	-111.650	33.00	4.10mb	.....	..	...	DG	15	...	.....	.....	.	.....
1448	1969 APR 22	13:24:02.60	44.200	-114.600	33.00	3.60Mb NEIC	.....	IV	...	SA	...	...	.....	.....	D	.....
1449	1969 APR 26	10:41:53.00	44.200	-114.500	13.00	4.90Mb DW	.....	..	...	DG	58	...	.....	.....	.	.....
1450	1969 APR 27	21:31:31.80	44.230	-114.560	33.00	3.70Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....
1451	1969 MAY 02	05:06:27.90	44.070	-114.730	33.00	3.60Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....
1452	1969 MAY 03	09:30:00.00	43.700	-114.400	.00	.....	.....	III	...	SA	...	...	.....	.....	F	.....
1453	1969 MAY 05	07:09:10.90	44.100	-114.500	33.00	4.60mb	.....	..	...	DG	17	...	.....	.....	.	.....
1454	1969 MAY 31	02:24:32.30	44.150	-114.550	33.00	3.30Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....
1455	1969 JUN 03	06:01:57.30	44.100	-114.600	33.00	3.70Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....
1456	1969 JUN 07	00:42:00.10	42.280	-110.350	7.00	2.50MD UU	.....	..	...	SA	...	...	.....	.....	A	.....
1457	1969 JUN 11	03:48:49.21	41.621	-112.110	7.00	2.50MD UU	.....	..	...	DG	...	...	.....	.....	.	.....
1458	1969 JUN 30	12:05:52.30	42.690	-111.170	33.00	3.70Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....
1459	1969 AUG 26	11:13:46.90	44.960	-111.440	33.00	3.70Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....
1460	1969 AUG 27	15:59:28.40	42.900	-110.800	1.00	4.19mb	.....	..	...	DG	14	...	.....	.....	.	.....
1461	1969 AUG 27	18:35:18.90	43.000	-110.720	1.00	3.90ML GS	3.90Mb NEIC	..	...	SA	...	...	.....	.....	C	.....
1462	1969 AUG 30	02:01:02.50	43.070	-110.670	1.00	3.60ML GS	3.90Mb NEIC	..	...	SA	...	...	.....	.....	C	.....
1463	1969 SEP 19	09:31:45.90	43.060	-111.420	5.00	4.40ML CGS	.....	..	...	DG	14	...	.....	.....	.	.....
1464	1969 SEP 19	13:33:15.00	42.990	-111.430	5.00	4.90ML CGS	.....	..	...	DG	22	...	.....	.....	.	.....
1465	1969 SEP 19	19:57:18.70	43.010	-111.270	5.00	4.40ML CGS	.....	..	...	DG	21	...	.....	.....	.	.....
1466	1969 SEP 19	23:58:06.50	42.960	-111.490	5.00	4.10ML CGS	.....	..	...	DG	15	...	.....	.....	.	.....
1467	1969 SEP 20	09:12:06.70	43.120	-111.410	5.00	3.80ML GS	3.60Mb NEIC	..	...	SA	...	...	.....	.....	C	.....
1468	1969 SEP 23	12:58:13.50	42.920	-111.470	5.00	3.80ML GS	3.90Mb NEIC	..	...	SA	...	...	.....	.....	C	.....
1469	1969 SEP 24	15:46:15.20	45.580	-112.050	22.00	4.00mb	.....	..	...	DG	8	...	.....	.....	.	.....
1470	1969 SEP 25	03:19:45.00	42.870	-111.700	5.00	3.90ML GS	.....	..	...	SA	...	...	.....	.....	C	.....
1471	1969 OCT 06	04:03:51.60	44.160	-110.430	33.00	3.90Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....
1472	1969 OCT 26	13:54:51.10	44.660	-110.320	33.00	4.30mb	.....	..	...	DG	8	...	.....	.....	.	.....
1473	1969 DEC 11	18:49:46.90	42.057	-110.478	7.00	2.50MD UU	.....	..	...	DG	...	...	.....	.....	.	.....
1474	1970 JAN 07	12:27:53.40	45.000	-111.600	33.00	4.90mb	.....	..	...	DG	15	...	.....	.....	.	.....
1475	1970 MAR 22	18:08:25.70	44.880	-110.770	33.00	3.40Mb NEIC	.....	..	...	SA	...	...	.....	.....	C	.....
1476	1970 MAR 29	12:40:40.34	41.662	-113.839	7.00	5.10UK	.....	..	...	DG	29	...	.....	.....	.	.....
1477	1970 JUN 23	02:34:44.80	44.790	-110.920	33.00	4.40mb	.....	..	...	DG	20	...	.....	.....	.	.....
1478	1970 JUN 26	01:26:44.60	45.600	-111.800	26.00	4.90mb	.....	..	...	DG	15	...	.....	.....	.	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
1479	1970 SEP 20	06:34:57.30	44.690	-110.420	10.00	4.19mb				DG	14						
1480	1970 SEP 20	07:36:13.60	44.580	-110.650	15.00	4.00mb				DG	10						
1481	1970 SEP 21	07:04:36.90	43.180	-110.760	15.00	4.40mb				DG	32						
1482	1970 OCT 17	08:06:33.30	42.700	-111.120	15.00	4.30mb				DG	7						
1483	1970 OCT 18	20:06:32.60	46.200	-111.500	15.00	4.30mb USE				DG	34						
1484	1970 NOV 08	08:08:11.00	44.360	-115.580	33.00	3.80mb NEIC				SA						C	
1485	1970 NOV 13	00:45:45.10	44.050	-110.410	33.00	3.90mb NEIC				SA						C	
1486	1970 NOV 27	11:18:45.00	44.460	-115.610	33.00	3.50mb NEIC				SA						C	
1487	1970 DEC 05	02:16:30.90	44.470	-115.450	33.00	3.90mb NEIC				SA						C	
1488	1970 DEC 05	02:54:16.90	44.348	-115.494	33.00	4.30mb				DG	23						
1489	1970 DEC 05	08:17:46.00	44.490	-115.500	33.00	3.70mb NEIC				SA						C	
1490	1970 DEC 06	09:33:47.50	44.476	-115.422	33.00	4.30mb				DG	10						
1491	1971 JAN 11	02:08:53.90	45.230	-111.970	33.00	3.60mb NEIC			V	SA						C	
1492	1971 JAN 11	02:38:00.00	45.700	-111.000	.00			III		SA						G	
1493	1971 JAN 22	14:39:55.10	44.090	-114.590	33.00	3.80mb NEIC				SA						C	
1494	1971 JAN 26	10:52:52.70	46.430	-112.200	15.00			IV		SA						C	
1495	1971 FEB 03	19:52:40.60	45.100	-110.940	15.00	4.90mb				DG	19						
1496	1971 FEB 08	21:10:00.00	45.500	-111.800	.00			III		SA						G	
1497	1971 FEB 11	09:03:25.20	41.128	-116.661	.....	2.50MD UNR				UN			4.0	.37			
1498	1971 MAR 13	07:33:13.40	44.900	-111.290	33.00			IV		SA						C	
1499	1971 MAR 14	13:37:47.20	42.045	-111.255	7.00	2.60MD UU				DG							
1500	1971 APR 21	08:52:02.60	44.750	-111.260	15.00	3.90mb NEIC				SA						C	
1501	1971 JUL 16	10:54:18.00	42.420	-111.360	7.00	2.80ML UU	3.60mb NEIC	V		SA						C	
1502	1971 JUL 27	15:32:18.80	40.500	-111.990	7.00	2.50MD UU				SA						A	
1503	1971 DEC 03	05:35:00.40	42.489	-110.395	7.00	4.10mb				DG	12						
1504	1971 DEC 03	07:44:59.27	42.495	-110.342	7.00	4.19mb				DG	21						
1505	1972 JAN 14	04:34:22.70	44.950	-111.640	5.00			IV		SA						C	
1506	1972 JAN 18	07:06:00.00	45.300	-111.900	.00			III		SA						G	
1507	1972 FEB 06	05:50:00.00	45.300	-111.900	.00			III		SA						G	
1508	1972 FEB 12	05:13:11.87	41.817	-111.005	7.00	2.50MD UU				DG							
1509	1972 FEB 26	03:50:00.00	45.300	-111.900	.00			III		SA						G	
1510	1972 MAR 06	13:33:24.92	41.878	-111.610	7.00	4.60mb				DG	16						
1511	1972 MAR 17	23:09:50.60	41.804	-110.987	7.00	2.60MD UU				DG							
1512	1972 MAY 17	22:43:32.03	41.994	-110.966	7.00	2.60MD UU				DG							
1513	1972 JUN 12	13:02:29.31	41.608	-111.746	7.00	2.70MD UU				DG							
1514	1972 JUN 22	04:39:41.70	44.570	-110.100	10.00	3.90mb NEIC				SA						C	
1515	1972 JUL 22	06:05:09.70	42.460	-111.610	7.00	2.90ML UU				SA						B	
1516	1972 AUG 30	04:41:00.00	45.500	-111.800	.00			IV		SA						G	
1517	1972 SEP 17	04:25:36.40	40.803	-116.614	.....	2.70MD UNR				UN			6.0	.51			
1518	1972 SEP 28	03:08:04.50	42.280	-110.960	7.00	2.50MD UU				SA						A	
1519	1972 OCT 01	19:42:29.52	40.506	-111.348	7.00	4.69mb				DG	46						
1520	1972 OCT 01	20:06:26.72	40.605	-111.339	7.00	2.50MD UU				DG							
1521	1972 OCT 04	23:50:19.50	40.530	-111.360	8.00	3.10MD GS				DG							
1522	1972 NOV 02	03:41:31.30	46.150	-111.500	5.00	4.50ML ERL				DG	15						
1523	1972 NOV 02	07:27:52.00	46.170	-111.420	5.00	3.50ML GS			IV	SA						C	
1524	1972 NOV 02	10:40:52.40	46.160	-111.480	5.00	3.50ML GS				SA						C	
		Felt															
1525	1972 NOV 08	09:54:29.40	44.580	-110.690	5.00	2.90MD USG				SA						A	
1526	1972 NOV 24	05:36:06.90	42.500	-111.160	33.00	4.40mb				DG	23						
1527	1973 JAN 12	06:46:31.60	44.804	-111.479	10.00	2.60MD USG				DG							

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz Vert
1528	1973 JAN 15	04:41:08.48	44.699	-111.043	8.00	2.83MD	GS	.....	..	DG	15	...	.....	.....	.	.....
1529	1973 JAN 20	04:51:03.52	44.700	-111.045	8.00	2.63MD	GS	.....	..	DG	...	...	.....	.....	.	.....
1530	1973 JAN 23	04:17:33.55	44.678	-110.016	6.00	2.55MD	GS	.....	..	DG	...	...	.....	.....	.	.....
1531	1973 FEB 05	11:56:39.85	44.576	-110.937	8.00	2.77MD	GS	.....	..	DG	...	...	.....	.....	.	.....
1532	1973 FEB 14	03:37:27.54	44.738	-111.105	9.00	2.50MD	USG	.....	..	DG	...	...	.....	.....	.	.....
1533	1973 FEB 14	04:12:54.67	44.738	-111.106	9.00	2.60MD	USG	.....	..	DG	...	...	.....	.....	.	.....
1534	1973 FEB 14	06:11:42.11	44.737	-111.101	9.00	3.01MD	GS	.....	..	DG	14	...	.....	.....	.	.....
1535	1973 MAR 01	06:00:20.05	44.697	-111.167	5.00	4.30mb		.....	..	DG	19	...	.....	.....	.	.....
1536	1973 MAR 25	16:33:13.10	44.470	-110.470	10.00	3.40mb		.....	..	DG	18	...	.....	.....	.	.....
1537	1973 MAR 27	19:02:11.37	44.344	-110.325	2.00	3.34MD	GS	.....	..	DG	12	...	.....	.....	.	.....
1538	1973 MAR 28	02:39:57.43	44.352	-110.355	5.00	5.00mb		.....	..	DG	43	...	.....	.....	.	.....
1539	1973 MAR 28	03:02:28.54	44.353	-110.358	4.00	4.50mb		.....	..	DG	17	...	.....	.....	.	.....
1540	1973 MAR 28	03:31:31.53	44.358	-110.346	3.00	2.86MD	GS	.....	..	DG	...	...	.....	.....	.	.....
1541	1973 MAR 28	04:24:45.88	44.346	-110.322	.00	3.44MD	GS	.....	..	DG	...	...	.....	.....	.	.....
1542	1973 MAR 28	10:07:01.09	44.347	-110.336	4.00	4.00mb		.....	..	DG	16	...	.....	.....	.	.....
1543	1973 MAR 28	15:38:41.38	44.363	-110.361	3.00	2.75MD	GS	.....	..	DG	7	...	.....	.....	.	.....
1544	1973 MAR 30	00:10:39.31	44.362	-110.353	6.00	3.63MD	GS	.....	..	DG	10	...	.....	.....	.	.....
1545	1973 MAR 30	00:32:56.03	44.358	-110.354	3.00	4.61MD	GS	.....	..	DG	45	...	.....	.....	.	.....
1546	1973 MAR 30	01:32:13.21	44.363	-110.350	5.00	3.88MD	GS	.....	..	DG	16	...	.....	.....	.	.....
1547	1973 MAR 30	01:55:15.46	44.372	-110.391	7.00	3.44MD	GS	.....	..	DG	11	...	.....	.....	.	.....
1548	1973 MAR 30	02:13:25.94	44.345	-110.334	1.00	3.57MD	GS	.....	..	DG	12	...	.....	.....	.	.....
1549	1973 MAR 30	06:59:14.93	44.341	-110.328	1.00	3.13MD	GS	.....	..	DG	11	...	.....	.....	.	.....
1550	1973 MAR 30	08:26:32.01	44.379	-110.383	5.00	3.78MD	GS	.....	..	DG	...	...	.....	.....	.	.....
1551	1973 MAR 30	14:36:23.75	44.372	-110.380	5.00	3.44MD	GS	.....	..	DG	8	...	.....	.....	.	.....
1552	1973 MAR 30	16:31:18.95	44.746	-111.090	8.00	2.80MD	USG	.....	..	DG	...	...	.....	.....	.	.....
1553	1973 MAR 30	18:47:20.26	44.746	-111.088	8.00	2.54MD	GS	.....	..	DG	...	...	.....	.....	.	.....
1554	1973 MAR 30	19:04:26.33	44.746	-111.093	8.00	2.60MD	USG	.....	..	DG	...	...	.....	.....	.	.....
1555	1973 MAR 30	19:05:29.68	44.748	-111.090	8.00	2.71MD	GS	.....	..	DG	...	...	.....	.....	.	.....
1556	1973 MAR 30	20:18:57.89	44.345	-110.348	2.00	4.03MD	GS	.....	..	DG	20	...	.....	.....	.	.....
1557	1973 MAR 31	16:13:13.92	44.364	-110.375	5.00	2.98MD	GS	.....	..	DG	8	...	.....	.....	.	.....
1558	1973 MAR 31	20:33:30.72	44.367	-110.358	.00	5.10mb		.....	..	DG	27	...	.....	.....	.	.....
1559	1973 APR 01	09:44:06.78	44.359	-110.352	3.00	3.30MD	USG	.....	..	DG	14	...	.....	.....	.	.....
1560	1973 APR 01	12:09:39.11	44.746	-111.241	11.00	2.52MD	GS	.....	..	DG	...	...	.....	.....	.	.....
1561	1973 APR 02	18:57:41.93	44.354	-110.364	2.00	3.32MD	GS	.....	..	DG	10	...	.....	.....	.	.....
1562	1973 APR 02	19:48:38.78	44.355	-110.376	6.00	3.02MD	GS	.....	..	DG	10	...	.....	.....	.	.....
1563	1973 APR 04	15:14:28.85	44.365	-110.379	6.00	3.00MD	USG	.....	..	DG	10	...	.....	.....	.	.....
1564	1973 APR 04	18:10:22.53	44.641	-111.018	8.00	2.61MD	GS	.....	..	DG	...	...	.....	.....	.	.....
1565	1973 APR 05	16:30:23.78	44.368	-110.375	5.00	3.05MD	GS	.....	..	DG	13	...	.....	.....	.	.....
1566	1973 APR 06	23:46:08.17	44.741	-110.522	5.00	3.56MD	GS	.....	..	DG	16	...	.....	.....	.	.....
1567	1973 APR 07	19:16:49.94	44.385	-110.376	5.00	2.87MD	GS	.....	..	DG	11	...	.....	.....	.	.....
1568	1973 APR 09	10:30:58.11	44.107	-110.472	.00	3.60mb		.....	..	DG	13	...	.....	.....	.	.....
1569	1973 APR 12	03:15:06.04	44.373	-110.344	7.00	3.56MD	GS	.....	..	DG	24	...	.....	.....	.	.....
1570	1973 APR 12	03:19:57.99	44.373	-110.345	5.00	2.81MD	GS	.....	..	DG	11	...	.....	.....	.	.....
1571	1973 APR 12	03:24:13.20	44.369	-110.346	7.00	4.19mb		.....	..	DG	28	...	.....	.....	.	.....
1572	1973 APR 14	06:45:46.52	42.042	-112.631	7.00	4.75ML	ERL	.....	..	DG	49	...	.....	.....	.	.....
1573	1973 APR 21	07:26:10.70	44.550	-110.130	10.00	4.40mb		.....	..	DG	49	...	.....	.....	.	.....
1574	1973 APR 21	08:00:11.50	44.420	-110.450	10.00	3.60mb		.....	..	DG	13	...	.....	.....	.	.....
1575	1973 APR 21	14:46:03.43	44.310	-110.345	1.00	2.70MD	USG	.....	..	DG	...	...	.....	.....	.	.....
1576	1973 MAY 04	18:58:49.35	44.583	-111.196	8.00	2.61MD	GS	.....	..	DG	...	...	.....	.....	.	.....
1577	1973 JUN 09	12:37:26.03	44.810	-110.982	5.00	3.02MD	GS	.....	..	DG	9	...	.....	.....	.	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz Vert
1578	1973 JUN 11	20:14:57.07	44.809	-110.986	5.00	2.57MD	GS	.....	..	DG	...	...	.....	.....	.	.....
1579	1973 JUN 17	09:17:24.55	44.756	-110.971	1.00	3.72MD	GS	.....	..	DG	13	...	.....	.....	.	.....
1580	1973 JUN 18	18:39:46.31	44.748	-110.943	7.00	2.50MD	USG	.....	..	DG	...	...	.....	.....	.	.....
1581	1973 JUN 18	19:33:10.09	44.751	-110.951	5.00	3.50MD	USG	.....	..	DG	3	...	.....	.....	.	.....
1582	1973 JUN 22	04:10:16.49	44.752	-110.950	7.00	2.56MD	GS	.....	..	DG	...	...	.....	.....	.	.....
1583	1973 JUN 22	16:31:16.56	44.754	-110.949	7.00	2.77MD	GS	.....	..	DG	...	...	.....	.....	.	.....
1584	1973 JUN 26	13:17:52.00	44.755	-111.015	7.00	2.51MD	GS	.....	..	DG	...	...	.....	.....	.	.....
1585	1973 JUN 26	16:52:00.11	44.750	-111.016	7.00	2.89MD	GS	.....	..	DG	...	...	.....	.....	.	.....
1586	1973 JUN 27	01:07:38.92	44.751	-111.014	7.00	2.54MD	GS	.....	..	DG	...	...	.....	.....	.	.....
1587	1973 JUN 27	03:22:22.14	44.750	-111.008	6.00	2.85MD	GS	.....	..	DG	7	...	.....	.....	.	.....
1588	1973 JUN 27	04:10:48.55	44.753	-111.016	7.00	2.50MD	USG	.....	..	DG	...	...	.....	.....	.	.....
1589	1973 JUN 27	14:00:52.94	44.752	-111.014	7.00	2.79MD	GS	.....	..	DG	...	...	.....	.....	.	.....
1590	1973 JUN 28	08:22:33.50	44.800	-111.567	6.00	2.71MD	GS	.....	..	DG	...	...	.....	.....	.	.....
1591	1973 JUN 29	12:19:27.36	44.751	-111.016	7.00	2.71MD	GS	.....	..	DG	...	...	.....	.....	.	.....
1592	1973 JUL 22	12:35:52.76	41.930	-112.415	7.00	2.90ML	UU	.....	..	DG	...	...	.....	.....	.	.....
1593	1973 AUG 05	21:52:40.22	44.948	-111.627	6.00	2.61MD	GS	.....	..	DG	...	...	.....	.....	.	.....
1594	1973 AUG 06	06:26:14.61	44.744	-110.519	5.00	3.30MD	USG	.....	..	DG	13	...	.....	.....	.	.....
1595	1973 AUG 09	04:56:18.37	44.756	-111.052	6.00	2.54MD	GS	.....	..	DG	...	...	.....	.....	.	.....
1596	1973 AUG 20	10:35:07.94	44.541	-110.430	.00	2.50MD	USG	.....	..	DG	7	...	.....	.....	.	.....
1597	1973 AUG 20	18:22:10.10	44.542	-110.417	1.00	2.76MD	GS	.....	..	DG	...	...	.....	.....	.	.....
1598	1973 AUG 29	11:38:05.91	44.783	-111.425	12.00	2.60MD	USG	.....	..	DG	...	...	.....	.....	.	.....
1599	1973 AUG 31	15:49:39.91	44.830	-111.774	4.00	2.60MD	USG	.....	..	DG	...	...	.....	.....	.	.....
1600	1973 SEP 22	18:25:48.55	44.744	-110.921	7.00	2.50MD	USG	.....	..	DG	...	...	.....	.....	.	.....
1601	1973 SEP 24	14:41:17.49	44.779	-111.635	7.00	2.60MD	USG	.....	..	DG	...	...	.....	.....	.	.....
1602	1973 SEP 26	05:06:37.32	44.853	-111.561	8.00	2.90MD	USG	.....	..	DG	...	...	.....	.....	.	.....
1603	1973 NOV 20	23:36:30.33	41.995	-112.676	7.00	3.40ML	UU	.....	..	DG	16	...	.....	.....	.	.....
1604	1973 NOV 20	23:47:44.45	41.964	-112.683	7.00	2.70MD	UU	.....	..	DG	...	...	.....	.....	.	.....
1605	1973 NOV 21	00:37:46.24	41.925	-112.703	7.00	2.50MD	UU	.....	..	DG	...	...	.....	.....	.	.....
1606	1973 DEC 03	18:42:47.31	42.003	-112.777	7.00	2.70ML	UU	.....	..	DG	...	...	.....	.....	.	.....
1607	1973 DEC 03	20:59:58.25	42.006	-112.819	7.00	2.90ML	UU	.....	..	DG	...	...	.....	.....	.	.....
1608	1974 JAN 02	13:35:25.93	45.287	-111.477	5.00	2.80MD	USG	.....	..	DG	...	...	.....	.....	.	.....
1609	1974 JAN 07	01:26:32.84	44.457	-110.594	.00	2.52MD	GS	.....	..	DG	...	...	.....	.....	.	.....
1610	1974 JAN 26	19:24:07.20	44.331	-110.493	6.00	2.51MD	GS	.....	..	DG	...	...	.....	.....	.	.....
1611	1974 FEB 06	07:26:07.43	44.786	-110.888	8.00	3.33MD	GS	.....	..	DG	10	...	.....	.....	.	.....
1612	1974 FEB 09	23:47:44.45	44.712	-110.596	6.00	2.69MD	GS	.....	..	DG	...	...	.....	.....	.	.....
1613	1974 FEB 10	06:09:21.71	44.713	-110.596	5.00	3.12MD	GS	.....	..	DG	...	...	.....	.....	.	.....
1614	1974 FEB 10	06:12:22.94	44.711	-110.597	6.00	2.97MD	GS	.....	..	DG	...	...	.....	.....	.	.....
1615	1974 FEB 13	03:55:10.58	44.784	-110.917	5.00	2.70MD	USG	.....	..	DG	...	...	.....	.....	.	.....
1616	1974 MAR 02	16:48:17.43	44.745	-110.978	7.00	3.09MD	GS	.....	..	DG	...	...	.....	.....	.	.....
1617	1974 MAR 07	12:40:49.53	44.749	-110.855	2.00	2.50MD	USG	.....	..	DG	...	...	.....	.....	.	.....
1618	1974 MAR 10	07:40:44.33	44.752	-111.232	5.00	2.63MD	GS	.....	..	DG	...	...	.....	.....	.	.....
1619	1974 MAR 23	21:36:42.48	44.759	-111.097	5.00	2.50MD	USG	.....	..	DG	...	...	.....	.....	.	.....
1620	1974 MAR 24	15:04:42.16	44.667	-110.697	4.00	3.80mb	.....	.....	..	DG	19	...	.....	.....	.	.....
1621	1974 MAR 24	15:07:44.99	44.659	-110.708	4.00	3.25MD	GS	.....	..	DG	10	...	.....	.....	.	.....
1622	1974 MAR 24	22:57:02.71	44.676	-110.704	5.00	2.93MD	GS	.....	..	DG	9	...	.....	.....	.	.....
1623	1974 MAR 25	07:57:37.78	44.678	-110.704	4.00	2.50MD	USG	.....	..	DG	...	...	.....	.....	.	.....
1624	1974 MAR 28	00:11:09.65	44.775	-111.058	3.00	2.53MD	GS	.....	..	DG	...	...	.....	.....	.	.....
1625	1974 MAR 30	11:13:30.88	44.777	-111.056	3.00	2.60MD	USG	.....	..	DG	...	...	.....	.....	.	.....
1626	1974 MAR 30	11:21:29.32	44.776	-111.061	3.00	2.60MD	USG	.....	..	DG	...	...	.....	.....	.	.....
1627	1974 MAR 30	11:22:49.50	44.776	-111.060	3.00	2.62MD	GS	.....	..	DG	...	...	.....	.....	.	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
1628	1974 MAR 30	11:30:52.67	44.775	-111.061	3.00	2.80MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1629	1974 APR 03	08:50:28.85	44.780	-111.040	5.00	3.04UK	UU 0	.....	..	DG	...	...	.....	.....	.	.....	.....
1630	1974 APR 03	12:38:14.16	44.776	-111.030	4.00	2.97MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1631	1974 APR 03	13:13:19.45	44.776	-111.031	5.00	2.70MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1632	1974 APR 04	19:30:05.78	44.782	-111.037	2.00	2.60MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1633	1974 APR 07	13:28:19.44	44.780	-111.062	5.00	2.50MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1634	1974 APR 07	15:51:04.69	44.779	-111.062	5.00	2.50MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1635	1974 APR 10	22:24:14.27	44.785	-111.012	4.00	2.50MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1636	1974 APR 11	00:04:18.73	44.786	-111.010	4.00	2.60MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1637	1974 APR 14	13:32:16.02	44.785	-111.013	3.00	2.85MD	GS	.....	..	DG	18	...	.....	.....	.	.....	.....
1638	1974 APR 17	12:34:29.52	44.722	-111.246	12.00	2.80MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1639	1974 APR 20	15:50:59.76	44.776	-111.076	3.00	2.90MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1640	1974 APR 24	21:31:14.57	44.589	-109.966	8.00	2.72MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1641	1974 MAY 14	00:46:24.15	44.668	-110.699	4.00	2.94MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1642	1974 MAY 18	06:19:02.84	44.668	-110.705	4.00	2.54MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1643	1974 MAY 27	21:35:06.36	44.761	-110.982	4.00	2.83MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1644	1974 MAY 28	01:24:01.03	44.762	-110.979	3.00	2.84MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1645	1974 MAY 28	07:15:37.31	44.762	-110.977	3.00	2.53MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1646	1974 MAY 29	07:57:46.48	44.593	-110.714	3.00	2.52MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1647	1974 JUN 08	15:42:49.97	44.760	-110.977	6.00	2.74MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1648	1974 JUN 08	19:27:04.11	44.762	-110.976	3.00	3.11MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1649	1974 JUN 08	19:42:03.73	44.762	-110.974	5.00	3.05MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1650	1974 JUN 08	20:26:37.13	44.765	-110.977	5.00	3.02MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1651	1974 JUN 08	20:30:32.45	44.763	-110.980	5.00	2.68MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1652	1974 JUN 09	00:50:42.16	44.761	-110.970	5.00	4.90ML	GS	.....	..	DG	22	...	.....	.....	.	.....	.....
1653	1974 JUN 09	01:37:25.23	44.763	-110.978	5.00	2.50MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1654	1974 JUN 09	01:44:20.61	44.766	-110.985	5.00	3.05MD	GS	.....	..	DG	8	...	.....	.....	.	.....	.....
1655	1974 JUN 10	04:27:07.34	44.762	-110.980	7.00	2.58MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1656	1974 JUN 12	14:26:39.00	44.769	-110.995	4.00	2.75MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1657	1974 JUL 01	18:23:06.92	44.451	-111.080	11.00	5.10ML	GS	.....	..	DG	23	...	.....	.....	.	.....	.....
1658	1974 JUL 02	13:08:01.17	44.479	-111.112	4.00	3.70MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1659	1974 JUL 04	03:10:55.50	44.442	-111.075	9.00	3.50MD	GS	.....	..	DG	12	...	.....	.....	.	.....	.....
1660	1974 JUL 07	07:45:11.64	44.736	-110.534	.00	2.50MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1661	1974 JUL 08	15:44:02.83	44.575	-110.752	.00	2.57MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1662	1974 JUL 09	14:47:21.67	44.732	-110.537	3.00	2.53MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1663	1974 JUL 16	06:38:45.80	45.820	-111.350	10.00	4.40mb	.....	.....	..	DG	54	...	.....	.....	.	.....	.....
1664	1974 JUL 22	00:08:42.97	44.690	-110.770	4.00	2.83MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1665	1974 AUG 04	08:15:35.55	44.752	-111.389	4.00	2.80MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1666	1974 AUG 17	17:15:46.75	44.732	-111.115	8.00	2.64MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1667	1974 AUG 17	17:21:49.52	44.732	-111.119	8.00	2.81MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1668	1974 AUG 18	04:09:48.27	44.734	-111.747	5.00	2.64MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1669	1974 AUG 18	21:56:13.28	44.310	-110.561	.00	3.17MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1670	1974 AUG 30	13:23:06.21	44.627	-110.718	4.00	2.59MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1671	1974 AUG 30	16:41:58.42	44.633	-110.727	2.00	4.50mb	.....	.....	..	DG	49	...	.....	.....	.	.....	.....
1672	1974 AUG 30	17:04:45.90	44.650	-111.070	5.00	3.00MI	GS	.....	..	DG	6	...	.....	.....	.	.....	.....
1673	1974 AUG 30	17:41:20.90	44.570	-111.120	5.00	3.00MI	GS	.....	..	DG	5	...	.....	.....	.	.....	.....
1674	1974 AUG 30	19:33:20.50	44.350	-111.050	5.00	3.00MI	GS	.....	..	DG	6	...	.....	.....	.	.....	.....
1675	1974 AUG 30	19:46:53.88	44.624	-110.714	4.00	4.50mb	.....	.....	..	DG	14	...	.....	.....	.	.....	.....
1676	1974 SEP 01	04:39:34.07	44.635	-110.721	4.00	2.50MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1677	1974 SEP 01	13:57:29.30	40.781	-116.439	.00	3.10UK	.....	.....	..	DG	...	...	.....	.....	.	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz Vert
1678	1974 SEP 01	15:30:00.00	44.800	-110.700	.00			II	...	SA	...	...	...	...	F	.....
1679	1974 SEP 01	15:32:00.00	44.800	-110.700	.00			II	...	SA	...	...	...	...	F	.....
1680	1974 SEP 01	16:16:00.00	44.800	-110.700	.00			II	...	SA	...	...	...	...	F	.....
1681	1974 SEP 01	16:20:00.00	44.800	-110.700	.00			II	...	SA	...	...	...	...	F	.....
1682	1974 SEP 01	16:25:00.00	44.800	-110.700	.00			II	...	SA	...	...	...	...	F	.....
1683	1974 SEP 01	16:28:29.40	44.640	-110.730	5.00	2.10MD	USG	II	...	SA	...	...	...	...	A	.....
1684	1974 SEP 01	16:33:00.00	44.800	-110.700	.00			II	...	SA	...	...	...	...	F	.....
1685	1974 SEP 01	16:36:00.00	44.800	-110.700	.00			II	...	SA	...	...	...	...	F	.....
1686	1974 SEP 01	16:53:00.00	44.800	-110.700	.00			II	...	SA	...	...	...	...	F	.....
1687	1974 SEP 01	17:15:00.00	44.800	-110.700	.00			II	...	SA	...	...	...	...	F	.....
1688	1974 SEP 01	17:18:00.00	44.800	-110.700	.00			II	...	SA	...	...	...	...	F	.....
1689	1974 SEP 01	17:24:00.00	44.800	-110.700	.00			II	...	SA	...	...	...	...	F	.....
1690	1974 SEP 01	18:13:00.00	44.800	-110.700	.00			II	...	SA	...	...	...	...	F	.....
1691	1974 SEP 01	19:26:00.00	44.800	-110.700	.00			II	...	SA	...	...	...	...	F	.....
1692	1974 SEP 01	19:46:00.00	44.800	-110.700	.00			II	...	SA	...	...	...	...	F	.....
1693	1974 SEP 01	21:09:00.00	44.800	-110.700	.00			II	...	SA	...	...	...	...	F	.....
1694	1974 SEP 01	21:24:00.00	44.800	-110.700	.00			II	...	SA	...	...	...	...	F	.....
1695	1974 SEP 02	17:55:52.37	44.629	-110.716	5.00	2.94MD	GS	..	...	DG	...	...	...	...	.	.....
1696	1974 SEP 08	02:09:23.54	44.233	-110.790	2.00	2.56MD	GS	..	...	DG	...	...	...	...	.	.....
1697	1974 SEP 09	03:22:44.22	43.801	-111.080	11.00	2.59MD	GS	..	...	DG	...	...	...	...	.	.....
1698	1974 SEP 12	03:02:28.00	46.190	-112.100	5.00	2.90MD	MMT	..	...	SA	...	...	...	...	C	.....
1699	1974 SEP 16	04:07:20.95	41.936	-112.365	7.00	2.50MD	UU	..	...	DG	...	...	...	...	.	.....
1700	1974 SEP 24	05:59:11.72	43.777	-111.036	18.00	3.02MD	GS	..	...	DG	...	...	...	...	.	.....
1701	1974 OCT 13	22:37:21.90	46.010	-112.890	5.00	3.20MD	MMT	..	...	SA	...	...	...	...	C	.....
1702	1974 OCT 18	06:25:27.25	44.674	-110.708	3.00	4.40mb		..	...	DG	49	...	...	...	.	.....
1703	1974 OCT 18	06:59:11.50	44.740	-110.740	5.00	3.50mb	NEIC	II	...	SA	...	...	...	...	C	.....
1704	1974 OCT 18	07:26:41.15	44.698	-110.701	1.00	2.70MD	USG	..	...	DG	...	...	...	...	.	.....
1705	1974 OCT 18	12:00:00.00	44.700	-110.500	.00			II	...	SA	...	...	...	...	F	.....
1706	1974 OCT 18	13:25:00.00	44.700	-110.700	.00			II	...	SA	...	...	...	...	F	.....
1707	1974 OCT 18	13:59:11.50	44.700	-110.700	.00	3.50mb		..	...	DG	25	...	...	...	.	.....
1708	1974 OCT 18	17:00:00.00	44.300	-110.600	.00			II	...	SA	...	...	...	...	F	.....
1709	1974 OCT 18	18:30:00.00	44.100	-110.600	.00	3.67MI	SRA	..	...	DG	...	...	...	...	.	.....
1710	1974 OCT 18	19:05:00.00	44.600	-110.900	.00	3.00MI	SRA	..	...	DG	...	...	...	...	.	.....
1711	1974 OCT 18	19:24:36.63	44.674	-110.702	4.00	2.94MD	GS	..	...	DG	...	...	...	...	.	.....
1712	1974 OCT 18	22:05:00.00	44.600	-110.900	.00	3.00MI	SRA	..	...	DG	...	...	...	...	.	.....
1713	1974 OCT 19	02:45:00.00	44.600	-110.900	.00	3.00MI	SRA	..	...	DG	...	...	...	...	.	.....
1714	1974 OCT 19	04:00:00.00	44.700	-110.500	.00	3.00MI	SRA	..	...	DG	...	...	...	...	.	.....
1715	1974 OCT 19	11:00:00.00	44.700	-110.500	.00	3.00MI	SRA	..	...	DG	...	...	...	...	.	.....
1716	1974 OCT 20	00:00:00.00	44.700	-110.500	.00	3.00MI	SRA	..	...	DG	...	...	...	...	.	.....
1717	1974 OCT 20	02:14:55.00	44.470	-111.000	5.00	3.00MI	GS	..	...	DG	15	...	...	...	.	.....
1718	1974 OCT 22	08:43:07.10	44.720	-110.800	5.00	4.60mb		..	...	DG	15	...	...	...	.	.....
1719	1974 OCT 29	01:48:31.70	44.620	-111.300	5.00	4.00mb		..	...	DG	15	...	...	...	.	.....
1720	1974 OCT 30	09:14:47.31	44.769	-110.694	4.00	3.90mb		..	...	DG	18	...	...	...	.	.....
1721	1974 NOV 01	20:46:00.42	44.767	-110.814	6.00	2.80MD	USG	..	...	DG	...	...	...	...	.	.....
1722	1974 NOV 02	01:38:59.63	44.455	-110.560	1.00	2.57MD	GS	..	...	DG	...	...	...	...	.	.....
1723	1974 NOV 08	14:00:13.72	44.689	-110.711	4.00	3.04MD	GS	..	...	DG	...	...	...	...	.	.....
1724	1974 NOV 11	20:14:17.74	44.636	-110.720	5.00	3.00MD	USG	..	...	DG	...	...	...	...	.	.....
1725	1974 NOV 13	17:16:59.04	44.812	-111.514	11.00	2.70MD	USG	..	...	DG	...	...	...	...	.	.....
1726	1974 NOV 27	19:49:00.00	44.400	-110.800	.00	3.00MI	SRA	..	...	DG	...	...	...	...	.	.....
1727	1974 DEC 01	20:47:27.50	44.680	-110.790	2.00	2.10MD	USG	II	...	SA	...	...	...	...	A	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
1728	1974 DEC 04	19:07:30.99	44.364	-110.777	1.00	2.60MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1729	1974 DEC 07	20:48:13.25	44.800	-111.274	7.00	2.52MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1730	1974 DEC 17	08:22:11.24	44.729	-111.021	4.00	2.66MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1731	1974 DEC 20	05:55:45.30	40.553	-116.593	.00	3.20UK	.....	.....	..	DG	...	...	.....	.....	.	.....	.....
1732	1974 DEC 22	23:40:12.71	44.085	-110.504	3.00	3.36MD	GS	.....	..	DG	10	...	.....	.....	.	.....	.....
1733	1974 DEC 25	20:17:06.27	44.701	-110.709	3.00	2.58MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1734	1974 DEC 28	13:57:42.58	41.928	-111.953	7.00	2.80MD	UU	.....	..	DG	12	...	.....	.....	.	.....	.....
1735	1975 JAN 08	05:04:44.27	44.676	-110.690	4.00	2.77MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1736	1975 JAN 12	19:44:43.19	44.774	-111.007	4.00	2.52MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1737	1975 JAN 12	20:55:01.95	44.658	-110.681	5.00	2.73MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1738	1975 JAN 12	22:35:51.77	44.772	-111.007	4.00	2.62MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1739	1975 JAN 24	06:36:48.24	44.151	-110.414	3.00	2.52MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1740	1975 JAN 25	21:39:16.97	44.663	-110.685	5.00	2.52MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1741	1975 JAN 25	21:43:25.19	44.663	-110.683	5.00	2.50MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1742	1975 JAN 28	23:25:44.50	44.699	-111.059	7.00	2.56MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1743	1975 JAN 28	23:25:44.90	44.700	-111.070	8.00	2.50MD	USG	.....	..	SA	...	...	.....	.....	.	A	.....
1744	1975 JAN 28	23:26:06.58	44.699	-111.058	7.00	2.70MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1745	1975 JAN 29	20:08:18.29	44.695	-111.058	5.00	4.19mb	.....	.....	..	DG	20	...	.....	.....	.	.....	.....
1746	1975 JAN 29	20:22:20.00	44.700	-111.067	7.00	2.70MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1747	1975 JAN 29	20:27:59.74	44.703	-111.068	8.00	2.90MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1748	1975 JAN 29	20:30:11.77	44.699	-111.060	7.00	2.70MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1749	1975 JAN 29	20:42:44.44	44.697	-111.069	6.00	2.50MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1750	1975 JAN 30	15:14:00.00	44.600	-110.800	.00	.....	.....	.....	II	SA	...	...	.....	.....	.	F	.....
1751	1975 JAN 30	23:50:00.00	44.600	-110.800	.00	.....	.....	.....	III	SA	...	...	.....	.....	.	F	.....
1752	1975 JAN 31	07:10:00.00	44.700	-111.100	.00	.....	.....	.....	IV	SA	...	...	.....	.....	.	F	.....
1753	1975 JAN 31	08:10:00.00	44.732	-116.438	.00	3.67MI	HAN	.....	..	DG	...	...	.....	.....	.	.....	.....
1754	1975 FEB 02	07:10:16.53	44.699	-111.065	7.00	2.80MD	USG	.....	..	DG	9	...	.....	.....	.	.....	.....
1755	1975 FEB 02	07:10:30.45	44.697	-111.070	6.00	3.30MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1756	1975 FEB 02	11:48:41.65	44.699	-111.063	7.00	2.90MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1757	1975 FEB 08	03:14:29.40	45.950	-111.330	5.00	4.00ML	GS	.....	..	DG	26	...	.....	.....	.	.....	.....
1758	1975 FEB 13	20:39:00.00	44.200	-110.800	.00	3.00MI	SRA	.....	..	DG	...	...	.....	.....	.	.....	.....
1759	1975 FEB 15	22:40:58.52	44.465	-110.397	2.00	2.53MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1760	1975 FEB 17	13:05:04.82	44.468	-110.398	1.00	2.50MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1761	1975 FEB 22	21:15:27.62	44.683	-110.704	4.00	3.32MD	GS	.....	..	DG	20	...	.....	.....	.	.....	.....
1762	1975 FEB 22	21:46:04.01	44.677	-110.708	4.00	2.50MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1763	1975 FEB 23	14:50:55.59	44.682	-110.706	4.00	2.52MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1764	1975 MAR 06	14:53:42.65	44.669	-110.705	4.00	2.54MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1765	1975 MAR 06	20:36:43.84	44.707	-111.266	9.00	2.64MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1766	1975 MAR 11	13:30:55.94	44.727	-111.142	9.00	2.80MD	USG	.....	..	DG	16	...	.....	.....	.	.....	.....
1767	1975 MAR 14	13:37:47.20	42.050	-111.260	7.00	2.60ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1768	1975 MAR 20	21:36:59.19	44.726	-111.143	9.00	2.91MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1769	1975 MAR 21	15:56:21.51	44.704	-110.699	4.00	3.03MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1770	1975 MAR 26	14:41:31.22	44.830	-111.486	13.00	2.80MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1771	1975 MAR 27	04:48:51.71	42.065	-112.534	5.00	4.40mb	.....	.....	..	DG	58	...	.....	.....	.	.....	.....
1772	1975 MAR 28	00:13:01.10	42.122	-112.584	8.00	2.50ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1773	1975 MAR 28	02:31:05.99	42.062	-112.524	5.00	6.20ML	PAS	.....	..	DG	357	...	.....	.....	.	.....	.....
1774	1975 MAR 28	02:59:54.11	42.051	-112.530	5.00	3.00ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1775	1975 MAR 28	03:10:33.83	42.065	-112.500	5.00	2.60ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1776	1975 MAR 28	03:14:29.04	42.105	-112.522	5.00	3.30ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1777	1975 MAR 28	03:30:44.40	42.080	-112.557	5.00	3.10ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Std-Err Vert
1778	1975 MAR 28	04:04:58.01	42.070	-112.520	11.00	3.30ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1779	1975 MAR 28	04:42:32.48	42.063	-112.527	8.00	2.50ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1780	1975 MAR 28	05:18:54.11	42.023	-112.500	5.00	3.10ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1781	1975 MAR 28	05:52:15.98	42.002	-112.535	8.00	2.90ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1782	1975 MAR 28	06:52:33.33	41.891	-111.783	6.00	3.00ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1783	1975 MAR 28	07:42:45.27	42.072	-112.526	9.00	2.80ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1784	1975 MAR 28	08:11:23.25	42.069	-112.446	5.00	2.70ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1785	1975 MAR 28	09:27:15.20	42.049	-112.500	5.00	2.50ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1786	1975 MAR 28	11:22:24.13	42.080	-112.526	10.00	3.10ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1787	1975 MAR 28	11:26:16.07	42.041	-112.467	5.00	3.00ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1788	1975 MAR 28	13:07:45.41	42.027	-112.486	5.00	2.80ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1789	1975 MAR 28	13:11:16.46	42.076	-112.483	5.00	4.30mb	.....	.....	..	DG	15	...	.....	.....	.	.....	.....
1790	1975 MAR 28	16:15:06.40	42.082	-112.574	9.00	4.10mb	.....	.....	..	DG	34	...	.....	.....	.	.....	.....
1791	1975 MAR 28	16:42:33.94	42.077	-112.518	5.00	2.70ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1792	1975 MAR 28	17:57:41.28	42.107	-112.467	5.00	2.80ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1793	1975 MAR 28	18:30:07.73	42.062	-112.525	9.00	3.10ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1794	1975 MAR 28	19:21:45.33	42.050	-112.526	5.00	3.00ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1795	1975 MAR 28	21:32:55.90	42.005	-112.467	5.00	3.10ML	UU	.....	..	DG	5	...	.....	.....	.	.....	.....
1796	1975 MAR 28	22:05:10.95	42.047	-112.509	15.00	3.20ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1797	1975 MAR 29	01:29:53.19	42.019	-112.490	5.00	3.00ML	UU	.....	..	DG	5	...	.....	.....	.	.....	.....
1798	1975 MAR 29	01:47:23.98	42.060	-112.532	4.00	3.10ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1799	1975 MAR 29	02:18:19.23	42.113	-112.454	5.00	3.00ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1800	1975 MAR 29	05:44:32.02	42.123	-112.474	5.00	4.30mb	.....	.....	..	DG	18	...	.....	.....	.	.....	.....
1801	1975 MAR 29	05:49:01.89	42.147	-112.483	5.00	2.80ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1802	1975 MAR 29	08:24:10.29	42.033	-112.596	5.00	2.80ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1803	1975 MAR 29	09:32:13.91	42.002	-112.537	5.00	3.20ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1804	1975 MAR 29	13:01:19.89	42.033	-112.518	6.00	4.69mb	.....	.....	..	DG	78	...	.....	.....	.	.....	.....
1805	1975 MAR 29	14:32:42.27	42.070	-112.552	5.00	3.00ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1806	1975 MAR 29	15:43:43.63	42.122	-112.580	5.00	3.30ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1807	1975 MAR 30	05:10:06.74	44.670	-110.704	5.00	2.55MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1808	1975 MAR 30	05:14:05.11	42.036	-112.462	5.00	2.80ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1809	1975 MAR 30	05:32:29.27	41.998	-112.492	5.00	2.80ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1810	1975 MAR 30	06:56:28.73	42.033	-112.580	7.00	4.30mb	.....	.....	..	DG	44	...	.....	.....	.	.....	.....
1811	1975 MAR 30	07:18:42.92	42.145	-112.765	2.00	2.50ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1812	1975 MAR 30	07:22:00.29	42.055	-112.653	5.00	4.00mb	.....	.....	..	DG	6	...	.....	.....	.	.....	.....
1813	1975 MAR 30	07:32:13.23	42.024	-112.581	5.00	4.30mb	.....	.....	..	DG	22	...	.....	.....	.	.....	.....
1814	1975 MAR 30	08:46:30.97	42.023	-112.596	.00	3.20ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1815	1975 MAR 30	08:54:51.36	42.044	-112.589	4.00	2.90ML	UU	.....	..	DG	6	...	.....	.....	.	.....	.....
1816	1975 MAR 30	10:06:48.95	42.018	-112.601	5.00	3.90mb	.....	.....	..	DG	6	...	.....	.....	.	.....	.....
1817	1975 MAR 30	12:17:59.83	42.054	-112.534	5.00	4.00mb	.....	.....	..	DG	5	...	.....	.....	.	.....	.....
1818	1975 MAR 30	12:56:33.49	42.033	-112.598	5.00	4.00mb	.....	.....	..	DG	8	...	.....	.....	.	.....	.....
1819	1975 MAR 30	14:02:26.52	42.025	-112.604	5.00	4.00mb	.....	.....	..	DG	31	...	.....	.....	.	.....	.....
1820	1975 MAR 30	16:53:28.55	42.023	-112.594	5.00	2.70ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1821	1975 MAR 30	21:23:12.63	41.977	-112.500	5.00	2.70ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1822	1975 MAR 30	23:43:50.88	42.100	-112.499	5.00	2.70ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1823	1975 MAR 31	01:55:36.06	42.063	-112.542	10.00	3.60ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1824	1975 MAR 31	08:22:54.46	42.021	-112.500	5.00	2.90ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1825	1975 MAR 31	08:42:46.89	42.046	-112.511	5.00	2.70ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1826	1975 MAR 31	08:52:12.69	42.015	-112.487	5.00	2.90ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1827	1975 MAR 31	10:30:56.40	42.077	-112.497	6.00	4.30mb	.....	.....	..	DG	22	...	.....	.....	.	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
1828	1975 MAR 31	13:22:57.60	42.014	-112.481	5.00	2.70ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1829	1975 MAR 31	13:23:58.41	42.005	-112.500	7.00	4.40mb		.....	..	DG	7	...	.....	.....	.	.....	.....
1830	1975 MAR 31	13:45:51.87	41.993	-112.484	5.00	4.50mb		.....	..	DG	5	...	.....	.....	.	.....	.....
1831	1975 MAR 31	14:44:23.89	42.078	-112.424	5.00	2.90ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1832	1975 MAR 31	20:43:31.98	42.009	-112.485	5.00	2.80ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1833	1975 MAR 31	23:26:35.97	42.013	-112.489	3.00	3.00ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1834	1975 APR 01	08:27:46.57	42.073	-112.542	7.00	2.50ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1835	1975 APR 01	11:17:54.86	42.018	-112.472	5.00	2.50ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1836	1975 APR 01	11:40:29.64	42.071	-112.546	10.00	2.50ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1837	1975 APR 01	12:29:34.61	42.029	-112.500	6.00	2.70ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1838	1975 APR 01	18:47:56.41	42.046	-112.492	8.00	2.80ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1839	1975 APR 02	07:52:58.45	42.008	-112.497	5.00	2.50ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1840	1975 APR 02	10:15:11.61	41.987	-112.492	3.00	2.50ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1841	1975 APR 02	21:06:46.16	42.090	-112.442	6.00	4.69mb		.....	..	DG	13	...	.....	.....	.	.....	.....
1842	1975 APR 02	23:45:17.59	41.988	-112.489	5.00	2.90ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1843	1975 APR 03	01:11:22.12	42.050	-112.515	9.00	2.60ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1844	1975 APR 03	01:14:29.53	42.014	-112.476	5.00	3.00ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1845	1975 APR 03	01:22:10.16	42.001	-112.488	5.00	2.90ML	UU	.....	..	DG	5	...	.....	.....	.	.....	.....
1846	1975 APR 03	05:46:31.28	41.938	-112.656	5.00	2.50MD	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1847	1975 APR 03	19:00:22.14	42.024	-112.505	9.00	2.50ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1848	1975 APR 03	19:34:11.06	41.982	-112.494	5.00	2.90ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1849	1975 APR 04	03:21:51.00	42.027	-112.507	6.00	2.60ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1850	1975 APR 04	04:50:46.30	44.800	-112.980	5.00	4.00ML	GS	.....	..	DG	24	...	.....	.....	.	.....	.....
1851	1975 APR 04	05:22:33.98	41.989	-112.495	5.00	3.00ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1852	1975 APR 04	06:52:26.57	42.102	-112.504	8.00	2.90ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1853	1975 APR 04	13:46:03.52	42.016	-112.473	5.00	2.90ML	UU	.....	..	DG	8	...	.....	.....	.	.....	.....
1854	1975 APR 05	01:08:16.50	42.039	-112.503	7.00	3.20ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1855	1975 APR 05	06:44:35.67	42.016	-112.471	5.00	2.70ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1856	1975 APR 06	03:51:37.57	41.932	-112.656	5.00	2.50ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1857	1975 APR 06	21:05:34.13	42.025	-112.488	6.00	3.30ML	UU	.....	..	DG	11	...	.....	.....	.	.....	.....
1858	1975 APR 07	08:22:44.18	42.033	-112.507	6.00	2.90ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1859	1975 APR 07	09:24:40.92	42.025	-112.557	5.00	2.60ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1860	1975 APR 07	13:42:34.59	42.053	-112.490	6.00	4.60mb		.....	..	DG	17	...	.....	.....	.	.....	.....
1861	1975 APR 07	14:01:42.20	42.157	-112.585	3.00	3.10ML	SLC	.....	..	DG	18	...	.....	.....	.	.....	.....
1862	1975 APR 07	14:43:54.35	42.048	-112.493	5.00	4.40mb		.....	..	DG	17	...	.....	.....	.	.....	.....
1863	1975 APR 07	19:00:11.37	42.109	-112.472	7.00	2.50ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1864	1975 APR 08	03:48:03.61	41.860	-112.373	8.00	4.00mb		.....	..	DG	...	...	.....	.....	.	.....	.....
1865	1975 APR 09	05:20:11.01	42.040	-112.516	7.00	3.00ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1866	1975 APR 10	05:23:39.58	42.010	-112.543	5.00	2.60ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1867	1975 APR 10	10:21:00.72	42.017	-112.554	5.00	3.20ML	SLC	.....	..	DG	19	...	.....	.....	.	.....	.....
1868	1975 APR 10	22:56:37.66	42.009	-112.518	6.00	2.50ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1869	1975 APR 14	18:24:24.60	42.102	-112.444	8.00	2.80ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1870	1975 APR 14	20:32:16.94	42.106	-112.465	5.00	2.80ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1871	1975 APR 20	02:09:42.02	42.053	-112.541	7.00	2.50ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1872	1975 APR 20	08:56:27.00	41.980	-112.436	7.00	3.10ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1873	1975 APR 20	19:23:24.61	41.972	-112.446	7.00	2.90ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1874	1975 APR 20	22:10:27.87	41.989	-112.459	7.00	2.70ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1875	1975 APR 23	04:05:12.39	42.021	-112.543	7.00	2.60ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1876	1975 APR 23	04:28:33.81	42.006	-112.529	7.00	2.70ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1877	1975 APR 26	01:52:04.39	42.003	-112.470	7.00	3.20ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
1878	1975 APR 27	21:43:18.64	44.682	-110.706	4.00	2.90MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1879	1975 APR 30	20:05:13.98	44.703	-110.721	5.00	2.69MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1880	1975 MAY 02	08:56:58.80	46.180	-111.430	.00	4.00ML	GS	.....	..	DG	27	...	.....	.....	.	.....	.....
1881	1975 MAY 02	09:22:56.50	46.160	-111.640	5.00	.....	.....	II	...	SA	...	...	.....	.....	C	.....	.....
1882	1975 MAY 02	10:33:35.57	44.702	-110.714	5.00	2.82MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1883	1975 MAY 02	11:27:55.80	46.130	-111.700	5.00	.....	.....	II	...	SA	...	...	.....	.....	C	.....	.....
1884	1975 MAY 03	01:54:32.06	42.092	-112.462	7.00	2.70ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1885	1975 MAY 03	03:28:52.60	46.260	-111.530	5.00	3.70ML	GS	.....	..	DG	16	...	.....	.....	.	.....	.....
1886	1975 MAY 04	20:39:57.04	42.081	-112.434	7.00	2.60ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1887	1975 MAY 12	05:17:13.69	41.981	-112.493	2.00	3.10ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1888	1975 MAY 12	09:41:30.50	41.026	-114.872	.00	3.60UK	.....	.....	..	DG	...	...	.....	.....	.	.....	.....
1889	1975 MAY 15	14:09:13.68	41.898	-112.612	7.00	2.50MD	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1890	1975 MAY 19	15:18:28.67	42.076	-112.545	10.00	2.60ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1891	1975 MAY 19	21:37:28.05	42.004	-112.505	1.00	2.90ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1892	1975 MAY 24	06:24:26.06	44.417	-110.418	.00	2.50MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1893	1975 MAY 24	06:36:11.49	44.419	-110.417	.00	2.83MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1894	1975 MAY 25	01:02:26.95	44.660	-110.675	6.00	3.00UK	UU	0	.....	DG	...	...	.....	.....	.	.....	.....
1895	1975 MAY 29	12:29:52.37	41.978	-112.507	7.00	2.90ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1896	1975 JUN 03	09:43:54.50	44.895	-115.298	5.00	3.60ML	OTT	.....	..	DG	16	...	.....	.....	.	.....	.....
1897	1975 JUN 08	18:32:19.95	44.683	-110.706	4.00	2.78MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1898	1975 JUN 10	04:50:58.08	44.706	-111.182	3.00	2.90MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1899	1975 JUN 13	16:09:56.58	41.739	-112.345	7.00	2.70MD	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1900	1975 JUN 16	23:30:54.90	40.873	-114.803	.00	4.30mb	.....	.....	..	DG	27	...	.....	.....	.	.....	.....
1901	1975 JUN 18	05:42:28.20	43.370	-110.960	5.00	3.30mb	NEIC	.....	..	SA	...	...	.....	.....	C	.....	.....
1902	1975 JUN 20	10:54:36.58	44.682	-110.761	1.00	2.96MD	GS	.....	..	DG	10	...	.....	.....	.	.....	.....
1903	1975 JUN 20	11:10:00.00	44.600	-110.900	.00	.....	.....	II	...	SA	...	...	.....	.....	F	.....	.....
1904	1975 JUN 20	12:08:12.37	44.693	-110.774	3.00	2.55MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1905	1975 JUN 20	14:53:02.33	44.709	-110.732	4.00	2.56MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1906	1975 JUN 21	16:04:14.37	41.877	-112.477	7.00	2.50MD	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1907	1975 JUN 22	13:58:32.34	44.346	-110.352	5.00	2.53MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1908	1975 JUN 22	14:31:36.35	44.346	-110.345	5.00	2.77MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1909	1975 JUN 22	15:29:00.70	44.714	-110.734	4.00	2.80MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1910	1975 JUN 23	03:32:53.54	44.342	-110.353	3.00	3.10MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1911	1975 JUN 23	19:23:05.25	44.711	-110.731	5.00	3.03MD	GS	.....	..	DG	9	...	.....	.....	.	.....	.....
1912	1975 JUN 23	19:29:00.00	44.800	-110.700	.00	3.67MI	SRA	.....	..	DG	...	...	.....	.....	.	.....	.....
1913	1975 JUN 24	01:55:47.73	44.672	-110.689	3.00	2.55MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1914	1975 JUN 26	02:44:10.39	44.668	-111.030	4.00	2.83MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1915	1975 JUN 26	05:36:32.36	44.721	-110.822	5.00	2.67MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1916	1975 JUN 26	05:46:08.40	44.718	-110.824	5.00	2.50MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1917	1975 JUN 26	06:47:40.24	44.722	-110.824	5.00	2.53MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1918	1975 JUN 27	01:47:03.90	40.934	-114.873	.00	3.70UK	.....	.....	..	DG	...	...	.....	.....	.	.....	.....
1919	1975 JUN 27	13:40:02.70	44.671	-111.027	4.00	2.94MD	GS	.....	..	DG	10	...	.....	.....	.	.....	.....
1920	1975 JUN 28	02:26:57.18	44.669	-111.022	5.00	2.53MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1921	1975 JUN 29	18:59:28.45	42.015	-112.495	7.00	2.70ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1922	1975 JUN 29	20:36:55.22	44.713	-111.097	7.00	2.54MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1923	1975 JUN 30	03:26:45.89	42.142	-112.542	14.00	3.00ML	SLC	.....	..	DG	14	...	.....	.....	.	.....	.....
1924	1975 JUN 30	08:56:27.57	44.701	-110.711	5.00	2.95MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1925	1975 JUN 30	10:19:31.68	44.701	-110.709	5.00	2.58MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1926	1975 JUN 30	17:15:47.07	44.671	-111.028	5.00	2.50MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1927	1975 JUN 30	17:38:49.12	44.688	-110.607	4.00	2.74MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
1928	1975 JUN 30	18:05:50.07	44.685	-110.601	4.00	2.56MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1929	1975 JUN 30	18:24:11.90	44.780	-110.530	5.00	3.50ML	GS	.....	..	DG	11	...	.....	.....	.	.....	.....
1930	1975 JUN 30	18:47:56.64	44.691	-110.615	4.00	4.80ML	GS	.....	..	DG	42	...	.....	.....	.	.....	.....
1931	1975 JUN 30	18:54:11.82	44.689	-110.615	.00	6.10mb	.....	.....	..	DG	200	...	.....	.....	.	.....	.....
1932	1975 JUN 30	19:00:27.40	44.750	-110.720	5.00	5.30ML	GS	.....	..	DG	20	...	.....	.....	.	.....	.....
1933	1975 JUN 30	19:17:04.80	44.920	-110.650	.00	4.19ML	GS	.....	..	DG	13	...	.....	.....	.	.....	.....
1934	1975 JUN 30	19:44:45.95	44.696	-110.662	4.00	2.56MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1935	1975 JUN 30	19:55:02.89	44.734	-110.674	4.00	2.91MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1936	1975 JUN 30	19:56:33.70	44.700	-110.520	5.00	4.69mb	.....	.....	..	DG	34	...	.....	.....	.	.....	.....
1937	1975 JUN 30	20:20:56.60	44.680	-110.580	5.00	4.90mb	.....	.....	..	DG	30	...	.....	.....	.	.....	.....
1938	1975 JUN 30	20:46:43.50	45.020	-110.750	5.00	3.40ML	GS	.....	..	DG	12	...	.....	.....	.	.....	.....
1939	1975 JUN 30	21:15:22.95	44.672	-110.605	5.00	3.10ML	GS	.....	..	DG	10	...	.....	.....	.	.....	.....
1940	1975 JUL 01	04:16:22.17	44.686	-110.619	5.00	4.80mb	.....	.....	..	DG	39	...	.....	.....	.	.....	.....
1941	1975 JUL 01	05:13:23.28	44.707	-110.628	5.00	2.52MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1942	1975 JUL 01	05:14:49.23	44.684	-110.594	4.00	3.08MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1943	1975 JUL 01	06:15:05.26	44.654	-110.582	2.00	2.50MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1944	1975 JUL 01	07:00:00.00	44.800	-110.700	.00	.....	.....	IV	...	SA	...	...	.....	.....	F	.....	.....
1945	1975 JUL 01	08:46:36.81	44.681	-110.591	6.00	3.03MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1946	1975 JUL 01	09:02:45.73	44.735	-110.777	5.00	2.66MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1947	1975 JUL 01	11:55:04.07	44.685	-110.599	5.00	2.54MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1948	1975 JUL 01	12:07:12.32	44.756	-110.621	3.00	2.50MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1949	1975 JUL 01	15:57:46.64	44.670	-110.603	5.00	3.40ML	GS	.....	..	DG	16	...	.....	.....	.	.....	.....
1950	1975 JUL 01	18:30:54.05	44.670	-110.600	6.00	2.78MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1951	1975 JUL 02	08:29:29.60	44.780	-110.750	5.00	4.60mb	.....	.....	..	DG	18	...	.....	.....	.	.....	.....
1952	1975 JUL 02	09:36:53.69	44.680	-110.579	5.00	2.74MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1953	1975 JUL 02	11:23:29.43	44.640	-110.628	4.00	2.60MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1954	1975 JUL 02	16:25:10.35	44.684	-110.570	3.00	2.79MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1955	1975 JUL 02	19:54:56.82	44.689	-110.602	5.00	4.19mb	.....	.....	..	DG	26	...	.....	.....	.	.....	.....
1956	1975 JUL 02	20:13:09.79	44.843	-111.508	9.00	3.20MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1957	1975 JUL 03	03:21:33.62	44.679	-110.575	3.00	4.50mb	.....	.....	..	DG	21	...	.....	.....	.	.....	.....
1958	1975 JUL 03	04:51:35.71	44.680	-110.581	4.00	3.00MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1959	1975 JUL 03	07:36:10.80	44.839	-111.497	8.00	2.50MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1960	1975 JUL 04	08:11:23.95	44.674	-111.021	4.00	2.90MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1961	1975 JUL 04	15:57:15.55	44.712	-110.712	4.00	2.72MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1962	1975 JUL 04	16:46:31.17	44.671	-111.026	5.00	2.51MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1963	1975 JUL 04	22:02:00.00	44.800	-110.700	.00	.....	.....	IV	...	SA	...	...	.....	.....	F	.....	.....
1964	1975 JUL 05	19:17:39.31	44.653	-110.655	5.00	4.50mb	.....	.....	..	DG	44	...	.....	.....	.	.....	.....
1965	1975 JUL 05	20:08:29.41	44.661	-110.664	5.00	3.50mb	.....	.....	..	DG	13	...	.....	.....	.	.....	.....
1966	1975 JUL 05	22:47:12.01	44.673	-110.601	5.00	2.50MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1967	1975 JUL 06	00:17:46.55	44.647	-110.649	6.00	2.60MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1968	1975 JUL 06	08:34:01.97	44.665	-110.661	6.00	2.70MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1969	1975 JUL 06	21:12:56.18	44.645	-110.650	7.00	2.80MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1970	1975 JUL 07	00:51:27.72	44.651	-110.651	6.00	4.30mb	.....	.....	..	DG	19	...	.....	.....	.	.....	.....
1971	1975 JUL 07	00:52:50.15	44.657	-110.667	5.00	2.80MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1972	1975 JUL 07	01:33:25.03	41.975	-112.472	7.00	2.70MD	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1973	1975 JUL 07	01:37:57.73	44.655	-110.539	3.00	2.51MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
1974	1975 JUL 07	10:11:05.90	40.799	-111.587	7.00	2.50MD	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1975	1975 JUL 09	02:55:44.89	44.640	-110.633	3.00	3.00MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
1976	1975 JUL 09	11:12:17.76	41.990	-112.432	7.00	2.50MD	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
1977	1975 JUL 09	20:47:25.37	44.689	-110.608	5.00	2.50MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Std-Err Vert
1978	1975	JUL 10	03:33:28.90	44.694	-110.632	5.00	2.60MD	USG	.....	..	...	DG	...	...	.....	.....	.....
1979	1975	JUL 10	23:18:31.57	44.677	-110.667	6.00	2.60MD	USG	.....	..	...	DG	...	...	.....	.....	.....
1980	1975	JUL 11	00:53:52.16	44.704	-110.656	4.00	2.50MD	USG	.....	..	...	DG	...	...	.....	.....	.....
1981	1975	JUL 11	05:37:40.00	44.647	-110.651	5.00	3.70mb		.....	..	...	DG	21	...	.....	.....	.....
1982	1975	JUL 11	10:22:55.43	44.642	-110.624	4.00	2.50MD	USG	.....	..	...	DG	...	...	.....	.....	.....
1983	1975	JUL 12	09:40:40.34	44.708	-110.642	5.00	2.50MD	USG	.....	..	...	DG	...	...	.....	.....	.....
1984	1975	JUL 12	12:02:33.10	44.657	-110.653	5.00	2.50MD	USG	.....	..	...	DG	...	...	.....	.....	.....
1985	1975	JUL 13	10:01:06.27	44.667	-110.662	6.00	4.40mb		.....	..	...	DG	24	...	.....	.....	.....
1986	1975	JUL 13	10:07:44.42	44.652	-110.656	5.00	2.92MD	GS	.....	..	...	DG	...	...	.....	.....	.....
1987	1975	JUL 13	11:48:03.51	44.650	-110.645	6.00	2.50MD	USG	.....	..	...	DG	...	...	.....	.....	.....
1988	1975	JUL 14	20:37:58.29	44.647	-110.649	5.00	2.64MD	GS	.....	..	...	DG	...	...	.....	.....	.....
1989	1975	JUL 15	19:35:54.59	44.676	-110.567	3.00	3.11MD	GS	.....	..	...	DG	...	...	.....	.....	.....
1990	1975	JUL 16	14:33:39.73	42.037	-112.473	5.00	2.60ML	UU	.....	..	...	DG	...	...	.....	.....	.....
1991	1975	JUL 17	19:04:52.09	43.826	-110.346	10.00	3.30mb		.....	..	...	DG	9	...	.....	.....	.....
1992	1975	JUL 19	08:02:05.22	44.715	-110.639	5.00	2.80MD	USG	.....	..	...	DG	...	...	.....	.....	.....
1993	1975	JUL 21	19:08:08.34	44.709	-110.637	5.00	2.59MD	GS	.....	..	...	DG	...	...	.....	.....	.....
1994	1975	JUL 23	20:05:00.00	44.800	-110.700	.00	3.67MI	SRA	.....	..	...	DG	...	...	.....	.....	.....
1995	1975	JUL 25	23:46:00.91	44.648	-110.660	4.00	2.50MD	USG	.....	..	...	DG	...	...	.....	.....	.....
1996	1975	JUL 26	05:31:11.35	42.113	-112.479	3.00	2.50ML	UU	.....	..	...	DG	...	...	.....	.....	.....
1997	1975	JUL 27	01:08:41.65	44.744	-110.842	4.00	2.52MD	GS	.....	..	...	DG	...	...	.....	.....	.....
1998	1975	JUL 31	12:15:00.00	44.800	-110.700	.00	3.67MI	SRA	.....	..	...	DG	...	...	.....	.....	.....
1999	1975	JUL 31	13:00:00.00	44.800	-110.700	.00	.....	.....	II	..	...	SA	...	...	.....	F	.....
2000	1975	AUG 01	21:59:20.18	44.660	-110.611	3.00	2.71MD	GS	.....	..	...	DG	...	...	.....	.....	.....
2001	1975	AUG 01	22:44:01.98	44.746	-111.108	7.00	2.80MD	USG	.....	..	...	DG	...	...	.....	.....	.....
2002	1975	AUG 02	00:58:35.13	44.746	-111.105	7.00	2.70MD	USG	.....	..	...	DG	...	...	.....	.....	.....
2003	1975	AUG 03	06:48:40.65	44.746	-111.105	7.00	3.00MD	USG	.....	..	...	DG	...	...	.....	.....	.....
2004	1975	AUG 03	20:00:05.86	44.665	-111.003	5.00	3.00UK	UU	0	..	...	DG	...	...	.....	.....	.....
2005	1975	AUG 07	09:51:29.07	44.667	-111.012	4.00	2.61MD	GS	.....	..	...	DG	...	...	.....	.....	.....
2006	1975	AUG 10	20:21:18.10	46.450	-112.030	.00	2.50MD	MMT	.....	..	...	SA	...	...	.....	A	.....
2007	1975	AUG 14	09:35:27.04	43.792	-110.356	11.00	3.13MD	GS	.....	..	...	DG	...	...	.....	.....	.....
2008	1975	AUG 15	17:37:54.85	44.701	-111.001	7.00	2.78MD	GS	.....	..	...	DG	...	...	.....	.....	.....
2009	1975	AUG 16	05:54:27.33	44.704	-110.998	7.00	2.55MD	GS	.....	..	...	DG	...	...	.....	.....	.....
2010	1975	AUG 16	15:12:47.12	44.699	-110.999	7.00	2.50MD	USG	.....	..	...	DG	...	...	.....	.....	.....
2011	1975	AUG 16	21:20:53.76	42.083	-112.448	4.00	3.70ML	UU	.....	..	...	DG	34	...	.....	.....	.....
2012	1975	AUG 17	10:24:13.68	44.705	-111.008	6.00	3.11MD	GS	.....	..	...	DG	12	...	.....	.....	.....
2013	1975	AUG 18	16:30:00.00	44.800	-110.700	.00	3.00MI	SRA	.....	..	...	DG	...	...	.....	.....	.....
2014	1975	AUG 23	12:49:23.34	44.648	-110.660	4.00	3.24MD	GS	.....	..	...	DG	...	...	.....	.....	.....
2015	1975	SEP 06	05:36:39.50	44.508	-110.906	2.00	2.98MD	GS	.....	..	...	DG	...	...	.....	.....	.....
2016	1975	SEP 08	11:56:39.34	44.558	-111.070	7.00	2.80MD	USG	.....	..	...	DG	14	...	.....	.....	.....
2017	1975	SEP 10	22:18:40.50	46.240	-115.740	.00	2.50MD	MMT	.....	..	...	SA	...	...	.....	A	.....
2018	1975	SEP 12	18:26:06.80	42.108	-112.454	8.00	4.00ML	SLC	.....	..	...	DG	31	...	.....	.....	.....
2019	1975	SEP 14	04:13:24.57	41.892	-112.379	7.00	2.80MD	UU	.....	..	...	DG	26	...	.....	.....	.....
2020	1975	SEP 21	00:35:27.50	44.814	-111.374	9.00	2.70MD	USG	.....	..	...	DG	...	...	.....	.....	.....
2021	1975	SEP 22	07:30:46.32	44.665	-111.006	5.00	2.70MD	USG	.....	..	...	DG	...	...	.....	.....	.....
2022	1975	SEP 22	10:42:36.28	42.096	-112.450	6.00	4.19mb		.....	..	...	DG	34	...	.....	.....	.....
2023	1975	OCT 01	11:36:54.64	44.713	-110.634	5.00	2.62MD	GS	.....	..	...	DG	...	...	.....	.....	.....
2024	1975	OCT 09	22:09:00.77	42.085	-112.248	.00	2.50ML	UU	.....	..	...	DG	...	...	.....	.....	.....
2025	1975	OCT 11	00:09:56.31	40.555	-111.194	3.00	2.70ML	UU	.....	..	...	DG	...	...	.....	.....	.....
2026	1975	OCT 11	21:55:01.22	41.825	-111.538	7.00	2.90MD	UU	.....	..	...	DG	...	...	.....	.....	.....
2027	1975	OCT 12	09:47:03.90	40.879	-114.896	.00	3.70ML	ERD	.....	..	...	DG	6	...	.....	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz Vert
2028	1975 OCT 13	06:59:25.63	41.982	-112.514	7.00	2.70MD UU	.....	..	...	DG	5	...	.....	.....	.	.....
2029	1975 OCT 13	07:43:32.98	44.662	-110.024	9.00	2.50MD USG	.....	..	...	DG	...	...	.....	.....	.	.....
2030	1975 OCT 17	19:18:05.78	44.660	-110.027	16.00	2.70MD USG	.....	..	...	DG	...	...	.....	.....	.	.....
2031	1975 OCT 22	23:34:14.79	40.757	-111.622	8.00	2.60MD UU	.....	..	...	DG	...	...	.....	.....	.	.....
2032	1975 NOV 03	04:56:37.20	45.730	-111.340	1.00	3.40ML ERD	.....	..	...	SA	...	...	.....	.....	C	.....
2033	1975 NOV 08	03:58:03.29	44.809	-111.508	11.00	3.02MD GS	.....	..	...	DG	7	...	.....	.....	.	.....
2034	1975 NOV 15	23:36:14.96	44.705	-110.630	6.00	2.75MD GS	.....	..	...	DG	...	...	.....	.....	.	.....
2035	1975 NOV 17	08:21:11.15	41.956	-112.535	7.00	3.20MD UU	.....	..	...	DG	31	...	.....	.....	.	.....
2036	1975 NOV 25	09:04:24.37	44.508	-110.374	1.00	2.65MD GS	.....	..	...	DG	...	...	.....	.....	.	.....
2037	1975 NOV 25	09:20:52.57	44.510	-110.370	1.00	2.82MD GS	.....	..	...	DG	...	...	.....	.....	.	.....
2038	1975 NOV 25	15:54:13.53	44.508	-110.369	1.00	2.54MD GS	.....	..	...	DG	...	...	.....	.....	.	.....
2039	1975 DEC 01	14:52:55.01	44.723	-111.024	1.00	2.54MD GS	.....	..	...	DG	...	...	.....	.....	.	.....
2040	1975 DEC 05	11:06:34.77	44.748	-111.168	7.00	2.80MD USG	.....	..	...	DG	13	...	.....	.....	.	.....
2041	1975 DEC 07	16:58:22.39	42.033	-112.533	5.00	2.50ML UU	.....	..	...	DG	...	...	.....	.....	.	.....
2042	1975 DEC 16	11:15:47.51	44.633	-110.619	3.00	2.53MD GS	.....	..	...	DG	...	...	.....	.....	.	.....
2043	1975 DEC 20	01:44:12.71	42.026	-112.495	7.00	2.70UK ERD	.....	..	...	DG	12	...	.....	.....	.	.....
2044	1975 DEC 26	04:44:09.50	44.597	-115.150	5.00	3.50mb	.....	..	...	DG	26	...	.....	.....	.	.....
2045	1975 DEC 26	04:46:47.20	44.552	-115.218	5.00	3.80UK ERD	.....	..	...	DG	20	...	.....	.....	.	.....
2046	1975 DEC 27	21:53:09.80	43.150	-110.750	5.00	3.10ML ERD	.....	..	...	SA	...	...	.....	.....	C	.....
2047	1975 DEC 29	03:57:52.76	44.718	-111.098	10.00	2.64MD GS	.....	..	...	DG	...	...	.....	.....	.	.....
2048	1976 JAN 05	20:29:25.25	42.033	-112.660	7.00	2.52MD UU	.....	..	...	DG	...	...	.....	.....	.	.....
2049	1976 JAN 05	20:38:51.35	42.030	-112.680	5.00	2.50MD UU	.....	..	...	DG	...	...	.....	.....	.	.....
2050	1976 JAN 24	23:53:02.30	45.050	-111.420	5.00	3.50UK MSO	.....	..	...	DG	13	...	.....	.....	.	.....
2051	1976 FEB 01	15:12:15.19	42.520	-111.227	4.00	2.50MD UU	.....	..	...	DG	...	...	.....	.....	.	.....
2052	1976 FEB 11	03:28:14.78	41.271	-111.838	13.00	2.70ML SLC	.....	..	...	DG	32	...	.....	.....	.	.....
2053	1976 FEB 14	13:11:11.71	42.737	-111.287	3.00	3.40ML AEC	.....	..	...	DG	9	...	.....	.....	.	.....
2054	1976 FEB 15	09:12:16.74	44.710	-110.733	4.00	2.99MD GS	.....	..	...	DG	...	...	.....	.....	.	.....
2055	1976 FEB 15	09:47:25.02	44.707	-110.731	3.00	2.94MD GS	.....	..	...	DG	...	...	.....	.....	.	.....
2056	1976 FEB 17	13:45:08.86	44.569	-110.756	3.00	2.59MD GS	.....	..	...	DG	...	...	.....	.....	.	.....
2057	1976 FEB 21	14:12:46.85	41.998	-112.554	.00	3.30ML AEC	.....	..	...	DG	10	...	.....	.....	.	.....
2058	1976 FEB 23	01:01:18.19	42.034	-112.504	7.00	2.80ML AEC	.....	..	...	DG	7	...	.....	.....	.	.....
2059	1976 FEB 27	05:44:37.41	41.075	-111.579	7.00	2.60MD UU	.....	..	...	DG	...	...	.....	.....	.	.....
2060	1976 FEB 27	07:18:16.47	41.263	-111.262	7.00	2.70ML UU	.....	..	...	DG	12	...	.....	.....	.	.....
2061	1976 MAR 06	07:05:14.42	42.133	-112.474	4.00	2.50ML UU	.....	..	...	DG	...	...	.....	.....	.	.....
2062	1976 MAR 07	07:23:11.04	42.065	-112.523	3.00	2.80ML UU	.....	..	...	DG	12	...	.....	.....	.	.....
2063	1976 MAR 10	20:37:13.70	42.284	-111.819	7.00	2.50ML UU	.....	..	...	DG	...	...	.....	.....	.	.....
2064	1976 MAR 13	21:20:31.30	40.810	-114.976	.00	3.40UK	.....	..	...	DG	...	...	.....	.....	.	.....
2065	1976 MAR 15	02:28:35.32	43.249	-110.744	6.00	3.70mb	.....	..	...	DG	13	...	.....	.....	.	.....
2066	1976 MAR 16	00:36:07.92	44.733	-111.199	8.00	2.57MD GS	.....	..	...	DG	9	...	.....	.....	.	.....
2067	1976 MAR 16	22:51:54.75	44.689	-110.398	1.00	2.56MD GS	.....	..	...	DG	...	...	.....	.....	.	.....
2068	1976 MAR 17	08:02:46.30	43.230	-109.320	5.00	3.90mb	.....	..	...	DG	16	...	.....	.....	.	.....
2069	1976 MAR 21	07:52:34.58	43.253	-110.738	8.00	2.93MD UU	.....	..	...	DG	16	...	.....	.....	.	.....
2070	1976 MAR 21	08:03:08.15	43.288	-110.819	11.00	2.87MD UU	.....	..	...	DG	15	...	.....	.....	.	.....
2071	1976 MAR 21	08:55:42.10	42.139	-112.478	3.00	2.50ML UU	.....	..	...	DG	...	...	.....	.....	.	.....
2072	1976 MAR 22	09:18:45.28	42.097	-112.621	1.00	3.30ML UU	.....	..	...	DG	15	...	.....	.....	.	.....
2073	1976 MAR 22	20:43:06.86	44.691	-111.023	7.00	2.59MD GS	.....	..	...	DG	...	...	.....	.....	.	.....
2074	1976 MAR 24	02:29:06.52	42.024	-112.515	3.00	2.50ML UU	.....	..	...	DG	6	...	.....	.....	.	.....
2075	1976 MAR 25	17:44:42.72	44.520	-110.379	2.00	2.64MD GS	.....	..	...	DG	...	...	.....	.....	.	.....
2076	1976 MAR 27	13:16:34.49	44.095	-110.459	3.00	2.66MD GS	.....	..	...	DG	...	...	.....	.....	.	.....
2077	1976 MAR 31	17:40:38.30	45.430	-111.380	5.00	3.50ML MSO	.....	..	...	DG	14	...	.....	.....	.	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz Vert
2078	1976 MAR 31	19:31:21.40	45.420	-111.370	1.00	3.50ML	MSO	.....	..	DG	22	...	.....	.....	.	.....
2079	1976 APR 05	02:40:07.40	46.120	-110.330	5.00	3.80ML	MSO	.....	..	DG	26	...	.....	.....	.	.....
2080	1976 APR 05	10:22:31.11	44.658	-110.010	11.00	2.51MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2081	1976 APR 05	13:49:11.04	42.036	-112.544	3.00	2.50ML	UU	.....	..	DG	...	...	.....	.....	.	.....
2082	1976 APR 08	01:12:43.28	42.855	-110.394	4.00	2.93MD	UU	.....	..	DG	...	...	.....	.....	.	.....
2083	1976 APR 10	21:28:03.89	44.783	-111.417	3.00	2.88MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2084	1976 APR 16	15:08:28.30	45.630	-111.620	5.00	3.20MD	MSO	.....	..	SA	...	...	.....	.....	C	.....
2085	1976 APR 17	23:17:40.07	44.447	-110.403	5.00	2.57MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2086	1976 APR 18	23:05:55.34	44.737	-111.755	4.00	3.20ML	ERD	.....	..	DG	19	...	.....	.....	.	.....
2087	1976 APR 19	06:54:37.95	44.737	-110.800	2.00	2.56MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2088	1976 APR 19	10:08:20.04	44.738	-110.796	4.00	2.54MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2089	1976 APR 19	22:02:07.31	44.755	-111.062	7.00	2.60MD	GS	.....	..	DG	8	...	.....	.....	.	.....
2090	1976 APR 19	22:05:52.08	44.752	-111.064	7.00	3.30ML	ERD	.....	..	DG	29	...	.....	.....	.	.....
2091	1976 APR 19	22:50:29.73	44.786	-111.482	11.00	2.90ML	ERD	.....	..	DG	22	...	.....	.....	.	.....
2092	1976 MAY 06	02:02:09.10	44.770	-111.081	4.00	2.77MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2093	1976 MAY 08	15:48:22.91	43.619	-110.324	9.00	3.15MD	UU	.....	..	DG	...	...	.....	.....	.	.....
2094	1976 MAY 20	07:47:00.23	44.441	-110.617	1.00	2.50MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2095	1976 MAY 27	04:46:14.03	44.568	-110.915	5.00	2.54MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2096	1976 MAY 30	08:13:07.72	42.539	-111.431	2.00	2.74MD	UU	.....	..	DG	...	...	.....	.....	.	.....
2097	1976 JUN 06	06:10:15.56	44.574	-110.763	3.00	2.57MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2098	1976 JUN 06	07:26:23.73	44.578	-110.764	.00	2.71MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2099	1976 JUN 06	07:38:53.74	44.568	-110.761	2.00	2.78MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2100	1976 JUN 06	09:06:06.75	44.575	-110.764	2.00	2.51MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2101	1976 JUN 06	11:22:30.81	44.580	-110.763	3.00	2.70MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2102	1976 JUN 06	11:37:42.33	44.577	-110.764	2.00	3.30MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2103	1976 JUN 06	11:44:11.67	44.581	-110.763	2.00	2.51MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2104	1976 JUN 06	12:30:07.93	44.576	-110.761	.00	2.99MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2105	1976 JUN 06	19:49:40.06	44.568	-110.762	2.00	2.65MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2106	1976 JUN 06	19:50:25.08	44.568	-110.759	2.00	2.65MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2107	1976 JUN 07	04:48:00.00	44.600	-110.900	.00	4.33MI	SRA	.....	..	DG	...	...	.....	.....	.	.....
2108	1976 JUN 07	12:06:42.65	44.692	-111.000	7.00	2.57MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2109	1976 JUN 07	12:07:00.00	44.700	-110.500	.00	.....	.....	.....	V	SA	...	...	.....	.....	F	.....
2110	1976 JUN 07	12:07:12.65	44.691	-111.006	5.00	2.81MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2111	1976 JUN 11	06:43:39.30	45.820	-111.400	5.00	3.10ML	ERD	.....	..	SA	...	...	.....	.....	C	.....
2112	1976 JUN 14	09:29:13.31	44.771	-110.824	3.00	2.60MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2113	1976 JUN 14	09:37:57.78	42.125	-112.487	7.00	3.60ML	UU	.....	..	DG	36	...	.....	.....	.	.....
2114	1976 JUN 15	02:08:10.79	41.894	-112.429	7.00	3.10ML	SLC	.....	..	DG	30	...	.....	.....	.	.....
2115	1976 JUN 15	14:57:31.80	44.638	-114.574	5.00	3.70ML	GS	.....	..	DG	21	...	.....	.....	.	.....
2116	1976 JUN 19	19:38:37.87	42.119	-112.465	2.00	2.50ML	UU	.....	..	DG	...	...	.....	.....	.	.....
2117	1976 JUL 06	07:14:39.60	44.791	-111.509	11.00	2.53MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2118	1976 JUL 07	12:14:44.60	44.756	-111.097	8.00	2.78MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2119	1976 JUL 11	12:42:55.33	42.163	-112.624	4.00	2.70MD	UU	.....	..	DG	...	...	.....	.....	.	.....
2120	1976 JUL 11	13:16:49.02	42.150	-112.615	2.00	2.60ML	UU	.....	..	DG	...	...	.....	.....	.	.....
2121	1976 JUL 11	14:24:16.38	41.630	-112.066	2.00	2.60MD	UU	.....	..	DG	...	...	.....	.....	.	.....
2122	1976 JUL 11	16:22:28.18	44.493	-111.071	8.00	3.20ML	AEC	.....	..	DG	15	...	.....	.....	.	.....
2123	1976 JUL 11	17:27:39.76	42.171	-112.608	5.00	2.50ML	UU	.....	..	DG	...	...	.....	.....	.	.....
2124	1976 JUL 12	16:44:37.68	42.192	-112.643	5.00	2.90ML	UU	.....	..	DG	...	...	.....	.....	.	.....
2125	1976 JUL 12	20:32:42.04	42.172	-112.502	5.00	3.00ML	AEC	.....	..	DG	14	...	.....	.....	.	.....
2126	1976 JUL 15	21:20:24.36	44.605	-110.649	1.00	2.72MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2127	1976 JUL 16	01:38:23.13	44.816	-111.557	8.00	2.50MD	GS	.....	..	DG	...	...	.....	.....	.	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz Vert
2128	1976 JUL 18	06:45:01.30	44.728	-111.094	8.00	2.86MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2129	1976 JUL 19	00:39:42.51	44.730	-111.097	9.00	3.00MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2130	1976 JUL 19	05:15:00.00	44.731	-111.098	8.00	2.62MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2131	1976 JUL 21	00:33:29.55	42.105	-112.623	4.00	2.60ML	UU	.....	..	DG	...	...	.....	.....	.	.....
2132	1976 JUL 21	01:01:06.00	42.103	-112.629	2.00	3.00ML	UU	.....	..	DG	...	...	.....	.....	.	.....
2133	1976 JUL 23	22:14:00.90	40.723	-116.775	.00	3.20UK	.....	.....	..	DG	9	...	.....	.....	.	.....
2134	1976 JUL 24	18:41:24.40	40.959	-116.994	.00	3.00UK	.....	.....	..	DG	...	...	.....	.....	.	.....
2135	1976 JUL 26	10:45:28.20	45.022	-114.179	10.00	4.40ML	GS	.....	..	DG	58	...	.....	.....	.	.....
2136	1976 JUL 26	18:17:21.32	44.729	-111.095	9.00	2.82MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2137	1976 JUL 30	22:19:00.23	40.747	-110.302	7.00	3.10MD	UU	.....	..	DG	7	...	.....	.....	.	.....
2138	1976 AUG 03	00:59:05.92	44.485	-111.072	7.00	2.51MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2139	1976 AUG 05	17:36:37.90	45.630	-112.500	5.00	2.90ML	ERD	.....	..	SA	...	...	.....	.....	C	.....
2140	1976 AUG 08	11:20:51.03	44.755	-111.099	5.00	3.07MD	GS	.....	..	DG	8	...	.....	.....	.	.....
2141	1976 AUG 15	14:28:12.73	44.449	-111.011	.00	2.93MD	GS	.....	..	DG	8	...	.....	.....	.	.....
2142	1976 AUG 15	18:28:11.99	44.650	-110.663	4.00	2.62MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2143	1976 SEP 04	07:56:11.60	44.740	-112.950	5.00	2.90ML	ERD	.....	..	SA	...	...	.....	.....	C	.....
2144	1976 SEP 04	09:24:30.80	44.730	-112.980	5.00	3.10MD	MSO	.....	..	SA	...	...	.....	.....	C	.....
2145	1976 SEP 11	23:35:22.16	44.809	-111.679	6.00	2.78MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2146	1976 OCT 04	08:24:56.10	44.320	-115.020	5.00	3.20ML	ERD	.....	..	SA	...	...	.....	.....	C	.....
2147	1976 OCT 07	18:28:12.51	44.244	-110.763	.00	2.72MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2148	1976 OCT 11	12:09:50.57	44.602	-110.646	4.00	2.60MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2149	1976 OCT 11	19:31:15.08	44.731	-110.812	3.00	2.61MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2150	1976 OCT 11	21:44:08.86	44.757	-110.846	2.00	3.25MD	GS	.....	..	DG	9	...	.....	.....	.	.....
2151	1976 OCT 11	21:46:55.69	44.719	-110.801	3.00	3.24MD	GS	.....	..	DG	8	...	.....	.....	.	.....
2152	1976 OCT 11	23:16:21.04	44.737	-110.818	5.00	2.62MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2153	1976 OCT 11	23:46:12.33	44.730	-110.816	4.00	2.64MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2154	1976 OCT 13	11:21:33.48	44.737	-110.817	6.00	2.71MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2155	1976 OCT 13	23:37:26.92	44.734	-110.815	3.00	2.83MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2156	1976 OCT 14	08:03:44.10	44.733	-110.817	4.00	2.50MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2157	1976 OCT 14	10:06:45.19	44.740	-110.819	4.00	2.63MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2158	1976 OCT 14	10:10:26.85	44.743	-110.819	4.00	2.50MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2159	1976 OCT 14	20:26:37.61	44.739	-110.820	5.00	2.85MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2160	1976 OCT 17	13:38:10.78	44.727	-110.828	4.00	2.60MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2161	1976 OCT 17	23:41:45.53	44.790	-111.385	11.00	2.86MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2162	1976 OCT 18	14:58:09.72	44.732	-110.815	4.00	2.84MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2163	1976 OCT 19	06:18:34.79	44.738	-110.814	3.00	5.30mb	.....	.....	..	DG	34	...	.....	.....	.	.....
2164	1976 OCT 19	06:28:01.41	44.730	-110.809	3.00	2.90MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2165	1976 OCT 19	06:58:10.61	44.731	-110.799	6.00	2.79MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2166	1976 OCT 19	07:24:22.26	44.728	-110.808	5.00	5.30mb	.....	.....	..	DG	25	...	.....	.....	.	.....
2167	1976 OCT 19	07:24:35.56	44.729	-110.812	2.00	3.91MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2168	1976 OCT 19	10:29:24.29	44.731	-110.822	5.00	2.69MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2169	1976 OCT 19	12:48:12.34	44.733	-110.807	5.00	2.77MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2170	1976 OCT 20	00:19:19.09	44.730	-110.784	5.00	2.68MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2171	1976 OCT 20	00:23:44.61	44.733	-110.788	4.00	2.85MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2172	1976 OCT 20	02:54:51.52	44.724	-110.832	4.00	2.50MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2173	1976 OCT 20	03:45:38.63	44.735	-110.785	5.00	2.62MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2174	1976 OCT 20	03:59:42.30	44.731	-110.782	4.00	2.56MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2175	1976 OCT 20	04:19:24.44	44.735	-110.782	5.00	3.13MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2176	1976 OCT 20	04:31:42.66	44.731	-110.829	5.00	2.79MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2177	1976 OCT 20	04:33:45.14	44.729	-110.827	4.00	2.82MD	GS	.....	..	DG	...	...	.....	.....	.	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min ² -sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
2178	1976 OCT 20	04:55:56.28	44.734	-110.786	3.00	3.41MD	GS	.....	..	DG	8	...	.....	.....	.	.....	.....
2179	1976 OCT 20	05:08:47.61	44.729	-110.828	3.00	2.67MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2180	1976 OCT 20	06:25:56.42	44.732	-110.795	3.00	2.52MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2181	1976 OCT 20	09:03:38.71	44.483	-110.326	3.00	2.90MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2182	1976 OCT 20	10:10:50.18	44.731	-110.813	3.00	2.60MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2183	1976 OCT 20	11:38:28.45	44.728	-110.827	3.00	2.99MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2184	1976 OCT 20	16:46:26.93	44.731	-110.783	4.00	3.11MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2185	1976 OCT 20	21:21:40.70	44.733	-110.811	4.00	2.92MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2186	1976 OCT 20	22:52:16.37	44.729	-110.836	4.00	2.53MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2187	1976 OCT 21	03:26:00.71	44.734	-110.793	4.00	2.64MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2188	1976 OCT 21	11:05:05.58	44.688	-110.676	6.00	2.59MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2189	1976 OCT 22	08:03:41.50	44.736	-110.816	4.00	2.73MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2190	1976 OCT 23	17:27:04.89	44.732	-110.796	5.00	2.93MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2191	1976 OCT 23	17:52:51.90	44.733	-110.799	5.00	2.70MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2192	1976 OCT 25	05:42:18.95	42.107	-112.474	5.00	2.70ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
2193	1976 OCT 25	14:11:48.71	44.734	-110.816	3.00	2.83MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2194	1976 OCT 25	21:14:06.08	44.732	-110.800	5.00	2.73MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2195	1976 OCT 26	10:08:47.13	44.733	-110.816	4.00	3.16MD	GS	.....	..	DG	8	...	.....	.....	.	.....	.....
2196	1976 OCT 26	10:33:39.94	44.724	-110.780	4.00	2.67MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2197	1976 OCT 27	15:58:13.72	44.722	-110.803	4.00	2.77MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2198	1976 OCT 28	09:42:52.13	44.648	-110.651	5.00	2.62MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2199	1976 OCT 30	07:44:52.86	44.737	-110.823	5.00	2.51MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2200	1976 OCT 30	14:46:40.86	44.739	-110.823	5.00	2.77MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2201	1976 OCT 30	17:24:13.42	44.733	-110.792	5.00	3.27MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2202	1976 NOV 01	22:22:51.10	44.263	-114.973	5.00	3.70ML	ERD	.....	..	DG	12	...	.....	.....	.	.....	.....
2203	1976 NOV 02	09:31:42.94	44.730	-110.784	3.00	2.88MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2204	1976 NOV 02	19:00:32.60	44.740	-110.808	6.00	2.51MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2205	1976 NOV 05	01:15:07.06	41.822	-112.694	7.00	3.40ML	SLC	.....	..	DG	16	...	.....	.....	.	.....	.....
2206	1976 NOV 05	02:48:55.59	41.809	-112.698	7.00	4.10ML	SLC	.....	..	DG	27	...	.....	.....	.	.....	.....
2207	1976 NOV 05	05:54:00.92	41.815	-112.696	7.00	3.40ML	UU	.....	..	DG	12	...	.....	.....	.	.....	.....
2208	1976 NOV 05	10:58:03.62	41.813	-112.698	7.00	3.20ML	SLC	.....	..	DG	11	...	.....	.....	.	.....	.....
2209	1976 NOV 06	03:16:26.96	41.813	-112.714	7.00	2.80ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
2210	1976 NOV 06	04:40:08.02	44.727	-110.805	5.00	2.70MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2211	1976 NOV 06	23:44:16.68	44.721	-110.779	5.00	3.16MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2212	1976 NOV 06	23:54:35.58	44.725	-110.775	5.00	2.63MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2213	1976 NOV 07	03:15:41.11	44.725	-110.781	3.00	3.14MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2214	1976 NOV 07	09:46:35.43	44.724	-110.778	4.00	2.89MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2215	1976 NOV 07	23:21:34.32	44.602	-110.387	2.00	2.82MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2216	1976 NOV 08	04:22:46.06	44.725	-110.787	4.00	3.01MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2217	1976 NOV 08	08:20:23.85	44.742	-110.829	4.00	2.77MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2218	1976 NOV 09	13:10:22.64	44.740	-110.830	5.00	2.80MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2219	1976 NOV 12	10:59:41.47	44.730	-110.780	5.00	2.76MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2220	1976 NOV 12	22:13:15.36	44.735	-110.815	3.00	2.50MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2221	1976 NOV 15	22:02:26.33	44.778	-111.001	5.00	3.09MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2222	1976 NOV 16	08:39:21.08	44.776	-111.000	5.00	2.56MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2223	1976 NOV 16	14:10:06.93	44.777	-111.005	5.00	2.96MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2224	1976 NOV 17	14:34:32.36	44.728	-110.760	5.00	3.50MD	GS	.....	..	DG	13	...	.....	.....	.	.....	.....
2225	1976 NOV 17	14:57:37.86	44.722	-110.784	3.00	3.19MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2226	1976 NOV 19	23:44:43.58	40.726	-110.247	7.00	2.50MD	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
2227	1976 NOV 22	04:05:10.20	44.715	-110.772	4.00	2.54MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Std-Err Vert
2228	1976 NOV 24	04:20:37.71	44.777	-111.007	4.00	2.73MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2229	1976 NOV 25	18:16:22.62	44.727	-110.782	5.00	3.03MD	GS	.....	..	DG	11	...	.....	.....	.	.....	.....
2230	1976 NOV 25	19:44:59.99	44.729	-110.787	3.00	2.99MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2231	1976 NOV 27	00:24:43.72	44.737	-110.793	5.00	3.39MD	GS	.....	..	DG	13	...	.....	.....	.	.....	.....
2232	1976 NOV 27	00:26:31.41	44.736	-110.793	3.00	2.58MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2233	1976 NOV 27	00:27:23.10	44.729	-110.785	12.00	2.52MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2234	1976 NOV 27	00:46:36.37	44.740	-110.796	3.00	2.81MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2235	1976 NOV 27	00:55:25.37	44.738	-110.790	3.00	2.54MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2236	1976 NOV 27	01:09:35.06	44.737	-110.792	4.00	3.50ML	ERD	.....	..	DG	12	...	.....	.....	.	.....	.....
2237	1976 NOV 27	01:11:48.41	44.734	-110.792	6.00	3.00UK	UU 0	.....	..	DG	...	...	.....	.....	.	.....	.....
2238	1976 NOV 27	01:14:51.78	45.054	-111.862	5.00	3.02MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2239	1976 NOV 27	01:58:56.01	44.730	-110.789	5.00	2.56MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2240	1976 NOV 27	19:18:58.77	44.742	-110.797	3.00	3.60ML	ERD	.....	..	DG	20	...	.....	.....	.	.....	.....
2241	1976 NOV 27	20:45:34.31	44.739	-110.795	4.00	2.83MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2242	1976 NOV 28	02:10:30.07	44.736	-110.797	5.00	2.80MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2243	1976 NOV 28	02:20:51.31	44.739	-110.798	5.00	2.87MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2244	1976 NOV 28	09:13:57.77	44.748	-110.829	6.00	2.88MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2245	1976 NOV 29	01:41:05.26	44.740	-110.802	4.00	2.81MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2246	1976 DEC 02	00:42:26.58	44.803	-111.435	5.00	3.40ML	ERD	.....	..	DG	9	...	.....	.....	.	.....	.....
2247	1976 DEC 03	02:05:38.51	41.913	-112.364	7.00	2.90MD	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
2248	1976 DEC 03	15:05:59.74	41.497	-111.787	7.00	2.60MD	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
2249	1976 DEC 08	14:40:58.60	44.759	-110.797	4.00	5.50mb		.....	..	DG	41	...	.....	.....	.	.....	.....
2250	1976 DEC 08	15:25:10.54	44.754	-110.797	5.00	3.23MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2251	1976 DEC 08	21:35:49.08	44.758	-110.802	6.00	2.60MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2252	1976 DEC 08	21:55:27.45	44.762	-110.801	6.00	2.61MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2253	1976 DEC 08	22:10:41.07	44.763	-110.803	6.00	3.60MD	GS	.....	..	DG	11	...	.....	.....	.	.....	.....
2254	1976 DEC 08	22:11:49.10	44.765	-110.809	6.00	2.81MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2255	1976 DEC 08	22:12:38.11	44.759	-110.803	5.00	2.56MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2256	1976 DEC 08	22:13:17.68	44.759	-110.799	5.00	2.65MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2257	1976 DEC 08	22:13:55.68	44.761	-110.807	1.00	2.56MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2258	1976 DEC 08	22:14:15.83	44.759	-110.806	6.00	2.73MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2259	1976 DEC 08	22:29:14.09	44.764	-110.793	6.00	2.95MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2260	1976 DEC 09	00:12:44.92	44.759	-110.797	6.00	2.81MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2261	1976 DEC 09	00:13:55.14	44.760	-110.798	6.00	2.56MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2262	1976 DEC 09	00:47:27.73	44.760	-110.794	5.00	2.86MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2263	1976 DEC 09	04:32:19.06	44.760	-110.800	6.00	3.06MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2264	1976 DEC 09	06:23:08.69	44.760	-110.791	6.00	3.01MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2265	1976 DEC 09	08:09:21.81	44.757	-110.801	5.00	2.98MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2266	1976 DEC 09	08:21:20.30	44.765	-110.809	5.00	2.55MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2267	1976 DEC 09	09:11:20.73	44.744	-110.808	6.00	3.03MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2268	1976 DEC 09	11:12:31.99	44.760	-110.803	5.00	2.57MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2269	1976 DEC 09	20:37:28.34	44.760	-110.802	6.00	2.89MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2270	1976 DEC 09	20:49:38.88	44.761	-110.795	6.00	2.94MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2271	1976 DEC 09	22:35:04.93	44.764	-110.796	5.00	4.90mb		.....	..	DG	22	...	.....	.....	.	.....	.....
2272	1976 DEC 09	22:36:23.28	44.762	-110.806	5.00	5.10ML	GS	.....	..	DG	36	...	.....	.....	.	.....	.....
2273	1976 DEC 09	22:42:55.01	44.761	-110.809	7.00	2.81MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2274	1976 DEC 11	00:27:05.01	44.763	-110.807	6.00	3.00MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2275	1976 DEC 11	14:02:18.83	44.737	-111.683	4.00	2.50MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2276	1976 DEC 11	14:17:51.51	44.762	-110.810	6.00	2.98MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2277	1976 DEC 11	21:57:12.40	44.670	-110.970	5.00	3.10HL	ERD	.....	..	DG	9	...	.....	.....	.	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz Vert
2278	1976 DEC 11	22:37:12.89	44.759	-110.805	6.00	2.71MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2279	1976 DEC 11	22:49:30.88	44.760	-110.802	5.00	2.50MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2280	1976 DEC 12	00:55:27.23	44.764	-110.815	5.00	2.77MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2281	1976 DEC 12	01:57:25.63	44.796	-111.515	12.00	2.61MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2282	1976 DEC 12	21:21:54.91	44.760	-110.794	5.00	2.82MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2283	1976 DEC 13	09:30:46.86	44.758	-110.817	6.00	2.67MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2284	1976 DEC 14	08:30:42.00	44.437	-110.333	6.00	2.51MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2285	1976 DEC 14	19:04:23.47	44.761	-110.803	5.00	2.64MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2286	1976 DEC 15	12:09:34.18	44.394	-110.501	.00	2.52MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2287	1976 DEC 15	14:02:26.26	44.395	-110.503	.00	2.94MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2288	1976 DEC 15	14:10:29.89	44.394	-110.504	.00	2.64MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2289	1976 DEC 15	22:52:16.10	44.763	-110.810	6.00	2.66MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2290	1976 DEC 16	00:28:18.79	44.764	-110.808	6.00	3.30MD	GS	.....	..	DG	7	...	.....	.....	.	.....
2291	1976 DEC 17	03:36:07.70	44.778	-110.808	6.00	2.65MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2292	1976 DEC 18	02:35:16.01	44.780	-110.809	6.00	3.00UK	UU 0	.....	..	DG	...	...	.....	.....	.	.....
2293	1976 DEC 18	06:45:11.16	44.761	-110.808	6.00	3.11MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2294	1976 DEC 19	11:01:36.57	44.760	-110.798	6.00	2.79MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2295	1976 DEC 19	16:31:58.49	44.773	-110.808	5.00	2.91MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2296	1976 DEC 19	17:10:15.23	44.764	-110.811	5.00	4.90mb	GS	.....	..	DG	35	...	.....	.....	.	.....
2297	1976 DEC 19	17:15:46.07	44.758	-110.802	.00	2.73MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2298	1976 DEC 19	17:29:17.74	44.760	-110.810	5.00	2.66MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2299	1976 DEC 19	17:32:07.66	44.758	-110.813	5.00	2.78MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2300	1976 DEC 19	19:14:20.27	44.761	-110.818	6.00	2.85MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2301	1976 DEC 19	20:05:40.25	44.759	-110.822	5.00	2.51MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2302	1976 DEC 19	20:33:10.36	44.755	-110.807	5.00	2.81MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2303	1976 DEC 19	22:39:46.36	44.759	-110.826	5.00	2.66MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2304	1976 DEC 19	22:59:01.15	44.758	-110.818	5.00	3.01MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2305	1976 DEC 19	23:04:56.53	44.760	-110.820	6.00	2.81MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2306	1976 DEC 20	00:58:24.29	44.755	-110.812	4.00	2.68MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2307	1976 DEC 20	01:34:16.99	44.762	-110.815	5.00	4.40mb	GS	.....	..	DG	26	...	.....	.....	.	.....
2308	1976 DEC 20	01:37:04.20	44.765	-110.806	6.00	2.94MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2309	1976 DEC 20	03:23:50.10	44.760	-110.814	6.00	2.68MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2310	1976 DEC 20	04:56:00.37	44.759	-110.812	6.00	2.93MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2311	1976 DEC 20	05:16:29.63	44.754	-110.794	5.00	2.74MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2312	1976 DEC 20	05:41:12.02	44.758	-110.821	5.00	2.61MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2313	1976 DEC 20	06:00:47.23	44.758	-110.820	5.00	2.66MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2314	1976 DEC 20	09:13:50.68	44.760	-110.808	6.00	3.05MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2315	1976 DEC 20	09:51:41.83	44.761	-110.812	5.00	2.50MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2316	1976 DEC 20	17:07:10.12	44.500	-111.071	7.00	3.30ML	ERD	.....	..	DG	7	...	.....	.....	.	.....
2317	1976 DEC 20	17:19:48.96	44.832	-110.954	6.00	2.81MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2318	1976 DEC 20	22:35:16.11	44.758	-110.822	6.00	2.98MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2319	1976 DEC 20	22:55:20.35	44.759	-110.805	6.00	2.62MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2320	1976 DEC 21	14:34:04.57	44.757	-110.821	6.00	2.72MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2321	1976 DEC 21	19:57:52.43	44.760	-110.815	6.00	2.85MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2322	1976 DEC 22	07:33:04.46	44.758	-110.824	6.00	2.82MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2323	1976 DEC 23	01:32:53.46	44.760	-110.795	5.00	2.64MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2324	1976 DEC 23	12:29:29.88	44.762	-110.827	5.00	2.55MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2325	1976 DEC 23	17:34:55.61	44.735	-110.798	5.00	2.80MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2326	1976 DEC 23	17:35:40.59	44.736	-110.796	6.00	3.15MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2327	1976 DEC 23	21:41:56.72	44.757	-110.810	5.00	2.56MD	GS	.....	..	DG	...	...	.....	.....	.	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz Vert
2328	1976 DEC 24	04:13:39.29	44.747	-110.830	3.00	2.50MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2329	1976 DEC 24	07:50:38.47	44.171	-110.354	14.00	2.65MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2330	1976 DEC 24	18:58:47.31	44.757	-110.825	6.00	2.87MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2331	1976 DEC 25	03:04:19.00	44.759	-110.824	5.00	2.60MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2332	1976 DEC 25	05:42:37.40	44.758	-110.825	6.00	3.00MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2333	1976 DEC 25	05:52:51.82	44.758	-110.823	6.00	2.52MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2334	1976 DEC 25	19:48:53.03	44.760	-110.798	4.00	2.51MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2335	1976 DEC 29	06:59:35.10	44.488	-115.819	5.00	3.60ML	ERD	.....	..	DG	9	...	.....	.....	.	.....
2336	1976 DEC 29	21:22:53.05	44.494	-111.066	8.00	2.61MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2337	1976 DEC 31	04:33:03.23	44.754	-110.798	4.00	3.15MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2338	1976 DEC 31	06:13:51.42	44.753	-110.800	4.00	2.52MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2339	1976 DEC 31	11:15:13.26	44.751	-110.804	5.00	2.66MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2340	1976 DEC 31	14:52:52.75	44.755	-110.801	3.00	3.16MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2341	1976 DEC 31	15:01:09.61	44.755	-110.798	4.00	2.79MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2342	1976 DEC 31	16:02:12.96	44.756	-110.798	4.00	2.68MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2343	1976 DEC 31	19:50:51.48	44.755	-110.801	5.00	2.56MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2344	1976 DEC 31	20:39:26.94	44.757	-110.800	4.00	3.37MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2345	1976 DEC 31	22:02:08.60	44.756	-110.801	4.00	2.84MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2346	1977 JAN 01	10:04:26.63	44.754	-110.804	5.00	2.94MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2347	1977 JAN 01	14:27:06.33	44.761	-110.815	6.00	2.53MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2348	1977 JAN 02	14:08:39.65	44.764	-110.810	6.00	2.74MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2349	1977 JAN 02	20:14:35.86	44.711	-111.837	2.00	2.78MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2350	1977 JAN 05	10:05:22.61	44.756	-110.808	5.00	2.55MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2351	1977 JAN 08	05:30:33.28	44.758	-110.824	6.00	2.53MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2352	1977 JAN 08	15:49:54.65	44.679	-111.912	5.00	2.50MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2353	1977 JAN 12	14:12:22.32	44.676	-112.623	6.00	3.50ML	MSO	.....	..	DG	15	...	.....	.....	.	.....
2354	1977 JAN 17	04:46:46.74	44.763	-110.789	6.00	2.77MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2355	1977 JAN 17	08:47:15.24	44.760	-110.823	6.00	2.54MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2356	1977 JAN 26	10:23:32.70	44.760	-110.816	6.00	2.98MD	GS	.....	..	DG	7	...	.....	.....	.	.....
2357	1977 FEB 03	15:25:47.19	41.922	-112.368	3.00	2.50MD	UU	.....	..	DG	...	...	.....	.....	.	.....
2358	1977 FEB 05	11:16:07.88	44.486	-111.077	7.00	2.84MD	GS	.....	..	DG	8	...	.....	.....	.	.....
2359	1977 FEB 05	13:50:48.52	44.487	-111.074	8.00	2.51MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2360	1977 FEB 05	17:14:03.86	44.791	-111.535	7.00	2.86MD	GS	.....	..	DG	7	...	.....	.....	.	.....
2361	1977 FEB 07	05:26:47.20	44.487	-111.074	7.00	2.74MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2362	1977 FEB 13	21:27:56.14	44.760	-111.215	9.00	3.30MD	GS	.....	..	DG	12	...	.....	.....	.	.....
2363	1977 FEB 14	08:58:55.11	44.444	-110.316	3.00	2.59MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2364	1977 FEB 19	10:57:37.43	44.750	-110.834	6.00	2.69MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2365	1977 FEB 24	08:07:04.63	44.719	-110.890	3.00	2.70MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2366	1977 FEB 25	23:58:12.24	44.273	-110.623	.00	2.69MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2367	1977 MAR 01	19:52:40.52	43.855	-111.133	8.00	3.06MD	GS	.....	..	DG	8	...	.....	.....	.	.....
2368	1977 MAR 02	08:03:55.21	43.871	-111.145	5.00	3.11MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2369	1977 MAR 02	17:26:56.74	44.663	-110.470	2.00	3.03MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2370	1977 MAR 02	18:07:24.20	44.608	-109.903	1.00	3.13MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2371	1977 MAR 02	20:17:53.83	44.749	-111.043	5.00	2.66MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2372	1977 MAR 02	20:21:19.54	44.749	-111.043	5.00	2.93MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2373	1977 MAR 02	23:58:52.52	44.750	-111.043	5.00	3.05MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2374	1977 MAR 03	03:50:33.17	44.750	-111.040	5.00	2.50MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2375	1977 MAR 03	04:53:01.52	44.750	-111.040	5.00	3.26MD	GS	.....	..	DG	8	...	.....	.....	.	.....
2376	1977 MAR 03	05:22:09.76	44.749	-111.041	5.00	3.03MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2377	1977 MAR 03	06:08:35.06	44.749	-111.040	5.00	2.72MD	GS	.....	..	DG	...	...	.....	.....	.	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz Vert
2378	1977 MAR 03	22:15:37.05	44.747	-111.037	5.00	3.06MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2379	1977 MAR 04	00:52:57.32	44.748	-111.032	6.00	2.68MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2380	1977 MAR 04	06:04:23.56	44.751	-111.037	5.00	2.95MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2381	1977 MAR 04	10:06:00.34	44.752	-111.030	5.00	3.90mb		.....	..	DG	30	...	.....	.....	.	.....
2382	1977 MAR 04	10:07:14.30	44.749	-111.031	5.00	2.59MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2383	1977 MAR 04	10:11:59.95	44.752	-111.029	5.00	2.59MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2384	1977 MAR 04	11:01:50.88	44.754	-111.027	5.00	3.90mb		.....	..	DG	24	...	.....	.....	.	.....
2385	1977 MAR 04	11:33:06.97	44.753	-111.023	4.00	3.70mb		.....	..	DG	21	...	.....	.....	.	.....
2386	1977 MAR 04	11:54:01.49	44.755	-111.020	4.00	2.75MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2387	1977 MAR 04	12:22:40.05	44.755	-111.035	4.00	2.59MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2388	1977 MAR 04	13:00:59.63	44.753	-111.022	5.00	4.10mb		.....	..	DG	31	...	.....	.....	.	.....
2389	1977 MAR 04	13:04:20.97	44.755	-111.019	4.00	4.00mb		.....	..	DG	10	...	.....	.....	.	.....
2390	1977 MAR 04	13:12:17.25	44.750	-111.031	5.00	3.10MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2391	1977 MAR 04	14:03:39.03	44.754	-111.031	4.00	3.15MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2392	1977 MAR 04	14:08:49.85	44.754	-111.029	3.00	2.59MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2393	1977 MAR 04	14:09:32.75	44.749	-111.022	5.00	3.10MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2394	1977 MAR 04	14:19:49.05	44.751	-111.018	5.00	4.00mb		.....	..	DG	22	...	.....	.....	.	.....
2395	1977 MAR 04	14:26:00.00	44.700	-111.100	.00	.....		.....	III	SA	...	...	.....	.....	F	.....
2396	1977 MAR 04	14:39:24.87	44.751	-111.029	5.00	3.80ML	MSO	.....	..	DG	13	...	.....	.....	.	.....
2397	1977 MAR 04	14:40:41.88	44.748	-111.035	5.00	2.81MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2398	1977 MAR 04	14:58:03.98	44.747	-111.019	6.00	3.70ML	MSO	.....	..	DG	10	...	.....	.....	.	.....
2399	1977 MAR 04	15:00:20.19	44.748	-111.019	6.00	3.80ML	MSO	.....	..	DG	7	...	.....	.....	.	.....
2400	1977 MAR 04	15:05:49.10	44.749	-111.014	6.00	2.99MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2401	1977 MAR 04	15:50:10.93	44.754	-111.009	3.00	2.74MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2402	1977 MAR 04	16:03:24.17	44.748	-111.012	6.00	2.62MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2403	1977 MAR 04	16:12:29.03	44.753	-111.000	5.00	3.41MD	GS	.....	..	DG	18	...	.....	.....	.	.....
2404	1977 MAR 04	16:43:59.66	44.753	-111.029	3.00	2.53MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2405	1977 MAR 04	16:47:43.88	44.750	-111.009	5.00	3.70ML	GS	.....	..	DG	20	...	.....	.....	.	.....
2406	1977 MAR 04	16:51:47.80	44.749	-111.020	6.00	4.00ML	MSO	.....	..	DG	17	...	.....	.....	.	.....
2407	1977 MAR 04	16:53:23.44	44.750	-111.029	5.00	2.81MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2408	1977 MAR 04	17:09:48.34	44.755	-110.997	4.00	3.01MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2409	1977 MAR 04	17:10:41.32	44.753	-111.002	5.00	4.00mb		.....	..	DG	15	...	.....	.....	.	.....
2410	1977 MAR 04	17:14:11.34	44.752	-110.995	3.00	2.56MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2411	1977 MAR 04	17:16:15.64	44.757	-110.998	3.00	3.40MD	MSL 0	.....	..	DG	...	...	.....	.....	.	.....
2412	1977 MAR 04	17:18:30.11	44.754	-110.994	3.00	2.57MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2413	1977 MAR 04	17:27:06.05	44.752	-111.012	5.00	2.87MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2414	1977 MAR 04	17:29:49.88	44.750	-111.005	5.00	2.60MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2415	1977 MAR 04	17:38:36.43	44.751	-111.007	5.00	2.75MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2416	1977 MAR 04	19:59:46.47	44.754	-111.040	4.00	2.60MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2417	1977 MAR 04	20:01:15.82	44.753	-111.037	4.00	2.67MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2418	1977 MAR 04	20:03:02.00	44.746	-111.042	5.00	3.12MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2419	1977 MAR 04	23:12:02.86	44.747	-111.026	6.00	2.96MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2420	1977 MAR 05	00:32:00.07	44.745	-111.029	6.00	3.30MD	MSO	.....	..	DG	...	...	.....	.....	.	.....
2421	1977 MAR 05	01:05:30.67	44.745	-111.030	6.00	2.89MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2422	1977 MAR 05	04:29:45.69	44.753	-111.007	5.00	2.96MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2423	1977 MAR 05	08:02:59.11	44.754	-111.047	4.00	2.57MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2424	1977 MAR 05	10:33:13.18	44.747	-111.040	6.00	2.53MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2425	1977 MAR 05	18:43:18.59	42.599	-111.317	.00	2.57MD	UU	.....	..	DG	8	...	.....	.....	.	.....
2426	1977 MAR 05	23:51:53.52	44.745	-111.031	6.00	2.97MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2427	1977 MAR 06	01:18:14.40	44.745	-111.040	5.00	2.76MD	GS	.....	..	DG	...	...	.....	.....	.	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
2428	1977 MAR 06	01:20:08.33	44.746	-111.038	5.00	2.55MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2429	1977 MAR 06	04:46:51.82	44.748	-111.042	5.00	2.53MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2430	1977 MAR 06	04:56:09.40	44.747	-111.044	5.00	2.50MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2431	1977 MAR 06	05:01:03.78	44.749	-111.041	5.00	3.32MD	GS	.....	..	DG	12	...	.....	.....	.	.....	.....
2432	1977 MAR 06	06:10:11.64	44.754	-111.038	4.00	3.42MD	GS	.....	..	DG	15	...	.....	.....	.	.....	.....
2433	1977 MAR 06	06:11:27.26	44.755	-111.041	4.00	3.36MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2434	1977 MAR 07	04:54:32.37	44.748	-111.036	5.00	2.69MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2435	1977 MAR 07	06:04:39.56	44.744	-111.012	7.00	2.69MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2436	1977 MAR 07	11:30:32.55	44.750	-111.044	5.00	2.86MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2437	1977 MAR 07	11:32:00.94	44.750	-111.044	5.00	2.56MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2438	1977 MAR 07	11:33:04.41	44.749	-111.045	4.00	2.73MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2439	1977 MAR 07	19:39:36.64	44.745	-111.012	3.00	2.52MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2440	1977 MAR 07	19:51:23.75	44.740	-111.014	7.00	2.96MD	GS	.....	..	DG	9	...	.....	.....	.	.....	.....
2441	1977 MAR 07	20:04:56.16	44.243	-110.627	3.00	2.65MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2442	1977 MAR 07	20:17:00.36	44.741	-111.019	6.00	3.16MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2443	1977 MAR 07	20:28:44.73	44.740	-111.022	7.00	2.69MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2444	1977 MAR 08	01:58:19.74	44.739	-111.016	7.00	2.51MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2445	1977 MAR 10	18:49:04.45	44.736	-111.009	4.00	2.73MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2446	1977 MAR 11	05:09:37.20	46.120	-110.520	5.00	4.80ML	GS	.....	..	DG	41	...	.....	.....	.	.....	.....
2447	1977 MAR 11	12:17:52.94	44.812	-111.464	8.00	5.20mb	GS	.....	..	DG	26	...	.....	.....	.	.....	.....
2448	1977 MAR 11	22:22:11.64	44.496	-111.091	6.00	3.33MD	GS	.....	..	DG	11	...	.....	.....	.	.....	.....
2449	1977 MAR 15	18:46:41.87	44.794	-111.524	10.00	3.06MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2450	1977 MAR 16	22:55:31.29	44.742	-111.039	1.00	2.95MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2451	1977 MAR 24	13:20:11.90	45.710	-111.310	5.00	3.20ML	ERD	.....	IV	SA	...	...	.....	.....	C	.....	.....
2452	1977 APR 02	23:03:52.49	44.762	-110.821	5.00	3.90ML	GS	.....	..	DG	19	...	.....	.....	.	.....	.....
2453	1977 APR 03	00:00:40.64	44.761	-110.813	6.00	2.86MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2454	1977 APR 03	00:31:29.67	44.759	-110.824	6.00	2.57MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2455	1977 APR 03	04:43:51.81	44.761	-110.817	6.00	3.24MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2456	1977 APR 04	02:23:03.53	44.759	-110.807	6.00	2.69MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2457	1977 APR 05	23:12:08.89	44.889	-111.704	7.00	2.75MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2458	1977 APR 22	19:47:42.31	44.493	-111.068	8.00	3.05MD	GS	.....	..	DG	8	...	.....	.....	.	.....	.....
2459	1977 APR 23	06:36:10.69	44.496	-111.071	8.00	2.76MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2460	1977 APR 28	08:02:00.36	44.713	-110.774	4.00	2.72MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2461	1977 MAY 16	06:34:54.60	44.420	-114.420	5.00	3.10ML	ERD	.....	..	SA	...	...	.....	.....	C	.....	.....
2462	1977 MAY 16	16:58:50.25	42.601	-111.426	2.00	2.90ML	ERD	.....	..	DG	9	...	.....	.....	.	.....	.....
2463	1977 MAY 22	14:53:43.41	44.752	-110.791	5.00	2.74MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2464	1977 MAY 22	18:13:36.82	44.754	-110.791	3.00	2.54MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2465	1977 MAY 24	09:05:26.60	44.540	-110.677	3.00	2.53MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2466	1977 MAY 24	09:06:20.16	44.542	-110.677	3.00	2.59MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2467	1977 MAY 25	10:58:31.99	44.536	-111.015	7.00	3.00UK	UU 0	.....	..	DG	...	...	.....	.....	.	.....	.....
2468	1977 MAY 25	12:12:39.54	44.534	-111.014	7.00	2.72MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2469	1977 MAY 25	14:32:31.83	44.537	-111.010	5.00	2.93MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2470	1977 MAY 25	15:50:05.16	44.541	-111.010	7.00	2.94MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2471	1977 MAY 25	17:55:40.82	44.542	-111.011	6.00	2.79MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2472	1977 MAY 25	19:23:11.24	44.541	-111.010	6.00	2.94MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2473	1977 MAY 25	21:51:15.47	44.534	-111.016	7.00	2.63MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2474	1977 MAY 26	01:57:33.54	44.540	-111.017	6.00	2.55MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2475	1977 MAY 27	10:42:56.11	44.539	-111.012	6.00	2.59MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2476	1977 MAY 27	10:48:15.34	44.540	-111.014	6.00	2.53MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2477	1977 MAY 27	10:52:32.01	44.545	-111.012	4.00	3.27MD	GS	.....	..	DG	8	...	.....	.....	.	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz Vert
2478	1977 MAY 27	11:07:44.30	44.538	-111.016	6.00	2.69MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2479	1977 MAY 27	11:33:53.00	44.536	-111.022	7.00	3.02MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2480	1977 MAY 28	13:36:32.14	44.541	-111.022	7.00	3.26MD	GS	.....	..	DG	17	...	.....	.....	.	.....
2481	1977 MAY 28	18:37:59.31	44.542	-111.011	4.00	2.67MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2482	1977 MAY 30	09:25:35.30	41.677	-115.280	.00	4.19mb		.....	..	DG	34	...	.....	.....	.	.....
2483	1977 JUN 01	21:05:16.28	44.752	-111.774	2.00	2.79MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2484	1977 JUN 03	02:08:52.84	43.141	-110.945	.00	2.55MD	UU	.....	..	DG	...	...	.....	.....	.	.....
2485	1977 JUN 06	02:27:30.12	44.405	-110.253	5.00	2.57MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2486	1977 JUN 17	11:51:57.66	44.723	-110.808	2.00	2.63MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2487	1977 JUN 19	04:11:20.89	44.796	-110.489	4.00	2.60MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2488	1977 JUN 30	00:47:29.71	44.758	-110.782	4.00	2.92MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2489	1977 JUN 30	05:28:37.77	43.073	-111.442	.00	3.00ML	ERD	.....	..	DG	9	...	.....	.....	.	.....
2490	1977 JUL 10	17:58:46.23	44.739	-111.779	8.00	2.66MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2491	1977 JUL 11	18:41:27.00	44.431	-110.808	1.00	2.57MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2492	1977 JUL 13	10:40:54.64	44.553	-110.524	1.00	3.12MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2493	1977 JUL 13	11:56:38.66	44.503	-111.079	5.00	3.26MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2494	1977 JUL 22	22:52:50.12	43.497	-110.440	.00	3.00MD	UU	.....	..	DG	...	...	.....	.....	.	.....
2495	1977 JUL 23	13:36:55.58	44.404	-110.253	5.00	2.54MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2496	1977 JUL 24	03:41:25.63	44.520	-111.014	.00	2.52MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2497	1977 AUG 13	10:13:07.60	44.650	-114.610	5.00	3.30ML	ERD	.....	..	SA	...	...	.....	.....	.	C
2498	1977 AUG 19	06:02:09.52	42.489	-111.869	7.00	2.70ML	UU	.....	..	DG	...	...	.....	.....	.	.....
2499	1977 AUG 25	12:07:11.50	44.640	-114.600	5.00	3.10ML	ERD	.....	..	SA	...	...	.....	.....	.	C
2500	1977 AUG 27	05:23:49.10	45.980	-110.320	10.00	4.50mb		.....	..	DG	25	...	.....	.....	.	.....
2501	1977 AUG 29	12:56:23.40	44.658	-114.522	5.00	4.30ML	GS	.....	..	DG	20	...	.....	.....	.	.....
2502	1977 SEP 03	07:34:27.31	44.756	-110.843	7.00	2.76MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2503	1977 SEP 06	11:32:14.55	44.725	-111.257	11.00	3.00ML	ERD	.....	..	DG	5	...	.....	.....	.	.....
2504	1977 SEP 08	17:14:17.19	44.725	-110.322	.00	3.18MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2505	1977 SEP 10	16:06:06.60	41.754	-112.790	4.00	2.50MD	UU	.....	..	DG	15	...	.....	.....	.	.....
2506	1977 SEP 13	23:31:55.44	44.771	-110.942	6.00	2.94MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2507	1977 OCT 01	14:14:11.93	44.682	-111.823	1.00	2.51MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2508	1977 OCT 02	01:45:56.83	40.511	-110.463	7.00	3.00ML	CDL	.....	..	DG	7	...	.....	.....	.	.....
2509	1977 OCT 04	19:13:32.50	40.500	-110.470	4.00	2.90ML	CDL	.....	..	SA	...	...	.....	.....	.	A
2510	1977 OCT 06	17:13:16.82	44.332	-110.289	9.00	2.56MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2511	1977 OCT 09	22:37:09.95	44.798	-111.440	6.00	2.52MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2512	1977 OCT 11	08:37:53.40	40.530	-109.520	5.00	3.60ML	CDL	.....	..	DG	13	...	.....	.....	.	.....
2513	1977 OCT 14	23:10:58.62	44.407	-110.252	4.00	2.66MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2514	1977 OCT 17	09:24:07.09	44.412	-110.960	.00	2.51MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2515	1977 OCT 19	16:50:49.16	44.717	-111.857	.00	4.69ML	GS	.....	..	DG	47	...	.....	.....	.	.....
2516	1977 OCT 20	01:12:32.09	44.700	-111.751	1.00	2.64MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2517	1977 OCT 26	06:40:39.64	44.701	-111.775	1.00	2.60MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2518	1977 OCT 29	08:28:13.06	44.594	-110.580	.00	2.80MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2519	1977 NOV 03	00:19:13.95	44.668	-110.468	2.00	2.78MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2520	1977 NOV 07	06:30:57.56	44.485	-110.362	1.00	2.52MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2521	1977 NOV 08	11:10:32.40	46.070	-111.650	5.00	3.20ML	ERD	.....	..	SA	...	...	.....	.....	.	C
2522	1977 NOV 09	12:43:27.50	46.090	-111.720	5.00	3.40ML	ERD	.....	..	SA	...	...	.....	.....	.	C
2523	1977 NOV 18	13:49:50.82	44.644	-110.142	1.00	2.77MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2524	1977 NOV 18	13:53:11.94	44.648	-110.143	1.00	2.60MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2525	1977 NOV 21	08:27:32.38	42.279	-111.672	3.00	2.50MD	UU	.....	..	DG	...	...	.....	.....	.	.....
2526	1977 NOV 22	07:51:28.36	44.759	-110.823	6.00	2.63MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2527	1977 NOV 27	09:25:55.51	44.520	-116.354	10.00	4.80MD	SEA	.....	..	DG	38	...	.....	.....	.	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
2528	1977 NOV 28	02:23:11.16	41.351	-111.705	6.00	2.80mb				DG	28						
2529	1977 NOV 29	21:42:45.58	44.499	-110.867	3.00	2.66MD	GS			DG							
2530	1977 DEC 02	22:14:00.20	45.780	-112.770	17.00	3.30ML	ERD			SA					C		
2531	1977 DEC 04	15:09:22.22	44.761	-110.913	4.00	2.57MD	GS			DG							
2532	1977 DEC 04	15:47:21.19	44.843	-111.482	8.00	2.59MD	GS			DG							
2533	1977 DEC 16	01:28:04.45	44.469	-110.390	1.00	2.54MD	GS			DG							
2534	1977 DEC 22	23:05:11.11	44.610	-111.995	5.00	2.95MD	GS			DG							
2535	1978 JAN 13	09:09:03.13	44.543	-110.379	.00	2.59MD	GS			DG							
2536	1978 JAN 13	15:55:38.14	44.538	-110.381	1.00	2.75MD	GS			DG							
2537	1978 JAN 14	16:53:49.26	44.725	-111.791	.00	3.90UK	MSO			DG	11						
2538	1978 JAN 15	02:41:42.64	44.529	-110.375	1.00	2.69MD	GS			DG							
2539	1978 JAN 20	16:15:19.79	44.531	-110.380	1.00	2.60MD	GS			DG							
2540	1978 JAN 20	22:44:46.08	44.526	-110.367	1.00	2.93MD	GS			DG							
2541	1978 JAN 21	15:59:58.70	44.553	-110.387	1.00	2.54MD	GS			DG							
2542	1978 JAN 23	00:32:35.71	44.245	-110.419	5.00	2.99MD	GS			DG	14						
2543	1978 JAN 23	04:10:26.41	44.246	-110.409	7.00	2.50MD	GS			DG							
2544	1978 JAN 23	20:21:37.56	44.400	-110.701	.00	3.06MD	GS			DG							
2545	1978 JAN 24	00:10:05.67	44.399	-110.698	.00	2.51MD	GS			DG							
2546	1978 JAN 25	21:15:49.91	44.741	-111.189	11.00	2.61MD	GS			DG							
2547	1978 FEB 02	00:35:52.64	44.369	-110.831	1.00	2.71MD	GS			DG							
2548	1978 FEB 02	00:36:24.92	44.370	-110.832	1.00	3.60mb				DG	12						
2549	1978 FEB 02	00:49:00.83	44.369	-110.829	2.00	2.99MD	GS			DG	14						
2550	1978 FEB 02	04:30:25.68	44.364	-110.840	1.00	2.85MD	GS			DG	9						
2551	1978 FEB 02	12:35:55.64	44.372	-110.833	.00	3.30mb				DG	14						
2552	1978 FEB 07	05:03:10.40	42.500	-109.700	30.00	3.30ML	GS			SA					B		
2553	1978 FEB 07	16:15:44.36	44.365	-110.829	1.00	2.56MD	GS			DG							
2554	1978 FEB 13	17:35:36.10	45.070	-114.520	5.00	3.30ML	GS			SA					C		
2555	1978 FEB 17	00:52:28.96	44.739	-111.358	11.00	2.63MD	GS			DG							
2556	1978 FEB 18	08:38:15.28	44.734	-111.352	10.00	2.58MD	GS			DG							
2557	1978 FEB 22	00:37:00.00	44.605	-115.070	5.00	3.90mb				DG	20						
2558	1978 FEB 25	09:28:12.05	45.068	-111.780	7.00	2.89MD	GS			DG							
2559	1978 FEB 25	21:22:19.90	44.660	-113.880	5.00	3.00ML	GS			SA					C		
2560	1978 FEB 26	09:16:51.93	44.711	-110.635	6.00	2.52MD	GS			DG							
2561	1978 FEB 28	00:20:06.50	40.744	-112.202	10.00	2.70ML	SLC			DG	23						
2562	1978 MAR 01	23:05:02.37	41.106	-111.592	11.00	2.50MD	UU			DG							
2563	1978 MAR 06	11:06:20.93	44.249	-110.776	.00	3.13MD	GS			DG	12						
2564	1978 MAR 06	11:20:21.89	44.243	-110.771	.00	2.63MD	GS			DG							
2565	1978 MAR 07	01:08:52.79	44.429	-110.848	1.00	3.11MD	GS			DG							
2566	1978 MAR 07	01:10:47.40	44.432	-110.844	2.00	3.81MD	GS			DG	16						
2567	1978 MAR 07	01:23:18.54	44.424	-110.839	2.00	2.59MD	GS			DG							
2568	1978 MAR 07	01:23:51.50	44.431	-110.849	2.00	3.33MD	GS			DG							
2569	1978 MAR 07	01:37:36.54	44.395	-110.843	.00	2.89MD	GS			DG							
2570	1978 MAR 07	01:39:55.82	44.428	-110.851	.00	2.73MD	GS			DG							
2571	1978 MAR 07	01:46:21.57	44.425	-110.844	4.00	2.91MD	GS			DG							
2572	1978 MAR 07	01:49:34.35	44.426	-110.835	1.00	3.01MD	GS			DG							
2573	1978 MAR 07	02:06:07.31	44.420	-110.842	3.00	2.81MD	GS			DG							
2574	1978 MAR 07	03:33:57.52	44.423	-110.849	1.00	2.94MD	GS			DG							
2575	1978 MAR 07	03:42:44.18	44.425	-110.820	9.00	2.66MD	GS			DG							
2576	1978 MAR 07	03:49:31.22	44.415	-110.839	1.00	3.03MD	GS			DG							
2577	1978 MAR 07	05:57:41.23	44.426	-110.838	1.00	2.59MD	GS			DG							

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Std-Err Vert
2578	1978 MAR 07	06:42:34.27	44.416	-110.830	1.00	2.92MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2579	1978 MAR 07	06:44:16.95	44.423	-110.827	1.00	3.09MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2580	1978 MAR 07	06:53:31.25	44.413	-110.823	.00	2.83MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2581	1978 MAR 07	06:56:27.81	44.416	-110.821	1.00	2.86MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2582	1978 MAR 07	07:39:29.04	44.410	-110.826	.00	3.80mb		.....	..	DG	12	...	.....	.....	.	.....	.....
2583	1978 MAR 07	08:10:16.38	44.422	-110.830	1.00	2.63MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2584	1978 MAR 07	09:58:11.71	44.446	-110.820	20.00	2.53MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2585	1978 MAR 07	09:59:51.10	44.413	-110.823	1.00	2.69MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2586	1978 MAR 07	10:04:27.01	44.416	-110.822	5.00	2.72MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2587	1978 MAR 09	06:30:51.88	40.763	-112.087	8.00	3.30ML	SLC	.....	..	DG	29	...	.....	.....	.	.....	.....
2588	1978 MAR 09	06:46:20.01	40.762	-112.087	7.00	2.50ML	SLC	.....	..	DG	24	...	.....	.....	.	.....	.....
2589	1978 MAR 10	07:47:10.75	43.868	-110.105	9.00	3.20ML	GS	.....	..	DG	12	...	.....	.....	.	.....	.....
2590	1978 MAR 13	13:35:43.70	40.754	-112.091	8.00	2.80ML	SLC	.....	..	DG	15	...	.....	.....	.	.....	.....
2591	1978 MAR 19	02:33:47.80	44.500	-114.420	5.00	3.20ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
2592	1978 MAR 22	14:30:15.70	44.293	-115.496	5.00	4.50mb		.....	..	DG	28	...	.....	.....	.	.....	.....
2593	1978 MAR 22	20:11:23.28	44.785	-111.518	8.00	2.59MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2594	1978 MAR 27	11:40:57.45	44.430	-110.408	1.00	2.87MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2595	1978 MAR 29	03:53:26.23	44.789	-111.471	9.00	3.00MD	MSO	.....	..	DG	9	...	.....	.....	.	.....	.....
2596	1978 MAR 30	03:29:31.57	44.350	-110.667	1.00	2.72MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2597	1978 APR 03	10:10:08.10	44.050	-116.360	5.00	3.20ML	GS	.....	IV	SA	...	...	.....	.....	C	.....	.....
2598	1978 APR 10	21:51:08.55	42.656	-111.544	2.00	2.54MD	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
2599	1978 APR 14	09:18:05.41	45.315	-110.261	5.00	3.06MD	GS	.....	..	DG	9	...	.....	.....	.	.....	.....
2600	1978 APR 15	05:23:51.62	42.725	-110.919	4.00	2.50ML	GS	.....	..	DG	10	...	.....	.....	.	.....	.....
2601	1978 APR 20	14:56:48.36	42.658	-111.563	10.00	2.50ML	GS	.....	..	DG	9	...	.....	.....	.	.....	.....
2602	1978 APR 26	07:16:45.30	43.920	-114.120	5.00	3.10ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
2603	1978 MAY 10	16:50:34.85	44.613	-110.545	1.00	2.52MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2604	1978 MAY 10	16:51:56.95	44.615	-110.523	5.00	2.62MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2605	1978 MAY 10	16:53:11.05	44.612	-110.545	1.00	2.70MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2606	1978 MAY 23	04:13:13.34	44.632	-110.651	5.00	2.84MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2607	1978 MAY 23	06:45:07.60	41.143	-116.928	.00	3.40UK		.....	..	DG	...	...	.....	.....	.	.....	.....
2608	1978 JUN 03	08:42:45.80	40.722	-112.055	6.00	2.70ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
2609	1978 JUN 06	02:26:20.79	41.853	-112.724	6.00	2.50ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
2610	1978 JUN 07	12:27:05.79	44.603	-110.439	.00	2.83MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2611	1978 JUN 07	12:28:00.00	44.700	-110.500	.00	.....		.....	IV	SA	...	...	.....	.....	F	.....	.....
2612	1978 JUN 07	19:29:18.06	44.401	-110.262	4.00	2.79MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2613	1978 JUN 08	15:01:50.97	44.360	-110.792	.00	3.00UK	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
2614	1978 JUN 18	22:40:00.00	44.400	-110.800	.00	.....		.....	III	SA	...	...	.....	.....	F	.....	.....
2615	1978 JUN 19	05:43:26.64	44.570	-110.381	2.00	2.57MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2616	1978 JUN 22	23:01:03.14	44.297	-110.601	.00	3.09MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2617	1978 JUN 22	23:05:38.49	44.319	-110.625	2.00	2.67MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2618	1978 JUN 22	23:19:09.10	44.301	-110.600	.00	3.24MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2619	1978 JUN 22	23:21:05.25	44.314	-110.630	1.00	2.79MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2620	1978 JUN 22	23:33:03.15	44.297	-110.606	.00	2.50MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2621	1978 JUN 23	00:17:43.85	44.300	-110.609	.00	3.05MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2622	1978 JUN 23	04:54:29.46	41.695	-111.493	7.00	2.80MD	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
2623	1978 JUL 01	18:38:09.96	44.695	-110.338	1.00	2.58MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2624	1978 JUL 02	17:35:38.27	44.665	-110.465	2.00	2.66MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2625	1978 JUL 14	06:55:15.86	44.448	-110.337	.00	2.71MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2626	1978 JUL 14	08:37:10.17	44.444	-110.332	4.00	2.73MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2627	1978 JUL 14	08:54:59.32	44.453	-110.337	.00	2.65MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
2628	1978 JUL 14	09:35:37.16	44.435	-110.326	4.00	2.60MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2629	1978 JUL 14	10:29:12.81	44.434	-110.319	.00	2.82MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2630	1978 JUL 14	14:01:11.07	44.435	-110.327	.00	2.91MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2631	1978 JUL 14	20:20:51.74	44.450	-110.331	.00	2.60MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2632	1978 JUL 14	20:37:54.22	44.445	-110.340	3.00	2.67MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2633	1978 JUL 14	20:38:44.20	44.424	-110.351	.00	3.03MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2634	1978 JUL 14	20:39:35.79	44.454	-110.338	6.00	2.90MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2635	1978 JUL 14	21:31:06.92	44.453	-110.339	2.00	2.67MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2636	1978 JUL 14	22:10:44.21	44.440	-110.331	3.00	3.37MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2637	1978 JUL 15	08:26:00.00	44.800	-110.700	.00	.....	.....	.....	IV	SA	...	...	.....	.....	F	.....	.....
2638	1978 JUL 15	10:41:30.59	44.434	-110.331	.00	2.60MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2639	1978 JUL 16	02:06:28.11	44.420	-110.301	.00	2.66MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2640	1978 JUL 19	04:17:30.60	45.087	-114.416	5.00	3.70UK	MSO	.....	..	DG	9	...	.....	.....	.	.....	.....
2641	1978 JUL 21	10:01:00.00	44.400	-110.600	.00	.....	.....	.....	IV	SA	...	...	.....	.....	F	.....	.....
2642	1978 JUL 21	10:02:03.27	44.354	-110.541	.00	2.75MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2643	1978 JUL 23	17:35:36.39	44.440	-110.315	5.00	3.20UK	UU 0	.....	..	DG	...	...	.....	.....	.	.....	.....
2644	1978 JUL 29	14:04:03.36	41.848	-112.130	4.00	3.10ML	SLC	.....	..	DG	20	...	.....	.....	.	.....	.....
2645	1978 AUG 14	15:36:09.62	44.587	-110.391	1.00	2.98MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2646	1978 AUG 21	12:14:55.05	44.483	-110.841	1.00	2.53MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2647	1978 AUG 21	12:16:00.00	44.400	-110.800	.00	.....	.....	.....	III	SA	...	...	.....	.....	F	.....	.....
2648	1978 AUG 21	12:27:00.00	44.400	-110.800	.00	.....	.....	.....	III	SA	...	...	.....	.....	F	.....	.....
2649	1978 AUG 21	12:32:00.00	44.400	-110.800	.00	.....	.....	.....	III	SA	...	...	.....	.....	F	.....	.....
2650	1978 AUG 21	13:14:00.00	44.400	-110.800	.00	3.00MI	SRA	.....	..	DG	...	...	.....	.....	.	.....	.....
2651	1978 AUG 21	13:16:00.00	44.400	-110.800	.00	3.00MI	SRA	.....	..	DG	...	...	.....	.....	.	.....	.....
2652	1978 AUG 21	13:27:00.00	44.400	-110.800	.00	3.00MI	SRA	.....	..	DG	...	...	.....	.....	.	.....	.....
2653	1978 AUG 21	13:32:00.00	44.400	-110.800	.00	3.00MI	SRA	.....	..	DG	...	...	.....	.....	.	.....	.....
2654	1978 AUG 21	14:25:00.00	44.400	-110.800	.00	.....	.....	.....	III	SA	...	...	.....	.....	F	.....	.....
2655	1978 AUG 21	14:27:00.00	44.400	-110.800	.00	.....	.....	.....	III	SA	...	...	.....	.....	F	.....	.....
2656	1978 SEP 06	10:53:41.35	44.638	-112.129	.00	2.71MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2657	1978 SEP 13	06:02:44.09	44.516	-110.455	1.00	2.61MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2658	1978 SEP 13	06:32:25.64	44.515	-110.455	1.00	2.53MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2659	1978 SEP 15	13:45:41.25	44.654	-110.426	2.00	3.31MD	GS	.....	..	DG	6	...	.....	.....	.	.....	.....
2660	1978 SEP 15	22:31:07.07	44.236	-110.764	1.00	2.95MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2661	1978 SEP 15	22:34:21.37	44.240	-110.766	.00	2.67MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2662	1978 SEP 28	08:58:20.45	42.149	-112.329	3.00	2.70ML	GS	.....	..	DG	8	...	.....	.....	.	.....	.....
2663	1978 OCT 02	11:04:28.90	44.712	-110.802	3.00	2.56MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2664	1978 OCT 02	11:59:19.79	44.712	-110.804	2.00	2.53MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2665	1978 OCT 02	12:02:52.35	44.713	-110.800	4.00	3.14MD	GS	.....	..	DG	5	...	.....	.....	.	.....	.....
2666	1978 OCT 02	13:59:10.48	44.712	-110.801	5.00	3.55MD	GS	.....	..	DG	18	...	.....	.....	.	.....	.....
2667	1978 OCT 02	14:14:05.97	44.711	-110.798	4.00	2.54MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2668	1978 OCT 02	16:37:47.35	44.715	-110.808	4.00	3.04MD	GS	.....	..	DG	4	...	.....	.....	.	.....	.....
2669	1978 OCT 02	17:05:34.71	44.715	-110.804	4.00	3.14MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2670	1978 OCT 02	17:34:56.50	44.715	-110.806	4.00	2.76MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2671	1978 OCT 02	19:13:59.68	44.714	-110.804	4.00	2.75MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2672	1978 OCT 02	19:16:16.61	44.715	-110.809	4.00	2.81MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2673	1978 OCT 02	23:55:42.52	44.715	-110.804	5.00	3.70UK	MSO	.....	..	DG	15	...	.....	.....	.	.....	.....
2674	1978 OCT 03	02:46:02.39	44.713	-110.799	5.00	2.98MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2675	1978 OCT 06	12:38:13.15	44.717	-110.810	4.00	2.94MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2676	1978 OCT 12	13:52:19.04	44.425	-110.566	.00	2.81MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2677	1978 OCT 12	13:56:07.28	44.425	-110.568	.00	2.92MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Std-Err Vert
2678	1978 OCT 12	13:58:24.57	44.420	-110.577	.00	2.79MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2679	1978 OCT 24	20:30:59.15	42.550	-111.836	2.00	4.30UK	GS	.....	..	DG	56	...	.....	.....	.	.....	.....
2680	1978 OCT 25	22:05:27.67	44.602	-110.440	2.00	3.00MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2681	1978 OCT 27	02:37:35.16	44.736	-111.112	8.00	2.76MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2682	1978 OCT 27	07:57:52.81	44.606	-110.435	2.00	2.64MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2683	1978 OCT 29	13:46:44.50	44.962	-114.271	5.00	5.00UK	GS	.....	..	DG	59	...	.....	.....	.	.....	.....
2684	1978 OCT 29	17:20:19.40	44.920	-114.350	5.00	3.30ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
2685	1978 NOV 01	08:55:48.83	44.612	-110.443	3.00	2.55MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2686	1978 NOV 04	15:49:43.67	44.744	-111.222	5.00	3.50ML	GS	.....	..	DG	7	...	.....	.....	.	.....	.....
2687	1978 NOV 05	04:32:08.86	44.403	-110.261	4.00	2.80MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2688	1978 NOV 05	04:46:15.48	44.401	-110.259	4.00	2.66MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2689	1978 NOV 06	09:55:35.85	44.742	-111.228	5.00	2.55MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2690	1978 NOV 07	06:22:41.24	44.604	-110.438	1.00	2.85MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2691	1978 NOV 07	13:04:28.06	44.613	-110.441	3.00	2.64MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2692	1978 NOV 11	20:46:20.40	44.388	-110.235	5.00	3.41MD	GS	.....	..	DG	9	...	.....	.....	.	.....	.....
2693	1978 NOV 12	00:29:12.50	46.500	-112.700	5.00	3.40ML	GS	.....	..	SA	...	...	.....	.....	B	.....	.....
2694	1978 NOV 14	08:42:07.24	44.622	-110.454	1.00	3.07MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2695	1978 NOV 17	23:51:42.07	44.824	-111.455	6.00	2.61MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2696	1978 NOV 20	14:25:51.80	44.001	-114.414	5.00	3.70UK	MSO	.....	..	DG	16	...	.....	.....	.	.....	.....
2697	1978 NOV 21	03:58:47.41	44.437	-110.610	1.00	2.56MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2698	1978 NOV 26	00:53:09.93	44.616	-110.417	1.00	2.70MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2699	1978 NOV 30	06:53:40.10	42.108	-112.502	6.00	4.69ML	SLC	.....	..	DG	63	...	.....	.....	.	.....	.....
2700	1978 NOV 30	11:55:09.50	42.120	-112.518	7.00	3.50ML	SLC	.....	..	DG	23	...	.....	.....	.	.....	.....
2701	1978 NOV 30	12:25:20.37	44.648	-110.634	5.00	2.70MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2702	1978 NOV 30	12:36:26.19	44.653	-110.633	5.00	2.80MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2703	1978 NOV 30	15:13:29.23	44.729	-110.956	8.00	2.65MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2704	1978 DEC 02	02:30:37.42	42.111	-112.479	6.00	2.80ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
2705	1978 DEC 03	03:19:54.04	44.445	-110.354	.00	2.78MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2706	1978 DEC 03	04:40:01.96	44.440	-110.356	.00	2.53MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2707	1978 DEC 03	04:46:36.44	44.443	-110.353	.00	3.25MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2708	1978 DEC 03	04:47:54.75	44.435	-110.351	1.00	2.57MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2709	1978 DEC 03	05:04:57.27	44.430	-110.341	.00	2.92MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2710	1978 DEC 04	12:41:14.05	42.891	-111.436	.00	3.00UK	UU 0	.....	..	DG	...	...	.....	.....	.	.....	.....
2711	1978 DEC 04	17:22:31.08	44.436	-110.356	2.00	3.31MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2712	1978 DEC 04	20:18:27.21	44.424	-110.359	1.00	2.87MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2713	1978 DEC 05	11:24:57.49	42.107	-112.494	3.00	3.80ML	UU	.....	..	DG	33	...	.....	.....	.	.....	.....
2714	1978 DEC 05	11:56:27.81	42.108	-112.502	5.00	3.00ML	UU	.....	..	DG	20	...	.....	.....	.	.....	.....
2715	1978 DEC 08	14:03:54.27	44.377	-110.216	3.00	2.56MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2716	1978 DEC 10	14:59:07.18	40.812	-111.565	6.00	2.80ML	SLC	.....	..	DG	23	...	.....	.....	.	.....	.....
2717	1978 DEC 12	08:24:58.20	43.992	-114.410	5.00	3.50ML	GS	.....	..	DG	15	...	.....	.....	.	.....	.....
2718	1978 DEC 13	17:56:02.78	45.099	-111.713	.00	2.84MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2719	1978 DEC 16	10:57:14.10	44.654	-110.635	6.00	2.63MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2720	1978 DEC 20	13:46:22.60	42.115	-112.503	7.00	3.90ML	SLC	.....	..	DG	31	...	.....	.....	.	.....	.....
2721	1978 DEC 20	15:44:31.82	42.108	-112.505	6.00	2.80MD	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
2722	1978 DEC 28	02:34:50.44	44.727	-110.949	9.00	2.79MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2723	1979 JAN 04	18:40:15.67	44.672	-109.965	6.00	2.66MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2724	1979 JAN 05	14:08:38.48	44.401	-110.264	5.00	3.50ML	GS	.....	..	DG	11	...	.....	.....	.	.....	.....
2725	1979 JAN 06	01:25:49.51	44.803	-111.515	8.00	4.10ML	GS	.....	..	DG	18	...	.....	.....	.	.....	.....
2726	1979 JAN 08	09:05:58.15	43.395	-110.652	.00	2.76MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2727	1979 JAN 09	22:23:28.35	42.719	-111.324	.00	2.60MD	UU	.....	..	DG	...	...	.....	.....	.	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz Vert
2728	1979 JAN 27	16:41:55.21	42.712	-111.318	.00	2.60MD UU				DG	...	...	.....	.....	.	.....
2729	1979 JAN 30	18:31:38.02	43.080	-112.152	7.00	3.00UK UU				DG	...	...	.....	.....	.	.....
2730	1979 FEB 08	10:27:12.86	41.911	-112.668	1.00	2.50MD UU				DG	...	...	.....	.....	.	.....
2731	1979 FEB 13	15:52:51.10	40.925	-116.208	.00	4.50UK				DG	25	...	.....	.....	.	.....
2732	1979 FEB 21	19:51:48.57	44.682	-110.778	1.00	2.58MD GS				DG	...	...	.....	.....	.	.....
2733	1979 FEB 24	12:43:41.17	41.717	-111.148	90.00	3.80ML UU				DG	13	...	.....	.....	.	.....
2734	1979 FEB 28	05:21:24.69	44.398	-110.264	6.00	3.10MD GS				DG	...	...	.....	.....	.	.....
2735	1979 MAR 05	05:09:08.47	44.799	-110.875	7.00	2.82MD GS				DG	...	...	.....	.....	.	.....
2736	1979 MAR 06	18:56:44.13	44.757	-110.973	8.00	2.66MD GS				DG	...	...	.....	.....	.	.....
2737	1979 MAR 07	03:09:26.58	44.394	-110.248	6.00	2.58MD GS				DG	...	...	.....	.....	.	.....
2738	1979 MAR 13	02:43:44.75	44.641	-110.533	3.00	2.54MD GS				DG	...	...	.....	.....	.	.....
2739	1979 MAR 16	22:18:55.03	44.531	-110.396	1.00	2.55MD GS				DG	...	...	.....	.....	.	.....
2740	1979 MAR 17	11:47:00.00	44.600	-110.400	.00	.....		III		SA	...	...	.....	.....	F	.....
2741	1979 MAR 17	20:58:58.49	44.519	-110.401	.00	2.67MD GS				DG	...	...	.....	.....	.	.....
2742	1979 MAR 17	21:15:44.34	44.540	-110.392	1.00	2.57MD GS				DG	...	...	.....	.....	.	.....
2743	1979 MAR 23	03:34:47.83	42.470	-111.594	3.00	2.90MD UU				DG	...	...	.....	.....	.	.....
2744	1979 MAR 23	16:29:57.57	44.657	-110.544	1.00	2.57MD GS				DG	...	...	.....	.....	.	.....
2745	1979 MAR 23	16:30:59.85	44.653	-110.549	2.00	2.59MD GS				DG	...	...	.....	.....	.	.....
2746	1979 MAR 25	19:00:37.73	41.332	-113.293	7.00	2.70ML UU				DG	...	...	.....	.....	.	.....
2747	1979 MAR 25	19:13:42.17	41.383	-113.379	7.00	2.90ML UU				DG	...	...	.....	.....	.	.....
2748	1979 MAR 25	21:41:55.74	41.343	-113.284	7.00	3.20ML SLC				DG	9	...	.....	.....	.	.....
2749	1979 MAR 27	22:24:24.66	42.613	-111.511	7.00	3.10UK UU				DG	...	...	.....	.....	.	.....
2750	1979 MAR 31	09:30:54.33	41.703	-112.901	1.00	2.50MD UU				DG	...	...	.....	.....	.	.....
2751	1979 APR 13	04:54:45.47	42.020	-112.507	7.00	2.50MD UU				DG	...	...	.....	.....	.	.....
2752	1979 APR 21	18:55:05.31	43.717	-111.083	.00	2.53MD UU				DG	...	...	.....	.....	.	.....
2753	1979 MAY 07	10:20:52.41	44.746	-111.104	7.00	2.89MD GS				DG	...	...	.....	.....	.	.....
2754	1979 MAY 07	17:15:43.65	44.745	-111.104	7.00	3.60UK MSO				DG	11	...	.....	.....	.	.....
2755	1979 MAY 07	18:59:59.80	44.744	-111.096	7.00	2.71MD GS				DG	...	...	.....	.....	.	.....
2756	1979 MAY 07	19:29:56.62	44.747	-111.096	6.00	2.64MD GS				DG	...	...	.....	.....	.	.....
2757	1979 MAY 07	19:34:38.22	44.749	-111.121	7.00	2.95MD GS				DG	...	...	.....	.....	.	.....
2758	1979 MAY 08	00:56:34.62	44.747	-111.098	5.00	3.56MD GS				DG	14	...	.....	.....	.	.....
2759	1979 MAY 08	00:57:43.19	44.748	-111.106	5.00	4.19UK MSO				DG	14	...	.....	.....	.	.....
2760	1979 MAY 08	00:58:43.96	44.745	-111.092	.00	4.69UK MSO				DG	12	...	.....	.....	.	.....
2761	1979 MAY 08	00:59:26.91	44.753	-111.093	6.00	4.29MD GS				DG	...	...	.....	.....	.	.....
2762	1979 MAY 08	01:23:19.17	44.738	-111.106	10.00	3.50UK MSO				DG	16	...	.....	.....	.	.....
2763	1979 MAY 08	01:29:37.58	44.743	-111.115	7.00	2.84MD GS				DG	...	...	.....	.....	.	.....
2764	1979 MAY 08	14:53:19.37	44.745	-111.102	7.00	2.98MD GS				DG	...	...	.....	.....	.	.....
2765	1979 MAY 09	13:38:31.30	44.744	-111.088	7.00	2.53MD GS				DG	...	...	.....	.....	.	.....
2766	1979 MAY 10	08:12:49.60	44.749	-111.087	6.00	2.82MD GS				DG	...	...	.....	.....	.	.....
2767	1979 MAY 10	13:24:45.15	44.747	-111.098	8.00	2.79MD GS				DG	...	...	.....	.....	.	.....
2768	1979 MAY 14	23:15:42.03	41.999	-112.546	2.00	2.50MD UU				DG	...	...	.....	.....	.	.....
2769	1979 MAY 14	23:21:06.42	41.996	-112.552	1.00	2.60MD UU				DG	...	...	.....	.....	.	.....
2770	1979 MAY 15	02:20:22.09	41.990	-112.568	4.00	2.90MD UU				DG	...	...	.....	.....	.	.....
2771	1979 MAY 28	22:42:09.20	44.675	-110.806	6.00	2.80MD GS				DG	...	...	.....	.....	.	.....
2772	1979 MAY 28	23:52:26.76	44.702	-110.790	1.00	2.55MD GS				DG	...	...	.....	.....	.	.....
2773	1979 MAY 30	15:19:25.70	44.950	-111.870	5.00	3.80UK MSO				DG	7	...	.....	.....	.	.....
2774	1979 JUN 02	09:34:13.74	42.463	-111.259	1.00	2.50MD UU				DG	...	...	.....	.....	.	.....
2775	1979 JUN 02	10:05:44.38	42.475	-111.301	.00	2.78MD UU				DG	...	...	.....	.....	.	.....
2776	1979 JUN 03	04:58:25.72	42.465	-111.302	1.00	3.70ML SLC				DG	17	...	.....	.....	.	.....
2777	1979 JUN 07	01:39:07.01	44.763	-111.050	2.00	2.57MD GS				DG	...	...	.....	.....	.	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz Vert
2778	1979 JUN 07	16:36:44.82	42.467	-111.321	.00	3.20MD	UU	.....	..	DG	...	...	.....	.....	.	.....
2779	1979 JUN 11	20:17:13.66	44.652	-110.537	2.00	2.60MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2780	1979 JUN 17	06:21:51.50	44.243	-110.786	.00	2.67MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2781	1979 JUN 18	20:39:43.07	44.689	-110.822	4.00	2.76MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2782	1979 JUN 22	12:02:26.80	45.320	-112.830	5.00	4.50UK	MSO	.....	..	DG	20	...	.....	.....	.	.....
2783	1979 JUN 30	04:55:01.80	44.367	-111.016	.00	2.91MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2784	1979 JUL 02	21:44:09.68	42.772	-110.935	5.00	2.77MD	UU	.....	..	DG	...	...	.....	.....	.	.....
2785	1979 JUL 03	09:57:24.02	43.520	-110.742	5.00	3.20ML	SLC	.....	..	DG	13	...	.....	.....	.	.....
2786	1979 JUL 07	23:55:54.60	41.599	-112.834	10.00	2.50MD	UU	.....	..	DG	...	...	.....	.....	.	.....
2787	1979 AUG 03	06:32:32.34	45.519	-110.195	9.00	3.08MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2788	1979 AUG 09	19:51:18.40	44.734	-111.162	7.00	2.78MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2789	1979 AUG 13	10:51:23.03	44.326	-110.845	.00	2.59MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2790	1979 AUG 14	05:52:34.00	44.672	-110.791	5.00	2.60MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2791	1979 AUG 17	03:02:39.55	44.670	-111.023	4.00	2.59MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2792	1979 AUG 18	08:17:52.05	42.569	-111.242	1.00	3.00UK	UU 0	.....	..	DG	...	...	.....	.....	.	.....
2793	1979 SEP 06	14:41:00.00	44.800	-110.700	.00	3.00MI	SRA	.....	..	DG	...	...	.....	.....	.	.....
2794	1979 SEP 25	05:35:25.85	44.753	-111.146	9.00	3.01MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2795	1979 OCT 01	16:52:09.90	40.818	-116.319	.00	3.00ML	REN	.....	..	DG	...	...	.....	.....	.	.....
2796	1979 OCT 01	22:01:18.15	44.623	-110.712	1.00	2.92MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2797	1979 OCT 06	14:41:13.29	44.709	-110.716	1.00	2.67MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2798	1979 OCT 12	08:38:45.72	44.935	-111.123	1.00	2.52MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2799	1979 OCT 12	22:22:34.37	42.720	-111.542	7.00	3.00UK	UU	.....	..	DG	...	...	.....	.....	.	.....
2800	1979 OCT 25	15:46:10.29	44.610	-110.699	2.00	2.67MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2801	1979 OCT 25	16:41:04.38	44.612	-110.701	3.00	2.59MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2802	1979 OCT 27	08:05:52.60	44.615	-110.701	2.00	2.58MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2803	1979 NOV 06	15:05:42.32	44.761	-110.809	5.00	2.76MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2804	1979 NOV 13	09:50:23.52	44.775	-111.287	6.00	2.95MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2805	1979 NOV 14	02:22:31.66	44.424	-110.405	.00	2.75MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2806	1979 NOV 17	12:16:38.95	44.769	-111.451	4.00	2.60MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2807	1979 NOV 22	20:00:03.56	44.508	-110.859	.00	2.55MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2808	1979 NOV 28	21:52:37.53	44.792	-110.062	7.00	2.56MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2809	1979 NOV 30	07:07:28.90	45.750	-111.560	5.00	3.10MD	MSO	.....	..	SA	...	...	.....	.....	B	.....
2810	1979 DEC 05	20:00:25.84	44.386	-110.248	3.00	3.37MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2811	1979 DEC 06	14:02:31.24	44.747	-111.138	8.00	2.50MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2812	1979 DEC 11	20:08:10.00	44.400	-110.800	.00	3.00MI	SRA	.....	..	DG	...	...	.....	.....	.	.....
2813	1979 DEC 20	21:45:25.50	42.518	-111.124	1.00	2.60MD	UU	.....	..	DG	...	...	.....	.....	.	.....
2814	1979 DEC 22	19:37:40.51	42.777	-111.354	7.00	3.10UK	UU	.....	..	DG	...	...	.....	.....	.	.....
2815	1979 DEC 30	17:30:14.48	43.234	-111.610	10.00	2.64MD	INEL	.....	..	DG	...	...	.....	.....	.	.....
2816	1980 JAN 02	01:21:41.99	44.777	-110.814	6.00	2.73MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2817	1980 JAN 05	14:17:13.50	44.723	-114.388	5.00	3.60UK	GS	.....	..	DG	10	...	.....	.....	.	.....
2818	1980 JAN 06	04:44:36.94	44.148	-110.281	.00	2.80MD	USG	.....	..	DG	...	...	.....	.....	.	.....
2819	1980 JAN 06	21:47:24.30	41.673	-111.670	8.00	2.70MD	UU	.....	..	DG	...	...	.....	.....	.	.....
2820	1980 JAN 09	14:31:03.21	44.747	-111.088	4.00	2.63MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2821	1980 JAN 10	19:01:08.13	41.763	-111.650	14.00	2.50ML	UU	.....	..	DG	...	...	.....	.....	.	.....
2822	1980 JAN 11	00:58:57.38	42.065	-112.554	7.00	2.50ML	UU	.....	..	DG	...	...	.....	.....	.	.....
2823	1980 JAN 14	04:04:07.27	44.797	-111.479	10.00	2.90MD	USG	.....	..	DG	...	...	.....	.....	.	.....
2824	1980 JAN 15	20:09:59.73	44.234	-110.773	.00	2.51MD	GS	.....	..	DG	...	...	.....	.....	.	.....
2825	1980 JAN 16	07:03:27.00	44.710	-109.660	.00	2.60MD	USG	.....	..	SA	...	...	.....	.....	B	.....
2826	1980 JAN 25	19:45:49.93	42.767	-111.325	.00	2.70MD	UU	.....	..	DG	...	...	.....	.....	.	.....
2827	1980 JAN 28	20:59:07.15	43.906	-110.132	1.00	2.80MD	USG	.....	..	DG	...	...	.....	.....	.	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
2828	1980 JAN 31	18:31:11.16	44.644	-110.654	5.00	2.93MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2829	1980 FEB 06	02:03:06.71	42.106	-112.505	8.00	2.80ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
2830	1980 FEB 06	19:36:34.40	40.540	-116.335	.00	3.40UK		.....	..	DG	...	...	.....	.....	.	.....	.....
2831	1980 FEB 07	18:17:05.59	44.780	-111.505	4.00	2.50MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
2832	1980 FEB 13	05:37:24.17	44.736	-111.019	8.00	2.54MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2833	1980 FEB 20	00:14:49.69	41.732	-112.791	1.00	2.50MD	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
2834	1980 FEB 20	12:07:23.95	44.794	-110.908	2.00	2.59MD	GS	.....	..	DG	13	...	.....	.....	.	.....	.....
2835	1980 FEB 20	12:07:52.53	44.794	-110.909	2.00	3.92MD	GS	.....	..	DG	10	...	.....	.....	.	.....	.....
2836	1980 FEB 20	12:15:55.12	44.793	-110.903	3.00	2.84MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2837	1980 FEB 20	12:43:12.22	44.797	-110.909	2.00	3.12MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2838	1980 FEB 21	06:39:40.00	44.400	-112.980	5.00	3.00ML	MSO	.....	..	SA	...	...	.....	.....	B	.....	.....
2839	1980 FEB 22	10:18:27.47	44.801	-110.896	2.00	4.69ML	GS	.....	..	DG	35	...	.....	.....	.	.....	.....
2840	1980 FEB 22	16:40:36.60	44.427	-111.226	8.00	2.95MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2841	1980 FEB 27	06:05:49.41	44.794	-110.895	4.00	3.44MD	GS	.....	..	DG	8	...	.....	.....	.	.....	.....
2842	1980 FEB 27	20:35:48.33	44.642	-110.652	4.00	2.87MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2843	1980 FEB 28	14:15:21.24	44.974	-111.811	1.00	3.92MD	GS	.....	..	DG	16	...	.....	.....	.	.....	.....
2844	1980 FEB 29	19:33:38.90	42.720	-111.734	1.00	3.30ML	SLC	.....	..	DG	17	...	.....	.....	.	.....	.....
2845	1980 MAR 10	13:09:59.36	44.949	-111.636	.00	2.92MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2846	1980 MAR 10	20:28:40.86	42.444	-111.261	.00	3.40ML	UU	.....	..	DG	14	...	.....	.....	.	.....	.....
2847	1980 MAR 11	04:03:34.92	45.481	-111.836	5.00	4.00ML	GS	.....	..	DG	15	...	.....	.....	.	.....	.....
2848	1980 MAR 19	02:09:10.04	44.964	-111.760	1.00	2.90MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
2849	1980 MAR 19	21:15:41.83	44.642	-110.650	5.00	2.53MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2850	1980 MAR 21	17:50:02.00	44.400	-110.570	.00	2.20MD	USG	.....	IV	SA	...	...	.....	.....	A	.....	.....
2851	1980 MAR 22	22:23:34.41	44.396	-110.260	4.00	2.54MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2852	1980 MAR 23	03:49:39.16	44.818	-110.622	4.00	2.80MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
2853	1980 MAR 23	06:45:20.77	44.816	-110.619	5.00	2.87MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2854	1980 MAR 23	15:36:28.17	44.820	-110.625	4.00	2.72MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2855	1980 MAR 24	02:51:58.07	44.813	-110.619	4.00	2.61MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2856	1980 MAR 24	06:45:00.00	44.900	-110.700	.00	3.00MI	SRA	.....	..	DG	...	...	.....	.....	.	.....	.....
2857	1980 MAR 24	14:34:49.44	44.817	-110.622	4.00	2.52MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2858	1980 MAR 25	14:46:42.97	44.816	-110.621	5.00	2.56MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2859	1980 MAR 25	17:57:35.68	44.816	-110.620	5.00	2.51MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2860	1980 MAR 28	19:52:12.96	44.812	-110.620	4.00	2.81MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2861	1980 MAR 28	20:47:14.08	44.810	-110.619	4.00	2.58MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2862	1980 MAR 29	11:02:53.50	44.812	-110.633	4.00	2.94MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2863	1980 MAR 31	08:43:18.58	44.343	-110.768	1.00	2.98MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2864	1980 MAR 31	08:52:19.99	44.355	-110.765	.00	2.57MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2865	1980 MAR 31	08:59:25.30	44.351	-110.771	.00	2.66MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2866	1980 MAR 31	13:17:04.95	44.351	-110.765	.00	2.51MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2867	1980 MAR 31	18:19:53.78	44.752	-110.765	.00	2.58MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2868	1980 MAR 31	18:39:09.42	44.755	-110.723	1.00	2.62MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2869	1980 MAR 31	20:27:07.11	44.759	-110.727	3.00	2.82MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2870	1980 APR 03	14:22:09.25	41.333	-113.332	7.00	2.90ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
2871	1980 APR 04	00:45:04.50	41.336	-113.286	7.00	3.10ML	UU	.....	..	DG	19	...	.....	.....	.	.....	.....
2872	1980 APR 04	00:56:09.03	41.341	-113.335	7.00	2.70ML	SLC	.....	..	DG	8	...	.....	.....	.	.....	.....
2873	1980 APR 04	09:07:25.56	45.021	-111.662	5.00	2.91MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2874	1980 APR 09	04:20:11.92	42.755	-111.590	1.00	2.80MD	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
2875	1980 APR 15	11:39:29.47	44.994	-111.874	5.00	3.00MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
2876	1980 APR 16	14:32:04.12	44.657	-110.652	5.00	2.55MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2877	1980 APR 19	09:29:24.10	45.014	-111.655	5.00	2.80MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
2878	1980 APR 22	06:35:15.27	44.549	-110.515	1.00	2.51MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2879	1980 APR 23	14:35:30.80	44.259	-110.618	6.00	2.66MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2880	1980 MAY 04	00:32:39.96	42.110	-112.490	9.00	2.60MD	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
2881	1980 MAY 04	23:45:16.31	44.784	-110.705	3.00	2.50MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
2882	1980 MAY 07	09:31:00.33	44.658	-109.980	8.00	2.77MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2883	1980 MAY 07	14:03:50.74	44.656	-110.620	6.00	2.63MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2884	1980 MAY 10	23:41:48.24	44.722	-111.225	12.00	4.19ML	GS	.....	..	DG	14	...	.....	.....	.	.....	.....
2885	1980 MAY 23	00:59:12.82	43.220	-111.012	4.00	2.53MD	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
2886	1980 MAY 31	23:08:39.23	44.075	-110.451	9.00	2.52MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2887	1980 JUN 02	06:06:28.93	44.978	-111.845	5.00	2.71MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2888	1980 JUN 05	06:16:55.73	42.556	-111.429	.00	2.62MD	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
2889	1980 JUN 05	20:28:44.07	44.226	-110.786	.00	2.61MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2890	1980 JUN 07	02:15:50.00	41.704	-110.495	7.00	2.80MD	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
2891	1980 JUN 14	05:22:12.88	42.881	-110.854	.00	3.10MD	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
2892	1980 JUN 14	18:00:59.22	44.644	-110.658	2.00	2.72MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2893	1980 JUN 30	20:34:05.66	44.676	-110.792	1.00	2.78MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2894	1980 JUN 30	20:35:49.63	44.675	-110.792	1.00	2.70MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
2895	1980 JUL 08	13:31:52.61	44.659	-110.991	5.00	2.53MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2896	1980 JUL 11	21:17:24.23	42.767	-111.358	.00	2.80MD	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
2897	1980 JUL 11	21:17:32.34	42.365	-111.677	7.00	2.80MD	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
2898	1980 JUL 15	06:25:57.30	40.848	-116.455	20.60	2.90MD	UNR	.....	..	UN	...	...	11.0	.21	.	.....	.....
2899	1980 JUL 15	19:37:27.30	45.650	-111.800	5.00	3.00ML	GS	.....	..	SA	...	...	.....	.....	B	.....	.....
		Felt															
2900	1980 JUL 20	12:57:29.80	45.650	-111.850	5.00	3.00ML	GS	.....	..	SA	...	...	.....	.....	B	.....	.....
		Felt															
2901	1980 JUL 20	13:03:39.70	45.610	-111.850	5.00	3.30ML	GS	.....	..	SA	...	...	.....	.....	B	.....	.....
		Felt															
2902	1980 AUG 01	01:16:22.86	41.436	-113.160	7.00	2.80ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
2903	1980 AUG 09	04:50:38.38	44.451	-110.539	1.00	2.52MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2904	1980 AUG 09	04:52:04.30	44.430	-110.530	3.00	2.30MD	USG	.....	IV	SA	...	...	.....	.....	A	.....	.....
2905	1980 AUG 09	05:18:28.04	44.446	-110.537	1.00	2.61MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2906	1980 AUG 15	06:25:23.72	41.662	-111.685	7.00	3.10ML	UU	.....	..	DG	11	...	.....	.....	.	.....	.....
2907	1980 AUG 21	07:36:29.56	44.595	-110.395	1.00	2.68MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2908	1980 AUG 21	08:00:02.10	44.593	-110.399	2.00	2.65MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2909	1980 SEP 05	01:23:22.52	41.927	-112.415	4.00	2.50MD	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
2910	1980 SEP 15	19:57:19.67	44.793	-110.961	6.00	2.50MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
2911	1980 SEP 16	01:48:43.89	41.700	-111.590	13.00	2.60ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
2912	1980 OCT 10	17:09:08.61	44.419	-110.483	1.00	3.21MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2913	1980 OCT 11	08:18:49.96	44.655	-112.006	6.00	2.90MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
2914	1980 OCT 12	17:04:39.92	44.766	-111.645	5.00	2.71MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2915	1980 OCT 18	21:45:52.84	44.644	-110.525	3.00	2.70ML	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2916	1980 OCT 18	21:57:08.30	44.648	-110.516	4.00	2.70ML	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2917	1980 OCT 18	22:35:30.88	44.644	-110.530	1.00	2.71MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2918	1980 OCT 22	09:26:34.42	42.147	-112.485	6.00	2.80MD	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
2919	1980 OCT 29	07:30:54.58	41.768	-111.695	8.00	2.70MD	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
2920	1980 OCT 29	17:23:23.55	44.343	-110.778	.00	2.50MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
2921	1980 NOV 07	09:15:24.20	44.110	-114.320	5.00	2.90ML	GS	.....	..	SA	...	...	.....	.....	B	.....	.....
2922	1980 NOV 07	09:19:26.50	44.070	-114.410	5.00	3.10ML	GS	.....	..	SA	...	...	.....	.....	B	.....	.....
2923	1980 NOV 07	09:20:07.40	44.050	-114.460	5.00	3.40ML	GS	.....	..	SA	...	...	.....	.....	B	.....	.....
2924	1980 NOV 13	00:21:23.92	42.790	-111.241	7.00	3.00UK	UU	.....	..	DG	...	...	.....	.....	.	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
2925	1980 NOV 14	21:08:10.10	44.589	-111.033	8.00	3.44MD	GS	.....	..	DG	9	...	.....	.....	.	.....	.....
2926	1980 NOV 16	15:00:49.40	44.661	-111.907	11.00	2.60MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
2927	1980 NOV 19	12:21:21.37	44.587	-111.041	9.00	2.68MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2928	1980 DEC 11	00:08:46.69	44.736	-111.228	9.00	2.90MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
2929	1980 DEC 12	20:13:50.97	45.450	-111.214	5.00	2.90MD	USG	.....	..	DG	...	...	.....	.....	.	.....	.....
2930	1980 DEC 19	16:56:29.94	41.889	-112.675	2.00	2.50MD	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
2931	1980 DEC 19	23:20:33.40	44.666	-110.013	4.00	2.52MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2932	1980 DEC 27	16:55:11.43	44.781	-110.833	4.00	2.69MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2933	1981 JAN 03	22:37:36.47	44.742	-111.534	7.00	2.67MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2934	1981 JAN 04	16:00:13.34	44.780	-110.833	5.00	2.98MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2935	1981 JAN 06	18:50:44.94	44.780	-110.834	5.00	3.08MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2936	1981 JAN 07	07:21:43.18	44.782	-110.834	5.00	2.79MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2937	1981 JAN 07	17:06:28.39	44.691	-111.034	5.00	3.24MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2938	1981 JAN 07	17:07:22.03	44.691	-111.030	4.00	2.96MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2939	1981 JAN 09	07:12:49.92	44.782	-110.833	5.00	2.60MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2940	1981 JAN 18	05:46:49.21	44.723	-110.700	3.00	2.55MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2941	1981 JAN 18	05:54:03.90	44.726	-110.700	3.00	2.59MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2942	1981 JAN 28	05:51:42.12	44.778	-110.833	4.00	2.83MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2943	1981 JAN 31	09:36:17.08	44.633	-112.157	11.00	3.00MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2944	1981 FEB 02	06:20:16.85	44.807	-111.569	7.00	2.89MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2945	1981 FEB 04	03:39:43.29	44.777	-110.833	4.00	2.74MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2946	1981 FEB 05	09:50:54.57	44.777	-110.833	4.00	2.88MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2947	1981 FEB 09	22:53:37.15	43.094	-111.362	.00	3.25MD	UU	.....	..	DG	10	...	.....	.....	.	.....	.....
2948	1981 FEB 12	01:24:39.90	44.976	-111.808	1.00	2.83MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2949	1981 MAR 02	21:58:46.90	45.570	-113.880	5.00	3.50ML	GS	.....	..	DG	15	...	.....	.....	.	.....	.....
2950	1981 MAR 06	13:44:42.40	44.390	-110.570	1.00	1.50ML	GS	.....	III	SA	...	...	.....	.....	B	.....	.....
2951	1981 MAR 12	14:12:02.01	44.285	-110.757	.00	3.80ML	GS	.....	..	DG	19	...	.....	.....	.	.....	.....
2952	1981 MAR 12	14:19:37.96	44.295	-110.749	.00	3.29MD	GS	.....	..	DG	4	...	.....	.....	.	.....	.....
2953	1981 MAR 12	14:22:44.40	44.304	-110.771	1.00	2.68MD	GS	.....	..	DG	3	...	.....	.....	.	.....	.....
2954	1981 MAR 12	14:23:55.15	44.299	-110.739	5.00	2.73MD	GS	.....	..	DG	3	...	.....	.....	.	.....	.....
2955	1981 MAR 12	14:29:31.76	44.292	-110.742	.00	2.75MD	GS	.....	..	DG	3	...	.....	.....	.	.....	.....
2956	1981 MAR 12	14:40:02.69	44.306	-110.758	.00	2.58MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2957	1981 MAR 12	14:41:12.39	44.283	-110.749	.00	2.81MD	GS	.....	..	DG	3	...	.....	.....	.	.....	.....
2958	1981 MAR 12	14:47:27.08	44.286	-110.747	.00	2.62MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2959	1981 MAR 12	14:48:13.53	44.283	-110.751	.00	3.22MD	GS	.....	..	DG	6	...	.....	.....	.	.....	.....
2960	1981 MAR 12	15:00:22.33	44.284	-110.748	.00	2.70MD	GS	.....	..	DG	1	...	.....	.....	.	.....	.....
2961	1981 MAR 12	15:12:02.01	44.306	-110.749	.00	2.58MD	GS	.....	..	DG	1	...	.....	.....	.	.....	.....
2962	1981 MAR 12	15:55:41.74	44.293	-110.754	.00	3.48MD	GS	.....	..	DG	8	...	.....	.....	.	.....	.....
2963	1981 MAR 12	17:09:08.75	44.301	-110.745	.00	3.38MD	GS	.....	..	DG	5	...	.....	.....	.	.....	.....
2964	1981 MAR 12	17:31:46.71	44.306	-110.749	2.00	2.50MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2965	1981 MAR 18	12:36:03.27	44.759	-111.428	4.00	2.86MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2966	1981 MAR 20	05:12:37.75	44.785	-110.841	4.00	2.97MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2967	1981 MAR 25	00:01:27.19	44.797	-111.501	12.00	2.60MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2968	1981 MAR 26	00:21:28.64	43.340	-111.096	.00	3.00ML	GS	.....	..	DG	7	...	.....	.....	.	.....	.....
2969	1981 MAR 31	20:40:45.51	41.690	-111.043	.00	3.10ML	SLC	.....	..	DG	8	...	.....	.....	.	.....	.....
2970	1981 APR 02	04:39:07.22	44.587	-112.066	11.00	2.73MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2971	1981 APR 09	07:54:43.81	44.760	-110.824	5.00	2.92MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2972	1981 APR 11	05:19:48.65	41.857	-112.680	3.00	3.00ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
2973	1981 APR 11	08:08:02.32	41.858	-112.676	.00	3.10ML	SLC	.....	..	DG	13	...	.....	.....	.	.....	.....
2974	1981 APR 15	18:46:38.16	44.433	-111.224	6.00	3.80ML	GS	.....	..	DG	20	...	.....	.....	.	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Std-Err Vert
2975	1981 APR 29	12:56:43.24	44.738	-110.976	5.00	3.00MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2976	1981 APR 30	14:17:14.04	44.811	-111.505	13.00	2.54MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2977	1981 MAY 06	19:26:02.47	43.402	-110.662	.00	3.70ML	GS	.....	..	DG	15	...	.....	.....	.	.....	.....
2978	1981 MAY 08	05:02:25.46	44.521	-110.869	3.00	2.62MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2979	1981 MAY 11	19:06:32.10	44.796	-111.587	7.00	2.84MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2980	1981 MAY 11	22:43:02.18	44.799	-111.585	5.00	2.55MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2981	1981 MAY 12	10:18:13.95	43.721	-110.364	15.00	3.00ML	GS	.....	..	DG	12	...	.....	.....	.	.....	.....
2982	1981 MAY 12	14:55:31.36	44.663	-110.020	7.00	2.74MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2983	1981 MAY 21	01:51:30.71	44.724	-111.772	5.00	2.96MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2984	1981 MAY 22	07:56:40.62	44.820	-110.983	6.00	4.19ML	GS	.....	..	DG	21	...	.....	.....	.	.....	.....
2985	1981 MAY 22	08:20:26.37	44.818	-110.991	7.00	2.86MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2986	1981 MAY 23	08:46:39.05	44.525	-110.599	.00	3.06MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2987	1981 MAY 27	05:46:16.03	42.589	-111.685	.00	3.20MD	UU	.....	..	DG	13	...	.....	.....	.	.....	.....
2988	1981 JUN 04	16:37:15.65	44.782	-110.927	4.00	2.81MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2989	1981 JUN 26	14:03:03.91	44.521	-110.332	1.00	2.77MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2990	1981 JUN 26	23:47:39.80	44.670	-115.800	5.00	3.40ML	GS	.....	..	SA	...	...	.....	.....	B	.....	.....
2991	1981 JUL 04	22:10:31.71	45.517	-111.592	5.00	2.88MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2992	1981 JUL 09	17:07:09.66	44.681	-110.781	3.00	2.78MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2993	1981 AUG 05	20:37:53.10	40.500	-116.072	.00	3.10ML	CCN	.....	..	DG	12	...	.....	.....	.	.....	.....
2994	1981 SEP 05	22:09:33.20	44.440	-114.950	5.00	3.20ML	GS	.....	..	SA	...	...	.....	.....	B	.....	.....
2995	1981 SEP 15	04:44:05.12	44.830	-111.000	6.00	2.65MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2996	1981 SEP 17	20:08:47.17	43.914	-111.085	.00	2.80MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2997	1981 SEP 27	10:01:19.85	44.850	-111.798	1.00	2.65MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
2998	1981 SEP 29	05:39:49.80	44.746	-116.881	10.00	3.60ML	ZOLL	.....	..	DG	17	...	.....	.....	.	.....	.....
2999	1981 SEP 30	04:17:31.93	42.542	-111.200	.00	3.90ML	GS	.....	..	DG	21	...	.....	.....	.	.....	.....
3000	1981 OCT 03	12:27:32.34	44.807	-111.502	9.00	2.82MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
3001	1981 OCT 08	16:49:31.83	44.245	-110.792	1.00	3.31MD	GS	.....	..	DG	10	...	.....	.....	.	.....	.....
3002	1981 OCT 18	10:10:40.20	44.780	-110.710	1.00	2.10MD	GS	.....	IV	SA	...	...	.....	.....	B	.....	.....
3003	1981 NOV 11	21:27:19.20	44.304	-111.036	.00	2.74MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
3004	1981 NOV 15	02:36:21.37	44.823	-110.974	4.00	3.00MD	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
3005	1981 DEC 09	07:56:55.70	42.659	-111.443	1.00	3.00ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
3006	1981 DEC 09	08:15:04.47	42.636	-111.432	.00	4.30mb	.....	.....	..	DG	34	...	.....	.....	.	.....	.....
3007	1981 DEC 09	08:43:32.29	42.652	-111.464	1.00	3.20ML	SLC	.....	..	DG	10	...	.....	.....	.	.....	.....
3008	1981 DEC 09	15:03:18.36	42.653	-111.433	1.00	2.90ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
3009	1981 DEC 15	14:17:58.93	42.876	-110.992	3.00	2.90ML	GS	.....	..	DG	7	...	.....	.....	.	.....	.....
3010	1981 DEC 15	15:36:20.41	42.866	-110.928	1.00	2.90ML	GS	.....	..	DG	5	...	.....	.....	.	.....	.....
3011	1981 DEC 18	00:17:10.70	42.770	-111.510	7.00	2.70ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
3012	1981 DEC 29	04:03:04.33	41.897	-112.560	6.00	2.80ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
3013	1981 DEC.29	11:39:21.22	41.890	-112.557	2.00	3.10ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
3014	1982 JAN 28	08:00:40.38	42.388	-111.511	.00	3.20ML	UU	.....	..	DG	17	...	.....	.....	.	.....	.....
3015	1982 FEB 03	10:06:17.00	44.060	-114.340	2.00	2.70ML	MSO	.....	..	SA	...	...	.....	.....	B	.....	.....
3016	1982 FEB 10	12:02:58.10	44.980	-111.870	9.00	2.80MD	MSO	.....	..	SA	...	...	.....	.....	B	.....	.....
3017	1982 FEB 14	17:05:37.10	44.820	-114.340	13.00	2.70ML	MSO	.....	..	SA	...	...	.....	.....	B	.....	.....
3018	1982 FEB 17	01:42:35.30	44.520	-110.620	20.00	2.60MD	MSO	.....	..	SA	...	...	.....	.....	B	.....	.....
3019	1982 MAR 01	10:43:06.51	42.977	-111.083	.00	3.60ML	GS	.....	..	DG	17	...	.....	.....	.	.....	.....
3020	1982 MAR 21	11:42:10.50	44.920	-112.090	19.00	3.00MD	MSO	.....	..	SA	...	...	.....	.....	B	.....	.....
3021	1982 MAR 21	14:13:43.90	44.710	-111.730	19.00	2.60MD	MSO	.....	..	SA	...	...	.....	.....	B	.....	.....
3022	1982 MAR 26	06:26:24.90	45.587	-113.803	8.00	2.80MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3023	1982 APR 25	00:15:14.70	43.990	-114.550	33.00	3.10ML	MSO	.....	..	SA	...	...	.....	.....	B	.....	.....
3024	1982 MAY 01	04:57:55.90	44.810	-110.930	19.00	2.90MD	MSO	.....	..	SA	...	...	.....	.....	B	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz Vert
3025	1982 MAY 08	13:56:53.70	44.050	-114.410	5.00	2.80ML MSO	.....	..	...	SA	...	...	.....	.....	B	.....
3026	1982 MAY 09	21:07:36.50	44.640	-109.700	11.00	3.40MD MSO	.....	..	...	SA	...	...	.....	.....	B	.....
3027	1982 MAY 21	01:14:36.40	44.795	-110.812	19.00	3.80MD MSO	.....	..	...	DG	13	...	.....	.	.....	.....
3028	1982 MAY 22	09:10:41.60	44.700	-111.110	18.00	2.80MD MSO	.....	..	...	SA	...	...	.....	.....	B	.....
3029	1982 MAY 22	23:50:41.10	44.720	-110.980	15.00	2.80MD MSO	.....	..	...	SA	...	...	.....	.....	B	.....
3030	1982 MAY 30	04:21:18.70	44.610	-114.350	8.00	2.50ML MSO	.....	..	...	SA	...	...	.....	.....	B	.....
3031	1982 MAY 30	11:06:42.58	42.692	-111.235	.00	4.00ML SLC	.....	..	...	DG	25	...	.....	.	.....	.....
3032	1982 MAY 30	11:55:31.76	42.662	-111.224	1.00	3.60ML SLC	.....	..	...	DG	21	...	.....	.	.....	.....
3033	1982 JUN 02	12:44:33.10	44.780	-110.850	22.00	2.60MD MSO	.....	..	...	SA	...	...	.....	.....	B	.....
3034	1982 JUN 02	15:35:17.80	44.780	-110.900	17.00	2.80MD MSO	.....	..	...	SA	...	...	.....	.....	B	.....
3035	1982 JUN 08	22:47:42.60	44.615	-115.513	1.00	3.80MD MSO	.....	..	...	DG	19	...	.....	.	.....	.....
3036	1982 JUN 20	14:32:51.98	41.499	-112.823	8.00	2.60ML UU	.....	..	...	DG	...	...	.....	.	.....	.....
3037	1982 JUL 06	09:32:49.00	44.750	-111.700	5.00	3.30MD MSO	.....	..	...	SA	...	...	.....	.....	B	.....
3038	1982 JUL 10	01:19:54.80	44.190	-110.900	5.00	3.00ML GS	.....	III	...	SA	...	...	.....	.....	B	.....
3039	1982 AUG 01	02:10:53.00	44.770	-110.830	23.00	2.70MD MSO	.....	..	...	SA	...	...	.....	.....	B	.....
3040	1982 AUG 05	23:20:23.10	44.630	-114.430	18.00	2.60ML MSO	.....	..	...	SA	...	...	.....	.....	B	.....
3041	1982 AUG 08	21:19:09.70	44.685	-112.950	11.00	2.50MD MSO	.....	..	...	DG	...	...	.....	.	.....	.....
3042	1982 AUG 10	19:35:46.40	44.623	-114.528	16.00	4.10ML GS	.....	..	...	DG	18	...	.....	.	.....	.....
3043	1982 AUG 10	19:56:59.00	44.610	-114.250	8.00	2.70ML MSO	.....	..	...	SA	...	...	.....	.....	B	.....
3044	1982 AUG 10	23:58:06.10	44.620	-114.380	18.00	2.50ML MSO	.....	..	...	SA	...	...	.....	.....	B	.....
3045	1982 AUG 11	04:33:33.90	44.590	-114.440	31.00	2.50ML MSO	.....	..	...	SA	...	...	.....	.....	B	.....
3046	1982 AUG 11	06:18:08.60	44.630	-114.370	20.00	2.60ML MSO	.....	..	...	SA	...	...	.....	.....	B	.....
3047	1982 AUG 11	14:55:36.60	44.750	-111.170	28.00	2.60MD MSO	.....	..	...	SA	...	...	.....	.....	B	.....
3048	1982 AUG 23	13:59:54.70	44.820	-110.860	10.00	2.90MD MSO	.....	..	...	SA	...	...	.....	.....	B	.....
3049	1982 AUG 25	00:10:37.00	44.420	-111.000	6.00	2.70MD MSO	.....	..	...	SA	...	...	.....	.....	B	.....
3050	1982 AUG 25	00:17:44.50	44.390	-110.980	13.00	2.70MD MSO	.....	..	...	SA	...	...	.....	.....	B	.....
3051	1982 AUG 25	09:39:28.10	44.610	-114.310	11.00	2.50ML MSO	.....	..	...	SA	...	...	.....	.....	B	.....
3052	1982 AUG 29	12:07:54.32	40.878	-111.667	5.00	2.70ML UU	.....	..	...	DG	...	...	.....	.	.....	.....
3053	1982 SEP 04	14:48:43.20	44.590	-115.060	5.00	3.20ML GS	.....	..	...	SA	...	...	.....	.....	B	.....
3054	1982 SEP 09	17:20:11.90	44.810	-110.830	19.00	2.60MD MSO	.....	..	...	SA	...	...	.....	.....	B	.....
3055	1982 SEP 19	23:40:41.80	44.750	-111.160	18.00	3.00MD MSO	.....	..	...	SA	...	...	.....	.....	B	.....
3056	1982 SEP 30	01:02:15.99	42.632	-111.400	.00	3.00ML UU	.....	..	...	DG	...	...	.....	.	.....	.....
3057	1982 SEP 30	02:27:19.92	42.643	-111.416	.00	3.50ML GS	.....	..	...	DG	13	...	.....	.	.....	.....
3058	1982 OCT 01	22:55:29.60	44.330	-110.850	5.00	3.00ML GS	.....	IV	...	SA	...	...	.....	.....	B	.....
3059	1982 OCT 07	09:26:03.31	43.000	-111.086	1.00	3.50ML MSO	.....	..	...	DG	15	...	.....	.	.....	.....
3060	1982 OCT 08	09:53:30.87	42.629	-111.452	.00	3.50ML SLC	.....	..	...	DG	17	...	.....	.	.....	.....
3061	1982 OCT 08	10:06:57.76	42.630	-111.444	.00	3.80ML SLC	.....	..	...	DG	19	...	.....	.	.....	.....
3062	1982 OCT 08	10:09:00.00	42.625	-111.450	.00	3.50ML UU	.....	..	...	DG	...	...	.....	.	.....	.....
3063	1982 OCT 08	16:04:08.22	42.629	-111.455	1.00	3.20ML SLC	.....	..	...	DG	8	...	.....	.	.....	.....
3064	1982 OCT 08	23:21:35.10	44.800	-111.390	15.00	2.50MD MSO	.....	..	...	SA	...	...	.....	.....	B	.....
3065	1982 OCT 11	03:07:04.86	42.644	-111.464	1.00	2.64MD UU	.....	..	...	DG	...	...	.....	.	.....	.....
3066	1982 OCT 13	20:03:43.87	42.612	-111.415	1.00	2.70MD UU	.....	..	...	DG	...	...	.....	.	.....	.....
3067	1982 OCT 14	04:10:23.13	42.603	-111.418	.00	4.69ML SLC	.....	..	...	DG	49	...	.....	.	.....	.....
3068	1982 OCT 14	04:16:43.96	42.583	-111.411	1.00	3.40ML UU	.....	..	...	DG	...	...	.....	.	.....	.....
3069	1982 OCT 14	04:20:00.00	42.583	-111.400	.00	3.00ML UU	.....	..	...	DG	...	...	.....	.	.....	.....
3070	1982 OCT 14	04:22:39.93	42.586	-111.400	2.00	3.10ML UU	.....	..	...	DG	...	...	.....	.	.....	.....
3071	1982 OCT 14	04:32:49.89	42.622	-111.429	1.00	2.90ML UU	.....	..	...	DG	...	...	.....	.	.....	.....
3072	1982 OCT 14	05:03:23.55	42.609	-111.400	1.00	2.90ML UU	.....	..	...	DG	...	...	.....	.	.....	.....
3073	1982 OCT 14	06:10:35.71	42.600	-111.401	5.00	2.90ML UU	.....	..	...	DG	...	...	.....	.	.....	.....
3074	1982 OCT 14	06:11:07.94	42.571	-111.381	2.00	2.70ML UU	.....	..	...	DG	...	...	.....	.	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Std-Err Vert
3075	1982 OCT 14	06:28:45.84	42.589	-111.389	.00	3.90ML SLC	.....	..	...	DG	17	...	.....	.....	.	.....	.....
3076	1982 OCT 14	07:32:59.86	42.614	-111.411	.00	3.30ML SLC	.....	..	...	DG	7	...	.....	.....	.	.....	.....
3077	1982 OCT 14	09:11:07.99	42.591	-111.392	.00	3.10ML UU	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3078	1982 OCT 14	10:40:15.04	42.583	-111.393	.00	3.60ML SLC	.....	..	...	DG	11	...	.....	.....	.	.....	.....
3079	1982 OCT 14	10:56:29.89	42.571	-111.402	.00	3.60ML SLC	.....	..	...	DG	10	...	.....	.....	.	.....	.....
3080	1982 OCT 14	11:03:54.16	42.597	-111.408	.00	3.60ML SLC	.....	..	...	DG	9	...	.....	.....	.	.....	.....
3081	1982 OCT 14	11:05:36.40	42.584	-111.379	1.00	3.30ML UU	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3082	1982 OCT 14	11:09:29.05	42.605	-111.443	4.00	4.10ML SLC	.....	..	...	DG	16	...	.....	.....	.	.....	.....
3083	1982 OCT 14	12:21:41.84	42.590	-111.391	.00	3.40ML SLC	.....	..	...	DG	5	...	.....	.....	.	.....	.....
3084	1982 OCT 14	12:56:51.26	42.581	-111.412	2.00	3.20ML UU	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3085	1982 OCT 14	19:47:58.23	42.577	-111.425	5.00	2.60MD UU	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3086	1982 OCT 14	22:59:04.37	42.592	-111.393	.00	3.00ML UU	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3087	1982 OCT 14	23:44:53.20	42.604	-111.409	.00	3.50ML SLC	.....	..	...	DG	8	...	.....	.....	.	.....	.....
3088	1982 OCT 15	00:01:19.29	42.597	-111.411	1.00	2.90ML UU	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3089	1982 OCT 15	02:51:16.68	42.613	-111.407	.00	3.30ML UU	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3090	1982 OCT 16	01:36:50.67	42.616	-111.428	.00	2.93MD UU	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3091	1982 OCT 16	01:52:42.62	42.587	-111.389	1.00	3.02MD UU	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3092	1982 OCT 16	08:08:32.58	42.627	-111.441	1.00	2.55MD UU	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3093	1982 OCT 17	00:15:35.48	42.600	-111.409	.00	2.81MD UU	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3094	1982 OCT 17	19:28:34.67	42.604	-111.423	1.00	2.56MD UU	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3095	1982 OCT 19	10:28:30.58	42.594	-111.411	1.00	2.65MD UU	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3096	1982 OCT 21	06:05:29.80	44.708	-111.788	18.00	4.50MD MSO	.....	..	...	DG	33	...	.....	.....	.	.....	.....
3097	1982 OCT 21	22:40:19.50	44.710	-111.800	19.00	3.00MD MSO	.....	..	...	SA	...	...	.....	.....	.	.....	B
3098	1982 OCT 26	04:52:07.50	44.710	-111.760	19.00	2.50MD MSO	.....	..	...	SA	...	...	.....	.....	.	.....	B
3099	1982 OCT 26	08:26:31.90	44.712	-111.777	17.00	4.60ML GS	.....	..	...	DG	33	...	.....	.....	.	.....	.....
3100	1982 NOV 04	09:58:32.30	44.718	-111.808	18.00	4.19ML GS	.....	..	...	DG	29	...	.....	.....	.	.....	.....
3101	1982 NOV 04	14:38:18.60	44.710	-111.790	19.00	2.80MD MSO	.....	..	...	SA	...	...	.....	.....	.	.....	B
3102	1982 NOV 07	19:42:39.50	45.020	-110.690	12.00	2.70MD MSO	.....	..	...	SA	...	...	.....	.....	.	.....	B
3103	1982 NOV 08	01:18:29.70	44.780	-110.815	15.00	3.80MD MSO	.....	..	...	DG	10	...	.....	.....	.	.....	.....
3104	1982 NOV 08	01:25:12.10	44.840	-110.700	10.00	2.70MD MSO	.....	..	...	SA	...	...	.....	.....	.	.....	B
3105	1982 NOV 10	03:40:41.10	44.480	-110.630	.00	3.40MD MSO	.....	IV	...	SA	...	...	.....	.....	.	.....	B
3106	1982 NOV 18	22:56:01.00	44.820	-110.880	15.00	3.20MD MSO	.....	..	...	SA	...	...	.....	.....	.	.....	B
3107	1982 NOV 19	15:13:38.80	46.270	-111.943	8.00	2.60MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3108	1982 NOV 26	20:02:04.60	46.265	-111.942	.00	3.40ML MSO	.....	..	...	DG	12	...	.....	.....	.	.....	.....
3109	1982 DEC 01	04:48:51.20	45.818	-111.898	2.00	2.90MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3110	1982 DEC 15	15:16:05.80	44.800	-111.560	18.00	2.60MD MSO	.....	..	...	SA	...	...	.....	.....	.	.....	B
3111	1982 DEC 23	09:23:49.65	42.603	-111.394	.00	3.10ML GS	.....	..	...	DG	14	...	.....	.....	.	.....	.....
3112	1982 DEC 24	15:11:21.04	42.148	-112.483	.00	3.50ML SLC	.....	..	...	DG	15	...	.....	.....	.	.....	.....
3113	1982 DEC 29	03:57:01.70	44.220	-114.770	1.00	3.10ML MSO	.....	..	...	SA	...	...	.....	.....	.	.....	B
3114	1982 DEC 30	06:09:24.80	44.700	-111.070	16.00	3.00MD MSO	.....	..	...	SA	...	...	.....	.....	.	.....	B
3115	1982 DEC 30	16:39:12.80	44.700	-111.080	17.00	2.90MD MSO	.....	..	...	SA	...	...	.....	.....	.	.....	B
3116	1982 DEC 31	07:56:53.30	44.710	-111.070	18.00	2.70MD MSO	.....	..	...	SA	...	...	.....	.....	.	.....	B
3117	1983 JAN 27	23:45:21.80	44.417	-112.881	18.00	2.50MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3118	1983 JAN 30	13:57:11.70	44.736	-110.899	18.00	3.10ML MSO	.....	..	...	SA	...	...	.....	.....	.	.....	B
3119	1983 FEB 06	20:25:16.00	44.534	-110.610	.00	4.69mb	.....	..	...	DG	47	...	.....	.....	.	.....	.....
3120	1983 FEB 08	10:54:54.60	43.303	-111.171	4.00	4.40mb	.....	..	...	DG	32	...	.....	.....	.	.....	.....
3121	1983 FEB 16	07:14:09.30	45.850	-111.610	8.00	3.70MD MSO	.....	..	...	DG	22	...	.....	.....	.	.....	.....
3122	1983 FEB 23	21:03:53.42	42.753	-111.569	.00	3.20UK UU	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3123	1983 FEB 24	18:12:05.37	41.980	-115.449	5.00	3.40ML GS	.....	..	...	DG	6	...	.....	.....	.	.....	.....
3124	1983 FEB 25	05:28:05.10	42.939	-111.535	4.00	3.23MD INEL	.....	..	...	DG	10	...	.....	.....	.	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
3125	1983 FEB 28	07:24:21.40	44.347	-115.166	17.00	4.30MD	MSO	.....	..	DG	19	...	.....	.....	.	.....	.....
3126	1983 MAR 01	02:00:42.76	44.349	-115.244	5.00	3.70ML	GS	.....	..	DG	16	...	.....	.....	.	.....	.....
3127	1983 MAR 01	14:09:21.70	44.551	-115.089	5.00	3.30ML	GS	.....	..	SA	...	...	.....	.....	D	.....	.....
3128	1983 MAR 06	10:53:35.65	41.140	-111.672	8.00	2.80ML	SLC	.....	..	DG	12	...	.....	.....	.	.....	.....
3129	1983 MAR 29	01:36:59.40	44.790	-116.881	5.00	3.20ML	GS	.....	III	SA	...	...	.....	.....	C	.....	.....
3130	1983 MAR 30	05:11:25.20	44.696	-112.398	.00	2.50MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3131	1983 APR 08	07:10:27.00	44.774	-110.962	14.00	3.30ML	MSO	.....	..	SA	...	...	.....	.....	B	.....	.....
3132	1983 APR 14	23:24:26.10	43.961	-114.133	2.00	3.00ML	MSO	.....	..	SA	...	...	.....	.....	B	.....	.....
3133	1983 APR 19	04:05:60.00	44.824	-110.994	12.00	3.50MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3134	1983 APR 20	15:40:49.96	42.641	-111.443	1.00	2.50MD	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
3135	1983 APR 22	14:45:32.60	44.768	-111.389	8.00	3.50MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3136	1983 APR 30	19:20:16.38	41.379	-111.679	1.00	2.50MD	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
3137	1983 MAY 22	16:23:19.10	44.856	-111.512	15.00	3.20ML	MMT	.....	..	SA	...	...	.....	.....	B	.....	.....
3138	1983 MAY 22	16:26:41.60	44.882	-111.530	10.00	3.10ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3139	1983 JUN 29	23:35:11.10	44.928	-111.518	1.00	2.70ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3140	1983 JUL 01	16:24:38.10	44.229	-112.653	19.00	2.80MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3141	1983 JUL 10	10:54:40.20	45.030	-111.725	17.00	3.40ML	MMT	.....	..	SA	...	...	.....	.....	B	.....	.....
3142	1983 AUG 10	11:09:50.00	44.598	-112.877	6.00	2.60MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3143	1983 AUG 11	03:58:45.80	44.747	-111.258	13.00	3.20ML	MMT	.....	..	SA	...	...	.....	.....	B	.....	.....
3144	1983 AUG 13	04:41:06.20	44.704	-111.782	13.00	3.90ML	BUT	.....	..	DG	21	...	.....	.....	.	.....	.....
3145	1983 AUG 14	00:53:13.40	44.683	-111.808	8.00	4.10ML	BUT	.....	..	DG	21	...	.....	.....	.	.....	.....
3146	1983 AUG 19	03:48:43.00	46.018	-111.479	1.00	2.80MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3147	1983 AUG 25	19:49:35.00	44.869	-111.491	14.00	3.10ML	MMT	.....	..	SA	...	...	.....	.....	B	.....	.....
3148	1983 AUG 25	19:50:21.10	44.888	-111.468	2.00	3.60MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3149	1983 AUG 29	12:53:11.45	41.083	-111.426	9.00	3.00ML	UU	.....	..	DG	11	...	.....	.....	.	.....	.....
3150	1983 SEP 04	21:50:49.00	45.077	-111.938	9.00	3.00ML	MMT	.....	..	SA	...	...	.....	.....	B	.....	.....
3151	1983 SEP 09	01:09:36.26	44.580	-115.674	5.00	4.00ML	BUT	.....	..	DG	16	...	.....	.....	.	.....	.....
3152	1983 OCT 01	03:17:46.80	44.925	-111.783	9.00	3.20ML	MMT	.....	..	SA	...	...	.....	.....	B	.....	.....
3153	1983 OCT 08	11:57:53.83	40.748	-111.992	5.00	4.50ML	GS	.....	..	DG	56	...	.....	.....	.	.....	.....
3154	1983 OCT 11	11:01:58.17	40.731	-111.990	10.00	3.00ML	SLC	.....	..	DG	13	...	.....	.....	.	.....	.....
3155	1983 OCT 12	07:37:13.50	44.624	-114.350	12.00	3.60ML	GS	.....	..	DG	13	...	.....	.....	.	.....	.....
3156	1983 OCT 13	09:45:27.30	44.719	-110.971	8.00	3.50ML	BUT	.....	..	DG	7	...	.....	.....	.	.....	.....
3157	1983 OCT 20	10:28:17.20	44.593	-112.104	12.00	2.60ML	MMT	.....	..	SA	...	...	.....	.....	B	.....	.....
3158	1983 OCT 28	14:06:06.79	43.967	-113.899	16.00	7.30Ms	.....	.....	..	DG	611	...	.....	.....	.	.....	.....
3159	1983 OCT 28	15:14:07.71	44.126	-113.968	10.00	4.60ML	SLC	.....	..	DG	24	...	.....	.....	.	.....	.....
3160	1983 OCT 28	15:27:04.96	44.272	-114.125	10.00	3.70ML	SLC	.....	..	DG	7	...	.....	.....	.	.....	.....
3161	1983 OCT 28	15:54:31.67	44.206	-114.057	10.00	4.00ML	SLC	.....	..	DG	8	...	.....	.....	.	.....	.....
3162	1983 OCT 28	17:20:24.25	44.176	-114.091	10.00	4.00ML	SLC	.....	..	DG	9	...	.....	.....	.	.....	.....
3163	1983 OCT 28	18:31:52.49	44.198	-114.078	10.00	4.10ML	SLC	.....	..	DG	19	...	.....	.....	.	.....	.....
3164	1983 OCT 28	18:42:57.56	43.869	-113.914	10.00	3.90ML	SLC	.....	..	DG	9	...	.....	.....	.	.....	.....
3165	1983 OCT 28	19:30:44.63	44.229	-114.064	10.00	3.60ML	GS	.....	..	DG	7	...	.....	.....	.	.....	.....
3166	1983 OCT 28	19:51:25.07	44.062	-113.895	10.00	5.80ML	SLC	.....	..	DG	282	...	.....	.....	.	.....	.....
3167	1983 OCT 28	20:19:03.67	44.126	-113.892	10.00	3.70ML	SLC	.....	..	DG	10	...	.....	.....	.	.....	.....
3168	1983 OCT 29	02:37:03.73	44.255	-114.055	10.00	4.00ML	SLC	.....	..	DG	11	...	.....	.....	.	.....	.....
3169	1983 OCT 29	03:11:46.77	44.339	-114.001	10.00	3.60ML	GS	.....	..	DG	8	...	.....	.....	.	.....	.....
3170	1983 OCT 29	04:02:58.90	44.226	-114.018	10.00	3.50ML	GS	.....	..	DG	8	...	.....	.....	.	.....	.....
3171	1983 OCT 29	08:15:17.24	44.160	-113.992	10.00	3.90ML	SLC	.....	..	DG	13	...	.....	.....	.	.....	.....
3172	1983 OCT 29	11:47:02.42	44.133	-113.891	10.00	3.60ML	GS	.....	..	DG	9	...	.....	.....	.	.....	.....
3173	1983 OCT 29	16:24:14.50	44.063	-113.906	10.00	2.92Mw	USG	.....	..	SA	...	...	.....	.....	A	.....	.....
3174	1983 OCT 29	17:37:40.70	44.042	-113.869	8.00	3.28Mw	USG	.....	..	SA	...	...	.....	.....	A	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
3175	1983 OCT 29	19:23:24.30	44.045	-113.906	9.00	3.08Mw	USG	.....	..	SA	...	...	.....	.....	A	.....	.....
3176	1983 OCT 29	19:48:13.86	44.002	-113.741	1.00	3.60ML	GS	.....	..	DG	10	...	.....	.....	.	.....	.....
3177	1983 OCT 29	21:13:59.50	44.105	-113.943	9.00	3.28Mw	USG	.....	..	SA	...	...	.....	.....	A	.....	.....
3178	1983 OCT 29	23:29:12.53	44.193	-114.010	10.00	5.80ML	SLC	.....	..	DG	289	...	.....	.....	.	.....	.....
3179	1983 OCT 29	23:39:06.25	44.224	-114.030	4.00	5.50mb		.....	..	DG	285	...	.....	.....	.	.....	.....
3180	1983 OCT 29	23:49:43.60	44.173	-114.186	10.00	3.80ML	GS	.....	..	DG	6	...	.....	.....	.	.....	.....
3181	1983 OCT 30	01:07:40.77	44.247	-114.091	3.00	3.70ML	GS	.....	..	DG	9	...	.....	.....	.	.....	.....
3182	1983 OCT 30	01:16:39.40	44.056	-113.891	9.00	3.27Mw	USG	.....	..	SA	...	...	.....	.....	A	.....	.....
3183	1983 OCT 30	01:24:51.55	44.095	-113.967	11.00	4.80ML	SLC	.....	..	DG	40	...	.....	.....	.	.....	.....
3184	1983 OCT 30	01:59:01.55	44.220	-114.073	16.00	4.69ML	SLC	.....	..	DG	33	...	.....	.....	.	.....	.....
3185	1983 OCT 30	02:54:39.93	44.216	-114.094	4.00	4.00ML	SLC	.....	..	DG	9	...	.....	.....	.	.....	.....
3186	1983 OCT 30	03:45:19.28	44.238	-114.064	4.00	3.90ML	GS	.....	..	DG	7	...	.....	.....	.	.....	.....
3187	1983 OCT 30	07:14:00.71	44.304	-114.120	10.00	3.90ML	GS	.....	..	DG	10	...	.....	.....	.	.....	.....
3188	1983 OCT 30	09:41:33.18	44.226	-114.080	2.00	3.70ML	GS	.....	..	DG	7	...	.....	.....	.	.....	.....
3189	1983 OCT 30	12:25:52.60	44.108	-113.916	9.00	3.06Mw	USG	.....	..	SA	...	...	.....	.....	A	.....	.....
3190	1983 OCT 30	12:54:00.10	44.195	-114.015	6.00	3.60ML	GS	.....	..	DG	7	...	.....	.....	.	.....	.....
3191	1983 OCT 30	17:49:20.25	44.144	-113.865	3.00	3.80ML	GS	.....	..	DG	10	...	.....	.....	.	.....	.....
3192	1983 OCT 30	19:23:42.27	44.245	-114.037	8.00	3.60ML	GS	.....	..	DG	6	...	.....	.....	.	.....	.....
3193	1983 OCT 30	23:02:34.50	44.026	-113.807	8.00	3.06Mw	USG	.....	..	SA	...	...	.....	.....	A	.....	.....
3194	1983 OCT 30	23:56:26.05	44.258	-114.077	5.00	3.50ML	GS	.....	..	DG	7	...	.....	.....	.	.....	.....
3195	1983 OCT 31	10:33:26.30	44.184	-113.945	8.00	2.98Mw	USG	.....	..	SA	...	...	.....	.....	A	.....	.....
3196	1983 OCT 31	16:08:33.36	44.143	-113.986	10.00	3.60ML	GS	.....	..	DG	8	...	.....	.....	.	.....	.....
3197	1983 NOV 01	01:05:28.20	44.232	-114.053	8.00	3.05Mw	USG	.....	..	SA	...	...	.....	.....	A	.....	.....
3198	1983 NOV 01	05:02:46.60	44.052	-113.889	11.00	2.71Mw	USG	.....	..	SA	...	...	.....	.....	A	.....	.....
3199	1983 NOV 01	10:30:33.60	44.134	-113.950	10.00	2.93Mw	USG	.....	..	SA	...	...	.....	.....	A	.....	.....
3200	1983 NOV 01	13:50:25.18	44.152	-113.985	10.00	3.70ML	SLC	.....	..	DG	11	...	.....	.....	.	.....	.....
3201	1983 NOV 02	12:41:13.51	44.260	-114.062	4.00	3.70ML	GS	.....	..	DG	11	...	.....	.....	.	.....	.....
3202	1983 NOV 02	20:03:59.65	43.439	-110.945	.00	3.50ML	GS	.....	..	DG	13	...	.....	.....	.	.....	.....
3203	1983 NOV 02	22:24:04.60	44.232	-114.057	9.00	3.03Mw	USG	.....	..	SA	...	...	.....	.....	A	.....	.....
3204	1983 NOV 02	23:42:01.90	44.265	-114.082	6.00	3.34Mw	USG	.....	..	SA	...	...	.....	.....	A	.....	.....
3205	1983 NOV 02	23:43:55.00	44.271	-114.074	7.00	4.40mb		.....	..	DG	22	...	.....	.....	.	.....	.....
3206	1983 NOV 03	00:18:48.40	44.259	-114.036	9.00	3.31Mw	USG	.....	..	SA	...	...	.....	.....	A	.....	.....
3207	1983 NOV 03	01:22:15.70	44.262	-114.065	8.00	3.15Mw	USG	.....	..	SA	...	...	.....	.....	A	.....	.....
3208	1983 NOV 03	01:50:20.17	44.252	-114.098	7.00	4.19mb		.....	..	DG	14	...	.....	.....	.	.....	.....
3209	1983 NOV 03	02:24:13.60	44.377	-114.165	10.00	3.40ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3210	1983 NOV 03	02:59:19.26	44.231	-114.040	9.00	3.90ML	SLC	.....	..	DG	10	...	.....	.....	.	.....	.....
3211	1983 NOV 03	04:15:16.34	44.258	-114.087	8.00	3.60ML	GS	.....	..	DG	10	...	.....	.....	.	.....	.....
3212	1983 NOV 03	04:47:35.72	44.274	-114.030	10.00	3.50ML	GS	.....	..	DG	8	...	.....	.....	.	.....	.....
3213	1983 NOV 03	14:14:17.91	44.254	-114.091	7.00	3.60ML	GS	.....	..	DG	10	...	.....	.....	.	.....	.....
3214	1983 NOV 03	15:47:29.56	44.255	-114.033	6.00	3.60ML	GS	.....	..	DG	10	...	.....	.....	.	.....	.....
3215	1983 NOV 03	17:00:14.00	43.885	-113.679	8.00	2.67Mw	USG	.....	..	SA	...	...	.....	.....	A	.....	.....
3216	1983 NOV 03	22:09:24.50	44.101	-113.951	11.00	2.71Mw	USG	.....	..	SA	...	...	.....	.....	A	.....	.....
3217	1983 NOV 04	00:02:25.50	44.177	-114.013	11.00	2.51Mw	USG	.....	..	SA	...	...	.....	.....	A	.....	.....
3218	1983 NOV 04	05:00:14.81	44.138	-113.939	9.00	3.50ML	GS	.....	..	DG	9	...	.....	.....	.	.....	.....
3219	1983 NOV 04	07:08:19.09	44.210	-114.024	10.00	3.50ML	GS	.....	..	DG	9	...	.....	.....	.	.....	.....
3220	1983 NOV 04	09:04:12.90	44.139	-113.912	7.00	3.07Mw	USG	.....	..	SA	...	...	.....	.....	A	.....	.....
3221	1983 NOV 04	13:43:01.10	44.200	-114.029	9.00	2.88Mw	USG	.....	..	SA	...	...	.....	.....	A	.....	.....
3222	1983 NOV 04	23:29:49.30	44.257	-114.096	8.00	3.18Mw	USG	.....	..	SA	...	...	.....	.....	A	.....	.....
3223	1983 NOV 04	23:36:45.40	44.237	-114.072	8.00	2.67Mw	USG	.....	..	SA	...	...	.....	.....	A	.....	.....
3224	1983 NOV 05	01:51:49.10	44.131	-113.951	12.00	2.93Mw	USG	.....	..	SA	...	...	.....	.....	A	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz Vert
3225	1983 NOV 05	03:53:34.30	44.153	-113.895	6.00	2.77Mw	USG	.....	..	SA	...	...	.....	.....	A	.....
3226	1983 NOV 05	04:22:09.00	44.141	-113.970	10.00	2.87Mw	USG	.....	..	SA	...	...	.....	.....	A	.....
3227	1983 NOV 05	05:37:39.73	44.228	-114.063	9.00	3.60ML	GS	.....	..	DG	11	...	.....	.....	A	.....
3228	1983 NOV 05	08:13:39.40	44.206	-114.023	8.00	2.84Mw	USG	.....	..	SA	...	...	.....	.....	A	.....
3229	1983 NOV 05	17:36:25.16	44.181	-114.023	13.00	3.50ML	GS	.....	..	DG	9	...	.....	.....	A	.....
3230	1983 NOV 05	17:43:54.70	44.144	-113.987	14.00	3.09Mw	USG	.....	..	SA	...	...	.....	.....	A	.....
3231	1983 NOV 05	20:29:30.10	44.197	-114.030	10.00	3.18Mw	USG	.....	..	SA	...	...	.....	.....	A	.....
3232	1983 NOV 05	22:56:42.70	44.222	-114.039	12.00	3.23Mw	USG	.....	..	SA	...	...	.....	.....	A	.....
3233	1983 NOV 06	03:26:09.40	44.262	-114.085	7.00	2.88Mw	USG	.....	..	SA	...	...	.....	.....	A	.....
3234	1983 NOV 06	06:44:15.90	44.171	-113.972	11.00	2.95Mw	USG	.....	..	SA	...	...	.....	.....	A	.....
3235	1983 NOV 06	21:04:48.75	44.140	-113.967	10.00	4.60ML	SLC	.....	..	DG	44	...	.....	.....	A	.....
3236	1983 NOV 06	21:11:54.91	44.141	-113.975	12.00	3.80ML	SLC	.....	..	DG	10	...	.....	.....	A	.....
3237	1983 NOV 06	21:19:56.40	44.146	-113.974	10.00	3.00Mw	USG	.....	..	SA	...	...	.....	.....	A	.....
3238	1983 NOV 06	21:20:40.20	44.142	-113.975	10.00	3.09Mw	USG	.....	..	SA	...	...	.....	.....	A	.....
3239	1983 NOV 06	23:11:38.60	44.227	-114.044	7.00	3.09Mw	USG	.....	..	SA	...	...	.....	.....	A	.....
3240	1983 NOV 07	09:33:31.20	44.170	-113.968	9.00	3.18Mw	USG	.....	..	SA	...	...	.....	.....	A	.....
3241	1983 NOV 07	17:33:06.10	44.257	-114.046	10.00	3.09Mw	USG	.....	..	SA	...	...	.....	.....	A	.....
3242	1983 NOV 08	06:43:02.50	44.168	-113.958	9.00	2.94Mw	USG	.....	..	SA	...	...	.....	.....	A	.....
3243	1983 NOV 08	23:32:43.03	44.233	-114.054	6.00	3.50ML	GS	.....	..	DG	10	...	.....	.....	A	.....
3244	1983 NOV 09	09:25:04.30	44.480	-114.140	10.00	3.40ML	GS	.....	..	SA	...	...	.....	.....	C	.....
3245	1983 NOV 09	13:53:11.06	43.659	-110.046	.00	3.60ML	GS	.....	..	DG	13	...	.....	.....	A	.....
3246	1983 NOV 09	23:00:43.30	43.897	-113.755	11.00	3.40ML	GS	.....	..	SA	...	...	.....	.....	B	.....
3247	1983 NOV 10	06:25:16.70	44.702	-111.770	18.00	3.10ML	MMT	.....	..	SA	...	...	.....	.....	B	.....
3248	1983 NOV 19	03:50:46.91	42.005	-112.497	9.00	4.00ML	SLC	.....	..	DG	14	...	.....	.....	A	.....
3249	1983 NOV 20	21:36:48.10	45.640	-111.929	7.00	2.60MD	MSO	.....	..	DG	...	...	.....	.....	A	.....
3250	1983 NOV 21	19:11:35.70	44.027	-113.952	10.00	3.60ML	GS	.....	..	DG	16	...	.....	.....	A	.....
3251	1983 NOV 23	09:17:03.30	44.878	-112.023	1.00	3.00ML	MMT	.....	..	SA	...	...	.....	.....	B	.....
3252	1983 NOV 30	17:21:01.70	45.606	-111.800	2.00	2.60MD	MSO	.....	..	DG	...	...	.....	.....	A	.....
3253	1983 DEC 01	07:52:58.53	44.285	-114.133	10.00	3.50ML	GS	.....	..	DG	12	...	.....	.....	A	.....
3254	1983 DEC 03	03:10:16.00	44.480	-114.103	10.00	3.30ML	GS	.....	..	SA	...	...	.....	.....	C	.....
3255	1983 DEC 03	14:09:41.80	46.073	-111.475	1.00	2.50MD	MSO	.....	..	DG	...	...	.....	.....	A	.....
3256	1983 DEC 03	14:15:26.10	46.011	-111.401	11.00	3.30MD	MSO	.....	..	DG	...	...	.....	.....	A	.....
3257	1983 DEC 05	02:13:27.10	44.302	-113.816	10.00	3.50ML	GS	.....	..	DG	12	...	.....	.....	A	.....
3258	1983 DEC 05	11:51:02.40	44.362	-114.120	10.00	3.20ML	GS	.....	..	SA	...	...	.....	.....	C	.....
3259	1983 DEC 08	04:24:50.00	44.179	-113.907	10.00	3.40ML	GS	.....	..	SA	...	...	.....	.....	D	.....
3260	1983 DEC 10	01:35:01.02	44.256	-114.156	10.00	3.80ML	GS	.....	..	DG	13	...	.....	.....	A	.....
3261	1983 DEC 10	14:48:01.20	46.087	-111.490	1.00	3.10MD	MSO	.....	..	DG	...	...	.....	.....	A	.....
3262	1983 DEC 10	14:58:58.50	46.075	-111.491	3.00	3.00MD	MSO	.....	..	DG	...	...	.....	.....	A	.....
3263	1983 DEC 11	07:40:45.56	42.354	-111.558	7.00	3.60ML	UU	.....	..	DG	19	...	.....	.....	A	.....
3264	1983 DEC 11	10:00:25.50	46.049	-111.464	2.00	2.50MD	ESO	.....	..	DG	...	...	.....	.....	A	.....
3265	1983 DEC 11	19:58:18.21	44.286	-114.160	10.00	4.00ML	GS	.....	..	DG	17	...	.....	.....	A	.....
3266	1983 DEC 12	04:55:36.48	44.428	-114.102	10.00	4.40mb	...	.....	..	DG	56	...	.....	.....	A	.....
3267	1983 DEC 12	05:11:27.80	44.423	-114.114	10.00	3.20ML	GS	.....	..	SA	...	...	.....	.....	C	.....
3268	1983 DEC 13	14:55:26.90	44.226	-114.177	10.00	3.20ML	GS	.....	..	SA	...	...	.....	.....	C	.....
3269	1983 DEC 13	17:13:38.67	44.244	-114.074	10.00	3.60ML	GS	.....	..	DG	9	...	.....	.....	A	.....
3270	1983 DEC 15	06:13:34.83	44.365	-114.138	10.00	4.10ML	GS	.....	..	DG	22	...	.....	.....	A	.....
3271	1983 DEC 17	18:37:20.75	44.237	-114.085	10.00	3.70ML	GS	.....	..	DG	15	...	.....	.....	A	.....
3272	1983 DEC 18	06:34:34.90	46.477	-112.469	14.00	2.50MD	ESO	.....	..	DG	...	...	.....	.....	A	.....
3273	1983 DEC 19	11:31:34.41	44.305	-114.008	10.00	3.50ML	GS	.....	..	DG	10	...	.....	.....	A	.....
3274	1983 DEC 19	17:27:55.94	44.397	-114.179	10.00	3.60ML	GS	.....	..	DG	9	...	.....	.....	A	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
3275	1983 DEC 20	03:40:42.40	44.215	-114.059	10.00	3.10ML	GS	.....	..	SA	...	...	.....	.....	D	.....	.....
3276	1983 DEC 20	17:36:22.00	44.487	-111.146	10.00	3.00ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3277	1983 DEC 20	22:52:22.84	43.354	-110.762	.00	4.40mb		.....	..	DG	24	...	.....	.....	.	.....	.....
3278	1983 DEC 20	23:21:51.87	43.333	-110.761	2.00	3.50ML	GS	.....	..	DG	11	...	.....	.....	.	.....	.....
3279	1983 DEC 21	00:25:20.44	43.383	-110.724	7.00	3.00ML	BUT	.....	..	DG	10	...	.....	.....	.	.....	.....
3280	1983 DEC 21	02:54:17.07	44.125	-114.033	10.00	3.80ML	GS	.....	..	DG	14	...	.....	.....	.	.....	.....
3281	1983 DEC 21	06:33:54.90	44.365	-113.984	10.00	3.30ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3282	1983 DEC 22	18:56:02.94	43.325	-110.741	.00	3.40ML	GS	.....	..	DG	11	...	.....	.....	.	.....	.....
3283	1983 DEC 25	09:49:01.50	44.143	-113.924	10.00	3.60ML	GS	.....	..	DG	14	...	.....	.....	.	.....	.....
3284	1983 DEC 25	12:23:56.30	44.342	-114.093	10.00	3.40ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3285	1983 DEC 27	12:21:29.23	44.297	-114.079	10.00	4.60mb		.....	..	DG	49	...	.....	.....	.	.....	.....
3286	1983 DEC 27	20:19:17.71	44.223	-114.081	10.00	3.60ML	GS	.....	..	DG	14	...	.....	.....	.	.....	.....
3287	1983 DEC 28	08:16:53.61	44.281	-114.089	11.00	4.00ML	GS	.....	..	DG	26	...	.....	.....	.	.....	.....
3288	1983 DEC 29	03:44:39.80	44.289	-114.047	10.00	3.30ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3289	1983 DEC 29	16:05:24.47	44.419	-114.059	10.00	3.80ML	GS	.....	..	DG	17	...	.....	.....	.	.....	.....
3290	1983 DEC 31	12:10:13.22	44.264	-114.113	10.00	3.60ML	GS	.....	..	DG	14	...	.....	.....	.	.....	.....
3291	1984 JAN 01	02:29:26.00	46.069	-111.439	8.00	3.40ML	BUT	.....	..	DG	10	...	.....	.....	.	.....	.....
3292	1984 JAN 01	12:27:14.40	44.261	-113.985	10.00	3.40ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3293	1984 JAN 02	13:40:25.20	46.044	-111.442	.00	2.70MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3294	1984 JAN 03	09:30:08.40	44.305	-114.113	10.00	3.00ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3295	1984 JAN 03	09:40:32.90	44.281	-114.107	10.00	3.30ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3296	1984 JAN 05	02:02:51.30	44.395	-114.160	10.00	3.20ML	GS	.....	..	SA	...	...	.....	.....	D	.....	.....
3297	1984 JAN 05	20:10:25.07	43.337	-110.776	.00	3.30ML	UU	.....	..	DG	10	...	.....	.....	.	.....	.....
3298	1984 JAN 11	07:35:44.15	44.287	-114.093	10.00	4.00ML	GS	.....	..	DG	14	...	.....	.....	.	.....	.....
3299	1984 JAN 14	18:30:52.72	44.741	-111.031	7.00	3.47UK	UU 0	.....	..	DG	...	...	.....	.....	.	.....	.....
3300	1984 JAN 14	19:54:25.94	44.761	-110.985	8.00	3.70ML	BUT	.....	..	DG	6	...	.....	.....	.	.....	.....
3301	1984 JAN 14	21:38:10.30	44.972	-111.796	7.00	3.80ML	BUT	.....	..	DG	7	...	.....	.....	.	.....	.....
3302	1984 JAN 14	21:57:54.30	45.027	-111.818	2.00	3.10ML	MMT	.....	..	SA	...	...	.....	.....	B	.....	.....
3303	1984 JAN 14	22:24:02.47	44.750	-111.025	.00	3.90ML	BUT	.....	..	DG	9	...	.....	.....	.	.....	.....
3304	1984 JAN 14	23:45:11.65	44.714	-111.048	.00	3.20ML	BUT	.....	..	DG	8	...	.....	.....	.	.....	.....
3305	1984 JAN 15	00:05:34.10	44.264	-114.157	10.00	3.20ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3306	1984 JAN 15	03:56:23.70	44.733	-111.031	.00	3.00ML	BUT	.....	..	DG	8	...	.....	.....	.	.....	.....
3307	1984 JAN 15	08:18:38.50	44.591	-111.987	12.00	2.90MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3308	1984 JAN 15	17:11:34.20	44.847	-111.225	1.00	2.70ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3309	1984 JAN 16	08:43:28.55	44.146	-110.476	1.00	3.07UK	UU 0	.....	..	DG	...	...	.....	.....	.	.....	.....
3310	1984 JAN 17	16:41:07.10	44.707	-111.304	6.00	2.70MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3311	1984 JAN 17	16:50:45.80	44.724	-111.228	3.00	3.10MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3312	1984 JAN 17	17:04:01.70	44.692	-111.283	10.00	2.50MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3313	1984 JAN 17	20:54:40.26	44.128	-110.443	1.00	2.57MD	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
3314	1984 JAN 24	07:12:47.00	44.755	-109.989	10.00	3.50MD	MSO	.....	..	DG	6	...	.....	.....	.	.....	.....
3315	1984 JAN 24	19:18:23.20	44.868	-111.943	.00	2.80MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3316	1984 JAN 24	21:07:57.55	44.047	-114.442	10.00	4.50mb		.....	..	DG	24	...	.....	.....	.	.....	.....
3317	1984 JAN 29	03:22:25.40	44.721	-114.442	10.00	3.00ML	GS	.....	..	SA	...	...	.....	.....	.	.....	.....
3318	1984 JAN 29	07:03:46.10	44.573	-114.264	10.00	3.10ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3319	1984 JAN 29	12:05:06.90	44.098	-113.905	10.00	3.40ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3320	1984 JAN 31	03:24:46.50	44.768	-114.488	10.00	3.20ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3321	1984 JAN 31	05:29:16.96	45.495	-116.672	5.00	4.00MD	SEA	.....	..	DG	15	...	.....	.....	.	.....	.....
3322	1984 JAN 31	08:25:35.70	44.205	-114.032	10.00	3.20ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3323	1984 JAN 31	11:45:25.63	44.775	-114.460	10.00	3.70mb		.....	..	DG	6	...	.....	.....	.	.....	.....
3324	1984 JAN 31	16:50:07.50	44.735	-114.470	10.00	3.00ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
3325	1984 FEB 01	13:18:08.90	44.703	-114.472	10.00	3.40ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3326	1984 FEB 01	16:12:35.40	44.746	-114.370	10.00	3.10ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3327	1984 FEB 01	22:49:16.60	44.548	-114.214	10.00	3.20ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3328	1984 FEB 02	16:32:53.80	44.782	-112.753	18.00	2.50MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3329	1984 FEB 02	16:36:33.20	44.672	-114.506	10.00	3.40ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3330	1984 FEB 03	05:05:25.10	44.726	-114.432	10.00	3.20ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3331	1984 FEB 03	08:45:16.60	44.839	-112.789	.00	3.10MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3332	1984 FEB 05	03:42:29.60	44.276	-114.124	10.00	3.10ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3333	1984 FEB 05	03:44:15.88	44.275	-114.127	10.00	3.90ML	GS	.....	..	DG	13	...	.....	.....	.	.....	.....
3334	1984 FEB 05	14:02:54.70	44.093	-114.196	10.00	3.20ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3335	1984 FEB 06	23:04:32.10	44.540	-114.266	10.00	3.10ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3336	1984 FEB 07	19:00:40.10	44.438	-114.137	10.00	3.20ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3337	1984 FEB 08	15:02:32.40	44.702	-114.437	10.00	3.00ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3338	1984 FEB 08	18:17:43.90	44.431	-114.168	10.00	3.40ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3339	1984 FEB 10	12:57:54.60	44.849	-112.892	9.00	2.60ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3340	1984 FEB 10	16:06:15.70	44.333	-114.107	10.00	3.10ML	GS	.....	..	SA	...	...	.....	.....	D	.....	.....
3341	1984 FEB 11	22:23:11.40	46.060	-111.444	6.00	2.70MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3342	1984 FEB 14	11:31:37.80	44.794	-111.744	16.00	3.50ML	BUT	.....	..	DG	8	...	.....	.....	.	.....	.....
3343	1984 FEB 15	18:34:36.60	44.294	-114.000	10.00	3.20ML	GS	.....	..	SA	...	...	.....	.....	D	.....	.....
3344	1984 FEB 19	21:48:50.50	44.333	-114.105	10.00	3.00ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3345	1984 FEB 20	02:58:32.99	44.437	-114.089	10.00	3.70ML	GS	.....	..	DG	12	...	.....	.....	.	.....	.....
3346	1984 FEB 20	16:17:25.52	44.432	-114.194	10.00	3.60ML	GS	.....	..	DG	11	...	.....	.....	.	.....	.....
3347	1984 FEB 25	07:04:44.32	41.753	-114.882	5.00	4.00ML	GS	.....	..	DG	23	...	.....	.....	.	.....	.....
3348	1984 FEB 25	11:11:21.00	44.197	-114.093	10.00	3.40ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3349	1984 FEB 27	11:52:11.20	44.222	-114.003	10.00	3.00ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3350	1984 FEB 27	16:26:22.28	44.668	-111.306	9.00	2.80MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3351	1984 FEB 28	00:31:34.30	46.112	-111.415	12.00	3.20ML	BUT	.....	..	DG	11	...	.....	.....	.	.....	.....
3352	1984 FEB 28	04:25:12.40	46.132	-111.442	3.00	3.80ML	BUT	.....	..	DG	18	...	.....	.....	.	.....	.....
3353	1984 MAR 02	00:29:45.18	44.350	-114.186	10.00	4.50mb	.....	.....	..	DG	24	...	.....	.....	.	.....	.....
3354	1984 MAR 02	00:52:25.30	44.320	-114.173	10.00	3.00ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3355	1984 MAR 02	17:26:23.50	46.115	-111.400	11.00	2.50MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3356	1984 MAR 06	15:22:30.50	44.197	-114.457	10.00	3.30ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3357	1984 MAR 06	19:51:35.30	44.349	-114.586	10.00	3.00ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3358	1984 MAR 06	22:00:31.50	44.790	-111.155	14.00	2.70ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3359	1984 MAR 07	18:32:02.90	44.335	-114.387	10.00	3.00ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3360	1984 MAR 08	11:19:45.00	44.483	-112.664	6.00	3.00ML	BUT	.....	..	DG	6	...	.....	.....	.	.....	.....
3361	1984 MAR 09	01:16:14.20	44.330	-114.009	5.00	3.30ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3362	1984 MAR 09	01:55:34.00	44.302	-114.102	10.00	3.30ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3363	1984 MAR 09	10:49:37.20	43.971	-113.730	10.00	3.30ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3364	1984 MAR 09	23:49:12.40	44.151	-113.977	10.00	3.40ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3365	1984 MAR 10	04:53:48.90	44.534	-112.669	4.00	3.70MD	MSO	.....	..	DG	9	...	.....	.....	.	.....	.....
3366	1984 MAR 10	17:30:00.70	46.078	-111.473	6.00	2.50MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3367	1984 MAR 12	03:21:56.70	44.347	-114.317	10.00	3.20ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3368	1984 MAR 12	17:56:15.60	45.744	-113.820	26.00	2.50ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3369	1984 MAR 16	14:35:38.90	44.309	-114.544	10.00	3.20ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3370	1984 MAR 17	02:10:20.40	44.266	-114.147	10.00	3.20ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3371	1984 MAR 17	04:56:21.01	44.709	-111.649	.00	3.30ML	BUT	.....	..	DG	9	...	.....	.....	.	.....	.....
3372	1984 MAR 19	02:52:42.20	44.611	-112.079	9.00	2.70MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3373	1984 MAR 19	09:44:04.40	44.935	-111.921	18.00	2.70ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3374	1984 MAR 21	21:43:36.51	44.730	-114.438	10.00	3.80ML	GS	.....	..	DG	17	...	.....	.....	.	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
3375	1984 MAR 23	01:39:37.30	44.696	-114.531	10.00	3.20ML GS	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3376	1984 MAR 24	00:07:47.74	44.740	-114.430	10.00	4.19mb	.....	..	...	DG	31	...	.....	.....	.	.....	.....
3377	1984 MAR 24	02:16:52.80	44.743	-114.373	10.00	3.00ML GS	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3378	1984 MAR 24	02:31:33.30	44.669	-114.471	10.00	3.20ML GS	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3379	1984 MAR 24	03:03:15.52	44.722	-114.461	10.00	4.00ML GS	.....	..	...	DG	25	...	.....	.....	.	.....	.....
3380	1984 MAR 24	05:21:52.44	43.339	-110.753	8.00	2.80ML GS	.....	..	...	DG	5	...	.....	.....	.	.....	.....
3381	1984 MAR 24	08:55:14.50	44.715	-114.423	10.00	3.30ML GS	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3382	1984 MAR 24	09:53:42.63	44.693	-114.534	10.00	3.60ML BUT	.....	..	...	DG	12	...	.....	.....	.	.....	.....
3383	1984 MAR 24	16:01:32.60	44.641	-114.670	10.00	3.10ML GS	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3384	1984 MAR 24	19:20:13.80	44.721	-114.443	10.00	3.30ML GS	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3385	1984 MAR 24	20:02:06.04	44.709	-114.452	10.00	3.50ML GS	.....	..	...	DG	13	...	.....	.....	.	.....	.....
3386	1984 MAR 24	21:01:12.39	44.374	-114.086	10.00	3.50ML BUT	.....	..	...	DG	16	...	.....	.....	.	.....	.....
3387	1984 MAR 24	21:03:16.34	44.728	-114.441	10.00	3.80ML GS	.....	..	...	DG	21	...	.....	.....	.	.....	.....
3388	1984 MAR 25	00:21:14.50	44.713	-114.507	10.00	3.20ML GS	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3389	1984 MAR 25	11:24:53.70	44.722	-114.422	10.00	3.60ML BUT	.....	..	...	DG	16	...	.....	.....	.	.....	.....
3390	1984 MAR 26	07:08:33.70	44.925	-112.006	9.00	3.50ML GS	.....	..	...	DG	5	...	.....	.....	.	.....	.....
3391	1984 MAR 29	11:43:55.00	44.708	-114.505	10.00	3.20ML GS	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3392	1984 MAR 30	16:23:59.20	44.430	-114.173	10.00	3.50ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3393	1984 MAR 31	01:12:56.40	44.326	-114.144	10.00	3.30ML GS	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3394	1984 MAR 31	23:07:10.10	44.728	-114.356	10.00	3.30ML GS	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3395	1984 APR 01	05:15:18.80	44.707	-114.410	10.00	3.20ML GS	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3396	1984 APR 01	05:39:27.82	44.726	-114.375	10.00	3.90ML GS	.....	..	...	DG	11	...	.....	.....	.	.....	.....
3397	1984 APR 01	09:13:38.40	44.739	-114.376	10.00	3.40ML GS	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3398	1984 APR 01	20:43:09.50	44.799	-111.607	16.00	2.50MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3399	1984 APR 02	20:20:21.30	45.263	-112.915	2.00	2.50MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3400	1984 APR 03	00:07:26.70	44.297	-114.507	10.00	3.10ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3401	1984 APR 03	06:58:08.10	44.200	-114.161	10.00	3.00ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3402	1984 APR 06	08:25:42.90	44.830	-111.552	13.00	2.50MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3403	1984 APR 06	08:57:07.60	44.889	-111.484	10.00	2.50ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3404	1984 APR 07	13:16:21.00	45.595	-111.756	12.00	3.00ML BUT	.....	..	...	DG	11	...	.....	.....	.	.....	.....
3405	1984 APR 10	02:10:18.80	44.654	-114.310	10.00	3.10ML GS	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3406	1984 APR 10	14:30:54.90 Felt	44.270	-114.365	10.00	3.20ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3407	1984 APR 11	08:23:20.90 Felt	44.297	-114.295	10.00	3.40ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3408	1984 APR 11	15:51:55.99	44.774	-114.469	10.00	4.10ML GS	.....	..	...	DG	15	...	.....	.....	.	.....	.....
3409	1984 APR 12	09:08:02.00 Felt	44.297	-114.280	10.00	3.00ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3410	1984 APR 13	01:14:13.50	44.281	-114.193	10.00	3.40ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3411	1984 APR 13	02:34:32.10	44.833	-111.421	10.00	2.70ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3412	1984 APR 13	07:16:39.50	44.727	-114.433	10.00	3.00ML GS	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3413	1984 APR 13	12:16:05.40	44.742	-114.424	10.00	3.10ML GS	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3414	1984 APR 17	01:19:36.80	44.748	-111.114	15.00	2.80MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3415	1984 APR 18	01:15:09.43	44.342	-114.099	10.00	4.00ML GS	.....	..	...	DG	13	...	.....	.....	.	.....	.....
3416	1984 APR 19	01:58:49.50	44.363	-114.137	10.00	3.30ML GS	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3417	1984 APR 20	17:25:31.20	44.608	-114.408	10.00	3.00ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3418	1984 APR 23	05:54:14.60	44.133	-113.867	10.00	3.30ML MMT	.....	..	...	SA	...	...	.....	.....	D	.....	.....
3419	1984 APR 28	00:13:26.70	46.027	-111.546	11.00	2.60ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3420	1984 APR 28	03:11:50.71	44.709	-111.737	10.00	2.50MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3421	1984 APR 29	01:11:36.70	44.792	-111.597	15.00	2.50ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
3422	1984 APR 29	04:42:55.80	44.244	-114.135	10.00	3.40ML GS	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3423	1984 APR 30	08:22:55.16	44.730	-111.564	11.00	2.80MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3424	1984 APR 30	19:16:54.60	44.586	-111.182	14.00	2.50ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3425	1984 MAY 04	04:02:30.01	44.637	-110.063	5.00	3.00ML BUT	.....	..	...	DG	6	...	.....	.....	.	.....	.....
3426	1984 MAY 07	20:57:18.90	44.729	-111.719	15.00	4.10ML BUT	.....	..	...	DG	13	...	.....	.....	.	.....	.....
3427	1984 MAY 12	15:20:04.50	41.997	-112.548	3.00	3.00ML SLC	.....	..	...	DG	8	...	.....	.....	.	.....	.....
3428	1984 MAY 14	23:55:42.00	45.384	-111.885	6.00	2.60MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3429	1984 MAY 16	18:02:20.00	44.302	-114.126	10.00	3.20ML GS	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3430	1984 MAY 19	05:32:15.70	45.767	-111.954	7.00	2.80MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3431	1984 MAY 29	07:45:33.61	44.422	-110.985	9.00	2.60MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3432	1984 MAY 30	04:11:01.73	44.264	-114.136	10.00	3.50ML GS	.....	..	...	DG	15	...	.....	.....	.	.....	.....
3433	1984 MAY 30	07:22:27.70	46.032	-111.568	12.00	2.80MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3434	1984 JUN 05	11:39:38.99	44.767	-111.517	11.00	3.10ML BUT	.....	..	...	DG	7	...	.....	.....	.	.....	.....
3435	1984 JUN 09	10:36:19.00	45.025	-113.123	10.00	2.50ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3436	1984 JUN 10	14:10:30.92	40.753	-112.068	1.00	2.72MD UU	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3437	1984 JUN 13	06:17:08.90	44.857	-110.920	3.00	2.50MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3438	1984 JUN 16	09:35:36.60	46.040	-111.810	4.00	2.50MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3439	1984 JUN 17	14:02:01.00	44.797	-112.186	10.00	2.80ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3440	1984 JUN 22	05:10:29.00	44.759	-112.275	10.00	2.60ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3441	1984 JUN 22	08:09:12.70	44.767	-112.233	10.00	2.70ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3442	1984 JUN 26	19:15:35.96	44.221	-114.046	10.00	3.50ML GS	.....	..	...	DG	6	...	.....	.....	.	.....	.....
3443	1984 JUN 30	23:39:07.59	44.651	-114.396	10.00	3.80ML GS	.....	..	...	DG	16	...	.....	.....	.	.....	.....
3444	1984 JUL 01	16:32:48.90	44.752	-111.873	14.00	2.50MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3445	1984 JUL 02	22:42:49.40	44.956	-112.938	10.00	2.50ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3446	1984 JUL 05	19:32:59.00	44.574	-114.286	10.00	3.40ML GS	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3447	1984 JUL 09	21:32:04.90	45.058	-110.882	10.00	2.90MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3448	1984 JUL 09	21:42:05.60	45.029	-110.870	10.00	2.80MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3449	1984 JUL 13	19:13:18.00	44.811	-112.754	10.00	2.80ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3450	1984 JUL 14	05:42:47.70	44.717	-112.855	9.00	2.70ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3451	1984 JUL 14	07:17:45.20	44.771	-112.660	10.00	2.60MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3452	1984 JUL 14	13:52:45.70	44.806	-112.721	10.00	2.70ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3453	1984 JUL 14	17:46:02.11	44.628	-114.293	10.00	3.60ML BUT	.....	..	...	DG	11	...	.....	.....	.	.....	.....
3454	1984 JUL 16	01:34:52.80	44.302	-114.333	10.00	3.30ML GS	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3455	1984 JUL 16	23:39:13.70	44.686	-112.818	10.00	3.30MD BUT	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3456	1984 JUL 21	09:18:52.60	44.974	-112.905	13.00	2.60MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3457	1984 JUL 21	17:42:53.60	44.762	-112.758	6.00	2.80MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3458	1984 JUL 25	22:37:08.40	44.926	-112.731	13.00	2.50ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3459	1984 JUL 28	19:12:10.90	44.905	-112.612	1.00	2.60ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3460	1984 JUL 29	11:54:14.30	44.620	-114.490	10.00	3.40ML GS	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3461	1984 JUL 30	07:10:13.61	44.325	-110.663	2.00	2.50MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3462	1984 JUL 31	02:30:22.60	45.024	-112.745	.00	2.50ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3463	1984 AUG 02	13:02:09.83	44.257	-110.685	.00	3.00UK UU	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3464	1984 AUG 04	07:47:17.30	44.853	-112.934	10.00	2.90ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3465	1984 AUG 05	09:35:08.20	45.022	-112.961	6.00	2.50ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3466	1984 AUG 05	15:58:19.90	45.044	-112.757	5.00	2.50ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3467	1984 AUG 05	18:25:45.40	45.029	-112.759	1.00	2.80ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3468	1984 AUG 05	19:42:58.60	45.018	-113.009	8.00	2.50ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3469	1984 AUG 05	23:13:20.90	45.037	-112.856	18.00	2.50ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3470	1984 AUG 06	18:52:23.30	44.896	-112.820	6.00	2.70ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3471	1984 AUG 06	22:30:38.68	41.872	-112.372	1.00	3.00ML UU	.....	..	...	DG	...	...	.....	.....	.	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
3472	1984 AUG 07	02:45:09.70	45.021	-112.780	11.00	2.70ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3473	1984 AUG 09	18:59:57.30	44.767	-112.831	.00	2.60ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3474	1984 AUG 10	07:26:36.97	44.819	-116.791	10.00	3.80ML	ZOLL	.....	..	DG	15	...	.....	.....	.	.....	.....
3475	1984 AUG 10	12:58:29.50	45.061	-112.905	4.00	2.50ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3476	1984 AUG 12	20:30:06.70	44.903	-112.801	12.00	3.40MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3477	1984 AUG 13	06:47:32.20	44.861	-111.530	14.00	2.60MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3478	1984 AUG 13	23:33:34.90	46.081	-111.758	7.00	2.50MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3479	1984 AUG 15	00:02:21.50	44.950	-113.141	16.00	2.50ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3480	1984 AUG 15	22:07:52.40	44.126	-114.717	10.00	3.40ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3481	1984 AUG 19	20:59:50.50	44.957	-112.925	7.00	2.80ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3482	1984 AUG 21	23:42:13.70	44.087	-114.759	10.00	3.20ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3483	1984 AUG 22	09:46:30.82	44.407	-114.086	19.00	5.80ML	SLC	.....	..	DG	157	...	.....	.....	.	.....	.....
3484	1984 AUG 22	10:10:05.70	44.082	-114.687	10.00	3.00ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3485	1984 AUG 22	10:48:24.20	44.454	-114.153	10.00	3.30ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3486	1984 AUG 22	10:50:25.00	44.452	-114.113	10.00	3.30ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3487	1984 AUG 22	10:52:01.12	44.481	-114.204	10.00	4.00ML	GS	.....	..	DG	6	...	.....	.....	.	.....	.....
3488	1984 AUG 22	11:09:19.70	44.468	-114.084	10.00	3.30ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3489	1984 AUG 22	11:44:24.90	44.419	-114.118	10.00	3.20ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3490	1984 AUG 22	11:52:30.80	44.186	-114.658	10.00	3.20ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3491	1984 AUG 22	12:06:31.60	44.377	-114.181	10.00	3.10ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3492	1984 AUG 22	13:34:21.63	44.471	-114.152	10.00	4.10ML	GS	.....	..	DG	15	...	.....	.....	.	.....	.....
3493	1984 AUG 22	15:35:41.50	44.419	-114.094	10.00	3.20ML	GS	.....	..	SA	...	...	.....	.....	D	.....	.....
3494	1984 AUG 23	00:01:58.10	44.369	-114.203	10.00	3.20ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3495	1984 AUG 23	06:13:33.20	44.445	-114.089	10.00	3.40ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3496	1984 AUG 23	13:21:53.02	44.462	-114.137	10.00	3.80ML	GS	.....	..	DG	15	...	.....	.....	.	.....	.....
3497	1984 AUG 23	18:26:24.40	44.999	-112.995	9.00	2.50ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3498	1984 AUG 24	10:10:48.00	44.941	-112.616	1.00	2.60ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3499	1984 AUG 24	13:53:48.20	44.437	-114.063	10.00	3.40ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3500	1984 AUG 25	07:43:34.00	44.459	-114.141	10.00	3.10ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3501	1984 AUG 25	17:43:53.00	44.416	-114.100	10.00	3.00ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3502	1984 AUG 27	02:12:08.80	44.420	-114.174	10.00	3.10ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3503	1984 AUG 27	16:04:00.70	45.095	-113.080	1.00	2.50ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3504	1984 AUG 28	11:19:44.20	44.456	-114.138	10.00	3.10ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3505	1984 AUG 28	20:40:30.00	44.444	-114.172	10.00	3.40ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3506	1984 AUG 29	09:47:51.50	44.386	-114.060	10.00	3.30ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3507	1984 AUG 30	18:42:27.88	44.402	-114.107	6.00	3.50ML	GS	.....	..	DG	11	...	.....	.....	.	.....	.....
3508	1984 AUG 30	21:06:20.76	44.455	-114.154	10.00	3.90ML	GS	.....	..	DG	15	...	.....	.....	.	.....	.....
3509	1984 SEP 01	14:11:18.30	44.439	-114.117	10.00	3.10ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3510	1984 SEP 02	12:42:31.50	45.322	-112.763	1.00	2.60MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3511	1984 SEP 03	12:28:51.50	44.933	-112.885	13.00	3.20ML	BUT	.....	..	DG	9	...	.....	.....	.	.....	.....
3512	1984 SEP 03	20:28:00.10	44.359	-114.126	10.00	3.20ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3513	1984 SEP 04	05:50:41.36	44.449	-114.107	10.00	3.70ML	GS	.....	..	DG	17	...	.....	.....	.	.....	.....
3514	1984 SEP 04	05:57:21.80	44.466	-114.115	10.00	3.10ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3515	1984 SEP 04	14:10:03.60	44.491	-114.127	10.00	2.90ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3516	1984 SEP 05	09:39:54.80	44.432	-114.154	10.00	3.40ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3517	1984 SEP 05	17:38:58.48	44.421	-114.183	10.00	3.70ML	GS	.....	..	DG	18	...	.....	.....	.	.....	.....
3518	1984 SEP 05	20:28:01.20	44.218	-114.134	10.00	3.10ML	GS	.....	..	SA	...	...	.....	.....	D	.....	.....
3519	1984 SEP 06	19:50:22.30	44.450	-114.077	10.00	3.40ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3520	1984 SEP 08	06:16:40.17	44.423	-114.142	7.00	5.00mb		.....	..	DG	106	...	.....	.....	.	.....	.....
3521	1984 SEP 08	06:26:46.01	44.418	-114.136	10.00	3.50ML	GS	.....	..	DG	8	...	.....	.....	.	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
3522	1984 SEP 08	08:01:02.30	44.284	-114.256	10.00	3.00ML GS	.....	..	..	SA	...	...	.....	.....	C	.....	.....
3523	1984 SEP 08	08:03:16.80	44.415	-114.062	10.00	3.50ML GS	.....	..	..	DG	7	...	.....	.....	.	.....	.....
3524	1984 SEP 08	08:08:32.90	44.409	-114.149	10.00	3.30ML GS	.....	..	..	SA	...	...	.....	.....	D	.....	.....
3525	1984 SEP 08	08:16:28.10	44.441	-114.081	10.00	3.30ML GS	.....	..	..	SA	...	...	.....	.....	C	.....	.....
3526	1984 SEP 08	08:35:02.90	44.441	-114.141	10.00	3.10ML GS	.....	..	..	SA	...	...	.....	.....	C	.....	.....
3527	1984 SEP 08	08:55:50.09	44.444	-114.152	10.00	3.90ML GS	.....	..	..	DG	19	...	.....	.....	.	.....	.....
3528	1984 SEP 08	09:22:26.40	44.441	-114.115	10.00	3.00ML GS	.....	..	..	SA	...	...	.....	.....	C	.....	.....
3529	1984 SEP 08	09:27:28.30	44.438	-114.091	10.00	3.00ML GS	.....	..	..	SA	...	...	.....	.....	C	.....	.....
3530	1984 SEP 08	11:36:13.78	44.420	-114.150	10.00	4.00ML GS	.....	..	..	DG	20	...	.....	.....	.	.....	.....
3531	1984 SEP 08	13:56:43.41	44.230	-113.744	10.00	4.40mb	.....	..	..	DG	21	...	.....	.....	.	.....	.....
3532	1984 SEP 09	19:56:03.80	44.638	-111.912	7.00	2.50MD ESO	.....	..	..	DG	...	...	.....	.....	.	.....	.....
3533	1984 SEP 13	11:12:49.46	44.409	-114.133	9.00	3.90ML GS	.....	..	..	DG	17	...	.....	.....	.	.....	.....
3534	1984 SEP 13	17:54:22.30	44.830	-112.842	2.00	2.50ML MMT	.....	..	..	SA	...	...	.....	.....	C	.....	.....
3535	1984 SEP 14	10:55:02.42	45.250	-114.621	10.00	3.60ML GS	.....	..	..	DG	16	...	.....	.....	.	.....	.....
3536	1984 SEP 16	01:28:54.40	44.653	-111.851	10.00	2.70ML MMT	.....	..	..	SA	...	...	.....	.....	C	.....	.....
3537	1984 SEP 18	15:09:58.02	44.408	-114.124	10.00	4.00ML GS	.....	..	..	DG	21	...	.....	.....	.	.....	.....
3538	1984 SEP 18	16:27:30.60	44.420	-114.107	10.00	3.20ML GS	.....	..	..	SA	...	...	.....	.....	C	.....	.....
3539	1984 SEP 19	01:32:05.25	44.773	-116.817	10.00	3.80ML ZOLL	.....	..	..	DG	6	...	.....	.....	.	.....	.....
3540	1984 SEP 19	15:33:22.61	44.334	-114.205	10.00	3.50ML GS	.....	..	..	DG	12	...	.....	.....	.	.....	.....
3541	1984 SEP 20	02:32:08.60	45.043	-113.025	8.00	2.90ML MMT	.....	..	..	SA	...	...	.....	.....	C	.....	.....
3542	1984 SEP 20	17:18:39.10	44.930	-112.838	2.00	2.80MD BUT	.....	..	..	DG	...	...	.....	.....	.	.....	.....
3543	1984 SEP 20	17:19:03.60	44.913	-112.912	10.00	3.40MD ESO	.....	..	..	DG	...	...	.....	.....	.	.....	.....
3544	1984 SEP 20	20:28:45.90	44.931	-112.912	10.00	2.70MD ESO	.....	..	..	DG	...	...	.....	.....	.	.....	.....
3545	1984 SEP 21	04:01:02.60	44.835	-112.827	9.00	2.70MD ESO	.....	..	..	DG	...	...	.....	.....	.	.....	.....
3546	1984 SEP 21	08:40:40.80	44.816	-112.866	8.00	3.60ML BUT	.....	..	..	DG	11	...	.....	.....	.	.....	.....
3547	1984 SEP 21	18:21:55.50	44.428	-114.242	10.00	3.40ML GS	.....	..	..	SA	...	...	.....	.....	C	.....	.....
3548	1984 SEP 21	19:11:17.00	44.899	-113.006	.00	3.00MD ESO	.....	..	..	DG	...	...	.....	.....	.	.....	.....
3549	1984 SEP 21	19:29:04.90	44.833	-113.052	.00	2.90MD ESO	.....	..	..	DG	...	...	.....	.....	.	.....	.....
3550	1984 SEP 23	02:44:14.60	44.803	-112.919	3.00	2.70MD ESO	.....	..	..	DG	...	...	.....	.....	.	.....	.....
3551	1984 SEP 23	08:19:44.10	44.420	-114.150	10.00	3.40ML GS	.....	..	..	SA	...	...	.....	.....	C	.....	.....
3552	1984 SEP 24	17:09:02.00	44.876	-113.123	8.00	2.60ML MMT	.....	..	..	SA	...	...	.....	.....	C	.....	.....
3553	1984 SEP 26	10:19:20.60	44.514	-114.228	10.00	3.00ML GS	.....	..	..	SA	...	...	.....	.....	C	.....	.....
3554	1984 SEP 26	21:10:35.20	44.879	-112.847	2.00	2.70ML MMT	.....	..	..	SA	...	...	.....	.....	C	.....	.....
3555	1984 SEP 29	14:34:40.80	44.614	-115.057	10.00	3.30ML GS	.....	..	..	SA	...	...	.....	.....	C	.....	.....
3556	1984 SEP 30	20:46:31.75	41.457	-112.403	.00	2.80ML UU	.....	..	..	DG	...	...	.....	.....	.	.....	.....
3557	1984 OCT 01	15:01:54.83	44.763	-110.486	.00	3.10MD ESO	.....	..	..	DG	...	...	.....	.....	.	.....	.....
3558	1984 OCT 01	17:48:11.68	44.740	-110.470	4.00	3.10MD ESO	.....	..	..	DG	...	...	.....	.....	.	.....	.....
3559	1984 OCT 01	19:15:28.50	44.775	-110.500	.00	2.70MD ESO	.....	..	..	DG	...	...	.....	.....	.	.....	.....
3560	1984 OCT 02	09:51:31.86	44.392	-114.184	10.00	3.60ML GS	.....	..	..	DG	17	...	.....	.....	.	.....	.....
3561	1984 OCT 03	05:32:01.20	44.333	-114.033	10.00	3.20ML GS	.....	..	..	SA	...	...	.....	.....	C	.....	.....
3562	1984 OCT 03	05:45:16.60	44.912	-112.784	2.00	2.90ML MMT	.....	..	..	SA	...	...	.....	.....	C	.....	.....
3563	1984 OCT 03	20:38:59.70	45.000	-112.800	6.00	2.80MD ESO	.....	..	..	DG	...	...	.....	.....	.	.....	.....
3564	1984 OCT 04	17:02:45.20	44.282	-114.090	10.00	3.80ML GS	.....	..	..	DG	18	...	.....	.....	.	.....	.....
3565	1984 OCT 05	17:57:50.90	44.957	-112.723	6.00	2.70ML MMT	.....	..	..	SA	...	...	.....	.....	C	.....	.....
3566	1984 OCT 06	20:00:03.50	44.917	-110.484	5.00	2.70MD ESO	.....	..	..	DG	...	...	.....	.....	.	.....	.....
3567	1984 OCT 06	20:04:02.70	44.680	-110.625	2.00	2.50MD ESO	.....	..	..	DG	...	...	.....	.....	.	.....	.....
3568	1984 OCT 06	20:30:12.89	44.744	-110.456	.00	3.70MD ESO	.....	..	..	DG	9	...	.....	.....	.	.....	.....
3569	1984 OCT 06	20:34:28.20	44.819	-110.667	5.00	2.90MD ESO	.....	..	..	DG	...	...	.....	.....	.	.....	.....
3570	1984 OCT 06	21:29:31.80	44.782	-110.602	13.00	2.80MD ESO	.....	..	..	DG	...	...	.....	.....	.	.....	.....
3571	1984 OCT 07	04:37:21.90	44.769	-110.590	.00	3.00MD ESO	.....	..	..	DG	...	...	.....	.....	.	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Std-Err Vert
3572	1984 OCT 08	02:40:07.10	44.645	-112.903	8.00	2.70MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3573	1984 OCT 11	14:25:30.00	44.821	-112.735	6.00	2.80MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3574	1984 OCT 12	04:49:24.37	44.315	-114.083	10.00	3.50ML	GS	.....	..	DG	15	...	.....	.....	.	.....	.....
3575	1984 OCT 12	05:52:32.70	44.784	-110.634	4.00	2.80MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3576	1984 OCT 15	23:23:56.53	41.804	-112.401	4.00	3.40ML	UU	.....	..	DG	26	...	.....	.....	.	.....	.....
3577	1984 OCT 19	07:35:09.17	44.424	-114.021	10.00	3.70ML	GS	.....	..	DG	17	...	.....	.....	.	.....	.....
3578	1984 OCT 25	12:10:36.51	44.340	-114.157	10.00	3.60ML	GS	.....	..	DG	15	...	.....	.....	.	.....	.....
3579	1984 OCT 25	22:57:48.60	44.811	-112.708	17.00	2.80MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3580	1984 OCT 26	22:51:30.30	44.806	-112.694	18.00	2.60MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3581	1984 OCT 30	23:05:30.67	44.430	-114.112	10.00	3.90ML	GS	.....	..	DG	16	...	.....	.....	.	.....	.....
3582	1984 OCT 31	13:36:20.10	44.912	-112.758	16.00	2.90MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3583	1984 NOV 01	05:07:55.60	44.669	-111.968	7.00	3.00MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3584	1984 NOV 03	04:23:06.46	43.620	-110.762	.00	3.10ML	BUT	.....	..	DG	12	...	.....	.....	.	.....	.....
3585	1984 NOV 06	21:03:38.60	45.985	-111.360	3.00	2.80MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3586	1984 NOV 06	22:25:45.94	44.749	-111.415	5.00	2.50MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3587	1984 NOV 07	17:09:04.80	45.046	-112.900	1.00	2.80ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3588	1984 NOV 08	09:02:02.70	45.283	-112.645	.00	2.60ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3589	1984 NOV 11	16:32:51.38	44.805	-111.592	10.00	3.10MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3590	1984 NOV 13	03:11:14.51	44.346	-114.210	10.00	3.60ML	GS	.....	..	DG	17	...	.....	.....	.	.....	.....
3591	1984 NOV 17	14:59:41.30	44.907	-112.543	7.00	2.80ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3592	1984 NOV 20	04:49:45.40	44.715	-112.051	13.00	3.20MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3593	1984 NOV 20	05:37:57.50	44.878	-112.680	18.00	2.70MD	BUT	.....	..	DG	...	...	.....	.....	.	.....	.....
3594	1984 NOV 20	09:54:01.80	44.658	-111.858	17.00	2.60MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3595	1984 NOV 20	18:46:53.10	44.807	-112.904	13.00	2.60ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3596	1984 DEC 04	02:39:10.00	44.769	-112.880	12.00	2.80MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3597	1984 DEC 05	19:38:34.50	44.795	-111.945	1.00	2.50MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3598	1984 DEC 07	21:58:57.30	44.952	-112.767	17.00	2.80MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3599	1984 DEC 08	09:39:00.60	44.940	-112.762	13.00	2.70MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3600	1984 DEC 08	09:41:02.28	42.360	-111.475	.00	2.90ML	GS	.....	..	DG	6	...	.....	.....	.	.....	.....
3601	1984 DEC 10	03:38:39.19	44.743	-111.631	6.00	2.90MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3602	1984 DEC 19	11:32:29.45	42.604	-111.284	1.00	2.80MD	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
3603	1984 DEC 20	00:43:45.40	44.998	-111.810	12.00	3.50ML	GS	.....	..	DG	14	...	.....	.....	.	.....	.....
3604	1984 DEC 22	07:17:49.80	44.826	-112.748	8.00	2.70MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3605	1984 DEC 22	13:20:27.90	44.241	-114.059	10.00	3.20ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3606	1985 JAN 01	11:46:51.20	44.882	-112.772	4.00	2.70ML	MMT	.....	..	SA	...	...	.....	.....	B	.....	.....
3607	1985 JAN 02	03:10:16.60	44.887	-112.774	7.00	3.00ML	MMT	.....	..	SA	...	...	.....	.....	B	.....	.....
3608	1985 JAN 03	02:29:50.60	44.715	-111.796	3.00	3.80ML	BUT	.....	..	DG	9	...	.....	.....	.	.....	.....
3609	1985 JAN 05	14:47:39.40	45.995	-113.752	1.00	2.60MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3610	1985 JAN 06	14:16:43.20	44.626	-112.257	18.00	2.90MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3611	1985 JAN 06	14:39:59.90	44.624	-114.138	5.00	3.20ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3612	1985 JAN 07	07:47:02.60	44.554	-114.526	10.00	3.20ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3613	1985 JAN 07	07:47:04.40	44.639	-114.600	25.00	3.20ML	MMT	.....	..	SA	...	...	.....	.....	B	.....	.....
3614	1985 JAN 13	17:49:07.60	44.641	-114.194	10.00	3.40ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3615	1985 JAN 16	07:29:40.92	44.773	-110.394	1.00	3.60ML	BUT	.....	..	DG	12	...	.....	.....	.	.....	.....
3616	1985 JAN 16	23:37:07.21	44.772	-111.185	8.00	3.00MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3617	1985 JAN 18	03:38:08.30	44.668	-114.138	13.00	3.70ML	BUT	.....	..	DG	15	...	.....	.....	.	.....	.....
3618	1985 JAN 21	03:03:13.20	44.448	-114.882	17.00	3.10ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3619	1985 JAN 26	07:09:53.24	43.333	-111.078	1.00	3.20ML	SLC	.....	..	DG	13	...	.....	.....	.	.....	.....
3620	1985 JAN 26	15:08:06.71	41.890	-112.530	2.00	3.60ML	SLC	.....	..	DG	7	...	.....	.....	.	.....	.....
3621	1985 JAN 27	10:46:49.60	41.890	-112.536	1.00	3.30ML	SLC	.....	..	DG	9	...	.....	.....	.	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
3622	1985 JAN 27	21:05:59.40	44.849	-111.501	11.00	3.10ML	BUT	.....	..	DG	7	...	.....	.....	.	.....	.....
3623	1985 FEB 04	04:33:32.60	44.442	-114.140	7.00	3.20ML	MMT	.....	..	SA	...	...	.....	.....	B	.....	.....
3624	1985 FEB 06	16:08:57.20	44.473	-114.295	18.00	3.80ML	GS	.....	..	DG	14	...	.....	.....	.	.....	.....
3625	1985 FEB 06	18:13:54.20	44.355	-114.418	10.00	3.40ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
		Felt															
3626	1985 FEB 06	19:34:20.50	44.478	-114.184	17.00	4.80MD	ESO	.....	..	DG	58	...	.....	.....	.	.....	.....
3627	1985 FEB 06	21:59:10.10	44.492	-114.163	18.00	3.10ML	MMT	.....	..	SA	...	...	.....	.....	B	.....	.....
3628	1985 FEB 07	02:14:05.60	44.458	-114.101	12.00	4.19MD	MSO	.....	..	DG	18	...	.....	.....	.	.....	.....
3629	1985 FEB 07	11:21:24.70	44.266	-114.055	16.00	3.20ML	MMT	.....	..	SA	...	...	.....	.....	B	.....	.....
3630	1985 FEB 07	13:32:21.40	44.429	-114.152	10.00	3.10ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3631	1985 FEB 08	02:22:20.20	44.465	-114.145	20.00	3.20ML	MMT	.....	..	SA	...	...	.....	.....	B	.....	.....
3632	1985 FEB 08	05:36:15.10	44.469	-114.206	20.00	3.60ML	MMT	.....	..	SA	...	...	.....	.....	B	.....	.....
3633	1985 FEB 10	10:23:45.40	45.228	-114.531	19.00	2.50ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3634	1985 FEB 11	07:49:02.20	44.712	-111.778	15.00	3.10MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3635	1985 FEB 11	13:31:50.00	44.369	-114.493	5.00	3.00ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3636	1985 FEB 11	16:07:05.30	44.484	-114.194	16.00	4.10MD	ESO	.....	..	DG	19	...	.....	.....	.	.....	.....
3637	1985 FEB 12	04:14:48.70	44.855	-113.304	.00	3.20ML	BUT	.....	..	DG	6	...	.....	.....	.	.....	.....
3638	1985 FEB 15	09:58:14.40	44.126	-114.355	23.00	3.00ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3639	1985 FEB 17	05:31:28.60	44.415	-114.080	19.00	2.70ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3640	1985 FEB 19	19:25:49.20	44.469	-113.378	5.00	3.00ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3641	1985 FEB 22	06:32:50.50	44.788	-112.945	14.00	2.70ML	MMT	.....	..	SA	...	...	.....	.....	B	.....	.....
3642	1985 FEB 22	09:57:16.20	44.755	-113.055	18.00	2.90ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3643	1985 FEB 24	05:37:13.19	42.464	-111.822	7.00	2.72ML	UU	.....	..	DG	7	...	.....	.....	.	.....	.....
3644	1985 FEB 24	22:00:38.10	44.475	-114.185	15.00	2.90ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3645	1985 FEB 25	11:46:07.50	44.481	-114.184	21.00	3.60MD	ESO	.....	..	DG	9	...	.....	.....	.	.....	.....
3646	1985 FEB 27	07:29:07.80	44.480	-114.187	10.00	3.10ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3647	1985 FEB 28	11:09:01.40	42.985	-110.820	.00	3.50ML	SLC	.....	..	DG	14	...	.....	.....	.	.....	.....
3648	1985 FEB 28	12:37:44.87	42.977	-110.788	.00	3.10ML	SLC	.....	..	DG	10	...	.....	.....	.	.....	.....
3649	1985 MAR 01	23:33:28.87	44.803	-110.773	4.00	3.80MD	ESO	.....	..	DG	21	...	.....	.....	.	.....	.....
3650	1985 MAR 01	23:45:53.36	44.798	-110.775	4.00	4.30MD	ESO	.....	..	DG	22	...	.....	.....	.	.....	.....
3651	1985 MAR 02	04:03:41.80	44.799	-110.784	4.00	2.50MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3652	1985 MAR 02	04:19:09.87	44.807	-110.795	4.00	3.80MD	ESO	.....	..	DG	14	...	.....	.....	.	.....	.....
3653	1985 MAR 02	04:24:00.30	44.802	-110.781	4.00	2.50MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3654	1985 MAR 02	04:46:24.43	44.799	-110.791	4.00	3.30MD	ESO	.....	..	DG	9	...	.....	.....	.	.....	.....
3655	1985 MAR 02	10:32:35.84	44.804	-110.783	4.00	2.80MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3656	1985 MAR 02	11:10:11.22	44.798	-110.757	4.00	2.60MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3657	1985 MAR 02	13:14:51.01	44.802	-110.785	4.00	2.90MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3658	1985 MAR 03	09:44:05.80	44.243	-113.996	18.00	3.30ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3659	1985 MAR 04	12:01:14.54	44.801	-110.764	1.00	3.00MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3660	1985 MAR 04	19:45:58.65	44.820	-111.606	10.00	2.60MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3661	1985 MAR 05	20:30:40.80	44.777	-110.810	9.00	3.90MD	MSO	.....	..	DG	14	...	.....	.....	.	.....	.....
3662	1985 MAR 05	20:33:09.50	44.790	-110.791	25.00	3.00MD	BUT	.....	..	DG	...	...	.....	.....	.	.....	.....
3663	1985 MAR 05	20:34:38.70	44.853	-110.768	11.00	3.20ML	BUT	.....	..	DG	6	...	.....	.....	.	.....	.....
3664	1985 MAR 07	13:18:09.25	44.797	-110.777	1.00	2.90MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3665	1985 MAR 07	23:06:16.80	44.792	-110.788	4.00	2.60MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3666	1985 MAR 08	22:17:08.25	43.033	-110.734	5.00	3.40ML	BUT	.....	..	DG	8	...	.....	.....	.	.....	.....
3667	1985 MAR 08	22:57:42.10	44.796	-110.861	11.00	2.50MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3668	1985 MAR 10	08:08:27.60	44.790	-110.783	1.00	2.50MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3669	1985 MAR 10	14:19:54.65	44.798	-110.764	17.00	3.80MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3670	1985 MAR 10	14:33:30.29	44.806	-110.773	2.00	2.50MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Std-Err Vert
3671	1985 MAR 11	06:04:33.50	42.990	-110.795	.00	3.10UK UU	0	.....	..	DG	9	...	.....	.....	.	.....	.....
3672	1985 MAR 11	06:42:31.96	43.019	-110.852	6.00	3.60ML GS		.....	..	DG	17	...	.....	.....	.	.....	.....
3673	1985 MAR 11	07:24:20.90	42.988	-110.794	.00	2.60MD SLC		.....	..	DG	5	...	.....	.....	.	.....	.....
3674	1985 MAR 11	19:47:26.50	43.994	-114.384	22.00	3.00ML MMT		.....	..	SA	...	...	.....	.....	B	.....	.....
3675	1985 MAR 11	21:11:26.39	45.042	-110.856	3.00	2.50MD MSO		.....	..	DG	...	...	.....	.....	.	.....	.....
3676	1985 MAR 15	00:17:35.30	44.740	-110.842	14.00	2.70MD MSO		.....	..	DG	...	...	.....	.....	.	.....	.....
3677	1985 MAR 17	00:11:09.60	45.347	-112.951	7.00	2.70ML MMT		.....	..	SA	...	...	.....	.....	C	.....	.....
3678	1985 MAR 17	06:56:17.40	44.508	-114.222	10.00	4.69MD ESO		.....	..	DG	50	...	.....	.....	.	.....	.....
3679	1985 MAR 20	01:37:09.81	41.613	-109.622	7.00	2.86MD UU		.....	..	DG	...	...	.....	.....	.	.....	.....
3680	1985 MAR 20	03:18:43.22	44.818	-111.605	7.00	3.60MD MSO		.....	..	DG	9	...	.....	.....	.	.....	.....
3681	1985 MAR 21	09:02:57.30	44.286	-114.076	12.00	3.50MD MSO		.....	..	DG	...	...	.....	.....	.	.....	.....
3682	1985 MAR 21	10:46:30.80	44.750	-112.822	7.00	2.60MD ESO		.....	..	DG	...	...	.....	.....	.	.....	.....
3683	1985 MAR 22	18:07:55.00	44.264	-114.042	17.00	3.10ML MMT		.....	..	SA	...	...	.....	.....	C	.....	.....
3684	1985 MAR 23	18:03:53.67	44.215	-113.957	12.00	3.60MD ESO		.....	..	DG	14	...	.....	.....	.	.....	.....
3685	1985 MAR 23	18:10:19.24	44.194	-113.946	15.00	3.60MD ESO		.....	..	DG	10	...	.....	.....	.	.....	.....
3686	1985 MAR 25	07:55:12.30	44.465	-114.153	15.00	3.20ML MMT		.....	..	SA	...	...	.....	.....	B	.....	.....
3687	1985 MAR 31	00:26:31.40	44.843	-114.266	18.00	2.50ML MMT		.....	..	SA	...	...	.....	.....	C	.....	.....
3688	1985 MAR 31	16:05:34.10	44.125	-113.851	5.00	3.10ML MMT		.....	..	SA	...	...	.....	.....	B	.....	.....
3689	1985 APR 01	07:08:49.00	44.425	-114.083	15.00	2.80ML MMT		.....	..	SA	...	...	.....	.....	B	.....	.....
3690	1985 APR 05	05:43:26.79	42.390	-111.571	4.00	3.20ML UU		.....	..	DG	...	...	.....	.....	.	.....	.....
3691	1985 APR 06	06:38:34.41	44.794	-110.782	2.00	2.50MD ESO		.....	..	DG	...	...	.....	.....	.	.....	.....
3692	1985 APR 06	11:18:54.70	45.073	-111.743	6.00	2.50MD ESO		.....	..	DG	...	...	.....	.....	.	.....	.....
3693	1985 APR 07	04:50:44.00	44.803	-110.788	4.00	2.70MD ESO		.....	..	DG	...	...	.....	.....	.	.....	.....
3694	1985 APR 10	03:02:02.90	44.304	-114.228	10.00	3.20ML GS		.....	..	SA	...	...	.....	.....	B	.....	.....
3695	1985 APR 10	06:10:20.40	44.779	-112.826	18.00	3.00ML BUT		.....	..	DG	7	...	.....	.....	.	.....	.....
3696	1985 APR 11	08:22:02.30	44.745	-114.508	19.00	2.80ML MMT		.....	..	SA	...	...	.....	.....	B	.....	.....
3697	1985 APR 11	08:43:57.70	44.749	-114.538	14.00	3.50MD ESO		.....	..	DG	...	...	.....	.....	.	.....	.....
3698	1985 APR 12	11:28:45.24	44.648	-110.441	.00	3.30MD ESO		.....	..	DG	8	...	.....	.....	.	.....	.....
3699	1985 APR 12	20:57:51.30	44.442	-114.067	21.00	3.10ML MMT		.....	..	SA	...	...	.....	.....	B	.....	.....
3700	1985 APR 13	11:42:17.50	44.493	-113.628	10.00	2.50ML MMT		.....	..	SA	...	...	.....	.....	C	.....	.....
3701	1985 APR 14	21:39:09.05	43.938	-113.827	12.00	3.50MD ESO		.....	..	DG	5	...	.....	.....	.	.....	.....
3702	1985 APR 17	10:29:47.91	44.153	-113.945	8.00	3.50MD ESO		.....	..	DG	7	...	.....	.....	.	.....	.....
3703	1985 APR 17	22:28:38.70	44.992	-112.805	18.00	3.40MD ESO		.....	..	DG	...	...	.....	.....	.	.....	.....
3704	1985 APR 18	06:22:18.30	44.448	-114.129	9.00	3.20ML MMT		.....	..	SA	...	...	.....	.....	B	.....	.....
3705	1985 APR 19	00:03:49.30	44.500	-114.095	6.00	3.00ML MMT		.....	..	SA	...	...	.....	.....	B	.....	.....
3706	1985 APR 19	10:54:14.30	44.229	-114.005	10.00	2.80ML MMT		.....	..	SA	...	...	.....	.....	B	.....	.....
3707	1985 APR 20	02:54:13.90	45.981	-113.293	9.00	2.90MD MSO		.....	..	DG	9	...	.....	.....	.	.....	.....
3708	1985 APR 20	06:20:36.10	44.512	-114.150	14.00	3.60MD ESO		.....	..	DG	10	...	.....	.....	.	.....	.....
3709	1985 APR 21	23:00:20.70	40.755	-111.847	5.00	1.80ML UU		.....	IV	SA	...	...	.....	.....	A	.....	.....
3710	1985 APR 22	19:14:49.20	44.770	-112.805	18.00	2.90MD ESO		.....	..	DG	...	...	.....	.....	.	.....	.....
3711	1985 APR 23	10:47:25.70	44.664	-111.964	10.00	3.50ML BUT		.....	..	DG	10	...	.....	.....	.	.....	.....
3712	1985 APR 24	11:15:30.10	45.994	-113.317	4.00	2.80MD MSO		.....	..	DG	...	...	.....	.....	.	.....	.....
3713	1985 APR 26	05:21:39.32	44.799	-110.813	5.00	3.40MD MSO		.....	..	DG	9	...	.....	.....	.	.....	.....
3714	1985 APR 27	19:17:21.70	44.785	-111.487	12.00	2.70MD MSO		.....	..	DG	...	...	.....	.....	.	.....	.....
3715	1985 APR 28	22:23:22.70	44.933	-111.707	12.00	2.50MD MSO		.....	..	DG	...	...	.....	.....	.	.....	.....
3716	1985 APR 29	00:31:38.10	44.917	-111.722	11.00	2.70MD MSO		.....	..	DG	...	...	.....	.....	.	.....	.....
3717	1985 APR 30	04:20:33.31	44.583	-111.216	7.00	3.80MD MSO		.....	..	DG	16	...	.....	.....	.	.....	.....
3718	1985 MAY 01	14:56:43.00	45.771	-111.371	14.00	2.60MD MSO		.....	..	DG	...	...	.....	.....	.	.....	.....
3719	1985 MAY 02	09:51:16.50	45.807	-111.410	6.00	2.50MD ESO		.....	..	DG	...	...	.....	.....	.	.....	.....
3720	1985 MAY 03	04:38:58.60	46.428	-111.362	.00	2.70MD MSO		.....	..	DG	...	...	.....	.....	.	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
3721	1985 MAY 03	04:42:12.70	46.427	-111.389	6.00	2.60MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3722	1985 MAY 06	23:34:19.60	44.467	-114.275	5.00	3.20ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3723	1985 MAY 09	09:22:21.50	44.842	-111.521	13.00	2.60MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3724	1985 MAY 09	15:29:37.60	44.047	-114.377	5.00	3.00ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3725	1985 MAY 10	18:16:36.70	44.475	-114.418	10.00	2.90ML	MMT	.....	..	SA	...	...	.....	.....	B	.....	.....
3726	1985 MAY 10	22:00:58.40	44.599	-114.116	5.00	3.10ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3727	1985 MAY 13	08:23:35.20	44.045	-113.874	5.00	3.20ML	GS	.....	..	SA	...	...	.....	.....	B	.....	.....
3728	1985 MAY 13	09:36:36.20	44.361	-114.476	5.00	3.00ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3729	1985 MAY 15	20:30:36.39	44.777	-111.000	5.00	2.60MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3730	1985 MAY 16	05:08:35.90	44.716	-114.309	8.00	2.60ML	MMT	.....	..	SA	...	...	.....	.....	B	.....	.....
3731	1985 MAY 25	12:54:52.20	43.881	-110.573	1.00	2.80MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3732	1985 MAY 31	04:13:24.30	44.710	-112.820	11.00	3.10ML	BUT	.....	..	DG	...	8	.....	.....	.	.....	.....
3733	1985 JUN 05	08:14:06.48	44.694	-111.033	4.00	3.00UK	UU	0	.....	DG	...	.....	.....	.....	.	.....	.....
3734	1985 JUN 07	01:40:44.89	44.786	-111.017	4.00	3.60UK	GS	.....	..	DG	...	11	.....	.....	.	.....	.....
3735	1985 JUN 07	09:55:20.90	44.258	-114.038	14.00	2.90ML	MMT	.....	..	SA	...	...	.....	.....	B	.....	.....
3736	1985 JUN 08	02:26:39.00	44.879	-112.683	3.00	2.90MD	ESO	.....	..	DG	...	6	.....	.....	.	.....	.....
3737	1985 JUN 08	13:08:24.39	44.258	-114.157	16.00	3.60MD	ESO	.....	..	DG	...	9	.....	.....	.	.....	.....
3738	1985 JUN 09	05:53:02.00	44.882	-112.681	2.00	3.10MD	ESO	.....	..	DG	...	10	.....	.....	.	.....	.....
3739	1985 JUN 09	06:11:23.40	44.875	-112.667	6.00	2.50MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3740	1985 JUN 09	07:39:08.11	44.255	-110.321	.00	3.20UK	UU	0	.....	DG	...	...	.....	.....	.	.....	.....
3741	1985 JUN 10	13:01:12.30	45.768	-111.448	13.00	3.20MD	ESO	.....	..	DG	...	6	.....	.....	.	.....	.....
3742	1985 JUN 10	13:10:41.20	45.814	-111.407	9.00	2.50MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3743	1985 JUN 11	23:09:37.10	44.499	-114.216	5.00	3.00ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3744	1985 JUN 13	14:43:22.49	44.964	-111.824	5.00	2.80MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3745	1985 JUN 14	21:41:52.60	44.924	-114.278	11.00	2.80ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3746	1985 JUN 15	01:19:35.70	43.507	-113.622	12.00	3.40ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3747	1985 JUN 15	05:23:30.70	43.506	-113.618	19.00	3.20ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3748	1985 JUN 17	08:10:47.33	44.777	-111.019	5.00	3.50ML	GS	.....	..	DG	...	13	.....	.....	.	.....	.....
3749	1985 JUN 17	10:49:53.70	44.663	-112.055	11.00	2.60MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3750	1985 JUN 17	13:41:45.06	44.774	-111.012	5.00	2.70MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3751	1985 JUN 17	20:02:41.38	45.008	-111.759	14.00	2.60MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3752	1985 JUN 19	01:13:20.20	46.048	-115.736	7.00	2.80MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3753	1985 JUN 19	05:18:44.70	44.840	-114.277	14.00	2.60ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3754	1985 JUN 20	16:24:25.82	44.775	-111.005	6.00	3.00ML	BUT	.....	..	DG	...	7	.....	.....	.	.....	.....
3755	1985 JUN 22	22:40:08.00	44.856	-112.688	18.00	2.60MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3756	1985 JUN 23	08:10:55.80	44.668	-113.843	18.00	2.60ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3757	1985 JUN 23	10:43:38.30	45.542	-115.909	34.00	2.70MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3758	1985 JUN 23	16:41:04.50	44.799	-114.387	20.00	2.60ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3759	1985 JUN 27	11:11:07.80	44.117	-114.382	5.00	3.00ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3760	1985 JUN 27	11:19:56.45	41.779	-112.610	3.00	2.57MD	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
3761	1985 JUN 28	05:39:47.30	46.253	-111.907	6.00	2.50MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3762	1985 JUN 28	22:40:03.04	44.722	-111.154	9.00	3.10ML	GS	.....	..	DG	...	10	.....	.....	.	.....	.....
3763	1985 JUN 29	11:12:21.40	44.419	-113.917	1.00	2.70ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3764	1985 JUN 30	01:18:45.60	44.725	-111.141	9.00	2.60MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3765	1985 JUL 01	16:29:58.99	44.759	-111.186	8.00	2.50MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3766	1985 JUL 02	03:03:56.08	43.255	-111.154	5.00	4.00ML	GS	.....	..	DG	...	19	.....	.....	.	.....	.....
3767	1985 JUL 06	19:47:43.50	44.861	-112.658	17.00	2.60MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3768	1985 JUL 08	14:30:43.40	44.437	-113.992	5.00	3.30ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3769	1985 JUL 15	06:36:36.60	44.855	-112.677	4.00	2.90MD	BUT	.....	..	DG	...	...	.....	.....	.	.....	.....
3770	1985 JUL 16	18:43:06.20	43.979	-114.904	10.00	3.50MD	ESO	.....	..	DG	...	7	.....	.....	.	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz Vert
3771	1985 JUL 16	19:13:28.40	43.924	-114.671	3.00	2.80ML GS	.....	..	...	SA	...	...	.....	.....	C	.....
3772	1985 JUL 17	00:01:52.60	45.043	-114.485	.00	3.70MD ESO	.....	..	...	DG	9	...	.....	.....	.	.....
3773	1985 JUL 17	00:16:54.50	45.026	-114.461	1.00	3.70MD ESO	.....	..	...	DG	11	...	.....	.....	.	.....
3774	1985 JUL 17	00:20:13.90	45.038	-114.369	20.00	2.60ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....
3775	1985 JUL 19	12:52:42.00	44.005	-114.682	17.00	3.60ML BUT	.....	..	...	DG	12	...	.....	.....	.	.....
3776	1985 JUL 19	19:05:53.53	44.649	-110.099	7.00	3.30MD MSO	.....	..	...	DG	8	...	.....	.....	.	.....
3777	1985 JUL 20	17:33:22.70	44.426	-114.237	17.00	3.50ML GS	.....	..	...	DG	14	...	.....	.....	.	.....
3778	1985 JUL 28	06:13:47.80	44.305	-114.147	5.00	3.10ML GS	.....	..	...	SA	...	...	.....	.....	C	.....
3779	1985 JUL 28	23:19:07.07	41.937	-112.606	1.00	2.70ML UU	.....	..	...	DG	...	...	.....	.....	.	.....
3780	1985 AUG 01	11:50:54.70	44.594	-114.629	24.00	2.80ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....
3781	1985 AUG 03	11:20:58.30	44.422	-114.232	21.00	2.60ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....
3782	1985 AUG 05	11:06:52.90	43.821	-113.648	27.00	2.80ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....
3783	1985 AUG 06	19:32:00.80	44.057	-114.195	5.00	2.80ML GS	.....	..	...	SA	...	...	.....	.....	C	.....
3784	1985 AUG 07	07:10:33.25	42.108	-112.322	.00	2.80ML UU	.....	..	...	DG	7	...	.....	.....	.	.....
3785	1985 AUG 07	11:23:18.30	44.255	-114.034	21.00	2.60ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....
3786	1985 AUG 08	21:21:26.30	44.859	-112.678	1.00	2.50MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....
3787	1985 AUG 13	01:03:10.90	44.532	-114.462	14.00	2.70ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....
3788	1985 AUG 13	01:05:24.10	44.510	-114.411	11.00	2.70ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....
3789	1985 AUG 13	01:18:20.90	44.512	-114.471	22.00	2.50ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....
3790	1985 AUG 13	17:54:48.78	41.095	-110.335	.00	2.50ML UU	.....	..	...	DG	...	...	.....	.....	.	.....
3791	1985 AUG 14	06:58:42.60	44.423	-114.288	5.00	2.70ML GS	.....	..	...	SA	...	...	.....	.....	C	.....
3792	1985 AUG 15	07:41:44.50	44.265	-114.112	5.00	3.10ML GS	.....	..	...	SA	...	...	.....	.....	C	.....
3793	1985 AUG 18	00:42:45.78	44.643	-111.019	6.00	3.60MD MSO	.....	..	...	DG	13	...	.....	.....	.	.....
3794	1985 AUG 19	13:20:31.14	44.294	-110.565	6.00	3.02UK UU 0	.....	..	...	DG	...	...	.....	.....	.	.....
3795	1985 AUG 21	18:05:38.31	43.168	-110.781	5.00	4.80mb	.....	..	...	DG	39	...	.....	.....	.	.....
3796	1985 AUG 22	02:12:08.40	46.028	-110.395	12.00	3.20ML BUT	.....	..	...	DG	9	...	.....	.....	.	.....
3797	1985 AUG 22	03:01:08.70	46.037	-110.391	7.00	2.80MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....
3798	1985 AUG 22	06:17:39.67	43.125	-110.814	5.00	4.30mb	.....	..	...	DG	26	...	.....	.....	.	.....
3799	1985 AUG 22	20:44:12.87	43.129	-110.868	5.00	3.40ML GS	.....	..	...	DG	5	...	.....	.....	.	.....
3800	1985 AUG 22	22:49:18.95	43.179	-110.855	5.00	3.20ML GS	.....	..	...	DG	5	...	.....	.....	.	.....
3801	1985 AUG 23	05:12:08.20	44.483	-114.165	5.00	2.70ML GS	.....	..	...	SA	...	...	.....	.....	C	.....
3802	1985 AUG 28	00:24:06.20	44.587	-114.401	3.00	2.70ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....
3803	1985 AUG 28	15:08:24.60	44.412	-114.413	5.00	3.10ML GS	.....	..	...	SA	...	...	.....	.....	C	.....
3804	1985 AUG 28	19:10:12.40	44.417	-114.262	18.00	3.80MD ESO	.....	..	...	DG	12	...	.....	.....	.	.....
3805	1985 AUG 28	20:20:37.80	44.425	-114.351	5.00	3.10ML GS	.....	..	...	SA	...	...	.....	.....	C	.....
3806	1985 AUG 30	01:14:31.00	44.507	-114.324	9.00	2.90ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....
3807	1985 AUG 30	17:41:38.09	45.454	-110.919	7.00	2.90MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....
3808	1985 AUG 30	21:08:06.95	43.166	-110.890	5.00	4.30ML GS	.....	..	...	DG	18	...	.....	.....	.	.....
3809	1985 AUG 31	00:28:50.60	44.431	-114.221	14.00	3.50MD ESO	.....	..	...	DG	11	...	.....	.....	.	.....
3810	1985 SEP 04	04:07:18.70	44.209	-114.140	5.00	3.00ML GS	.....	..	...	SA	...	...	.....	.....	C	.....
3811	1985 SEP 05	03:59:26.67	44.687	-111.012	6.00	3.40UK UU 0	.....	..	...	DG	...	...	.....	.....	.	.....
3812	1985 SEP 06	17:18:57.08	43.201	-110.872	.00	3.07UK UU	.....	..	...	DG	...	...	.....	.....	.	.....
3813	1985 SEP 07	03:47:29.20	43.156	-110.724	5.00	4.60mb	.....	..	...	DG	18	...	.....	.....	.	.....
3814	1985 SEP 08	09:22:31.24	43.206	-110.922	.00	3.07UK UU	.....	..	...	DG	...	...	.....	.....	.	.....
3815	1985 SEP 11	19:53:37.30	44.712	-111.809	9.00	2.50MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....
3816	1985 SEP 19	14:49:25.09	44.351	-110.545	.00	3.17UK UU	.....	..	...	DG	...	...	.....	.....	.	.....
3817	1985 SEP 19	15:39:16.90	44.402	-110.586	.00	3.30UK UU	.....	..	...	DG	...	...	.....	.....	.	.....
3818	1985 SEP 19	16:34:05.88	44.346	-110.798	.00	3.27UK UU	.....	..	...	DG	...	...	.....	.....	.	.....
3819	1985 SEP 19	16:37:52.90	44.296	-110.741	8.00	2.60MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....
3820	1985 SEP 19	16:54:56.85	44.330	-110.804	.00	3.10UK UU	.....	..	...	DG	...	...	.....	.....	.	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
3821	1985 SEP 19	17:20:59.79	44.351	-110.791	.00	3.37UK	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
3822	1985 SEP 19	17:25:31.93	44.363	-110.803	.00	3.60UK	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
3823	1985 SEP 19	17:27:48.95	44.359	-110.815	.00	3.60UK	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
3824	1985 SEP 19	17:33:43.06	44.358	-110.791	.00	3.12UK	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
3825	1985 SEP 19	17:36:12.27	44.349	-110.815	.00	3.10UK	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
3826	1985 SEP 19	17:41:40.69	44.337	-110.801	.00	3.10UK	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
3827	1985 SEP 19	17:44:58.07	44.357	-110.815	.00	3.62UK	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
3828	1985 SEP 19	18:32:03.46	44.351	-110.587	.00	3.15UK	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
3829	1985 SEP 19	18:47:24.97	44.349	-110.610	.00	3.58UK	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
3830	1985 SEP 19	20:46:38.88	44.588	-110.625	.00	3.10UK	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
3831	1985 SEP 19	23:26:54.90	43.118	-110.926	8.00	3.50ML	GS	.....	..	SA	...	...	.....	.....	B	.....	.....
		Felt															
3832	1985 SEP 20	05:07:52.45	44.361	-110.815	.00	4.16UK	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
3833	1985 SEP 23	21:54:22.85	40.771	-113.294	2.00	2.50ML	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
3834	1985 SEP 23	21:54:24.80	41.609	-110.803	.00	2.50ML	UU	.....	..	SA	...	...	.....	.....	C	.....	.....
3835	1985 SEP 23	22:07:18.60	44.263	-114.162	5.00	2.80ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3836	1985 SEP 24	08:19:29.30	44.434	-114.276	5.00	2.80ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3837	1985 SEP 24	19:14:56.80	44.802	-111.137	11.00	3.50MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3838	1985 SEP 24	19:19:14.20	44.829	-111.127	18.00	3.20MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3839	1985 SEP 27	07:58:04.50	44.517	-115.981	10.00	3.40MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3840	1985 SEP 29	01:05:18.96	44.355	-110.807	.00	3.00UK	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
3841	1985 OCT 02	12:15:34.50	44.673	-112.052	6.00	3.30UK	GS	.....	..	DG	5	...	.....	.....	.	.....	.....
3842	1985 OCT 02	18:48:19.80	44.345	-114.098	5.00	3.00ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3843	1985 OCT 06	03:07:55.00	44.341	-114.263	5.00	3.00ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3844	1985 OCT 06	06:08:25.80	44.234	-114.088	21.00	3.10ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3845	1985 OCT 07	06:50:03.20	44.768	-111.678	8.00	3.10MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3846	1985 OCT 07	07:48:01.05	44.786	-110.911	4.00	2.90MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3847	1985 OCT 07	11:52:08.30	44.774	-110.882	17.00	2.90MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3848	1985 OCT 09	07:18:00.60	44.448	-114.173	5.00	3.30ML	GS	.....	..	SA	...	...	.....	.....	B	.....	.....
3849	1985 OCT 09	09:10:03.00	44.455	-114.154	5.00	3.10ML	GS	.....	..	SA	...	...	.....	.....	B	.....	.....
3850	1985 OCT 10	04:14:09.11	44.632	-110.996	2.00	2.80MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3851	1985 OCT 10	16:49:12.58	44.628	-110.985	2.00	2.70MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3852	1985 OCT 12	03:47:29.10	44.647	-111.018	21.00	2.60MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3853	1985 OCT 14	00:27:49.69	44.630	-111.000	6.00	2.80MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3854	1985 OCT 14	01:38:23.64	44.642	-111.008	5.00	2.80MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3855	1985 OCT 14	01:42:52.30	44.642	-111.015	.00	3.13UK	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
3856	1985 OCT 14	17:45:11.06	44.637	-111.002	4.00	2.70MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3857	1985 OCT 16	20:01:59.15	44.644	-111.017	5.00	3.60MD	ESO	.....	..	DG	6	...	.....	.....	.	.....	.....
3858	1985 OCT 16	23:36:00.25	44.645	-111.018	.00	3.60MD	BUT	.....	..	DG	...	...	.....	.....	.	.....	.....
3859	1985 OCT 16	23:39:48.67	44.646	-111.019	.00	3.17UK	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
3860	1985 OCT 16	23:59:17.73	44.647	-111.021	4.00	3.80MD	ESO	.....	..	DG	8	...	.....	.....	.	.....	.....
3861	1985 OCT 17	00:08:43.24	44.646	-111.025	5.00	3.70MD	BUT	.....	..	DG	5	...	.....	.....	.	.....	.....
3862	1985 OCT 17	00:11:43.18	44.652	-111.024	4.00	3.50MD	ESO	.....	..	DG	5	...	.....	.....	.	.....	.....
3863	1985 OCT 17	00:18:36.73	44.644	-111.018	6.00	3.70MD	ESO	.....	..	DG	8	...	.....	.....	.	.....	.....
3864	1985 OCT 17	01:11:46.76	44.636	-111.005	.00	3.38UK	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
3865	1985 OCT 17	03:06:05.01	44.649	-111.020	5.00	3.70MD	ESO	.....	..	DG	8	...	.....	.....	.	.....	.....
3866	1985 OCT 17	04:30:44.86	44.636	-111.003	3.00	3.20MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3867	1985 OCT 17	06:05:01.90	44.751	-111.067	1.00	2.50MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3868	1985 OCT 17	08:01:48.20	44.652	-111.081	7.00	3.50MD	ESO	.....	..	DG	7	...	.....	.....	.	.....	.....
3869	1985 OCT 17	09:07:08.40	44.770	-111.122	1.00	2.50MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Std-Err Vert
3870	1985 OCT 17	10:18:02.90	44.672	-111.100	3.00	2.50MD BUT	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3871	1985 OCT 17	10:48:01.90	44.704	-111.054	18.00	3.10MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3872	1985 OCT 17	11:57:58.20	44.644	-111.017	4.00	3.80MD BUT	.....	..	...	DG	8	...	.....	.....	.	.....	.....
3873	1985 OCT 17	12:49:04.00	44.635	-110.997	8.00	2.50MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3874	1985 OCT 17	17:56:19.78	44.643	-111.013	.00	3.10MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3875	1985 OCT 17	18:33:07.64	44.637	-111.001	4.00	2.50MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3876	1985 OCT 17	19:13:24.85	44.665	-111.013	5.00	2.60MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3877	1985 OCT 17	19:57:10.70	44.754	-111.131	3.00	3.00MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3878	1985 OCT 17	22:34:01.24	44.659	-111.022	5.00	2.70MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3879	1985 OCT 17	22:46:36.46	44.644	-111.019	5.00	3.40MD ESO	.....	..	...	DG	4	...	.....	.....	.	.....	.....
3880	1985 OCT 17	23:34:01.50	44.667	-111.023	7.00	2.90ML MMT	.....	..	...	SA	...	...	.....	.....	B	.....	.....
3881	1985 OCT 18	00:16:44.00	44.646	-111.007	5.00	3.20UK GS	.....	..	...	DG	4	...	.....	.....	.	.....	.....
3882	1985 OCT 18	00:26:19.90	44.652	-111.022	7.00	3.20MD ESO	.....	..	...	DG	5	...	.....	.....	.	.....	.....
3883	1985 OCT 18	02:26:01.09	44.645	-111.019	.00	3.03UK UU	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3884	1985 OCT 18	04:28:14.10	44.650	-111.013	5.00	2.70MD BUT	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3885	1985 OCT 18	05:04:20.90	44.662	-111.035	4.00	2.60MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3886	1985 OCT 18	10:30:55.30	44.707	-111.015	21.00	2.60MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3887	1985 OCT 18	14:58:43.90	44.631	-111.007	6.00	2.80MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3888	1985 OCT 18	19:23:22.98	44.659	-111.024	.00	3.10MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3889	1985 OCT 18	22:26:28.90	44.637	-110.999	6.00	2.80MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3890	1985 OCT 19	04:00:40.90	44.761	-111.146	1.00	3.00MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3891	1985 OCT 19	06:33:04.40	44.679	-111.082	7.00	3.50MD MSO	.....	..	...	DG	5	...	.....	.....	.	.....	.....
3892	1985 OCT 19	09:18:05.20	44.690	-110.988	17.00	3.40MD MSO	.....	..	...	DG	5	...	.....	.....	.	.....	.....
3893	1985 OCT 19	09:28:43.30	44.524	-110.906	18.00	3.70MD MSO	.....	..	...	DG	5	...	.....	.....	.	.....	.....
3894	1985 OCT 19	09:36:44.10	44.648	-110.976	3.00	2.60MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3895	1985 OCT 19	09:45:16.25	44.663	-111.032	.00	3.70MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3896	1985 OCT 19	09:58:04.60	44.714	-111.048	9.00	2.90MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3897	1985 OCT 19	09:59:05.00	44.718	-111.093	14.00	2.80MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3898	1985 OCT 19	11:31:10.80	44.627	-110.999	.00	3.30MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3899	1985 OCT 19	11:43:14.10	44.679	-110.979	17.00	3.10MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3900	1985 OCT 19	11:47:04.30	44.666	-111.016	19.00	3.50MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3901	1985 OCT 19	12:00:10.50	44.785	-111.123	1.00	2.90MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3902	1985 OCT 19	12:45:53.50	44.663	-111.026	19.00	2.80MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3903	1985 OCT 19	12:47:51.80	44.655	-111.058	17.00	4.00MD MSO	.....	..	...	DG	8	...	.....	.....	.	.....	.....
3904	1985 OCT 19	13:01:59.80	44.642	-111.062	20.00	3.10MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3905	1985 OCT 19	15:33:49.50	44.727	-111.076	1.00	3.20MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3906	1985 OCT 19	15:35:01.70	44.667	-110.996	18.00	4.30MD MSO	.....	..	...	DG	11	...	.....	.....	.	.....	.....
3907	1985 OCT 19	15:40:27.80	44.706	-111.045	21.00	2.90MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3908	1985 OCT 19	15:55:44.40	44.743	-110.978	11.00	3.10MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3909	1985 OCT 19	16:09:39.90	44.719	-111.012	11.00	3.30MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3910	1985 OCT 19	16:32:37.70	44.670	-111.094	7.00	4.00MD ESO	.....	..	...	DG	14	...	.....	.....	.	.....	.....
3911	1985 OCT 19	16:45:08.40	44.654	-110.987	18.00	4.10MD MSO	.....	..	...	DG	5	...	.....	.....	.	.....	.....
3912	1985 OCT 19	16:51:22.80	44.646	-111.017	4.00	2.80MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3913	1985 OCT 19	17:56:08.40	44.641	-110.999	7.00	2.60MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3914	1985 OCT 19	18:18:18.50	44.641	-110.956	20.00	3.00MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3915	1985 OCT 19	18:19:07.45	44.656	-111.028	.00	3.45UK UU	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3916	1985 OCT 19	19:14:21.40	44.649	-111.020	13.00	2.90MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3917	1985 OCT 19	21:40:17.40	44.641	-111.004	6.00	3.10MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3918	1985 OCT 19	22:42:39.10	44.419	-114.097	22.00	2.70ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....	.....
3919	1985 OCT 20	02:18:51.60	44.412	-114.256	20.00	3.00ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
3920	1985 OCT 20	03:15:56.20	44.548	-114.283	5.00	3.00ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
3921	1985 OCT 20	05:33:10.90	44.633	-110.996	4.00	2.50MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3922	1985 OCT 20	06:27:22.34	44.650	-111.008	.00	3.00MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3923	1985 OCT 20	06:31:31.03	44.636	-111.012	.00	3.40MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3924	1985 OCT 21	00:48:28.60	44.644	-111.014	6.00	2.60MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3925	1985 OCT 21	07:31:40.00	44.645	-110.993	6.00	2.60MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3926	1985 OCT 21	08:43:30.69	44.642	-110.996	8.00	2.80MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3927	1985 OCT 21	08:48:58.91	44.644	-111.008	6.00	2.90MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3928	1985 OCT 21	09:16:38.98	44.637	-110.980	6.00	2.90MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3929	1985 OCT 21	13:22:42.69	44.654	-111.020	5.00	3.10MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3930	1985 OCT 22	09:54:43.46	44.634	-110.995	4.00	2.90MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3931	1985 OCT 22	20:33:03.90	44.678	-111.041	4.00	2.60MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3932	1985 OCT 23	09:20:51.60	44.888	-110.657	6.00	2.80MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3933	1985 OCT 23	12:31:35.71	44.636	-111.010	5.00	2.70MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3934	1985 OCT 24	05:50:13.20	44.556	-114.080	24.00	2.90ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3935	1985 OCT 24	07:53:13.98	44.632	-110.995	5.00	3.10MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3936	1985 OCT 25	02:21:06.58	44.547	-110.995	.00	3.75UK	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
3937	1985 OCT 25	15:07:29.60	44.707	-111.082	3.00	2.50MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3938	1985 OCT 25	18:32:37.98	44.639	-111.006	7.00	2.80MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3939	1985 OCT 26	04:09:34.31	44.615	-110.977	6.00	2.80MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3940	1985 OCT 26	20:57:42.30	44.666	-114.687	22.00	2.70ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3941	1985 OCT 27	09:01:41.20	44.688	-114.692	20.00	2.50ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3942	1985 OCT 27	23:58:26.07	44.650	-111.040	6.00	2.80MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3943	1985 OCT 28	04:22:12.94	44.631	-110.995	7.00	2.50MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3944	1985 OCT 28	08:28:40.60	44.748	-111.192	1.00	3.20MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3945	1985 OCT 28	20:54:25.25	44.638	-110.977	5.00	2.90MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3946	1985 OCT 29	00:10:38.82	44.650	-110.963	.00	3.30MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3947	1985 OCT 29	01:10:50.61	44.652	-110.977	7.00	2.60MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3948	1985 OCT 29	21:30:36.50	44.396	-114.046	18.00	4.10MD	MSO	.....	..	DG	10	...	.....	.....	.	.....	.....
3949	1985 OCT 29	21:37:39.10	44.408	-114.030	18.00	2.80ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
3950	1985 OCT 29	23:57:38.40	44.378	-114.155	5.00	3.20ML	GS	.....	..	SA	...	...	.....	.....	B	.....	.....
3951	1985 OCT 30	17:12:32.66	44.645	-110.997	3.00	2.50MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3952	1985 NOV 04	08:12:52.80	44.721	-111.131	12.00	2.80MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3953	1985 NOV 04	23:39:48.08	44.628	-110.989	7.00	2.60MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3954	1985 NOV 08	02:11:31.91	44.659	-111.011	.00	3.00MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
3955	1985 NOV 09	11:38:18.82	44.667	-111.038	5.00	4.80mb		.....	..	DG	32	...	.....	.....	.	.....	.....
3956	1985 NOV 09	11:40:24.60	44.768	-111.314	1.00	4.19MD	BUT	.....	..	DG	6	...	.....	.....	.	.....	.....
3957	1985 NOV 09	11:46:25.34	44.666	-111.019	.00	3.30UK	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
3958	1985 NOV 09	11:48:49.50	44.792	-111.217	1.00	3.40MD	BUT	.....	..	DG	9	...	.....	.....	.	.....	.....
3959	1985 NOV 09	11:58:49.69	44.651	-111.032	5.00	4.19MD	ESO	.....	..	DG	13	...	.....	.....	.	.....	.....
3960	1985 NOV 09	12:20:21.20	44.777	-111.097	14.00	2.50MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3961	1985 NOV 09	13:09:17.70	44.682	-111.065	18.00	4.19MD	ESO	.....	..	DG	18	...	.....	.....	.	.....	.....
3962	1985 NOV 09	14:35:57.90	44.702	-111.027	18.00	2.80MD	BUT	.....	..	DG	...	...	.....	.....	.	.....	.....
3963	1985 NOV 09	15:19:58.38	44.653	-111.006	.00	3.70MD	BUT	.....	..	DG	...	...	.....	.....	.	.....	.....
3964	1985 NOV 09	15:23:29.90	44.751	-111.038	19.00	2.70MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3965	1985 NOV 09	16:36:44.20	44.744	-111.115	13.00	3.00MD	BUT	.....	..	DG	...	...	.....	.....	.	.....	.....
3966	1985 NOV 09	16:41:07.00	44.779	-111.214	8.00	2.80MD	BUT	.....	..	DG	...	...	.....	.....	.	.....	.....
3967	1985 NOV 09	17:16:19.60	44.652	-111.051	21.00	3.40MD	ESO	.....	..	DG	8	...	.....	.....	.	.....	.....
3968	1985 NOV 09	19:16:15.72	44.639	-111.006	4.00	2.80MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
3969	1985 NOV 09	20:01:10.26	44.651	-111.010	6.00	2.70MD	BUT	.....	..	DG	...	...	.....	.....	.	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Std-Err Vert
3970	1985 NOV 09	21:34:59.15	44.651	-111.002	1.00	2.50MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3971	1985 NOV 09	21:42:55.47	44.651	-111.009	6.00	3.10MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3972	1985 NOV 09	22:40:23.85	44.677	-111.033	5.00	2.60MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3973	1985 NOV 09	23:57:49.54	44.675	-111.035	4.00	2.50MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3974	1985 NOV 10	00:06:37.02	44.631	-111.004	5.00	2.80MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3975	1985 NOV 10	01:28:39.29	44.627	-111.006	.00	3.12UK UU	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3976	1985 NOV 10	01:53:26.95	44.675	-111.037	5.00	3.10MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3977	1985 NOV 10	02:59:29.66	44.639	-111.015	9.00	3.20MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3978	1985 NOV 10	04:26:53.80	44.681	-111.027	18.00	2.50MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3979	1985 NOV 10	05:52:18.80	44.604	-111.033	26.00	3.60ML BUT	.....	..	...	DG	9	...	.....	.....	.	.....	.....
3980	1985 NOV 10	10:27:31.62	44.642	-111.017	9.00	3.00MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3981	1985 NOV 10	12:58:44.40	44.683	-111.032	14.00	3.00MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3982	1985 NOV 10	15:46:25.00	44.695	-111.046	18.00	3.10UK GS	.....	..	...	DG	5	...	.....	.....	.	.....	.....
3983	1985 NOV 10	19:30:38.48	44.641	-111.030	.00	3.00UK UU	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3984	1985 NOV 10	21:05:28.32	44.637	-110.974	6.00	2.70MD BUT	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3985	1985 NOV 10	21:12:40.28	44.636	-111.003	7.00	3.00MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3986	1985 NOV 10	21:50:03.12	44.660	-111.017	5.00	2.50MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3987	1985 NOV 11	00:53:44.20	44.648	-111.010	6.00	3.10MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3988	1985 NOV 11	01:26:09.12	44.641	-111.012	8.00	3.50MD ESO	.....	..	...	DG	9	...	.....	.....	.	.....	.....
3989	1985 NOV 11	08:09:20.00	44.703	-111.070	9.00	2.50MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3990	1985 NOV 11	11:27:40.50	44.700	-111.040	16.00	2.90ML GS	.....	..	...	DG	7	...	.....	.....	.	.....	.....
3991	1985 NOV 11	14:10:01.95	44.645	-111.022	7.00	3.10MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3992	1985 NOV 11	17:46:59.01	44.644	-111.015	.00	3.27UK UU	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3993	1985 NOV 11	20:15:49.14	44.643	-110.995	6.00	2.60MD BUT	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3994	1985 NOV 11	22:07:14.26	44.670	-111.041	5.00	2.90MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3995	1985 NOV 11	22:13:42.10	44.742	-111.089	1.00	2.70MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3996	1985 NOV 11	22:17:07.64	44.628	-111.016	8.00	2.50MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3997	1985 NOV 11	23:50:07.35	44.643	-111.007	8.00	2.70MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3998	1985 NOV 12	07:22:35.48	44.642	-111.014	.00	3.30MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
3999	1985 NOV 12	12:42:45.61	44.636	-111.012	10.00	2.90MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
4000	1985 NOV 12	17:54:27.95	44.662	-111.026	.00	3.40MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
4001	1985 NOV 12	23:51:12.31	44.632	-111.004	6.00	3.70MD MSO	.....	..	...	DG	5	...	.....	.....	.	.....	.....
4002	1985 NOV 13	04:58:44.60	44.729	-111.115	1.00	2.50MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
4003	1985 NOV 13	09:02:10.70	44.778	-111.123	1.00	2.60MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
4004	1985 NOV 13	09:05:53.25	44.634	-110.981	6.00	2.70MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
4005	1985 NOV 13	11:39:52.00	44.744	-111.095	1.00	2.70MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
4006	1985 NOV 13	13:43:37.50	44.650	-110.989	3.00	2.60MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
4007	1985 NOV 13	18:47:50.32	44.637	-110.999	7.00	3.40MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
4008	1985 NOV 13	18:52:51.45	44.626	-111.022	9.00	3.50MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
4009	1985 NOV 13	21:50:09.21	44.676	-111.033	3.00	2.80MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
4010	1985 NOV 14	05:30:16.42	44.642	-111.001	.00	3.50MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
4011	1985 NOV 14	09:07:58.20	44.201	-113.952	20.00	2.60ML MMT	.....	..	...	SA	...	...	.....	.....	C	.....	.....
4012	1985 NOV 14	11:17:10.10	44.664	-111.014	18.00	3.00MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
4013	1985 NOV 14	13:18:30.00	44.719	-111.067	22.00	2.70MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
4014	1985 NOV 15	06:34:26.54	44.621	-110.992	3.00	3.00MD MSO	.....	..	...	DG	9	...	.....	.....	.	.....	.....
4015	1985 NOV 15	08:14:28.39	44.644	-111.010	7.00	3.50MD MSO	.....	..	...	DG	11	...	.....	.....	.	.....	.....
4016	1985 NOV 15	15:16:06.59	44.660	-111.015	8.00	3.10MD MSO	.....	..	...	DG	9	...	.....	.....	.	.....	.....
4017	1985 NOV 15	15:21:05.00	44.665	-111.011	4.00	2.50MD ESO	.....	..	...	DG	...	...	.....	.....	.	.....	.....
4018	1985 NOV 15	17:51:35.46	44.675	-111.013	.00	3.90MD MSO	.....	..	...	DG	11	...	.....	.....	.	.....	.....
4019	1985 NOV 15	17:55:02.17	44.660	-111.023	3.00	2.80MD MSO	.....	..	...	DG	...	...	.....	.....	.	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz Vert
4020	1985 NOV 15	20:51:10.08	44.633	-110.982	7.00	2.90MD	MSO	.....	..	DG	10	...	.....	.....	.	.....
4021	1985 NOV 16	01:50:12.80	44.743	-111.023	17.00	3.60MD	MSO	.....	..	DG	11	...	.....	.....	.	.....
4022	1985 NOV 16	04:20:18.08	44.662	-111.022	4.00	3.20MD	MSO	.....	..	DG	10	...	.....	.....	.	.....
4023	1985 NOV 16	10:24:52.51	44.632	-110.989	6.00	2.80MD	MSO	.....	..	DG	...	...	.....	.....	.	.....
4024	1985 NOV 16	12:36:42.60	44.736	-111.085	1.00	2.50MD	MSO	.....	..	DG	...	...	.....	.....	.	.....
4025	1985 NOV 16	22:04:48.24	44.674	-111.033	5.00	3.10MD	ESO	.....	..	DG	10	...	.....	.....	.	.....
4026	1985 NOV 16	23:15:09.80	44.675	-111.032	4.00	4.10MD	MSO	.....	..	DG	10	...	.....	.....	.	.....
4027	1985 NOV 17	03:13:51.20	44.728	-111.070	8.00	2.90MD	MSO	.....	..	DG	...	...	.....	.....	.	.....
4028	1985 NOV 17	06:46:05.68	44.640	-111.011	6.00	4.30MD	MSO	.....	..	DG	11	...	.....	.....	.	.....
4029	1985 NOV 17	06:50:20.55	44.637	-111.004	7.00	3.50MD	MSO	.....	..	DG	6	...	.....	.....	.	.....
4030	1985 NOV 17	09:21:17.93	44.643	-110.987	5.00	2.70MD	MSO	.....	..	DG	...	...	.....	.....	.	.....
4031	1985 NOV 17	11:45:54.95	44.641	-111.008	7.00	2.70MD	MSO	.....	..	DG	...	...	.....	.....	.	.....
4032	1985 NOV 17	15:28:32.30	44.728	-111.090	1.00	2.50MD	MSO	.....	..	DG	...	...	.....	.....	.	.....
4033	1985 NOV 17	16:34:18.03	44.635	-110.999	7.00	2.90MD	MSO	.....	..	DG	...	...	.....	.....	.	.....
4034	1985 NOV 18	04:54:40.80	44.769	-111.137	2.00	2.70MD	MSO	.....	..	DG	...	...	.....	.....	.	.....
4035	1985 NOV 18	17:30:47.50	44.314	-114.094	18.00	3.20ML	MMT	.....	..	SA	...	...	.....	.....	C	.....
4036	1985 NOV 19	04:38:47.50	44.739	-111.063	3.00	2.60MD	MSO	.....	..	DG	...	...	.....	.....	.	.....
4037	1985 NOV 19	09:45:09.40	44.184	-116.168	14.00	2.70ML	MMT	.....	..	SA	...	...	.....	.....	C	.....
4038	1985 NOV 19	10:21:51.00	44.726	-111.103	14.00	2.50MD	MSO	.....	..	DG	...	...	.....	.....	.	.....
4039	1985 NOV 19	12:22:07.30	44.668	-111.026	19.00	3.30MD	MSO	.....	..	DG	9	...	.....	.....	.	.....
4040	1985 NOV 19	12:49:50.00	44.706	-111.029	17.00	2.70MD	MSO	.....	..	DG	...	...	.....	.....	.	.....
4041	1985 NOV 20	04:36:17.90	44.685	-111.070	9.00	2.50MD	ESO	.....	..	DG	...	...	.....	.....	.	.....
4042	1985 NOV 20	13:16:49.00	44.686	-111.117	9.00	2.60MD	ESO	.....	..	DG	...	...	.....	.....	.	.....
4043	1985 NOV 20	14:55:56.78	44.630	-111.005	8.00	3.50UK	GS	.....	..	DG	11	...	.....	.....	.	.....
4044	1985 NOV 20	15:14:59.47	44.620	-110.999	4.00	3.00MD	ESO	.....	..	DG	...	...	.....	.....	.	.....
4045	1985 NOV 20	15:30:35.70	44.638	-110.994	.00	3.13UK	UU	.....	..	DG	...	...	.....	.....	.	.....
4046	1985 NOV 21	15:00:56.90	44.726	-111.040	14.00	2.50MD	ESO	.....	..	DG	...	...	.....	.....	.	.....
4047	1985 NOV 21	15:34:04.80	44.679	-111.906	2.00	3.80UK	GS	.....	..	DG	11	...	.....	.....	.	.....
4048	1985 NOV 22	00:27:00.30	44.680	-111.020	7.00	2.90MD	ESO	.....	..	DG	...	...	.....	.....	.	.....
4049	1985 NOV 22	07:42:28.70	44.640	-111.004	8.00	3.10MD	ESO	.....	..	DG	5	...	.....	.....	.	.....
4050	1985 NOV 22	11:43:46.60	44.465	-114.080	21.00	3.20ML	MMT	.....	..	SA	...	...	.....	.....	C	.....
4051	1985 NOV 23	10:11:10.70	44.717	-111.047	14.00	2.70MD	ESO	.....	..	DG	...	...	.....	.....	.	.....
4052	1985 NOV 23	17:47:26.20	44.701	-111.045	11.00	2.70UK	GS	.....	..	DG	...	...	.....	.....	.	.....
4053	1985 NOV 24	13:09:42.89	44.671	-111.040	.00	3.02UK	UU	.....	..	DG	...	...	.....	.....	.	.....
4054	1985 NOV 24	20:53:40.90	44.666	-111.049	10.00	2.50MD	ESO	.....	..	DG	...	...	.....	.....	.	.....
4055	1985 NOV 25	16:09:03.60	44.648	-111.016	7.00	3.90MD	BUT	.....	..	DG	...	...	.....	.....	.	.....
4056	1985 NOV 25	16:37:36.70	44.672	-111.014	6.00	2.60MD	ESO	.....	..	DG	...	...	.....	.....	.	.....
4057	1985 NOV 25	16:53:07.30	44.794	-111.225	1.00	3.50UK	GS	.....	..	DG	5	...	.....	.....	.	.....
4058	1985 NOV 25	17:11:20.60	44.664	-111.022	8.00	3.00MD	ESO	.....	..	DG	...	...	.....	.....	.	.....
4059	1985 NOV 25	17:18:36.30	44.673	-111.021	9.00	3.10MD	ESO	.....	..	DG	...	...	.....	.....	.	.....
4060	1985 NOV 25	17:21:37.20	44.710	-111.133	18.00	2.60MD	ESO	.....	..	DG	...	...	.....	.....	.	.....
4061	1985 NOV 25	19:25:57.90	44.667	-111.010	8.00	3.10MD	ESO	.....	..	DG	...	...	.....	.....	.	.....
4062	1985 NOV 25	19:41:26.21	44.653	-111.022	.00	3.40MD	ESO	.....	..	DG	...	...	.....	.....	.	.....
4063	1985 NOV 25	20:31:56.90	44.773	-111.075	9.00	3.00MD	ESO	.....	..	DG	...	...	.....	.....	.	.....
4064	1985 NOV 26	03:14:38.20	44.694	-111.102	14.00	2.90MD	BUT	.....	..	DG	...	...	.....	.....	.	.....
4065	1985 NOV 26	05:43:21.10	44.670	-111.000	8.00	2.60MD	ESO	.....	..	DG	...	...	.....	.....	.	.....
4066	1985 NOV 26	09:27:49.85	44.661	-111.014	7.00	3.60MD	ESO	.....	..	DG	9	...	.....	.....	.	.....
4067	1985 NOV 26	09:34:41.18	44.658	-111.001	6.00	4.60MD	MSO	.....	..	DG	11	...	.....	.....	.	.....
4068	1985 NOV 26	12:09:39.20	44.729	-111.164	19.00	2.50MD	ESO	.....	..	DG	...	...	.....	.....	.	.....
4069	1985 NOV 26	15:27:57.90	44.686	-111.008	4.00	2.60MD	ESO	.....	..	DG	...	...	.....	.....	.	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
4070	1985 NOV 26	16:27:56.30	44.670	-111.021	8.00	3.50MD	ESO	.....	..	DG	10	...	.....	.....	.	.....	.....
4071	1985 NOV 26	18:52:23.20	44.739	-111.051	16.00	2.80MD	ESO	.....	..	DG	8	...	.....	.....	.	.....	.....
4072	1985 NOV 27	07:31:49.40	44.662	-111.014	9.00	3.20MD	ESO	.....	..	DG	9	...	.....	.....	.	.....	.....
4073	1985 NOV 27	11:18:35.30	44.726	-111.073	9.00	2.60MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4074	1985 NOV 28	09:19:52.60	44.652	-110.992	7.00	2.90MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4075	1985 NOV 29	06:11:03.00	44.664	-111.011	8.00	3.10MD	ESO	.....	..	DG	9	...	.....	.....	.	.....	.....
4076	1985 NOV 29	07:21:26.10	44.695	-111.045	15.00	3.40UK	GS	.....	..	DG	5	...	.....	.....	.	.....	.....
4077	1985 NOV 29	22:30:36.90	44.657	-111.011	7.00	3.40MD	ESO	.....	..	DG	5	...	.....	.....	.	.....	.....
4078	1985 NOV 30	05:32:36.89	44.358	-110.423	.00	3.30UK	UU	.....	..	DG	...	...	.....	.....	.	.....	.....
4079	1985 NOV 30	06:16:11.70	44.658	-111.004	3.00	2.50MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4080	1985 NOV 30	16:03:29.60	44.669	-111.009	6.00	3.00MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4081	1985 DEC 01	01:05:52.50	44.694	-111.109	14.00	2.90MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4082	1985 DEC 01	01:08:54.10	44.631	-111.017	7.00	3.80MD	ESO	.....	..	DG	8	...	.....	.....	.	.....	.....
4083	1985 DEC 01	12:26:49.50	44.649	-110.997	6.00	2.70MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4084	1985 DEC 01	20:28:04.70	44.074	-114.051	5.00	3.40ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....
4085	1985 DEC 02	14:45:46.20	44.682	-111.046	11.00	2.60MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4086	1985 DEC 03	05:08:23.90	44.678	-111.097	11.00	2.70MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4087	1985 DEC 03	09:07:10.80	44.680	-111.002	6.00	2.50MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4088	1985 DEC 04	01:29:17.20	44.694	-111.039	19.00	2.70UK	GS	.....	..	DG	...	...	.....	.....	.	.....	.....
4089	1985 DEC 04	06:37:52.80	44.644	-111.017	4.00	4.19UK	GS	.....	..	DG	9	...	.....	.....	.	.....	.....
4090	1985 DEC 04	06:42:53.18	44.673	-111.014	.00	3.30MD	BUT	.....	..	DG	...	...	.....	.....	.	.....	.....
4091	1985 DEC 04	06:44:20.50	44.689	-111.027	21.00	3.90MD	BUT	.....	..	DG	5	...	.....	.....	.	.....	.....
4092	1985 DEC 04	07:57:38.60	44.647	-111.002	5.00	2.90MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4093	1985 DEC 04	09:10:30.60	44.624	-110.991	4.00	3.10MD	BUT	.....	..	DG	...	...	.....	.....	.	.....	.....
4094	1985 DEC 04	12:47:29.70	44.652	-111.027	4.00	4.10MD	BUT	.....	..	DG	6	...	.....	.....	.	.....	.....
4095	1985 DEC 04	12:56:16.70	44.634	-110.993	4.00	3.50MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4096	1985 DEC 04	14:12:41.20	44.642	-111.009	3.00	2.90MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4097	1985 DEC 04	14:28:56.20	44.637	-111.005	4.00	3.00MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4098	1985 DEC 04	17:01:55.50	44.662	-111.019	5.00	3.20MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4099	1985 DEC 05	16:12:46.40	42.389	-111.572	7.00	2.90MD	UU	.....	..	SA	...	...	.....	.....	A	.....	.....
4100	1985 DEC 05	20:34:43.44	44.654	-111.020	.00	3.40MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
4101	1985 DEC 05	21:58:10.90	44.734	-111.107	1.00	3.00MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
4102	1985 DEC 06	10:19:35.80	44.631	-111.022	9.00	3.40MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
4103	1985 DEC 06	14:59:48.10	44.642	-110.986	4.00	2.50MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4104	1985 DEC 06	15:05:54.00	44.752	-111.122	1.00	2.70MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
4105	1985 DEC 07	04:49:34.80	44.640	-111.006	8.00	2.60MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4106	1985 DEC 07	20:51:14.80	44.654	-110.984	6.00	3.00MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
4107	1985 DEC 08	08:04:53.50	44.647	-110.988	7.00	3.50MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
4108	1985 DEC 08	12:21:04.60	44.648	-110.995	6.00	2.90MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
4109	1985 DEC 08	20:12:38.70	44.661	-110.989	7.00	2.80MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
4110	1985 DEC 09	04:58:33.80	44.649	-110.987	6.00	3.00MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
4111	1985 DEC 09	12:49:26.20	44.657	-110.995	9.00	2.50MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4112	1985 DEC 09	21:38:57.80	44.646	-110.993	8.00	3.50MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
4113	1985 DEC 10	04:13:12.30	44.641	-110.991	8.00	3.30MD	MSO	.....	..	DG	...	...	.....	.....	.	.....	.....
4114	1985 DEC 12	09:53:31.50	44.713	-111.125	12.00	2.50MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4115	1985 DEC 12	10:26:42.30	44.617	-112.900	.00	3.10MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4116	1985 DEC 12	11:27:37.40	44.525	-114.095	9.00	2.70ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
4117	1985 DEC 12	19:27:20.60	44.645	-111.001	6.00	2.60MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4118	1985 DEC 13	11:47:37.50	44.645	-111.001	7.00	3.00MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4119	1985 DEC 14	14:02:23.80	44.326	-114.204	5.00	2.70ML	GS	.....	..	SA	...	...	.....	.....	C	.....	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
4120	1985 DEC 15	01:42:04.60	44.624	-110.993	6.00	3.80MD	ESO	.....	..	DG	6	...	.....	.....	.	.....	.....
4121	1985 DEC 15	02:01:52.40	44.647	-110.992	7.00	2.90MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4122	1985 DEC 15	08:25:55.50	44.790	-111.114	1.00	2.60MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4123	1985 DEC 15	12:03:06.30	44.701	-111.030	11.00	2.80MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4124	1985 DEC 16	01:25:50.40	44.645	-110.995	7.00	2.80MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4125	1985 DEC 16	02:56:32.98	44.644	-111.018	.00	3.30MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4126	1985 DEC 16	07:39:03.30	44.649	-110.986	7.00	2.90MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4127	1985 DEC 16	14:33:16.80	44.687	-111.030	18.00	2.60MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4128	1985 DEC 16	14:53:56.00	44.743	-111.177	1.00	2.80MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4129	1985 DEC 16	16:59:59.70	44.634	-111.084	5.00	2.70ML	GS	.....	..	SA	...	...	.....	.....	B	.....	.....
4130	1985 DEC 16	17:00:00.10	44.644	-110.972	5.00	2.80MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4131	1985 DEC 17	06:27:17.60	44.633	-110.988	6.00	3.00MD	ESO	.....	..	DG	9	...	.....	.....	.	.....	.....
4132	1985 DEC 17	08:20:38.00	44.640	-110.985	5.00	2.70MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4133	1985 DEC 18	06:46:00.10	44.631	-110.987	9.00	3.00MD	ESO	.....	..	DG	7	...	.....	.....	.	.....	.....
4134	1985 DEC 18	17:23:16.90	44.645	-110.986	8.00	3.00MD	ESO	.....	..	DG	9	...	.....	.....	.	.....	.....
4135	1985 DEC 18	19:28:23.80	44.652	-111.009	6.00	3.10MD	ESO	.....	..	DG	9	...	.....	.....	.	.....	.....
4136	1985 DEC 20	01:45:09.30	44.648	-110.994	9.00	2.70MD	ESO	.....	..	DG	9	...	.....	.....	.	.....	.....
4137	1985 DEC 20	02:31:49.30	44.744	-111.187	1.00	2.70MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4138	1985 DEC 20	04:52:03.80	44.632	-110.992	10.00	3.10MD	ESO	.....	..	DG	10	...	.....	.....	.	.....	.....
4139	1985 DEC 20	10:57:21.50	44.641	-110.992	7.00	2.90MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4140	1985 DEC 21	00:53:01.90	44.664	-111.007	7.00	2.60MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4141	1985 DEC 22	01:57:11.00	44.751	-111.103	5.00	2.70MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4142	1985 DEC 22	08:01:42.20	44.404	-114.037	19.00	3.00ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
4143	1985 DEC 22	12:21:30.30	44.565	-114.018	1.00	2.90ML	MMT	.....	..	SA	...	...	.....	.....	C	.....	.....
4144	1985 DEC 24	04:12:38.20	44.640	-110.988	9.00	2.80MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4145	1985 DEC 24	11:55:13.70	44.707	-111.081	13.00	2.50MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4146	1985 DEC 24	18:59:02.30	44.636	-111.997	10.00	2.90MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4147	1985 DEC 25	11:17:18.80	44.695	-111.049	14.00	2.90MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4148	1985 DEC 25	21:39:27.80	44.642	-111.004	6.00	2.70MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4149	1985 DEC 26	11:56:35.10	44.635	-111.015	7.00	2.80MD	ESO	.....	..	DG	9	...	.....	.....	.	.....	.....
4150	1985 DEC 26	18:40:50.50	44.714	-111.042	15.00	2.80UK	GS	.....	..	DG	9	...	.....	.....	.	.....	.....
4151	1985 DEC 27	18:31:54.80	44.632	-111.003	5.00	3.30MD	ESO	.....	..	DG	10	...	.....	.....	.	.....	.....
4152	1985 DEC 29	01:53:19.80	44.697	-111.087	5.00	2.70MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4153	1985 DEC 31	21:32:12.00	44.614	-110.978	1.00	2.50MD	ESO	.....	..	DG	...	...	.....	.....	.	.....	.....
4154	1986 JAN 02	15:53:40.78	44.623	-110.989	8.34	3.04MU	GX	2.85MD	UU	..	UU	21	54	10.7	.07	A	.2 .1
4155	1986 JAN 02	20:04:05.60	44.639	-110.982	10.20	3.07MU	GX	2.90MD	BT	..	UU	8	78	9.0	.17	.	.0 .0
4156	1986 JAN 04	03:14:41.70	44.640	-110.990	11.80	2.97MU	GX	2.70MD	BT	..	UU	8	79	10.0	.10	.	.0 .0
4157	1986 JAN 05	01:54:33.00	44.305	-114.138	13.30	3.01MU	GX	2.80MD	EO	..	MB	11	257	106.3	.29	D	2.8 4.8
4158	1986 JAN 06	04:52:04.60	44.092	-113.941	24.40	2.92MU	GX	2.60MD	EO	..	MB	11	253	79.8	.08	C	.7 .7
4159	1986 JAN 08	07:32:25.64	44.627	-110.995	7.13	2.93MU	GX	2.62MD	UU	..	UU	18	83	11.1	.05	A	.2 .3
4160	1986 JAN 08	11:08:15.60	44.623	-110.988	7.94	3.00MU	GX	2.78MD	UU	..	UU	18	73	10.7	.05	A	.2 .3
4161	1986 JAN 08	13:36:28.50	44.635	-110.999	7.50	3.42MU	GX	3.40MD	BT	..	UU	9	145	11.0	.12	.	.0 .0
4162	1986 JAN 09	19:16:47.60	44.654	-111.008	6.90	2.92MU	GX	2.60MD	EO	..	UU	11	85	9.1	.20	.	.7 3.0
4163	1986 JAN 09	20:46:40.50	44.647	-111.007	7.40	3.20MU	GX	3.10MD	EO	..	UU	12	91	8.7	.17	.	.6 2.1
4164	1986 JAN 11	19:24:55.50	44.654	-113.902	1.10	3.01MU	GX	2.80MD	EO	..	MB	16	199	86.4	.32	D	1.8 2.8
4165	1986 JAN 14	01:50:37.69	44.643	-110.997	7.94	2.97MU	GX	2.70MD	UU	..	UU	18	62	11.0	.06	A	.2 .2
4166	1986 JAN 14	16:46:29.74	44.659	-111.013	7.70	3.09MU	GX	2.93MD	UU	..	UU	22	53	9.1	.04	A	.1 .3
4167	1986 JAN 15	16:05:04.90	44.813	-114.489	9.90	3.01MU	GX	2.80MD	EO	..	MB	12	221	128.1	.30	C	2.5 4.3
4168	1986 JAN 15	21:10:17.83	44.632	-110.990	7.83	2.94MU	GX	2.63MD	UU	..	UU	15	81	10.6	.04	A	.2 .3
4169	1986 JAN 16	02:02:00.40	44.454	-114.168	19.20	3.59MU	GX	3.60MD	BT	..	MB	21	214	114.6	.21	C	1.6 1.7

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
4170	1986 JAN 16	10:29:47.61	44.624	-110.992	7.45	3.11MU GX	2.96MD UU	..	...	UU	17	71	10.9	.04	A	.1	.3
4171	1986 JAN 16	11:27:54.00	44.476	-114.108	13.10	3.01MU GX	2.80MD BT	..	...	MB	11	259	109.3	.18	C	1.7	2.2
4172	1986 JAN 18	05:27:21.40	44.628	-110.997	6.90	3.01MU GX	2.80MD BT	..	...	UU	10	149	11.2	.22	.	.9	4.4
4173	1986 JAN 18	14:39:50.30	44.412	-113.802	27.70	3.07MU GX	2.90MD EO	..	...	MB	10	246	92.4	.14	C	2.0	1.5
4174	1986 JAN 18	22:51:41.50	44.625	-110.993	7.10	3.01MU GX	2.80MD BT	..	...	UU	12	149	11.0	.16	.	.6	2.4
4175	1986 JAN 25	12:51:04.50	44.660	-110.995	11.20	3.01MU GX	2.80MD BT	..	...	UU	7	135	11.0	.13	.	.0	.0
4176	1986 JAN 25	20:01:56.00	44.657	-110.998	8.70	2.97MU GX	2.70MD BT	..	...	UU	11	84	9.9	.13	.	.5	1.8
4177	1986 JAN 28	05:45:03.00	44.149	-113.902	10.70	4.30MU GX	4.30MD BT	..	...	MB	20	109	80.8	.40	D	1.7	2.7
4178	1986 JAN 28	06:14:52.11	44.123	-113.900	5.00	3.02MU GX	2.82MD UU	..	...	IN	8	144	111.3	.25	C	1.6	4.2
4179	1986 JAN 28	07:15:34.50	44.156	-113.935	17.70	3.68MU GX	3.70MD EO	..	...	MB	13	109	115.8	.27	C	1.9	3.4
4180	1986 JAN 28	07:26:57.50	44.111	-113.901	24.50	3.51MU GX	3.50MD EO	..	...	MB	18	112	110.3	.34	D	1.8	2.1
4181	1986 JAN 30	09:50:52.98	42.344	-111.390	1.27	2.60MU GX	2.50ML UU	..	...	UU	24	111	41.0	.23	.	.8	1.2
4182	1986 JAN 30	11:47:55.30	44.780	-111.491	19.80	2.89MU GX	2.50MD EO	..	...	MB	12	270	110.4	.28	D	2.2	5.7
4183	1986 FEB 01	06:09:54.72	44.631	-110.990	7.99	2.97MU GX	2.70MD UU	..	...	UU	17	69	10.6	.07	A	.2	.3
4184	1986 FEB 01	12:12:43.38	44.262	-114.021	7.93	3.00MU GX	2.78MD UU	..	...	IN	9	171	96.1	.30	C	2.1	3.5
4185	1986 FEB 04	05:41:45.30	44.665	-111.012	5.30	3.07MU GX	2.90MD EO	..	...	UU	8	94	10.0	.12	.	.0	.0
4186	1986 FEB 05	14:26:19.18	44.645	-111.011	5.51	3.32MU GX	3.27MD UU	..	...	UU	26	53	12.7	.07	A	.2	.5
4187	1986 FEB 05	14:37:01.63	44.646	-111.017	6.02	2.97MU GX	2.71MD UU	..	...	UU	22	98	12.5	.06	A	.2	.4
4188	1986 FEB 05	15:25:28.10	44.234	-114.006	18.00	3.35MU GX	3.30MD BT	..	...	MB	14	215	93.1	.27	C	2.2	2.9
4189	1986 FEB 06	13:22:03.06	44.623	-111.030	6.38	3.21MU GX	3.11MD UU	..	...	UU	12	163	20.1	.03	A	.4	.4
4190	1986 FEB 07	14:29:11.20	44.653	-111.013	6.70	3.07MU GX	2.90MD EO	..	...	UU	17	56	11.8	.25	.	.6	2.9
4191	1986 FEB 08	01:01:13.58	43.306	-110.847	.43	3.50MU GX	3.50ML UU	..	...	UU	12	95	66.0	.43	.	2.7	6.1
4192	1986 FEB 08	01:49:22.70	44.628	-111.004	3.90	2.89MU GX	2.50MD BT	..	...	UU	13	150	11.7	.28	.	.9	1.7
4193	1986 FEB 09	07:03:51.30	44.363	-113.930	29.30	3.20MU GX	3.10MD EO	..	...	MB	14	208	98.5	.12	C	1.0	1.1
4194	1986 FEB 10	00:17:43.70	44.644	-114.712	21.30	3.13MU GX	3.00MD EO	..	...	MB	16	270	148.5	.23	C	2.1	1.7
4195	1986 FEB 10	22:50:16.40	44.660	-111.014	9.40	2.89MU GX	2.50MD BT	..	...	UU	17	80	9.1	.26	.	.7	1.3
4196	1986 FEB 11	22:23:20.90	44.651	-111.008	6.60	2.92MU GX	2.60MD BT	..	...	UU	11	87	8.9	.15	.	.6	2.3
4197	1986 FEB 11	22:26:09.10	44.645	-111.015	9.00	3.27MU GX	3.20MD BT	..	...	UU	12	66	8.0	.14	.	.6	1.9
4198	1986 FEB 11	22:26:55.42	44.647	-111.005	7.12	4.35MU GX	4.35MD UU	..	...	UU	23	42	8.9	.06	A	.2	.4
4199	1986 FEB 11	22:27:56.49	44.619	-110.997	6.31	3.96MU GX	3.99MD UU	..	...	UU	11	83	8.3	.10	A	.5	1.0
4200	1986 FEB 11	22:34:07.00	44.659	-111.002	3.90	3.07MU GX	2.90MD BT	..	...	UU	13	83	9.8	.27	.	.8	1.7
4201	1986 FEB 12	16:20:18.50	44.658	-111.009	9.90	2.92MU GX	2.60MD BT	..	...	UU	12	139	11.3	.37	.	1.5	4.1
4202	1986 FEB 16	02:11:10.00	44.648	-111.012	7.00	3.07MU GX	2.90MD EO	..	...	UU	13	62	12.1	.14	.	.4	2.8
4203	1986 FEB 16	12:54:44.00	44.627	-114.088	13.20	3.13MU GX	3.00MD EO	..	...	MB	12	255	101.2	.18	C	1.5	2.2
4204	1986 FEB 17	08:53:39.32	42.543	-111.328	2.79	3.10MU GX	3.10ML UU	..	...	UU	28	172	60.4	.36	.	1.1	1.5
4205	1986 FEB 22	18:07:18.70	44.578	-114.232	10.20	3.13MU GX	3.00MD EO	..	...	MB	10	257	132.4	.30	D	4.9	6.2
4206	1986 FEB 23	15:25:54.70	44.963	-111.955	20.60	2.92MU GX	2.60MD BT	..	...	MB	10	334	97.5	.26	D	3.9	6.6
4207	1986 FEB 24	03:13:34.93	43.184	-111.200	5.57	3.10MU GX	3.10ML UU	..	...	UU	17	79	59.7	.23	.	.7	4.9
4208	1986 FEB 26	15:05:51.70	44.595	-114.125	23.60	3.77MU GX	3.80MD EO	..	...	MB	13	209	127.9	.28	D	2.8	2.7
4209	1986 FEB 27	04:00:18.40	44.634	-114.107	19.00	2.97MU GX	2.70MD EO	..	...	MB	11	252	128.8	.26	D	3.7	6.3
4210	1986 FEB 28	22:09:10.10	44.328	-114.080	22.50	2.92MU GX	2.60MD BT	..	...	MB	8	254	104.4	.21	D	3.5	5.8
4211	1986 MAR 02	10:55:25.27	44.654	-111.012	7.15	3.27MU GX	3.19MD UU	..	...	UU	21	53	11.7	.05	A	.2	.3
4212	1986 MAR 02	11:23:26.50	44.646	-111.019	5.60	3.07MU GX	2.90MD BT	..	...	UU	17	54	7.9	.26	.	.6	1.3
4213	1986 MAR 02	12:59:36.35	44.653	-111.009	7.37	3.10MU GX	2.94MD UU	..	...	UU	17	83	11.7	.04	A	.2	.3
4214	1986 MAR 03	14:56:05.60	45.083	-114.203	20.60	2.97MU GX	2.70MD EO	..	...	MB	8	221	159.7	.28	D	3.2	4.0
4215	1986 MAR 03	22:14:16.30	44.713	-111.002	10.90	2.92MU GX	2.60MD MO	..	...	MB	12	323	142.7	.30	D	3.8	4.4
4216	1986 MAR 05	03:01:55.20	44.882	-111.717	3.50	2.89MU GX	2.50MD BT	..	...	MB	10	316	107.0	.18	D	2.9	3.8
4217	1986 MAR 06	15:11:54.50	44.697	-112.500	9.10	3.07MU GX	2.90MD EO	..	...	MB	28	126	68.6	.28	C	1.1	2.5
4218	1986 MAR 07	19:32:09.07	44.645	-111.003	6.95	3.08MU GX	2.91MD UU	..	...	UU	19	99	8.9	.05	A	.2	.4
4219	1986 MAR 08	20:58:35.20	44.397	-113.999	4.20	3.27MU GX	3.20MD EO	..	...	MB	11	244	111.0	.17	C	2.2	2.3

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err	
																Horiz	Vert
4220	1986 MAR 11	22:57:04.90	44.485	-114.146	19.00	3.27MU GX	3.20MD BT	..	...	MB	16	213	111.6	.23	C	1.9	2.4
4221	1986 MAR 12	12:42:35.90	44.783	-112.813	5.70	3.13MU GX	3.00MD BT	..	...	MB	16	142	15.5	.25	C	2.1	1.6
4222	1986 MAR 17	23:18:14.02	43.214	-110.939	5.47	2.98MU GX	2.73MD UU	..	...	UU	15	88	75.9	.32	.	.9	4.4
4223	1986 MAR 18	23:53:36.72	44.639	-110.993	7.27	3.02MU GX	2.81MD UU	..	...	UU	17	71	9.2	.05	A	.2	.4
4224	1986 MAR 21	02:06:56.50	44.227	-110.691	.10	3.20MU GX	3.10MD EO	..	...	UU	13	72	37.3	.47	.	1.6	3.9
4225	1986 MAR 21	04:56:00.40	44.295	-114.113	19.40	2.92MU GX	2.60MD BT	..	...	MB	9	256	104.0	.17	C	2.1	2.1
4226	1986 MAR 22	07:33:40.30	44.729	-111.042	8.80	2.89MU GX	2.50MD EO	..	...	MB	12	294	139.6	.21	D	2.9	6.0
4227	1986 MAR 23	14:26:14.10	44.433	-114.104	14.20	3.42MU GX	3.40MD BT	..	...	MB	16	253	111.2	.20	D	2.6	2.5
4228	1986 MAR 25	14:45:54.90	45.937	-112.266	5.20	2.92MU GX	2.60MD EO	..	...	MB	12	93	16.0	.19	C	.9	1.1
4229	1986 MAR 25	22:05:18.80	44.880	-111.564	.50	2.97MU GX	2.70MD BT	..	...	MB	11	261	103.5	.33	D	3.4	3.6
4230	1986 MAR 26	04:15:43.30	44.640	-111.004	7.70	3.01MU GX	2.80MD BT	..	...	UU	15	67	8.6	.27	.	.8	1.8
4231	1986 MAR 29	19:36:57.70	44.582	-112.977	8.30	3.07MU GX	2.90MD BT	..	...	MB	12	187	37.9	.33	D	3.5	3.0
4232	1986 MAR 31	18:13:51.30	44.251	-114.668	34.20	3.07MU GX	2.90MD EO	..	...	MB	11	276	139.5	.12	D	3.4	5.4
4233	1986 APR 04	14:16:35.84	44.640	-110.992	8.09	3.11MU GX	2.96MD UU	..	...	UU	23	72	13.2	.07	A	.2	.0
4234	1986 APR 06	11:05:31.80	44.717	-110.967	18.90	3.01MU GX	2.80MD BT	..	...	MB	9	295	143.7	.15	C	1.5	1.8
4235	1986 APR 06	11:06:23.45	44.638	-110.987	5.60	2.93MU GX	2.61MD UU	..	...	UU	19	101	13.6	.07	A	.3	.8
4236	1986 APR 07	14:07:27.30	44.291	-114.205	20.60	4.50MU GX	4.50MD BT	..	...	MB	14	229	109.7	.12	C	1.5	1.1
4237	1986 APR 08	18:54:27.20	44.646	-111.004	7.80	3.01MU GX	2.80MD BT	..	...	UU	10	100	8.0	.20	.	.0	.0
4238	1986 APR 08	18:55:25.60	44.647	-110.989	11.30	2.97MU GX	2.70MD BT	..	...	UU	7	109	12.0	.24	.	.0	.0
4239	1986 APR 11	09:31:29.10	44.240	-114.004	21.60	2.97MU GX	2.70MD BT	..	...	MB	10	252	93.4	.29	D	4.5	3.4
4240	1986 APR 11	10:13:58.70	44.572	-114.294	18.00	3.20MU GX	3.10MD EO	..	...	MB	11	216	118.8	.21	C	2.1	2.8
4241	1986 APR 12	23:05:47.80	44.644	-111.006	7.70	3.35MU GX	3.30MD BT	..	...	UU	13	72	8.0	.23	.	.0	.0
4242	1986 APR 13	05:02:51.70	44.272	-114.128	25.00	3.68MU GX	3.70MD BT	..	...	MB	20	227	103.5	.08	C	.6	.5
4243	1986 APR 14	10:02:55.50	44.619	-113.992	23.20	3.20MU GX	3.10MD EO	..	...	MB	14	206	94.4	.23	C	2.0	2.2
4244	1986 APR 15	06:05:50.40	44.310	-114.172	16.90	3.68MU GX	3.70MD BT	..	...	MB	20	219	108.8	.21	C	1.5	2.1
4245	1986 APR 16	06:25:29.30	44.251	-114.087	20.00	3.59MU GX	3.60MD BT	..	...	MB	20	218	99.4	.16	C	1.5	1.5
4246	1986 APR 16	17:54:47.20	44.613	-114.423	17.20	3.01MU GX	2.80MD EO	..	...	MB	11	219	127.1	.10	C	1.0	1.7
4247	1986 APR 17	01:15:26.80	44.647	-111.009	8.30	3.01MU GX	2.80MD BT	..	...	UU	15	53	8.0	.22	.	.0	.0
4248	1986 APR 17	03:10:40.40	44.314	-114.114	18.40	3.42MU GX	3.40MD BT	..	...	MB	17	217	105.4	.23	C	1.7	1.8
4249	1986 APR 18	14:17:55.52	44.645	-110.992	7.76	3.25MU GX	3.17MD UU	..	...	UU	25	46	12.7	.09	A	.2	.3
4250	1986 APR 20	02:31:56.60	44.154	-114.946	16.60	3.35MU GX	3.30MD EO	..	...	MB	11	248	156.4	.13	D	3.7	4.3
4251	1986 APR 20	17:12:25.40	44.105	-113.823	21.30	3.07MU GX	2.90MD EO	..	...	MB	15	248	72.8	.16	C	1.3	1.5
4252	1986 APR 23	13:21:01.50	44.468	-114.201	21.90	3.13MU GX	3.00MD BT	..	...	MB	11	221	116.4	.11	C	1.3	1.6
4253	1986 APR 26	01:30:16.50	44.665	-112.869	1.50	3.20MU GX	3.10MD BT	..	...	MB	15	216	27.8	.20	C	2.4	1.7
4254	1986 APR 26	02:51:34.70	44.640	-110.996	8.10	3.13MU GX	3.00MD EO	..	...	UU	11	74	9.0	.16	.	.0	.0
4255	1986 APR 27	13:42:06.79	41.072	-116.246	29.95	2.80MD UNR	.....	..	...	UN	7	332	193.0	.22	D	5.9	.0
4256	1986 APR 28	12:00:23.80	44.492	-114.843	8.40	3.01MU GX	2.80MD BT	..	...	MB	11	277	163.0	.21	C	2.3	3.0
4257	1986 APR 28	12:51:09.60	44.468	-114.896	14.60	3.13MU GX	3.00MD BT	..	...	MB	11	279	166.7	.17	C	1.9	2.5
4258	1986 APR 28	23:38:15.50	44.742	-111.063	3.50	2.92MU GX	2.60MD BT	..	...	MB	14	282	137.6	.13	C	2.0	3.0
4259	1986 APR 29	08:46:23.60	44.626	-110.979	11.00	2.92MU GX	2.60MD BT	..	...	UU	13	80	9.0	.41	.	.0	.0
4260	1986 MAY 02	02:17:45.60	44.638	-112.079	13.10	2.97MU GX	2.70MD BT	..	...	MB	14	110	70.0	.24	C	1.7	3.3
4261	1986 MAY 11	10:04:58.37	44.765	-111.432	8.20	2.91MU GX	2.57MD UU	..	...	UU	8	218	33.7	.11	C	1.1	9.4
4262	1986 MAY 12	09:58:28.20	45.348	-112.415	11.20	3.51MU GX	3.50MD BT	..	...	MB	14	132	52.8	.25	D	2.8	1.8
4263	1986 MAY 15	15:06:26.30	44.687	-114.444	5.40	3.13MU GX	3.00MD EO	..	...	MB	8	218	155.5	.18	D	4.2	5.0
4264	1986 MAY 17	03:52:22.20	44.511	-114.038	9.80	3.07MU GX	2.90MD EO	..	...	MB	8	250	118.2	.14	D	2.6	2.5
4265	1986 MAY 17	04:07:48.70	44.187	-113.947	11.90	3.42MU GX	3.40MD BT	..	...	MB	12	251	102.2	.17	D	3.0	3.8
4266	1986 MAY 19	02:17:10.00	44.583	-115.180	32.00	3.51MU GX	3.50MD EO	..	...	MB	9	255	207.1	.18	D	4.0	7.3
4267	1986 MAY 21	03:04:57.60	44.658	-113.984	5.90	3.13MU GX	3.00MD EO	..	...	MB	8	278	121.6	.23	D	3.5	4.8
4268	1986 MAY 21	03:34:13.50	44.640	-114.036	17.30	2.97MU GX	2.70MD EO	..	...	MB	9	277	124.2	.25	D	4.5	3.6
4269	1986 JUN 02	22:56:38.80	44.259	-114.061	18.00	2.97MU GX	2.70MD EO	..	...	MB	11	254	98.4	.22	D	3.0	2.7

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
4270	1986 JUN 05	20:58:56.50	44.634	-114.440	13.30	2.92MU GX	2.60MD EO	..	...	MB	10	219	127.8	.19	C	2.2	3.6
4271	1986 JUN 07	16:53:45.10	44.749	-111.122	2.30	2.89MU GX	2.50MD BT	..	...	MB	11	280	139.8	.20	D	3.3	4.7
4272	1986 JUN 11	16:44:01.50	44.653	-114.480	19.30	2.92MU GX	2.60MD EO	..	...	MB	10	266	130.4	.23	D	3.1	2.7
4273	1986 JUN 13	20:16:28.90	44.846	-111.584	18.90	3.51MU GX	3.50MD BT	..	...	MB	11	263	102.1	.25	C	2.3	4.8
4274	1986 JUN 20	20:55:47.91	44.779	-111.006	6.39	3.27MU GX	3.19MD UU	..	...	UU	17	92	2.2	.04	A	.2	.2
4275	1986 JUN 21	13:33:48.10	44.675	-111.010	5.80	2.92MU GX	2.60MD BT	..	...	UU	10	108	9.0	.24	.	.0	.0
4276	1986 JUN 21	20:30:52.98	42.735	-111.089	1.23	3.60MU GX	3.60ML UU	..	...	UU	26	101	87.3	.44	.	1.8	2.4
4277	1986 JUN 22	02:02:47.30	45.000	-112.845	5.40	3.27MU GX	3.20MD BT	..	...	MB	17	179	9.7	.28	C	2.6	1.7
4278	1986 JUN 25	23:12:24.60	44.650	-110.985	9.40	2.97MU GX	2.70MD BT	..	...	UU	14	88	10.0	.46	.	.0	.0
4279	1986 JUN 27	04:09:29.49	44.654	-111.007	.12	2.92MU GX	2.60MD UU	..	...	UU	13	287	148.2	.08	B	2.1	1.6
4280	1986 JUN 28	02:13:19.30	44.674	-111.011	8.70	2.89MU GX	2.50MD BT	..	...	UU	10	107	9.0	.09	.	.0	.0
4281	1986 JUN 28	16:26:57.10	44.660	-111.055	26.70	3.07MU GX	2.90MD BT	..	...	MB	11	285	146.7	.09	D	2.9	2.7
4282	1986 JUN 30	16:37:51.40	44.421	-114.129	14.40	2.97MU GX	2.70MD BT	..	...	MB	11	255	113.7	.08	C	.8	1.1
4283	1986 JUL 02	03:30:47.30	44.708	-111.034	19.80	2.97MU GX	2.70MD BT	..	...	MB	10	295	142.0	.14	C	1.5	1.4
4284	1986 JUL 02	05:52:47.20	44.714	-111.054	18.80	2.92MU GX	2.60MD BT	..	...	MB	11	283	140.6	.11	C	1.0	1.1
4285	1986 JUL 04	09:37:12.70	44.664	-114.420	9.30	2.97MU GX	2.70MD EO	..	...	MB	11	264	125.5	.24	D	2.7	3.8
4286	1986 JUL 05	02:18:05.60	44.666	-111.024	9.00	4.00MU GX	4.00MD BT	..	...	UU	18	50	9.0	.20	.	.6	1.0
4287	1986 JUL 05	02:18:61.40	44.825	-111.081	7.00	2.97MU GX	2.70MD BR	..	...	BR	15	326	91.0	.10	.	.3	.0
4288	1986 JUL 05	13:16:16.70	44.750	-111.054	13.10	2.92MU GX	2.60MD BT	..	...	MB	9	293	145.2	.31	D	3.8	6.1
4289	1986 JUL 07	11:53:15.86	43.162	-110.983	11.35	3.13MU GX	3.00MD BR	..	...	BR	23	191	1.0	.09	.	.6	.0
4290	1986 JUL 10	08:07:26.20	44.464	-114.260	18.20	2.97MU GX	2.70MD BT	..	...	MB	13	265	120.8	.25	D	2.7	2.4
4291	1986 JUL 11	21:51:10.33	41.638	-110.499	7.00	2.92MU GX	2.60MD BR	..	...	BR	14	341	172.0	.34	.	3.2	.0
4292	1986 JUL 20	02:29:20.30	44.415	-116.002	5.00	3.68MU GX	3.70MD EO	..	...	NE	13	0	.0	.00	.	.0	.0
4293	1986 JUL 20	12:39:36.40	44.884	-111.668	4.60	2.89MU GX	2.50MD BT	..	...	MB	6	258	95.3	.23	C	2.2	3.8
4294	1986 JUL 20	19:05:32.60	44.455	-116.033	5.00	3.77MU GX	3.80MD BT	..	...	NE	11	0	.0	.00	.	.0	.0
4295	1986 JUL 24	16:59:57.40	44.932	-114.539	24.00	2.89MU GX	2.50MD EO	..	...	MB	9	276	131.6	.11	C	1.5	1.2
4296	1986 JUL 29	12:03:46.50	44.623	-114.150	16.60	2.92MU GX	2.60MD EO	..	...	MB	9	258	106.1	.06	C	.8	1.5
4297	1986 JUL 29	19:04:20.30	44.222	-114.104	23.60	3.68MU GX	3.70MD EO	..	...	MB	9	266	98.6	.15	D	3.1	2.1
4298	1986 JUL 30	08:19:06.49	42.451	-111.218	.43	3.70MU GX	3.70ML UU	..	...	UU	33	106	54.9	.35	.	.9	2.0
4299	1986 AUG 01	00:33:07.90	44.824	-111.549	14.60	2.89MU GX	2.50MD BT	..	...	MB	11	265	105.1	.21	C	2.4	3.5
4300	1986 AUG 03	00:43:24.00	44.427	-113.990	13.40	2.92MU GX	2.60MD BT	..	...	MB	11	256	103.8	.21	C	1.8	2.6
4301	1986 AUG 03	04:48:16.40	44.469	-114.150	14.30	3.07MU GX	2.90MD BT	..	...	MB	12	261	112.7	.15	C	2.2	1.9
4302	1986 AUG 06	09:37:42.10	44.152	-114.612	23.00	3.27MU GX	3.20MD EO	..	...	MB	16	276	131.1	.22	D	2.6	3.1
4303	1986 AUG 06	23:17:19.94	42.968	-110.965	7.00	2.89MU GX	2.50MD BR	..	...	BR	17	309	20.0	.16	.	.1	.0
4304	1986 AUG 10	10:05:58.10	44.512	-114.261	20.20	3.13MU GX	3.00MD BT	..	...	MB	10	264	118.7	.27	D	4.0	4.0
4305	1986 AUG 12	00:23:52.50	44.786	-111.391	20.80	3.01MU GX	2.80MD BT	..	...	MB	10	272	118.0	.26	D	2.8	3.6
4306	1986 AUG 17	08:59:20.70	44.118	-113.967	16.20	2.92MU GX	2.60MD EO	..	...	MB	13	265	83.2	.25	C	2.2	2.6
4307	1986 AUG 18	20:30:21.70	44.460	-114.190	17.90	3.01MU GX	2.80MD BT	..	...	MB	9	288	116.0	.04	C	.7	.9
4308	1986 AUG 24	18:04:25.50	45.802	-111.594	13.00	3.87MU GX	3.90MD EO	..	...	MB	14	129	22.4	.24	B	1.5	1.9
4309	1986 AUG 28	15:12:58.90	44.215	-114.260	19.40	3.01MU GX	2.80MD EO	..	...	MB	11	263	108.7	.14	C	1.9	1.6
4310	1986 AUG 28	15:13:01.20	44.188	-113.940	1.15	2.95MU GX	2.67MD UU	..	...	IN	9	296	84.8	.28	D	7.9	8.4
4311	1986 AUG 29	02:32:31.30	44.714	-111.097	2.20	2.89MU GX	2.50MD BT	..	...	MB	12	282	139.2	.19	D	2.9	3.9
4312	1986 AUG 29	08:26:24.06	42.105	-111.654	.14	3.20MU GX	3.20ML UU	..	...	UU	28	75	34.7	.32	.	1.0	3.1
4313	1986 SEP 03	06:11:12.61	43.995	-114.647	6.00	3.70ML ZOLL	.00	..	...	ZO	9	191	128.0	.06	.	9.0	16.1
4314	1986 SEP 03	14:30:25.45	44.021	-114.658	6.00	2.65ML ZOLL	.00	..	...	ZO	4	154	117.7	.03	.	6.4	30.0
4315	1986 SEP 03	18:48:35.83	44.015	-114.654	6.00	2.70ML ZOLL	.00	..	...	ZO	5	156	117.7	.01	.	6.4	29.8
4316	1986 SEP 03	18:53:49.94	44.002	-114.646	6.00	4.40ML ZOLL	.00	..	...	ZO	12	119	117.6	.08	.	2.3	6.9
4317	1986 SEP 04	00:14:56.80	44.004	-114.640	6.00	3.13ML ZOLL	.00	..	...	ZO	11	136	118.1	.06	.	2.8	9.7
4318	1986 SEP 04	01:10:31.67	44.008	-114.654	6.00	3.26ML ZOLL	.00	..	...	ZO	8	155	117.4	.09	.	3.2	12.3
4319	1986 SEP 04	04:15:57.35	44.009	-114.649	6.00	3.80ML ZOLL	.00	..	...	ZO	10	126	117.8	.09	.	2.9	8.3

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Std-Err Vert
4320	1986 SEP 04	04:38:08.09	44.011	-114.646	6.00	2.65ML ZOLL	.00	..	...	ZO	5	156	118.1	.04	.	6.3	30.3
4321	1986 SEP 04	04:38:21.06	43.998	-114.642	6.00	4.37ML ZOLL	.00	..	...	ZO	15	119	117.7	.08	.	2.0	6.1
4322	1986 SEP 04	12:43:48.32	43.991	-114.633	6.00	3.75ML ZOLL	.00	..	...	ZO	7	148	118.0	.05	.	3.6	11.2
4323	1986 SEP 04	14:25:43.57	44.057	-114.673	6.00	2.57ML ZOLL	.00	..	...	ZO	5	154	118.6	.40	.	9.8	66.0
4324	1986 SEP 04	15:04:58.66	43.994	-114.647	6.00	2.63ML ZOLL	.00	..	...	ZO	5	157	117.1	.05	.	6.4	30.5
4325	1986 SEP 05	06:02:34.27	44.002	-114.644	6.00	2.62ML ZOLL	.00	..	...	ZO	6	149	117.8	.20	.	6.0	41.3
4326	1986 SEP 05	16:05:04.15	44.012	-114.642	6.00	3.87ML ZOLL	.00	..	...	ZO	12	126	118.4	.08	.	2.4	6.8
4327	1986 SEP 05	17:25:47.73	43.980	-114.615	6.00	2.52ML ZOLL	.00	..	...	ZO	4	192	118.7	.03	.	11.9	30.2
4328	1986 SEP 05	19:15:03.95	44.001	-114.640	6.00	3.32ML ZOLL	.00	..	...	ZO	8	136	118.0	.06	.	3.4	9.6
4329	1986 SEP 05	19:20:52.14	44.002	-114.638	6.00	4.44ML ZOLL	.00	..	...	ZO	15	119	118.2	.04	.	1.9	5.9
4330	1986 SEP 05	19:23:51.30	44.017	-114.693	19.20	3.59MU GX	3.60MD BT	..	...	MB	9	153	115.2	.20	C	2.1	2.5
4331	1986 SEP 05	19:38:38.09	44.006	-114.643	6.00	2.65ML ZOLL	.00	..	...	ZO	6	149	118.0	.05	.	4.6	16.0
4332	1986 SEP 05	19:40:03.74	44.031	-114.657	6.00	3.28ML ZOLL	.00	..	...	ZO	7	151	118.3	.16	.	5.5	16.4
4333	1986 SEP 06	02:20:45.10	44.024	-114.660	6.00	2.95ML ZOLL	.00	..	...	ZO	4	154	117.8	.07	.	6.7	31.6
4334	1986 SEP 06	02:31:33.42	44.002	-114.635	6.00	3.14ML ZOLL	.00	..	...	ZO	8	136	118.4	.07	.	3.8	9.0
4335	1986 SEP 06	17:55:22.70	44.012	-114.659	18.70	4.00MU GX	4.00MD BT	..	...	MB	16	133	117.3	.21	C	1.5	2.2
4336	1986 SEP 06	21:40:26.09	44.000	-114.637	6.00	3.57ML ZOLL	.00	..	...	ZO	9	130	127.4	.07	.	3.0	7.5
4337	1986 SEP 07	10:35:52.35	43.999	-114.645	6.00	3.36ML ZOLL	.00	..	...	ZO	10	136	128.0	.05	.	2.8	9.6
4338	1986 SEP 07	11:07:46.34	44.002	-114.639	6.00	3.37ML ZOLL	.00	..	...	ZO	8	129	127.6	.07	.	3.1	6.9
4339	1986 SEP 08	02:12:00.50	45.169	-111.850	1.50	2.89MU GX	2.50MD EO	..	...	MB	13	250	74.4	.22	C	1.6	2.6
4340	1986 SEP 09	09:52:12.38	43.995	-114.634	6.00	2.74ML ZOLL	.00	..	...	ZO	7	149	118.1	.06	.	4.5	30.8
4341	1986 SEP 10	10:05:59.36	44.013	-114.659	6.00	2.80ML ZOLL	.00	..	...	ZO	7	151	117.2	.16	.	6.1	19.6
4342	1986 SEP 10	10:10:50.52	44.033	-114.671	6.00	2.63ML ZOLL	.00	..	...	ZO	5	154	117.5	.11	.	7.2	34.2
4343	1986 SEP 10	20:52:01.06	44.001	-114.644	6.00	2.50ML ZOLL	.00	..	...	ZO	4	190	117.7	.10	.	13.1	33.2
4344	1986 SEP 10	20:52:11.63	44.018	-114.645	6.00	2.90ML ZOLL	.00	..	...	ZO	4	188	118.5	.02	.	12.0	29.9
4345	1986 SEP 10	20:52:13.58	44.000	-114.641	6.00	3.40ML ZOLL	.00	..	...	ZO	4	190	117.8	.09	.	13.2	32.9
4346	1986 SEP 11	00:21:30.80	45.175	-112.341	1.30	2.89MU GX	2.50MD BT	..	...	MB	11	196	51.0	.27	C	1.9	3.9
4347	1986 SEP 11	00:53:48.96	43.995	-114.637	6.00	2.50ML ZOLL	.00	..	...	ZO	4	190	117.9	.03	.	12.1	30.0
4348	1986 SEP 11	02:07:28.56	44.006	-114.650	6.00	4.12ML ZOLL	.00	..	...	ZO	10	126	117.5	.07	.	2.5	8.0
4349	1986 SEP 11	02:12:34.20	44.057	-114.757	10.40	3.35MU GX	3.30MD BT	..	...	MB	11	138	113.1	.29	D	3.3	6.2
4350	1986 SEP 11	03:49:10.09	43.997	-114.646	6.00	3.88ML ZOLL	.00	..	...	ZO	13	128	117.4	.08	.	2.5	6.3
4351	1986 SEP 11	03:55:13.31	43.994	-114.635	6.00	4.52ML ZOLL	.00	..	...	ZO	14	119	118.0	.10	.	2.1	6.7
4352	1986 SEP 11	07:09:24.17	44.018	-114.653	6.00	3.82ML ZOLL	.00	..	...	ZO	9	151	117.9	.05	.	3.3	12.8
4353	1986 SEP 11	08:35:30.66	43.994	-114.633	6.00	3.57ML ZOLL	.00	..	...	ZO	12	128	118.1	.08	.	2.6	6.3
4354	1986 SEP 11	11:23:44.13	44.002	-114.645	6.00	3.38ML ZOLL	.00	..	...	ZO	6	149	117.7	.05	.	4.4	30.4
4355	1986 SEP 12	13:17:01.40	45.140	-111.882	8.20	3.07MU GX	2.90MD BT	..	...	MB	12	227	77.5	.26	C	2.2	2.3
4356	1986 SEP 12	20:02:16.51	44.019	-114.646	6.00	3.27ML ZOLL	.00	..	...	ZO	5	151	118.5	.06	.	5.2	30.6
4357	1986 SEP 14	16:01:51.13	44.001	-114.658	6.00	3.80ML ZOLL	.00	..	...	ZO	8	138	116.7	.10	.	3.1	8.6
4358	1986 SEP 14	21:52:03.01	43.987	-114.643	6.00	3.38ML ZOLL	.00	..	...	ZO	6	167	117.1	.08	.	4.7	14.1
4359	1986 SEP 14	22:10:30.61	44.012	-114.660	6.00	2.84ML ZOLL	.00	..	...	ZO	5	188	117.1	.06	.	11.8	27.2
4360	1986 SEP 16	20:59:25.38	44.027	-114.679	6.00	2.90ML ZOLL	.00	..	...	ZO	4	187	116.6	.08	.	12.3	32.3
4361	1986 SEP 16	21:00:16.30	44.012	-114.642	6.00	2.50ML ZOLL	.00	..	...	ZO	4	189	118.4	.02	.	11.5	29.9
4362	1986 SEP 16	21:17:29.53	43.997	-114.633	6.00	2.83ML ZOLL	.00	..	...	ZO	4	190	118.2	.01	.	12.0	29.8
4363	1986 SEP 16	21:41:46.10	44.005	-114.648	6.00	2.83ML ZOLL	.00	..	...	ZO	6	149	117.6	.05	.	4.4	19.7
4364	1986 SEP 16	23:26:11.22	43.998	-114.646	6.00	2.80ML ZOLL	.00	..	...	ZO	6	149	117.4	.06	.	4.6	20.4
4365	1986 SEP 17	01:10:59.86	44.002	-114.655	6.00	2.85ML ZOLL	.00	..	...	ZO	4	189	116.9	.05	.	11.8	30.9
4366	1986 SEP 18	00:01:33.50	44.003	-114.631	6.00	2.53ML ZOLL	.00	..	...	ZO	4	182	118.7	.01	.	11.8	29.8
4367	1986 SEP 18	15:47:31.52	43.971	-114.651	6.00	3.13ML ZOLL	.00	..	...	ZO	7	136	115.7	.13	.	4.7	13.2
4368	1986 SEP 18	23:07:34.49	44.019	-114.641	6.00	3.07ML ZOLL	.00	..	...	ZO	4	184	118.8	.02	.	11.8	29.9
4369	1986 SEP 21	21:48:48.11	44.006	-114.663	6.00	2.80ML ZOLL	.00	..	...	ZO	8	150	116.6	.13	.	4.2	17.9

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
4370	1986 SEP 22	05:38:53.09	43.998	-114.655	6.00	3.82ML	ZOLL	.00	..	ZO	13	119	116.8	.09	.	2.2	6.5
4371	1986 SEP 24	01:50:56.43	43.966	-114.629	6.00	3.03ML	ZOLL	.00	..	ZO	4	193	117.0	.00	.	11.8	29.8
4372	1986 SEP 24	15:32:27.83	43.998	-114.656	6.00	4.23ML	ZOLL	.00	..	ZO	12	119	116.7	.07	.	2.1	7.5
4373	1986 SEP 24	15:47:34.11	44.012	-114.664	6.00	2.63ML	ZOLL	.00	..	ZO	5	151	116.8	.14	.	5.8	36.4
4374	1986 SEP 24	15:50:46.53	43.990	-114.654	6.00	3.42ML	ZOLL	.00	..	ZO	9	140	116.4	.05	.	3.5	11.7
4375	1986 SEP 24	15:55:37.36	43.910	-114.642	6.00	2.97ML	ZOLL	.00	..	ZO	5	165	113.5	.23	.	9.6	45.0
4376	1986 SEP 24	22:57:57.04	43.986	-114.657	6.00	2.52ML	ZOLL	.00	..	ZO	4	158	116.0	.02	.	6.5	29.9
4377	1986 SEP 25	11:26:32.39	43.997	-114.663	6.00	3.23ML	ZOLL	.00	..	ZO	8	136	116.1	.09	.	3.5	12.6
4378	1986 SEP 25	11:32:21.96	43.978	-114.643	6.00	3.02ML	ZOLL	.00	..	ZO	5	159	116.6	.19	.	8.6	41.5
4379	1986 SEP 26	20:13:07.21	44.009	-114.664	6.00	2.80ML	ZOLL	.00	..	ZO	4	156	116.7	.04	.	6.6	30.4
4380	1986 SEP 26	21:28:10.04	43.996	-114.658	6.00	4.70ML	ZOLL	.00	..	ZO	12	119	116.4	.11	.	2.2	7.3
4381	1986 SEP 26	21:34:32.33	43.993	-114.652	6.00	3.20ML	ZOLL	.00	..	ZO	7	157	116.7	.06	.	5.2	10.4
4382	1986 SEP 26	22:09:49.50	44.003	-114.664	6.00	3.83ML	ZOLL	.00	..	ZO	9	149	116.4	.07	.	2.8	15.8
4383	1986 SEP 26	22:13:44.37	44.001	-114.655	6.00	2.75ML	ZOLL	.00	..	ZO	5	149	116.9	.05	.	4.8	30.6
4384	1986 SEP 26	22:48:58.94	43.998	-114.655	6.00	4.90ML	ZOLL	.00	..	ZO	13	119	116.8	.10	.	2.1	7.1
4385	1986 SEP 26	22:51:24.55	43.971	-114.632	6.00	3.40ML	ZOLL	.00	..	ZO	5	192	117.1	.09	.	10.7	17.1
4386	1986 SEP 26	22:56:10.57	44.006	-114.655	6.00	3.55ML	ZOLL	.00	..	ZO	8	149	117.1	.04	.	4.1	15.3
4387	1986 SEP 27	00:23:00.08	43.996	-114.656	6.00	3.10ML	ZOLL	.00	..	ZO	4	190	116.6	.08	.	12.6	32.0
4388	1986 SEP 27	13:02:03.07	44.001	-114.668	6.00	3.55ML	ZOLL	.00	..	ZO	12	127	116.0	.14	.	2.7	7.5
4389	1986 SEP 27	17:08:06.03	44.035	-114.682	6.00	2.52ML	ZOLL	.00	..	ZO	6	153	116.9	.06	.	4.6	31.0
4390	1986 SEP 27	18:56:18.75	44.003	-114.664	6.00	3.66ML	ZOLL	.00	..	ZO	10	136	116.3	.09	.	3.1	12.2
4391	1986 SEP 27	18:59:11.16	43.995	-114.656	6.00	4.16ML	ZOLL	.00	..	ZO	11	139	116.6	.07	.	2.5	7.9
4392	1986 SEP 28	11:07:32.16	44.016	-114.655	6.00	3.05ML	ZOLL	.00	..	ZO	7	151	117.7	.05	.	4.1	25.4
4393	1986 SEP 28	11:51:09.45	44.001	-114.665	6.00	3.05ML	ZOLL	.00	..	ZO	5	156	116.2	.11	.	7.0	34.0
4394	1986 SEP 28	14:02:38.97	44.000	-114.666	6.00	2.65ML	ZOLL	.00	..	ZO	6	149	116.1	.06	.	4.5	31.1
4395	1986 SEP 28	14:04:03.67	44.000	-114.669	6.00	2.55ML	ZOLL	.00	..	ZO	8	149	115.8	.10	.	3.9	16.6
4396	1986 SEP 29	15:45:07.72	44.013	-114.676	6.00	3.40ML	ZOLL	.00	..	ZO	9	151	116.1	.12	.	4.0	14.8
4397	1986 SEP 29	19:15:54.37	44.002	-114.643	6.00	2.90ML	ZOLL	.00	..	ZO	5	157	117.9	.03	.	6.3	30.0
4398	1986 SEP 30	11:33:33.80	44.380	-114.222	11.90	3.20MU	GX	3.10MD	EO	..	19	144	116.8	.21	C	1.1	2.3
4399	1986 SEP 30	16:11:55.90	44.007	-113.866	17.90	4.00MU	GX	4.00MD	BT	..	19	120	69.9	.30	C	1.5	3.0
4400	1986 OCT 01	02:09:31.27	43.967	-114.634	6.00	2.50ML	ZOLL	.00	..	ZO	5	192	116.7	.01	.	11.5	29.8
4401	1986 OCT 01	07:20:29.64	43.978	-114.780	5.00	3.00ML	GS	.00	..	PE	7	...	.....	.....	.	.....	.....
4402	1986 OCT 01	15:34:23.06	40.733	-116.202	1.06	3.20MD	UNR	.....	..	UN	13	297	92.0	.33	D	7.8	4.8
4403	1986 OCT 02	02:43:37.44	41.115	-116.469	29.21	2.90MD	UNR	.....	..	UN	6	348	98.0	.35	D	13.7	.0
4404	1986 OCT 02	09:02:24.60	44.405	-114.054	22.10	3.42MU	GX	3.40MD	BT	..	15	252	108.7	.21	C	2.4	2.0
4405	1986 OCT 03	18:58:35.20	44.358	-112.596	15.70	2.97MU	GX	2.70MD	EO	..	12	151	30.2	.18	C	2.1	1.5
4406	1986 OCT 09	09:42:42.70	43.997	-114.640	6.00	3.60ML	ZOLL	.00	..	ZO	10	87	3.7	.06	.	1.9	1.3
4407	1986 OCT 14	12:17:55.70	44.011	-114.676	17.50	4.10MU	GX	4.10MD	BT	..	10	136	116.1	.10	C	1.0	2.1
4408	1986 OCT 14	12:32:21.37	44.011	-114.661	6.00	2.55ML	ZOLL	.00	..	ZO	7	150	117.0	.12	.	4.4	34.5
4409	1986 OCT 14	13:10:10.49	44.000	-114.646	6.00	4.37ML	ZOLL	.00	..	ZO	23	119	10.3	.09	.	1.5	2.2
4410	1986 OCT 14	13:43:48.14	43.998	-114.635	6.00	4.17ML	ZOLL	.00	..	ZO	26	119	118.2	.03	.	1.4	5.8
4411	1986 OCT 14	13:54:09.47	43.994	-114.669	6.00	3.30ML	ZOLL	.00	..	ZO	8	149	115.6	.04	.	3.8	30.3
4412	1986 OCT 18	21:21:28.96	42.023	-111.461	.40	3.50MU	GX	3.50ML	UU	..	24	149	20.1	.35	.	1.1	2.6
4413	1986 OCT 19	00:32:29.80	44.914	-111.888	1.00	2.97MU	GX	2.70MD	EO	..	13	249	77.9	.23	C	2.3	2.6
4414	1986 OCT 25	20:27:23.94	44.005	-114.653	6.00	3.50ML	ZOLL	.00	..	ZO	11	96	3.8	.09	.	1.9	1.3
4415	1986 NOV 01	01:39:12.60	44.399	-114.049	27.00	3.07MU	GX	2.90MD	BT	..	8	258	107.8	.06	C	1.3	1.3
4416	1986 NOV 03	17:08:19.50	44.010	-114.579	14.90	3.42MU	GX	3.40MD	BT	..	11	290	123.5	.36	D	4.0	4.9
4417	1986 NOV 04	08:46:04.10	44.156	-113.959	21.00	3.42MU	GX	3.40MD	EO	..	15	253	85.0	.27	D	3.1	2.3
4418	1986 NOV 05	02:26:15.55	44.545	-110.946	2.41	2.91MU	GX	2.57MD	UU	..	6	158	13.3	.05	C	.2	7.0
4419	1986 NOV 07	12:44:14.00	44.052	-114.576	5.70	3.51MU	GX	3.50MD	EO	..	13	277	124.6	.24	D	3.6	4.0

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
4420	1986 NOV 09	14:02:29.40	44.044	-114.577	12.10	3.87MU GX	3.90MD EO	..	...	MB	12	277	124.4	.26	D	4.9	5.0
4421	1986 NOV 09	14:15:40.00	44.036	-114.620	11.80	3.35MU GX	3.30MD BT	..	...	MB	9	279	127.5	.16	D	4.4	4.9
4422	1986 NOV 09	19:11:48.00	44.644	-110.238	.40	3.13MU GX	3.00MD EO	..	...	UU	14	96	3.0	.34	.	1.3	6.7
4423	1986 NOV 12	07:12:47.58	44.004	-114.715	5.00	3.00ML GS	.00	..	...	PE	5	...	.....	.....	.	.....	.....
4424	1986 NOV 13	17:05:34.50	42.668	-111.656	2.70	3.16MU GX	3.04MD UU	..	...	UU	23	102	62.3	.36	.	1.2	1.7
4425	1986 NOV 14	22:00:50.30	44.671	-111.090	18.40	2.89MU GX	2.50MD EO	..	...	MB	9	323	164.6	.25	D	2.6	3.2
4426	1986 NOV 15	00:56:56.77	44.670	-111.015	7.19	3.51MU GX	3.50MD UU	..	...	UU	22	74	9.9	.05	A	.2	.3
4427	1986 NOV 15	09:00:13.76	42.696	-111.640	.20	3.27MU GX	3.20MD UU	..	...	UU	25	138	62.6	.41	.	1.4	3.4
4428	1986 NOV 17	08:34:13.32	43.172	-110.896	.09	3.15MU GX	3.02MD UU	..	...	UU	23	89	40.3	.43	.	1.4	2.5
4429	1986 NOV 17	09:06:28.29	43.195	-110.929	.83	3.65MU GX	3.67MD UU	..	...	UU	23	170	36.7	.32	.	2.2	3.2
4430	1986 NOV 17	15:22:20.50	44.657	-111.095	18.40	2.92MU GX	2.60MD EO	..	...	MB	12	323	145.0	.30	D	3.2	2.2
4431	1986 NOV 21	08:07:55.00	44.523	-114.025	5.90	2.97MU GX	2.70MD EO	..	...	MB	15	250	116.8	.28	D	2.7	2.6
4432	1986 NOV 21	16:11:00.00	44.678	-111.024	7.40	3.01MU GX	2.80MD EO	..	...	UU	13	72	9.0	.15	.	.0	.0
4433	1986 NOV 23	06:03:09.90	44.758	-114.387	16.30	3.20MU GX	3.10MD EO	..	...	MB	14	260	155.0	.17	D	2.7	2.1
4434	1986 NOV 23	23:14:47.60	44.671	-111.027	7.50	2.97MU GX	2.70MD BT	..	...	UU	12	75	9.0	.16	.	.0	.0
4435	1986 NOV 24	02:10:58.70	44.674	-111.021	6.60	2.97MU GX	2.70MD EO	..	...	UU	12	80	9.0	.16	.	.0	.0
4436	1986 NOV 24	04:29:47.50	44.671	-111.026	7.10	2.89MU GX	2.50MD EO	..	...	UU	13	75	9.0	.14	.	.0	.0
4437	1986 NOV 24	06:31:50.16	44.664	-111.019	7.65	3.54MU GX	3.54MD UU	..	...	UU	22	77	9.2	.07	A	.2	.3
4438	1986 NOV 25	04:46:53.80	44.671	-111.032	6.10	2.89MU GX	2.50MD BT	..	...	UU	12	75	9.0	.19	.	.0	.0
4439	1986 NOV 25	20:45:25.18	44.665	-111.014	7.04	3.44MU GX	3.42MD UU	..	...	UU	21	77	9.5	.06	A	.1	.3
4440	1986 NOV 26	00:13:10.11	42.485	-111.259	1.14	3.50MU GX	3.50ML UU	..	...	UU	22	101	58.7	.39	.	1.3	2.4
4441	1986 NOV 27	14:27:01.90	45.999	-111.231	8.40	2.89MU GX	2.50MD BT	..	...	MB	8	246	16.7	.25	D	3.3	4.0
4442	1986 NOV 30	14:03:04.40	44.668	-111.028	7.10	2.97MU GX	2.70MD EO	..	...	UU	13	76	9.0	.19	.	.0	.0
4443	1986 NOV 30	20:07:27.21	44.663	-111.018	5.77	2.92MU GX	2.60MD UU	..	...	UU	23	78	9.1	.07	A	.1	.1
4444	1986 NOV 30	22:16:52.80	44.669	-111.038	7.30	2.89MU GX	2.50MD EO	..	...	UU	13	75	8.0	.30	.	.0	.0
4445	1986 DEC 01	16:09:37.84	44.666	-111.015	6.70	3.01MU GX	2.80MD UU	..	...	UU	22	76	9.5	.05	A	.2	.3
4446	1986 DEC 01	19:42:26.33	44.667	-111.015	4.08	2.90MU GX	2.55MD UU	..	...	UU	23	76	10.3	.14	A	.3	.1
4447	1986 DEC 01	22:45:20.20	44.670	-111.020	6.80	3.01MU GX	2.80MD BT	..	...	UU	12	75	9.0	.14	.	.0	.0
4448	1986 DEC 07	14:32:20.20	44.680	-111.018	7.80	2.92MU GX	2.60MD BT	..	...	UU	14	77	8.0	.24	.	.0	.0
4449	1986 DEC 11	12:35:53.10	44.638	-114.093	10.50	2.97MU GX	2.70MD EO	..	...	MB	13	252	101.3	.32	D	2.6	3.7
4450	1986 DEC 13	18:12:07.70	44.159	-114.008	21.70	3.51MU GX	3.50MD BT	..	...	MB	15	265	88.4	.13	C	1.8	1.0
4451	1986 DEC 14	15:46:07.70	44.668	-111.020	7.60	2.97MU GX	2.70MD EO	..	...	UU	17	62	9.0	.28	.	.0	.0
4452	1986 DEC 15	20:50:31.30	44.393	-113.959	21.80	3.51MU GX	3.50MD BT	..	...	MB	18	248	102.4	.29	C	2.1	2.2
4453	1986 DEC 16	10:56:07.20	43.377	-110.979	9.46	2.89MU GX	2.50MD BR	..	...	BR	18	84	10.0	.05	.	.5	.0
4454	1986 DEC 16	22:38:35.47	43.772	-110.905	7.38	2.97MU GX	2.70MD BR	..	...	BR	25	82	6.0	.06	.	.5	.0
4455	1986 DEC 20	07:18:49.80	44.322	-114.381	17.90	3.13MU GX	3.00MD EO	..	...	MB	18	266	123.2	.25	C	1.8	2.3
4456	1986 DEC 23	02:06:07.60	44.708	-111.052	7.00	2.89MU GX	2.50MD BT	..	...	UU	13	72	6.0	.21	.	.0	.0
4457	1986 DEC 23	21:37:47.33	43.376	-110.974	9.80	3.01MU GX	2.80MD BR	..	...	BR	19	85	10.0	.05	.	.5	.0
4458	1986 DEC 24	07:28:58.49	43.878	-114.848	5.00	3.00ML GS	.00	..	...	PE	5	....	.....	.....	.	.....	.....
4459	1986 DEC 30	09:51:28.38	42.696	-111.262	1.46	3.20MU GX	3.20ML UU	..	...	UU	22	92	77.4	.23	.	.7	1.3
4460	1987 JAN 04	17:09:28.40	44.859	-114.415	17.70	3.01MU GX	2.80MD EO	..	...	MB	13	174	121.9	.13	C	.9	1.6
4461	1987 JAN 05	16:40:35.50	44.212	-110.461	8.76	3.01MU GX	2.80MD UU	..	...	UU	31	121	20.5	.13	A	.4	.3
4462	1987 JAN 12	03:05:14.94	42.775	-111.176	4.65	3.34MU GX	3.29MD UU	..	...	UU	18	164	44.1	.27	.	1.0	1.9
4463	1987 JAN 12	08:10:44.06	44.576	-110.359	1.43	2.91MU GX	2.56MD UU	..	...	UU	5	166	10.0	.10	C	.4	8.6
4464	1987 JAN 13	01:06:44.90	44.772	-114.019	14.20	2.92MU GX	2.60MD EO	..	...	MB	14	171	92.0	.27	C	1.5	3.0
4465	1987 JAN 13	01:26:36.70	44.626	-114.812	16.00	3.27MU GX	3.20MD EO	..	...	MB	22	129	145.8	.25	C	1.4	2.2
4466	1987 JAN 13	13:04:47.50	44.652	-114.778	9.30	3.13MU GX	3.00MD EO	..	...	MB	21	174	149.5	.27	C	1.3	2.3
4467	1987 JAN 14	00:22:24.40	44.597	-114.826	19.50	3.35MU GX	3.30MD EO	..	...	MB	21	172	143.0	.20	C	1.0	1.3
4468	1987 JAN 14	06:52:12.00	44.622	-114.835	17.00	3.59MU GX	3.60MD BT	..	...	MB	24	171	144.1	.31	D	1.3	2.2
4469	1987 JAN 14	11:04:13.20	44.641	-114.835	11.60	3.13MU GX	3.00MD EO	..	...	MB	16	175	145.2	.18	C	1.1	1.9

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Std-Err Vert
4470	1987 JAN 14	13:56:41.50	44.614	-114.819	18.40	2.97MU GX	2.70MD EO	..	...	MB	15	173	144.6	.23	C	1.5	2.0
4471	1987 JAN 15	21:43:29.30	44.019	-114.675	20.20	3.07MU GX	2.90MD EO	..	...	MB	11	154	116.6	.19	C	1.7	2.4
4472	1987 JAN 19	13:24:23.40	43.998	-114.657	16.80	3.35MU GX	3.30MD EO	..	...	MB	15	132	129.2	.30	D	1.6	3.2
4473	1987 JAN 20	08:34:06.80	44.348	-114.233	17.00	3.35MU GX	3.30MD BT	..	...	MB	20	103	115.3	.27	C	1.1	2.4
4474	1987 JAN 22	04:04:43.80	45.260	-111.727	10.70	2.89MU GX	2.50MD BT	..	...	MB	14	152	65.3	.28	C	1.7	1.8
4475	1987 JAN 23	02:26:35.60	44.313	-114.071	12.80	2.97MU GX	2.70MD MO	..	...	MB	13	138	102.7	.31	D	2.1	4.4
4476	1987 JAN 24	16:22:30.80	44.479	-114.083	14.60	2.97MU GX	2.70MD EO	..	...	MB	13	211	107.4	.11	C	.9	1.2
4477	1987 JAN 26	00:57:28.30	44.473	-114.323	20.20	2.97MU GX	2.70MD EO	..	...	MB	12	116	124.9	.26	C	2.2	2.4
4478	1987 FEB 04	02:39:13.73	44.718	-111.026	5.61	2.91MU GX	2.57MD UU	..	...	UU	40	67	4.8	.16	A	.2	.1
4479	1987 FEB 04	23:30:14.70	44.655	-114.175	11.70	3.01MU GX	2.80MD EO	..	...	MB	10	111	106.9	.18	C	1.4	2.8
4480	1987 FEB 05	13:56:37.79	44.723	-111.024	6.78	3.44MU GX	3.42MD UU	..	...	UU	43	67	4.3	.16	B	.2	.4
4481	1987 FEB 06	00:12:04.62	43.191	-110.897	4.57	3.01MU GX	2.80MD BR	..	...	BR	19	213	9.0	.09	.	.5	.0
4482	1987 FEB 06	09:29:51.30	44.718	-111.032	7.60	3.35MU GX	3.30MD EO	..	...	UU	45	62	5.0	.17	B	.3	.3
4483	1987 FEB 07	12:47:55.30	44.560	-112.110	7.80	3.13MU GX	3.00MD BT	..	...	MB	22	82	39.0	.23	C	.7	1.3
4484	1987 FEB 08	10:56:01.20	44.724	-111.034	7.40	3.27MU GX	3.20MD EO	..	...	UU	45	57	4.6	.18	B	.3	.3
4485	1987 FEB 09	08:04:46.60	44.731	-111.778	11.60	2.89MU GX	2.50MD MO	..	...	MB	16	136	26.1	.33	C	2.4	5.2
4486	1987 FEB 19	00:49:13.60	44.785	-110.861	10.60	2.97MU GX	2.70MD BT	..	...	UU	29	128	11.8	.18	B	.3	.5
4487	1987 FEB 20	02:49:41.00	44.794	-111.331	20.40	2.97MU GX	2.70MD BT	..	...	MB	14	209	37.9	.25	C	1.7	3.1
4488	1987 FEB 20	06:21:07.64	43.697	-110.405	.02	3.20MU GX	3.10MD BR	..	...	BR	21	234	13.0	.09	.	.0	.0
4489	1987 FEB 20	06:38:59.00	43.695	-110.408	.04	3.27MU GX	3.20MD BR	..	...	BR	20	233	13.0	.08	.	.0	.0
4490	1987 FEB 22	13:48:32.50	45.327	-112.419	6.20	3.35MU GX	3.30MD BT	..	...	MB	28	103	55.1	.32	D	1.0	3.0
4491	1987 FEB 25	12:30:28.29	41.527	-112.380	9.00	4.10MU GX	4.10MD BR	..	...	BR	21	348	213.0	.40	.	2.2	.0
4492	1987 FEB 26	14:58:43.50	44.201	-114.009	24.10	2.89MU GX	2.50MD EO	..	...	MB	9	147	107.4	.22	D	2.6	2.7
4493	1987 FEB 28	02:37:64.07	44.110	-110.425	7.00	3.01MU GX	2.80MD BR	..	...	BR	24	155	22.0	.19	.	.1	.0
4494	1987 FEB 28	02:38:03.30	44.116	-110.431	7.65	2.99MU GX	2.76MD UU	..	...	UU	25	152	21.2	.13	A	.3	.4
4495	1987 FEB 28	07:44:39.60	44.686	-114.535	11.30	2.89MU GX	2.50MD EO	..	...	MB	12	168	133.9	.08	C	.5	.9
4496	1987 FEB 28	14:57:60.79	43.406	-111.119	12.17	3.13MU GX	3.00MD BR	..	...	BR	21	85	12.0	.06	.	.4	.0
4497	1987 MAR 03	04:21:49.90	44.649	-114.098	15.90	2.89MU GX	2.50MD EO	..	...	MB	9	123	101.3	.07	C	.7	1.2
4498	1987 MAR 05	00:30:20.22	41.107	-116.231	.02	4.10MD UNR	.....	..	...	UN	37	164	197.0	3.13	D	1.9	4.1
4499	1987 MAR 05	14:32:17.98	42.795	-110.818	7.00	3.13MU GX	3.00MD BR	..	...	BR	17	318	42.0	.37	.	1.5	.0
4500	1987 MAR 10	07:46:27.50	44.775	-110.847	4.10	2.92MU GX	2.60MD BT	..	...	UU	26	104	12.7	.53	D	1.6	2.1
4501	1987 MAR 14	10:13:50.50	44.261	-114.060	19.30	2.97MU GX	2.70MD EO	..	...	MB	12	140	112.1	.15	C	1.2	1.6
4502	1987 MAR 15	00:35:36.90	44.923	-111.459	12.40	2.89MU GX	2.50MD BT	..	...	MB	16	109	29.3	.36	C	2.3	4.9
4503	1987 MAR 15	14:49:18.70	44.763	-112.367	10.60	2.97MU GX	2.70MD BT	..	...	MB	18	95	43.5	.25	C	1.2	2.4
4504	1987 MAR 18	00:00:42.65	42.627	-111.319	.33	4.10MU GX	4.10ML UU	..	...	UU	23	139	68.4	.29	.	1.0	2.1
4505	1987 MAR 18	00:14:47.69	42.623	-111.329	.81	2.97MU GX	2.70MD UU	..	...	UU	20	245	67.5	.25	.	1.9	2.7
4506	1987 MAR 18	20:15:30.91	44.235	-110.770	6.20	2.95MU GX	2.66MD UU	..	...	UU	24	298	21.9	.09	A	1.0	.3
4507	1987 MAR 18	20:17:12.38	44.235	-110.772	6.73	2.96MU GX	2.68MD UU	..	...	UU	26	298	21.9	.09	A	.9	.2
4508	1987 MAR 23	14:04:36.20	44.251	-114.045	17.10	3.87MU GX	3.90MD BT	..	...	MB	22	105	110.8	.28	C	1.1	2.3
4509	1987 MAR 31	12:10:11.20	44.761	-110.444	3.10	2.89MU GX	2.50MD BT	..	...	MB	7	275	97.2	.10	D	5.5	4.1
4510	1987 APR 02	13:15:04.80	44.512	-114.551	20.90	3.27MU GX	3.20MD EO	..	...	MB	15	269	140.3	.31	D	2.8	2.6
4511	1987 APR 03	00:42:55.70	44.644	-114.141	4.00	2.97MU GX	2.70MD EO	..	...	MB	16	155	104.7	.30	C	1.3	2.4
4512	1987 APR 04	05:08:35.50	44.256	-114.063	21.40	3.01MU GX	2.80MD EO	..	...	MB	17	217	112.3	.19	C	1.3	1.4
4513	1987 APR 06	02:43:44.40	44.601	-110.090	21.60	2.92MU GX	2.60MD EO	..	...	MB	8	293	121.9	.21	D	5.3	5.5
4514	1987 APR 10	17:34:33.30	44.347	-114.166	19.00	2.97MU GX	2.70MD BT	..	...	MB	12	257	120.5	.28	D	2.9	3.1
4515	1987 APR 18	14:12:54.40	44.660	-111.019	11.10	3.07MU GX	2.90MD BT	..	...	UU	24	143	12.7	.12	b	.4	.6
4516	1987 APR 23	06:50:52.20	44.660	-111.022	11.00	2.97MU GX	2.70MD MO	..	...	UU	29	78	8.7	.15	a	.4	.7
4517	1987 APR 23	14:06:64.03	43.181	-110.536	7.00	2.89MU GX	2.50MD BR	..	...	BR	24	261	32.0	.11	.	.1	.0
4518	1987 APR 25	08:11:14.30	44.060	-113.906	11.10	3.20MU GX	3.10MD EO	..	...	MB	15	137	75.6	.22	C	1.4	2.5
4519	1987 APR 25	15:15:16.20	43.193	-110.554	1.48	2.92MU GX	2.60MD BR	..	...	BR	20	258	30.0	.09	.	.9	.0

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
4520	1987 APR 26	14:41:44.30	44.103	-114.573	16.80	4.00MU GX	4.00MD BT	..	...	MB	23	121	126.2	.31	D	1.3	2.5
4521	1987 APR 26	14:45:00.60	44.093	-114.556	18.00	3.13MU GX	3.00MD EO	..	...	MB	17	156	124.6	.28	C	1.3	1.9
4522	1987 APR 27	11:14:12.90	44.800	-114.508	6.40	2.97MU GX	2.70MD EO	..	...	MB	10	189	129.7	.21	C	1.8	4.1
4523	1987 APR 28	02:23:39.60	44.589	-111.175	7.70	2.97MU GX	2.70MD BT	..	...	UU	44	58	6.2	.15	a	.2	.4
4524	1987 APR 28	19:57:51.60	44.076	-114.559	21.30	3.51MU GX	3.50MD EO	..	...	MB	22	120	124.2	.26	C	1.0	1.4
4525	1987 APR 30	12:54:21.50	44.131	-114.490	15.40	3.59MU GX	3.60MD BT	..	...	MB	18	129	121.1	.38	D	1.8	3.7
4526	1987 MAY 08	12:13:55.60	44.695	-111.788	9.80	2.89MU GX	2.50MD BT	..	...	MB	10	90	23.1	.09	B	.6	1.3
4527	1987 MAY 10	14:25:02.90	45.185	-114.557	.40	3.01MU GX	2.80MD EO	..	...	MB	10	224	136.0	.22	C	2.1	1.5
4528	1987 MAY 16	12:38:17.50	44.043	-113.833	15.10	3.07MU GX	2.90MD BT	..	...	MB	15	263	69.6	.16	C	1.6	1.9
4529	1987 MAY 26	16:11:49.50	45.380	-116.231	17.20	4.30MU GX	4.30MD BT	..	...	MB	19	98	162.2	.26	C	1.2	3.4
4530	1987 MAY 27	09:18:36.10	45.034	-111.787	15.00	2.97MU GX	2.70MD EO	..	...	MB	11	121	58.1	.26	C	1.6	3.6
4531	1987 MAY 27	12:05:06.00	45.578	-111.698	6.50	3.35MU GX	3.30MD BT	..	...	MB	26	127	32.1	.30	C	1.2	1.9
4532	1987 MAY 27	17:12:21.40	45.570	-111.716	5.80	2.97MU GX	2.70MD EO	..	...	MB	14	117	32.3	.15	B	.6	1.9
4533	1987 MAY 29	16:39:07.40	44.630	-114.155	17.80	2.92MU GX	2.60MD EO	..	...	MB	10	155	106.2	.16	C	1.4	2.9
4534	1987 JUN 02	22:13:08.21	44.796	-111.020	5.32	2.89MU GX	2.51MD UU	..	...	UU	41	58	4.3	.14	A	.2	.1
4535	1987 JUN 04	08:13:37.48	44.074	-110.815	5.59	3.12MU GX	2.97MD UU	..	...	UU	28	115	11.1	.09	A	.3	.2
4536	1987 JUN 05	03:05:42.30	44.462	-114.202	.10	3.07MU GX	2.90MD EO	..	...	MB	13	166	116.7	.17	C	1.8	1.4
4537	1987 JUN 06	00:13:07.35	44.680	-111.207	9.88	3.06MU GX	2.88MD UU	..	...	UU	28	178	18.2	.18	B	.3	.1
4538	1987 JUN 06	00:14:54.00	44.725	-111.242	1.80	3.07MU GX	2.90MD BT	..	...	MB	10	100	19.1	.12	B	.8	1.5
4539	1987 JUN 06	02:48:17.09	44.231	-110.793	6.43	3.01MU GX	2.79MD UU	..	...	UU	24	297	22.2	.07	B	1.1	.2
4540	1987 JUN 06	12:39:31.00	44.233	-110.790	6.00	3.07MU GX	2.90MD UU	..	...	UU	27	65	22.2	.10	A	.3	.7
4541	1987 JUN 06	12:39:73.46	44.218	-110.777	5.00	4.20MU GX	4.20MD BR	..	...	BR	27	115	19.0	.33	.	.2	.0
4542	1987 JUN 06	12:40:12.39	44.231	-110.777	5.73	3.82MU GX	3.85MD UU	..	...	UU	23	115	21.7	.13	A	.4	.8
4543	1987 JUN 06	14:17:34.37	44.222	-110.796	3.57	3.03MU GX	2.83MD UU	..	...	UU	24	136	21.4	.08	A	.4	.1
4544	1987 JUN 06	16:56:56.22	44.214	-110.796	4.62	3.64MU GX	3.65MD UU	..	...	UU	33	65	20.5	.11	A	.3	.6
4545	1987 JUN 06	19:25:50.70	44.809	-111.452	11.00	3.07MU GX	2.90MD BT	..	...	MB	13	107	34.4	.26	C	1.9	3.4
4546	1987 JUN 06	21:01:53.19	44.114	-110.423	7.75	2.98MU GX	2.73MD UU	..	...	UU	24	302	21.7	.10	B	2.2	.5
4547	1987 JUN 10	21:06:26.70	45.613	-111.733	15.40	2.89MU GX	2.50MD EO	..	...	MB	13	115	27.4	.10	B	.6	.5
4548	1987 JUN 11	15:03:57.40	44.266	-114.056	23.80	3.07MU GX	2.90MD EO	..	...	MB	12	135	98.5	.15	C	1.3	1.6
4549	1987 JUN 14	18:42:19.90	44.350	-113.957	18.10	2.92MU GX	2.60MD BT	..	...	MB	10	139	98.9	.13	C	1.4	2.2
4550	1987 JUN 19	16:24:27.10	44.785	-111.548	7.40	2.92MU GX	2.60MD BT	..	...	MB	13	85	29.6	.25	C	1.2	2.8
4551	1987 JUN 23	12:31:48.80	45.604	-111.719	12.90	2.89MU GX	2.50MD EO	..	...	MB	10	143	28.8	.10	C	1.4	3.3
4552	1987 JUN 28	12:37:12.80	45.540	-111.784	10.20	2.89MU GX	2.50MD EO	..	...	MB	13	140	33.9	.13	B	.7	1.3
4553	1987 JUN 29	05:40:19.40	45.520	-111.758	5.30	2.97MU GX	2.70MD EO	..	...	MB	11	143	36.5	.15	C	.9	2.6
4554	1987 JUN 30	15:48:46.95	43.045	-111.626	11.28	2.89MU GX	2.50MD UU	..	...	IN	9	222	37.4	.29	C	2.3	2.1
4555	1987 JUL 03	11:26:00.20	44.756	-114.561	19.70	2.97MU GX	2.70MD EO	..	...	MB	12	270	134.7	.16	C	1.9	2.1
4556	1987 JUL 04	12:23:23.90	44.654	-111.888	7.00	3.01MU GX	2.80MD BT	..	...	MB	12	65	25.6	.30	C	1.4	3.3
4557	1987 JUL 06	01:40:16.30	44.846	-113.004	5.80	2.97MU GX	2.70MD BT	..	...	MB	10	235	12.8	.20	D	3.2	1.4
4558	1987 JUL 10	13:01:54.87	43.193	-110.541	4.65	2.97MU GX	2.70MD BR	..	...	BR	22	259	31.0	.09	.	1.7	.0
4559	1987 JUL 13	13:44:43.80	45.553	-111.704	4.30	2.92MU GX	2.60MD EO	..	...	MB	11	152	34.5	.12	B	.7	1.3
4560	1987 JUL 14	06:45:09.40	44.427	-114.012	14.70	2.92MU GX	2.60MD EO	..	...	MB	11	141	105.3	.39	D	3.3	5.4
4561	1987 JUL 14	06:55:32.40	44.396	-113.929	29.80	2.89MU GX	2.50MD EO	..	...	MB	10	138	101.1	.18	C	2.0	2.1
4562	1987 JUL 15	07:08:16.90	45.548	-111.676	3.70	3.42MU GX	3.40MD BT	..	...	MB	11	120	35.8	.14	B	.8	1.7
4563	1987 JUL 15	18:12:04.00	45.579	-111.703	7.90	2.92MU GX	2.60MD EO	..	...	MB	12	118	31.9	.18	C	.9	2.0
4564	1987 JUL 16	08:47:23.60	45.549	-111.699	7.80	2.92MU GX	2.60MD EO	..	...	MB	12	118	35.0	.30	C	1.4	2.7
4565	1987 JUL 17	12:40:24.40	45.564	-111.716	6.60	3.13MU GX	3.00MD EO	..	...	MB	12	117	32.9	.33	C	1.7	4.5
4566	1987 JUL 17	13:50:05.80	45.569	-111.715	6.80	2.92MU GX	2.60MD EO	..	...	MB	13	117	32.5	.24	C	1.1	2.0
4567	1987 JUL 17	15:40:25.90	45.573	-111.708	6.50	3.13MU GX	3.00MD EO	..	...	MB	20	91	32.3	.30	C	1.1	2.1
4568	1987 JUL 18	02:31:55.70	45.566	-111.707	6.00	3.01MU GX	2.80MD EO	..	...	MB	18	91	33.0	.26	C	1.0	2.8
4569	1987 JUL 18	04:02:35.10	45.565	-111.696	7.20	3.07MU GX	2.90MD EO	..	...	MB	16	92	33.5	.25	C	1.0	2.0

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
4570	1987 JUL 20	03:50:47.00	45.574	-111.686	4.40	2.89MU GX	2.50MD EO	..	...	MB	14	79	.9	.21	B	1.1	.8
4571	1987 JUL 21	17:36:07.30	44.736	-110.823	2.55	3.66MU GX	3.68MD UU	..	...	UU	5	183	25.8	.10	C	.9	9.0
4572	1987 JUL 21	20:35:39.80	45.566	-111.679	4.10	3.59MU GX	3.60MD BT	..	...	MB	26	93	.2	.29	B	1.0	.8
4573	1987 JUL 21	20:38:05.00	45.576	-111.705	.30	3.51MU GX	3.50MD EO	..	...	MB	18	83	2.3	.30	B	1.3	1.8
4574	1987 JUL 21	20:53:38.30	45.552	-111.696	3.40	3.07MU GX	2.90MD EO	..	...	MB	18	96	3.0	.24	B	1.2	1.3
4575	1987 JUL 21	22:18:20.60	45.581	-111.680	4.60	3.42MU GX	3.40MD EO	..	...	MB	24	128	1.4	.26	B	1.1	.9
4576	1987 JUL 22	03:54:05.30	45.557	-111.684	3.50	3.13MU GX	3.00MD BT	..	...	MB	19	63	1.3	.17	B	.7	.6
4577	1987 JUL 22	05:23:06.80	45.552	-111.679	3.80	4.10MU GX	4.10MD EO	..	...	MB	24	60	1.7	.21	B	.8	.6
4578	1987 JUL 22	06:05:25.60	45.549	-111.698	3.20	3.35MU GX	3.30MD EO	..	...	MB	21	60	2.6	.18	B	.7	.7
4579	1987 JUL 22	06:14:31.90	45.577	-111.702	3.80	3.01MU GX	2.80MD EO	..	...	MB	17	64	2.0	.25	B	.9	.8
4580	1987 JUL 22	06:18:51.80	45.557	-111.683	6.00	3.51MU GX	3.50MD EO	..	...	MB	22	79	6.1	.23	B	.9	1.5
4581	1987 JUL 22	06:53:04.90	45.563	-111.678	4.30	3.20MU GX	3.10MD BT	..	...	MB	20	78	.6	.20	B	.8	.5
4582	1987 JUL 22	08:26:34.50	45.553	-111.698	3.50	3.01MU GX	2.80MD EO	..	...	MB	12	84	2.2	.24	B	1.4	1.4
4583	1987 JUL 22	08:56:12.50	45.564	-111.681	4.80	3.27MU GX	3.20MD EO	..	...	MB	24	75	.5	.18	B	.6	.5
4584	1987 JUL 22	10:08:01.60	45.567	-111.682	4.40	2.89MU GX	2.50MD EO	..	...	MB	11	80	.2	.12	A	.7	.6
4585	1987 JUL 22	10:56:25.70	45.570	-111.689	4.80	3.01MU GX	2.80MD EO	..	...	MB	14	66	3.2	.28	B	1.3	1.4
4586	1987 JUL 22	10:59:12.00	45.562	-111.684	4.90	3.27MU GX	3.20MD EO	..	...	MB	15	72	.8	.14	A	.7	.5
4587	1987 JUL 22	11:30:02.90	45.565	-111.716	1.50	2.92MU GX	2.60MD EO	..	...	MB	13	66	2.9	.25	B	1.3	2.0
4588	1987 JUL 22	15:47:08.40	45.567	-111.708	3.00	3.20MU GX	3.10MD BT	..	...	MB	24	61	2.3	.26	B	.9	1.0
4589	1987 JUL 22	15:49:50.20	45.571	-111.700	2.80	3.13MU GX	3.00MD EO	..	...	MB	18	70	1.7	.31	B	1.3	1.2
4590	1987 JUL 22	16:00:53.60	45.564	-111.706	4.20	3.27MU GX	3.20MD EO	..	...	MB	21	61	2.2	.25	B	.9	1.0
4591	1987 JUL 22	16:08:16.80	45.560	-111.695	3.70	3.27MU GX	3.20MD BT	..	...	MB	21	78	3.1	.31	B	1.2	1.4
4592	1987 JUL 22	16:17:24.50	45.586	-111.726	7.30	2.92MU GX	2.60MD BT	..	...	MB	13	101	30.5	.28	C	1.7	4.0
4593	1987 JUL 22	17:41:36.70	45.580	-111.702	2.50	2.97MU GX	2.70MD EO	..	...	MB	12	64	2.2	.29	B	1.6	1.9
4594	1987 JUL 22	18:38:16.00	45.583	-111.712	1.70	3.20MU GX	3.10MD EO	..	...	MB	20	64	5.5	.32	C	1.2	2.2
4595	1987 JUL 22	23:40:44.80	45.550	-111.679	4.30	2.89MU GX	2.50MD EO	..	...	MB	11	84	1.7	.11	A	.7	.5
4596	1987 JUL 23	08:23:17.80	45.557	-111.676	4.10	3.35MU GX	3.30MD BT	..	...	MB	24	75	1.2	.24	B	.9	.7
4597	1987 JUL 23	11:44:58.30	45.552	-111.710	2.20	2.97MU GX	2.70MD EO	..	...	MB	15	65	3.0	.22	B	1.0	1.3
4598	1987 JUL 23	15:27:37.30	45.553	-111.672	4.60	2.89MU GX	2.50MD EO	..	...	MB	13	63	1.1	.11	A	.6	.4
4599	1987 JUL 23	16:02:07.40	45.553	-111.682	3.90	2.89MU GX	2.50MD EO	..	...	MB	11	64	1.7	.11	A	.6	.5
4600	1987 JUL 23	22:41:50.00	45.553	-111.677	4.20	2.89MU GX	2.50MD EO	..	...	MB	12	63	1.5	.14	A	.8	.5
4601	1987 JUL 24	01:46:20.40	45.556	-111.702	3.20	2.92MU GX	2.60MD EO	..	...	MB	13	65	2.3	.26	B	1.3	1.4
4602	1987 JUL 24	09:00:06.90	45.562	-111.686	4.50	2.97MU GX	2.70MD EO	..	...	MB	13	80	.8	.11	A	.6	.4
4603	1987 JUL 24	10:33:39.27	44.671	-111.021	5.50	2.95MU GX	2.67MD UU	..	...	UU	17	76	9.7	.09	A	.3	.5
4604	1987 JUL 24	11:56:16.40	44.689	-111.034	1.30	2.92MU GX	2.60MD EO	..	...	MB	13	100	27.4	.23	C	1.2	2.2
4605	1987 JUL 24	14:55:18.50	45.546	-111.694	4.20	3.01MU GX	2.80MD EO	..	...	MB	12	70	2.2	.23	B	1.4	1.0
4606	1987 JUL 24	21:41:57.40	44.127	-114.457	23.80	3.07MU GX	2.90MD BT	..	...	MB	10	188	150.7	.18	D	3.7	1.7
4607	1987 JUL 24	23:54:09.30	44.139	-114.460	23.90	3.35MU GX	3.30MD BT	..	...	MB	12	187	150.7	.25	D	3.4	2.1
4608	1987 JUL 25	15:10:11.60	45.570	-111.711	2.20	2.97MU GX	2.70MD EO	..	...	MB	11	64	2.5	.20	B	1.2	1.5
4609	1987 JUL 25	16:54:40.19	42.123	-112.471	4.36	2.84MU GX	2.80ML UU	..	...	UU	21	91	4.6	.23	.	.7	1.0
4610	1987 JUL 28	13:10:01.50	45.539	-111.683	3.80	3.13MU GX	3.00MD EO	..	...	MB	15	94	2.2	.12	B	.5	.4
4611	1987 JUL 28	21:44:07.60	45.533	-111.662	4.90	3.07MU GX	2.90MD EO	..	...	MB	14	122	2.1	.18	B	.9	.5
4612	1987 JUL 29	18:31:38.08	42.686	-111.120	.31	3.31MU GX	3.25MD UU	..	...	UU	12	102	77.0	.47	.	2.8	6.1
4613	1987 JUL 30	05:19:01.20	45.543	-111.682	4.00	3.27MU GX	3.20MD EO	..	...	MB	16	73	2.1	.18	B	.8	.5
4614	1987 JUL 30	10:17:31.40	45.563	-111.713	2.70	3.13MU GX	3.00MD EO	..	...	MB	14	65	2.7	.23	B	1.1	1.2
4615	1987 JUL 30	12:20:49.70	45.553	-111.706	4.00	3.07MU GX	2.90MD EO	..	...	MB	13	65	2.7	.29	B	1.4	1.2
4616	1987 JUL 30	17:10:50.40	45.550	-111.688	4.20	2.89MU GX	2.50MD EO	..	...	MB	11	64	2.1	.06	A	.3	.2
4617	1987 JUL 30	17:53:11.31	44.658	-111.016	9.80	3.27MU GX	3.19MD UU	..	...	UU	33	80	8.9	.13	A	.2	.1
4618	1987 JUL 31	02:09:25.20	45.545	-111.690	3.70	2.97MU GX	2.70MD EO	..	...	MB	14	74	2.2	.19	B	.9	.7
4619	1987 AUG 01	03:33:04.90	45.561	-111.694	4.70	2.89MU GX	2.50MD EO	..	...	MB	13	64	1.4	.11	A	.6	.4

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Std-Err Vert
4620	1987 AUG 01	17:13:38.60	45.559	-111.686	3.80	2.92MU GX	2.60MD EO	..	...	MB	12	81	1.2	.18	B	1.0	.7
4621	1987 AUG 02	19:22:47.40	44.559	-114.902	20.30	3.07MU GX	2.90MD EO	..	...	MB	12	172	135.7	.16	C	1.4	1.5
4622	1987 AUG 03	21:33:45.20	45.559	-111.716	.20	3.27MU GX	3.20MD EO	..	...	MB	14	68	3.1	.19	B	.8	1.3
4623	1987 AUG 03	22:40:25.50	45.558	-111.712	.10	3.27MU GX	3.20MD EO	..	...	MB	22	65	2.8	.22	B	.7	1.1
4624	1987 AUG 04	06:37:52.50	44.384	-114.205	13.60	3.59MU GX	3.60MD BT	..	...	MB	13	144	121.1	.20	C	1.9	2.5
4625	1987 AUG 08	01:33:14.70	45.567	-111.722	.40	3.13MU GX	3.00MD EO	..	...	MB	16	65	3.4	.24	B	1.0	1.5
4626	1987 AUG 09	12:40:33.10	44.755	-114.646	17.90	2.92MU GX	2.60MD EO	..	...	MB	10	175	141.3	.17	D	1.7	5.5
4627	1987 AUG 10	19:27:02.30	45.546	-111.681	3.90	3.13MU GX	3.00MD EO	..	...	MB	20	64	1.9	.23	B	.9	.7
4628	1987 AUG 12	06:23:53.20	45.558	-111.701	3.00	3.13MU GX	3.00MD EO	..	...	MB	12	64	2.1	.27	B	1.5	1.5
4629	1987 AUG 12	18:15:34.78	43.020	-112.042	1.08	2.97MU GX	2.70MD UU	..	...	UU	11	109	69.9	.40	.	3.8	7.9
4630	1987 AUG 13	13:05:07.70	45.527	-111.678	4.30	2.89MU GX	2.50MD EO	..	...	MB	11	147	2.2	.10	B	.6	.4
4631	1987 AUG 15	09:04:03.70	44.826	-111.646	5.00	2.89MU GX	2.50MD EO	..	...	MB	16	99	33.6	.17	C	.7	1.5
4632	1987 AUG 16	16:44:52.90	44.404	-114.111	22.20	2.97MU GX	2.70MD EO	..	...	MB	10	180	113.3	.12	D	5.8	3.5
4633	1987 AUG 17	03:44:21.60	43.987	-114.722	20.10	4.60MU GX	4.60MD BT	..	...	MB	13	133	127.5	.33	D	2.8	3.7
4634	1987 AUG 17	16:40:18.60	44.099	-114.842	27.50	3.42MU GX	3.40MD BT	..	...	MB	11	151	119.8	.21	C	1.6	1.7
4635	1987 AUG 20	05:39:14.40	45.552	-111.676	4.60	3.51MU GX	3.50MD BT	..	...	MB	29	57	1.5	.24	B	.8	.5
4636	1987 AUG 20	05:40:17.60	45.542	-111.738	.40	3.27MU GX	3.20MD BT	..	...	MB	14	124	63.7	.32	D	2.1	4.0
4637	1987 AUG 20	05:41:47.60	45.581	-111.696	5.40	3.20MU GX	3.10MD EO	..	...	MB	12	97	2.4	.21	B	1.2	.7
4638	1987 AUG 20	07:44:35.70	45.555	-111.677	4.80	3.35MU GX	3.30MD EO	..	...	MB	28	66	1.5	.25	B	.8	.5
4639	1987 AUG 21	10:05:59.20	45.559	-111.678	4.40	3.13MU GX	3.00MD EO	..	...	MB	15	77	1.0	.06	A	.3	.2
4640	1987 AUG 21	11:27:12.10	44.090	-114.575	19.30	3.07MU GX	2.90MD EO	..	...	MB	10	150	140.6	.25	D	2.6	2.7
4641	1987 AUG 21	21:39:43.20	43.755	-113.966	18.50	3.42MU GX	3.40MD BT	..	...	MB	10	187	110.1	.14	C	1.9	1.7
4642	1987 AUG 22	14:28:60.00	45.546	-111.672	4.70	2.97MU GX	2.70MD EO	..	...	MB	23	60	1.3	.17	B	.6	.4
4643	1987 AUG 23	20:49:07.50	45.550	-111.686	5.00	3.07MU GX	2.90MD EO	..	...	MB	28	45	.4	.17	B	.6	.3
4644	1987 AUG 25	12:32:25.60	45.535	-111.656	5.90	2.97MU GX	2.70MD EO	..	...	MB	17	161	1.9	.10	B	.6	.3
4645	1987 AUG 25	16:01:22.80	45.537	-111.660	5.40	3.01MU GX	2.80MD EO	..	...	MB	17	153	1.6	.12	B	.8	.3
4646	1987 AUG 25	16:08:20.90	45.537	-111.645	6.10	2.89MU GX	2.50MD EO	..	...	MB	15	169	1.9	.09	B	.7	.3
4647	1987 AUG 25	20:04:05.20	44.627	-114.182	6.60	3.01MU GX	2.80MD EO	..	...	MB	9	127	108.4	.16	C	1.3	2.2
4648	1987 AUG 25	21:27:25.12	42.919	-111.448	1.13	2.92MU GX	2.60MD UU	..	...	UU	13	150	50.5	.34	.	1.7	3.9
4649	1987 AUG 25	22:29:54.22	42.897	-111.247	.57	2.91MU GX	2.57MD UU	..	...	UU	22	84	52.2	.40	.	1.3	2.8
4650	1987 AUG 28	10:28:66.76	43.172	-110.829	3.39	2.89MU GX	2.50MD BR	..	...	BR	12	323	21.0	.08	.	.8	.0
4651	1987 AUG 29	02:40:00.95	43.838	-113.743	.47	2.90MU GX	2.53MD UU	..	...	IN	10	264	53.8	.24	D	3.0	3.3
4652	1987 AUG 31	03:00:32.70	44.287	-114.092	20.60	2.92MU GX	2.60MD EO	..	...	MB	10	141	115.2	.26	D	3.0	5.0
4653	1987 SEP 01	17:00:21.49	42.692	-111.441	.08	2.95MU GX	2.65MD UU	..	...	UU	18	82	69.9	.31	.	1.1	2.9
4654	1987 SEP 01	21:24:57.17	42.905	-111.496	.10	2.89MU GX	2.50MD UU	..	...	UU	11	146	52.9	.38	.	2.8	6.3
4655	1987 SEP 02	09:09:35.30	45.550	-111.693	2.00	3.01MU GX	2.80MD EO	..	...	MB	18	123	2.7	.28	B	1.4	1.9
4656	1987 SEP 06	20:33:33.10	45.548	-111.710	3.20	2.97MU GX	2.70MD EO	..	...	MB	11	141	3.5	.24	C	1.8	1.9
4657	1987 SEP 07	15:27:17.60	44.539	-114.353	18.80	3.01MU GX	2.80MD EO	..	...	MB	13	158	124.5	.19	D	3.4	2.6
4658	1987 SEP 10	04:45:58.50	44.638	-114.159	19.90	3.68MU GX	3.70MD EO	..	...	MB	15	111	106.3	.28	C	2.2	3.1
4659	1987 SEP 10	09:02:49.20	44.641	-114.110	23.60	3.01MU GX	2.80MD EO	..	...	MB	12	111	102.5	.26	D	2.5	3.2
4660	1987 SEP 11	04:32:39.70	44.623	-114.170	17.90	3.07MU GX	2.90MD EO	..	...	MB	13	155	107.6	.18	C	1.3	2.4
4661	1987 SEP 12	11:36:58.20	44.610	-114.079	17.30	3.13MU GX	3.00MD EO	..	...	MB	8	161	101.2	.10	D	2.9	2.8
4662	1987 SEP 14	01:50:65.94	43.356	-110.972	9.70	2.92MU GX	2.60MD BR	..	...	BR	20	99	9.0	.06	.	.4	.0
4663	1987 SEP 15	03:20:21.00	43.847	-113.999	13.10	3.20MU GX	3.10MD BT	..	...	MB	12	217	148.7	.17	D	4.0	2.5
4664	1987 SEP 17	10:35:50.70	44.208	-114.016	20.90	2.97MU GX	2.70MD EO	..	...	MB	13	146	107.8	.20	C	1.8	2.1
4665	1987 SEP 19	22:43:42.80	45.029	-112.782	1.90	2.89MU GX	2.50MD BT	..	...	MB	11	160	14.6	.33	C	4.0	9.8
4666	1987 OCT 06	11:09:50.51	43.273	-111.157	7.57	2.89MU GX	2.50MD BR	..	...	BR	25	177	6.0	.19	.	1.2	.0
4667	1987 OCT 06	12:01:27.70	44.390	-114.071	18.40	2.97MU GX	2.70MD EO	..	...	MB	10	141	111.4	.22	D	2.8	3.8
4668	1987 OCT 10	14:09:21.50	44.629	-114.124	18.50	3.07MU GX	2.90MD EO	..	...	MB	13	186	103.9	.17	C	1.5	2.1
4669	1987 OCT 12	22:46:15.00	44.220	-114.076	21.40	4.30MU GX	4.30MD BT	..	...	MB	12	232	112.7	.23	D	2.9	2.5

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
4670	1987 OCT 17	07:06:45.60	44.387	-114.094	7.00	3.01MU GX	2.80MD BT	..	...	MB	11	142	109.5	.12	C	1.2	2.1
4671	1987 OCT 18	06:36:09.60	44.587	-114.352	16.30	4.00MU GX	4.00MD EO	..	...	MB	20	88	122.5	.15	C	.8	2.0
4672	1987 OCT 31	23:37:34.03	43.188	-110.412	4.42	2.92MU GX	2.60MD BR	..	...	BR	18	269	40.0	.10	.	.1	.0
4673	1987 NOV 01	10:18:19.57	44.605	-109.776	1.81	2.93MU GX	2.62MD UU	..	...	UU	6	296	33.3	.06	C	2.2	6.8
4674	1987 NOV 04	23:17:51.72	43.272	-111.162	8.14	3.13MU GX	3.00MD BR	..	...	BR	16	181	5.0	.05	.	.4	.0
4675	1987 NOV 06	03:20:01.99	42.873	-111.613	.58	2.97MU GX	2.70MD UU	..	...	UU	18	76	59.5	.38	.	2.1	5.3
4676	1987 NOV 17	13:03:05.10	44.911	-113.753	6.20	2.92MU GX	2.60MD EO	..	...	MB	13	169	69.5	.34	D	2.6	5.2
4677	1987 NOV 24	06:18:52.20	44.652	-114.181	10.40	3.20MU GX	3.10MD EO	..	...	MB	15	142	107.4	.20	C	1.2	3.7
4678	1987 NOV 27	03:56:41.50	45.570	-111.711	6.80	2.92MU GX	2.60MD EO	..	...	MB	10	90	32.5	.26	C	1.1	2.4
4679	1987 NOV 27	04:32:11.20	45.569	-111.712	6.60	2.89MU GX	2.50MD EO	..	...	MB	10	129	32.6	.23	C	.9	2.2
4680	1987 NOV 29	21:58:28.09	44.367	-110.551	4.31	3.47MU GX	3.45MD UU	..	...	UU	41	66	20.8	.16	A	.3	.1
4681	1987 DEC 06	06:04:66.05	43.362	-110.976	9.82	2.92MU GX	2.60MD BR	..	...	BR	24	93	10.0	.06	.	.5	.0
4682	1987 DEC 08	21:37:25.23	43.362	-110.978	9.86	2.89MU GX	2.50MD BR	..	...	BR	21	93	10.0	.04	.	.4	.0
4683	1987 DEC 19	10:05:46.60	45.567	-111.707	4.90	2.89MU GX	2.50MD EO	..	...	MB	8	129	32.9	.23	C	1.4	6.3
4684	1987 DEC 26	11:40:31.81	43.325	-110.468	6.23	2.92MU GX	2.60MD BR	..	...	BR	20	246	27.0	.08	.	.0	.0
4685	1987 DEC 27	09:51:50.40	44.512	-116.143	8.00	3.59MU GX	3.60MD EO	..	...	MB	7	224	72.7	.11	D	3.1	2.3
4686	1987 DEC 31	12:12:26.40	44.647	-114.079	18.90	2.92MU GX	2.60MD EO	..	...	MB	9	87	99.9	.16	C	2.1	4.5
4687	1988 JAN 05	12:54:39.40	44.775	-114.636	22.00	3.27MU GX	3.20MD EO	..	...	MB	9	250	140.3	.15	D	3.6	3.1
4688	1988 JAN 09	05:25:21.30	44.426	-114.133	21.60	4.10MU GX	4.10MD BT	..	...	MB	11	161	113.7	.10	C	1.2	1.4
4689	1988 JAN 09	20:29:50.66	44.557	-110.345	2.44	2.91MU GX	2.57MD UU	..	...	UU	5	120	7.7	.07	A	.5	.3
4690	1988 JAN 10	02:51:02.00	44.765	-114.446	18.50	4.20MU GX	4.20MD BT	..	...	MB	10	183	125.5	.15	C	2.4	2.7
4691	1988 JAN 10	03:22:49.00	44.942	-114.132	21.20	3.42MU GX	3.40MD EO	..	...	MB	6	311	99.4	.28	D	4.8	2.6
4692	1988 JAN 10	09:23:43.60	44.788	-114.459	16.00	3.13MU GX	3.00MD EO	..	...	MB	6	320	126.0	.11	D	6.6	7.0
4693	1988 JAN 10	12:09:28.30	44.765	-114.454	19.20	3.35MU GX	3.30MD EO	..	...	MB	6	321	126.1	.10	D	5.3	3.6
4694	1988 JAN 10	18:44:00.30	44.775	-114.498	20.00	3.35MU GX	3.30MD EO	..	...	MB	8	267	129.4	.11	D	2.9	2.1
4695	1988 JAN 10	23:22:20.60	44.777	-114.471	13.90	4.50MU GX	4.50MD EO	..	...	MB	10	184	127.3	.17	C	1.9	3.1
4696	1988 JAN 10	23:48:38.13	44.797	-114.359	5.00	3.40ML BUT	.....	..	...	PE	10	...	.....	.....	.	.....	.....
4697	1988 JAN 12	15:07:11.54	44.802	-114.557	5.00	3.10ML BUT	.00	..	...	PE	7	...	.....	.....	.	.....	.....
4698	1988 JAN 13	08:54:41.10	45.537	-111.704	14.90	3.07MU GX	2.90MD EO	..	...	MB	6	135	36.1	.11	C	1.2	1.5
4699	1988 JAN 13	16:10:21.54	44.839	-110.926	10.29	3.45MU GX	3.43MD UU	..	...	UU	32	114	10.9	.14	A	.3	.1
4700	1988 JAN 16	03:09:48.85	43.540	-110.402	7.98	2.92MU GX	2.60MD BR	..	...	BR	22	237	18.0	.07	.	.0	.0
4701	1988 JAN 16	20:29:35.30	44.709	-114.546	18.50	3.51MU GX	3.50MD BT	..	...	MB	7	323	134.2	.37	D	4.7	3.1
4702	1988 JAN 19	03:08:55.69	42.630	-111.213	1.02	3.09MU GX	2.93MD UU	..	...	UU	13	109	74.8	.28	.	1.1	3.0
4703	1988 JAN 22	00:29:12.50	42.740	-111.694	2.52	3.00MU GX	3.00ML UU	..	...	UU	21	68	56.9	.26	.	.7	1.5
4704	1988 JAN 22	21:43:47.30	44.714	-114.390	25.50	3.68MU GX	3.70MD EO	..	...	MB	10	251	122.0	.13	C	2.3	1.9
4705	1988 JAN 22	22:23:45.89	44.793	-114.539	5.00	2.70ML GS	.00	..	...	PE	11	...	.....	.....	.	.....	.....
4706	1988 JAN 24	23:17:34.50	44.844	-114.284	23.60	2.97MU GX	2.70MD EO	..	...	MB	6	317	111.7	.07	D	3.1	2.1
4707	1988 JAN 28	04:34:52.01	44.769	-110.916	6.56	2.93MU GX	2.62MD UU	..	...	UU	10	117	7.1	.08	A	.6	.4
4708	1988 JAN 28	06:35:31.40	44.772	-114.547	17.10	3.35MU GX	3.30MD EO	..	...	MB	8	321	133.3	.23	D:	8.3	8.7
4709	1988 JAN 28	11:55:45.60	44.816	-114.526	20.70	3.13MU GX	3.00MD EO	..	...	MB	7	320	131.0	.12	D	4.8	3.4
4710	1988 JAN 29	13:30:56.20	44.857	-114.503	11.20	3.07MU GX	2.90MD EO	..	...	MB	9	318	128.9	.18	D	7.3	7.7
4711	1988 JAN 30	10:48:52.10	44.791	-114.788	10.50	3.01MU GX	2.80MD EO	..	...	MB	6	333	151.8	.08	D	5.9	5.6
4712	1988 JAN 31	15:28:35.50	45.020	-112.724	12.10	3.01MU GX	2.80MD BT	..	...	MB	6	159	16.6	.24	C	4.3	5.6
4713	1988 JAN 31	15:34:57.00	45.033	-112.760	12.90	3.20MU GX	3.10MD BT	..	...	MB	5	161	15.9	.18	D	3.3	4.6
4714	1988 JAN 31	15:37:32.20	45.036	-112.747	11.30	3.27MU GX	3.20MD BT	..	...	MB	6	158	16.7	.11	C	3.7	5.5
4715	1988 JAN 31	15:42:37.20	45.038	-112.744	11.00	3.01MU GX	2.80MD BT	..	...	MB	6	158	17.1	.19	C	2.1	3.2
4716	1988 FEB 01	22:01:46.10	44.813	-114.344	10.60	3.27MU GX	3.20MD EO	..	...	MB	10	244	116.7	.22	D	3.4	4.0
4717	1988 FEB 08	23:04:69.69	43.295	-111.047	8.69	2.89MU GX	2.50MD BR	..	...	BR	19	111	13.0	.06	.	1.0	.0
4718	1988 FEB 09	22:23:32.02	42.913	-111.513	.12	3.42MU GX	3.40MD UU	..	...	UU	11	110	51.9	.37	.	3.3	8.8
4719	1988 FEB 11	22:21:37.12	42.926	-111.552	3.46	2.90MU GX	2.53MD UU	..	...	UU	13	81	51.5	.33	.	1.5	2.8

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
4720	1988 FEB 15	18:03:51.81	44.779	-110.987	8.89	2.89MU GX	2.52MD UU	..	...	UU	7	158	2.7	.04	A	.5	.7
4721	1988 FEB 19	08:16:44.60	44.666	-114.069	1.10	3.27MU GX	3.20MD BT	..	...	MB	6	278	98.5	.30	D	8.1	11.9
4722	1988 FEB 21	05:44:09.30	44.439	-115.717	15.60	4.10MU GX	4.10MD EO	..	...	MB	20	154	224.8	.34	D	2.2	5.7
4723	1988 FEB 24	10:58:22.20	45.060	-112.732	2.90	3.27MU GX	3.20MD BT	..	...	MB	9	160	19.6	.21	C	2.2	5.0
4724	1988 FEB 24	10:59:38.70	45.014	-112.731	12.40	2.92MU GX	2.60MD BT	..	...	MB	5	160	15.8	.18	D	6.5	8.4
4725	1988 FEB 24	22:24:28.19	42.915	-111.555	.71	2.90MU GX	2.55MD UU	..	...	UU	19	73	52.8	.35	.	2.5	5.2
4726	1988 FEB 27	09:26:26.11	44.751	-110.723	8.92	3.47MU GX	3.45MD UU	..	...	UU	6	87	15.7	.04	B	.5	2.5
4727	1988 MAR 07	05:34:50.97	43.544	-110.416	8.06	3.07MU GX	2.90MD BR	..	...	BR	22	235	16.0	.06	.	.3	.0
4728	1988 MAR 07	15:06:44.54	44.221	-110.236	8.20	3.37MU GX	3.33MD UU	..	...	UU	31	199	8.3	.13	A	.5	1.0
4729	1988 MAR 08	21:57:10.42	44.521	-110.270	6.33	2.89MU GX	2.50MD UU	..	...	UU	16	338	61.8	.14	C	4.0	10.2
4730	1988 MAR 09	04:58:44.01	44.460	-110.363	3.71	3.29MU GX	3.22MD UU	..	...	UU	25	98	9.0	.18	B	.3	.2
4731	1988 MAR 13	03:43:54.24	43.520	-110.322	2.86	2.89MU GX	2.50MD BR	..	...	BR	23	250	24.0	.10	.	.4	.0
4732	1988 MAR 16	00:08:27.70	44.904	-112.778	5.40	3.13MU GX	3.00MD BT	..	...	MB	9	218	7.7	.16	D	2.5	2.6
4733	1988 MAR 21	13:23:43.72	43.097	-110.836	6.32	3.13MU GX	3.00MD BR	..	...	BR	21	276	14.0	.15	.	2.1	.0
4734	1988 MAR 24	02:21:37.93	44.628	-109.924	14.44	3.55MU GX	3.55MD UU	..	...	UU	6	277	21.4	.01	B	1.7	1.2
4735	1988 MAR 24	18:57:53.23	43.091	-110.940	8.64	3.07MU GX	2.90MD BR	..	...	BR	22	292	8.0	.18	.	.9	.0
4736	1988 MAR 26	10:09:71.85	43.511	-110.742	5.87	2.89MU GX	2.50MD BR	..	...	BR	24	145	5.0	.09	.	.6	.0
4737	1988 APR 01	03:49:01.50	44.762	-111.772	4.40	2.92MU GX	2.60MD BT	..	...	MB	12	247	56.6	.18	C	1.8	3.0
4738	1988 APR 01	18:34:33.60	44.779	-111.770	3.40	3.01MU GX	2.80MD BT	..	...	MB	9	245	54.8	.19	C	2.3	3.6
4739	1988 APR 01	20:17:01.67	42.909	-111.551	.10	2.95MU GX	2.67MD UU	..	...	UU	15	122	53.3	.38	.	2.3	5.4
4740	1988 APR 03	11:03:50.50	45.566	-111.672	7.20	2.89MU GX	2.50MD EO	..	...	MB	6	132	34.3	.09	C	.9	2.6
4741	1988 APR 17	04:11:43.60	45.525	-111.672	14.90	2.89MU GX	2.50MD BT	..	...	MB	10	141	38.3	.16	C	.9	1.4
4742	1988 APR 26	13:29:34.96	42.735	-111.741	.24	2.96MU GX	2.68MD UU	..	...	UU	23	129	68.9	.41	.	1.5	3.1
4743	1988 MAY 03	07:55:54.54	44.781	-110.494	5.87	3.41MU GX	3.38MD UU	..	...	UU	31	101	4.2	.13	A	.3	.2
4744	1988 MAY 08	12:17:05.50	44.798	-111.337	6.10	2.89MU GX	2.50MD BR	..	...	MB	8	258	73.6	.32	D	6.3	8.8
4745	1988 MAY 11	02:23:05.53	44.130	-113.992	21.38	3.51MU GX	3.50MD UU	..	...	IN	7	128	105.1	.26	S	1.3	2.7
4746	1988 MAY 11	21:10:20.26	44.137	-113.984	5.02	3.20MU GX	3.10MD UU	..	...	IN	14	145	94.7	.24	S	1.0	2.6
4747	1988 MAY 11	23:19:62.01	43.700	-111.200	6.86	3.13MU GX	3.00MD BR	..	...	BR	27	195	13.0	.17	.	2.0	.0
4748	1988 MAY 11	23:20:01.64	43.710	-111.222	.16	2.95MU GX	2.65MD UU	..	...	UU	16	77	30.7	.31	.	1.2	2.9
4749	1988 MAY 12	04:46:13.80	45.403	-113.033	14.30	3.68MU GX	3.70MD BT	..	...	MB	10	202	55.7	.27	D	3.1	3.2
4750	1988 MAY 12	18:34:06.50	44.902	-114.307	18.80	3.13MU GX	3.00MD EO	..	...	MB	8	300	113.2	.12	C	2.4	2.2
4751	1988 MAY 18	03:41:04.86	44.734	-111.126	9.52	3.01MU GX	2.79MD UU	..	...	UU	44	120	7.0	.17	B	.3	.1
4752	1988 MAY 18	23:31:05.63	44.743	-111.128	10.66	2.92MU GX	2.59MD UU	..	...	UU	38	130	6.2	.15	A	.3	.1
4753	1988 MAY 21	21:34:22.94	43.498	-110.953	10.57	2.92MU GX	2.60MD BR	..	...	BR	22	51	1.0	.04	.	.3	.0
4754	1988 MAY 22	00:21:47.17	44.737	-111.126	10.19	3.00MU GX	2.77MD UU	..	...	UU	37	124	6.7	.17	B	.4	.1
4755	1988 MAY 23	03:37:52.62	44.743	-111.120	7.74	2.98MU GX	2.72MD UU	..	...	UU	10	122	6.0	.03	A	.4	.4
4756	1988 MAY 27	02:47:00.17	42.742	-111.068	3.14	2.94MU GX	2.64MD UU	..	...	UU	19	106	72.4	.47	.	1.8	3.7
4757	1988 MAY 31	06:21:31.94	43.276	-111.170	8.83	2.89MU GX	2.50MD BR	..	...	BR	24	184	5.0	.09	.	.6	.0
4758	1988 JUN 02	08:26:10.60	45.959	-114.633	5.50	2.89MU GX	2.50MD EO	..	...	MB	6	286	161.0	.18	D	5.4	8.9
4759	1988 JUN 10	04:04:30.80	44.678	-114.259	6.70	3.20MU GX	3.10MD BT	..	...	MB	7	310	112.7	.12	D	4.7	4.4
4760	1988 JUN 15	06:19:38.20	44.727	-112.087	1.40	3.13MU GX	3.00MD BT	..	...	MB	10	247	56.4	.16	C	1.7	2.9
4761	1988 JUL 02	00:02:24.20	44.366	-114.300	8.90	3.13MU GX	3.00MD BT	..	...	MB	8	322	128.7	.14	D	5.2	4.8
4762	1988 JUL 02	00:17:24.66	44.224	-114.045	5.32	2.95MU GX	2.66MD UU	..	...	IN	11	322	94.5	.16	S	1.9	3.0
4763	1988 JUL 02	04:32:00.41	44.695	-111.159	10.09	3.07MU GX	2.90MD UU	..	...	UU	29	97	6.6	.21	B	.5	.1
4764	1988 JUL 07	09:45:35.70	44.817	-111.440	10.07	3.12MU GX	2.98MD UU	..	...	UU	14	225	19.9	.06	A	.9	.1
4765	1988 JUL 14	17:31:35.80	44.384	-114.048	21.00	4.90MU GX	4.90MD EO	..	...	MB	14	128	106.7	.16	C	1.4	2.2
4766	1988 JUL 14	17:39:14.70	44.383	-114.070	6.45	4.10MU GX	4.10MD UU	..	...	IN	11	165	111.1	.15	S	.8	3.1
4767	1988 JUL 14	17:47:30.67	44.406	-114.043	20.67	3.20MU GX	3.10MD UU	..	...	IN	11	129	108.0	.18	S	.8	2.3
4768	1988 JUL 14	18:43:53.20	44.388	-114.093	14.83	4.40MU GX	4.40MD UU	..	...	IN	16	129	112.4	.26	S	.8	3.5
4769	1988 JUL 14	21:21:57.22	42.912	-111.502	.22	2.89MU GX	2.50MD UU	..	...	UU	13	146	52.3	.48	.	4.2	10.4

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
4770	1988 JUL 18	04:03:17.50	44.636	-114.111	.90	2.97MU GX	2.70MD BT	..	...	MB	9	311	102.7	.16	D	4.7	3.4
4771	1988 JUL 19	16:11:42.20	45.099	-113.003	9.10	3.51MU GX	3.50MD BT	..	...	MB	9	213	22.8	.28	D	3.7	3.4
4772	1988 JUL 27	02:10:34.60	44.668	-114.059	12.60	3.20MU GX	3.10MD BT	..	...	MB	10	310	97.7	.19	D	4.0	4.1
4773	1988 JUL 28	20:10:55.70	45.955	-111.166	9.90	2.97MU GX	2.70MD BT	..	...	MB	8	167	21.9	.20	C	1.8	2.5
4774	1988 JUL 30	08:55:23.80	44.157	-114.773	15.20	3.77MU GX	3.80MD BT	..	...	MB	9	326	173.0	.21	D	4.2	3.3
4775	1988 AUG 05	06:21:13.19	44.388	-114.164	9.38	3.07MU GX	2.90MD UU	..	...	IN	15	244	113.4	.24	S	2.2	3.1
4776	1988 AUG 09	23:07:52.90	42.377	-111.499	8.64	3.10MU GX	2.95MD UU	..	...	UU	19	147	37.2	.23	.	.7	1.1
4777	1988 AUG 11	06:54:20.50	44.212	-114.637	8.10	3.07MU GX	2.90MD BT	..	...	MB	6	326	160.3	.06	D	4.0	3.6
4778	1988 AUG 16	01:12:06.87	42.386	-111.489	1.05	2.94MU GX	2.63MD UU	..	...	UU	17	149	38.5	.23	.	.8	1.7
4779	1988 AUG 24	23:06:43.51	43.473	-110.675	7.00	3.07MU GX	2.90MD BR	..	...	BR	18	236	6.0	.16	.	.1	.0
4780	1988 AUG 24	23:53:34.71	43.476	-110.675	7.00	2.97MU GX	2.70MD BR	..	...	BR	19	235	6.0	.15	.	.1	.0
4781	1988 SEP 17	11:52:10.82	44.265	-114.091	3.59	2.92MU GX	2.60MD UU	..	...	IN	9	157	100.2	.10	S	.7	2.7
4782	1988 SEP 17	11:52:12.80	44.437	-114.123	13.40	2.92MU GX	2.60MD BT	..	...	MB	7	320	112.4	.11	D	5.1	3.8
4783	1988 SEP 26	01:45:36.10	44.585	-114.111	2.70	3.35MU GX	3.30MD BT	..	...	MB	7	314	104.5	.22	D	5.9	7.1
4784	1988 SEP 28	19:23:06.50	44.889	-114.349	5.50	2.92MU GX	2.60MD EO	..	...	MB	6	302	116.5	.30	D	6.5	9.4
4785	1988 SEP 29	16:37:45.90	44.706	-114.091	16.10	3.35MU GX	3.30MD BT	..	...	MB	9	308	99.1	.19	D	4.7	4.0
4786	1988 OCT 02	06:01:13.24	44.733	-110.918	7.81	2.91MU GX	2.56MD UU	..	...	UU	21	139	7.5	.07	A	.2	.3
4787	1988 OCT 09	05:10:31.30	44.705	-115.050	5.40	3.20MU GX	3.10MD EO	..	...	MB	9	326	173.8	.17	D	7.7	7.4
4788	1988 OCT 18	20:08:37.97	43.511	-110.740	5.78	3.01MU GX	2.80MD BR	..	...	BR	23	147	5.0	.06	.	.5	.0
4789	1988 OCT 20	12:31:36.74	43.513	-110.744	5.37	2.89MU GX	2.50MD BR	..	...	BR	22	142	5.0	.07	.	.6	.0
4790	1988 OCT 22	03:48:65.37	43.345	-110.318	7.00	3.27MU GX	3.20MD BR	..	...	BR	24	260	37.0	.08	.	.0	.0
4791	1988 OCT 22	04:05:37.04	43.341	-110.311	7.00	3.13MU GX	3.00MD BR	..	...	BR	24	261	38.0	.09	.	.0	.0
4792	1988 OCT 22	04:15:70.98	43.345	-110.319	7.00	2.97MU GX	2.70MD BR	..	...	BR	22	260	37.0	.10	.	.0	.0
4793	1988 OCT 22	06:15:40.84	43.340	-110.302	7.00	2.92MU GX	2.60MD BR	..	...	BR	21	262	38.0	.12	.	.0	.0
4794	1988 OCT 22	07:18:69.80	43.346	-110.321	7.00	2.92MU GX	2.60MD BR	..	...	BR	22	260	37.0	.10	.	.0	.0
4795	1988 OCT 23	03:44:49.84	44.210	-114.113	.03	3.27MU GX	3.20MD UU	..	...	IN	12	154	98.1	.22	S	1.0	3.2
4796	1988 OCT 24	03:12:16.79	44.659	-110.659	3.62	2.94MU GX	2.63MD UU	..	...	UU	12	116	15.8	.13	A	.5	.5
4797	1988 OCT 25	16:39:22.52	44.887	-111.710	7.03	3.05MU GX	2.87MD UU	..	...	UU	11	293	42.1	.06	C	2.2	7.3
4798	1988 NOV 02	15:45:57.09	42.701	-110.491	.12	2.76MU GX	2.70ML UU	..	...	UU	16	129	75.8	.50	.	2.5	4.4
4799	1988 NOV 12	14:14:57.00	44.768	-110.188	18.60	2.97MU GX	2.70MD BT	..	...	MB	6	302	111.4	.16	D	3.6	2.9
4800	1988 NOV 13	11:53:24.90	42.633	-110.928	.97	4.40MU GX	4.40ML UU	..	...	UU	18	118	79.2	.32	.	.8	2.1
4801	1988 NOV 15	15:16:00.56	44.686	-111.074	8.63	3.04MU GX	2.85MD UU	..	...	UU	22	322	77.4	.09	B	1.3	.7
4802	1988 NOV 15	15:16:03.20	44.693	-111.006	18.10	3.13MU GX	3.00MD BT	..	...	MB	9	278	101.3	.41	D	5.9	5.2
4803	1988 NOV 15	18:34:48.92	44.698	-111.015	7.50	2.98MU GX	2.72MD UU	..	...	UU	14	329	85.7	.16	B	1.7	2.7
4804	1988 NOV 18	21:17:40.10	44.502	-114.114	10.90	3.20MU GX	3.10MD BT	..	...	MB	8	318	108.4	.21	D	9.5	9.5
4805	1988 NOV 19	01:17:41.62	44.321	-113.895	7.24	2.95MU GX	2.66MD UU	..	...	IN	9	322	92.8	.09	S	1.9	1.3
4806	1988 NOV 19	19:37:26.08	42.004	-111.472	2.19	2.68MU GX	2.60ML UU	..	...	UU	17	168	20.3	.14	.	.5	10.8
4807	1988 NOV 19	19:46:16.45	42.010	-111.465	1.66	2.99MU GX	2.76MD UU	..	...	UU	18	143	19.9	.18	.	.7	3.4
4808	1988 NOV 19	20:00:53.11	42.007	-111.477	4.88	4.30MU GX	4.30ML UU	..	...	UU	19	142	20.8	.15	.	.7	1.3
4809	1988 NOV 19	21:06:28.29	42.004	-111.468	3.72	2.60MU GX	2.50ML UU	..	...	UU	13	168	20.0	.14	.	.6	10.5
4810	1988 NOV 20	05:19:40.50	44.837	-112.810	4.00	2.97MU GX	2.70MD BT	..	...	MB	7	270	10.0	.23	D	4.9	3.9
4811	1988 NOV 21	11:22:36.48	44.413	-111.027	7.00	3.20MU GX	3.10MD BR	..	...	BR	23	257	48.0	.13	.	.1	.0
4812	1988 NOV 27	12:36:46.70	44.568	-114.233	9.40	3.07MU GX	2.90MD EO	..	...	MB	8	315	114.4	.12	D	5.0	4.8
4813	1988 NOV 27	12:36:47.04	44.542	-114.219	14.57	3.05MU GX	2.86MD UU	..	...	IN	15	138	113.9	.11	S	.6	2.6
4814	1988 NOV 29	12:07:07.74	42.005	-111.483	1.69	2.68MU GX	2.60ML UU	..	...	UU	16	167	21.2	.20	.	.7	14.0
4815	1988 DEC 02	12:02:58.40	45.127	-111.770	2.60	2.89MU GX	2.50MD BT	..	...	MB	7	205	24.3	.07	C	.6	.8
4816	1988 DEC 02	13:57:54.90	44.770	-114.417	23.00	3.01MU GX	2.80MD EO	..	...	MB	9	307	123.1	.35	D	7.2	5.9
4817	1988 DEC 02	18:46:17.03	42.004	-111.475	2.30	2.84MU GX	2.80ML UU	..	...	UU	14	167	20.6	.17	.	.7	12.2
4818	1988 DEC 03	13:12:32.46	44.812	-111.477	10.71	3.05MU GX	2.86MD UU	..	...	UU	31	226	22.0	.14	A	.8	.1
4819	1988 DEC 04	02:24:00.64	44.273	-114.121	4.81	3.77MU GX	3.80MD UU	..	...	IN	13	158	102.7	.20	S	1.0	2.8

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
4820	1988 DEC 04	02:37:40.39	44.290	-114.117	13.12	3.07MU GX	2.90MD UU	..	...	IN	18	137	103.5	.33	S	1.1	3.9
4821	1988 DEC 04	06:02:22.42	43.516	-110.324	7.00	3.51MU GX	3.50MD BR	..	...	BR	37	138	24.0	.24	.	.1	.0
4822	1988 DEC 04	06:33:43.40	43.522	-110.328	7.00	2.97MU GX	2.70MD BR	..	...	BR	37	138	24.0	.19	.	.1	.0
4823	1988 DEC 06	21:10:58.52	42.924	-111.480	7.00	3.13MU GX	3.00MD BR	..	...	BR	35	83	46.0	.48	.	.7	.0
4824	1988 DEC 06	22:46:44.00	44.776	-110.610	5.38	2.93MU GX	2.62MD UU	..	...	UU	13	111	8.3	.16	A	.5	.3
4825	1988 DEC 14	06:27:19.00	44.728	-114.427	22.60	3.59MU GX	3.60MD EO	..	...	MB	13	194	124.7	.18	C	1.9	2.4
4826	1988 DEC 20	21:37:23.98	43.549	-111.212	10.24	3.13MU GX	3.00MD BR	..	...	BR	29	66	11.0	.15	.	1.3	.0
4827	1988 DEC 21	21:56:04.30	44.798	-114.221	13.00	2.89MU GX	2.50MD EO	..	...	MB	6	304	107.2	.13	D	4.9	5.6
4828	1988 DEC 24	04:33:35.00	45.934	-111.599	5.70	2.89MU GX	2.50MD EO	..	...	MB	10	77	24.1	.28	C	1.5	2.7
4829	1988 DEC 29	17:37:52.90	45.930	-111.568	1.00	3.01MU GX	2.80MD EO	..	...	MB	10	79	26.2	.16	C	.9	4.9
4830	1989 JAN 04	03:09:37.90	42.002	-111.480	8.68	2.97MU GX	2.70MD UU	..	...	UU	17	166	20.9	.16	.	.6	.9
4831	1989 JAN 09	23:35:52.48	44.367	-114.077	.06	2.97MU GX	2.70MD UU	..	...	IN	8	180	106.7	.12	S	.7	2.2
4832	1989 JAN 16	03:08:23.90	45.935	-111.598	5.70	3.01MU GX	2.80MD EO	..	...	MB	9	139	24.2	.34	C	2.4	3.4
4833	1989 JAN 19	11:35:13.10	44.645	-114.140	19.10	2.92MU GX	2.60MD BT	..	...	MB	5	332	104.6	.13	C	1.8	1.1
4834	1989 JAN 22	04:36:21.60	45.885	-111.462	3.90	2.97MU GX	2.70MD EO	..	...	MB	7	146	32.7	.15	C	1.3	2.7
4835	1989 JAN 23	15:47:42.17	44.736	-111.078	7.74	3.09MU GX	2.93MD UU	..	...	UU	34	84	6.2	.06	A	.2	.1
4836	1989 JAN 24	16:16:30.40	44.457	-114.191	9.90	3.51MU GX	3.50MD BT	..	...	MB	8	319	116.1	.10	D	3.6	3.4
4837	1989 JAN 30	02:11:30.38	42.773	-111.413	1.72	2.98MU GX	2.74MD UU	..	...	UU	17	159	91.8	.29	.	1.1	1.7
4838	1989 JAN 30	11:47:30.90	45.929	-111.568	.30	3.77MU GX	3.80MD EO	..	...	MB	8	141	26.1	.19	C	1.4	8.5
4839	1989 FEB 01	23:36:33.20	45.939	-111.577	3.40	2.92MU GX	2.60MD EO	..	...	MB	8	78	25.9	.13	B	.9	1.6
4840	1989 FEB 02	06:43:26.20	45.936	-111.582	6.50	2.97MU GX	2.70MD EO	..	...	MB	9	77	25.4	.29	C	1.7	9.8
4841	1989 FEB 02	12:03:38.93	44.786	-111.130	4.45	3.04MU GX	2.85MD UU	..	...	UU	23	325	89.4	.09	B	1.1	.9
4842	1989 FEB 02	21:19:32.20	44.459	-114.341	19.00	3.20MU GX	3.10MD BT	..	...	MB	8	319	126.8	.13	D	3.6	2.3
4843	1989 FEB 16	05:43:54.86	44.739	-111.103	6.85	3.17MU GX	3.05MD UU	..	...	UU	34	104	6.4	.08	A	.2	.1
4844	1989 FEB 16	15:58:47.72	44.739	-111.101	6.97	2.89MU GX	2.52MD UU	..	...	UU	24	103	6.3	.07	A	.2	.1
4845	1989 FEB 26	16:33:16.36	43.398	-111.067	8.09	2.89MU GX	2.50MD BR	..	...	BR	19	67	13.0	.06	.	.5	.0
4846	1989 MAR 16	02:32:50.29	44.703	-111.036	6.22	2.97MU GX	2.71MD UU	..	...	UU	27	67	6.6	.05	A	.2	.3
4847	1989 MAR 16	12:02:88.02	43.464	-110.855	6.30	2.89MU GX	2.50MD BR	..	...	BR	22	86	8.0	.05	.	.4	.0
4848	1989 MAR 16	14:34:01.77	43.778	-113.926	4.61	3.07MU GX	2.90MD UU	..	...	IN	13	142	66.9	.15	S	.8	1.7
4849	1989 MAR 16	15:24:15.92	44.702	-111.040	6.36	2.91MU GX	2.57MD UU	..	...	UU	26	129	6.9	.10	A	.2	.1
4850	1989 MAR 19	01:12:21.94	44.738	-111.067	8.78	2.89MU GX	2.50MD UU	..	...	UU	9	77	5.4	.09	A	.4	.9
4851	1989 MAR 19	23:40:25.22	44.593	-110.378	1.73	3.12MU GX	2.97MD UU	..	...	UU	9	150	8.0	.10	A	.4	.1
4852	1989 MAR 23	08:13:21.20	44.329	-114.104	24.95	2.92MU GX	2.60MD UU	..	...	IN	15	144	105.4	.17	S	.6	1.7
4853	1989 MAR 26	11:54:29.66	44.213	-114.075	.01	3.01MU GX	2.80MD UU	..	...	IN	10	153	95.8	.23	S	1.0	2.2
4854	1989 MAR 29	00:49:20.77	44.734	-111.131	5.00	3.34MU GX	3.29MD UU	..	...	UU	22	323	84.2	.10	B	1.3	1.0
4855	1989 MAR 29	00:49:31.62	44.704	-111.121	9.35	3.03MU GX	2.83MD UU	..	...	UU	9	143	10.3	.08	A	.5	.1
4856	1989 MAR 29	16:30:21.50	44.335	-114.231	12.10	3.27MU GX	3.20MD BT	..	...	MB	5	339	125.6	.03	C	1.0	.8
4857	1989 MAR 29	16:30:22.46	44.205	-114.052	15.92	3.27MU GX	3.20MD UU	..	...	IN	14	144	93.8	.27	S	1.0	3.0
4858	1989 MAR 30	12:40:49.21	44.603	-110.504	5.17	3.25MU GX	3.17MD UU	..	...	UU	12	334	63.1	.13	D	6.7	7.7
4859	1989 MAR 31	17:15:45.95	44.625	-110.433	9.97	3.17MU GX	3.05MD UU	..	...	UU	8	339	66.9	.29	D	9.9	16.3
4860	1989 MAR 31	18:00:27.93	44.523	-110.381	4.52	3.52MU GX	3.51MD UU	..	...	UU	14	183	25.9	.15	A	.5	1.0
4861	1989 MAR 31	18:03:30.56	44.525	-110.358	6.94	3.26MU GX	3.18MD UU	..	...	UU	12	188	25.6	.15	D	5.5	10.1
4862	1989 MAR 31	18:08:51.95	44.637	-110.297	9.29	3.30MU GX	3.24MD UU	..	...	UU	8	342	72.0	.09	D	7.1	7.2
4863	1989 MAR 31	21:08:57.06	44.747	-110.365	7.49	2.90MU GX	2.54MD UU	..	...	UU	6	348	81.6	.08	D	5.2	6.0
4864	1989 MAR 31	21:21:53.30	44.139	-110.585	9.59	2.95MU GX	2.65MD UU	..	...	UU	6	306	12.6	.12	D	9.5	.8
4865	1989 APR 07	04:02:60.51	43.253	-111.314	7.46	2.92MU GX	2.60MD BR	..	...	BR	24	241	10.0	.13	.	.8	.0
4866	1989 APR 07	04:42:34.45	43.255	-111.315	7.74	3.01MU GX	2.80MD BR	..	...	BR	20	240	10.0	.12	.	.7	.0
4867	1989 APR 09	17:08:06.27	44.192	-113.965	5.13	2.89MU GX	2.50MD UU	..	...	IN	10	257	87.4	.25	S	2.0	3.2
4868	1989 APR 11	02:42:38.57	44.498	-110.365	7.40	3.15MU GX	3.03MD UU	..	...	UU	6	184	7.2	.13	A	.9	1.0
4869	1989 APR 21	01:23:24.91	44.341	-110.310	5.78	2.91MU GX	2.56MD UU	..	...	UU	28	181	19.1	.18	B	.6	.5

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err	
																Horiz	Vert
4870	1989 APR 28	11:45:20.68	44.667	-110.479	3.97	3.00MU GX	2.77MD UU	..	...	UU	11	126	8.7	.06	A	.3	.6
4871	1989 MAY 01	14:24:08.30	44.696	-112.034	6.70	2.89MU GX	2.50MD BT	..	...	MB	7	250	59.7	.13	C	1.6	1.8
4872	1989 MAY 02	10:08:26.45	43.974	-111.000	10.92	2.89MU GX	2.50MD BR	..	...	BR	23	222	10.0	.04	.	.3	.0
4873	1989 MAY 03	05:04:26.57	42.638	-111.623	7.08	3.50MU GX	3.50ML UU	..	...	UU	13	208	59.5	.17	.	.7	5.9
4874	1989 MAY 08	09:21:12.80	44.493	-114.344	17.80	3.27MU GX	3.20MD BT	..	...	MB	7	330	125.6	.09	D	3.3	3.5
4875	1989 MAY 09	06:29:18.37	44.228	-110.789	6.04	3.08MU GX	2.92MD UU	..	...	UU	36	93	21.7	.31	C	.5	.5
4876	1989 MAY 09	18:17:44.05	43.304	-110.685	3.89	2.92MU GX	2.60MD BR	..	...	BR	22	222	14.0	.11	.	.5	.0
4877	1989 MAY 12	15:03:74.02	43.511	-110.740	5.72	3.01MU GX	2.80MD BR	..	...	BR	23	147	5.0	.06	.	.5	.0
4878	1989 MAY 12	15:04:18.50	43.710	-110.992	.50	2.92MU GX	2.60MD BT	..	...	MB	5	311	188.7	.42	D	6.7	7.2
4879	1989 MAY 12	15:04:62.07	43.513	-110.743	4.79	3.13MU GX	3.00MD BR	..	...	BR	23	143	5.0	.07	.	.7	.0
4880	1989 MAY 12	15:05:05.20	43.555	-110.910	11.50	3.20MU GX	3.10MD BT	..	...	MB	5	315	207.1	.30	D	5.3	6.7
4881	1989 MAY 14	12:58:22.75	42.243	-111.017	1.89	3.04MU GX	2.85MD UU	..	...	UU	12	301	36.4	.17	.	1.4	12.1
4882	1989 MAY 14	23:52:63.97	43.511	-110.738	5.86	2.92MU GX	2.60MD BR	..	...	BR	24	149	5.0	.07	.	.6	.0
4883	1989 MAY 17	11:07:50.68	43.511	-110.738	6.20	2.97MU GX	2.70MD BR	..	...	BR	25	149	5.0	.07	.	.4	.0
4884	1989 MAY 20	22:10:13.12	44.719	-111.116	7.03	3.04MU GX	2.85MD UU	..	...	UU	8	146	9.8	.14	A	.9	.2
4885	1989 MAY 21	06:26:28.23	44.813	-111.389	8.79	3.01MU GX	2.80MD UU	..	...	UU	8	221	16.5	.05	B	1.3	.4
4886	1989 MAY 22	10:05:51.23	43.511	-110.740	5.17	3.07MU GX	2.90MD BR	..	...	BR	24	147	5.0	.08	.	.7	.0
4887	1989 MAY 23	05:46:59.90	45.262	-110.291	2.80	3.13MU GX	3.00MD BT	..	...	MB	18	202	43.4	.31	D	2.2	4.3
4888	1989 MAY 23	13:33:37.54	44.511	-112.207	9.55	3.27MU GX	3.20MD UU	..	...	IN	17	130	59.4	.24	S	.7	1.7
4889	1989 MAY 29	03:49:10.81	44.510	-112.271	17.68	3.13MU GX	3.00MD UU	..	...	IN	9	155	51.6	.07	S	.7	12.7
4890	1989 JUN 06	20:02:34.55	44.741	-111.492	3.60	3.30MU GX	3.24MD UU	..	...	UU	33	205	20.3	.13	A	.6	.7
4891	1989 JUN 08	11:36:45.86	44.751	-111.488	5.17	2.90MU GX	2.55MD UU	..	...	UU	28	206	20.2	.07	A	.4	.5
4892	1989 JUN 08	23:30:43.70	44.591	-115.107	13.10	3.13MU GX	3.00MD EO	..	...	MB	6	329	180.3	.09	D	4.0	3.5
4893	1989 JUN 13	09:33:23.50	45.005	-111.674	10.60	2.89MU GX	2.50MD BT	..	...	MB	9	224	38.4	.25	C	2.1	2.2
4894	1989 JUN 14	22:42:54.76	42.688	-111.475	3.15	2.89MU GX	2.50MD UU	..	...	UU	15	240	68.4	.28	.	1.1	1.9
4895	1989 JUN 15	15:09:33.43	42.698	-111.481	1.53	2.91MU GX	2.57MD UU	..	...	UU	14	241	69.3	.25	.	1.3	1.7
4896	1989 JUN 16	22:25:22.80	45.705	-111.369	1.30	3.59MU GX	3.60MD BT	..	...	MB	8	128	33.1	.08	B	.6	1.2
4897	1989 JUN 18	03:31:16.34	44.738	-111.169	5.31	3.12MU GX	2.98MD UU	..	...	UU	24	323	85.9	.07	B	1.0	1.2
4898	1989 JUN 18	03:31:17.80	44.793	-111.173	1.00	2.97MU GX	2.70MD EO	..	...	MB	8	266	84.1	.25	D	4.9	6.6
4899	1989 JUN 19	21:26:31.60	45.895	-111.507	5.90	2.89MU GX	2.50MD EO	..	...	MB	9	143	29.5	.28	C	1.6	5.8
4900	1989 JUN 24	09:24:49.95	43.507	-110.740	5.17	3.68MU GX	3.70MD BR	..	...	BR	16	149	5.0	.03	.	.3	.0
4901	1989 JUN 24	10:24:65.96	43.507	-110.738	5.45	3.59MU GX	3.60MD BR	..	...	BR	17	152	5.0	.03	.	.3	.0
4902	1989 JUN 24	10:25:05.71	43.527	-110.761	.16	3.40MU GX	3.40ML UU	..	...	UU	22	110	72.6	.35	.	.9	2.9
4903	1989 JUN 24	17:52:68.80	43.508	-110.742	5.26	3.13MU GX	3.00MD BR	..	...	BR	23	147	5.0	.06	.	.5	.0
4904	1989 JUN 24	20:32:52.26	43.504	-110.739	5.56	3.07MU GX	2.90MD BR	..	...	BR	22	153	4.0	.06	.	.5	.0
4905	1989 JUN 24	22:09:21.70	45.053	-112.988	7.50	2.97MU GX	2.70MD BT	..	...	MB	8	237	17.8	.33	D	3.7	4.7
4906	1989 JUN 27	18:24:58.95	43.507	-110.737	5.50	3.07MU GX	2.90MD BR	..	...	BR	21	153	5.0	.05	.	.4	.0
4907	1989 JUN 28	03:16:37.65	44.586	-112.322	13.65	3.20MU GX	3.10MD UU	..	...	IN	12	96	55.9	.23	S	.1	1.4
4908	1989 JUL 03	22:44:24.44	41.379	-112.419	7.00	4.50MU GX	4.50MD BR	..	...	BR	19	349	229.0	.10	.	.4	.0
4909	1989 JUL 16	02:01:11.30	44.237	-114.519	10.60	3.13MU GX	3.00MD BT	..	...	MB	8	336	150.7	.24	D	7.8	6.9
4910	1989 JUL 25	03:31:54.15	43.508	-110.242	7.00	3.07MU GX	2.90MD BR	..	...	BR	19	261	31.0	.08	.	.0	.0
4911	1989 JUL 26	04:17:25.12	43.512	-110.268	7.00	3.20MU GX	3.10MD BR	..	...	BR	32	232	29.0	.14	.	.0	.0
4912	1989 JUL 26	22:38:08.79	44.730	-111.065	5.18	4.11MU GX	4.11MD UU	..	...	UU	29	147	5.6	.06	A	.2	.3
4913	1989 JUL 27	09:58:21.00	44.859	-111.564	5.40	2.92MU GX	2.60MD BT	..	...	MB	8	244	56.1	.21	D	2.8	4.5
4914	1989 AUG 05	03:00:43.00	42.981	-111.546	6.69	2.93MU GX	2.62MD UU	..	...	IN	10	280	47.0	.07	S	1.2	.6
4915	1989 AUG 06	02:49:50.79	42.919	-111.204	8.50	3.13MU GX	2.99MD UU	..	...	IN	6	320	72.3	.16	S	2.9	1.7
4916	1989 AUG 06	02:49:59.26	42.998	-111.553	8.51	2.89MU GX	2.50MD UU	..	...	UU	14	141	44.8	.35	.	.9	1.5
4917	1989 AUG 06	15:05:25.57	42.981	-111.581	.03	2.90MU GX	2.53MD UU	..	...	UU	17	139	47.5	.32	.	1.4	3.0
4918	1989 AUG 06	15:08:40.33	43.074	-111.660	10.68	3.19MU GX	3.09MD UU	..	...	IN	5	288	33.2	.04	S	2.6	1.4
4919	1989 AUG 06	15:10:27.80	43.021	-111.721	7.02	3.18MU GX	3.07MD UU	..	...	IN	8	267	35.4	.04	S	2.6	1.6

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
4920	1989 AUG 07	13:30:50.80	45.897	-111.290	.10	4.30MU GX	4.30MD EO	..	...	MB	16	167	41.0	.17	C	.9	2.6
4921	1989 AUG 10	21:15:00.30	45.902	-111.277	4.30	2.89MU GX	2.50MD EO	..	...	MB	6	170	40.9	.12	C	.8	20.9
4922	1989 AUG 12	08:31:55.80	44.643	-114.261	11.60	3.13MU GX	3.00MD EO	..	...	MB	7	317	187.3	.15	D	6.5	6.5
4923	1989 AUG 17	22:15:39.78	44.271	-114.894	5.00	3.00ML BUT	.00	..	...	PE	7	...	.....	.....	.	.....	.....
4924	1989 AUG 21	17:22:16.84	44.239	-110.681	8.12	3.04MU GX	2.85MD UU	..	...	UU	24	85	21.0	.30	C	.7	.3
4925	1989 AUG 24	04:07:19.57	44.249	-110.698	8.08	2.95MU GX	2.65MD UU	..	...	UU	33	96	22.3	.30	C	.7	1.0
4926	1989 AUG 25	20:06:37.90	45.910	-111.290	9.60	3.59MU GX	3.60MD BT	..	...	MB	14	131	27.4	.28	C	1.3	2.0
4927	1989 AUG 27	16:08:02.92	44.641	-111.093	6.84	2.90MU GX	2.54MD UU	..	...	UU	13	114	4.0	.11	A	.4	.1
4928	1989 AUG 29	10:12:44.35	44.803	-110.811	7.70	2.89MU GX	2.50MD UU	..	...	UU	16	134	12.4	.10	A	.4	.2
4929	1989 SEP 03	15:26:50.26	44.715	-111.167	7.26	3.00MU GX	2.78MD UU	..	...	UU	36	148	5.8	.16	A	.3	.1
4930	1989 SEP 06	05:32:27.57	44.761	-111.203	9.91	2.93MU GX	2.62MD UU	..	...	UU	32	212	6.4	.09	A	.4	.1
4931	1989 SEP 18	07:17:10.78	44.777	-110.981	7.04	2.98MU GX	2.73MD UU	..	...	UU	12	181	2.8	.04	A	.5	.1
4932	1989 SEP 23	11:59:24.10	44.526	-114.124	1.30	2.92MU GX	2.60MD EO	..	...	MB	7	312	106.5	.25	D	5.1	5.1
4933	1989 SEP 27	02:48:12.78	42.325	-111.364	3.31	2.92MU GX	2.90ML UU	..	...	UU	14	154	41.6	.16	.	.9	1.5
4934	1989 SEP 29	20:51:44.32	44.732	-111.081	8.06	2.98MU GX	2.73MD UU	..	...	UU	32	150	6.7	.09	A	.2	.3
4935	1989 SEP 29	21:09:24.46	44.731	-111.080	7.78	2.92MU GX	2.59MD UU	..	...	UU	30	149	6.6	.07	A	.2	.1
4936	1989 SEP 29	21:23:49.01	44.730	-111.081	8.21	3.12MU GX	2.97MD UU	..	...	UU	35	149	6.7	.08	A	.2	.1
4937	1989 SEP 29	22:13:28.29	44.730	-111.081	6.88	2.94MU GX	2.63MD UU	..	...	UU	27	149	6.7	.09	A	.2	.0
4938	1989 SEP 29	22:16:48.83	44.733	-111.076	7.91	2.96MU GX	2.68MD UU	..	...	UU	11	150	6.3	.04	A	.3	.2
4939	1989 SEP 29	22:46:05.46	44.732	-111.073	7.71	2.89MU GX	2.50MD UU	..	...	UU	10	149	6.1	.04	A	.4	.2
4940	1989 SEP 30	01:30:31.60	44.748	-111.073	19.00	3.13MU GX	3.00MD BT	..	...	MB	9	248	86.0	.46	D	7.5	6.7
4941	1989 SEP 30	01:46:36.88	44.732	-111.091	7.83	3.21MU GX	3.11MD UU	..	...	UU	10	167	7.2	.13	A	.9	.8
4942	1989 SEP 30	02:15:08.77	44.733	-111.077	8.08	2.90MU GX	2.53MD UU	..	...	UU	12	150	6.3	.04	A	.3	.4
4943	1989 SEP 30	02:18:10.50	44.728	-111.074	7.28	3.31MU GX	3.25MD UU	..	...	UU	25	147	6.4	.09	A	.3	.2
4944	1989 SEP 30	02:30:18.27	44.732	-111.079	7.03	2.91MU GX	2.57MD UU	..	...	UU	15	150	6.5	.09	A	.4	.1
4945	1989 SEP 30	04:54:10.42	44.727	-111.078	7.24	3.10MU GX	2.95MD UU	..	...	UU	38	147	6.7	.10	A	.2	.1
4946	1989 SEP 30	05:27:07.82	44.727	-111.074	7.00	2.92MU GX	2.58MD UU	..	...	UU	12	146	6.5	.11	A	.5	.2
4947	1989 SEP 30	05:32:40.23	44.730	-111.077	8.31	2.99MU GX	2.76MD UU	..	...	UU	13	148	6.5	.06	A	.4	.2
4948	1989 SEP 30	06:52:00.06	44.731	-111.096	8.54	3.15MU GX	3.02MD UU	..	...	UU	28	165	7.2	.13	A	.4	.7
4949	1989 SEP 30	07:13:07.21	44.732	-111.097	8.03	3.36MU GX	3.31MD UU	..	...	UU	31	165	7.1	.12	A	.4	.5
4950	1989 SEP 30	07:29:20.40	44.428	-114.192	8.43	3.42MU GX	3.40MD UU	..	...	IN	15	245	115.5	.27	S	2.0	2.4
4951	1989 SEP 30	08:57:11.01	44.731	-111.079	8.37	2.89MU GX	2.51MD UU	..	...	UU	32	149	6.5	.05	A	.2	.1
4952	1989 SEP 30	12:49:59.52	44.730	-111.080	7.97	2.94MU GX	2.63MD UU	..	...	UU	32	149	6.7	.09	A	.2	.2
4953	1989 SEP 30	15:04:47.47	44.729	-111.081	8.25	2.98MU GX	2.74MD UU	..	...	UU	28	148	6.8	.08	A	.2	.1
4954	1989 SEP 30	15:37:48.37	44.732	-111.082	8.67	2.98MU GX	2.72MD UU	..	...	UU	11	150	6.8	.04	A	.4	.2
4955	1989 SEP 30	18:11:38.70	44.783	-111.089	1.10	2.92MU GX	2.60MD BT	..	...	MB	8	245	85.8	.28	D	5.3	6.5
4956	1989 SEP 30	19:01:57.32	44.725	-111.079	7.06	3.07MU GX	2.90MD UU	..	...	UU	29	145	6.9	.15	A	.4	.1
4957	1989 SEP 30	20:16:53.16	44.730	-111.077	7.95	3.07MU GX	2.89MD UU	..	...	UU	30	148	13.0	.10	A	.3	.7
4958	1989 OCT 01	04:11:40.59	44.732	-111.068	7.05	2.93MU GX	2.61MD UU	..	...	UU	16	148	5.8	.10	A	.4	.1
4959	1989 OCT 01	06:04:21.40	44.735	-111.075	7.97	2.95MU GX	2.66MD UU	..	...	UU	12	151	6.1	.04	A	.3	.4
4960	1989 OCT 01	10:10:03.82	44.729	-111.068	7.94	2.93MU GX	2.61MD UU	..	...	UU	29	146	5.9	.06	A	.2	.2
4961	1989 OCT 01	10:22:29.69	44.730	-111.072	8.65	3.01MU GX	2.80MD UU	..	...	UU	36	147	6.2	.08	A	.2	.1
4962	1989 OCT 01	22:35:13.60	42.683	-111.272	.21	3.40MU GX	3.40ML UU	..	...	UU	23	171	75.7	.29	.	2.2	1.6
4963	1989 OCT 02	00:24:57.19	44.733	-111.076	8.29	2.89MU GX	2.50MD UU	..	...	UU	12	150	6.2	.04	A	.4	.1
4964	1989 OCT 03	11:48:07.02	44.731	-111.086	8.29	2.89MU GX	2.50MD UU	..	...	UU	13	150	7.0	.04	A	.3	.1
4965	1989 OCT 12	16:59:35.35	44.729	-111.074	7.06	2.92MU GX	2.58MD UU	..	...	UU	14	147	6.3	.14	A	.5	.2
4966	1989 OCT 16	10:14:01.35	42.718	-111.326	.45	3.40MU GX	3.40ML UU	..	...	UU	24	151	71.7	.30	.	1.0	1.9
4967	1989 OCT 16	13:29:22.12	42.604	-110.939	2.56	3.60MU GX	3.60ML UU	..	...	UU	11	219	75.8	.27	.	1.2	1.4
4968	1989 OCT 17	10:30:13.04	44.764	-111.125	6.93	2.96MU GX	2.69MD UU	..	...	UU	27	179	9.4	.08	A	.3	.1
4969	1989 OCT 20	03:25:41.36	44.738	-111.087	7.11	2.93MU GX	2.62MD UU	..	...	UU	29	155	6.8	.08	A	.2	.1

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Std-Err Vert
4970	1989 OCT 20	13:29:53.64	44.735	-111.086	7.03	2.90MU GX	2.54MD UU	..	...	UU	13	152	6.9	.09	A	.4	.1
4971	1989 OCT 20	13:43:28.45	44.736	-111.090	7.27	3.05MU GX	2.86MD UU	..	...	UU	34	154	7.1	.07	A	.2	.1
4972	1989 OCT 20	15:46:43.78	44.737	-111.090	6.95	2.99MU GX	2.75MD UU	..	...	UU	30	154	7.1	.08	A	.3	.1
4973	1989 OCT 21	02:31:03.53	44.744	-110.414	6.26	2.89MU GX	2.50MD UU	..	...	UU	10	179	5.0	.13	A	.7	.1
4974	1989 OCT 22	16:35:05.41	44.745	-110.418	3.78	2.95MU GX	2.65MD UU	..	...	UU	8	110	5.2	.08	A	.5	.8
4975	1989 OCT 24	07:08:42.74	44.501	-110.460	6.96	2.95MU GX	2.65MD UU	..	...	UU	7	175	15.0	.04	A	.6	.5
4976	1989 OCT 24	20:22:10.69	44.736	-111.087	6.91	2.95MU GX	2.66MD UU	..	...	UU	17	153	6.9	.09	A	.4	.1
4977	1989 OCT 24	20:49:09.46	44.736	-111.090	8.68	2.89MU GX	2.50MD UU	..	...	UU	9	154	7.1	.06	A	.4	.2
4978	1989 OCT 24	23:00:56.54	44.741	-111.089	7.98	2.95MU GX	2.67MD UU	..	...	UU	28	156	6.9	.08	A	.2	.2
4979	1989 OCT 24	23:35:24.03	44.734	-111.086	7.93	2.93MU GX	2.62MD UU	..	...	UU	7	152	6.9	.04	A	.4	.8
4980	1989 OCT 25	00:02:29.07	44.734	-111.085	7.82	2.89MU GX	2.50MD UU	..	...	UU	9	152	6.8	.07	A	.5	.3
4981	1989 OCT 25	00:27:50.94	44.741	-111.086	9.31	2.90MU GX	2.53MD UU	..	...	UU	9	156	6.6	.06	A	.4	.8
4982	1989 OCT 25	00:50:46.94	44.736	-111.090	8.35	3.05MU GX	2.86MD UU	..	...	UU	35	154	7.1	.05	A	.3	.0
4983	1989 OCT 25	00:52:29.73	44.637	-110.361	3.57	3.02MU GX	2.81MD UU	..	...	UU	8	178	12.8	.16	B	.7	.3
4984	1989 OCT 25	00:53:26.80	44.738	-111.088	8.36	2.89MU GX	2.50MD UU	..	...	UU	10	155	6.9	.05	A	.4	.1
4985	1989 OCT 25	01:07:02.57	44.734	-111.088	6.93	2.90MU GX	2.54MD UU	..	...	UU	11	152	7.1	.11	A	.5	.1
4986	1989 OCT 25	01:29:10.18	44.732	-111.088	7.29	3.09MU GX	2.93MD UU	..	...	UU	34	151	7.1	.08	A	.2	.1
4987	1989 OCT 25	02:22:36.73	44.736	-111.084	7.18	2.91MU GX	2.56MD UU	..	...	UU	16	153	6.7	.12	A	.4	.1
4988	1989 OCT 25	02:27:57.40	44.734	-111.084	7.16	2.91MU GX	2.57MD UU	..	...	UU	13	151	6.8	.12	A	.6	.3
4989	1989 OCT 25	02:37:12.61	44.728	-111.087	7.07	2.98MU GX	2.73MD UU	..	...	UU	32	148	7.3	.12	A	.3	.1
4990	1989 OCT 25	02:57:10.62	44.729	-111.091	6.98	3.13MU GX	3.00MD UU	..	...	UU	30	150	11.9	.12	A	.3	.1
4991	1989 OCT 25	03:00:25.11	44.736	-111.091	8.52	2.92MU GX	2.60MD UU	..	...	UU	15	154	7.2	.05	A	.4	.1
4992	1989 OCT 25	03:06:19.34	44.728	-111.084	7.59	3.14MU GX	3.01MD UU	..	...	UU	33	148	7.1	.12	A	.3	.1
4993	1989 OCT 25	03:35:00.01	44.733	-111.094	8.95	3.42MU GX	3.40MD UU	..	...	UU	32	152	7.6	.10	A	.3	.5
4994	1989 OCT 25	03:35:30.11	44.738	-111.090	6.93	3.19MU GX	3.09MD UU	..	...	UU	12	155	7.0	.11	A	.5	.1
4995	1989 OCT 25	04:39:49.57	44.735	-111.096	8.58	2.92MU GX	2.58MD UU	..	...	UU	12	154	7.6	.04	A	.4	.2
4996	1989 OCT 25	06:58:15.74	44.732	-111.094	8.66	3.17MU GX	3.06MD UU	..	...	UU	27	152	7.6	.08	A	.3	.1
4997	1989 OCT 30	12:01:39.58	44.730	-111.080	8.56	2.89MU GX	2.51MD UU	..	...	UU	12	148	6.7	.06	A	.4	.2
4998	1989 OCT 31	07:36:58.16	44.787	-111.509	8.80	2.90MU GX	2.54MD UU	..	...	UU	22	258	23.0	.08	B	1.1	.1
4999	1989 OCT 31	14:17:47.64	42.890	-111.114	7.00	2.92MU GX	2.60MD BR	..	...	BR	23	158	30.0	.35	.	.4	.0
5000	1989 NOV 03	13:28:56.67	42.709	-111.232	4.61	2.94MU GX	2.64MD UU	..	...	UU	20	176	73.0	.31	.	1.1	1.5
5001	1989 NOV 04	14:15:08.38	45.100	-111.299	7.09	2.89MU GX	2.50MD UU	..	...	UU	12	293	43.7	.09	B	2.5	.1
5002	1989 NOV 20	03:49:54.80	45.649	-111.972	6.80	2.89MU GX	2.50MD BT	..	...	MB	10	91	22.2	.26	C	1.0	2.7
5003	1989 NOV 20	03:50:33.70	45.652	-111.968	6.30	2.97MU GX	2.70MD EO	..	...	MB	10	91	21.8	.24	C	1.2	5.9
5004	1989 NOV 29	18:24:21.31	44.222	-114.056	1.33	2.97MU GX	2.70MD UU	..	...	IN	15	137	95.2	.33	S	1.1	2.8
5005	1989 NOV 30	21:03:15.93	44.750	-110.413	2.42	2.99MU GX	2.75MD UU	..	...	UU	13	94	4.8	.14	A	.7	.1
5006	1989 NOV 30	21:58:35.17	44.744	-110.417	1.07	3.01MU GX	2.80MD UU	..	...	UU	12	92	5.2	.13	A	.6	.4
5007	1989 NOV 30	22:08:48.97	44.745	-110.406	6.27	3.12MU GX	2.98MD UU	..	...	UU	16	93	4.3	.22	B	.5	.2
5008	1989 NOV 30	22:23:56.93	44.740	-110.415	4.16	3.13MU GX	2.99MD UU	..	...	UU	15	91	5.1	.16	A	.4	.2
5009	1989 DEC 01	09:25:17.30	45.590	-111.183	10.90	2.70ML BUT	2.20MD ESO	..	...	MB	17	87	16.7	.31	C	1.2	1.9
			10 km SW of Bozeman														
5010	1989 DEC 01	19:48:05.00	44.349	-115.851	12.90	2.50MD ESO	.....	..	...	MB	7	142	64.6	.04	C	.5	.7
			20 km SE of Cascade, ID														
5011	1989 DEC 09	02:58:37.90	45.585	-111.178	5.70	3.10ML BUT	2.50MD ESO	..	...	MB	16	85	16.4	.22	C	1.0	2.2
			12 km SW of Bozeman														
5012	1989 DEC 09	23:33:55.80	45.588	-111.192	6.60	2.90ML BUT	2.40MD ESO	..	...	MB	19	85	17.4	.29	C	.8	1.6
			12 km SW of Bozeman														
5013	1989 DEC 19	09:35:28.00	44.627	-114.254	22.20	2.80ML BUT	2.80MD ESO	..	...	MB	10	112	139.0	.29	D	2.8	5.5
			15 km N of Challis, ID														
5014	1989 DEC 19	10:01:43.50	44.433	-110.374	3.59	2.56MD UU	.....	..	...	UU	16	145	12.2	.12	A	.4	.2

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
5015	1989 DEC 19	15:15:21.46	44.429	-110.372	5.14	2.88MD	UU	..	..	UU	22	112	18.5	.19	B	.3	.5
5016	1989 DEC 19	15:19:41.57	44.427	-110.369	4.50	3.08MD	UU	..	..	UU	28	113	18.1	.15	A	.3	.4
5017	1989 DEC 19	15:21:35.00	44.436	-110.367	3.21	2.95MD	UU	..	..	UU	27	102	11.6	.14	A	.2	.1
5018	1989 DEC 19	15:38:06.68	44.432	-110.363	5.03	2.82MD	UU	..	..	UU	26	116	18.3	.14	A	.2	.4
5019	1989 DEC 19	15:50:15.20	44.438	-110.358	5.52	2.81MD	UU	..	..	UU	25	106	10.9	.19	B	.3	.3
5020	1989 DEC 19	15:57:43.75	44.433	-110.364	3.17	2.51MD	UU	..	..	UU	16	105	11.6	.12	A	.3	.1
5021	1989 DEC 19	16:59:32.89	44.441	-110.341	9.67	3.03MD	UU	..	..	UU	4	121	9.8	.00	A	.4	1.4
5022	1989 DEC 19	16:59:42.35	44.473	-110.332	9.59	2.58MD	UU	..	..	UU	12	334	54.7	.24	D	8.4	13.8
5023	1989 DEC 19	22:47:06.14	44.320	-110.494	11.96	3.09MD	UU	..	..	UU	11	321	33.5	.16	D	10.1	10.2
5024	1989 DEC 19	22:55:52.71	44.425	-110.361	3.45	3.13MD	UU	..	..	UU	20	154	11.9	.13	A	.3	.1
5025	1989 DEC 20	02:05:04.00	44.771	-111.027	6.08	2.66MD	UU	..	..	UU	13	161	2.1	.10	A	.6	.1
5026	1989 DEC 22	14:59:01.39	44.429	-110.357	3.68	2.68MD	UU	..	..	UU	34	108	11.7	.14	A	.2	.1
5027	1989 DEC 26	10:28:32.37	44.228	-110.394	6.78	3.12MD	UU	..	..	UU	36	133	15.0	.24	B	.4	.5
5028	1989 DEC 26	11:15:05.86	44.240	-110.417	9.00	2.73MD	UU	..	..	UU	30	122	16.0	.17	B	.4	.1
5029	1989 DEC 26	16:25:26.65	44.756	-110.949	8.28	2.50MD	UU	..	..	UU	11	125	4.6	.12	A	.5	.3
5030	1989 DEC 27	06:12:54.50	44.576	-114.344	19.30	3.80ML	BUT	3.40MD	ESO	..	..	..	..	.30	D	1.6	2.4
		3.5Mb NEIC; 10 km NW of Challis, ID; Felt V															
5031	1989 DEC 27	07:08:16.51	44.325	-110.457	9.28	3.01MD	UU	..	..	UU	12	324	35.4	.10	D	8.4	2.0
5032	1989 DEC 27	07:09:14.20	44.436	-110.348	3.03	3.21MD	UU	..	..	UU	17	113	10.6	.16	A	.4	.2
5033	1990 JAN 02	00:15:34.51	44.751	-110.392	3.30	2.75MD	UU	..	..	UU	14	94	3.0	.15	A	.5	.7
5034	1990 JAN 02	22:09:18.40	46.226	-111.396	.50	3.70ML	BUT	3.60MD	ESO	..	..	..	..	.22	C	1.1	4.1
		7 KM NE OF TOSTON; FELT															
5035	1990 JAN 03	16:42:47.70	44.497	-114.054	.30	2.90ML	BUT	2.60MD	ESO	..	..	..	..	.38	D	5.6	4.6
		15 KM E OF CHALLIS, ID															
5036	1990 JAN 04	06:47:03.64	44.244	-110.785	4.90	2.95MD	UU	..	..	UU	31	82	22.8	.31	C	.6	.3
5037	1990 JAN 05	15:42:41.90	44.741	-114.160	1.00	2.70ML	BUT	2.60MD	ESO	..	..	..	..	.09	D	3.3	3.1
		22 KM N OF CHALLIS, ID															
5038	1990 JAN 06	15:17:45.45	44.471	-110.376	5.80	2.60MD	UU	..	..	UU	10	118	9.4	.11	A	.3	.4
5039	1990 JAN 06	15:59:16.25	44.470	-110.376	3.90	2.50MD	UU	..	..	UU	7	118	9.5	.10	A	.4	1.1
5040	1990 JAN 07	19:15:50.50	44.608	-114.271	10.40	2.90ML	BUT	2.50MD	ESO	..	..	..	..	.25	D	9.2	8.9
		15 KM NW OF CHALLIS, ID															
5041	1990 JAN 08	06:30:57.90	44.688	-114.141	1.00	2.90ML	BUT	2.70MD	ESO	..	..	..	..	.09	C	2.3	1.9
		20 KM NNE OF CHALLIS, ID															
5042	1990 JAN 10	09:08:31.62	44.316	-110.560	5.70	2.57MD	UU	..	..	UU	21	77	23.9	.17	B	.5	.2
5043	1990 JAN 10	21:14:47.01	44.465	-114.204	10.36	3.03MD	INEL	..	..	IN	14	244	114.9	.33	S	2.6	3.3
5044	1990 JAN 13	15:27:01.90	44.718	-111.159	6.60	2.73MD	UU	..	..	UU	22	83	6.4	.11	A	.3	.1
5045	1990 JAN 13	16:05:43.73	44.685	-110.409	.00	3.01MD	UU	..	..	UU	15	62	8.9	.41	C	1.0	16.6
5046	1990 JAN 13	16:05:50.48	44.801	-110.800	6.20	3.33MD	UU	..	..	UU	5	263	90.2	.03	C	2.7	6.0
5047	1990 JAN 15	16:00:08.90	44.743	-114.251	3.70	3.00ML	BUT	3.00MD	ESO	..	..	..	..	.29	D	5.3	7.7
		25 KM N OF CHALLIS, ID															
5048	1990 JAN 18	14:01:53.10	44.727	-114.168	14.60	3.20ML	BUT	3.10MD	ESO	..	..	..	..	.22	D	3.1	3.7
		20 KM N OF CHALLIS, ID															
5049	1990 JAN 19	00:50:28.60	44.781	-114.089	.80	2.50ML	BUT	2.70MD	ESO	..	..	..	..	.22	D	4.6	3.9
		25 KM NNE OF CHALLIS, ID															
5050	1990 JAN 19	23:59:14.84	44.480	-110.917	18.20	2.70MD	UU	..	..	UU	5	119	6.8	.08	A	.9	1.7
5051	1990 JAN 24	09:03:30.97	41.763	-112.628	9.97	3.60ML	UU	..	..	UU	14	105	12.3	.15	.	.6	.9
5052	1990 JAN 24	10:27:01.89	41.767	-112.632	8.23	2.50ML	UU	..	..	UU	9	122	11.9	.21	.	.9	1.7
5053	1990 JAN 27	08:41:32.20	45.904	-111.505	9.30	2.70ML	BUT	2.50MD	ESO	..	..	..	..	.07	B	.4	1.6
		NEAR THREE FORKS															
5054	1990 JAN 27	15:17:23.56	44.423	-110.427	4.60	2.72MD	UU	..	..	UU	25	80	11.5	.17	B	.3	.2

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert		
5055	1990 JAN 27	15:26:11.24	44.421	-110.423	5.00	2.70MD	UU	.....	..	..	UU	14	106	11.8	.13	A	.3	.2
5056	1990 JAN 27	15:42:29.51	44.419	-110.426	4.10	2.77MD	UU	.....	..	..	UU	25	81	12.0	.16	B	.3	.2
5057	1990 JAN 27	16:22:29.45	44.414	-110.424	4.00	2.68MD	UU	.....	..	..	UU	13	109	12.5	.24	B	.6	.6
5058	1990 JAN 27	16:46:46.44	44.414	-110.420	2.80	3.34MD	UU	.....	..	..	UU	31	83	12.7	.19	B	.3	.1
5059	1990 JAN 31	01:35:35.01	44.459	-110.960	7.20	2.50MD	UU	.....	..	..	UU	8	228	9.5	.04	A	.9	.5
5060	1990 FEB 01	01:34:00.87	44.699	-111.021	8.30	2.67MD	UU	.....	..	..	UU	22	45	6.8	.07	A	.2	.1
5061	1990 FEB 02	07:49:08.67	44.375	-112.753	6.53	3.90ML	INEL	.....	..	..	IN	7	151	32.0	.14	.	.9	16.8
5062	1990 FEB 03	19:37:39.15	44.236	-110.817	5.30	2.52MD	UU	.....	..	..	UU	23	89	20.1	.27	B	.6	.5
5063	1990 FEB 05	16:13:20.69	44.217	-113.559	5.59	3.30ML	INEL	.....	..	..	IN	11	249	67.2	.17	S	2.0	3.2
5064	1990 FEB 06	04:48:54.22	44.776	-111.518	9.00	2.61MD	UU	.....	..	..	UU	12	280	23.2	.08	B	2.4	.1
5065	1990 FEB 13	18:11:15.13	44.240	-110.404	10.60	2.65MD	UU	.....	..	..	UU	11	322	30.5	.08	D	7.6	1.2
5066	1990 FEB 13	21:59:27.58	45.100	-110.980	.40	2.60MD	UU	.....	..	..	UU	5	273	26.9	.47	D	17.6	27.6
5067	1990 FEB 15	00:13:39.26	44.371	-112.749	1.33	3.60ML	INEL	.....	..	..	IN	8	151	31.5	.16	S	.9	3.7
5068	1990 FEB 15	14:53:30.89	44.322	-110.553	5.80	3.13MD	UU	.....	..	..	UU	21	114	23.1	.13	A	.3	.2
5069	1990 FEB 16	09:37:57.30	45.007	-111.810	6.80	3.30ML	BUT	2.70MD	ESO	10	159	31.0	.17	C	1.1	1.8
N GRAVELLY RANGE																			
5070	1990 FEB 18	00:32:54.61	44.273	-110.335	7.30	2.56MD	UU	.....	..	..	UU	12	158	8.6	.06	A	.4	.3
5071	1990 FEB 23	21:35:23.99	44.379	-114.173	10.05	2.94MD	INEL	.....	..	..	IN	12	264	113.2	.23	S	1.9	2.2
5072	1990 FEB 23	22:40:12.71	41.199	-113.179	6.93	3.00ML	UU	.....	..	..	UU	20	223	66.1	.19	.	1.5	.7
5073	1990 FEB 24	19:48:19.00	44.338	-113.129	.10	2.70ML	BUT	2.10MD	ESO	8	302	58.8	.32	D	8.8	8.4
10 KM W OF NICHOLIA, ID																			
5074	1990 FEB 25	16:11:15.90	44.734	-111.809	.50	2.60ML	BUT	2.00MD	ESO	10	192	33.3	.15	C	1.2	1.7
S GRAVELLY RANGE																			
5075	1990 FEB 26	02:09:16.48	44.639	-111.081	6.60	3.05MD	UU	.....	..	..	UU	23	57	4.0	.08	A	.2	.1
5076	1990 FEB 26	16:02:34.28	44.639	-111.076	6.00	2.53MD	UU	.....	..	..	UU	14	92	4.2	.15	A	.4	.2
5077	1990 FEB 26	19:01:45.45	44.643	-111.079	6.40	2.99MD	UU	.....	..	..	UU	38	58	4.5	.12	A	.2	.1
5078	1990 FEB 26	20:02:15.39	44.643	-111.070	2.00	3.53MD	UU	.....	..	..	UU	10	88	4.8	.08	C	.2	8.1
5079	1990 FEB 26	20:02:19.20	44.632	-111.107	17.20	2.90ML	BUT	2.30MD	ESO	9	256	80.5	.42	D	9.1	9.4
HEBGEN LAKE REGION																			
5080	1990 FEB 26	20:08:59.18	44.638	-111.073	6.50	2.77MD	UU	.....	..	..	UU	28	52	4.2	.09	A	.2	.1
5081	1990 FEB 26	20:24:06.92	44.635	-111.068	5.40	2.68MD	UU	.....	..	..	UU	16	81	4.2	.06	A	.2	.3
5082	1990 FEB 26	20:41:59.38	44.640	-111.069	5.00	2.88MD	UU	.....	..	..	UU	23	33	4.6	.11	A	.2	.5
5083	1990 FEB 26	21:00:33.53	44.640	-111.071	4.70	2.81MD	UU	.....	..	..	UU	27	33	4.5	.09	A	.2	.3
5084	1990 FEB 26	21:10:39.64	44.641	-111.078	6.70	3.41MD	UU	.....	..	..	UU	25	56	4.3	.10	A	.2	.1
5085	1990 FEB 26	21:10:40.70	44.701	-111.127	3.90	3.20ML	BUT	2.60MD	ESO	9	249	80.5	.37	D	5.6	8.2
HEBGEN LAKE REGION																			
5086	1990 FEB 26	21:11:31.68	44.638	-111.073	6.60	2.50MD	UU	.....	..	..	UU	13	89	4.3	.10	A	.4	.2
5087	1990 FEB 26	21:24:09.23	44.636	-111.072	6.20	2.84MD	UU	.....	..	..	UU	22	52	4.0	.07	A	.3	.1
5088	1990 FEB 26	21:24:50.58	44.634	-111.066	3.90	2.70MD	UU	.....	..	..	UU	13	80	4.1	.11	A	.4	.4
5089	1990 FEB 26	21:30:52.58	44.640	-111.074	4.70	3.05MD	UU	.....	..	..	UU	27	52	4.4	.08	A	.2	.2
5090	1990 FEB 26	22:10:47.79	44.641	-111.075	4.70	3.24MD	UU	.....	..	..	UU	28	34	4.4	.08	A	.2	.4
5091	1990 FEB 26	22:54:54.33	44.639	-111.080	6.40	2.57MD	UU	.....	..	..	UU	21	56	4.0	.11	A	.3	.1
5092	1990 FEB 26	23:21:59.18	44.642	-111.078	6.50	2.69MD	UU	.....	..	..	UU	20	57	4.4	.15	A	.3	.1
5093	1990 FEB 27	01:22:54.37	44.639	-111.074	6.70	2.85MD	UU	.....	..	..	UU	26	51	4.3	.11	A	.2	.1
5094	1990 FEB 27	04:14:59.13	44.640	-111.071	4.80	3.17MD	UU	.....	..	..	UU	23	52	4.5	.10	A	.2	.4
5095	1990 FEB 27	04:31:26.86	44.638	-111.076	6.40	2.74MD	UU	.....	..	..	UU	23	52	4.1	.09	A	.3	.1
5096	1990 FEB 27	08:43:26.70	44.471	-114.874	.20	2.50ML	BUT	2.70MD	ESO	10	251	165.6	.38	D	4.1	4.5
80 KM NW OF STANLEY, ID																			
5097	1990 FEB 27	14:59:34.36	44.637	-111.075	6.60	2.94MD	UU	.....	..	..	UU	23	52	4.0	.08	A	.2	.1

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
5098	1990 FEB 27	22:56:19.40	44.346	-114.110	6.60	2.90M1	BUT 2.60MD	ESO	..	MB	7	311	113.6	.18	D	7.2	6.5
		15 KM SE OF CHALLIS, ID															
5099	1990 FEB 28	14:04:43.00	44.771	-111.938	3.30	2.50M1	BUT 2.20MD	ESO	..	MB	9	167	30.5	.17	C	1.9	3.3
		S GRAVELLY RANGE															
5100	1990 FEB 28	18:44:22.78	44.643	-111.077	4.50	2.65MD	UU .....	..	..	UU	30	56	4.5	.10	A	.2	.1
5101	1990 MAR 01	01:29:25.18	44.643	-111.078	5.70	2.93MD	UU .....	..	..	UU	60	57	4.5	.12	A	.2	.3
5102	1990 MAR 03	00:36:13.07	44.641	-111.081	6.40	2.99MD	UU .....	..	..	UU	41	58	4.2	.09	A	.2	.1
5103	1990 MAR 03	00:36:17.83	44.349	-111.033	3.30	2.73MD	UU .....	..	..	UU	12	304	43.6	.17	D	7.4	2.0
5104	1990 MAR 03	18:41:34.12	44.644	-111.085	6.40	2.60MD	UU .....	..	..	UU	15	103	4.4	.13	A	.4	.1
5105	1990 MAR 05	06:50:56.21	43.415	-110.721	4.45	3.90MD	BR .....	..	..	BR	18	194	5.0	.08	A	.0	.....
5106	1990 MAR 06	00:23:54.80	44.541	-112.676	.90	3.10M1	BUT 2.70MD	ESO	..	MB	6	245	34.7	.23	C	.6	.8
		15 KM SW OF LIMA															
5107	1990 MAR 07	04:40:11.38	44.640	-111.085	6.50	2.79MD	UU .....	..	..	UU	36	62	4.1	.09	A	.2	.1
5108	1990 MAR 07	12:05:39.80	44.866	-111.809	.20	2.50M1	BUT 2.20MD	ESO	..	MB	10	173	44.7	.20	C	1.3	2.4
		S GRAVELLY RANGE															
5109	1990 MAR 08	05:07:31.48	44.647	-111.085	6.70	3.03MD	UU .....	..	..	UU	28	33	4.7	.12	A	.2	.1
5110	1990 MAR 08	05:35:57.59	44.642	-111.086	6.60	2.65MD	UU .....	..	..	UU	23	64	4.2	.12	A	.3	.1
5111	1990 MAR 08	06:25:36.28	44.636	-111.075	6.30	2.72MD	UU .....	..	..	UU	21	52	4.0	.11	A	.3	.1
5112	1990 MAR 08	11:21:47.25	43.382	-111.241	7.00	2.80MD	BR .....	..	..	BR	13	199	6.0	.61	D	.6	.....
5113	1990 MAR 09	08:04:57.80	44.991	-112.740	.30	2.50M1	BUT 1.80MD	ESO	..	MB	8	168	20.1	.08	B	.5	1.2
		CLARK CANYON RESERVOIR AREA															
5114	1990 MAR 09	17:19:22.87	44.647	-111.082	4.50	2.57MD	UU .....	..	..	UU	10	101	4.8	.07	A	.3	.4
5115	1990 MAR 12	08:15:02.90	45.663	-111.962	5.70	3.50M1	BUT 3.20MD	ESO	..	MB	23	75	20.5	.28	C	1.0	2.2
		NEAR PONY; FELT															
5116	1990 MAR 12	14:11:49.79	44.627	-110.449	5.70	2.60MD	UU .....	..	..	UU	11	56	11.9	.09	A	.3	.5
5117	1990 MAR 14	21:25:19.04	43.244	-110.576	7.00	3.40MD	BR .....	..	..	BR	24	247	25.0	.17	B	.1	.....
5118	1990 MAR 14	21:27:24.60	43.223	-110.547	7.00	2.90MD	BR .....	..	..	BR	24	253	29.0	.23	B	.3	.....
5119	1990 MAR 17	01:27:02.20	44.795	-110.872	7.50	2.67MD	UU .....	..	..	UU	28	44	11.3	.08	A	.2	.3
5120	1990 MAR 19	16:02:50.26	46.419	-111.237	6.00	3.55MD	UU .....	..	..	UU	5	353	276.5	.05	D	6.6	4.7
5121	1990 MAR 19	16:02:55.20	45.890	-111.659	5.40	2.30M1	BUT 2.50MD	ESO	..	MB	10	73	17.9	.22	C	1.1	1.9
		NEAR THREE FORKS															
5122	1990 APR 08	02:51:23.53	44.724	-111.118	10.00	2.60MD	UU .....	..	..	UU	32	80	8.0	.09	A	.2	.2
5123	1990 APR 09	16:56:51.49	43.044	-110.509	7.00	3.60MD	BR .....	..	..	BR	16	285	41.0	.17	B	1.0	.....
5124	1990 APR 10	22:51:56.93	44.615	-109.975	.60	2.56MD	UU .....	..	..	UU	11	233	17.7	.51	D	2.7	10.6
5125	1990 APR 15	23:50:35.83	42.434	-111.561	6.89	2.60M1	UU .....	..	..	UU	21	265	39.7	.25	.	1.5	.9
5126	1990 APR 19	01:45:48.98	44.617	-110.337	2.80	2.60MD	UU .....	..	..	UU	15	81	11.9	.27	B	.5	.4
5127	1990 APR 19	08:37:35.05	43.283	-111.162	7.43	3.50MD	BR .....	..	..	BR	28	67	5.0	.25	B	1.1	.....
5128	1990 APR 19	13:25:34.45	41.707	-112.373	8.44	2.70M1	UU .....	..	..	UU	21	88	6.7	.15	.	.4	1.0
5129	1990 APR 20	02:15:57.42	44.818	-111.547	8.30	2.73MD	UU .....	..	..	UU	11	310	34.9	.05	C	4.3	.7
5130	1990 APR 20	02:16:09.85	44.158	-111.117	6.50	2.50MD	UU .....	..	..	UU	8	313	40.0	.23	D	13.6	6.7
5131	1990 APR 21	17:42:51.10	44.597	-114.398	19.00	2.80M1	BUT 3.00MD	ESO	..	MB	4	339	199.2	.03	C	.....	.....
		30 KM NW OF CHALLIS, ID															
5132	1990 APR 22	21:13:42.40	44.468	-114.357	10.00	2.60M1	BUT 2.50MD	ESO	..	MB	3	340	201.8	.14	C	.....	.....
		10 KM W OF CHALLIS, ID															
5133	1990 APR 29	19:01:48.37	44.756	-110.971	6.50	2.73MD	UU .....	..	..	UU	18	51	2.8	.11	A	.3	.1
5134	1990 MAY 01	18:04:22.69	45.030	-111.622	1.50	2.55MD	UU .....	..	..	UU	15	300	46.7	.12	C	3.6	8.7
5135	1990 MAY 02	20:18:04.02	44.763	-110.935	7.10	2.56MD	UU .....	..	..	UU	20	53	5.6	.05	A	.2	.2
5136	1990 MAY 04	02:24:09.29	44.419	-110.317	.00	3.43MD	UU .....	..	..	UU	12	132	15.2	.23	C	.7	5.6
5137	1990 MAY 04	02:24:13.54	44.242	-110.460	9.10	3.20MD	UU .....	..	..	UU	7	324	27.6	.07	D	7.5	1.3
5138	1990 MAY 04	17:39:25.63	44.408	-110.327	2.20	3.02MD	UU .....	..	..	UU	20	126	14.5	.20	B	.5	.2

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert		
5139	1990 MAY 04	18:29:41.48	44.418	-110.312	6.40	3.70MD	UU	.....	..	UU	8	134	15.0	.06	A	.3	.5
5140	1990 MAY 05	03:19:34.11	44.617	-109.641	.50	2.70MD	UU	.....	..	UU	5	287	43.8	.46	D	13.1	23.9
5141	1990 MAY 06	20:11:54.14	44.431	-110.995	5.20	2.63MD	UU	.....	..	UU	15	159	12.4	.20	B	.8	1.1
5142	1990 MAY 08	21:55:44.02	44.416	-110.316	8.00	2.53MD	UU	.....	..	UU	6	132	14.8	.07	A	.3	.9
5143	1990 MAY 09	04:50:04.79	44.727	-111.094	6.90	2.53MD	UU	.....	..	UU	17	78	7.8	.04	A	.2	.1
5144	1990 MAY 11	01:31:59.56	44.417	-110.313	2.60	2.94MD	UU	.....	..	UU	12	134	14.9	.11	A	.4	.2
5145	1990 MAY 12	03:44:24.17	44.728	-111.106	7.00	2.58MD	UU	.....	..	UU	10	100	7.6	.05	A	.3	.2
5146	1990 MAY 16	08:05:22.76	44.751	-111.117	6.30	2.50MD	UU	.....	..	UU	12	70	5.1	.09	A	.4	.1
5147	1990 MAY 16	18:48:13.78	44.597	-109.970	.10	2.65MD	UU	.....	..	UU	18	231	18.6	.26	B	1.4	4.0
5148	1990 MAY 18	03:53:02.96	44.605	-111.159	6.90	2.62MD	UU	.....	..	UU	18	146	4.6	.13	A	.5	.1
5149	1990 MAY 21	05:11:09.94	42.490	-110.932	.30	2.60ML	UU	.....	..	UU	14	273	64.1	.31	.	4.0	3.2
5150	1990 MAY 25	14:57:49.52	44.730	-111.040	6.90	2.60MD	UU	.....	..	UU	8	83	4.2	.12	A	.6	.2
5151	1990 MAY 28	13:22:45.76	44.736	-110.777	4.30	2.71MD	UU	.....	..	UU	19	68	6.7	.10	A	.3	.3
5152	1990 JUN 04	02:49:36.70	44.164	-114.655	10.00	2.50ML	BUT	2.80MD	ESO	MB	5	342	238.9	.07	D	99.9	99.9
		20 KM E OF STANLEY, ID																	
5153	1990 JUN 05	09:18:50.73	44.721	-110.794	6.50	2.70MD	UU	.....	..	UU	15	104	8.0	.08	A	.3	.1
5154	1990 JUN 08	11:51:04.24	44.602	-110.323	2.40	2.58MD	UU	.....	..	UU	14	92	10.9	.19	B	.4	.3
5155	1990 JUN 08	22:08:23.04	44.699	-111.057	7.10	2.75MD	UU	.....	..	UU	13	76	7.8	.06	A	.3	.2
5156	1990 JUN 16	19:51:50.00	44.778	-110.751	.40	2.60ML	BUT	2.50MD	ESO	MB	4	307	93.3	.55	D
		NW YELLOWSTONE																	
5157	1990 JUN 16	21:30:30.30	44.719	-110.805	5.30	3.03MD	UU	.....	..	UU	14	140	8.9	.06	A	.4	.6
5158	1990 JUN 16	22:13:52.53	44.718	-110.803	5.90	3.63MD	UU	.....	..	UU	27	140	8.8	.11	A	.3	.6
5159	1990 JUN 19	02:58:42.31	44.791	-110.976	6.80	2.60MD	UU	.....	..	UU	16	167	4.3	.09	A	.5	.1
5160	1990 JUN 19	05:50:06.21	44.799	-110.972	6.70	2.57MD	UU	.....	..	UU	14	173	5.1	.05	A	.4	.2
5161	1990 JUN 19	23:29:25.79	44.754	-111.145	6.70	2.61MD	UU	.....	..	UU	21	155	5.7	.12	A	.4	.1
5162	1990 JUN 21	05:21:04.86	44.805	-111.178	8.90	2.54MD	UU	.....	..	UU	8	255	5.8	.07	A	1.0	.2
5163	1990 JUN 21	07:47:15.52	44.717	-110.809	6.60	2.59MD	UU	.....	..	UU	14	139	8.6	.09	A	.4	.2
5164	1990 JUN 21	20:31:34.91	44.802	-110.626	6.60	2.53MD	UU	.....	..	UU	10	167	9.5	.11	A	.9	.4
5165	1990 JUN 23	18:04:29.94	41.907	-112.402	9.61	2.70ML	UU	.....	..	UU	15	95	6.8	.31	.	.9	2.7
5166	1990 JUN 24	01:27:43.71	41.897	-112.399	7.48	3.10ML	UU	.....	..	UU	24	93	7.1	.23	.	.5	1.2
5167	1990 JUN 24	03:00:34.72	41.902	-112.400	7.55	2.60ML	UU	.....	..	UU	21	94	6.9	.21	.	.5	1.1
5168	1990 JUN 25	22:06:59.65	41.901	-112.406	5.70	3.40ML	UU	.....	..	UU	15	95	7.4	.27	.	.8	2.1
5169	1990 JUN 28	00:05:13.45	41.895	-112.404	9.27	3.90ML	UU	.....	..	UU	13	94	7.6	.21	.	.6	2.4
5170	1990 JUN 28	04:20:35.05	41.895	-112.395	7.67	2.60ML	UU	.....	..	UU	17	93	6.9	.22	.	.6	2.0
5171	1990 JUN 30	18:52:49.33	44.653	-109.938	6.70	3.05MD	UU	.....	..	UU	7	244	20.2	.16	A	.8	.3
5172	1990 JUL 02	05:19:37.57	44.820	-110.896	7.70	3.02MD	UU	.....	..	UU	16	142	11.0	.05	A	.3	.4
5173	1990 JUL 02	11:37:45.87	41.900	-112.396	8.97	3.20ML	UU	.....	..	UU	13	93	6.7	.22	.	.7	1.9
5174	1990 JUL 03	00:44:41.16	44.734	-111.092	6.80	2.59MD	UU	.....	..	UU	13	93	7.0	.05	A	.3	.1
5175	1990 JUL 03	14:14:03.88	44.754	-110.978	6.50	2.70MD	UU	.....	..	UU	11	108	2.3	.19	B	.6	.1
5176	1990 JUL 04	06:47:33.94	44.730	-111.086	6.90	2.75MD	UU	.....	..	UU	26	88	7.1	.05	A	.2	.1
5177	1990 JUL 08	04:09:42.96	44.386	-110.478	3.70	2.70MD	UU	.....	..	UU	12	98	15.0	.16	B	.4	.1
5178	1990 JUL 08	04:11:14.17	44.374	-110.479	3.20	2.54MD	UU	.....	..	UU	9	174	16.4	.16	A	.6	.3
5179	1990 JUL 08	04:21:23.01	44.371	-110.485	2.50	2.50MD	UU	.....	..	UU	12	129	16.8	.13	A	.4	.2
5180	1990 JUL 08	04:22:54.81	44.369	-110.472	.30	3.20MD	UU	.....	..	UU	13	129	16.9	.21	C	.8	14.3
5181	1990 JUL 08	04:22:57.76	44.241	-110.538	6.20	3.45MD	UU	.....	..	UU	14	313	24.1	.32	D	20.3	4.8
5182	1990 JUL 08	04:37:13.07	44.167	-110.656	10.10	2.58MD	UU	.....	..	UU	10	318	13.2	.09	D	7.3	.5
5183	1990 JUL 08	04:45:43.93	44.374	-110.488	5.20	2.84MD	UU	.....	..	UU	8	128	16.5	.08	A	.5	1.7
5184	1990 JUL 09	00:16:55.84	44.384	-110.460	3.80	3.07MD	UU	.....	..	UU	9	178	15.3	.11	A	.7	.4
5185	1990 JUL 19	18:32:47.50	45.572	-111.711	6.30	2.30ML	BUT	2.60MD	ESO	MB	8	109	45.7	.21	C	1.3	6.4
		NEAR NORRIS																	

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
5186	1990 JUL 22	05:05:48.75	44.650	-110.435	5.80	2.71MD	UU .....	..	...	UU	15	62	11.6	.09	A	.3	.4
5187	1990 JUL 23	15:19:39.30	44.445	-111.006	5.40	2.55MD	UU .....	..	...	UU	8	143	13.1	.07	A	.5	.3
5188	1990 JUL 23	18:40:27.10	45.363	-112.632	1.10	2.80ML	BUT 2.60MD	ESO ..	...	MB	9	169	48.6	.23	C	1.7	3.3
			12 KM N OF DILLON														
5189	1990 AUG 01	23:45:04.27	44.300	-110.854	4.50	2.52MD	UU .....	..	...	UU	12	313	31.1	.15	D	10.5	2.7
5190	1990 AUG 01	23:45:05.72	44.247	-110.789	4.90	2.55MD	UU .....	..	...	UU	10	115	22.7	.18	B	.7	.3
5191	1990 AUG 05	08:28:39.38	40.572	-116.882	4.21	2.52MD	UNR .....	..	...	UN	6	270	99.0	.05	a	.....	.....
5192	1990 AUG 08	06:22:14.95	44.798	-111.479	8.90	2.58MD	UU .....	..	...	UU	14	279	21.3	.07	B	2.0	.4
5193	1990 AUG 17	12:03:53.50	44.659	-114.269	19.60	3.40ML	BUT 3.30MD	ESO ..	...	MB	12	257	114.1	.37	D	7.2	4.9
			20 KM NE OF CHALLIS, ID; FELT														
5194	1990 AUG 17	12:04:29.89	44.693	-111.269	1.60	2.57MD	UU .....	..	...	UU	6	189	16.4	.28	C	2.6	18.5
5195	1990 AUG 24	06:47:14.82	44.238	-110.821	5.80	2.66MD	UU .....	..	...	UU	25	90	20.0	.24	B	.5	.5
5196	1990 AUG 24	14:28:57.47	44.650	-110.439	3.50	2.59MD	UU .....	..	...	UU	14	61	11.4	.10	A	.3	.5
5197	1990 AUG 27	06:01:30.60	46.135	-111.451	10.10	2.00ML	BUT 2.50MD	ESO ..	...	MB	9	110	18.8	.07	B	.5	.9
			NEAR TOSTON														
5198	1990 AUG 28	03:10:17.10	45.888	-112.308	9.90	2.60ML	BUT 2.80MD	ESO ..	...	MB	9	77	13.3	.16	B	1.1	1.7
			NEAR PIPESTONE; FELT														
5199	1990 AUG 29	19:21:23.72	44.460	-114.253	7.90	2.91MD	INEL .....	..	...	IN	15	259	118.7	.33	S	3.3	3.6
5200	1990 AUG 29	19:21:26.50	44.587	-114.011	.40	3.70ML	BUT 3.30MD	ESO ..	...	MB	9	303	95.9	.19	D	4.5	4.2
			15 KM E OF CHALLIS, ID														
5201	1990 AUG 30	01:07:05.84	44.821	-111.499	6.00	2.75MD	UU .....	..	...	UU	6	281	31.1	.03	B	1.5	2.4
5202	1990 AUG 31	16:04:44.52	44.745	-111.231	4.60	2.86MD	UU .....	..	...	UU	16	229	4.0	.15	B	1.1	.5
5203	1990 SEP 01	20:33:34.81	44.679	-109.993	.50	3.05MD	UU .....	..	...	UU	15	231	16.2	.74	D	4.2	17.0
5204	1990 SEP 02	00:47:31.33	44.929	-109.895	11.70	2.53MD	UU .....	..	...	UU	5	302	20.8	.30	D	13.1	6.4
5205	1990 SEP 04	09:13:41.13	44.360	-110.271	6.90	2.97MD	UU .....	..	...	UU	10	145	7.7	.14	A	.7	.6
5206	1990 SEP 04	23:15:37.94	44.363	-110.256	3.50	2.72MD	UU .....	..	...	UU	18	156	7.6	.27	B	.8	.3
5207	1990 SEP 07	13:14:46.52	44.757	-111.622	7.40	3.08MD	UU .....	..	...	UU	13	287	30.7	.13	C	3.5	.4
5208	1990 SEP 08	07:24:23.60	44.068	-114.588	10.30	2.60ML	BUT 2.50MD	ESO ..	...	MB	6	324	162.1	.13	D	32.5	25.7
			40 KM SE OF STANLEY, ID														
5209	1990 SEP 11	15:22:51.97	44.757	-111.637	7.10	2.94MD	UU .....	..	...	UU	12	288	31.8	.07	C	2.7	.2
5210	1990 SEP 12	13:36:16.80	45.353	-112.622	1.00	2.60ML	BUT 2.50MD	ESO ..	...	MB	9	164	47.5	.21	C	1.3	5.0
			15 KM N OF DILLON														
5211	1990 SEP 17	17:09:00.96	44.711	-111.030	7.10	2.59MD	UU .....	..	...	UU	15	67	5.7	.08	A	.3	.1
5212	1990 SEP 20	22:46:45.66	42.443	-111.574	6.63	2.51MD	UU .....	..	...	UU	20	198	40.2	.25	.	.9	1.7
5213	1990 SEP 21	01:47:28.01	44.710	-111.025	6.70	2.94MD	UU .....	..	...	UU	17	68	5.7	.06	A	.2	.1
5214	1990 SEP 22	01:44:59.10	43.974	-115.348	10.00	3.00ML	BUT .00	..	...	PE	9	...	.....	.....	.	.....	.....
5215	1990 SEP 22	01:45:04.90	44.160	-114.768	1.20	3.00ML	BUT 2.60MD	ESO ..	...	MB	6	324	169.7	.19	D	45.5	46.0
			20 KM SE OF STANLEY, ID														
5216	1990 SEP 23	17:37:11.40	44.700	-114.489	.70	2.70ML	BUT 2.70MD	ESO ..	...	MB	8	310	130.6	.16	D	4.7	2.8
			30 KM NW OF CHALLIS, ID														
5217	1990 SEP 24	10:00:20.48	44.710	-111.025	6.80	2.55MD	UU .....	..	...	UU	10	88	5.7	.07	A	.3	.2
5218	1990 SEP 29	00:54:13.34	44.801	-111.562	5.50	2.78MD	UU .....	..	...	UU	11	284	27.4	.07	B	1.4	3.0
5219	1990 SEP 30	01:08:13.00	44.364	-114.349	13.50	4.30MD	ESO .....	..	...	MB	16	264	123.7	.26	D	3.7	3.8
			10 KM SW OF CHALLIS, ID														
5220	1990 OCT 02	10:58:10.40	45.647	-111.962	6.80	3.00ML	BUT 2.80MD	ESO ..	...	MB	10	92	42.8	.21	C	.9	2.3
			NEAR PONY														
5221	1990 OCT 02	15:15:25.42	43.547	-110.425	7.00	3.40MD	BR .....	..	...	BR	18	195	25.0	.11	A	.1	.....
5222	1990 OCT 03	11:50:02.30	44.507	-114.206	.50	2.80ML	BUT 2.50MD	ESO ..	...	MB	7	312	113.4	.18	D	7.4	3.5
			NEAR CHALLIS, ID														

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Std-Err Vert
5223	1990 OCT 05	09:46:47.70	44.584	-114.184	14.60	3.10ML	BUT 2.90MD	ESO	..	MB	9	306	109.2	.27	D	7.6	5.7
			NEAR CHALLIS, ID														
5224	1990 OCT 07	01:09:46.60	44.582	-114.197	10.10	2.50ML	BUT 2.40MD	ESO	..	MB	6	311	110.3	.22	D	10.6	7.6
			NEAR CHALLIS, ID														
5225	1990 OCT 07	02:22:04.50	44.429	-114.336	11.00	3.40ML	BUT 3.10MD	ESO	..	MB	9	311	126.1	.06	C	2.1	2.2
			10 KM SW OF CHALLIS, ID														
5226	1990 OCT 07	06:41:08.70	44.675	-109.946	7.80	2.92MD	UU .....	..	..	UU	8	244	19.8	.11	B	1.9	.8
5227	1990 OCT 08	10:04:42.00	44.448	-114.303	7.20	3.50ML	BUT 3.20MD	ESO	..	MB	9	310	122.9	.16	D	5.4	5.7
			NEAR CHALLIS, ID														
5228	1990 OCT 08	16:28:47.60	44.446	-114.320	7.50	2.70ML	BUT 2.60MD	ESO	..	MB	7	315	124.3	.19	D	8.7	9.2
			NEAR CHALLIS, ID														
5229	1990 OCT 10	21:12:31.28	44.773	-111.163	8.00	2.82MD	UU .....	..	..	UU	21	198	5.2	.08	A	.6	.5
5230	1990 OCT 10	23:33:11.50	45.957	-111.332	2.00	2.50ML	BUT 2.30MD	ESO	..	MB	8	120	23.4	.14	C	1.2	3.4
			CLARKSTON VALLEY														
5231	1990 OCT 11	19:46:18.82	44.628	-110.114	1.20	2.62MD	UU .....	..	..	UU	8	201	6.6	.07	C	.8	7.7
5232	1990 OCT 12	05:02:18.10	45.239	-112.723	7.00	3.20ML	BUT 2.80MD	ESO	..	MB	10	176	46.8	.21	C	1.7	3.7
			12 KM W OF DILLON; FELT														
5233	1990 OCT 12	05:07:19.01	44.242	-110.802	6.30	2.92MD	UU .....	..	..	UU	22	110	21.5	.26	B	.6	.5
5234	1990 OCT 12	05:07:59.51	44.282	-110.849	4.90	2.61MD	UU .....	..	..	UU	11	311	29.2	.15	D	10.6	2.6
5235	1990 OCT 13	16:44:10.90	44.485	-114.276	2.80	2.80ML	BUT 2.50MD	ESO	..	MB	6	314	119.4	.13	D	5.4	3.4
			NEAR CHALLIS, ID														
5236	1990 OCT 16	11:37:44.75	43.390	-110.338	7.00	2.50MD	BR .....	..	..	BR	26	221	27.0	.23	B	.2	.....
5237	1990 OCT 17	11:24:64.05	43.256	-111.640	7.00	3.10MD	BR .....	..	..	BR	27	279	35.0	.15	A	.2	.....
5238	1990 OCT 19	12:03:16.51	44.735	-111.065	6.90	2.70MD	UU .....	..	..	UU	11	76	5.4	.09	A	.4	.1
5239	1990 OCT 24	11:50:16.97	44.794	-111.490	7.10	2.76MD	UU .....	..	..	UU	26	257	21.9	.13	B	1.0	.1
5240	1990 OCT 26	03:22:48.90	44.435	-114.261	10.20	3.40ML	BUT 3.10MD	ESO	..	MB	11	148	120.4	.19	D	3.1	4.1
			NEAR CHALLIS, ID														
5241	1990 OCT 26	23:07:17.20	43.877	-110.140	6.28	3.60MD	BR .....	..	..	BR	39	159	6.0	.19	B	.7	.....
5242	1990 NOV 02	01:53:18.80	44.467	-114.308	6.10	2.50ML	BUT .....	..	..	MB	7	314	122.6	.20	D	8.3	7.5
			NEAR CHALLIS, ID														
5243	1990 NOV 05	01:38:38.24	44.635	-110.353	5.40	2.53MD	UU .....	..	..	UU	8	84	12.7	.03	A	.3	.5
5244	1990 NOV 07	12:25:51.50	44.402	-114.074	5.91	3.80ML	INEL .....	..	..	IN	14	252	108.3	.14	S	1.5	2.0
5245	1990 NOV 08	04:30:31.10	44.583	-114.030	22.20	2.50ML	BUT 2.20MD	ESO	..	MB	5	307	97.5	.03	D	4.5	1.6
			15 KM NE OF CHALLIS, ID														
5246	1990 NOV 11	04:56:00.78	44.660	-109.973	2.70	2.50MD	UU .....	..	..	UU	9	237	17.4	.22	B	1.3	.4
5247	1990 NOV 12	00:43:41.87	40.829	-116.518	15.62	2.55MD	UNR .....	..	..	UN	6	333	74.0	.12	C	.....	.....
5248	1990 NOV 17	14:14:36.87	43.060	-110.702	6.00	2.50MD	BR .....	..	..	BR	24	273	22.0	.10	A	.1	.....
5249	1990 NOV 17	14:38:63.06	43.077	-110.710	5.66	2.60MD	BR .....	..	..	BR	30	262	20.0	.15	B	2.3	.....
5250	1990 NOV 17	15:18:39.88	43.066	-110.706	6.00	2.80MD	BR .....	..	..	BR	26	266	21.0	.14	A	.1	.....
5251	1990 NOV 17	17:39:61.09	43.085	-110.715	6.00	3.30MD	BR .....	..	..	BR	24	260	20.0	.15	B	.1	.....
5252	1990 NOV 21	04:28:41.94	41.410	-111.713	7.93	2.86MD	UU .....	..	..	UU	26	70	18.0	.22	.	.4	1.4
5253	1990 NOV 21	07:58:25.03	44.553	-110.522	4.00	2.54MD	UU .....	..	..	UU	13	82	5.3	.07	A	.3	.4
5254	1990 NOV 21	08:13:32.31	44.557	-110.524	4.30	2.50MD	UU .....	..	..	UU	11	104	5.7	.14	A	.3	.4
5255	1990 NOV 21	21:00:00.30	45.056	-111.829	8.60	2.60ML	BUT 2.30MD	ESO	..	MB	10	153	25.8	.25	C	1.7	2.5
			N GRAVELLY RANGE														
5256	1990 NOV 24	01:37:19.60	44.856	-111.517	.80	2.50ML	BUT 2.10MD	ESO	..	MB	10	205	58.9	.25	C	2.1	2.9
			S MADISON VALLEY														
5257	1990 NOV 27	15:41:08.84	44.477	-110.278	7.30	2.87MD	UU .....	..	..	UU	12	150	4.0	.13	A	.5	.4
5258	1990 NOV 27	15:41:17.38	44.044	-110.618	6.40	2.57MD	UU .....	..	..	UU	15	228	5.0	.31	C	2.2	.7
5259	1990 NOV 29	00:16:49.46	44.619	-109.990	1.10	2.66MD	UU .....	..	..	UU	15	230	16.4	.31	C	1.2	3.2

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert		
5260	1990 DEC 04	09:26:42.08	41.171	-110.374	2.74	2.50ML	UU	..	..	UU	13	261	86.8	.21	.	1.9	1.2
5261	1990 DEC 05	11:43:01.45	42.467	-111.057	5.68	2.80ML	UU	..	..	UU	14	301	58.5	.25	.	3.5	1.3
5262	1990 DEC 05	13:18:36.65	45.152	-111.274	8.60	3.85MD	UU	..	..	UU	6	302	41.7	.87	D	54.0	54.6
5263	1990 DEC 05	23:20:40.35	41.671	-112.817	4.67	2.60ML	UU	..	..	UU	28	213	12.6	.29	.	1.0	2.8
5264	1990 DEC 06	08:12:50.72	44.800	-111.558	9.70	2.50MD	UU	..	..	UU	12	284	27.1	.09	C	2.5	.3
5265	1990 DEC 06	10:05:12.28	44.733	-111.109	8.50	2.58MD	UU	..	..	UU	13	105	7.0	.07	A	.3	.2
5266	1990 DEC 11	13:46:14.12	40.634	-109.225	.39	2.90MD	UU	..	..	UU	10	267	162.9	.29	.	3.1	2.0
5267	1990 DEC 11	15:11:39.10	44.754	-110.935	.50	2.80ML	BUT	2.10MD	ESO	MB	8	256	94.5	.45	D	9.3	18.2
HEBGEN LAKE REGION																			
5268	1990 DEC 11	16:32:08.32	44.760	-110.985	6.20	2.57MD	UU	..	..	UU	13	111	1.7	.15	A	.5	.1
5269	1990 DEC 12	01:38:21.68	44.733	-111.029	6.40	2.68MD	UU	..	..	UU	18	72	3.4	.19	B	.4	.2
5270	1990 DEC 12	21:02:45.02	44.723	-111.020	3.60	2.56MD	UU	..	..	UU	10	79	4.2	.10	A	.4	.2
5271	1990 DEC 16	09:16:33.81	44.366	-110.268	5.80	2.90MD	UU	..	..	UU	11	148	8.2	.07	A	.4	.2
5272	1990 DEC 24	02:54:16.95	44.719	-111.211	4.90	4.07MD	UU	..	..	UU	33	158	2.5	.16	B	.8	.7
5273	1990 DEC 24	02:57:49.40	44.735	-111.179	1.50	3.10ML	BUT	2.50MD	ESO	MB	10	243	77.4	.30	D	3.7	5.6
HEBGEN LAKE REGION																			
5274	1990 DEC 24	02:57:49.50	44.717	-111.206	4.40	3.31MD	UU	..	..	UU	31	149	2.8	.11	A	.5	.5
5275	1990 DEC 24	03:00:55.61	44.721	-111.214	4.80	2.50MD	UU	..	..	UU	8	167	2.4	.04	A	.9	.7
5276	1990 DEC 24	03:19:44.06	44.722	-111.212	4.70	2.98MD	UU	..	..	UU	29	168	2.6	.13	A	.7	.6
5277	1990 DEC 24	03:20:44.98	44.723	-111.211	4.70	3.23MD	UU	..	..	UU	28	168	2.7	.09	A	.7	.6
5278	1990 DEC 24	04:13:19.96	44.721	-111.209	4.90	3.63MD	UU	..	..	UU	32	160	2.7	.11	A	.6	.5
5279	1990 DEC 24	04:16:02.81	44.723	-111.213	5.50	3.11MD	UU	..	..	UU	13	172	2.6	.13	B	1.2	.9
5280	1990 DEC 24	04:20:50.53	44.730	-111.233	6.80	3.42MD	UU	..	..	UU	33	220	2.4	.10	A	.5	.1
5281	1990 DEC 24	05:13:25.95	44.727	-111.221	6.10	2.54MD	UU	..	..	UU	17	193	2.5	.09	A	.5	.2
5282	1990 DEC 24	08:35:36.29	44.729	-111.228	6.70	2.91MD	UU	..	..	UU	27	209	2.4	.19	B	.9	.1
5283	1990 DEC 24	10:13:41.68	44.721	-111.213	4.70	2.59MD	UU	..	..	UU	25	166	2.5	.07	A	.5	.4
5284	1990 DEC 25	02:59:07.91	44.369	-112.739	14.15	2.70ML	INEL	..	..	IN	12	149	31.1	.20	S	.9	1.7
5285	1990 DEC 25	06:19:33.56	44.734	-111.216	4.40	3.10MD	UU	..	..	UU	10	196	3.3	.04	B	1.0	.9
5286	1990 DEC 25	14:56:38.05	44.720	-111.214	5.00	3.88MD	UU	..	..	UU	15	164	2.3	.13	B	1.2	1.1
5287	1990 DEC 26	10:30:22.55	44.729	-111.020	6.50	2.70MD	UU	..	..	UU	10	108	3.5	.11	A	.4	.1
5288	1990 DEC 26	14:34:29.53	44.729	-111.020	6.90	2.55MD	UU	..	..	UU	10	108	3.6	.11	A	.4	.2
5289	1990 DEC 27	22:44:53.04	44.717	-111.203	4.60	2.70MD	UU	..	..	UU	20	146	3.0	.07	A	.6	.6
5290	1990 DEC 27	22:52:45.09	44.726	-111.225	6.60	3.09MD	UU	..	..	UU	27	197	2.2	.12	A	.5	.1
5291	1990 DEC 28	19:44:56.07	44.721	-111.210	4.20	2.50MD	UU	..	..	UU	7	164	2.7	.17	B	1.9	2.1
5292	1990 DEC 28	23:27:40.37	44.734	-111.212	4.30	2.58MD	UU	..	..	UU	20	191	3.5	.07	A	.7	.5
5293	1990 DEC 29	05:29:58.36	44.712	-111.199	2.60	2.67MD	UU	..	..	UU	7	132	3.2	.17	B	.8	3.1
5294	1990 DEC 29	13:14:52.21	44.717	-111.209	5.00	2.54MD	UU	..	..	UU	8	152	2.6	.07	B	1.1	1.1
5295	1990 DEC 31	20:17:39.39	44.784	-110.813	4.40	2.50MD	UU	..	..	UU	9	111	11.2	.07	A	.3	.3
5296	1990 DEC 31	20:28:11.04	44.758	-111.265	.20	4.08MD	UU	..	..	UU	22	323	91.4	.08	B	1.9	1.3
5297	1990 DEC 31	20:28:12.01	44.734	-111.236	6.80	3.78MD	UU	..	..	UU	11	230	2.7	.10	A	.9	.1
5298	1991 JAN 01	12:25:17.84	44.820	-110.872	2.41	2.50MD	UU	..	..	UU	7	138	12.6	.09	B	.6	2.8
5299	1991 JAN 02	21:10:15.86	44.719	-111.197	3.77	2.72MD	UU	..	..	UU	18	85	3.5	.14	A	.3	.6
5300	1991 JAN 04	09:20:37.04	44.722	-111.202	4.99	3.61MD	UU	..	..	UU	22	97	3.2	.08	A	.3	.4
5301	1991 JAN 04	14:33:07.17	44.715	-111.197	4.25	2.60MD	UU	..	..	UU	16	102	3.5	.15	A	.5	.7
5302	1991 JAN 08	04:20:37.33	44.721	-111.184	4.16	2.83MD	UU	..	..	UU	36	52	4.6	.10	A	.2	.4
5303	1991 JAN 08	22:42:26.13	44.717	-111.195	4.15	2.66MD	UU	..	..	UU	33	51	3.6	.17	B	.3	.6
5304	1991 JAN 08	23:04:45.22	44.722	-111.183	4.04	2.73MD	UU	..	..	UU	32	51	4.7	.09	A	.2	.4
5305	1991 JAN 09	18:21:52.58	44.305	-110.866	3.89	2.72MD	UU	..	..	UU	15	301	32.0	.17	D	5.8	1.8
5306	1991 JAN 10	02:46:03.17	44.721	-111.180	3.88	2.63MD	UU	..	..	UU	26	51	4.8	.07	A	.2	.4
5307	1991 JAN 11	18:38:23.55	44.713	-111.193	3.39	2.62MD	UU	..	..	UU	27	51	3.7	.16	A	.3	.6

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Std-Err Vert
5308	1991 JAN 12	20:23:40.80	44.756	-114.242	6.10	2.10ML	BUT 2.50MD	ESO	..	..	MB	6	309	110.5	.10	D	2.7 5.5
			25 km N of Challis, ID														
5309	1991 JAN 14	09:24:24.46	44.744	-110.656	2.12	3.02MD	UU	..	..	UU	32	73	3.3	.18	B	.3	1.0
5310	1991 JAN 16	00:37:41.20	44.489	-114.220	19.60	2.50ML	BUT 2.30MD	ESO	..	..	MB	5	330	115.0	.02	C	1.4 .9
			near Challis, ID														
5311	1991 JAN 16	18:03:13.34	44.812	-111.417	8.86	3.45MD	UU	..	..	UU	34	50	18.0	.14	A	.3	.7
5312	1991 JAN 16	21:42:28.00	44.510	-111.184	1.10	2.80ML	BUT 2.20MD	ESO	..	..	MB	6	264	73.7	.11	D	4.8 4.2
			Hebgen Lake region														
5313	1991 JAN 18	04:10:06.66	44.725	-111.166	3.25	2.53MD	UU	..	..	UU	12	99	6.0	.19	B	.7	1.2
5314	1991 JAN 18	07:58:37.83	44.728	-111.165	7.42	2.68MD	UU	..	..	UU	14	133	42.6	.12	B	.4	2.3
5315	1991 JAN 19	17:23:75.39	43.553	-110.425	7.00	2.60MD	BR	..	..	BR	28	166	12.0	.11	A	.0	.....
5316	1991 JAN 21	11:55:37.66	42.407	-111.495	1.28	2.80ML	UU	..	..	UU	6	279	54.3	.03	.	5.9	2.8
5317	1991 JAN 22	12:39:03.78	41.002	-114.707	5.00	3.40ML	GS	.....	III	..	PE	6	...	.....	.	.....	.....
			Felt														
5318	1991 JAN 22	17:13:34.49	44.232	-110.299	5.17	2.57MD	UU	..	..	UU	12	159	31.3	.18	B	.6	.8
5319	1991 JAN 23	01:43:11.85	44.709	-111.084	3.14	2.64MD	UU	..	..	UU	24	58	8.3	.11	A	.2	.7
5320	1991 JAN 23	09:10:35.32	44.709	-111.084	3.25	2.53MD	UU	..	..	UU	15	99	8.3	.10	A	.3	.9
5321	1991 JAN 23	15:12:47.44	44.719	-111.174	3.69	2.71MD	UU	..	..	UU	27	51	5.3	.14	A	.3	.6
5322	1991 JAN 23	17:17:05.72	44.791	-112.723	8.79	3.00ML	INEL	.....	..	IN	12	99	10.8	.09	S	.4	.9
5323	1991 JAN 24	19:38:11.40	44.457	-114.180	13.70	2.50ML	BUT 2.30MD	ESO	..	..	MB	7	312	113.4	.32	D	15.8 17.3
			near Challis, ID														
5324	1991 JAN 26	04:01:04.67	41.882	-112.612	13.79	2.80ML	UU	.....	..	UU	12	144	17.6	.33	.	.9	1.9
5325	1991 JAN 26	17:38:08.63	41.872	-112.587	8.34	2.90ML	UU	.....	..	UU	22	133	18.6	.19	.	.6	1.1
5326	1991 JAN 27	14:13:56.15	41.879	-112.591	12.69	2.50ML	UU	.....	..	UU	19	136	18.7	.26	.	.6	2.0
5327	1991 JAN 28	12:40:08.18	41.875	-112.588	8.69	3.10ML	UU	.....	..	UU	18	134	18.8	.26	.	.7	3.3
5328	1991 JAN 30	00:06:46.90	46.204	-112.098	10.20	2.20ML	BUT 2.50MD	ESO	..	..	MB	8	141	41.5	.12	C	1.2 2.3
			near Boulder														
5329	1991 FEB 09	02:26:28.33	44.580	-114.282	1.97	2.74MD	INEL	.....	..	IN	17	190	116.8	.14	S	.9	2.1
5330	1991 FEB 11	16:10:49.25	44.713	-111.228	3.95	2.67MD	UU	.....	..	UU	16	70	1.0	.08	A	.3	.4
5331	1991 FEB 11	18:18:03.90	44.719	-111.226	3.71	2.70MD	UU	.....	..	UU	27	49	1.5	.10	A	.3	.4
5332	1991 FEB 12	13:27:33.71	44.749	-111.058	8.30	3.07MD	UU	.....	..	UU	41	48	4.2	.09	A	.2	.4
5333	1991 FEB 12	13:48:36.04	44.748	-111.060	8.60	3.09MD	UU	.....	..	UU	41	48	4.4	.10	A	.2	.4
5334	1991 FEB 14	07:42:13.30	46.437	-116.767	10.00	2.80MD	ESO	.....	..	..	MB	6	298	66.8	.60	D	99.9 99.9
			near Wallace, ID; felt														
5335	1991 FEB 15	07:09:21.44	42.799	-111.219	9.27	3.50ML	INEL	.....	..	IN	10	302	80.2	.21	S	2.1	1.3
5336	1991 FEB 17	00:39:56.60	44.447	-114.170	8.50	2.70ML	BUT 2.50MD	ESO	..	..	MB	6	312	113.1	.08	D	3.5 2.6
			near Challis, ID														
5337	1991 FEB 18	08:53:15.50	45.914	-111.519	6.10	2.40ML	BUT 2.50MD	ESO	..	..	MB	10	86	35.5	.34	C	1.7 7.9
			near Three Forks														
5338	1991 FEB 23	17:45:15.05	42.250	-111.351	.13	2.71MD	UU	.....	..	UU	22	213	33.8	.26	.	1.8	1.9
5339	1991 FEB 26	17:20:10.55	44.336	-111.041	.10	2.80MD	UU	.....	..	UU	34	56	20.5	.59	D	1.0	7.3
5340	1991 FEB 28	20:05:42.81	44.750	-110.248	7.29	2.77MD	UU	.....	..	UU	6	131	8.4	.05	A	.5	.7
5341	1991 MAR 09	23:26:29.20	44.759	-110.246	.60	2.80ML	BUT 2.80MD	ESO	..	..	MB	9	286	109.8	.33	D	5.5 4.0
			NE Yellowstone														
5342	1991 MAR 14	11:19:28.26	44.693	-111.009	1.99	2.50MD	UU	.....	..	UU	7	144	7.4	.06	C	.5	7.2
5343	1991 MAR 14	22:47:20.42	44.600	-111.305	12.27	2.52MD	UU	.....	..	UU	14	114	26.4	.23	B	.9	1.7
5344	1991 MAR 15	18:10:45.56	43.012	-111.168	7.00	3.20MD	BR	.....	..	BR	41	123	20.0	.38	C	.4	.....
5345	1991 MAR 19	01:11:32.14	44.692	-111.011	1.44	2.58MD	UU	.....	..	UU	12	71	7.5	.12	C	.3	9.5
5346	1991 MAR 22	13:01:14.02	44.719	-111.210	3.85	2.88MD	UU	.....	..	UU	27	84	11.8	.07	A	.2	.5
5347	1991 MAR 23	11:08:12.90	44.722	-111.209	4.92	2.61MD	UU	.....	..	UU	20	62	2.9	.10	A	.2	.4

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert		
5348	1991 MAR 27	04:35:10.65	44.803	-111.494	8.85	2.66MD	UU	..	..	UU	26	48	22.6	.10	A	.2	.7
5349	1991 MAR 30	01:15:57.94	44.682	-110.004	5.81	2.70MD	UU	..	..	UU	18	217	15.5	.25	B	1.3	.6
5350	1991 MAR 30	11:52:54.66	44.629	-110.346	3.26	2.50MD	UU	..	..	UU	7	82	12.3	.03	C	.3	6.6
5351	1991 APR 01	07:07:15.40	45.552	-111.633	7.20	2.20ML	BUT	2.50MD	ESO	MB	8	115	47.7	.25	C	1.8	5.5
		near Norris																	
5352	1991 APR 06	12:13:24.02	44.395	-110.366	4.03	3.54MD	UU	..	..	UU	29	109	15.3	.20	B	.5	.6
5353	1991 APR 08	08:04:47.59	44.492	-110.574	.35	2.59MD	UU	..	..	UU	19	61	8.7	.52	D	1.0	11.4
5354	1991 APR 08	08:32:21.03	44.704	-111.031	1.35	2.89MD	UU	..	..	UU	28	56	6.5	.52	D	.8	15.6
5355	1991 APR 10	08:41:23.59	43.343	-110.854	6.12	2.70MD	BR	..	..	BR	29	91	2.0	.14	A	.5	.....	
5356	1991 APR 14	08:51:54.60	44.788	-112.661	1.70	2.50ML	BUT	2.10MD	ESO	MB	7	163	15.5	.13	C	1.6	2.6
		Red Rock Valley																	
5357	1991 APR 14	23:43:26.74	44.791	-111.004	7.66	2.57MD	UU	..	..	UU	13	87	3.5	.13	A	.5	.7
5358	1991 APR 15	21:39:27.97	43.466	-111.265	8.39	2.60MD	BR	..	..	BR	24	138	8.0	.11	A	.1	.....	
5359	1991 APR 17	00:54:14.00	44.310	-114.183	6.63	2.94MD	INEL	..	..	IN	19	123	109.0	.22	S	.8	3.0
5360	1991 APR 22	06:40:00.77	44.629	-112.612	12.48	3.23ML	INEL	..	..	IN	10	119	29.0	.11	.	.5	1.3
5361	1991 APR 22	13:17:39.50	44.834	-114.368	16.90	2.50ML	BUT	2.80MD	ESO	MB	7	303	120.2	.11	D	3.6	2.3
		30 km NW of Challis, ID																	
5362	1991 APR 23	17:23:49.81	44.675	-111.144	4.23	2.80MD	UU	..	..	UU	28	57	8.4	.13	A	.3	.6
5363	1991 APR 30	23:50:39.90	44.510	-114.799	2.30	2.50MD	ESO	..	..	MB	6	321	158.6	.06	C	2.0	2.7
		35 km NNE of Stanley, ID																	
5364	1991 MAY 02	03:00:48.70	43.218	-110.532	9.47	3.00MD	BR	..	..	BR	25	276	7.0	.14	A	.8	.....	
5365	1991 MAY 03	18:11:04.21	44.348	-110.545	6.02	2.51MD	UU	..	..	UU	19	80	20.1	.16	B	.4	.7
5366	1991 MAY 03	18:49:33.66	44.342	-110.541	4.62	2.54MD	UU	..	..	UU	20	78	20.7	.20	B	.5	.9
5367	1991 MAY 03	21:12:37.66	44.346	-110.549	5.30	2.52MD	UU	..	..	UU	19	80	20.4	.18	B	.5	.6
5368	1991 MAY 05	11:43:22.00	44.590	-114.289	12.80	2.90ML	BUT	3.00MD	ESO	MB	13	135	117.1	.32	D	2.6	3.6
		15 km NW of Challis, ID																	
5369	1991 MAY 13	14:13:03.29	44.414	-111.223	.01	3.50MD	UU	..	..	UU	36	65	30.6	.28	B	.5	3.5
5370	1991 MAY 14	01:49:43.11	44.412	-111.221	.61	3.34MD	UU	..	..	UU	31	65	30.5	.25	B	.5	3.4
5371	1991 MAY 20	21:29:05.70	44.770	-114.228	8.80	3.40ML	BUT	3.10MD	ESO	MB	15	165	109.3	.39	D	2.3	6.5
		25 km NE of Challis, ID																	
5372	1991 MAY 26	19:37:27.44	44.813	-111.854	10.00	3.30ML	INEL	..	..	IN	6	112	36.9	.03	.	.5	2.2
5373	1991 MAY 30	18:47:16.20	44.861	-115.763	23.10	2.80ML	BUT	3.40MD	ESO	MB	18	168	118.5	.14	C	.8	1.5
		25 km E of McCall, ID																	
5374	1991 MAY 31	11:55:42.60	44.444	-114.106	6.30	3.10ML	BUT	2.30MD	ESO	MB	6	311	108.5	.03	C	1.3	.8
		10 km SE of Challis, ID																	
5375	1991 JUN 09	21:09:21.73	44.576	-110.756	5.74	2.62MD	UU	..	..	UU	7	102	15.3	.11	C	1.0	9.3
5376	1991 JUN 16	09:45:14.49	43.035	-110.536	10.22	2.80MD	BR	..	..	BR	28	95	24.0	.24	B	2.3	.....	
5377	1991 JUN 16	21:18:38.87	44.577	-110.746	.81	2.80MD	UU	..	..	UU	20	67	15.8	.67	D	1.1	14.1
5378	1991 JUN 16	23:18:36.08	44.558	-110.750	1.00	2.53MD	UU	..	..	UU	6	112	13.8	.16	C	.6	11.6
5379	1991 JUN 17	00:08:54.20	44.563	-110.734	3.14	2.53MD	UU	..	..	UU	6	113	14.9	.29	C	1.0	18.9
5380	1991 JUN 17	10:21:47.78	44.779	-111.439	13.73	2.83MD	UU	..	..	UU	12	80	17.5	.08	A	.4	.9
5381	1991 JUN 18	06:08:51.10	44.673	-110.030	.12	3.04MD	UU	..	..	UU	8	249	13.2	.48	D	5.5	21.9
5382	1991 JUN 21	05:56:29.38	44.731	-110.988	7.99	2.50MD	UU	..	..	UU	5	118	3.5	.02	A	.5	.8
5383	1991 JUN 23	15:21:29.22	44.236	-110.805	5.28	2.74MD	UU	..	..	UU	23	87	21.0	.32	C	.8	1.1
5384	1991 JUN 25	23:00:64.07	42.866	-111.291	7.00	3.30MD	BR	..	..	BR	25	304	39.0	.14	A	.2	.....	
5385	1991 JUN 29	05:17:21.78	44.775	-111.394	8.43	2.57MD	UU	..	..	UU	27	55	14.2	.12	A	.3	.8
5386	1991 JUN 29	17:52:17.74	44.693	-111.015	6.48	2.60MD	UU	..	..	UU	13	102	7.4	.16	A	.6	1.1
5387	1991 JUL 02	07:24:21.80	44.387	-114.797	15.30	2.50MD	ESO	..	..	MB	10	163	133.5	.14	C	2.2	1.9
		20 km NE of Stanley, ID																	
5388	1991 JUL 02	22:56:08.25	44.735	-110.413	1.74	2.60MD	UU	..	..	UU	5	146	5.2	.08	C	.7	7.8

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
5389	1991 JUL 02	23:06:33.86	44.734	-110.415	1.79	2.60MD	UU	.....	..	UU	8	101	5.4	.08	B	.4	4.3
5390	1991 JUL 04	11:24:34.72	44.699	-111.118	9.37	2.60MD	UU	.....	..	UU	14	71	9.7	.13	A	.4	.7
5391	1991 JUL 09	04:59:10.40	43.037	-110.716	7.00	2.90MD	BR	.....	..	BR	26	273	25.0	.14	A	.2	.....
5392	1991 JUL 09	05:06:33.43	43.074	-110.729	5.00	2.80MD	BR	.....	..	BR	34	89	21.0	.23	B	.1	.....
5393	1991 JUL 09	11:10:40.08	43.067	-110.716	5.00	2.90MD	BR	.....	..	BR	34	172	22.0	.33	C	.4	.....
5394	1991 JUL 10	00:24:24.90	44.822	-110.917	7.16	2.77MD	UU	.....	..	UU	10	147	9.9	.03	A	.5	1.1
5395	1991 JUL 10	02:22:16.03	44.761	-110.795	2.26	2.98MD	UU	.....	..	UU	9	110	8.7	.09	C	.5	8.2
5396	1991 JUL 10	03:35:03.51	44.758	-110.786	3.34	2.65MD	UU	.....	..	UU	6	107	7.9	.07	C	.5	6.7
5397	1991 JUL 10	03:40:59.28	44.759	-110.789	1.55	3.01MD	UU	.....	..	UU	20	72	8.2	.11	C	.3	9.2
5398	1991 JUL 12	15:04:06.86	44.742	-110.886	5.47	2.50MD	UU	.....	..	UU	6	142	9.7	.07	A	.5	1.3
5399	1991 JUL 13	09:40:14.10	44.704	-110.048	7.12	2.77MD	UU	.....	..	UU	18	209	13.1	.24	B	1.3	.6
5400	1991 JUL 14	20:49:16.37	44.742	-111.400	.11	2.87MD	UU	.....	..	UU	18	53	13.2	.49	C	1.4	22.3
5401	1991 JUL 21	02:20:36.28	44.291	-114.988	5.00	3.10ML	BUT	.00	..	PE	10	...	.....	.....	..	.....	.....
5402	1991 JUL 22	19:30:49.34	44.339	-110.003	7.05	2.60MD	UU	.....	..	UU	6	271	67.8	.21	D	6.1	14.4
5403	1991 JUL 22	19:31:56.48	44.338	-109.947	12.12	2.60MD	UU	.....	..	UU	5	311	72.2	.13	D	8.8	8.9
5404	1991 JUL 22	19:33:22.34	44.348	-110.025	8.63	2.92MD	UU	.....	..	UU	5	306	65.9	.17	D	10.3	10.4
5405	1991 JUL 25	14:59:19.53	44.751	-111.183	11.53	2.50MD	UU	.....	..	UU	15	90	6.5	.14	A	.4	.6
5406	1991 JUL 27	09:58:30.33	43.422	-110.483	7.23	2.50MD	BR	.....	..	BR	34	181	21.0	.16	B	.1	.....
5407	1991 JUL 27	11:57:55.30	44.874	-110.692	5.23	2.85MD	UU	.....	..	UU	15	85	11.4	.17	B	.5	1.0
5408	1991 JUL 28	14:18:56.60	46.414	-115.837	.60	2.80ML	BUT	3.20MD	ESO	..	7	317	259.1	.15	D	14.9	11.2
5409	1991 JUL 30	03:58:57.00	44.264	-113.989	21.20	2.70ML	BUT	2.50MD	ESO	..	7	311	110.1	.32	D	10.3	7.9
		near Weippe, ID 30 km SE of Challis, ID															
5410	1991 AUG 03	09:38:04.06	44.759	-110.809	3.64	2.54MD	UU	.....	..	UU	8	101	15.6	.11	C	.5	9.1
5411	1991 AUG 13	06:56:32.03	42.831	-111.253	10.03	3.00ML	INEL	.....	..	IN	19	312	75.7	.26	S	1.4	1.1
5412	1991 AUG 14	07:39:73.74	43.370	-110.618	5.82	3.20MD	BR	.....	..	BR	34	140	13.0	.28	B	2.0	.....
5413	1991 AUG 18	13:02:08.70	44.743	-114.072	14.20	2.80ML	BUT	2.80MD	ESO	..	9	301	97.3	.26	D	4.8	7.5
		20 km NE of Challis, ID															
5414	1991 AUG 18	21:08:27.90	44.172	-114.540	20.60	2.50MD	ESO	.....	..	MB	8	322	153.0	.11	D	2.7	1.6
		25 km E of Stanley, ID															
5415	1991 AUG 19	05:52:47.70	44.344	-114.323	10.30	2.50ML	BUT	2.60MD	ESO	..	8	317	128.9	.36	D	12.1	13.7
		15 km SW of Challis, ID															
5416	1991 AUG 19	16:53:54.00	43.951	-113.742	10.82	3.00ML	INEL	.....	..	IN	19	306	58.0	.28	S	1.6	2.0
5417	1991 AUG 26	03:28:37.37	43.385	-110.855	8.40	2.50MD	BR	.....	..	BR	20	129	2.0	.05	A	.0	.....
5418	1991 AUG 28	08:14:21.07	43.384	-110.856	8.46	2.50MD	BR	.....	..	BR	19	128	2.0	.04	A	.3	.....
5419	1991 AUG 28	08:21:73.12	43.389	-110.868	7.54	2.50MD	BR	.....	..	BR	26	69	3.0	.15	A	.6	.....
5420	1991 AUG 28	11:12:47.40	44.676	-109.921	3.64	2.89MD	UU	.....	..	UU	12	232	21.8	.25	B	1.4	.6
5421	1991 AUG 29	13:56:11.00	44.292	-111.029	1.86	2.77MD	UU	.....	..	UU	28	67	15.9	.30	B	.6	.8
5422	1991 SEP 01	08:40:52.83	44.253	-110.798	5.68	2.95MD	UU	.....	..	UU	21	112	22.4	.26	B	.6	.7
5423	1991 SEP 01	11:29:35.50	45.443	-116.785	10.00	2.90MD	ESO	.....	..	MB	5	340	317.1	.35	D	99.9	99.9
		20 km NE of Weiser, ID															
5424	1991 SEP 03	14:17:10.70	44.314	-114.743	.30	2.80ML	BUT	2.90MD	ESO	..	10	317	160.9	.30	D	8.9	6.5
		20 km NE of Stanley, ID															
5425	1991 SEP 06	12:23:43.96	44.381	-110.843	4.22	2.57MD	UU	.....	..	UU	17	123	7.9	.18	B	.6	.7
5426	1991 SEP 06	20:55:41.44	44.650	-111.007	5.98	2.56MD	UU	.....	..	UU	23	73	18.1	.14	B	.3	3.4
5427	1991 SEP 07	07:32:38.80	44.553	-114.805	6.60	2.50ML	BUT	2.70MD	ESO	..	8	325	158.1	.19	D	5.3	5.6
		50 km NW of Challis, ID															
5428	1991 SEP 07	08:01:07.80	44.373	-110.357	6.56	2.77MD	UU	.....	..	UU	20	106	13.1	.21	B	.6	.9
5429	1991 SEP 15	10:31:20.08	43.575	-110.405	6.57	2.70MD	BR	.....	..	BR	32	165	9.0	.10	A	.6	.....
5430	1991 SEP 15	10:45:53.24	43.577	-110.408	6.51	2.60MD	BR	.....	..	BR	28	162	9.0	.09	A	.6	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
5431	1991 SEP 17	09:33:49.77	44.039	-110.557	9.52	3.36MD	UU	.....	..	UU	30	86	9.9	.37	C	.7	.9
5432	1991 SEP 20	04:33:12.88	44.598	-110.996	9.55	2.91MD	UU	.....	..	UU	41	71	12.2	.14	A	.2	.5
5433	1991 SEP 26	18:20:09.37	44.818	-110.881	5.22	2.54MD	UU	.....	..	UU	13	76	18.0	.08	A	.3	.7
5434	1991 SEP 26	23:57:13.47	43.106	-110.968	6.40	2.60MD	BR	.....	..	BR	28	148	5.0	.27	B	.9	.....
5435	1991 SEP 29	08:08:08.40	44.451	-114.703	9.50	2.50MD	ESO	.....	..	MB	7	334	152.9	.36	D	13.6	10.9
		30 km NE of Stanley, ID															
5436	1991 SEP 30	05:34:20.94	43.501	-110.231	6.95	3.30MD	BR	.....	..	BR	43	140	17.0	.31	C	.1	.....
5437	1991 OCT 07	05:42:45.97	44.849	-110.379	6.80	2.82MD	UU	.....	..	UU	13	102	10.6	.14	A	.3	1.1
5438	1991 OCT 07	05:51:51.15	44.853	-110.373	7.42	2.65MD	UU	.....	..	UU	6	139	11.0	.09	A	.5	1.6
5439	1991 OCT 07	06:16:42.84	44.855	-110.374	7.40	2.73MD	UU	.....	..	UU	16	140	11.1	.12	A	.4	.8
5440	1991 OCT 07	17:48:07.88	44.854	-110.374	5.41	3.12MD	UU	.....	..	UU	17	103	11.0	.15	A	.4	.8
5441	1991 OCT 08	18:36:08.39	44.375	-110.470	5.70	2.78MD	UU	.....	..	UU	20	131	16.3	.20	B	.6	.9
5442	1991 OCT 11	23:43:47.75	44.069	-110.843	7.64	2.92MD	UU	.....	..	UU	26	66	13.2	.34	C	.7	1.0
5443	1991 OCT 12	10:53:51.44	44.697	-111.133	4.88	2.60MD	UU	.....	..	UU	22	68	11.2	.11	A	.3	.8
5444	1991 OCT 14	05:42:26.66	44.721	-110.800	.65	2.70MD	UU	.....	..	UU	11	56	9.3	.16	C	.5	11.5
5445	1991 OCT 14	14:00:25.11	43.465	-111.242	5.39	2.70MD	BR	.....	..	BR	23	127	9.0	.13	B	1.6	.....
5446	1991 OCT 17	16:38:45.91	44.739	-110.249	.52	3.05MD	UU	.....	..	UU	9	131	8.5	.52	D	1.1	23.0
5447	1991 OCT 18	06:12:06.90	44.786	-111.323	.70	2.50ML	BUT	2.10MD	ESO	..	..	..	..	..	..	..	..
		Hebgen Lake region															
5448	1991 OCT 18	15:34:19.14	44.738	-111.275	4.58	2.59MD	UU	.....	..	UU	27	46	14.8	.12	A	.2	.6
5449	1991 OCT 18	17:07:59.50	44.619	-114.724	.90	2.50ML	BUT	2.50MD	ESO	..	..	..	..	..	..	..	..
		35 km NW of Challis, ID															
5450	1991 OCT 19	14:57:51.80	45.525	-111.652	4.00	2.90ML	BUT	2.70MD	ESO	..	..	..	..	..	..	..	..
		near Norris															
5451	1991 OCT 19	15:55:04.90	44.645	-110.137	2.15	3.08MD	UU	.....	..	UU	6	194	4.4	.05	B	.7	2.5
5452	1991 OCT 19	16:29:06.83	44.647	-110.139	2.90	2.80MD	UU	.....	..	UU	6	193	4.3	.03	A	.6	1.6
5453	1991 OCT 20	10:51:58.13	44.694	-111.146	4.06	2.88MD	UU	.....	..	UU	39	54	11.8	.15	A	.2	.6
5454	1991 OCT 20	14:30:29.08	44.646	-110.130	2.39	3.30MD	UU	.....	..	UU	7	196	5.0	.03	B	.6	2.2
5455	1991 OCT 20	19:33:02.15	44.645	-110.123	.80	2.66MD	UU	.....	..	UU	5	275	5.6	.06	C	2.9	1.5
5456	1991 OCT 20	19:33:24.88	44.650	-110.134	.91	3.23MD	UU	.....	..	UU	7	195	4.7	.13	A	.8	.6
5457	1991 OCT 20	20:33:45.65	44.665	-110.176	1.21	2.74MD	UU	.....	..	UU	5	182	2.4	.11	C	1.0	9.4
5458	1991 OCT 20	21:06:32.18	44.645	-110.133	.92	3.53MD	UU	.....	..	UU	16	195	4.8	.24	B	.7	.6
5459	1991 OCT 21	04:36:01.06	44.652	-110.139	2.66	2.64MD	UU	.....	..	UU	6	193	4.3	.05	A	.8	1.7
5460	1991 OCT 21	11:19:51.54	44.277	-110.822	4.18	2.91MD	UU	.....	..	UU	23	107	19.6	.26	B	.6	.8
5461	1991 OCT 22	09:02:11.00	44.353	-116.129	11.70	3.20ML	BUT	3.40MD	ESO	..	..	..	..	..	..	..	..
		15 km S of Cascade, ID															
5462	1991 OCT 24	20:42:13.08	44.340	-111.042	3.10	2.55MD	UU	.....	..	UU	14	152	20.3	.22	B	.7	1.0
5463	1991 OCT 25	11:45:43.26	44.738	-111.317	6.36	2.65MD	UU	.....	..	UU	31	46	17.8	.14	A	.3	1.2
5464	1991 OCT 26	22:36:33.30	44.794	-111.314	1.60	2.80ML	BUT	2.10MD	ESO	..	..	..	..	..	..	..	..
		Hebgen Lake region															
5465	1991 OCT 27	16:18:23.00	44.563	-114.221	.04	2.60MD	INEL	.....	..	IN	27	328	129.9	.22	S	2.9	2.7
5466	1991 OCT 29	11:45:55.50	44.393	-112.718	15.60	2.50ML	BUT	1.80MD	ESO	..	..	..	..	..	..	..	..
		25 km S of Lima															
5467	1991 OCT 30	04:55:22.90	44.343	-114.730	14.80	2.70ML	BUT	3.00MD	ESO	..	..	..	..	..	..	..	..
		30 km NE of Stanley, ID															
5468	1991 OCT 30	05:05:13.80	44.473	-114.818	20.90	2.90ML	BUT	3.00MD	ESO	..	..	..	..	..	..	..	..
		30 km NE of Stanley, ID															
5469	1991 NOV 02	02:39:05.31	44.736	-111.267	4.85	3.36MD	UU	.....	..	UU	40	48	14.3	.14	A	.2	.6
5470	1991 NOV 06	09:42:58.30	45.534	-111.640	8.40	3.00ML	BUT	2.80MD	ESO	..	..	..	..	..	..	..	..
		near Norris; felt @ Norris H.Sp															

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
5471	1991 NOV 06	09:51:34.30 near Norris	45.527	-111.644	13.80	2.40ML	BUT 2.50MD	ESO ..	...	MB	7	143	39.1	.16	C	1.5	1.9
5472	1991 NOV 06	23:52:16.71	44.760	-110.975	6.47	2.80MD	UU .....	..	...	UU	18	90	11.2	.10	A	.3	.8
5473	1991 NOV 17	01:19:30.80 N Gravelly Range	45.030	-111.789	13.20	2.70ML	BUT 2.60MD	ESO ..	...	MB	13	159	30.0	.25	C	1.3	1.8
5474	1991 NOV 17	07:29:58.40 20 km NW of Leadore, ID	44.810	-113.558	1.20	2.70ML	BUT 2.50MD	ESO ..	...	MB	8	302	56.2	.28	D	9.7	12.5
5475	1991 NOV 20	08:49:56.30 near Norris	45.523	-111.649	14.30	2.40ML	BUT 2.50MD	ESO ..	...	MB	7	143	39.3	.24	C	2.2	2.7
5476	1991 NOV 22	06:40:28.70 15 km E of Challis, ID	44.523	-114.037	.10	2.50ML	BUT 2.50MD	ESO ..	...	MB	8	305	100.1	.21	D	5.0	7.1
5477	1991 NOV 23	05:47:22.58	44.717	-110.409	.85	3.34MD	UU .....	..	...	UU	26	68	6.1	.66	D	1.0	10.8
5478	1991 NOV 26	18:00:17.86	44.617	-110.376	4.95	2.83MD	UU .....	..	...	UU	11	70	13.1	.21	B	.5	1.5
5479	1991 DEC 01	00:24:06.60 35 km SE of Stanley, ID	44.097	-114.549	12.60	2.90ML	BUT 2.80MD	ESO ..	...	MB	11	320	157.8	.26	D	3.6	3.3
5480	1991 DEC 05	09:20:54.35	44.820	-111.478	7.13	2.60MD	UU .....	..	...	UU	18	52	22.5	.11	A	.3	1.1
5481	1991 DEC 19	15:21:20.16	43.539	-110.525	6.45	3.10MD	BR .....	..	...	BR	27	138	10.0	.11	A	1.8	.....
5482	1991 DEC 20	15:19:32.37	44.469	-110.984	2.51	2.94MD	UU .....	..	...	UU	34	57	11.4	.27	B	.4	.9
5483	1991 DEC 28	07:00:21.02	44.519	-114.139	.68	4.50ML	INEL .....	..	...	IN	21	315	121.9	.17	S	3.3	3.5
5484	1991 DEC 28	07:09:26.81	44.518	-114.096	3.25	3.80ML	INEL .....	..	...	IN	22	314	119.5	.17	S	2.5	2.4
5485	1991 DEC 28	07:48:29.80 25 km NE of Challis, ID	44.626	-113.980	.30	2.50ML	BUT 2.30MD	ESO ..	...	MB	10	302	92.4	.28	D	4.0	4.4
5486	1991 DEC 28	09:12:35.75	44.496	-114.039	.03	3.20ML	INEL .....	..	...	IN	22	313	114.8	.15	S	1.8	1.6
5487	1991 DEC 28	09:14:08.64	44.502	-114.056	.14	3.50ML	INEL .....	..	...	IN	22	314	116.2	.17	S	2.6	2.3
5488	1991 DEC 28	14:01:51.10 25 km NE of Challis, ID	44.651	-113.961	1.50	3.10ML	BUT 2.90MD	ESO ..	...	MB	9	301	90.3	.23	D	3.4	5.3
5489	1991 DEC 28	14:31:55.90 25 km NE of Challis, ID	44.632	-114.018	3.40	2.50ML	BUT .00MD	ESO ..	...	MB	9	302	95.1	.21	C	2.5	3.9
5490	1991 DEC 28	14:33:02.00 25 km NE of Challis, ID	44.632	-114.014	.10	2.70ML	BUT 2.80MD	ESO ..	...	MB	9	302	94.8	.15	D	3.4	3.6
5491	1991 DEC 28	17:30:13.20 25 km NE of Challis, ID	44.598	-113.998	9.40	2.40ML	BUT 2.60MD	ESO ..	...	MB	9	303	94.6	.28	D	2.8	2.1
5492	1991 DEC 29	03:51:23.37	44.780	-110.942	5.70	3.44MD	UU .....	..	...	UU	45	50	5.6	.11	A	.2	.3
5493	1991 DEC 29	04:38:06.45	44.744	-110.689	2.37	2.50MD	UU .....	..	...	UU	15	88	1.5	.07	A	.3	.6
5494	1991 DEC 29	04:42:36.76	44.747	-110.691	2.05	3.52MD	UU .....	..	...	UU	41	86	1.8	.16	A	.2	.5
5495	1991 DEC 29	12:27:45.35	44.778	-110.934	5.12	2.66MD	UU .....	..	...	UU	20	52	6.0	.07	A	.2	.4
5496	1991 DEC 30	18:25:42.20	44.514	-114.101	2.29	2.70ML	INEL .....	..	...	IN	24	314	119.5	.15	S	2.3	2.7
5497	1991 DEC 31	08:51:16.69	44.448	-111.062	6.49	2.50MD	UU .....	..	...	UU	6	158	17.5	.05	A	.6	1.2
5498	1992 JAN 04	04:15:31.40 S Madison Range	44.872	-111.455	5.00	2.60MD	ESO .....	..	...	MB	9	208	61.1	.20	C	2.4	4.4
5499	1992 JAN 06	06:51:17.20 15 km NE of Challis, ID	44.561	-114.057	19.10	2.40ML	BUT 2.60MD	ESO ..	...	MB	7	308	100.2	.11	D	3.6	3.3
5500	1992 JAN 06	08:34:28.30 40 km W of Salmon, ID	45.051	-114.515	34.70	2.80ML	BUT 3.10MD	ESO ..	...	MB	11	155	133.8	.33	D	2.7	5.9
5501	1992 JAN 08	07:24:17.86	44.558	-114.077	4.83	3.50ML	INEL .....	..	...	IN	10	315	122.0	.10	.	6.3	9.2
5502	1992 JAN 08	07:25:14.78	44.522	-114.224	.02	2.64MD	INEL .....	..	...	IN	21	257	114.2	.30	.	3.0	1.9
5503	1992 JAN 08	10:34:20.51	44.514	-114.135	4.72	3.70ML	INEL .....	..	...	IN	15	315	121.4	.16	.	3.0	4.4
5504	1992 JAN 08	23:24:49.10 20 km N of Nicholia, ID	44.540	-113.092	12.30	2.50ML	BUT 2.30MD	ESO ..	...	MB	10	283	37.3	.18	C	2.1	1.4

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Std-Err Vert
5505	1992 JAN 09	07:24:47.20	44.625	-114.047	.20	2.50ML	BUT 2.70MD	ESO ..	...	MB	10	303	97.5	.12	C	2.5	2.8
		20 km NE of Challis, ID															
5506	1992 JAN 10	16:11:10.21	44.451	-114.002	.81	3.40ML	INEL .....	..	...	IN	11	312	109.1	.11	.	3.1	2.6
5507	1992 JAN 13	09:49:35.90	44.632	-113.976	.30	2.50ML	BUT 2.60MD	ESO ..	...	MB	11	301	91.9	.21	D	4.0	4.3
		25 km NE of Challis, ID															
5508	1992 JAN 15	21:00:15.10	44.462	-114.257	18.60	3.10ML	BUT 2.40MD	ESO ..	...	MB	9	161	118.9	.40	D	9.6	9.0
		10 km NE of Challis, ID															
5509	1992 JAN 17	12:28:05.98	44.494	-114.127	12.86	3.40ML	INEL .....	..	...	IN	17	314	119.3	.22	.	3.4	6.8
5510	1992 JAN 18	02:54:53.96	44.446	-113.989	.16	3.50ML	INEL .....	..	...	IN	17	311	108.0	.26	.	3.0	2.5
5511	1992 JAN 18	03:57:49.40	44.634	-114.052	1.80	2.60ML	BUT 2.40MD	ESO ..	...	MB	8	307	97.7	.21	D	3.6	5.4
		20 km NE of Challis, ID															
5512	1992 JAN 18	14:02:10.30	44.480	-114.011	.02	3.40ML	INEL .....	..	...	IN	16	312	112.0	.24	.	3.3	2.5
5513	1992 JAN 23	02:51:42.20	45.162	-111.749	8.90	2.80ML	BUT 2.50MD	ESO ..	...	MB	10	151	24.2	.30	C	1.8	3.1
		Central Madison Valley															
5514	1992 JAN 24	10:15:48.30	43.969	-113.939	15.60	3.50ML	BUT 3.00MD	ESO ..	...	MB	12	184	129.1	.18	D	2.6	3.1
		20 km NW of Mackay, ID															
5515	1992 JAN 24	20:42:43.36	40.968	-113.196	8.93	2.60ML	UU .....	..	...	UU	7	194	58.4	.26	.	1.5	2.3
5516	1992 JAN 25	15:16:31.46	40.924	-116.524	5.00	3.50ML	GS .....	..	...	PE	9	...	.....	.....	.	.....	.....
5517	1992 JAN 25	15:18:09.93	40.783	-116.480	5.00	3.60ML	GS .....	..	...	PE	5	...	.....	.....	.	.....	.....
5518	1992 JAN 26	05:35:48.90	45.021	-116.741	5.60	3.20ML	BUT 3.20MD	ESO ..	...	MB	16	86	24.3	.30	C	1.1	1.9
		10 km NE of Copperfield, OR; Fel															
5519	1992 JAN 29	20:53:56.82	44.285	-114.171	11.61	3.00ML	INEL .....	..	...	IN	22	259	106.6	.21	.	1.1	1.9
5520	1992 FEB 02	22:11:67.98	43.420	-110.731	4.04	2.50MD	BR .....	..	...	BR	29	100	5.0	.18	B	.5	.....
5521	1992 FEB 06	03:28:03.89	44.451	-114.056	2.35	3.30ML	INEL .....	..	...	IN	12	313	112.0	.22	.	2.9	3.3
5522	1992 FEB 07	07:14:01.20	44.642	-114.069	.50	2.90ML	BUT 2.50MD	ESO ..	...	MB	8	174	98.8	.22	D	2.6	3.3
		20 km NE of Challis, ID															
5523	1992 FEB 11	15:13:10.16	42.625	-111.779	7.61	3.20ML	INEL .....	..	...	IN	15	308	55.6	.18	.	1.7	.9
5524	1992 FEB 14	05:34:50.78	44.478	-114.062	.06	3.00ML	INEL .....	..	...	IN	15	313	114.5	.12	.	2.5	1.7
5525	1992 FEB 14	05:34:51.50	44.607	-114.051	.70	3.00ML	BUT 3.00MD	ESO ..	...	MB	11	303	98.4	.20	D	4.7	4.2
		15 km NE of Challis, ID															
5526	1992 FEB 14	22:34:13.40	44.323	-114.576	22.10	2.50MD	ESO .....	..	...	MB	8	315	148.2	.22	D	5.1	3.4
		30 km SW of Challis, ID															
5527	1992 FEB 15	03:33:52.69	44.476	-114.072	.07	3.10ML	INEL .....	..	...	IN	18	314	114.9	.18	.	2.3	1.9
5528	1992 FEB 16	01:04:12.37	44.470	-114.070	9.57	2.80ML	INEL .....	..	...	IN	14	313	114.3	.16	.	2.2	3.7
5529	1992 FEB 16	20:23:50.08	44.753	-112.374	15.18	3.20ML	INEL .....	..	...	IN	19	89	32.7	.13	.	.4	.6
5530	1992 FEB 16	23:25:25.10	44.541	-114.842	9.40	2.40ML	BUT 2.60MD	ESO ..	...	MB	9	321	161.2	.22	D	3.7	3.6
		30 km NNE of Stanley, ID															
5531	1992 FEB 17	01:32:30.40	44.770	-112.370	8.20	4.00ML	BUT 3.60MD	ESO ..	...	MB	24	73	34.0	.37	C	1.3	2.3
		25 km NE of Lima; Felt															
5532	1992 FEB 17	02:41:20.70	44.423	-114.891	18.30	2.30ML	BUT 2.50MD	ESO ..	...	MB	8	323	168.2	.47	D	3.3	2.3
		25 km NNE of Stanley, ID															
5533	1992 FEB 17	06:32:41.00	44.423	-114.912	8.50	2.50ML	BUT 2.60MD	ESO ..	...	MB	5	323	169.8	.13	D	53.7	40.7
		25 km NNE of Stanley, ID															
5534	1992 FEB 17	07:44:06.90	44.417	-114.817	28.00	2.60ML	BUT 2.70MD	ESO ..	...	MB	8	322	162.7	.14	D	19.8	31.3
		25 km NNE of Stanley, ID															
5535	1992 FEB 17	10:02:57.90	44.484	-114.790	21.10	2.40ML	BUT 2.60MD	ESO ..	...	MB	8	321	158.6	.17	D	3.9	2.7
		25 km NNE of Stanley, ID															
5536	1992 FEB 17	16:52:40.83	44.497	-114.768	5.00	4.30ML	BUT 4.30ML	GS ..	...	PE	54	...	.....	.....	.	.....	.....
5537	1992 FEB 17	18:00:28.25	44.165	-113.913	7.25	3.00ML	INEL .....	..	...	IN	27	302	82.3	.22	.	1.1	1.2
5538	1992 FEB 19	06:02:55.37	44.463	-114.012	.08	3.60ML	INEL .....	..	...	IN	21	312	110.6	.27	.	3.0	2.3

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Std-Err Vert
5539	1992 FEB 19	06:02:55.40	44.569	-114.107	12.90	3.60ML	BUT 3.10MD	ESO	..	...	MB	9	305	103.8	.26	D	7.5 5.6
		12 km NE of Challis, ID															
5540	1992 FEB 19	07:08:01.06	44.435	-113.962	1.25	3.20ML	INEL	.....	..	...	IN	20	310	105.7	.34	.	3.5 3.1
5541	1992 FEB 19	07:40:48.46	44.475	-114.017	.04	3.10ML	INEL	.....	..	...	IN	18	312	111.9	.27	.	3.7 2.8
5542	1992 FEB 24	08:51:08.70	44.637	-114.055	.70	2.60ML	BUT 2.40MD	ESO	..	...	MB	9	303	97.9	.15	D	3.0 3.2
		20 km NE of Challis, ID															
5543	1992 FEB 26	16:43:01.30	44.728	-110.843	18.60	3.00ML	BUT 2.60MD	ESO	..	...	MB	10	263	97.8	.39	D	4.0 4.9
		NW Yellowstone															
5544	1992 MAR 01	06:09:26.10	44.550	-110.659	.70	2.70ML	BUT 2.50MD	ESO	..	...	MB	10	280	115.4	.32	D	8.3 8.4
		Central Yellowstone															
5545	1992 MAR 02	22:34:33.50	44.492	-114.798	3.50	2.70ML	BUT 2.90MD	ESO	..	...	MB	9	314	159.0	.13	D	3.2 3.2
		25 km NE of Stanley, ID															
5546	1992 MAR 06	07:51:34.30	44.552	-114.133	18.50	2.50ML	BUT 2.30MD	ESO	..	...	MB	8	310	106.3	.34	D	8.9 8.0
		10 km NE of Challis, ID															
5547	1992 MAR 07	02:51:44.00	43.100	-111.441	7.00	2.90MD	BR	.....	..	...	BR	23	288	30.0	.15	B	.2
5548	1992 MAR 07	18:20:03.50	44.517	-114.117	7.02	3.80ML	INEL	.....	..	...	IN	31	111	106.3	.18	.	.5 1.2
5549	1992 MAR 08	09:50:25.90	44.516	-114.174	1.40	2.60ML	BUT 2.70MD	ESO	..	...	MB	7	308	110.7	.26	D	4.7 4.3
		near Challis, ID															
5550	1992 MAR 13	10:28:52.19	40.523	-115.616	4.24	3.23MD	UNR	.....	..	...	UN	6	301	99.0	.60	d	.....
5551	1992 MAR 16	05:26:20.80	44.832	-111.607	7.10	3.30ML	BUT 2.70MD	ESO	..	...	MB	10	199	52.4	.25	C	2.0 2.7
		S Gravelly Range															
5552	1992 MAR 21	12:34:07.39	44.528	-114.142	3.57	3.50ML	INEL	.....	..	...	IN	39	99	107.8	.31	.	.5 1.2
5553	1992 MAR 21	13:34:37.50	44.641	-114.026	1.80	2.80ML	BUT 2.40MD	ESO	..	...	MB	9	302	95.5	.28	D	5.1 7.6
		20 km NE of Challis, ID															
5554	1992 MAR 22	13:31:40.41	44.536	-114.140	6.24	3.60ML	INEL	.....	..	...	IN	32	99	107.4	.18	.	.4 1.0
5555	1992 MAR 23	05:08:47.20	44.061	-114.505	14.30	2.70ML	BUT 2.80MD	ESO	..	...	MB	9	323	157.0	.09	C	1.9 1.7
		40 km SE of Stanley, ID															
5556	1992 MAR 23	20:22:32.10	44.512	-114.109	19.10	3.20ML	BUT 3.10MD	ESO	..	...	MB	19	143	106.0	.26	C	2.2 2.8
		15 km NE of Challis, ID															
5557	1992 MAR 26	20:16:13.30	46.036	-111.433	5.00	2.20ML	BUT 2.70MD	ESO	..	...	MB	10	89	21.5	.21	C	1.6 3.8
		Clarkston Valley															
5558	1992 APR 01	09:06:24.90	43.616	-110.127	6.39	3.00MD	BR	.....	..	...	BR	34	224	16.0	.12	A	.0
5559	1992 APR 02	09:33:29.55	41.409	-112.771	8.91	2.83MD	UU	.....	..	...	UU	21	179	30.3	.22	.	.8 .8
5560	1992 APR 04	01:29:70.31	43.814	-111.067	8.38	4.00MD	BR	.....	..	...	BR	33	89	8.0	.16	B	.9
5561	1992 APR 04	01:30:09.82	43.834	-111.030	14.07	4.00ML	INEL	.....	..	...	IN	14	180	10.1	.09	.	3.9 4.1
5562	1992 APR 11	20:31:42.00	44.436	-114.926	12.90	2.70ML	BUT 2.70MD	ESO	..	...	MB	5	332	170.5	.10	D	9.0 8.3
		20 km N of Stanley, ID															
5563	1992 APR 12	00:03:27.90	45.905	-111.497	6.40	2.60ML	BUT 2.70MD	ESO	..	...	MB	10	90	35.2	.30	C	1.5 7.0
		near Three Forks															
5564	1992 APR 13	02:01:42.10	44.251	-114.063	16.30	2.50MD	ESO	.....	..	...	MB	6	337	115.9	.10	D	8.4 7.2
		30 km SE of Challis, ID															
5565	1992 APR 17	21:56:47.85	41.368	-112.533	7.84	2.60ML	UU	.....	..	...	UU	28	158	10.7	.24	.	.8 1.7
5566	1992 APR 25	17:47:07.08	44.382	-113.922	1.04	3.30ML	INEL	.....	..	...	IN	20	246	78.1	.19	.	1.9 1.8
5567	1992 APR 25	20:05:31.80	44.519	-113.993	2.40	2.50ML	BUT 2.50MD	ESO	..	...	MB	8	308	97.0	.20	D	3.6 5.5
		20 km E of Challis, ID															
5568	1992 APR 25	22:17:22.20	44.526	-114.023	4.80	2.80ML	BUT 2.70MD	ESO	..	...	MB	8	308	99.0	.10	D	2.5 2.8
		18 km E of Challis, ID															
5569	1992 APR 25	22:40:16.80	44.467	-114.080	12.50	3.00ML	BUT 2.60MD	ESO	..	...	MB	7	311	105.6	.16	D	4.1 3.9
		15 km E of Challis, ID															

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Std-Err Vert
5570	1992 APR 27	15:06:01.70	44.426	-114.055	10.60	2.70ML	BUT 2.80MD	ESO	..	MB	9	308	105.6	.23	D	4.3	4.1
		15 km SE of Challis, ID															
5571	1992 APR 29	08:57:47.70	44.477	-114.764	10.60	2.50ML	BUT 2.70MD	ESO	..	MB	9	314	156.8	.09	C	2.0	2.1
		30 km NE of Stanley, ID															
5572	1992 APR 29	09:00:06.15	44.487	-114.821	5.00	3.70ML	BUT 3.40ML	GS	..	PE	11	...	.....	.....	.	.....	.....
5573	1992 APR 29	14:56:34.86	44.459	-114.939	5.00	3.10ML	BUT 3.20ML	GS	..	PE	8	...	.....	.....	.	.....	.....
5574	1992 APR 30	08:51:54.47	44.386	-113.940	5.47	3.70ML	INEL	.....	..	IN	26	275	79.6	.20	.	1.1	1.7
5575	1992 APR 30	18:30:56.30	44.494	-114.040	3.00	2.90ML	BUT 3.00MD	ESO	..	MB	9	309	101.5	.24	D	4.7	5.2
		15 km E of Challis, ID															
5576	1992 MAY 01	06:12:03.20	44.449	-113.971	9.60	2.60ML	BUT 2.40MD	ESO	..	MB	9	306	98.5	.26	D	4.5	4.3
		15 km E of Challis, ID															
5577	1992 MAY 01	19:21:57.30	44.888	-114.625	6.00	2.50MD	ESO	.....	..	MB	8	316	140.5	.25	D	5.1	7.6
		50 km NW of Challis, ID															
5578	1992 MAY 01	19:41:44.50	44.489	-114.020	16.30	2.80ML	BUT 2.70MD	ESO	..	MB	7	309	100.2	.06	C	1.9	2.3
		15 km E of Challis, ID															
5579	1992 MAY 02	05:20:30.00	44.884	-114.568	4.70	3.10ML	BUT 3.40MD	ESO	..	MB	9	305	136.0	.20	D	6.1	4.2
		50 km NW of Challis, ID															
5580	1992 MAY 02	11:25:38.29	43.518	-110.267	8.51	2.50MD	BR	.....	..	BR	27	213	14.0	.11	A	.5	.....
5581	1992 MAY 03	01:09:33.28	44.511	-114.039	6.80	2.50MD	INEL	.....	..	IN	21	254	89.4	.25	.	1.4	2.8
5582	1992 MAY 03	12:35:17.90	44.456	-114.081	12.20	2.40ML	BUT 2.50MD	ESO	..	MB	7	311	106.1	.24	D	5.8	6.4
		12 km SE of Challis, ID															
5583	1992 MAY 04	05:59:39.40	44.441	-114.058	7.30	2.70ML	BUT 2.50MD	ESO	..	MB	8	311	105.1	.23	D	3.6	2.9
		15 km SE of Challis, ID															
5584	1992 MAY 04	09:14:24.25	44.369	-113.945	1.84	4.70ML	INEL	.....	..	IN	14	314	79.9	.09	.	1.6	2.3
5585	1992 MAY 04	09:19:58.20	44.482	-114.103	2.30	2.50ML	BUT 2.10MD	ESO	..	MB	6	311	106.6	.25	D	6.9	13.1
		10 km E of Challis, ID															
5586	1992 MAY 04	09:21:06.50	44.500	-113.910	23.40	2.60ML	BUT 2.10MD	ESO	..	MB	5	307	91.7	.05	C	1.1	1.1
		25 km E of Challis, ID															
5587	1992 MAY 04	09:26:45.00	44.499	-114.047	4.30	2.60ML	BUT 2.40MD	ESO	..	MB	6	306	101.8	.12	D	3.3	2.6
		20 km E of Challis, ID															
5588	1992 MAY 04	09:34:37.80	44.521	-114.003	18.40	2.30ML	BUT 2.50MD	ESO	..	MB	6	308	97.7	.12	D	3.4	4.0
		18 km E of Challis, ID															
5589	1992 MAY 04	09:42:40.00	44.519	-114.012	10.90	2.50ML	BUT 2.70MD	ESO	..	MB	8	305	98.4	.17	D	5.2	10.7
		18 km E of Challis, ID															
5590	1992 MAY 04	09:47:23.20	44.519	-113.990	17.90	2.50MD	ESO	.....	..	MB	6	308	96.8	.12	D	3.4	5.5
		20 km E of Challis, ID															
5591	1992 MAY 04	10:54:24.44	44.361	-113.960	.16	3.30ML	INEL	.....	..	IN	20	249	81.1	.31	.	2.8	3.8
5592	1992 MAY 04	11:02:31.94	44.397	-114.027	.63	3.40ML	INEL	.....	..	IN	18	251	86.6	.21	.	2.0	3.7
5593	1992 MAY 04	11:31:14.83	44.371	-113.979	4.10	2.68MD	INEL	.....	..	IN	9	317	82.6	.09	.	9.4	4.7
5594	1992 MAY 04	12:47:14.70	44.455	-114.101	1.00	2.30ML	BUT 2.50MD	ESO	..	MB	5	311	107.6	.11	D	5.7	8.3
		12 km E of Challis, ID															
5595	1992 MAY 04	12:51:10.80	44.471	-114.021	.10	2.50ML	BUT 2.40MD	ESO	..	MB	5	309	101.1	.07	D	3.4	5.0
		15 km E of Challis, ID															
5596	1992 MAY 04	14:12:08.30	44.485	-113.983	10.10	2.40ML	BUT 2.50MD	ESO	..	MB	7	305	97.7	.17	D	3.7	3.8
		18 km E of Challis, ID															
5597	1992 MAY 04	15:09:36.16	44.406	-114.074	7.21	3.40ML	INEL	.....	..	IN	20	253	90.4	.23	.	3.2	1.3
5598	1992 MAY 04	15:15:22.16	44.376	-113.875	.16	3.50ML	INEL	.....	..	IN	16	273	74.4	.17	.	1.9	3.5
5599	1992 MAY 04	15:22:54.00	44.370	-113.921	1.83	3.40ML	INEL	.....	..	IN	19	274	78.0	.20	.	1.5	3.3
5600	1992 MAY 04	16:25:12.10	44.409	-114.165	9.60	2.70ML	BUT 2.60MD	ESO	..	MB	6	313	114.4	.16	D	6.5	9.5
		10 km SE of Challis, ID															

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Std-Err Vert		
5601	1992 MAY 04	17:14:48.59	44.414	-114.060	7.93	2.50ML	INEL	.....	..	..	IN	19	252	89.4	.21	.	2.8	1.4
5602	1992 MAY 04	18:50:16.60	44.483	-114.040	10.20	2.80ML	BUT	2.70MD	ESO	MB	7	306	101.9	.20	D	5.5	5.3
		20 km E of Challis, ID																	
5603	1992 MAY 04	19:34:03.80	44.484	-114.010	1.00	2.50ML	BUT	2.50MD	ESO	MB	6	309	99.7	.04	C	1.3	1.8
		20 km E of Challis, ID																	
5604	1992 MAY 05	01:12:35.20	44.396	-114.107	2.47	3.50ML	INEL	.....	..	..	IN	20	255	92.9	.22	.	2.4	2.7
5605	1992 MAY 05	05:54:08.97	44.375	-113.917	.80	2.55MD	INEL	.....	..	..	IN	18	274	77.7	.18	.	1.8	3.1
5606	1992 MAY 05	06:10:33.06	44.376	-113.961	4.78	3.20ML	INEL	.....	..	..	IN	19	276	81.2	.13	.	.9	3.1
5607	1992 MAY 05	08:21:14.40	44.491	-114.029	11.90	2.50ML	BUT	2.50MD	ESO	MB	7	309	100.8	.11	D	2.7	2.9
		20 km E of Challis, ID																	
5608	1992 MAY 05	08:31:14.79	44.338	-113.867	2.64	3.00ML	INEL	.....	..	..	IN	14	311	73.7	.12	.	1.5	3.6
5609	1992 MAY 05	08:33:07.04	44.389	-113.887	8.37	3.20ML	INEL	.....	..	..	IN	18	272	75.4	.11	.	.9	1.6
5610	1992 MAY 05	09:58:19.30	44.466	-114.064	9.60	2.80ML	BUT	2.70MD	ESO	MB	7	307	104.4	.17	D	6.6	4.7
		15 km SE of Challis, ID																	
5611	1992 MAY 05	15:36:40.30	45.518	-111.647	6.80	2.90ML	BUT	2.70MD	ESO	MB	9	119	44.2	.26	C	1.6	3.6
		near Norris																	
5612	1992 MAY 06	03:09:05.60	44.793	-114.539	12.80	2.50MD	ESO	.....	..	..	MB	9	306	133.8	.09	C	1.3	1.8
		35 km NW of Challis, ID																	
5613	1992 MAY 06	10:22:12.43	44.415	-114.050	.10	4.40ML	INEL	.....	..	..	IN	24	96	88.6	.14	.	.5	3.9
5614	1992 MAY 06	11:03:04.01	44.407	-114.096	.02	2.56MD	INEL	.....	..	..	IN	17	257	92.1	.16	.	2.3	6.0
5615	1992 MAY 06	14:35:18.16	44.412	-114.033	6.88	2.73MD	INEL	.....	..	..	IN	19	252	87.2	.25	.	1.9	2.7
5616	1992 MAY 07	03:35:06.80	44.495	-114.018	17.00	2.20ML	BUT	2.70MD	ESO	MB	6	309	99.8	.08	C	2.4	3.9
		20 km E of Challis, ID																	
5617	1992 MAY 07	04:03:52.88	44.410	-114.091	5.37	3.10ML	INEL	.....	..	..	IN	18	254	91.8	.18	.	2.5	2.2
5618	1992 MAY 07	06:49:39.20	44.514	-113.987	7.40	2.40ML	BUT	2.50MD	ESO	MB	6	305	96.7	.05	C	1.1	.8
		20 km E of Challis, ID																	
5619	1992 MAY 09	10:39:39.20	44.475	-114.055	1.00	2.30ML	BUT	2.50MD	ESO	MB	6	310	103.4	.06	C	1.4	1.9
		18 km E of Challis, ID																	
5620	1992 MAY 09	23:42:26.50	44.494	-113.984	20.20	2.70ML	BUT	2.80MD	ESO	MB	7	308	97.3	.08	C	2.3	2.3
		20 km E of Challis, ID																	
5621	1992 MAY 10	04:42:34.40	44.523	-114.002	16.20	2.40ML	BUT	2.80MD	ESO	MB	6	308	97.5	.12	D	3.4	5.5
		20 km E of Challis, ID																	
5622	1992 MAY 10	08:01:12.20	44.528	-113.986	17.40	2.40ML	BUT	2.60MD	ESO	MB	5	308	96.1	.07	D	3.0	5.0
		20 km E of Challis, ID																	
5623	1992 MAY 11	17:26:21.00	44.446	-113.992	14.70	2.50ML	BUT	2.30MD	ESO	MB	5	309	100.1	.03	C	1.4	2.2
		20 km E of Challis, ID																	
5624	1992 MAY 12	04:10:22.50	44.512	-113.985	13.70	2.20ML	BUT	2.50MD	ESO	MB	6	308	96.7	.17	D	5.0	7.9
		20 km E of Challis, ID																	
5625	1992 MAY 12	07:56:24.71	44.406	-114.080	.19	2.57MD	INEL	.....	..	..	IN	18	256	90.9	.17	.	2.1	5.5
5626	1992 MAY 12	07:59:40.26	44.378	-113.947	6.96	2.63MD	INEL	.....	..	..	IN	9	283	80.1	.11	.	2.2	15.3
5627	1992 MAY 12	08:05:23.30	44.494	-114.014	18.00	2.50MD	ESO	.....	..	..	MB	6	309	99.6	.17	D	6.8	7.8
		20 km E of Challis, ID																	
5628	1992 MAY 12	17:43:15.70	44.508	-113.977	16.80	2.20ML	BUT	2.50MD	ESO	MB	6	308	96.3	.16	D	5.2	7.3
		20 km E of Challis, ID																	
5629	1992 MAY 15	10:18:03.60	44.477	-114.040	.40	2.60ML	BUT	2.40MD	ESO	MB	5	310	102.2	.07	D	3.6	5.1
		20 km E of Challis, ID																	
5630	1992 MAY 15	19:35:59.00	44.490	-114.055	1.10	2.50ML	BUT	2.30MD	ESO	MB	6	310	102.8	.09	D	3.1	4.2
		15 km E of Challis, ID																	
5631	1992 MAY 15	21:15:37.70	44.478	-114.012	16.80	3.00ML	BUT	2.60MD	ESO	MB	6	309	100.1	.11	D	4.7	7.6
		20 km E of Challis, ID																	

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Std-Err Vert
5632	1992 MAY 16	23:11:35.50	44.778	-110.300	1.30	2.60ML	BUT 2.70MD	ESO	..	MB	10	284	105.8	.29	D	5.0	7.1
5633	1992 MAY 18	13:36:49.10	44.483	-114.004	18.90	2.30ML	BUT 2.50MD	ESO	..	MB	6	309	99.3	.13	D	5.1	5.5
5634	1992 MAY 18	14:35:39.60	44.368	-113.970	.79	2.56MD	INEL	..	..	IN	24	254	63.9	.26	.	1.9	3.4
5635	1992 MAY 18	14:48:28.80	44.514	-114.022	18.00	2.20ML	BUT 2.50MD	ESO	..	MB	6	309	99.4	.16	D	6.3	9.6
5636	1992 MAY 18	23:14:47.90	44.520	-114.067	6.40	3.00ML	BUT 2.80MD	ESO	..	MB	8	306	102.5	.13	C	2.4	2.1
5637	1992 MAY 19	08:17:19.48	44.403	-114.174	1.97	3.80ML	INEL	..	..	IN	18	239	78.0	.21	.	1.8	3.7
5638	1992 MAY 19	10:37:46.60	44.480	-114.061	1.40	2.20ML	BUT 2.60MD	ESO	..	MB	7	307	103.6	.11	C	1.9	3.8
5639	1992 MAY 20	21:08:37.80	44.490	-114.012	18.30	2.30ML	BUT 2.50MD	ESO	..	MB	6	309	99.6	.25	D	9.0	10.6
5640	1992 MAY 21	18:20:28.90	44.487	-114.202	2.50	3.10ML	BUT 2.80MD	ESO	..	MB	6	309	113.8	.15	D	8.0	4.0
5641	1992 MAY 23	17:28:01.20	44.486	-114.049	17.20	2.50ML	BUT 2.40MD	ESO	..	MB	6	310	102.5	.12	D	4.7	7.3
5642	1992 MAY 28	14:35:14.10	44.471	-114.090	1.20	2.50MD	ESO	..	..	MB	6	311	106.2	.13	D	3.1	6.4
5643	1992 MAY 30	00:23:17.63	44.916	-114.599	5.00	3.60ML	BUT 3.70ML	GS	..	PE	26	...	.....	.....	.	.....	.....
5644	1992 MAY 30	10:33:13.60	44.825	-114.563	11.30	2.40ML	BUT 2.90MD	ESO	..	MB	10	306	135.6	.14	D	2.7	3.2
5645	1992 MAY 31	08:35:37.65	41.828	-111.567	7.50	2.87MD	UU	..	..	UU	26	91	16.0	.23	.	.6	1.2
5646	1992 JUN 01	03:35:55.90	44.515	-114.035	18.00	2.20ML	BUT 2.70MD	ESO	..	MB	7	306	100.3	.29	D	10.9	14.7
5647	1992 JUN 02	03:31:51.80	44.465	-114.805	15.20	2.50ML	BUT 2.60MD	ESO	..	MB	6	321	160.3	.16	D	5.8	7.6
5648	1992 JUN 02	20:30:13.70	43.260	-110.490	9.94	2.60MD	BR	..	..	BR	27	253	10.0	.10	A	.8	.....
5649	1992 JUN 03	15:50:40.50	44.811	-114.603	10.40	2.40ML	BUT 2.70MD	ESO	..	MB	6	321	138.8	.10	D	3.3	3.2
5650	1992 JUN 05	04:32:02.50	44.613	-114.041	20.20	2.70ML	BUT 2.70MD	ESO	..	MB	7	303	97.4	.29	D	8.7	9.3
5651	1992 JUN 06	18:24:18.40	44.681	-114.010	1.50	2.70ML	BUT 2.30MD	ESO	..	MB	6	305	93.4	.33	D	5.2	10.4
5652	1992 JUN 08	12:31:53.50	44.491	-112.530	.80	2.30ML	BUT 2.50MD	ESO	..	MB	10	243	33.6	.27	D	4.4	6.3
5653	1992 JUN 10	18:30:25.20	44.633	-114.025	14.20	2.30ML	BUT 2.60MD	ESO	..	MB	7	302	95.7	.24	D	6.7	12.4
5654	1992 JUN 11	14:09:57.78	44.356	-114.021	.08	2.56MD	INEL	..	..	IN	19	231	65.6	.32	.	2.3	3.4
5655	1992 JUN 12	19:13:44.50	44.654	-114.240	16.20	2.40ML	BUT 2.50MD	ESO	..	MB	7	311	111.8	.14	D	3.4	4.2
5656	1992 JUN 14	15:41:23.54	44.396	-113.960	.28	2.78MD	INEL	..	..	IN	21	265	45.1	.11	.	1.1	1.6
5657	1992 JUN 15	02:19:42.60	44.767	-112.949	7.10	2.50ML	BUT 2.50MD	ESO	..	MB	8	261	10.4	.10	C	2.1	1.0
5658	1992 JUN 16	12:31:16.88	44.840	-116.990	5.00	3.30ML	GS .00	IV	..	PE	50	...	.....	.....	.	.....	.....
5659	1992 JUN 17	02:51:28.40	44.657	-114.712	1.10	2.50ML	BUT 2.80MD	ESO	..	MB	7	319	148.8	.33	D	9.7	12.8
5660	1992 JUN 18	01:25:17.30	44.188	-113.979	20.60	2.40ML	BUT 2.60MD	ESO	..	MB	7	315	114.5	.09	D	2.7	2.4

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Std-Err Vert
5661	1992 JUN 21	07:57:49.10	44.826	-110.831	1.00	2.50ML	BUT 2.50MD	ESO ..	...	MB	9	259	87.2	.57	D	9.2	15.6
5662	1992 JUN 23	09:02:14.45	44.400	-114.062	.08	4.00ML	INEL .....	..	...	IN	25	171	53.1	.15	.	1.1	2.4
5663	1992 JUN 23	10:53:07.09	44.384	-113.937	1.63	2.80MD	INEL .....	..	...	IN	21	255	43.0	.12	.	1.5	1.0
5664	1992 JUN 28	04:08:52.30	44.561	-112.080	1.80	2.90ML	BUT 2.60MD	ESO ..	...	MB	10	175	4.6	.20	C	2.3	3.9
5665	1992 JUN 29	03:41:34.00	44.874	-110.810	8.50	2.50ML	BUT 2.30MD	ESO ..	...	MB	10	258	82.1	.39	D	4.9	5.4
5666	1992 JUN 29	03:52:44.20	44.810	-110.825	4.50	2.90ML	BUT 2.60MD	ESO ..	...	MB	10	260	89.0	.50	D	6.4	10.2
5667	1992 JUN 29	17:22:42.10	44.848	-111.274	.30	2.40ML	BUT 2.50MD	ESO ..	...	MB	10	226	74.0	.33	D	3.2	5.5
5668	1992 JUL 04	07:16:22.10	44.631	-112.147	1.40	2.80ML	BUT 2.20MD	ESO ..	...	MB	11	126	12.0	.24	C	2.0	4.7
5669	1992 JUL 04	16:53:04.84	44.390	-113.986	6.90	3.80ML	INEL .....	..	...	IN	24	258	47.0	.11	.	.8	1.2
5670	1992 JUL 04	19:05:24.69	44.378	-114.003	3.09	2.64MD	INEL .....	..	...	IN	22	259	48.1	.18	.	1.2	3.9
5671	1992 JUL 06	15:29:46.39	42.254	-112.174	4.83	2.51MD	UU .....	..	...	UU	15	128	25.6	.30	.	1.4	6.5
5672	1992 JUL 07	23:14:46.40	44.748	-113.231	32.82	2.70MD	INEL .....	..	...	IN	16	286	50.5	.10	.	1.0	1.4
5673	1992 JUL 09	09:39:62.20	43.036	-111.407	7.00	2.80MD	BR .....	..	...	BR	26	295	34.0	.19	B	.3	.....
5674	1992 JUL 10	03:51:42.97	44.381	-114.056	.08	2.67MD	INEL .....	..	...	IN	22	262	52.3	.29	.	2.3	6.6
5675	1992 JUL 11	06:10:13.62	43.422	-110.733	7.00	2.50MD	BR .....	..	...	BR	27	99	4.0	.14	A	.0	.....
5676	1992 JUL 11	22:54:11.80	44.536	-113.982	6.30	2.40ML	BUT 2.80MD	ESO ..	...	MB	8	304	95.5	.13	C	2.2	2.0
5677	1992 JUL 15	11:13:58.50	44.521	-114.747	6.80	2.70ML	BUT 2.80MD	ESO ..	...	MB	7	320	154.3	.27	D	6.7	5.7
5678	1992 JUL 18	01:08:47.80	44.520	-114.018	3.40	2.20ML	BUT 2.50MD	ESO ..	...	MB	8	305	98.8	.20	D	3.5	5.2
5679	1992 JUL 20	06:49:59.30	44.627	-110.524	2.70	2.50ML	BUT 2.60MD	ESO ..	...	MB	7	282	114.0	.16	D	6.8	9.6
5680	1992 JUL 20	07:03:31.10	44.577	-110.319	.70	3.40ML	BUT 3.80MD	ESO ..	...	MB	18	99	8.2	.43	C	1.6	3.4
5681	1992 JUL 20	07:44:41.50	44.609	-110.474	.20	2.60ML	BUT 2.70MD	ESO ..	...	MB	7	285	117.3	.32	D	15.1	14.1
5682	1992 JUL 20	07:55:57.60	44.577	-110.320	2.00	3.20MD	ESO .....	..	...	MB	8	289	125.1	1.01	D	26.3	31.6
5683	1992 JUL 24	01:16:43.50	44.828	-114.567	13.30	2.30ML	BUT 2.80MD	ESO ..	...	MB	8	315	135.9	.18	D	8.6	9.5
5684	1992 JUL 27	13:17:16.70	45.533	-111.654	4.10	2.70ML	BUT 2.80MD	ESO ..	...	MB	11	116	38.2	.30	C	1.4	7.3
5685	1992 JUL 28	19:02:46.70	44.807	-111.184	2.60	3.40ML	BUT 3.30MD	ESO ..	...	MB	10	236	79.8	.36	D	4.6	7.3
5686	1992 JUL 30	15:04:30.60	44.547	-114.025	8.30	2.50ML	BUT 2.60MD	ESO ..	...	MB	7	304	98.3	.13	C	2.0	1.5
5687	1992 AUG 03	20:12:47.71	43.668	-110.129	7.29	2.90MD	BR .....	..	...	BR	25	235	16.0	.11	A	.0	.....
5688	1992 AUG 05	18:06:31.80	44.398	-114.142	6.00	3.20ML	BUT 2.80MD	ESO ..	...	MB	10	310	113.2	.14	D	2.6	2.1
5689	1992 AUG 06	21:54:15.10	44.812	-111.557	5.60	2.70ML	BUT 2.40MD	ESO ..	...	MB	13	206	54.2	.28	C	2.2	4.3
5690	1992 AUG 07	21:43:52.30	44.952	-112.867	3.90	2.50ML	BUT 2.20MD	ESO ..	...	MB	10	198	13.8	.14	C	1.5	1.6

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
5691	1992 AUG 12	08:05:05.70	44.289	-114.841	14.90	2.50ML	BUT 2.60MD	ESO ..	...	MB	13	142	123.9	.17	C	1.5	3.3
			15 km NE of Stanley, ID														
5692	1992 AUG 15	01:32:03.60	44.513	-113.983	7.00	2.80ML	BUT 2.70MD	ESO ..	...	MB	7	304	96.5	.13	C	2.5	1.8
			20 km E of Challis, ID														
5693	1992 AUG 16	00:41:23.10	44.625	-110.330	2.10	2.40ML	BUT 2.70MD	ESO ..	...	MB	12	288	119.8	.68	D	4.9	6.7
			Central Yellowstone														
5694	1992 AUG 20	05:49:46.50	44.736	-114.404	15.70	3.20ML	BUT 3.40MD	ESO ..	...	MB	14	215	123.5	.16	C	1.6	2.1
			25 km NW of Challis, ID														
5695	1992 AUG 20	13:38:28.00	44.757	-114.438	13.30	2.60ML	BUT 2.80MD	ESO ..	...	MB	7	309	126.0	.04	C	1.0	1.1
			25 km NW of Challis, ID														
5696	1992 AUG 27	21:49:31.80	44.396	-116.194	9.00	4.00ML	BUT 4.00MD	ESO ..	...	MB	15	89	50.4	.15	C	.8	1.2
			15 km SW of Cascade, ID														
5697	1992 AUG 28	15:26:17.40	44.552	-113.258	5.30	4.00MD	ESO ..	...	...	MB	44	65	29.2	.25	C	.8	2.5
			15 km SE of Leadore, ID; Felt														
5698	1992 SEP 07	06:44:16.60	44.586	-112.290	6.50	2.70ML	BUT 2.50MD	ESO ..	...	MB	11	186	15.8	.32	D	2.4	4.9
			W Centennial Valley														
5699	1992 SEP 08	07:25:02.60	44.706	-114.560	7.30	2.40ML	BUT 2.60MD	ESO ..	...	MB	5	316	136.2	.06	C	2.2	3.2
			30 km NW of Challis, ID														
5700	1992 SEP 08	14:42:65.55	43.812	-111.060	6.23	2.50MD	BR ..	...	...	BR	25	136	7.0	.05	A	.4	.....
5701	1992 SEP 09	09:27:35.10	44.858	-111.640	6.30	2.90ML	BUT 2.80MD	ESO ..	...	MB	12	193	52.3	.19	C	1.2	2.3
			S Gravelly Range														
5702	1992 SEP 11	07:07:38.80	44.652	-114.605	1.10	2.40ML	BUT 2.70MD	ESO ..	...	MB	7	235	140.5	.43	D	10.1	8.9
			25 km NE of Stanley, ID														
5703	1992 SEP 11	11:36:40.20	44.443	-114.781	22.60	2.90ML	BUT 3.10MD	ESO ..	...	MB	15	134	137.3	.34	D	2.3	2.8
			25 km NE of Stanley, ID														
5704	1992 SEP 15	16:00:39.70	44.331	-114.176	11.00	2.70ML	BUT 2.40MD	ESO ..	...	MB	8	315	119.0	.32	D	9.5	10.8
			20 km SE of Challis, ID														
5705	1992 SEP 18	21:51:15.29	43.604	-110.303	9.11	2.50MD	BR ..	...	...	BR	26	192	4.0	.08	A	.5	.....
5706	1992 SEP 19	07:09:51.10	44.711	-111.948	2.20	2.90ML	BUT 2.70MD	ESO ..	...	MB	10	174	24.3	.17	C	2.1	3.7
			E Centennial Valley														
5707	1992 SEP 23	03:01:35.90	44.384	-116.213	3.00	3.10MD	ESO ..	...	...	MB	10	88	49.6	.13	C	1.0	4.5
			20 km SW of Cascade, ID														
5708	1992 SEP 24	14:17:49.02	43.753	-110.349	5.67	3.80MD	BR ..	...	...	BR	25	118	12.0	.15	B	1.9	.....
5709	1992 SEP 25	08:26:09.20	44.741	-110.809	18.40	2.70ML	BUT 2.40MD	ESO ..	...	MB	7	277	106.0	.31	D	5.6	4.7
			NW Yellowstone														
5710	1992 SEP 25	18:43:21.60	44.623	-113.129	1.30	2.50ML	BUT 2.30MD	ESO ..	...	MB	10	280	31.8	.09	C	1.0	.9
			15 km SE of Leadore, ID														
5711	1992 SEP 28	17:10:03.90	46.334	-116.124	1.80	2.60MD	ESO ..	...	...	MB	6	123	38.7	.33	D	5.3	10.4
			near Greer, ID; poss. blast														
5712	1992 SEP 30	00:16:27.40	44.507	-114.047	16.00	2.50ML	BUT 2.30MD	ESO ..	...	MB	6	309	101.5	.11	D	3.3	5.2
			20 km E of Challis, ID														
5713	1992 SEP 30	00:49:58.60	44.804	-114.296	1.10	2.30ML	BUT 2.80MD	ESO ..	...	MB	6	310	114.5	.21	D	5.1	10.3
			25 km N of Challis, ID														
5714	1992 SEP 30	01:15:29.00	44.536	-113.990	18.90	2.50ML	BUT 2.90MD	ESO ..	...	MB	8	304	96.1	.13	D	3.2	3.5
			20 km E of Challis, ID														
5715	1992 SEP 30	15:35:14.30	40.645	-109.345	1.99	3.17MD	UU ..	...	...	UU	17	215	155.3	.35	.	2.4	3.8
5716	1992 SEP 30	18:48:37.35	44.342	-113.903	6.93	3.20MD	INEL ..	...	...	IN	23	252	39.7	.32	.	1.7	3.3
5717	1992 SEP 30	18:58:38.20	44.456	-114.070	.70	2.70ML	BUT 2.80MD	ESO ..	...	MB	9	307	105.3	.21	D	3.3	2.6
			20 km SE of Challis, ID														

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert
5718	1992 OCT 02	13:11:27.30	44.780	-111.018	1.10	2.70ML	BUT 2.60MD	ESO	..	MB	12	250	91.1	.47	D	5.5	6.5
			Hebgen Lake region														
5719	1992 OCT 02	21:33:50.00	44.844	-111.094	.90	2.50ML	BUT 2.20MD	ESO	..	MB	11	240	85.0	.28	D	3.6	4.8
			Hebgen Lake region														
5720	1992 OCT 07	08:35:11.05	44.362	-114.016	.04	3.50ML	INEL	..	..	IN	24	259	48.9	.22	.	1.6	2.9
5721	1992 OCT 10	03:33:46.90	44.392	-114.146	1.70	2.40ML	BUT 2.60MD	ESO	..	MB	6	330	113.8	.11	D	5.3	4.3
			20 km SE of Challis, ID														
5722	1992 OCT 12	11:04:57.23	41.799	-112.043	4.79	2.50ML	UU	..	..	UU	26	46	20.5	.22	.	.4	5.2
5723	1992 OCT 17	06:47:31.40	44.440	-114.777	10.60	2.80ML	BUT 2.80MD	ESO	..	MB	7	318	159.0	.15	D	3.8	4.5
			20 km NE of Stanley, ID														
5724	1992 NOV 01	00:51:48.20	44.684	-114.477	9.60	2.70ML	BUT .00MD	ESO	..	MB	8	307	129.9	.18	D	5.2	4.0
			20 km N of Challis, ID														
5725	1992 NOV 01	08:00:17.60	44.201	-115.410	14.90	2.90ML	BUT 3.10MD	ESO	..	MB	7	326	215.2	.16	D	37.7	44.2
			30 km W of Stanley, ID														
5726	1992 NOV 04	18:22:10.10	41.510	-113.388	7.09	4.80ML	UU	..	..	UU	30	208	59.1	.27	.	2.7	1.1
5727	1992 NOV 04	18:25:03.53	41.540	-113.369	7.58	3.80ML	UU	..	..	UU	18	254	56.1	.19	.	1.2	.7
5728	1992 NOV 04	18:53:06.54	41.532	-113.403	6.39	2.52MD	UU	..	..	UU	28	245	59.0	.26	.	1.6	.9
5729	1992 NOV 04	19:33:14.20	41.514	-113.389	5.41	2.63MD	UU	..	..	UU	22	244	59.0	.35	.	2.5	1.2
5730	1992 NOV 10	10:45:16.49	43.025	-111.437	7.00	2.70MD	BR	..	..	BR	25	295	36.0	.17	B	.4	.....
5731	1992 NOV 10	10:54:50.32	43.031	-111.437	7.00	4.00MD	BR	..	..	BR	19	295	36.0	.32	C	.8	.....
5732	1992 NOV 10	21:05:09.07	42.990	-111.498	7.00	2.70MD	BR	..	..	BR	21	304	42.0	.17	B	1.5	.....
5733	1992 NOV 10	21:54:29.06	42.999	-111.454	7.00	3.00MD	BR	..	..	BR	23	298	40.0	.23	B	.5	.....
5734	1992 NOV 10	23:22:68.23	43.016	-111.433	7.00	2.70MD	BR	..	..	BR	17	298	37.0	.25	B	.6	.....
5735	1992 NOV 10	23:46:27.64	42.994	-111.477	7.00	2.50MD	BR	..	..	BR	15	302	41.0	.41	C	6.1	.....
5736	1992 NOV 11	01:06:10.73	42.998	-111.444	7.00	2.70MD	BR	..	..	BR	20	298	39.0	.21	B	.4	.....
5737	1992 NOV 11	05:32:47.56	43.022	-111.419	7.00	2.80MD	BR	..	..	BR	18	298	36.0	.28	B	.4	.....
5738	1992 NOV 11	05:38:43.69	42.999	-111.471	7.00	2.80MD	BR	..	..	BR	18	302	40.0	.33	C	1.0	.....
5739	1992 NOV 11	12:08:07.02	43.028	-111.486	11.77	4.00ML	INEL	..	..	IN	20	233	46.8	.09	.	.8	.5
5740	1992 NOV 11	12:57:33.73	43.005	-111.450	7.00	2.50MD	BR	..	..	BR	22	297	39.0	.32	C	.6	.....
5741	1992 NOV 11	14:19:74.86	43.040	-111.443	7.00	2.80MD	BR	..	..	BR	25	294	35.0	.32	C	.4	.....
5742	1992 NOV 11	14:23:43.55	43.032	-111.416	7.00	2.50MD	BR	..	..	BR	21	296	35.0	.32	C	.5	.....
5743	1992 NOV 11	17:36:55.30	43.014	-111.443	7.00	3.70MD	BR	..	..	BR	19	299	38.0	.14	A	.1	.....
5744	1992 NOV 11	17:40:53.29	43.029	-111.428	7.00	2.80MD	BR	..	..	BR	22	295	35.0	.31	C	.5	.....
5745	1992 NOV 11	17:59:80.89	43.006	-111.457	7.00	3.90MD	BR	..	..	BR	18	300	39.0	.17	B	.3	.....
5746	1992 NOV 11	18:13:60.08	43.029	-111.478	7.00	2.70MD	BR	..	..	BR	21	296	38.0	.29	B	.8	.....
5747	1992 NOV 11	18:15:65.59	43.020	-111.462	7.00	3.20MD	BR	..	..	BR	23	300	38.0	.24	B	.3	.....
5748	1992 NOV 11	18:18:22.38	43.039	-111.432	7.00	2.90MD	BR	..	..	BR	20	297	35.0	.34	C	.8	.....
5749	1992 NOV 11	19:30:59.31	43.045	-111.419	7.00	2.50MD	BR	..	..	BR	21	293	34.0	.26	B	.7	.....
5750	1992 NOV 11	20:06:43.69	43.014	-111.445	5.61	2.69MD	INEL	..	..	IN	7	307	50.3	.07	.	.7	7.3
5751	1992 NOV 11	20:36:50.01	43.009	-111.424	7.00	2.60MD	BR	..	..	BR	18	313	37.0	.24	B	.3	.....
5752	1992 NOV 11	22:01:43.55	43.041	-111.439	7.00	2.50MD	BR	..	..	BR	19	297	35.0	.27	B	.4	.....
5753	1992 NOV 11	22:13:07.54	43.029	-111.456	7.00	2.70MD	BR	..	..	BR	21	296	37.0	.22	B	.3	.....
5754	1992 NOV 11	23:15:32.11	43.047	-111.416	7.00	3.30MD	BR	..	..	BR	22	293	33.0	.19	B	.2	.....
5755	1992 NOV 11	23:33:64.17	43.033	-111.439	7.00	2.50MD	BR	..	..	BR	14	312	36.0	.15	B	.2	.....
5756	1992 NOV 12	00:02:44.12	43.030	-111.428	7.00	3.50MD	BR	..	..	BR	22	295	35.0	.26	B	.3	.....
5757	1992 NOV 12	01:42:55.40	43.032	-111.451	7.00	2.70MD	BR	..	..	BR	19	295	36.0	.36	C	.5	.....
5758	1992 NOV 12	05:01:38.38	43.008	-111.471	7.00	3.10MD	BR	..	..	BR	22	298	39.0	.28	B	.4	.....
5759	1992 NOV 12	06:22:12.21	43.013	-111.476	7.00	2.50MD	BR	..	..	BR	19	302	39.0	.20	B	.3	.....
5760	1992 NOV 12	06:32:57.22	43.008	-111.462	7.00	3.70MD	BR	..	..	BR	21	301	39.0	.18	B	.3	.....
5761	1992 NOV 12	07:07:64.97	43.069	-111.417	7.00	2.50MD	BR	..	..	BR	17	291	31.0	.22	B	1.2	.....

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz	Vert			
5762	1992 NOV 12	07:15:32.72	43.044	-111.429	7.00	3.40MD	BR	.....	..	BR	21	296	34.0	.14	A	.2	.....		
5763	1992 NOV 12	07:25:09.41	43.034	-111.433	8.57	3.40MD	INEL	.....	..	IN	10	282	49.7	.03	.	1.1	1.7	
5764	1992 NOV 12	10:21:18.22	43.024	-111.501	7.00	2.50MD	BR	.....	..	BR	21	302	39.0	.28	B	.4	.....		
5765	1992 NOV 12	14:18:47.12	43.023	-111.469	7.00	2.90MD	BR	.....	..	BR	23	297	38.0	.21	B	.3	.....		
5766	1992 NOV 12	15:01:39.63	43.047	-111.425	7.00	2.70MD	BR	.....	..	BR	20	295	34.0	.27	B	.7	.....		
5767	1992 NOV 12	15:50:59.32	43.035	-111.407	7.00	2.60MD	BR	.....	..	BR	21	294	34.0	.29	B	.4	.....		
5768	1992 NOV 12	17:13:42.71	43.024	-111.482	7.00	2.50MD	BR	.....	..	BR	18	301	38.0	.28	B	.7	.....		
5769	1992 NOV 12	17:41:33.95	43.033	-111.446	7.00	3.00MD	BR	.....	..	BR	21	295	36.0	.21	B	.4	.....		
5770	1992 NOV 12	18:53:54.88	43.015	-111.475	7.00	3.10MD	BR	.....	..	BR	21	301	39.0	.17	B	.3	.....		
5771	1992 NOV 12	18:56:72.25	43.078	-111.414	7.00	2.70MD	BR	.....	..	BR	19	287	30.0	.15	B	.7	.....		
5772	1992 NOV 12	21:02:56.09	43.020	-111.463	7.00	3.10MD	BR	.....	..	BR	20	300	38.0	.18	B	.3	.....		
5773	1992 NOV 12	21:30:64.15	43.043	-111.431	7.00	3.40MD	BR	.....	..	BR	21	296	34.0	.11	A	.1	.....		
5774	1992 NOV 12	22:15:66.49	42.998	-111.469	7.00	2.50MD	BR	.....	..	BR	19	302	40.0	.22	B	.4	.....		
5775	1992 NOV 13	02:01:48.27	43.026	-111.460	7.00	3.60MD	BR	.....	..	BR	22	299	37.0	.10	A	.1	.....		
5776	1992 NOV 13	02:28:39.22	43.039	-111.469	7.00	2.50MD	BR	.....	..	BR	18	311	36.0	.16	B	.4	.....		
5777	1992 NOV 13	07:32:59.65	43.014	-111.444	7.00	2.60MD	BR	.....	..	BR	23	298	38.0	.32	C	.4	.....		
5778	1992 NOV 13	17:59:52.83	42.975	-111.484	7.00	2.70MD	BR	.....	..	BR	18	306	43.0	.19	B	1.4	.....		
5779	1992 NOV 14	05:24:68.60	43.009	-111.431	7.00	2.50MD	BR	.....	..	BR	15	299	38.0	.20	B	.4	.....		
5780	1992 NOV 15	23:52:31.20	43.007	-111.469	7.00	2.70MD	BR	.....	..	BR	16	301	39.0	.27	B	.5	.....		
5781	1992 NOV 16	01:37:12.35	43.019	-111.441	7.00	3.10MD	BR	.....	..	BR	18	299	37.0	.23	B	.3	.....		
5782	1992 NOV 16	01:51:22.75	43.011	-111.490	7.00	3.00MD	BR	.....	..	BR	17	302	40.0	.09	A	.1	.....		
5783	1992 NOV 16	02:31:72.78	42.982	-111.496	7.00	3.20MD	BR	.....	..	BR	12	324	43.0	.12	A	1.4	.....		
5784	1992 NOV 16	02:32:13.95	43.031	-111.486	.02	3.40ML	INEL	.....	..	IN	13	233	46.5	.12	.	.8	2.3	
5785	1992 NOV 16	02:43:24.21	43.019	-111.486	7.00	2.70MD	BR	.....	..	BR	13	301	39.0	.16	B	.2	.....		
5786	1992 NOV 16	02:51:42.41	43.003	-111.468	7.00	2.50MD	BR	.....	..	BR	13	301	40.0	.28	B	.6	.....		
5787	1992 NOV 16	02:53:26.08	43.011	-111.469	7.00	2.50MD	BR	.....	..	BR	12	301	39.0	.08	A	.3	.....		
5788	1992 NOV 16	03:05:29.59	43.001	-111.469	7.00	2.70MD	BR	.....	..	BR	16	301	40.0	.21	B	.4	.....		
5789	1992 NOV 16	03:41:25.16	43.031	-111.499	7.00	2.50MD	BR	.....	..	BR	12	301	38.0	.15	A	.2	.....		
5790	1992 NOV 16	04:47:37.71	43.041	-111.435	7.00	3.30MD	BR	.....	..	BR	25	296	35.0	.27	B	.2	.....		
5791	1992 NOV 16	04:57:13.68	43.004	-111.534	7.00	3.40MD	BR	.....	..	BR	18	305	43.0	.15	A	1.3	.....		
5792	1992 NOV 16	05:00:27.38	42.999	-111.547	7.00	2.80MD	BR	.....	..	BR	23	306	44.0	.18	B	1.1	.....		
5793	1992 NOV 16	05:05:13.83	43.012	-111.504	7.00	2.50MD	BR	.....	..	BR	10	303	40.0	.07	A	.9	.....		
5794	1992 NOV 16	05:09:64.30	43.019	-111.472	7.00	2.70MD	BR	.....	..	BR	8	300	38.0	.11	A	.3	.....		
5795	1992 NOV 16	12:59:29.36	43.018	-111.498	7.00	2.70MD	BR	.....	..	BR	16	302	40.0	.11	A	.1	.....		
5796	1992 NOV 16	17:22:63.15	43.024	-111.484	7.00	2.60MD	BR	.....	..	BR	9	301	38.0	.16	B	.3	.....		
5797	1992 NOV 18	07:26:12.27	43.002	-111.448	7.00	2.50MD	BR	.....	..	BR	24	300	39.0	.16	B	.3	.....		
5798	1992 NOV 18	09:38:00.40	44.432	-112.937	10.10	2.60ML	BUT	2.40MD	ESO	MB	10	288	44.6	.26	D	4.2	2.1	
			30 km SW of Lima																	
5799	1992 NOV 21	12:44:68.98	42.991	-111.500	7.00	2.90MD	BR	.....	..	BR	22	304	42.0	.21	B	.9	.....		
5800	1992 NOV 21	23:40:59.60	42.989	-111.469	7.00	2.50MD	BR	.....	..	BR	12	304	41.0	.19	B	2.1	.....		
5801	1992 NOV 23	18:36:42.86	40.647	-109.466	.48	3.01MD	UU	.....	..	UU	18	217	147.4	.37	.	2.4	4.3	
5802	1992 NOV 29	06:01:10.05	40.863	-111.630	9.51	2.60ML	UU	.....	..	UU	31	88	17.6	.22	.	.5	.9	
5803	1992 DEC 03	00:59:48.34	42.459	-111.249	.92	3.30ML	UU	.....	..	UU	19	242	55.7	.20	.	2.1	1.5	
5804	1992 DEC 04	17:08:05.00	44.538	-110.185	1.70	2.50ML	BUT	2.60MD	ESO	MB	9	297	119.4	.37	D	15.2	11.9	
			E-Central Yellowstone																	
5805	1992 DEC 06	14:21:08.10	44.007	-114.560	27.70	2.50MD	ESO	MB	7	183	20.4	.09	D	5.0	5.5
			30 km SE of Stanley, ID																	
5806	1992 DEC 06	20:39:37.70	44.643	-112.094	4.10	2.70ML	BUT	2.30MD	ESO	MB	11	111	13.0	.21	C	2.1	3.4
			W Centennial Valley																	

Cat No.	Date year-mo-day	Time (GMT) hr-min-sec	Lat	Long	Depth (km)	Mag1	Mag2	Inten (MM)	Dist (km)	Data Source	No. Arr	Az Gap	D-min (km)	RMS (sec)	Q	Std-Err Horiz Vert	
5807	1992 DEC 14	20:36:23.20	44.819	-114.601	10.60	2.70MD	ESO .....	..	...	MB	7	316	138.6	.16	D	4.7	5.2
		45 km NW of Challis, ID															
5808	1992 DEC 17	00:38:16.40	43.932	-114.080	3.40	3.10ML	BUT 3.10MD	ESO ..	...	MB	10	320	139.8	.26	D	6.2	5.6
		35 km W of Mackay, ID															
5809	1992 DEC 20	02:27:04.70	46.056	-111.467	5.90	2.50ML	BUT 2.70MD	ESO ..	...	MB	12	84	22.5	.32	C	1.7	3.9
		Clarkston Valley															
5810	1992 DEC 20	02:30:24.90	46.057	-111.452	7.00	2.20ML	BUT 2.60MD	ESO ..	...	MB	12	83	21.4	.31	C	1.3	5.3
		Clarkston Valley															
5811	1992 DEC 20	02:54:06.90	46.059	-111.466	6.30	2.30ML	BUT 2.60MD	ESO ..	...	MB	12	84	22.3	.34	C	1.5	6.2
		Clarkston Valley															
5812	1992 DEC 20	03:19:16.10	46.062	-111.454	13.00	2.30ML	BUT 2.60MD	ESO ..	...	MB	11	85	21.3	.39	C	2.6	4.1
		Clarkston Valley															
5813	1992 DEC 22	05:34:32.80	41.810	-111.581	7.47	2.70ML	UU .....	..	...	UU	31	87	14.1	.26	.	.6	.9
5814	1992 DEC 28	08:16:05.20	44.711	-110.970	.60	3.20ML	BUT 3.00MD	ESO ..	...	MB	13	257	55.2	.40	D	4.9	5.5
		Hebgen Lake region															
5815	1992 DEC 28	09:58:41.60	44.708	-110.970	.70	2.60ML	BUT 2.50MD	ESO ..	...	MB	11	257	55.2	.40	D	5.2	6.3
		Hebgen Lake region															
5816	1992 DEC 28	10:27:27.50	44.696	-110.981	1.60	3.00ML	BUT 2.80MD	ESO ..	...	MB	13	258	54.3	.33	D	3.1	4.4
		Hebgen Lake region															
5817	1992 DEC 28	11:25:28.70	44.692	-110.976	4.20	2.70ML	BUT 2.60MD	ESO ..	...	MB	10	258	54.8	.35	D	4.2	6.5
		Hebgen Lake region															
5818	1992 DEC 29	14:54:01.50	44.693	-111.892	4.30	2.90ML	BUT 2.50MD	ESO ..	...	MB	11	146	18.4	.21	C	2.1	3.1
		E Centennial Valley															
5819	1992 DEC 31	01:59:43.50	45.560	-111.706	7.10	2.90ML	BUT 2.90MD	ESO ..	...	MB	13	93	33.7	.26	C	1.0	2.3
		near Norris; Felt at Norris															
5820	1992 DEC 31	08:10:51.90	44.503	-114.051	1.40	2.20ML	BUT 2.50MD	ESO ..	...	MB	7	306	101.9	.18	D	3.5	6.9
		15 km E of Challis, ID															
5821	1992 DEC 31	13:02:30.30	44.846	-114.562	7.10	2.00ML	BUT 2.50MD	ESO ..	...	MB	8	315	135.4	.13	D	3.5	3.8
		35 km NW of Challis, ID															



APPENDIX B

**INVERSION OF REGIONAL EARTHQUAKES AND
BORAH PEAK AFTERSHOCKS**

Seismic source, path, and site parameters were obtained in this study for a number of earthquake data sets by using a nonlinear least-squares inversion of the log of the Fourier amplitude spectra for the BLWN model parameters (Equation 5-1). The use of log spectra is appropriate since the parameters are approximately log-normally distributed.

To perform the inversions, the Fourier amplitude spectra from horizontal components of each recording were combined by taking a vector sum. The bandwidth for each combined spectrum was judgmentally selected based upon visual examination. In no cases did the bandwidth extend beyond either instrument or filter corner frequencies.

The inversion scheme treats multiple earthquakes and sites simultaneously with the common path parameter $Q(f)$. In total, six parameters may be determined depending upon the number of stations per earthquake and distance ranges. The parameter covariance matrix is examined to determine which parameters may be resolved for each data set. Asymptotic standard errors are computed in the final iteration. The six parameters which may be determined include: κ (site-specific attenuation), A (frequency-independent site-specific amplification), Q_0 and η (frequency-dependent path Q model), M_w , and corner frequency. The procedure uses the Levenberg-Marquardt algorithm.

Crustal and soil profile amplification are accommodated in the inversion scheme by incorporating the appropriate transfer functions in the model spectra. To reduce the non-uniqueness inherent in inversion schemes, a suite of starting models is employed. The final set of parameters is selected based upon a visual inspection of the model fit to the Fourier amplitude spectrum and the chi-square values.

The most important data sets for this study are the earthquakes recorded in the region closest to the INEL. The 1983 Borah Peak earthquake and its aftershocks represent one of the largest data sets within the Basin and Range province. Most of these earthquakes occurred at distances less than 100 km from the INEL. The mainshock was recorded at a number of

strong motion sites at the INEL (Jackson, 1985). However, only one site was a true free-field recording and it was founded on shallow alluvium. Because of possible contamination due to building effects, it was determined that the inversion results from the INEL data would not be reliable and are thus not included in this analysis. The aftershocks were recorded by a temporary network operated in the epicentral region (Boatwright, 1985). Additionally, a number of other regional events were recorded by a temporary array operated at the INEL in the spring of 1989, most of which have source-to-site distances in the range of 100 to 200 km. These regional recordings are described in Woodward-Clyde Consultants (1990). Two additional regional earthquakes were recorded in 1993 by two temporary stations which were located within or near the boundaries of the INEL and which were part of a University of Oregon array (herein called the Oregon events).

For this study, we used nine regional events, seven of which were well-recorded by at least two stations of the INEL array and the two Oregon events (Table B-1), plus 18 of the largest and best-recorded Borah Peak aftershocks (Table B-2). The combined data set for the inversion contains 91 recordings ranging from M_L 2.8 to 5.1 and hypocentral distances from 7 to 230 km.

The inversion incorporated the simple geometrical attenuation of $1/R$ for 100 km distance or less and $1/\sqrt{R}$ for greater than 100 km distance. An attempt was made to include crustal path effects on the attenuation using the Ou and Herrmann (1990) geometrical attenuation correction (Section 5.2.1.5) with the Richins *et al.* (1987) Borah Peak crustal model. However, this resulted in a poorer fit to the spectra (larger chi-square error). The site-specific velocity profiles developed for the INEL sites were incorporated into the inversion by computing transfer functions and smoothing them. The Richins *et al.* (1987) crustal model was included for the sites off the ESRP. Plots of the Fourier amplitude spectra computed from the recordings and model predictions from the inversion are shown in Figures B-1. In general, spectra from rock sites are best approximated by the smoothed model as some of the spectra from soil sites contain strong resonances. Soil sites were included because the solutions are less sensitive to starting models with the additional recordings. Apparently, the effects of site resonances in the inversion process are not great in this case. The Borah Peak aftershocks were recorded on alluvium and stations IET, LOFT, and TRAW were founded on soil at the INEL.

Parameter values determined from the inversions are listed in Table B-3. For the regional earthquakes, the average (log) stress drop is about 24 bars. Interestingly, the Borah Peak aftershocks (A to B2; Table B-3) have significantly larger values with a median of nearly 50 bars. The Q(f) model ($Q_0 = 152$, $\eta = 0.58$) is very close to the standard western North America model ($Q_0 = 150$, $\eta = 0.6$; Boore, 1983). This suggests ground motion attenuation for this portion of the Basin and Range province is similar to that in WNA (Singh and Herrmann, 1983). Our previous inversions (Woodward-Clyde Consultants, 1992a), which did not include either the use of transfer functions or the Oregon events, resulted in a Q(f) model of $220f^{0.44}$. These values are within the $\pm 1\sigma$ values of the new model and the resulting Q(f) values are not substantially different over the frequency range where Q(f) has a major impact (> 5 Hz). For example, at 10 Hz the difference is only about 1% and at 20 Hz, about 10%.

The kappa values resulting from the inversion (Table B-3) have a median value of 0.020 sec for the INEL sites. This value is at the lower end of the range for hard WNA rock (0.01 to 0.06 sec; Silva and Darragh, 1995). The median kappa value for hard WNA rock is about 0.026 sec (Silva and Darragh, 1995), similar to the INEL value. For comparison, the median kappa values for typical WNA and ENA rock sites are 0.037 sec and 0.008 sec, respectively. The near-surface damping at the INEL is thus similar to WNA rock which consists of unweathered or slightly weathered granites, schists, and carbonates.

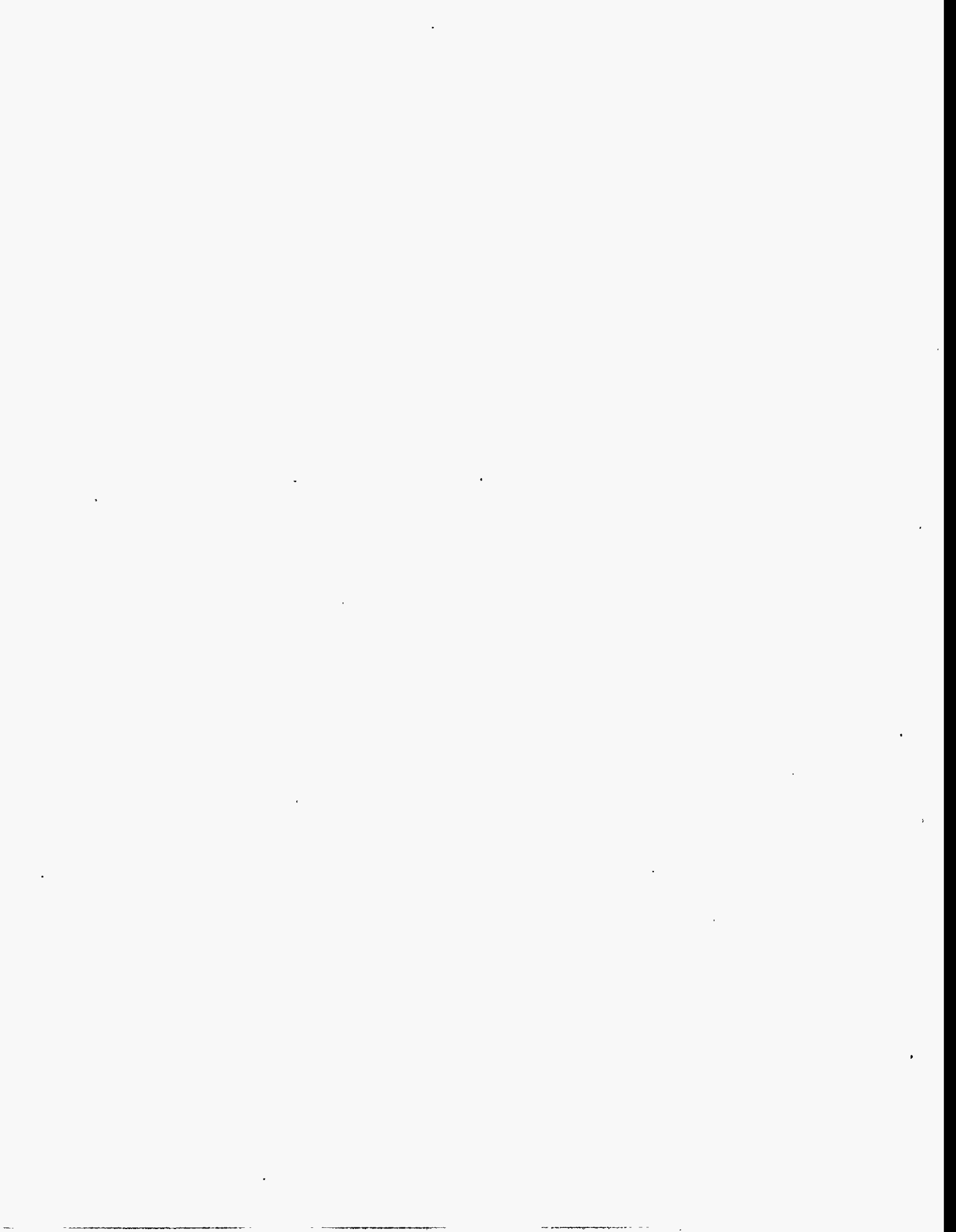


TABLE B-1
REGIONAL EARTHQUAKES¹ USED IN ANALYSIS

Event ID	Date	Origin Time (UTC)	M _L	Station	Hypocentral Distance (km)
11	29 May 1989	0349	3.0	BLM	121
				IET	96
				INEL	130
				LOFT	99
				NPR	131
				TRAW	134
12	6 Jun 1989	2002	3.5	BLM	166
				INEL	172
				LOFT	142
				NPR	172
24	24 Jun 1989	0924	3.7	ANL	154
				BLM	188
				IET	163
				INEL	178
				LOFT	165
				RWMC	186
25	24 Jun 1989	1025	3.6	ANL	154
				BLM	189
				IET	163
				INEL	179
				LOFT	166
				RWMC	187
28	27 Jun 1989	1551	3.0	ANL	198
				BLM	221
				INEL	204
				LOFT	228
				PBF	194
29	27 Jun 1989	1628	2.9	ANL	198
				BLM	221
				IET	230
				INEL	204
				PBF	194
31	28 Jun 1989	0316	3.1	ANL	121
				BLM	112
				IET	91
				LOFT	93
OR1	6 Nov 1993	0301	2.8	ANLN	197
				ARW	197
OR2	10 Nov 1993	1453	4.6	ARW	196

¹Events 11 to 31 were recorded by the INEL temporary array (Woodward-Clyde Consultants, 1990). Events OR1 and OR2 were recorded by the University of Oregon array.

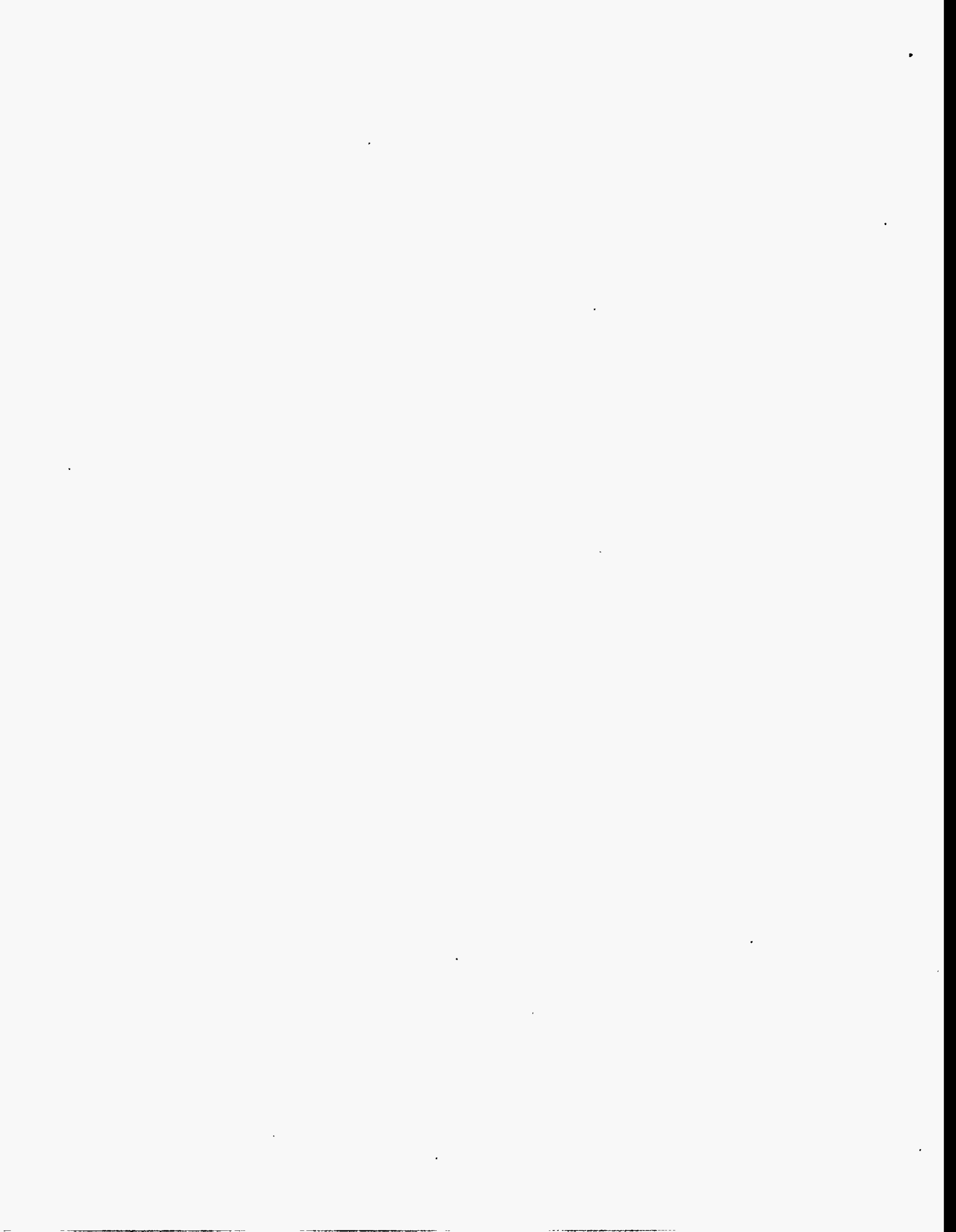


TABLE B-2
BORAH PEAK AFTERSHOCKS USED IN ANALYSIS

Event ID	Date	Origin Time (UTC)	M_L^1	Station	Hypocentral Distance (km)
A	29 October 1983	2329	5.8	BOR	20.4
				CEM	25.1
B	29 October 1983	2339	5.4	BOR	21.9
				CEM	27.3
C	30 October 1983	0124	4.8	BOR	17.4
				CEM	14.1
D	30 October 1983	0159	4.7	BOR	21.9
				CEM	24.7
E	2 November 1983	2343	4.2	CEM	26.5
				SMS	7.5
				WCP	8.5
K	6 November 1983	2104	4.6	CEM	14.2
				LCC	23.0
				WCP	17.2
L	29 October 1983	1737	3.3	BOR	15.8
				CEM	9.1
M	29 October 1983	2113	3.3	BOR	12.3
				CEM	10.2
N	30 October 1983	0116	3.3	BOR	14.8
				CEM	8.7
				UCC	21.0
O	30 October 1983	0254	4.0	BOR	21.3
				MGW	18.1
P	30 October 1983	1749	3.5	BOR	7.0
				CEM	13.0
T	3 November 1983	0150	4.2	CEM	25.6
				WCP	8.8
W	4 November 1983	0500	3.5	CEM	12.3
				MGW	25.2
				UCC	28.0
				WCP	16.9

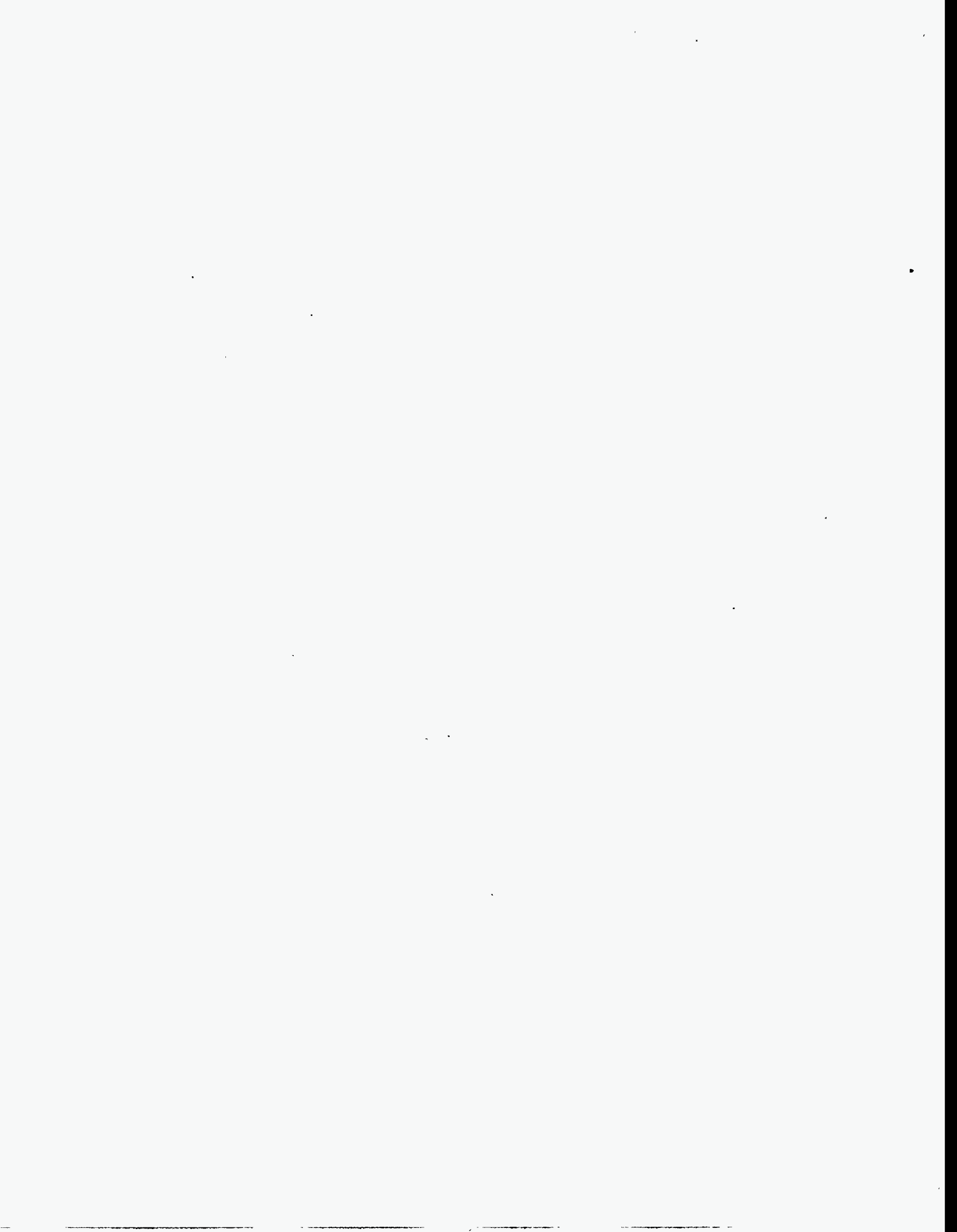


TABLE B-2
BORAH PEAK AFTERSHOCKS USED IN ANALYSIS

Event ID	Date	Origin Time (UTC)	M_L^1	Station	Hypocentral Distance (km)
X	4 November 1983	0708	3.7	CEM	20.4
				MGW	17.8
				UCC	37.6
				WCP	10.6
Y	5 November 1983	0537	3.5	CEM	24.1
				MGW	17.1
				WCP	11.3
Z	5 November 1983	1736	3.8	CEM	19.8
				LCC	29.5
				MGW	21.8
				UCC	36.8
				WCP	14.6
A2	5 November 1983	2256	3.6	BRH	19.0
				LCC	32.6
				MGW	18.4
				UCC	39.7
				WCP	12.8
B2	6 November 1983	2111	3.8	CEM	15.2
				LCC	24.3
				UCC	31.4
				WCP	17.7

¹ M_L from Richins et al. (1987), Shemeta and Pechmann (1993) or Boatwright (1985). In the case of the latter, M_w values are given and assumed to be equal to M_L .



TABLE B-3
SOURCE, PATH, AND SITE PARAMETERS FROM INVERSION
OF REGIONAL EARTHQUAKES AND BORAH PEAK AFTERSHOCKS

A) SOURCE PARAMETERS			
Event ID	Brune Stress Drop (bars)	Number of Observations	M_w
11	28.4 ± 26.9	7	3.03 ± 0.17
12	38.0 ± 36.8	4	3.36 ± 0.22
24	11.4 ± 14.9	7	4.08 ± 0.30
25	14.0 ± 16.4	6	3.98 ± 0.28
28	28.4 ± 30.2	5	3.59 ± 0.38
29	36.1 ± 37.9	5	3.66 ± 0.28
31	8.5 ± 8.4	4	3.01 ± 0.18
OR1	$64.9 \pm 0.0^*$	8	3.04 ± 0.26
OR2	$23.1 \pm 0.0^*$	7	4.39 ± 0.26
Log Average	23.8		
A	$44.4 \pm 0.0^*$	2	5.78 ± 0.06
B	$38.3 \pm 0.0^*$	2	5.36 ± 0.06
C	$51.4 \pm 0.0^*$	2	4.71 ± 0.05
D	$30.9 \pm 0.0^*$	2	4.56 ± 0.06
E	$57.0 \pm 0.0^*$	3	4.26 ± 0.05
K	$39.5 \pm 0.0^*$	3	4.51 ± 0.05
L	$114.5 \pm 0.0^*$	2	3.45 ± 0.06
M	$109.1 \pm 0.0^*$	2	3.50 ± 0.05
N	$86.0 \pm 0.0^*$	3	3.49 ± 0.05
O	$63.2 \pm 0.0^*$	2	3.91 ± 0.06
P	$11.2 \pm 0.0^*$	2	4.24 ± 0.05
T	$47.6 \pm 0.0^*$	2	4.01 ± 0.06
W	$65.2 \pm 0.0^*$	4	3.49 ± 0.05
X	$34.4 \pm 0.0^*$	4	3.59 ± 0.05
Y	$73.0 \pm 0.0^*$	3	3.47 ± 0.05
Z	$34.3 \pm 0.0^*$	5	3.73 ± 0.04
A2	$44.2 \pm 0.0^*$	5	3.41 ± 0.05
B2	$42.6 \pm 0.0^*$	4	3.71 ± 0.05
Log Average	48.6		
B) PATH PARAMETERS			
$Q_0 = 152 \pm 87$		$\eta = 0.58 \pm 0.18$	

*Corner frequencies held fixed to values from separate inversion using sites off the ESRP.

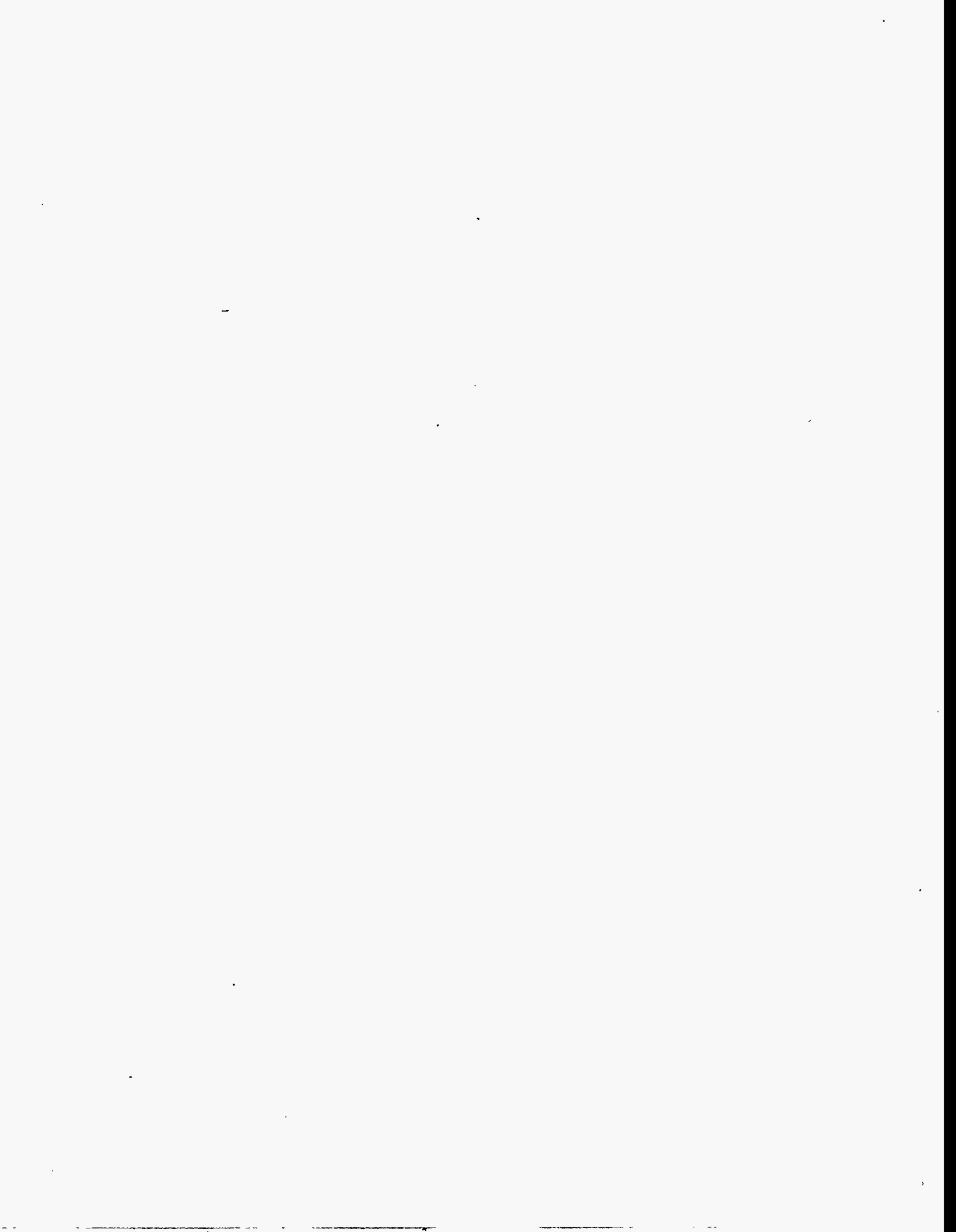
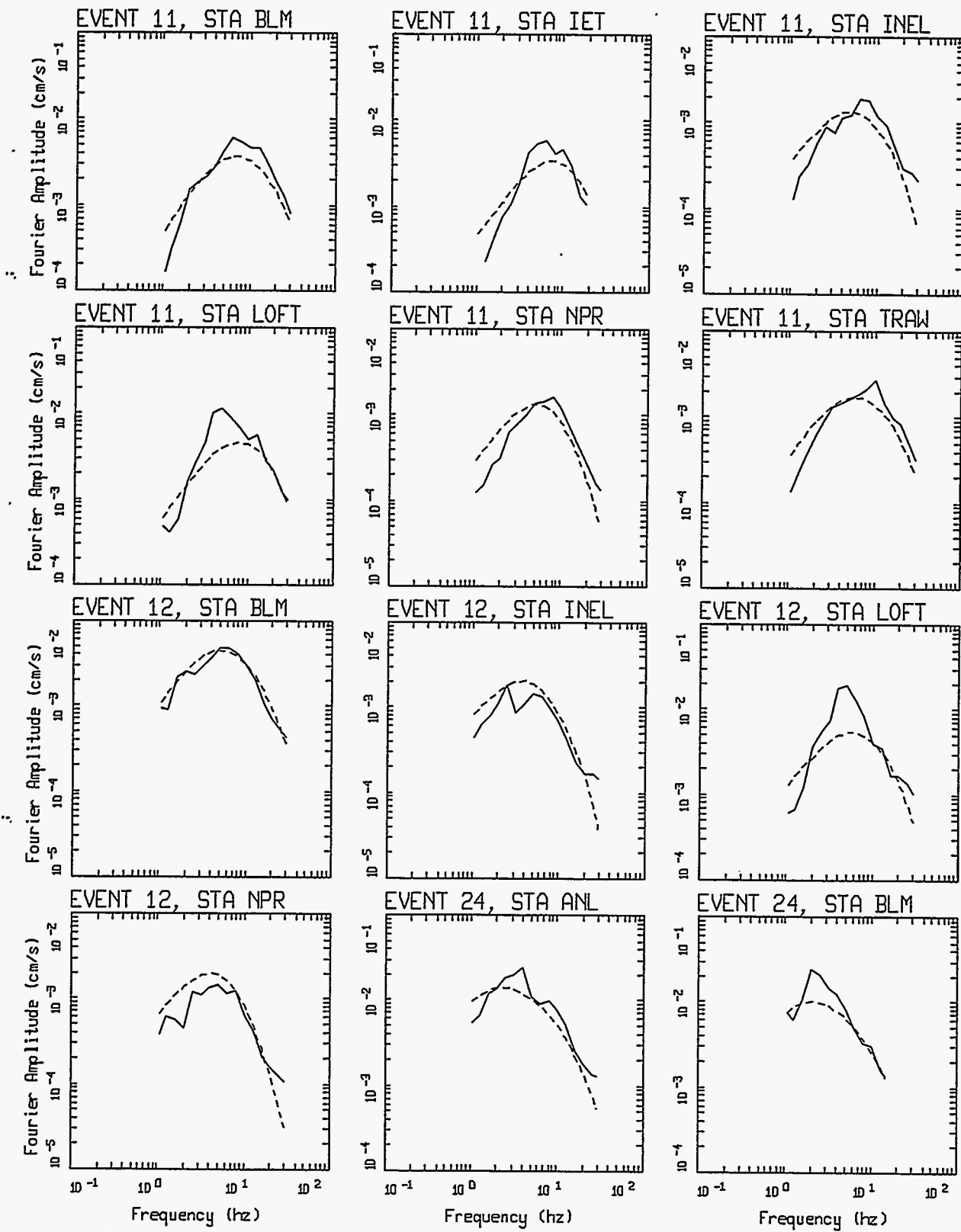


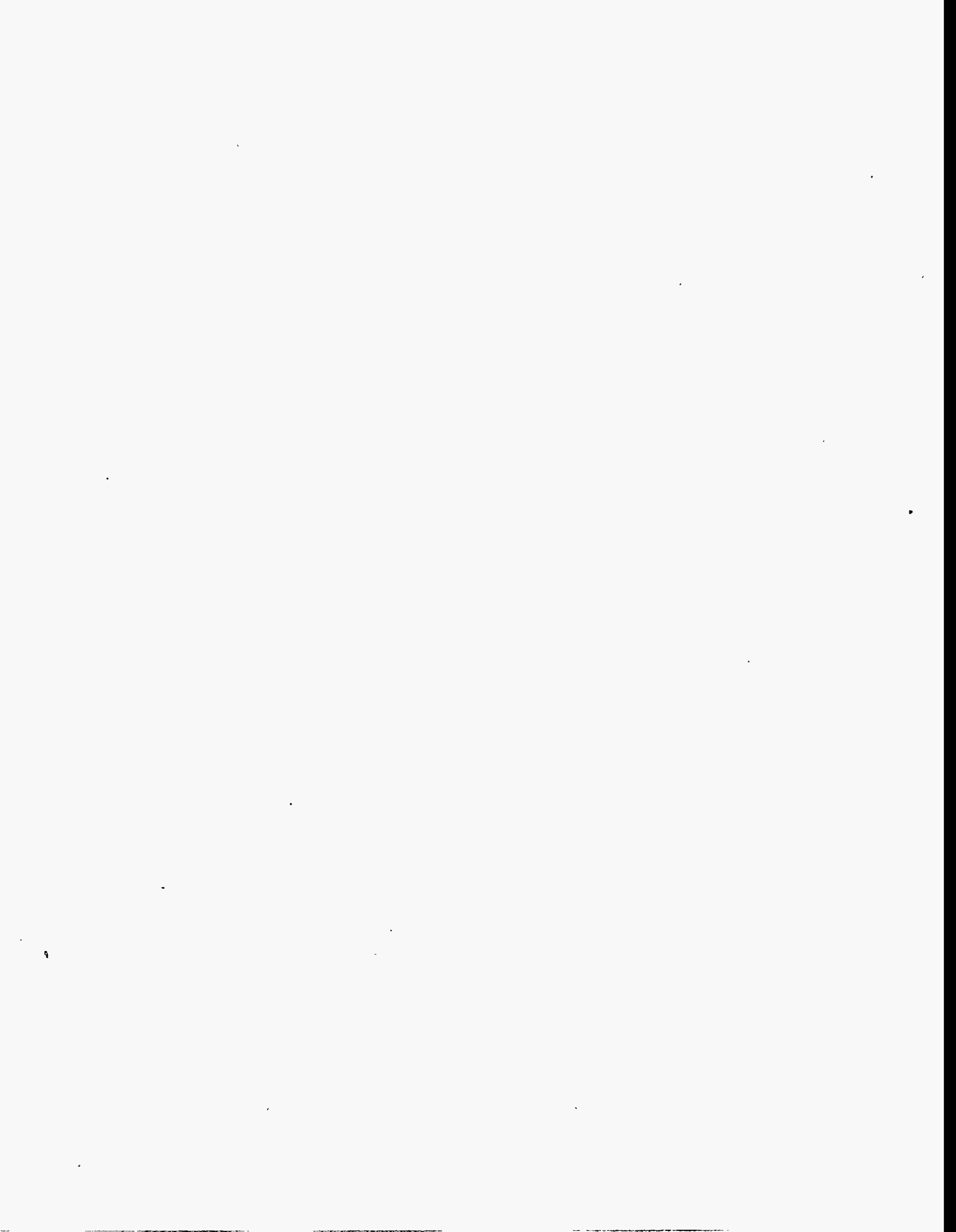
TABLE B-3 (CONTINUED)
SOURCE, PATH, AND SITE PARAMETERS FROM INVERSION
OF REGIONAL EARTHQUAKES AND BORAH PEAK AFTERSHOCKS

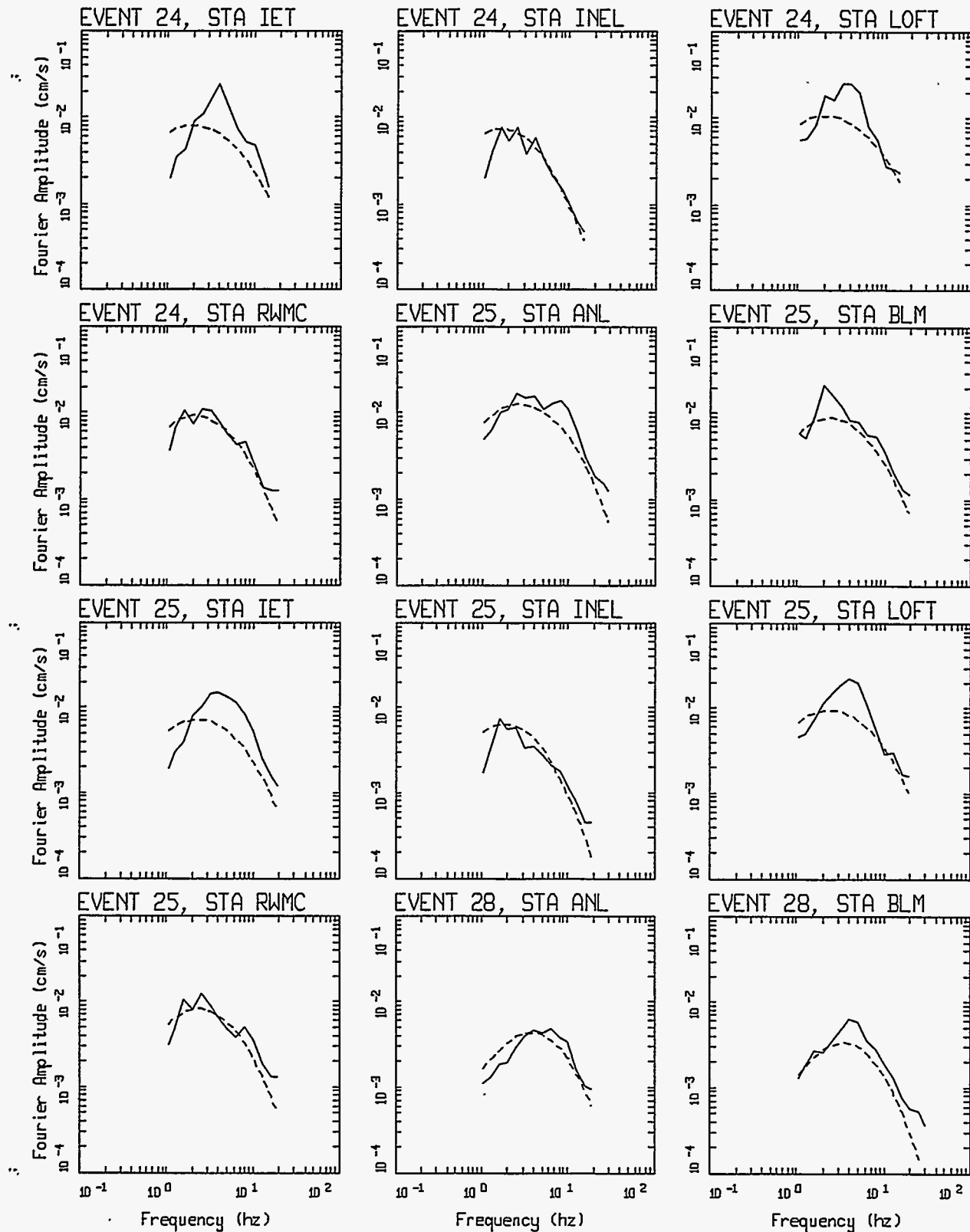
C) SITE PARAMETERS		
Station	Kappa (sec)	Number of Observations
ANL	0.014 ± 0.012	5
BLM	0.015 ± 0.013	7
IET	0.027 ± 0.013	5
INEL	0.033 ± 0.013	6
LOFT	0.021 ± 0.013	6
NPR	0.034 ± 0.013	2
PBF	0.033 ± 0.014	2
RWMC	0.021 ± 0.015	3
TRAW	0.020 ± 0.014	1
ARW	0.007 ± 0.018	2
ANLN	0.017 ± 0.020	1
Log Average	0.020 sec	
BOR	0.031 ± 0.002	9
BRH	0.013 ± 0.005	1
CEM	0.034 ± 0.002	16
LCC	0.011 ± 0.003	4
MGW	0.026 ± 0.002	6
SMS	0.026 ± 0.005	1
UCC	0.018 ± 0.003	6
WCP	0.030 ± 0.002	9



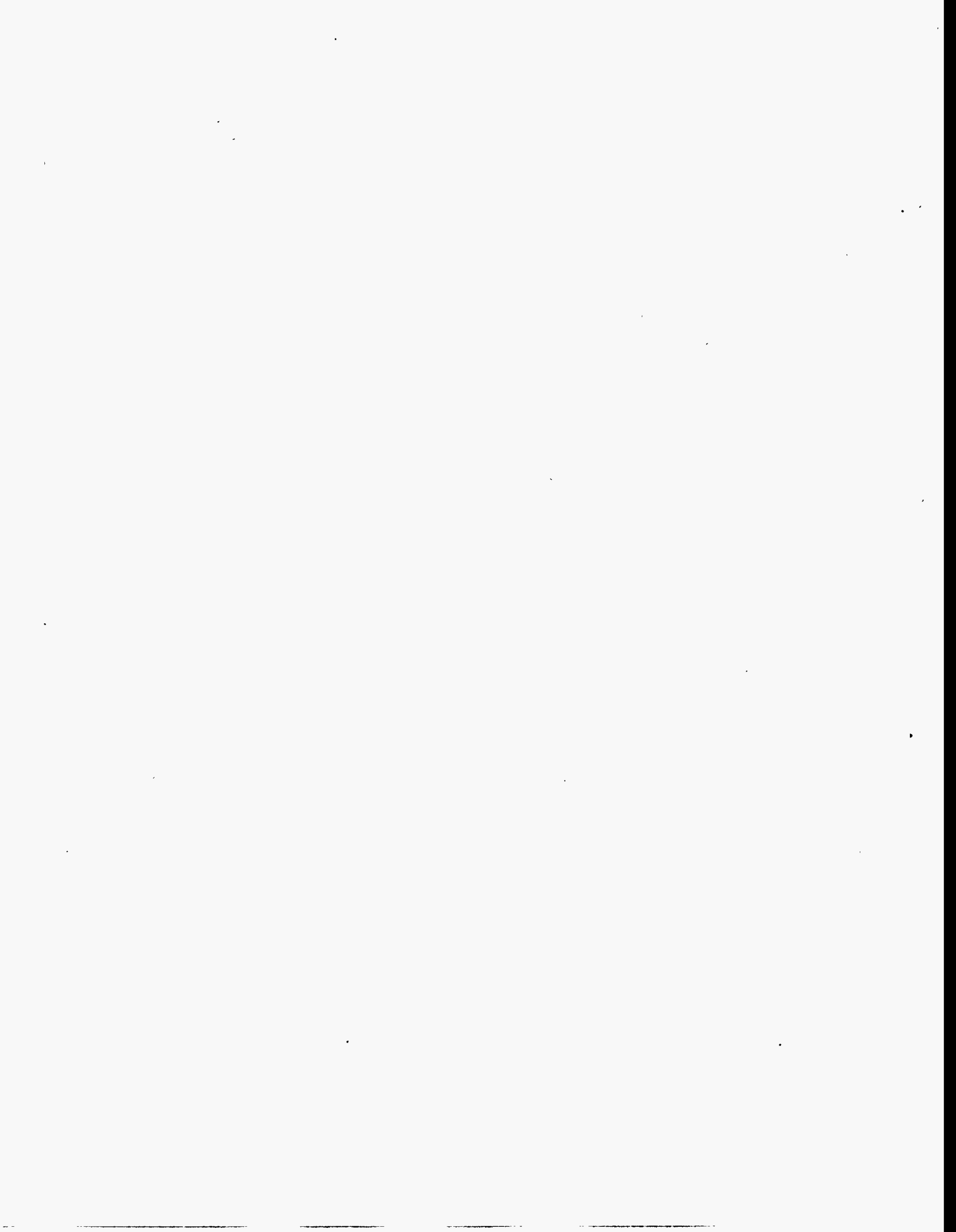


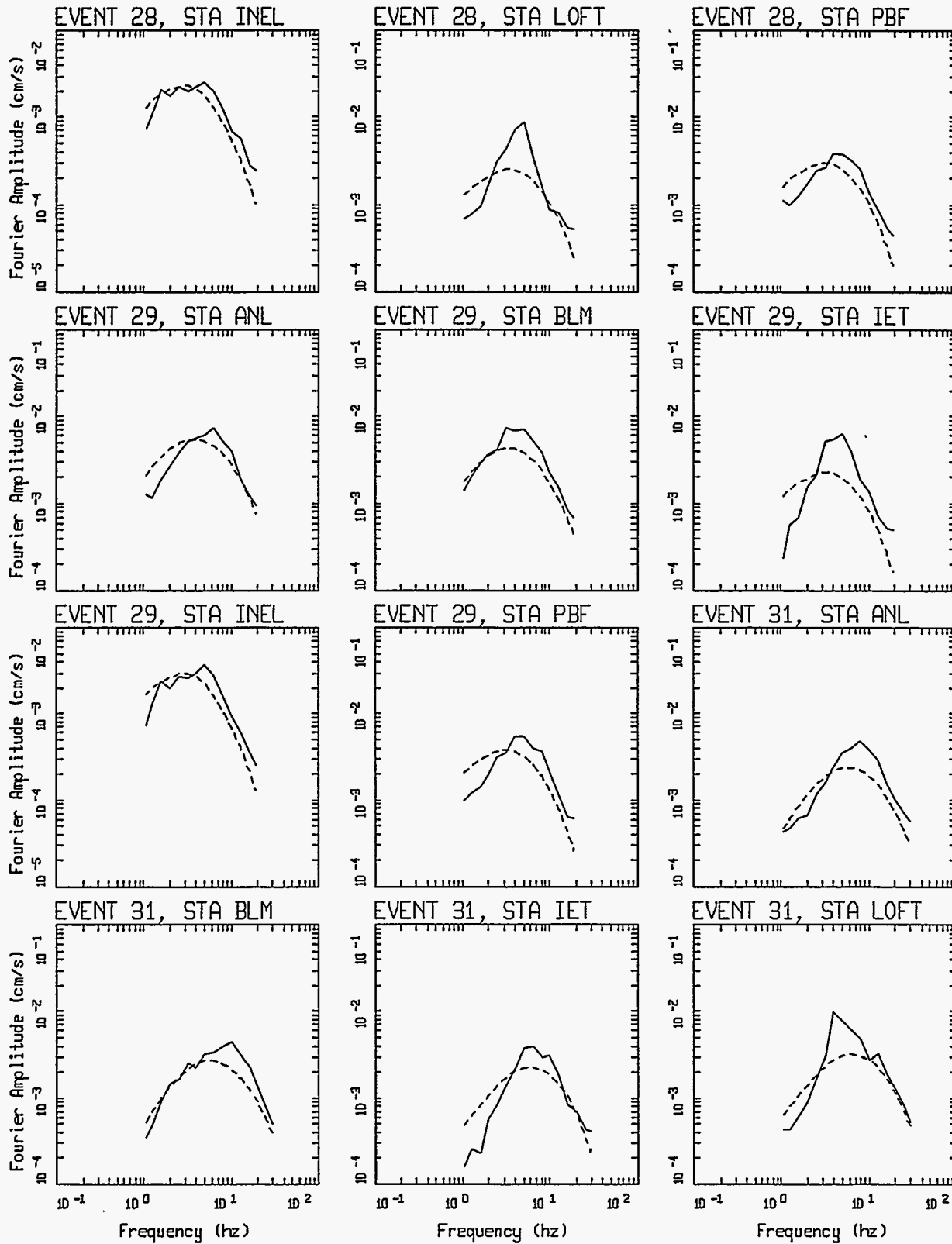
LEGEND
 ——— DATA
 - - - MODEL





——— DATA
 - - - - - MODEL





———— LEGEND
 ———— DATA
 - - - - MODEL

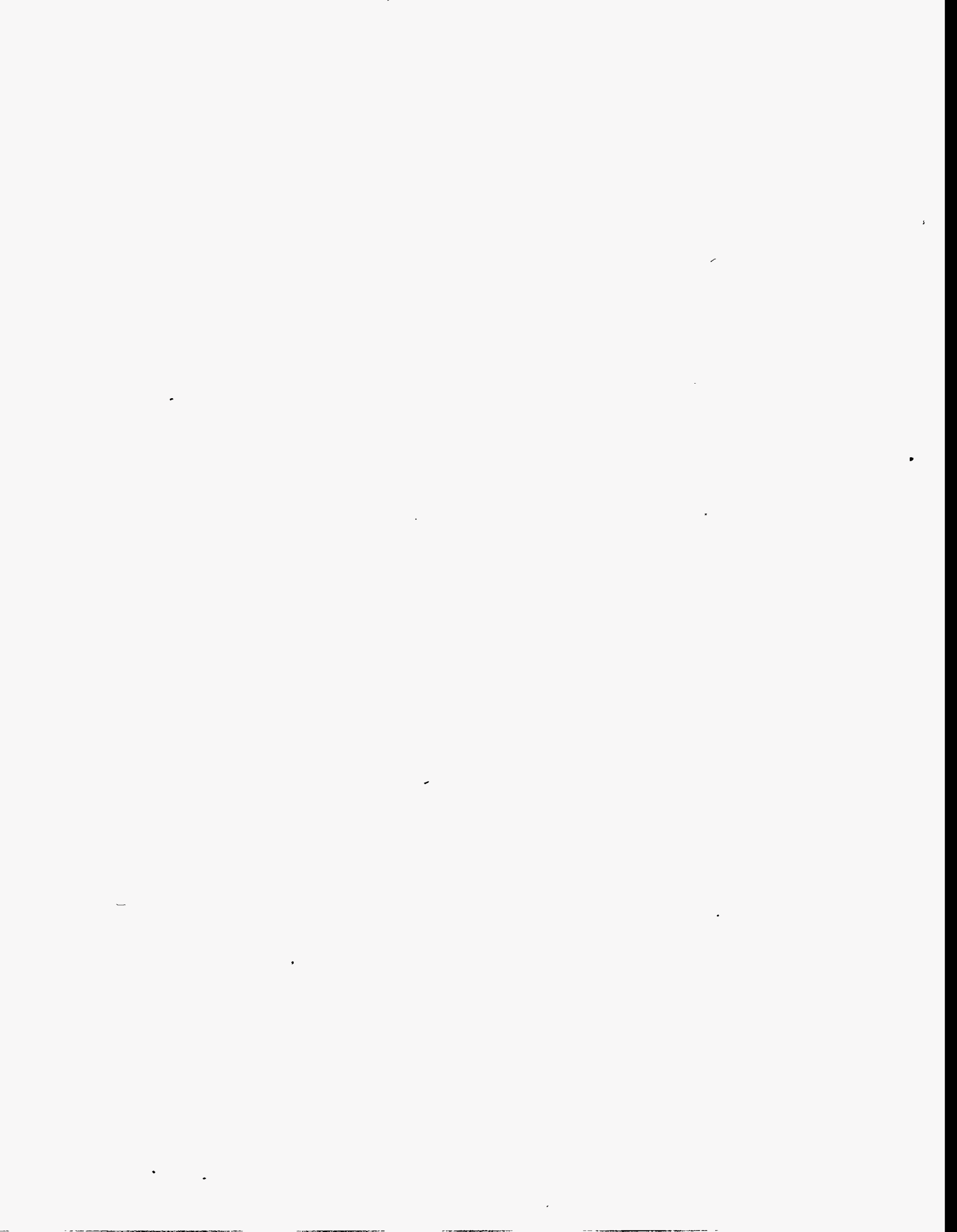
Project No.
SK9455

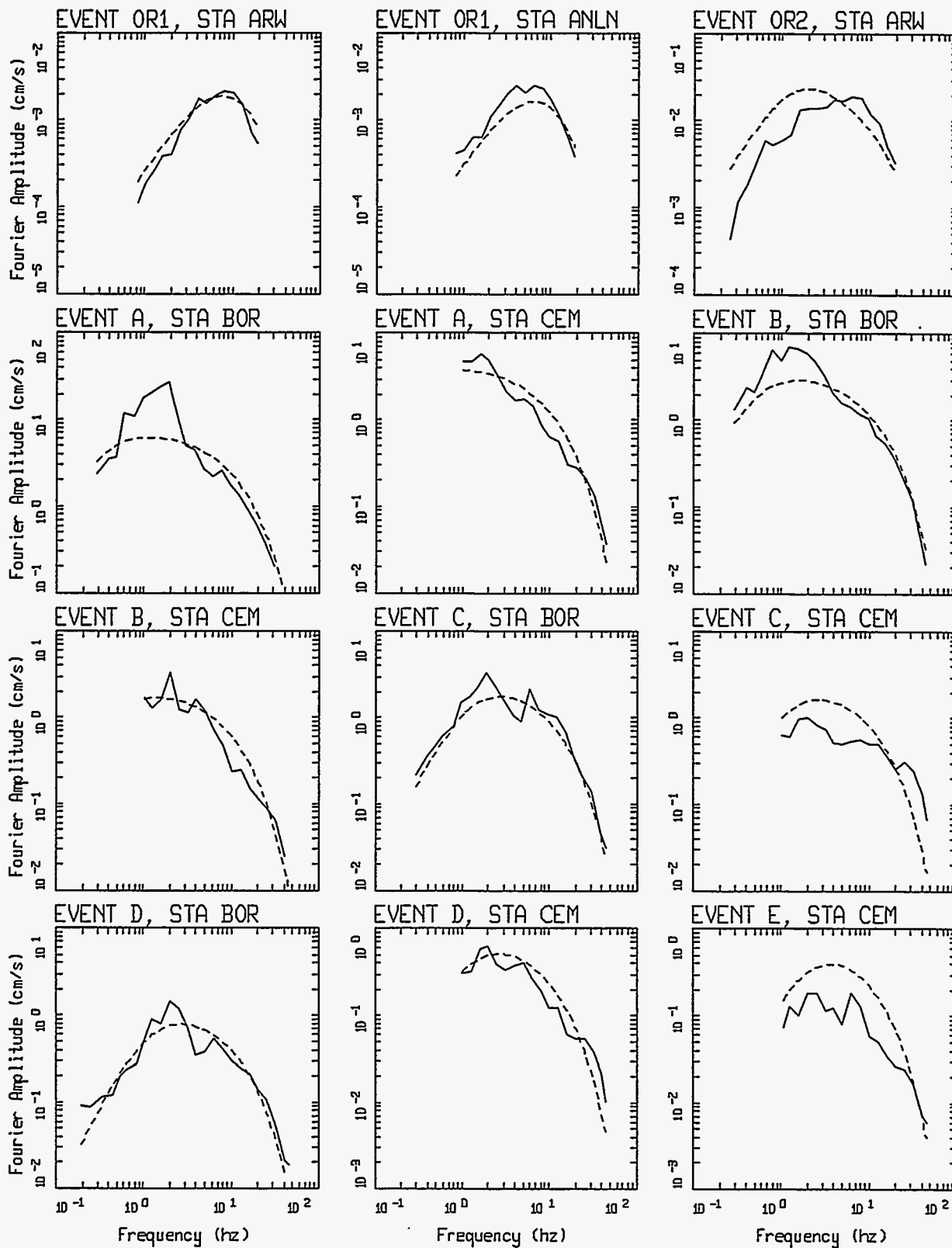
INEL-Probabilistic Analyses

Woodward-Clyde Federal Services

**RESULTS OF SPECTRAL INVERSION
OF REGIONAL EARTHQUAKES AND
BORAH PEAK AFTERSHOCKS**

Figure
B-1c





_____ LEGEND
 _____ DATA
 - - - - - MODEL

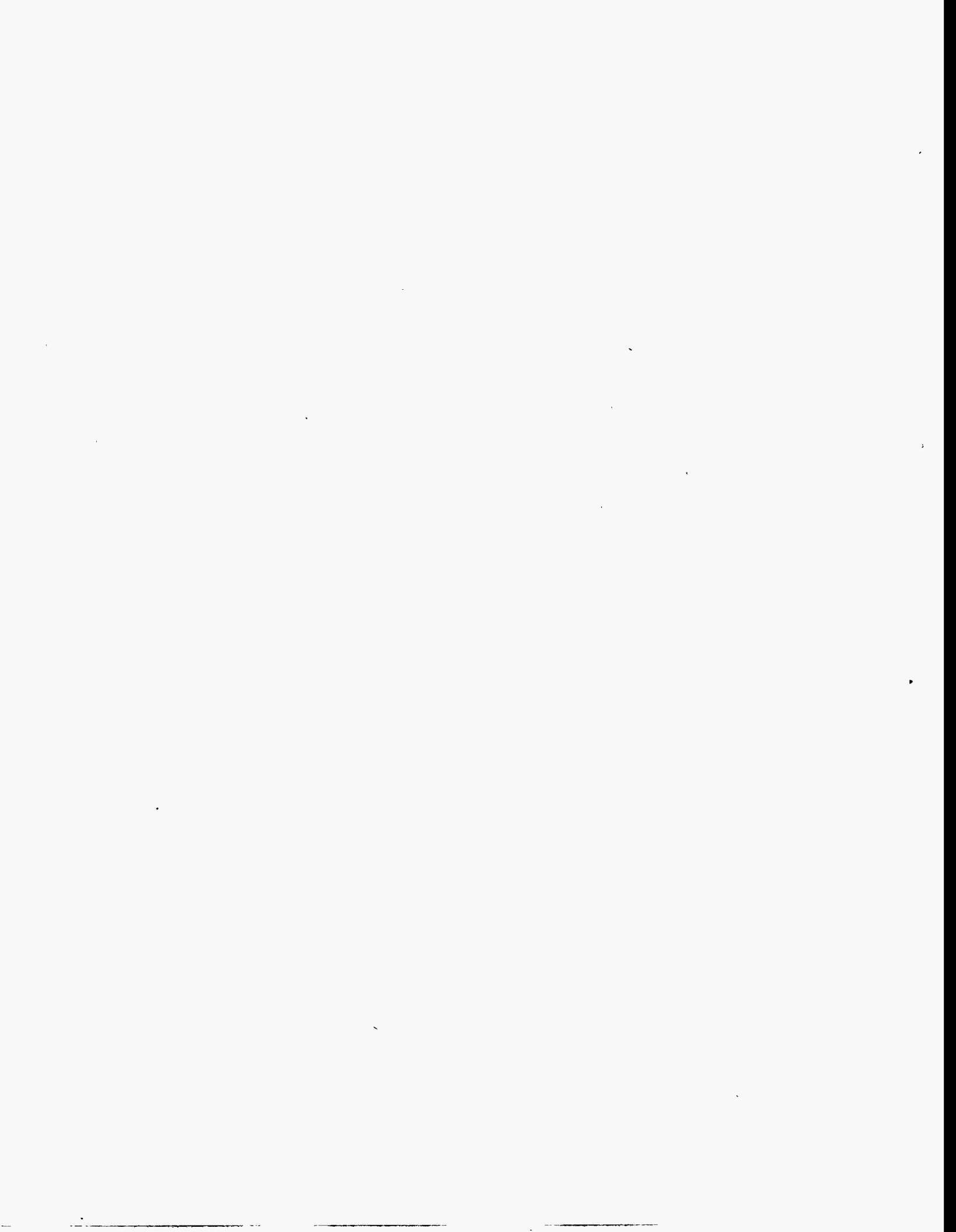
Project No.
SK9455

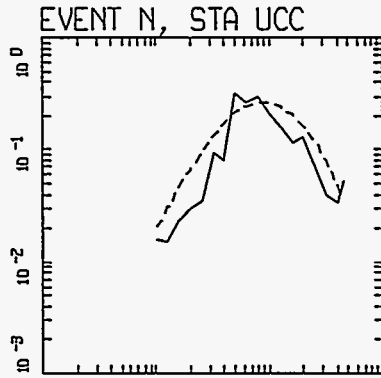
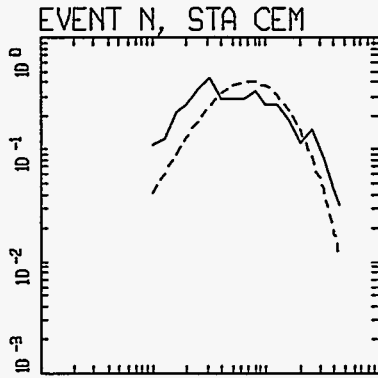
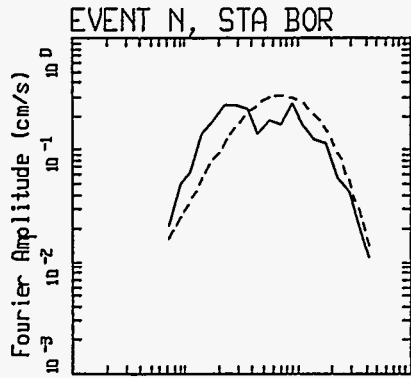
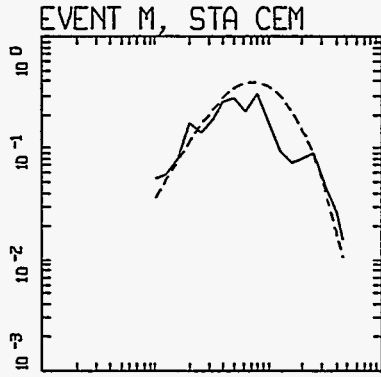
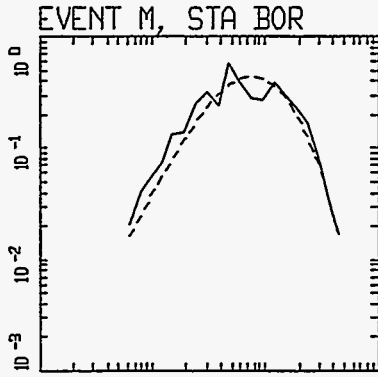
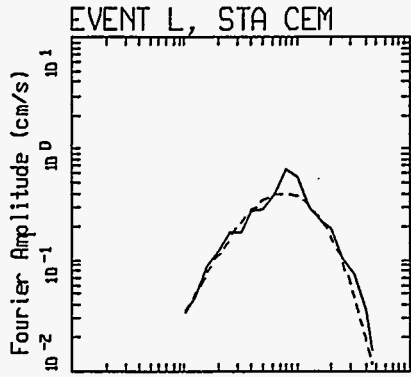
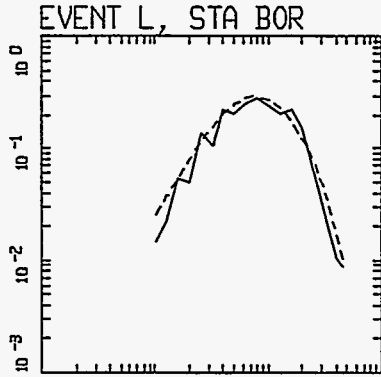
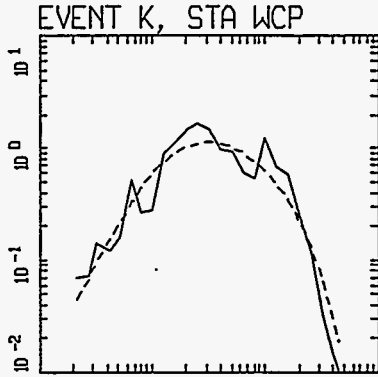
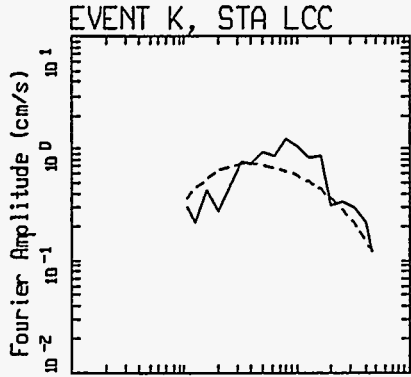
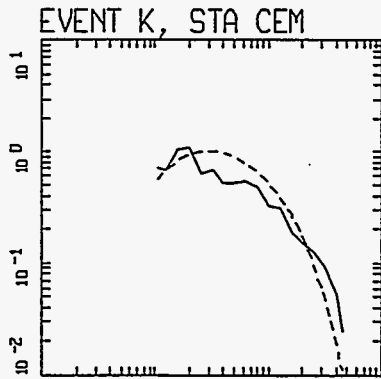
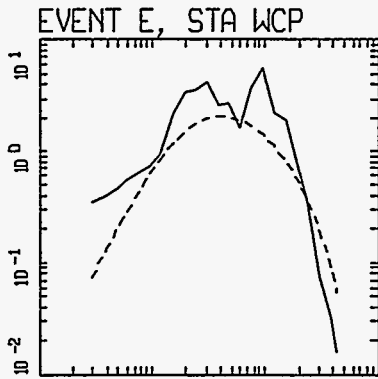
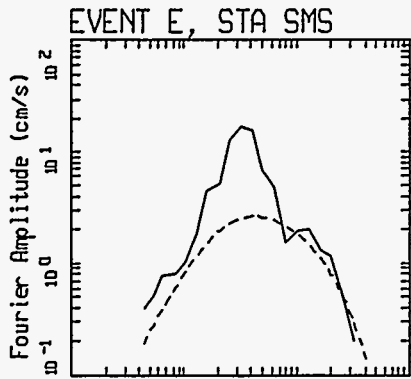
INEL-Probabilistic Analyses

Woodward-Clyde Federal Services

**RESULTS OF SPECTRAL INVERSION
OF REGIONAL EARTHQUAKES AND
BORAH PEAK AFTERSHOCKS**

Figure
B-1d





Frequency (hz)

Frequency (hz)

Frequency (hz)

LEGEND
 — DATA
 - - - MODEL

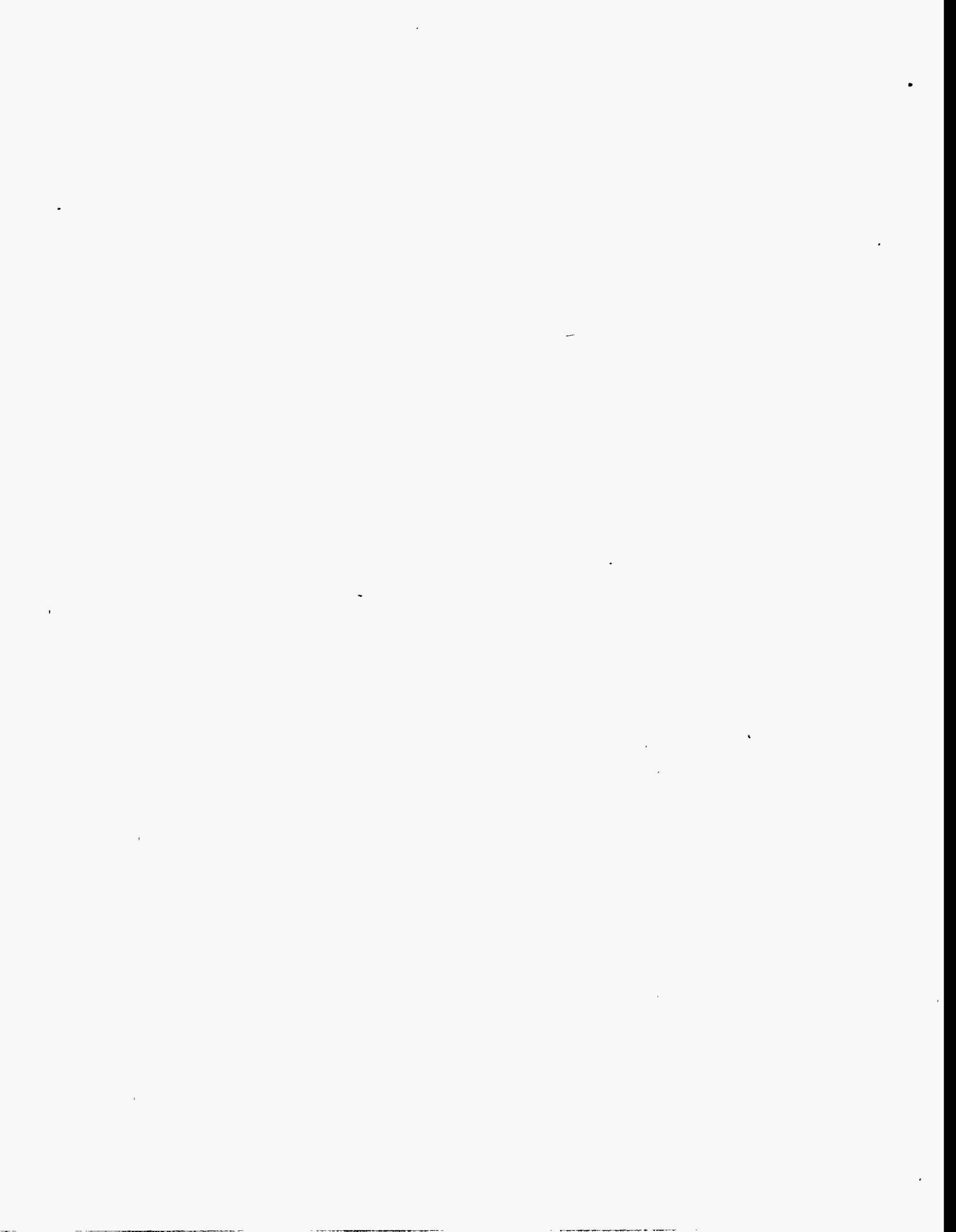
Project No.
SK9455

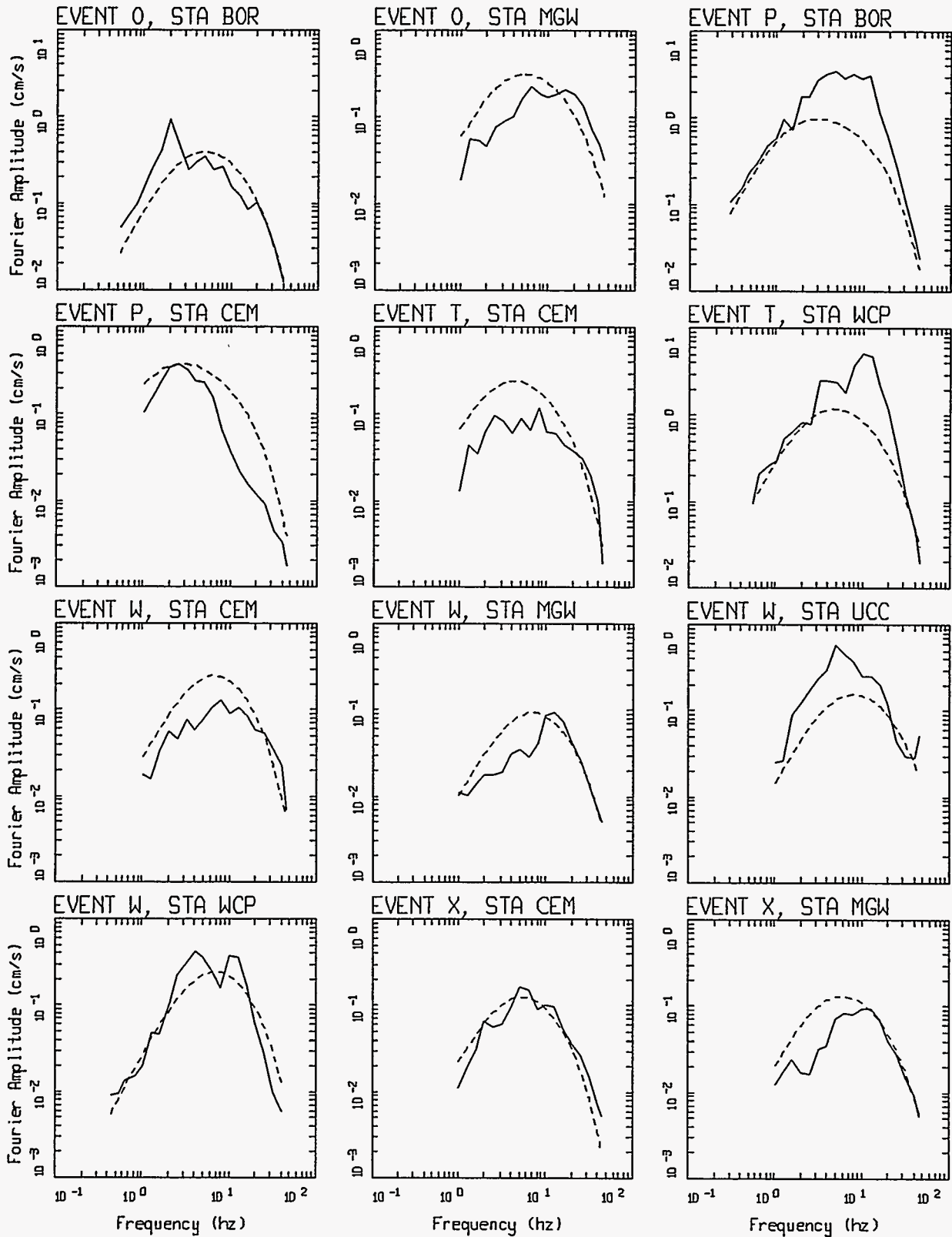
INEL-Probabilistic Analyses

Woodward-Clyde Federal Services

**RESULTS OF SPECTRAL INVERSION
 OF REGIONAL EARTHQUAKES AND
 BORAH PEAK AFTERSHOCKS**

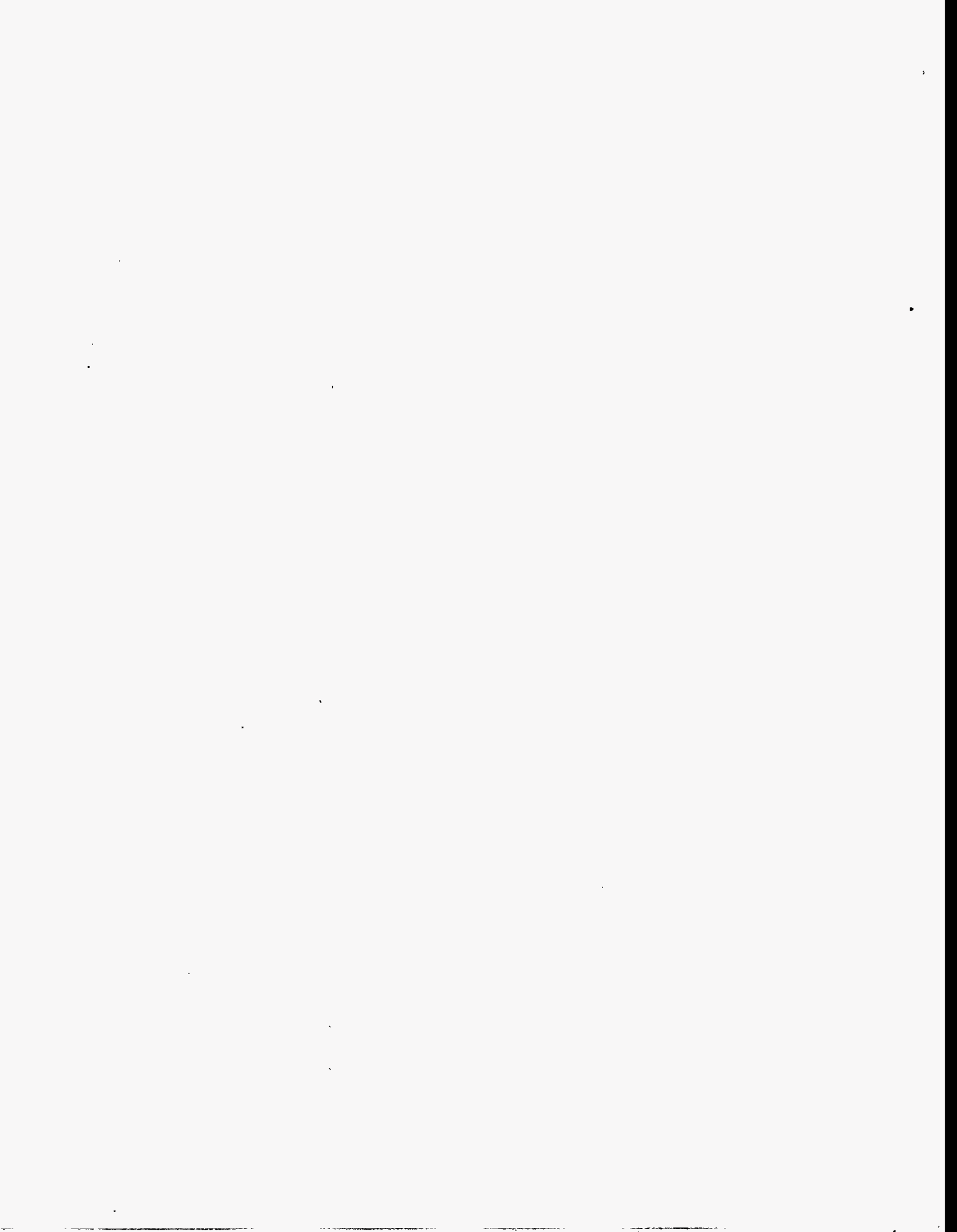
Figure
B-1e

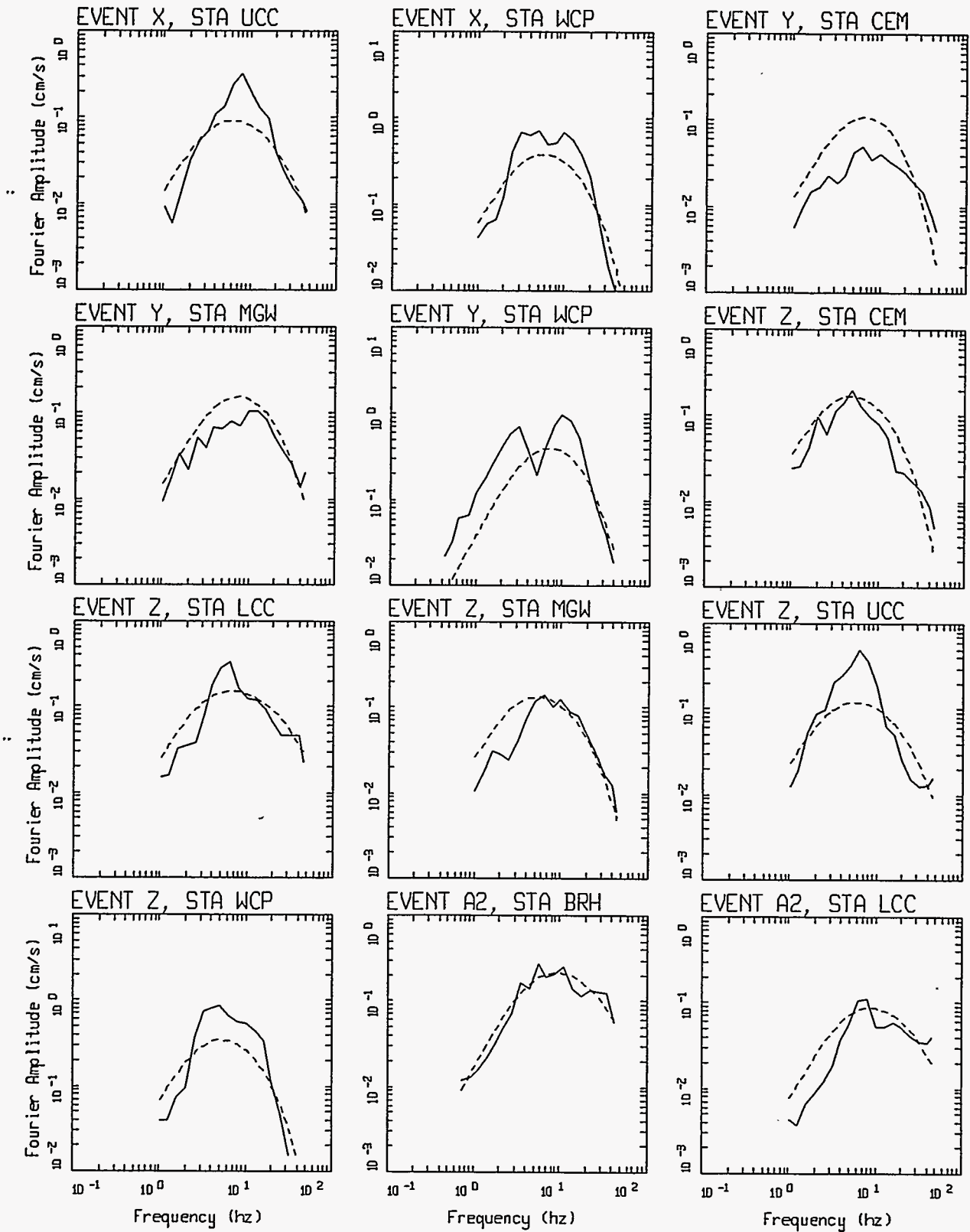




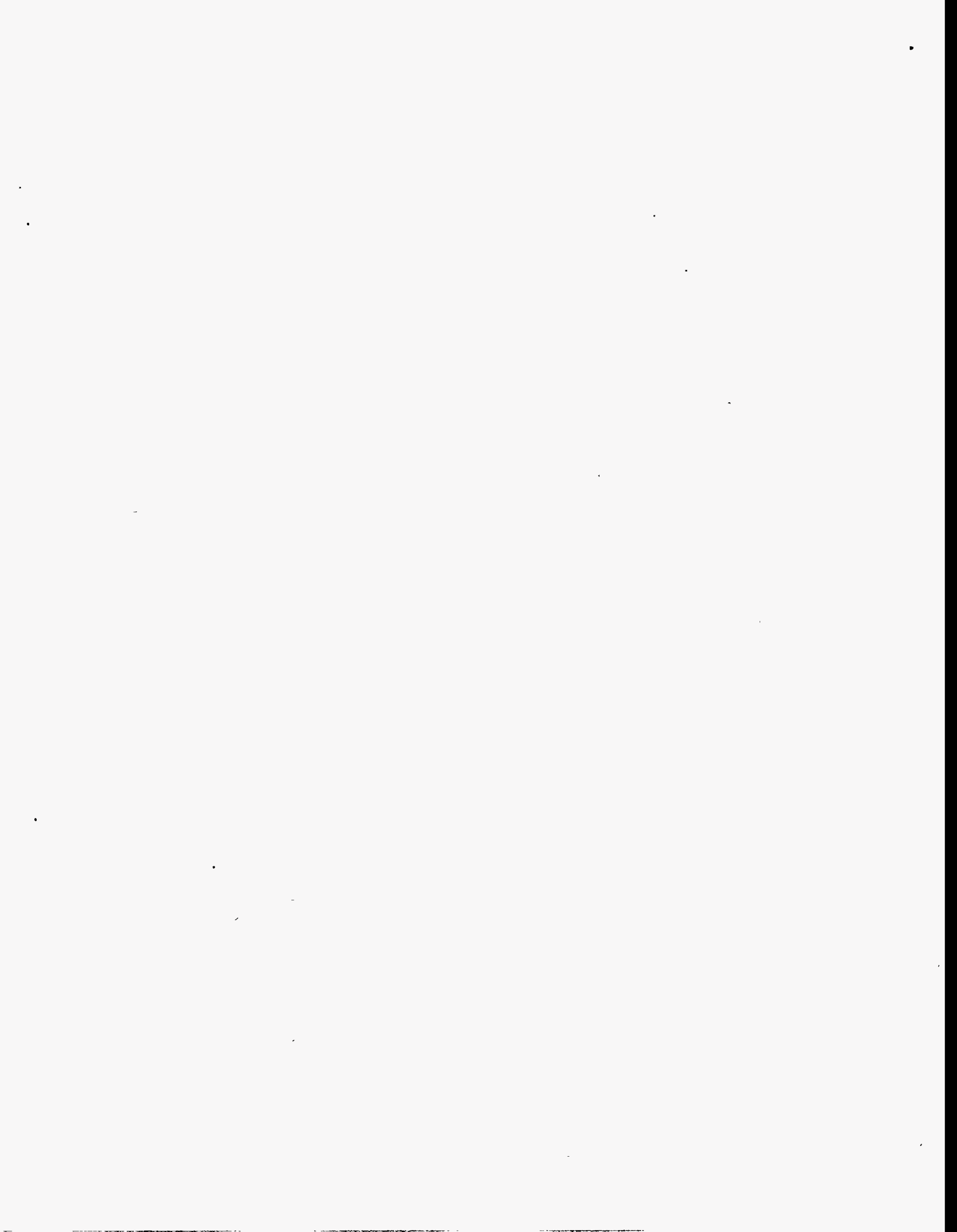
LEGEND
 — DATA
 - - - MODEL

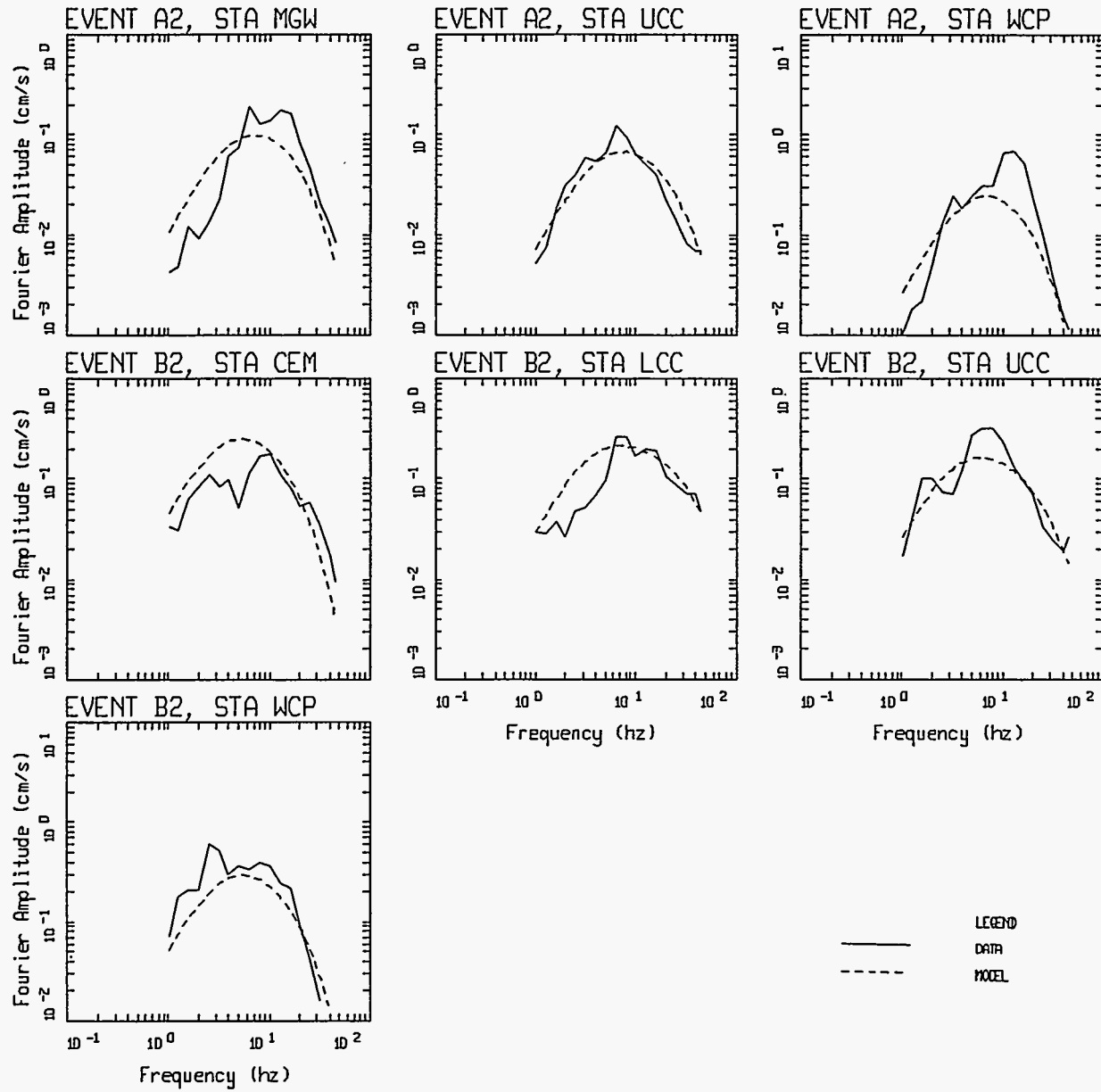
Project No. SK9455	INEL-Probabilistic Analyses	RESULTS OF SPECTRAL INVERSION OF REGIONAL EARTHQUAKES AND BORAH PEAK AFTERSHOCKS	Figure B-1f
Woodward-Clyde Federal Services			

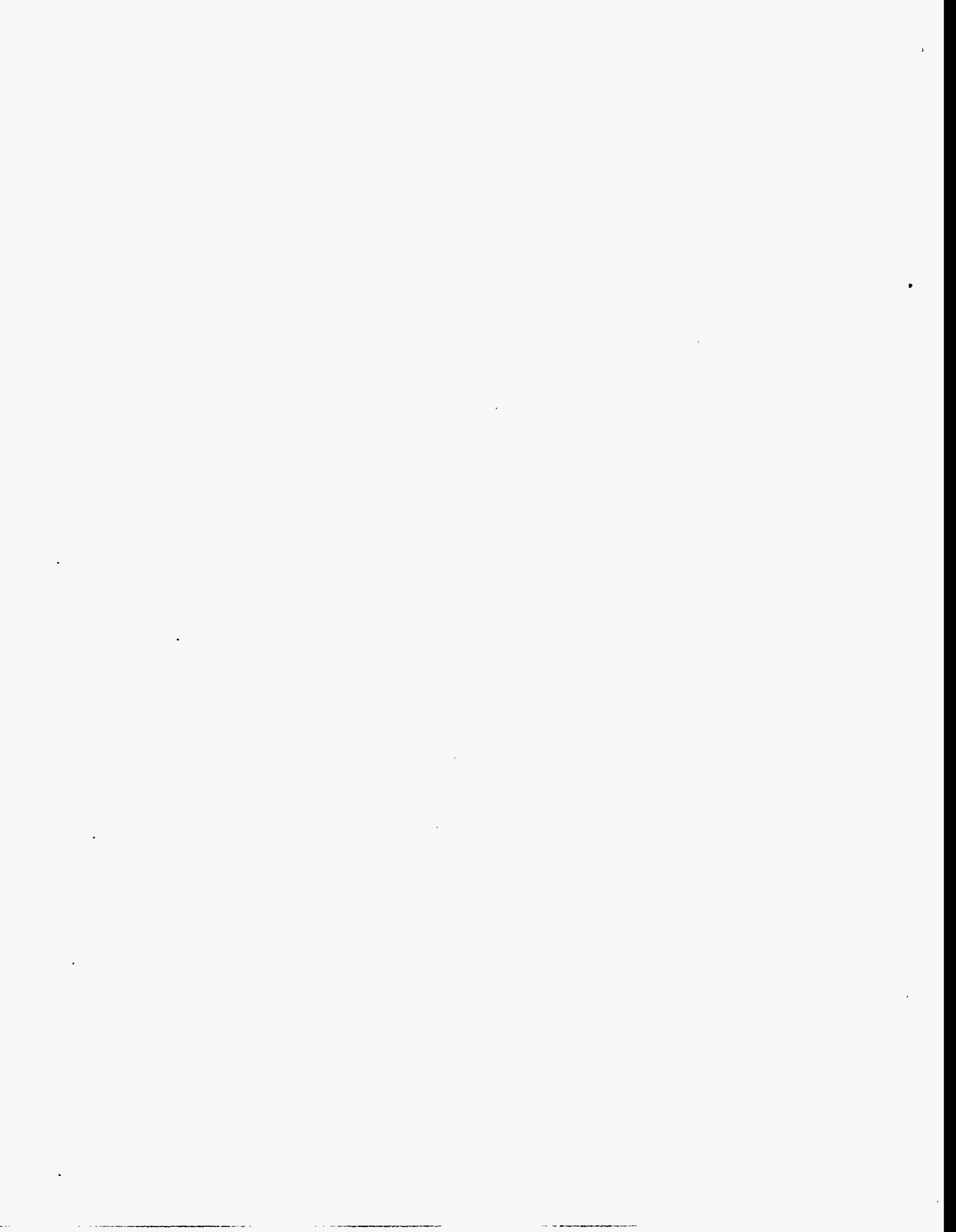




LEGEND
 — DATA
 - - - MODEL







APPENDIX C

**BASIN AND RANGE AND OTHER EXTENSIONAL
EARTHQUAKE STRESS DROPS**

The range of stress drops used in estimating ground motions based on the stochastic ground motion model is critical. The following describes an analysis of several Basin and Range earthquakes and aftershocks from other extensional regimes which was performed as part of the NPR study (Woodward-Clyde Consultants, 1992a). This analysis is in addition to the evaluation of regional earthquakes and Borah Peak aftershocks which was also performed originally as part of the NPR study and was redone as part of this study (Appendix B).

Based on McGarr's (1984) analysis of ground motion parameters and tectonic regimes, it has been suggested that stress drops in extensional regimes may be lower than in compressional regimes. McGarr (1984) observed that for a comparable hypocentral depth, peak acceleration in a compressional regime such as the eastern U.S. is a factor of 3 greater than in an extensional regime. Regional differences in stress drops have been noted elsewhere. For example, eastern North American stress drops average about 150 to 200 bars for $M_w > 4$ compared to California stress drops which range from 70 to 100 bars (Atkinson, 1996). Recent studies of earthquakes in the Pacific Northwest reveal average stress drops of about 30 bars (Atkinson, 1996).

A static stress drop of 17 bars has been determined by Boatwright and Choy (1985) for the 1983 Borah Peak earthquake based on the maximum fault displacement of 2 m and a total length of faulting of 35 km. Boatwright and Choy (1985) also determined a dynamic stress drop of 28 bars corresponding, however, only to the initial rupture event in the 1983 earthquake. Stein and Barrientos (1985) computed a static stress drop of 30 ± 10 bars from geodetic data. Doser and Smith (1985) estimated static stress drops of 12 and 17 bars based on either geologic or seismologic parameters for the seismic moment, average displacement and rupture dimensions, respectively. Doser and Smith (1985) state that even considering possible errors in stress drop estimations, the 1983 earthquake was probably a low stress drop event compared to other normal-faulting earthquakes and that the stress drop did not exceed 75 bars.

For the 18 August 1959 M_L 7.5 Hebgen Lake earthquake, Doser (1985a) estimated a static stress drop of 115 bars. However, the mainshock was a complex double-event possibly involving rupture on one or more faults. Doser (1985a) also estimated stress drops of 17 and 4 bars for two of the largest aftershocks, M_L 6.3 and 5.9 on 18 and 19 August 1959, respectively. The 28 March 1975 M_L 6.0 Pocatello Valley earthquake in southeastern Idaho had an estimated dynamic stress drop of 50 bars (Bache *et al.*, 1980). Archuleta *et al.* (1982) determined Brune stress drops for 66 earthquakes ranging from M_L 2.5 to 5.0 occurring in the Mammoth Lakes area along the California-Nevada border and the western Basin and Range province; 54 of the events had stress drops less than 50 bars.

To determine an appropriate range of stress drops to use in the development of the stochastic attenuation relationship, stress drops were calculated using several data sets including: (1) the 31 October and 28 November 1935 Helena, Montana earthquakes of M_L 6.0 and 5.5; (2) the 30 August 1962 M_L 5.6 Cache Valley, Utah earthquake; (3) aftershocks of the 1980 Mammoth Lakes, California earthquakes; and (4) aftershocks of the 1 August 1975 M_L 5.7 Oroville earthquake. Stress drops were calculated using two approaches: Brune stress drops were computed by determining the seismic moment and corner frequency, and rms stress drops were computed from rms acceleration calculations. If both estimates of stress drop are equivalent then the observed source spectra are consistent with the BLWN model (Section 5.2.1.2). The comparison is a convenient method of assessing the appropriateness of the stress drop for use in the model. Where available, stress drops calculated using other methods are also compared with our results.

The rms stress drops for earthquakes in this study were computed using the method of Hanks and McGuire (1981) with modifications to include the site attenuation (κ), frequency-dependent crustal attenuation ($Q(f)$), and crustal amplification effects. Source durations over which the rms accelerations were calculated, were taken as the inverse of the corner frequencies. Corner frequencies, κ values, and path Q models used in the rms stress drop determinations are from the spectral inversion results for each data set.

1935 HELENA, MONTANA EARTHQUAKES

Three moderate-sized but significant earthquakes occurred to the northeast of the INEL in the fall of 1935 near Helena, Montana. Two of the events (M_L 6.0 and 5.5) were recorded

by a single strong-motion station situated on limestone at close distances (Table C-1). Spectra from these recordings were inverted for source, path, and site parameters.

The source depths of the events are uncertain; therefore the distances used in the inversions were varied to obtain the most stable solution. The crustal model of Richins *et al.* (1987) was used to compute a transfer function for crustal amplification, which was then smoothed and applied to the model. The resulting Brune stress drops for the two earthquakes are 49 and 102 bars, respectively (Table C-1). The spectra from observed records and the best-fit model are shown in Figure C-1. The rms stress drops were calculated to be 63 and 95 bars, and are also listed in Table C-1.

1962 CACHE VALLEY, UTAH EARTHQUAKE

The 1962 M_L 5.6 Cache Valley earthquake is an important earthquake because it is the largest recorded event in the eastern part of the Basin and Range province (Table C-1). It was recorded by only one strong-motion station which was located in Logan, Utah and on Recent alluvium. Fortunately, some geotechnical and geophysical information about the site were available.

The epicentral location from Westaway and Smith (1989) was used in this analysis. The site was drilled to a depth of 87 m, downhole shear-wave velocities were measured, and samples taken for laboratory dynamic tests. The borehole did not encounter bedrock, but the depth of the sediments is estimated at about 91 m. Dynamic material models and velocities (Shannon and Wilson/Agbabian Associates, 1980) were used in addition to the Wasatch Front crustal velocity model from Bjarnason and Pechmann (1989) to compute a site-specific transfer function to incorporate into the inversion. Other inversions which used crustal amplification factors from Boore (1986) and a simple half-space produced poorer solutions.

Because of the short epicentral distance, the $Q(f)$ model was held fixed. In addition, for only one event-station pair, the inversion is unstable with varying corner frequency and moment. To reduce the instability, the magnitude was fixed at values from M_w 5.6 to 6.0 and a suite of inversions performed. To correct for the radiation pattern, since only one site was available, the focal mechanism from Westaway and Smith (1989) was used. This solution had a higher standard error and the final inversion incorporated the average radiation pattern

(Figure C-2). The magnitude that matches the low frequencies best is M_w 5.8, and the resulting Brune stress drop is 35 bars. A rms stress drop of 45 bars was calculated for this event and it compares well with the Brune value (Table C-1).

1980 MAMMOTH LAKES, CALIFORNIA EARTHQUAKES

The 1980 Mammoth Lakes, California, earthquakes provided an excellent data set of high-quality recordings. Although these strike-slip faulting earthquakes are probably not typical of Basin and Range earthquakes because they are associated with magmatic movement (Hill *et al.*, 1985), analyses were performed on these recordings because the region is located in an extensional tectonic regime that may be similar in some respects with the Basin and Range province. The recording stations were situated on alluvium and tuff deposits within the Long Valley Caldera, or on alluvium in the mountains to the southeast. The California Division of Mines and Geology strong-motion stations in the area recorded several large events of approximate M_L 6. The USGS deployed a temporary strong motion array which recorded several aftershocks in the range M_L 3 to 5.

For this study, it was found that stable inversions required events which were well-recorded by at least three stations. This criterion precluded the evaluation of the largest earthquakes because they were recorded by too few stations (Table C-2). Preliminary inversions included records from these large events were attempted, but the results proved to be unstable and therefore judged to be unreliable. The corner frequencies of these large magnitude events were low and thus not resolvable above long-period noise levels.

To accommodate crustal amplification, crustal velocity models for the mountain and caldera areas from Mueller *et al.* (1981) were used to calculate the site transfer functions. These transfer functions were smoothed to add stability to the inversion and then applied to the spectral model.

The spectra from the recordings and the modeling are shown in Figure C-3. The Brune stress drops of the events ranged from 82 to 178 bars, averaging 131 bars (Table C-3). Archuleta *et al.* (1982) calculated Brune stress drops for the same events, and their values are considerably lower, with an average of 53 bars (Table C-3). This difference may be attributed to the inclusion of kappa, and has been included in the spectral fits for this study.

If not accounted for, kappa can result in the erroneous selection of corner frequencies for small and moderate-sized events. The rms stress drops obtained for these events average 96 bars and are also listed in Table C-3.

1975 OROVILLE, CALIFORNIA AFTERSHOCKS

One of the largest data sets comprised of normal faulting earthquakes consists of recorded aftershocks from the 1975 M_L 5.7 Oroville, California earthquake. This data set was analyzed primarily because of the extensional style of faulting, even though they did not occur within the Basin and Range province. Strong-motion recordings at 14 stations were available, of which five were located on rock, five on stiff soils, and four on Recent alluvium. Only records from the rock and stiff soil sites were used in these analyses. Also, the recordings from stations DJR and DWR were excluded because of a strong site resonance observed at DJR and a strong structural resonance at DWR (Seekins and Hanks, 1978). To obtain stable results for source parameters, events which were well-recorded at four or more stations were chosen, resulting in the nine events which are listed in Table C-4.

The time histories were reprocessed to preserve more of the high-frequency energy in the recordings. The original processed data were filtered using a low-pass Ormsby filter at 25 to 27 Hz with a time step of 0.005 sec. In the reprocessing, the uncorrected data with uneven time steps were interpolated and filtered at 62.5 Hz with a five-pole Butterworth. The filtered data were then decimated to a time step of 0.004 sec.

The transfer function from a typical western North America crustal model (Boore, 1986) was applied to the model spectra to account for crustal amplification. Velocity models developed by Cohn *et al.* (1982) and Seekins *et al.* (1978) were also initially used in the inversions, as well as combinations of the models, i.e. the Seekins model at the rock sites and the Cohn model at the sediment sites. It was found, however, that the difference in amplification between the rock and sediment sites increased the standard error of the inversion. As a result, a uniform crustal amplification was used in the final inversion. The spectral fits are shown in Figure C-4.

The calculated Brune stress drops ranged between 36 bars and 147 bars (Table C-5). Fletcher *et al.* (1984) also computed Brune stress drops for these events and these values are

shown for comparison (Table C-5). Their mean stress drop value of 80 bars is very comparable to the mean of 90 bars obtained in this study.

The rms accelerations of these records were calculated and the resulting rms stress drops are also listed in Table C-5. These values range from 32 to 140 bars with a mean of 81 bars. Also shown are the rms stress drops determined by Hanks and McGuire (1981). Their rms stress drops are generally higher than those determined in this study, averaging 113 bars. The differences may be attributed to the fact that site-specific kappa and frequency-dependent path Q were accounted for in this study, whereas their analysis assumed constant Q with no site-attenuation parameter.

Stress drops for the Oroville earthquakes analyzed in this study using both an inversion for Brune stress drops and rms calculations have very comparable means, at 90 and 81 bars respectively. The dynamic stress drops from Boatwright (1984) are considerably higher, averaging 167 bars (Table C-5).

SUMMARY OF STRESS DROP ANALYSES

The analysis of stress drops described in this Appendix and Appendix B were performed to determine the appropriate range stress drops to use in the BLWN source model and to assess appropriate median and one-sigma values for use in this study. Because only a small amount of recorded data were available for Basin and Range normal faulting earthquakes (Table C-6), additional extensional strike-slip events occurring at Mammoth Lakes and normal-faulting earthquakes in the Sierran foothills near Oroville were also analyzed. The results indicate a strong correspondence between Brune stress drops, determined from the seismic moment and corner frequency, and rms stress drops. This correspondence suggests that these earthquakes are adequately characterized as single-corner-frequency ω^{-2} seismic sources.

Unweighted mean values of stress drop were calculated and are compared in Table C-7 for data sets which included: Group #1 - regional events recorded at the INEL, 1983 Borah Peak aftershocks, 1962 Cache Valley earthquake, and 1935 Helena earthquakes; Group #2 - events in Group #1 plus the 1980 Mammoth Lakes events; and Group #3 - events in Group #2 plus the 1975 Oroville aftershocks. These data sets were classified as such because of the uncertainty in regarding the Mammoth Lakes and Oroville events as similar to Basin and

Range normal faulting earthquakes. The mean values and standard errors are based on a log-normal distribution of the stress drops.

The mean value for Group #1 is 39.7 bars (Table C-7). Including the Mammoth Lake events raises the mean value to 52.8 bars, respectively. Adding the Oroville aftershocks gives a mean value of 56.9 bars. Mean values from rms stress drops are also listed in Table C-7; they are somewhat even lower than the mean Brune stress drop values.

Based on these analyses, a median stress drop of 50 bars appears to be an appropriate value for Basin and Range earthquakes. This value is higher than the Group #1 mean, and therefore provides conservative predictions. The standard error was taken as 0.36, which provides a 2σ stress drop of 103 bars, accommodating all but the two highest values in Group #1.

A possible criticism of this study is the inclusion of aftershocks in the analyzed data set. Such events may be characterized by low stress drops because they represent release of residual (hence smaller) stresses after a mainshock. Although the number of mainshock stress drops in this analysis is small, they alone still suggest an average value less than the commonly cited 100 bar value for western U.S. earthquakes.

Boore (1983) and Boore and Atkinson (1987) have previously found that a stress drop of 50 bars gives a good predictive fit to a number of strong motion records of western U.S. earthquakes in the range M_w 5.0 to 7.7 and even subduction zone earthquakes as large as M_w 9.5 (Boore, 1986). Based on the analyses in this study and a review of other studies, the data suggests that a stress drop of 75 bars is an appropriately conservative value to use in the estimation of strong motions from Basin and Range normal faulting earthquakes. In the development of the stochastic attenuation relationships, a range of stress drops centered on 75 bars has been used (Section 5.2.2.1).



TABLE C-1

1935 HELENA AND 1962 CACHE VALLEY EARTHQUAKE STRESS DROPS

Date	Origin Time (UTC)	M_L	Station	Hypocentral Distance (km)	Stress Drops (Bars)	
					Brune	rms
31 Oct 1935 Helena, MT	1837	6.0	Federal Bldg	15	49.3 ± 76.5	62.9
28 Nov 1935 Helena, MT	1441	5.5	Federal Bldg	14	101.8 ± 51.6	95.4
30 Aug 1962 Cache Valley, UT	1335	5.6	Logan	22	35.3 ± 7.3	45.4

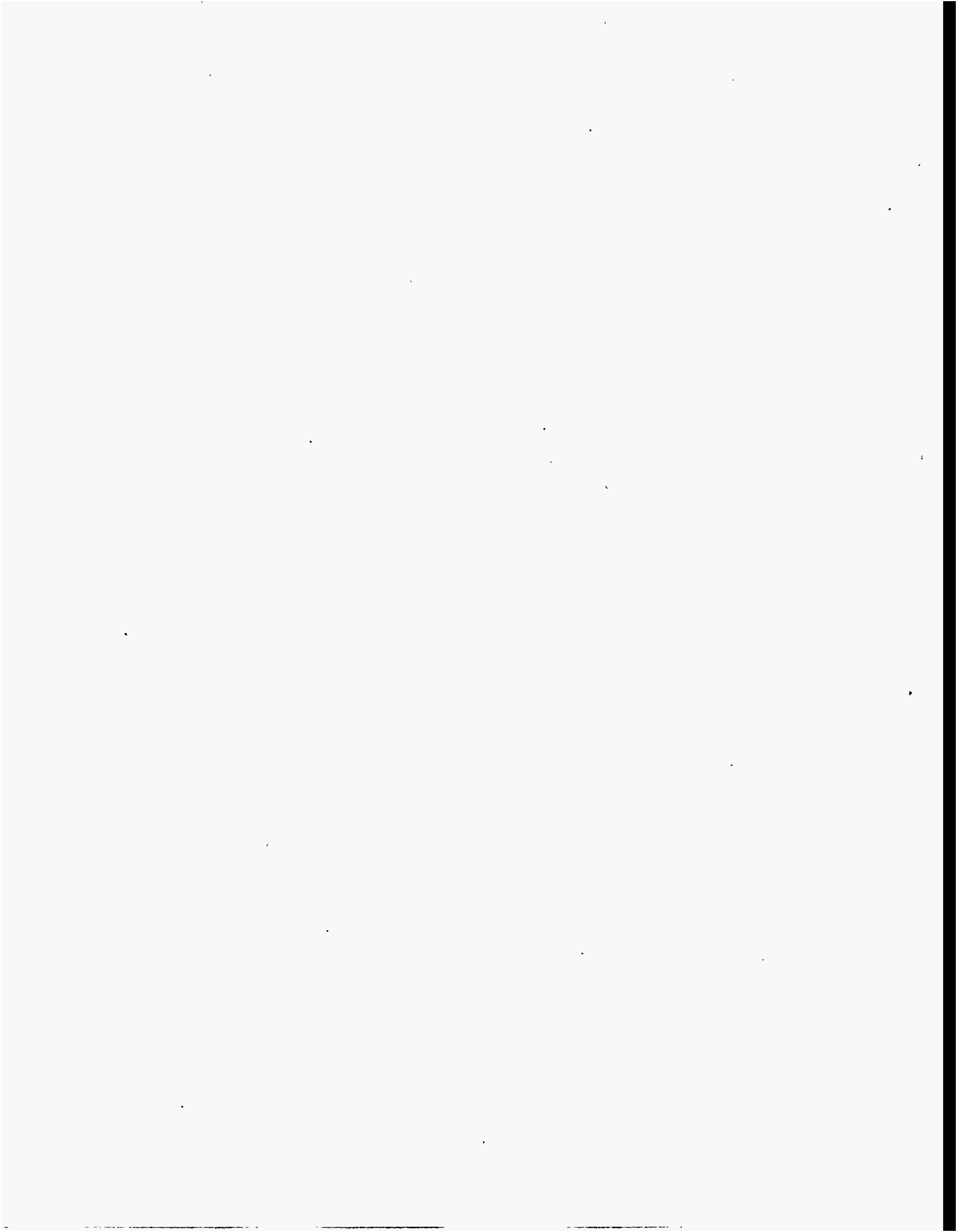


TABLE C-2

1980 MAMMOTH LAKES AFTERSHOCKS USED IN ANALYSES

Event ID	Date	Origin Time (GMT)	M _L	Station	Hypocentral Distance (km) ⁽²⁾
9	May 27	2341	3.8	CON	8.8
				FIS	10.1
				MGE	9.8
11	May 28	0402	3.9	FIS	6.0
				HCF	8.5
				MGE	6.1
14	May 28	0516	4.9	CON	5.7
				FIS	8.3
				HCF	9.4
				MGE	10.5
38	May 30	1949	3.7	CON	8.0
				FIS	9.6
				MGE	10.5
42	May 31	1011	4.3	CON	4.9
				FIS	4.6
				HCF	7.3
				MGE	5.5
50	May 31	1516	4.9	CON	9.7
				FIS	8.6
				HCF	10.6
51	May 31	1520	3.9	CON	9.5
				FIS	8.5
				MGE	8.3
65	June 2	1022	4.1	CON	8.3
				FIS	9.9
				HCF	9.7
67	June 2	2034	4.0	CON	6.7
				FIS	8.4
				MGE	9.1
112	June 7	2317	3.9	FIS	5.9
				HCF	4.7
				CBR	7.6

⁽¹⁾ Local magnitude from UCB⁽²⁾ Station and hypocentral locations from Mueller et al. (1981)

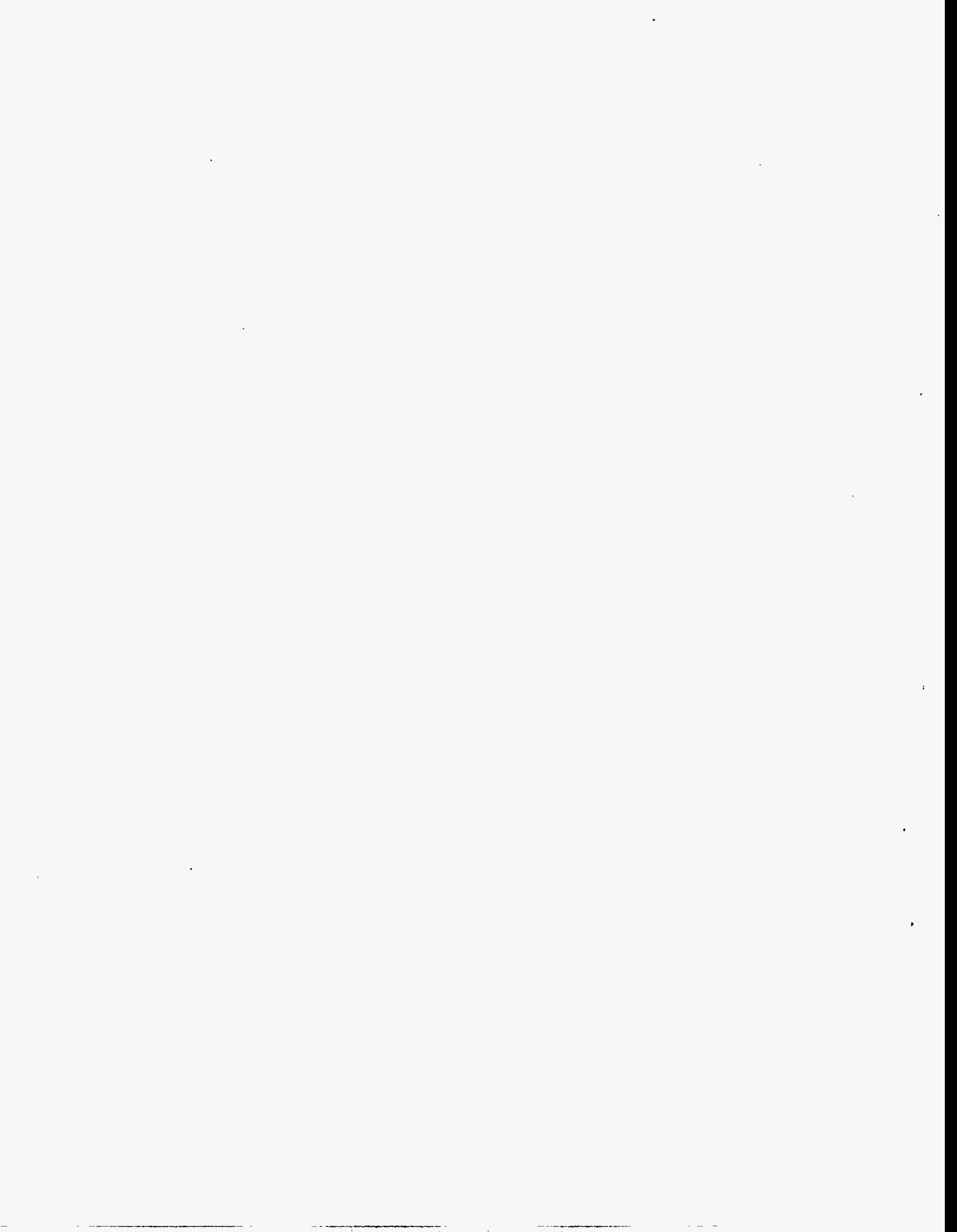


TABLE C-3

STRESS DROP ESTIMATES FOR 1980 MAMMOTH LAKES AFTERSHOCKS

Event ID	Stress Drops (bars)		
	Brune ⁽¹⁾	Brune ⁽²⁾	rms ⁽³⁾
9	175.9 ± 41.9	95.4	137.4
11	66.2 ± 17.6	21.7	45.3
14	94.0 ± 43.2	39.9	85.2
38	166.6 ± 38.7	47.1	131.1
42	81.6 ± 22.6	20.4	60.3
50	123.0 ± 63.2	114.0	123.6
51	178.3 ± 44.3	111.0	166.3
65	134.4 ± 36.7	35.6	77.1
67	161.1 ± 39.0	19.2	98.0
112	126.5 ± 33.4	23.4	35.0
MEAN	130.8 ± 38.1	52.8 ± 36.7	95.9 ± 40.9
MEAN OF LOGS(e ⁹)	124.5 (1.4)	41.7 (2.0)	86.3 (1.6)
MEAN OF WEIGHTED LOGS(e ⁹)	130.7 (1.4)		

⁽¹⁾ From spectral inversion in this study

⁽²⁾ From Archuleta et al. (1982)

⁽³⁾ From this study

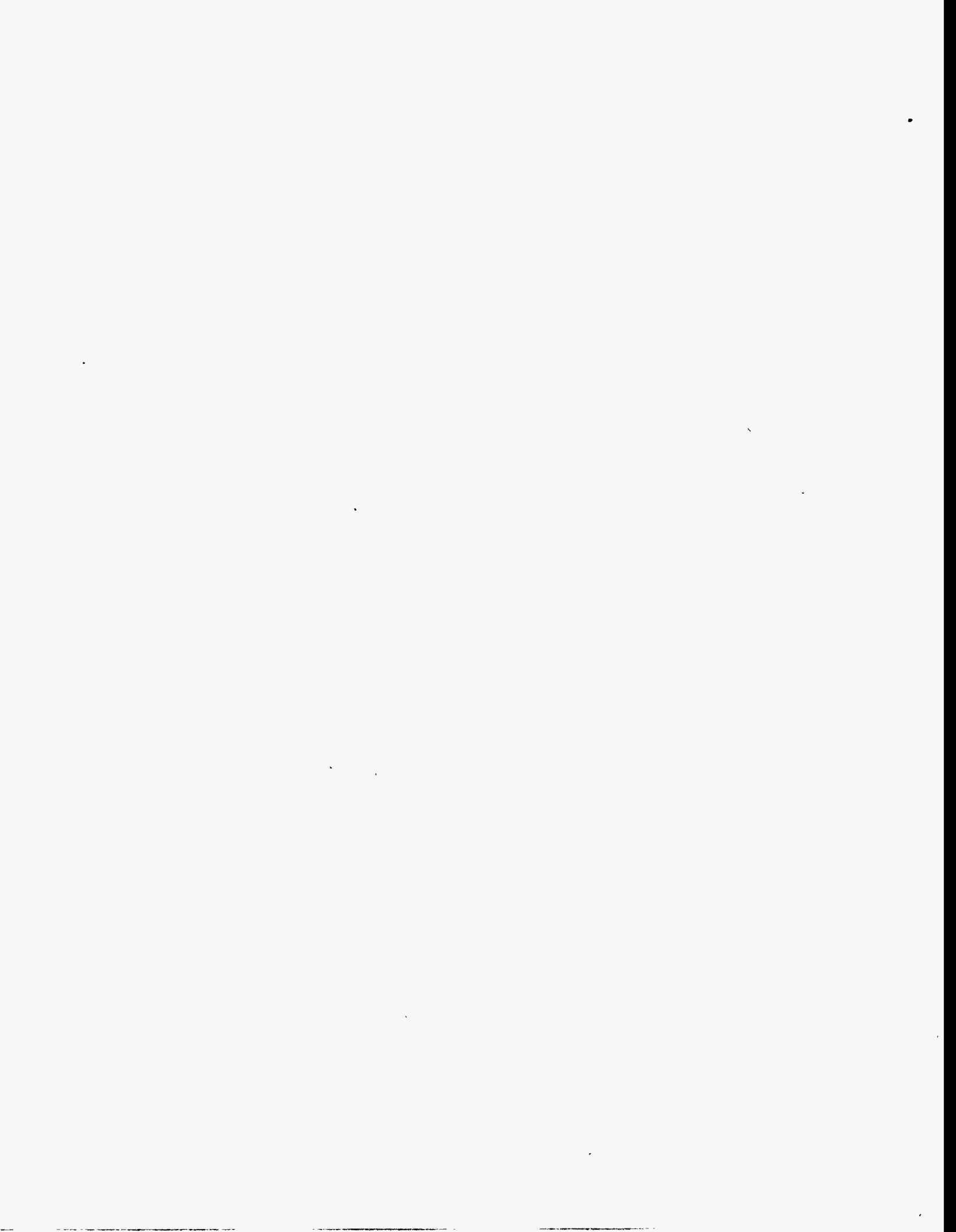


TABLE C-4

1975 OROVILLE AFTERSHOCKS USED IN ANALYSES
(Page 1 of 2)

Event ID	Date	Origin Time (UTC)	$M_L^{(1)}$	Station	Hypocentral Distance (km) ⁽²⁾
A	Aug 3	0103	4.6	CG4	12.1
				CG5	11.2
				OAP	12.1
				OMC	9.2
B	Aug 3	0247	4.1	CG4	11.5
				CG5	10.3
				OAP	12.0
				OMC	8.5
F	Aug 6	0350	4.7	CG4	12.0
				CG5	11.5
				OAP	11.7
				OMC	9.4
K	Aug 8	0700	4.9	CG4	11.9
				CG5	11.0
				CG6	9.6
				CG7	7.8
				OAP	11.7
N	Aug 11	0611	4.3	CG6	3.3
				CG7	4.8
				OMC	8.0
O	Aug 11	1559	3.6	CG4	13.1
				CG5	12.6
				CG6	12.1
				CG7	10.2
				OAP	12.4
				OMC	9.9
P	Aug 16	0548	4.0	CG4	10.9
				CG5	9.9
				CG6	9.6
				CG7	9.0
				CG8	10.7
				OAP	11.8
				OMC	9.7

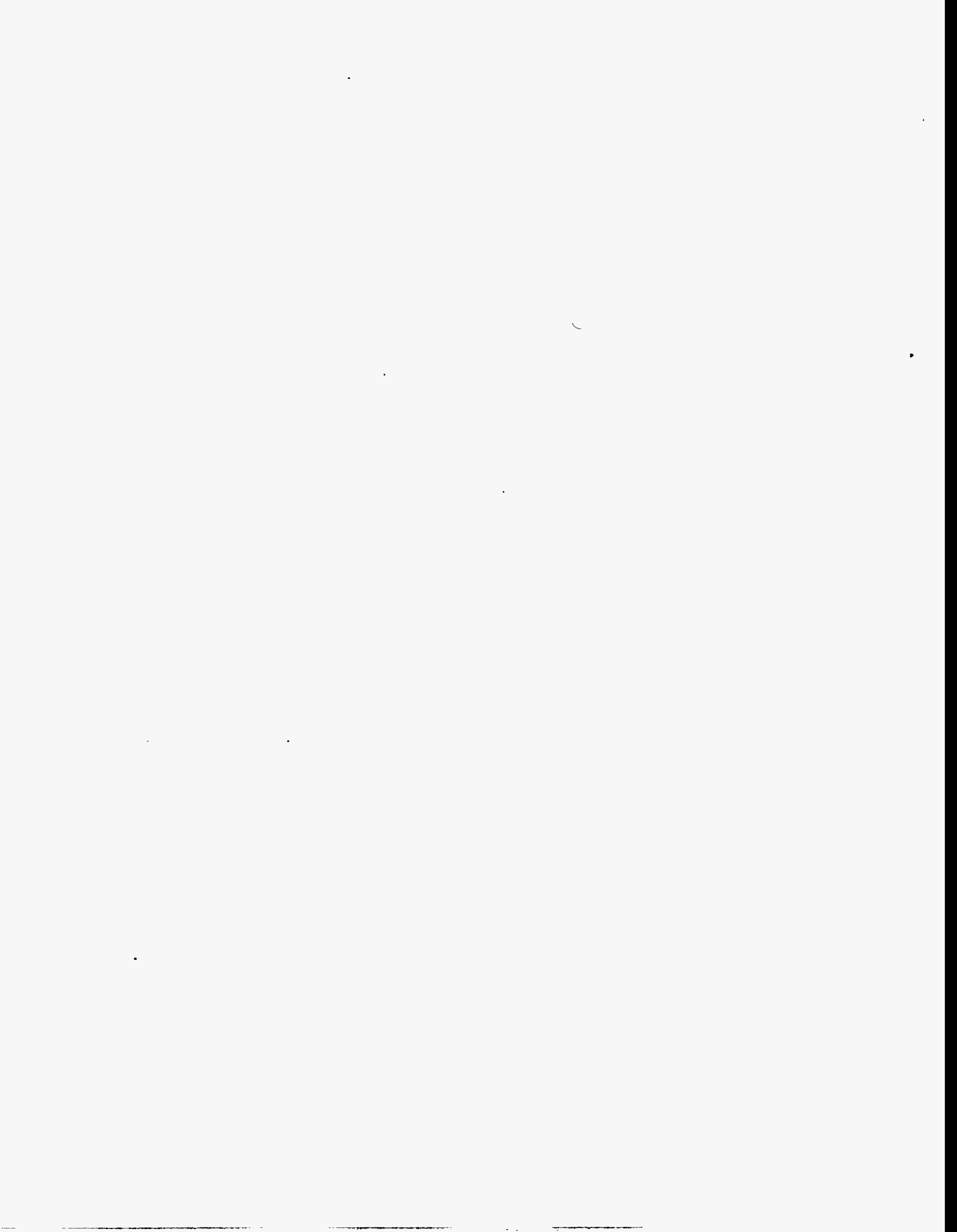


TABLE C-4

1975 OROVILLE AFTERSHOCKS USED IN ANALYSES
(Page 2 of 2)

Event ID	Date	Origin Time (UTC)	$M_L^{(1)}$	Station	Hypocentral Distance (km) ⁽²⁾
T	Sept 26	0231	4.0	CG4	13.7
				CG5	13.1
				CG6	12.4
				CG8	13.4
				CG9	20.1
				OAP	13.8
				OMC	11.6
U	Sept 27	2234	4.6	CG4	14.0
				CG5	13.8
				CG8	14.8
				CG9	23.3
				OAP	12.8
				OMC	10.5

⁽¹⁾ Local magnitude from UCB

⁽²⁾ Locations from Seekins and Hanks (1978)

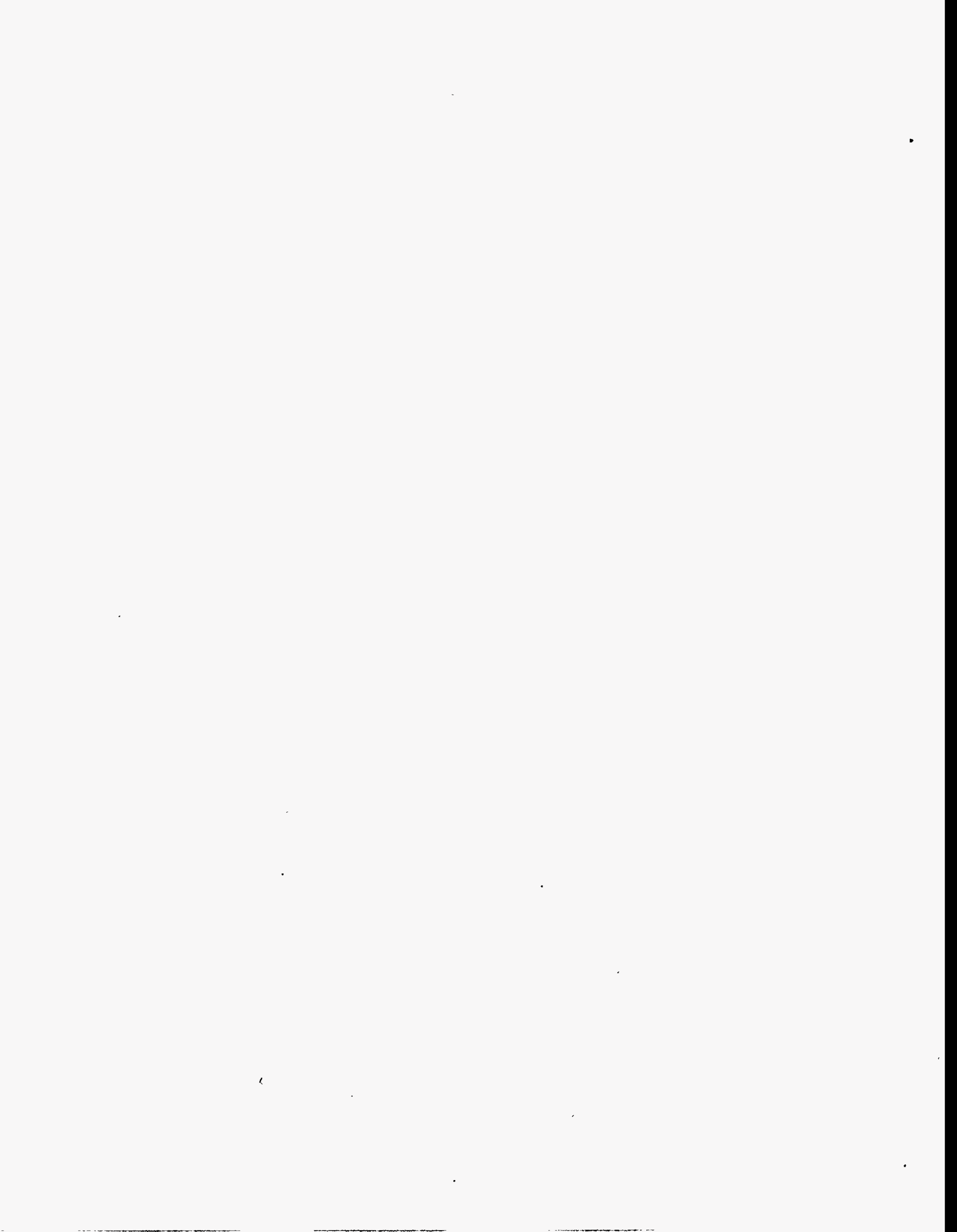


TABLE C-5

STRESS DROP ESTIMATES FOR 1975 OROVILLE AFTERSHOCKS

Event ID	Stress Drop (bars)			
	Brune ⁽¹⁾	Brune ⁽²⁾	rms ⁽³⁾	Dynamic ⁽⁴⁾
A	60.3 ± 32.0	84	64.7	175
B	54.4 ± 22.8	117	66.6	141
F	120.1 ± 62.4	76	132.2	245
K	36.2 ± 26.3	20	31.6	115
N	47.2 ± 24.9	31	37.9	-
O	143.1 ± 36.1	34	88.6	-
P	69.4 ± 21.0	82	60.6	162
T	127.8 ± 37.6	111	105.3	146
U	146.7 ± 67.4	168	140.1	187
MEAN	89.5 ± 41.7	80.3 ± 45.0	80.8 ± 36.4	167.3 ± 38.5
MEAN OF LOGS(e°)	79.4 (1.6)	66.1 (2.0)	72.3 (1.6)	163.1 (1.2)
MEAN OF WEIGHTED LOGS(e°)	93.1 (1.6)			

⁽¹⁾ From spectral inversion in this study

⁽²⁾ From Fletcher et al. (1984)

⁽³⁾ From this study

⁽⁴⁾ From Boatwright (1984)

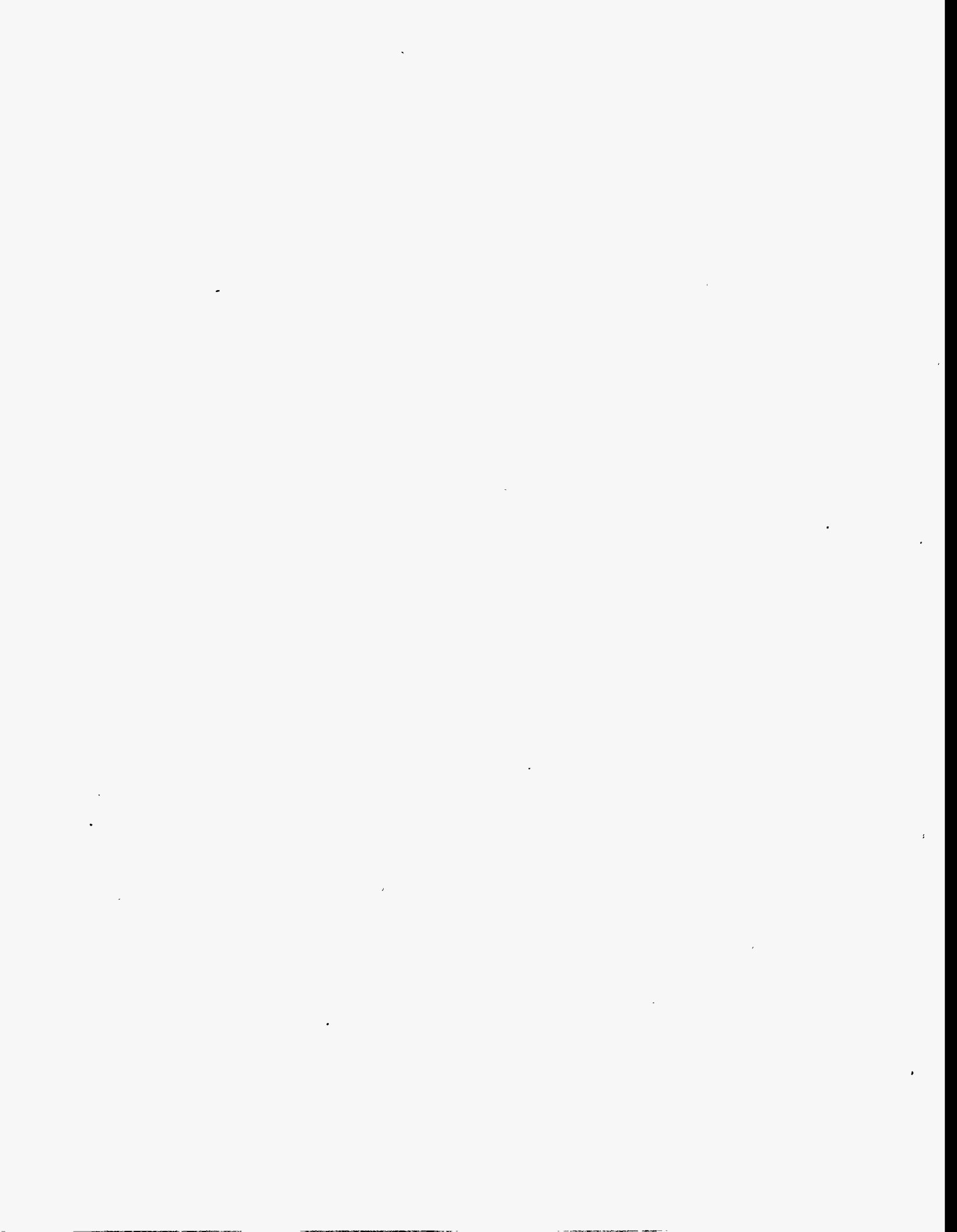


TABLE C-6

**STRESS DROPS FROM BASIN AND RANGE EARTHQUAKES
(Group #1)**

Event ID	Date	M_L	Brune Stress Drop (bars)	rms Stress Drop (bars)	
INEL	11	29 May 89	3.0	28.4 ± 26.9	-----
	12	06 June 89	3.5	38.0 ± 36.8	-----
	24	24 June 89	3.7	11.4 ± 14.9	-----
	25	24 June 89	3.6	14.0 ± 16.4	-----
	28	27 June 89	3.0	28.4 ± 30.2	-----
	29	27 June 89	2.9	36.1 ± 37.9	-----
	31	28 June 89	3.1	8.5 ± 8.4	-----
	OR1	6 Nov 93	2.8	64.9 ± 0.0*	
	OR2	10 Nov 93	4.6	23.1 ± 0.0*	
BORAH	A	29 Oct 83	5.8	44.4 ± 0.0*	57.2
	B	29 Oct 83	5.4	38.3 ± 0.0*	32.7
	C	30 Oct 83	4.8	51.4 ± 0.0*	31.0
	D	30 Oct 83	4.7	30.9 ± 0.0*	14.9
	E	02 Nov 83	4.2	57.0 ± 0.0*	52.4
	K	06 Nov 83	4.6	39.5 ± 0.0*	22.0
	L	29 Oct 83	3.3	114.5 ± 0.0*	39.4
	M	29 Oct 83	3.3	109.1 ± 0.0*	22.3
	N	30 Oct 83	3.3	86.0 ± 0.0*	20.8
	O	30 Oct 83	4.0	63.2 ± 0.0*	14.0
	P	30 Oct 83	3.5	11.2 ± 0.0*	29.0
	T	03 Nov 83	4.2	47.6 ± 0.0*	84.1
	W	04 Nov 83	3.5	65.2 ± 0.0*	22.6
	X	04 Nov 83	3.7	34.4 ± 0.0*	15.5
	Y	05 Nov 83	3.5	73.0 ± 0.0*	29.1
	Z	05 Nov 83	3.8	34.3 ± 0.0*	17.5
A2	05 Nov 83	3.6	44.2 ± 0.0*	18.3	
B2	06 Nov 83	3.8	42.6 ± 0.0*	13.0	
CACHE	30 Sept 62	5.8	35.3 ± 7.3	45.4	
MONT	A	31 Oct 35	6.0	49.3 ± 76.5	62.9
	B	28 Nov 35	5.5	101.8 ± 51.6	95.4

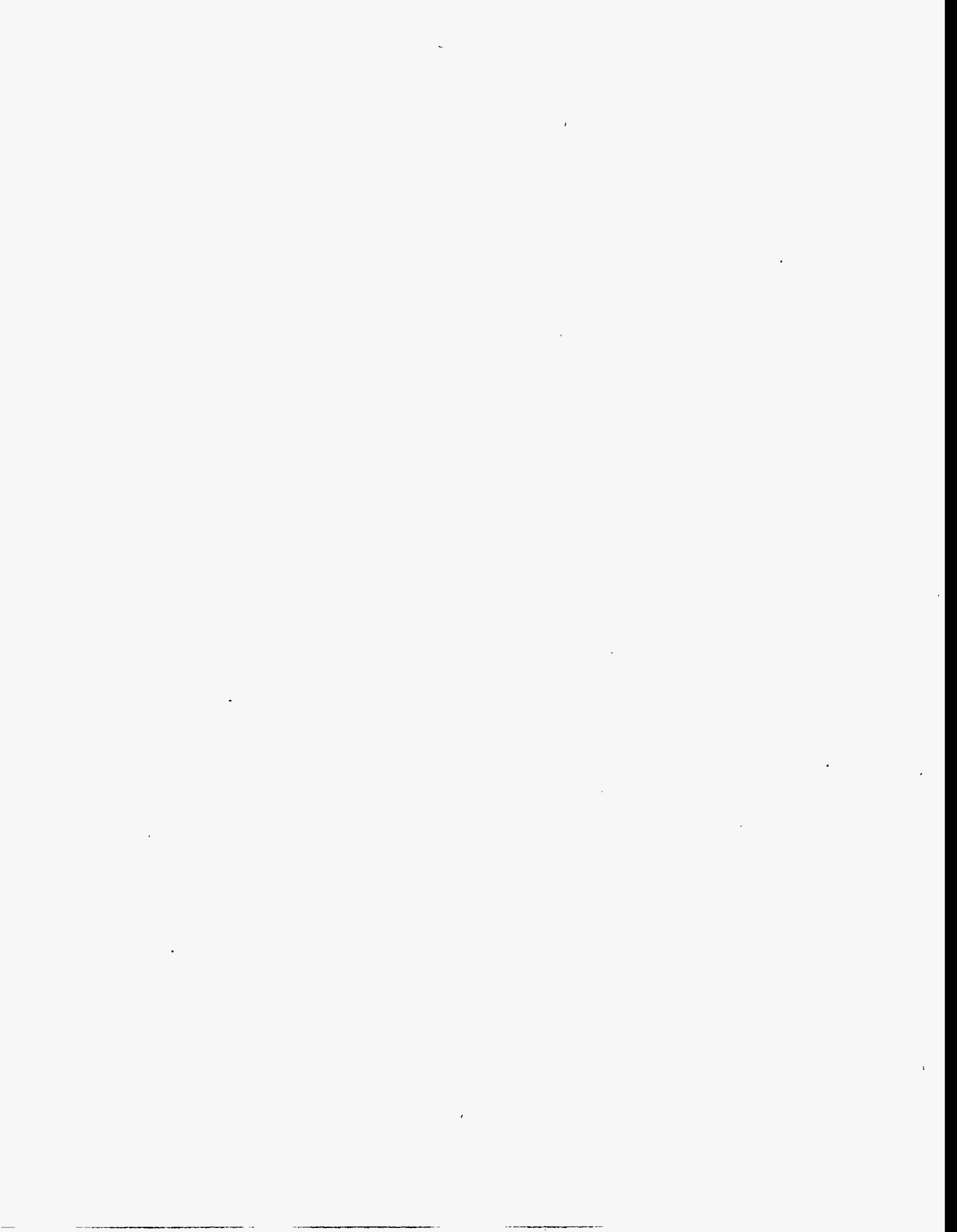
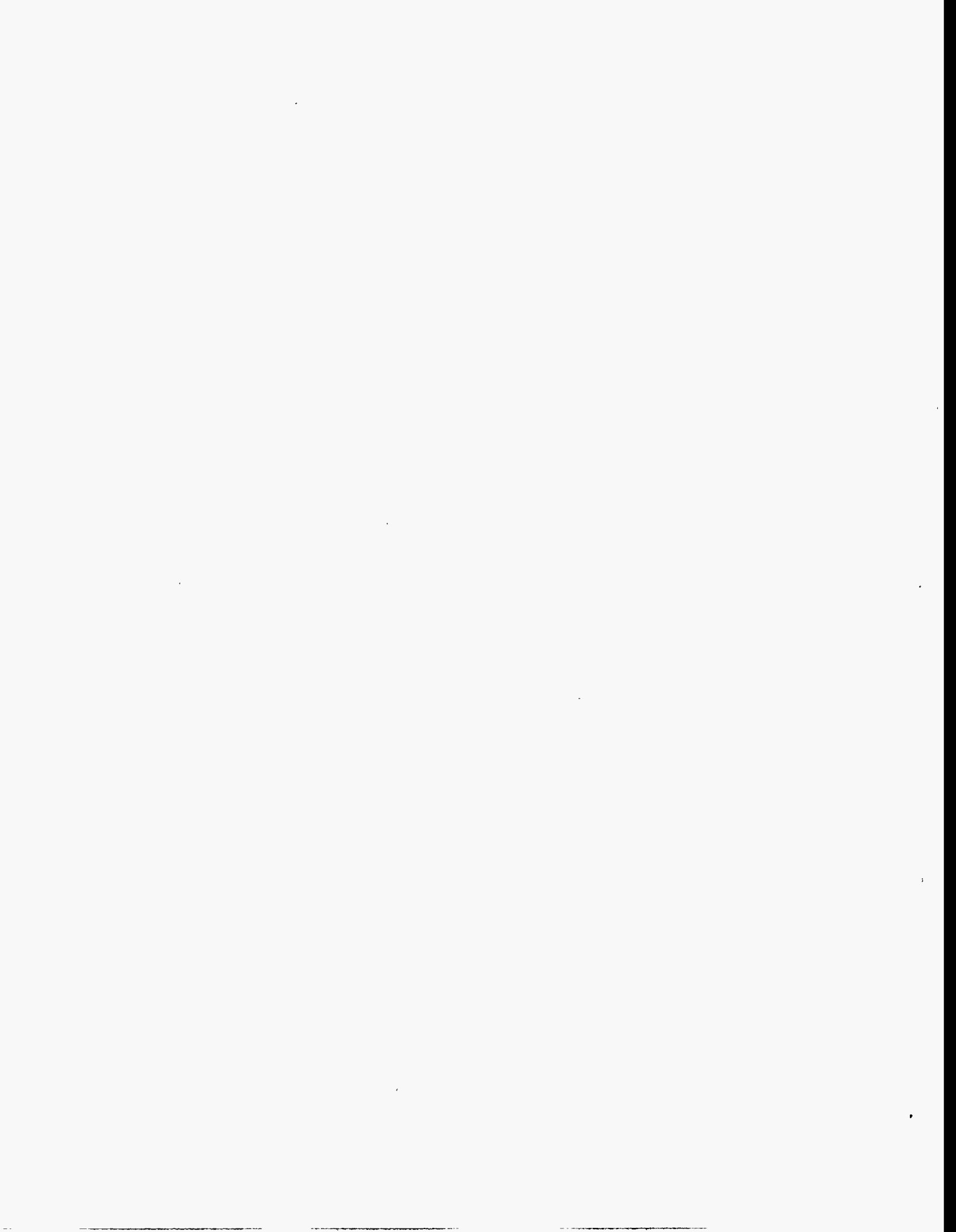
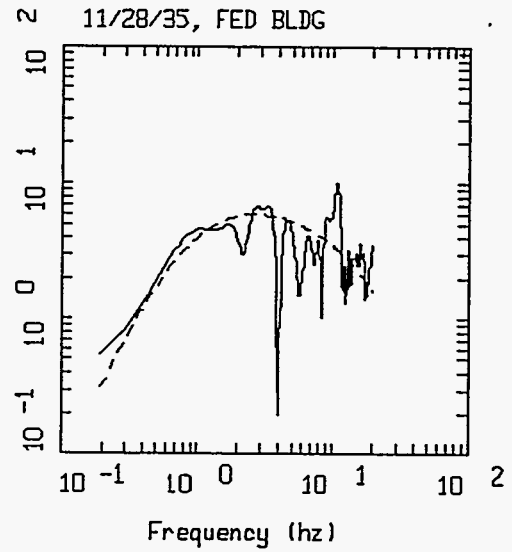
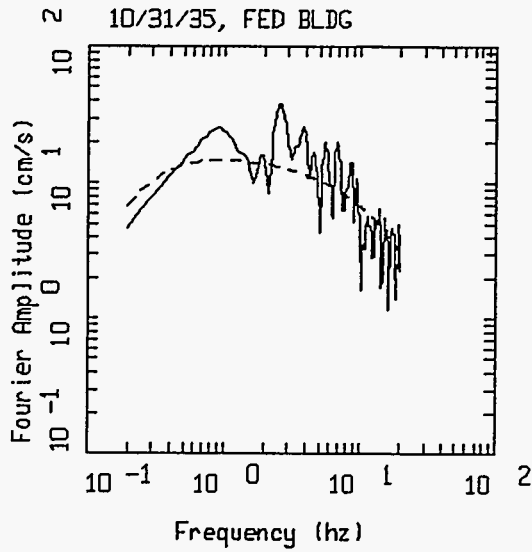


TABLE C-7
STATISTICS ON STRESS DROP ESTIMATES

Data Set ¹	Mean	σ	e^σ
<u>Brune</u>			
Group #1	39.7	0.65	1.92
Group #2	52.8	0.77	2.16
Group #3	56.9	0.74	2.11
<u>rms²</u>			
Group #1	29.5	0.59	1.81
Group #2	41.7	0.76	2.13
Group #3	47.2	0.74	2.10

- 1) Group #1: INEL regional earthquakes, 1983 Borah Peak aftershocks, 1935 Helena and the 1962 Cache Valley earthquakes (see Table C-6).
 Group #2: Group #1 plus Mammoth Lakes earthquakes.
 Group #3: Group #2 plus Oroville aftershocks
- 2) rms groups do not include INEL regional earthquakes.

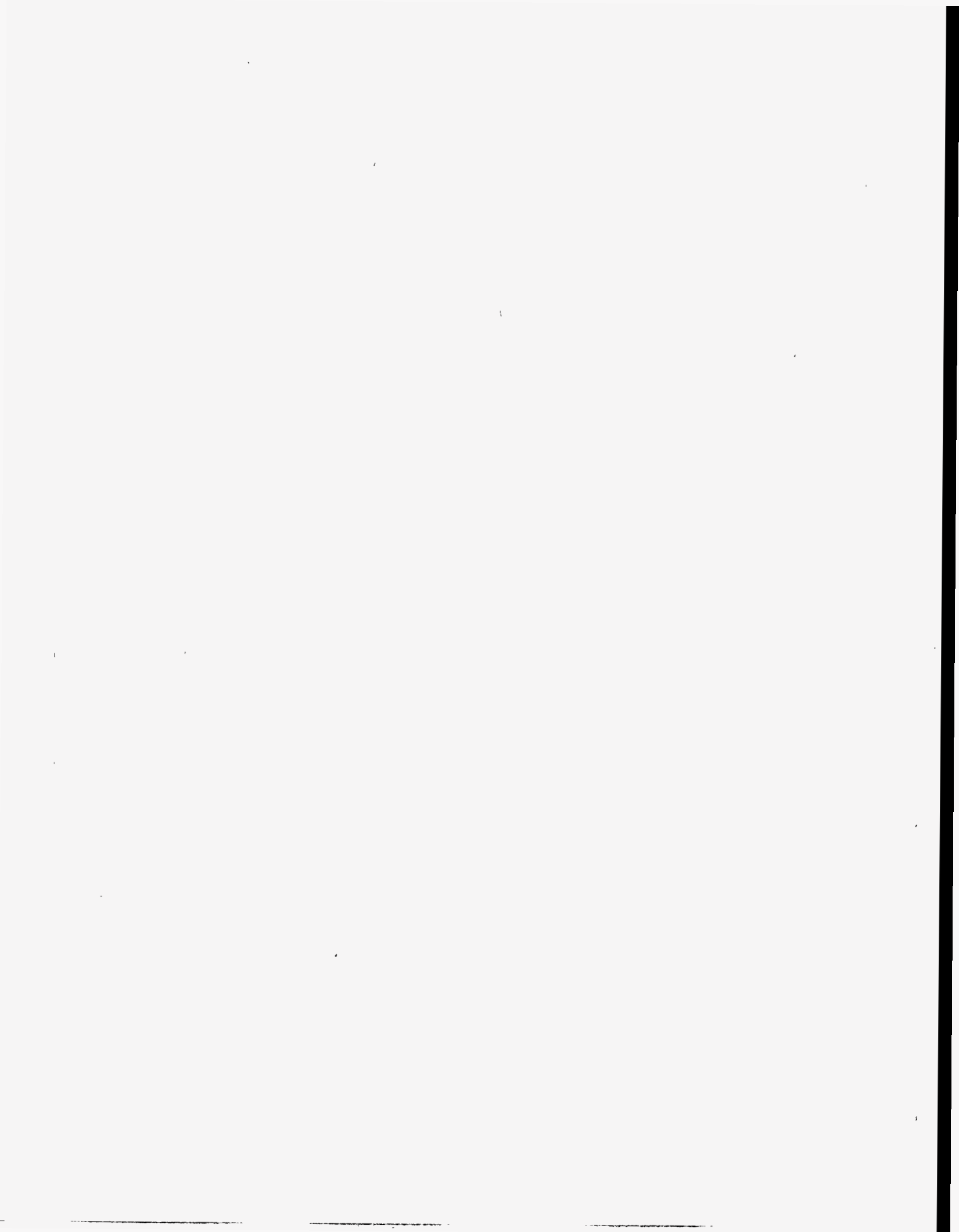


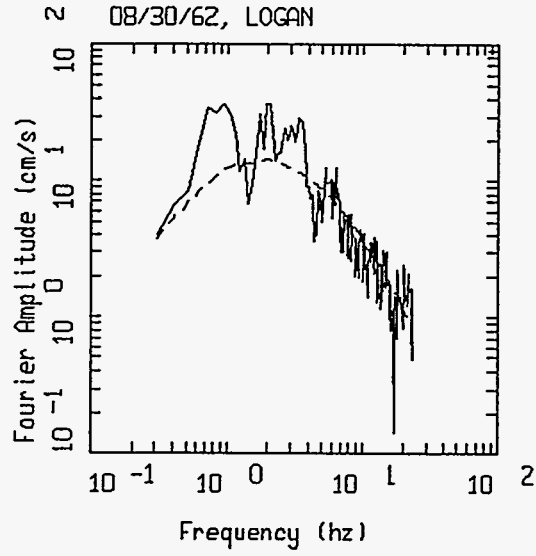


LEGEND

———— Data - - - - - Model

Project No. SK9455	INEL-Probabilistic Analyses	RESULTS OF SPECTRAL INVERSION OF 1935 HELENA, MT EARTHQUAKES	Figure C-1
Woodward-Clyde Federal Services			

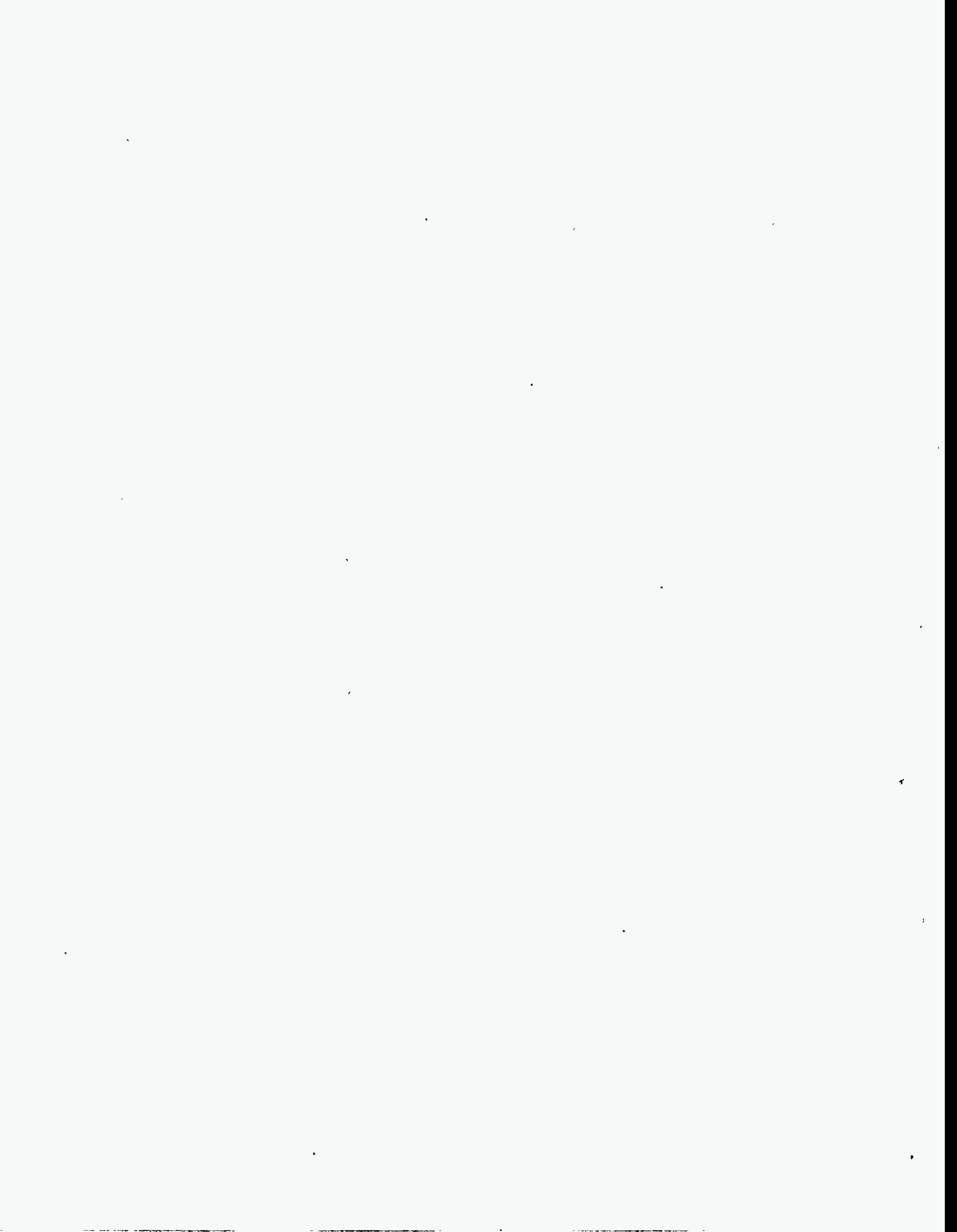


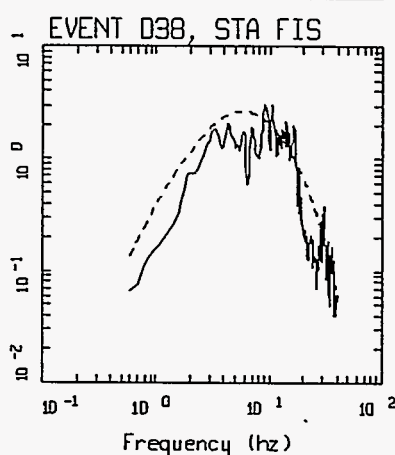
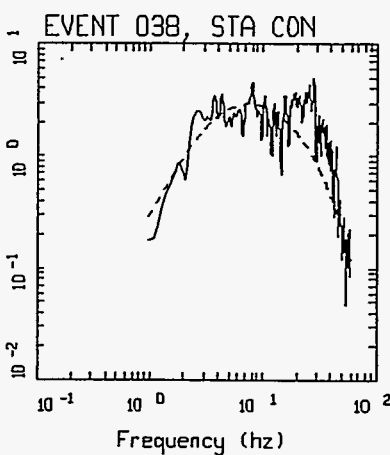
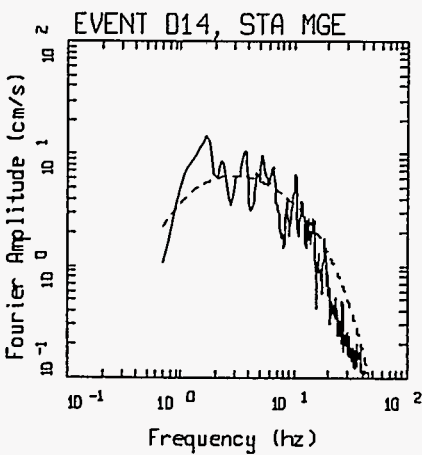
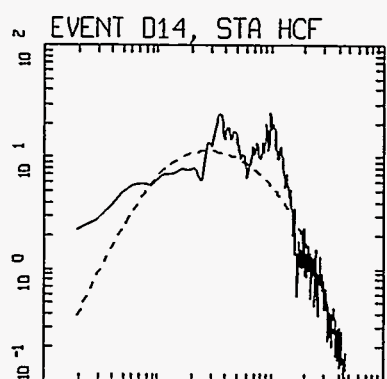
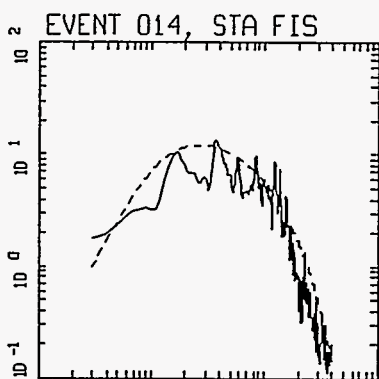
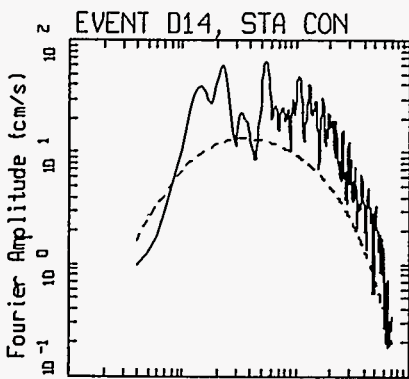
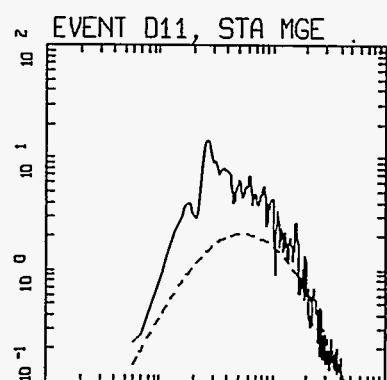
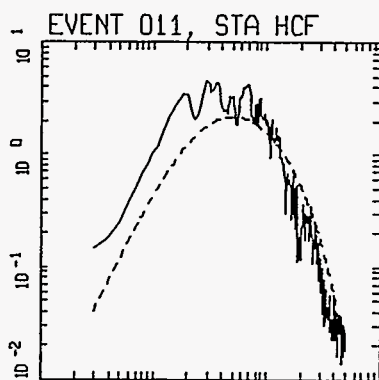
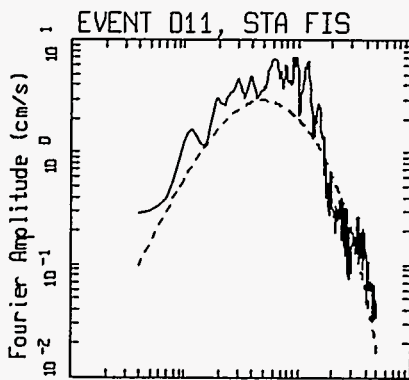
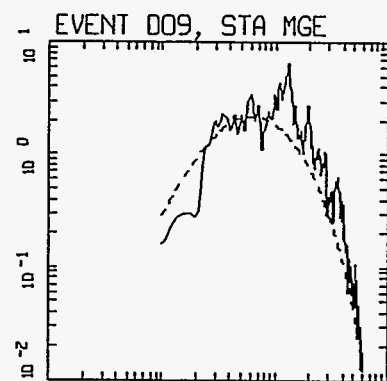
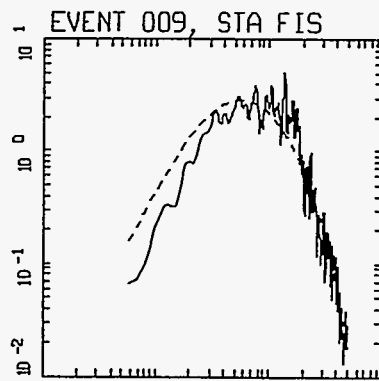
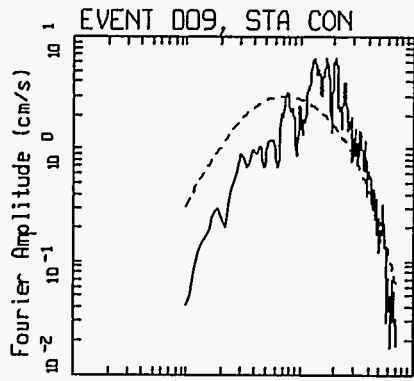


LEGEND

———— Data - - - - - Model

Project No. SK9455	INEL-Probabilistic Analyses	RESULTS OF SPECTRAL INVERSION OF 1962 CACHE VALLEY, UT EARTHQUAKES	Figure C-2
Woodward-Clyde Federal Services			





LEGEND

— Data

- - - Model

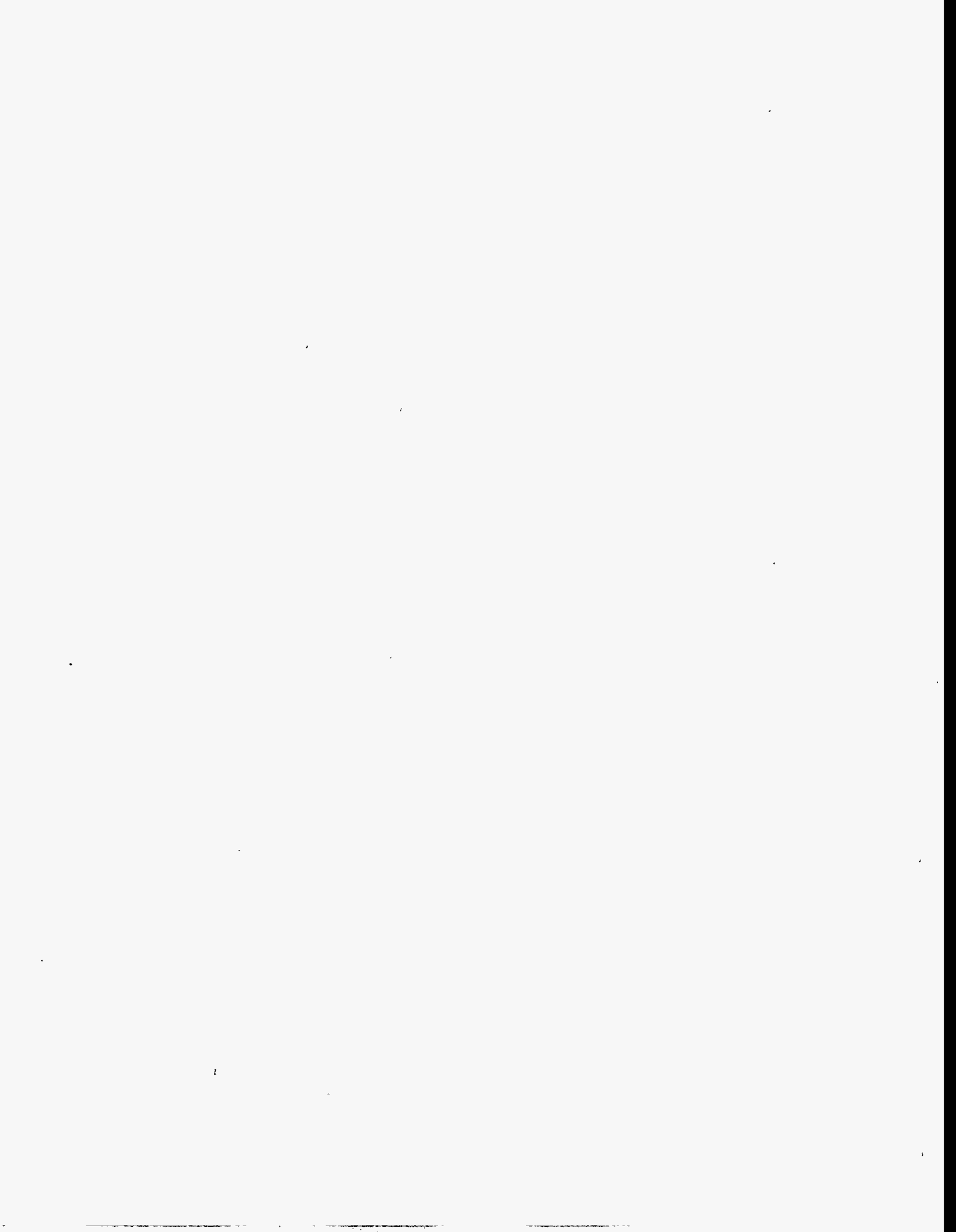
Project No.
SK9455

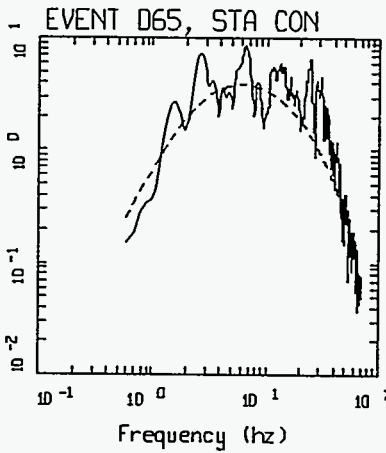
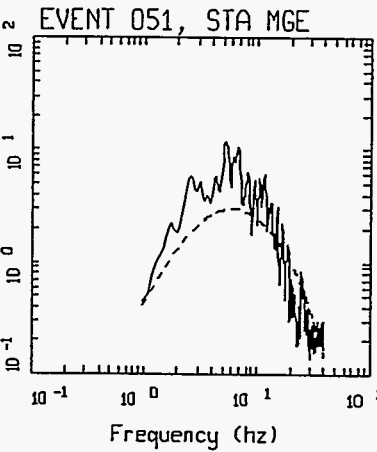
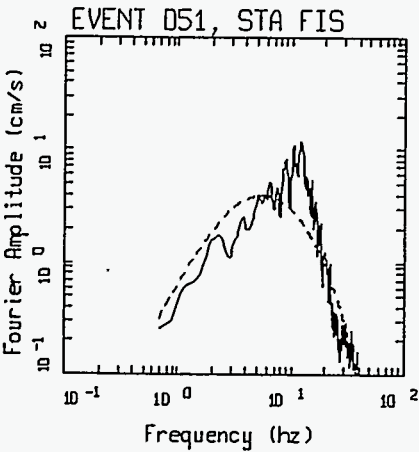
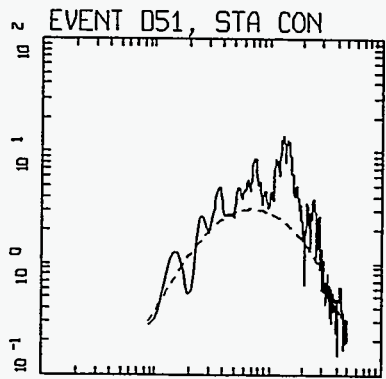
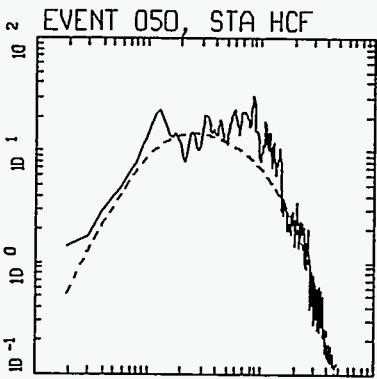
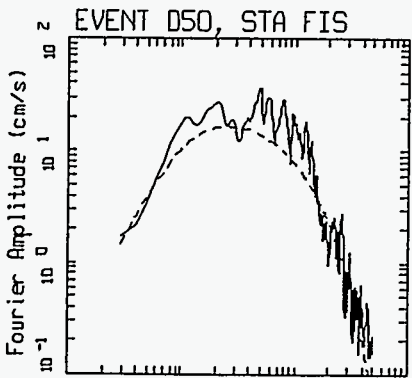
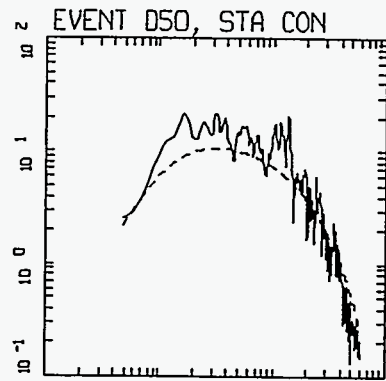
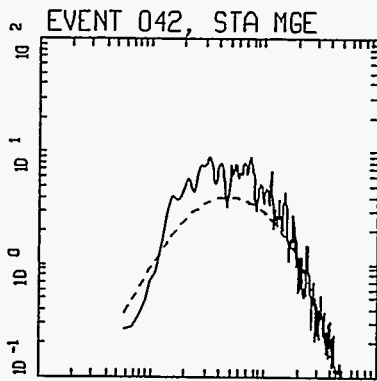
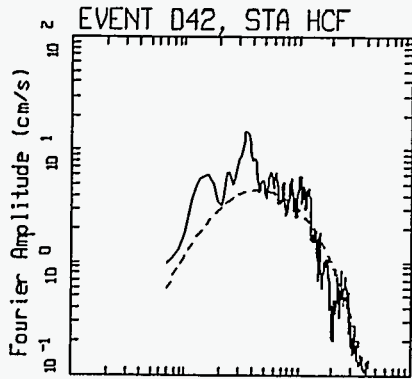
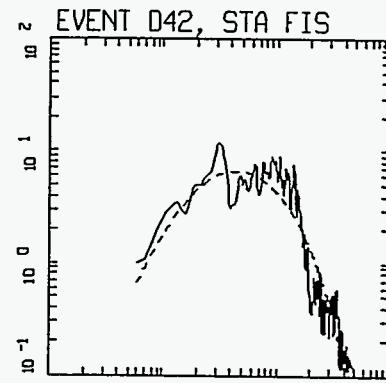
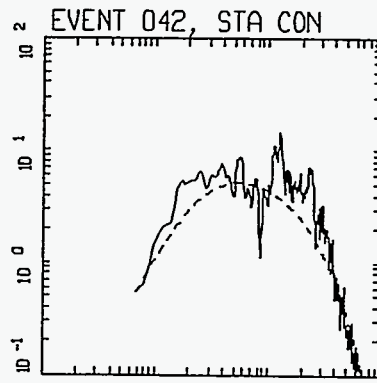
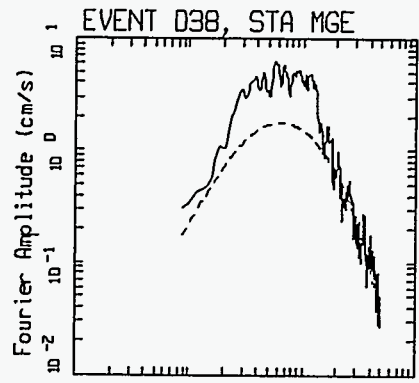
INEL-Probabilistic Analyses

RESULTS OF SPECTRAL INVERSION OF
1980 MAMMOTH LAKE, CA EARTHQUAKES

Figure
C-3(a)

Woodward-Clyde Federal Services





LEGEND

————— Decimated Input Data

----- Final Model Calculations

Project No.
SK9455

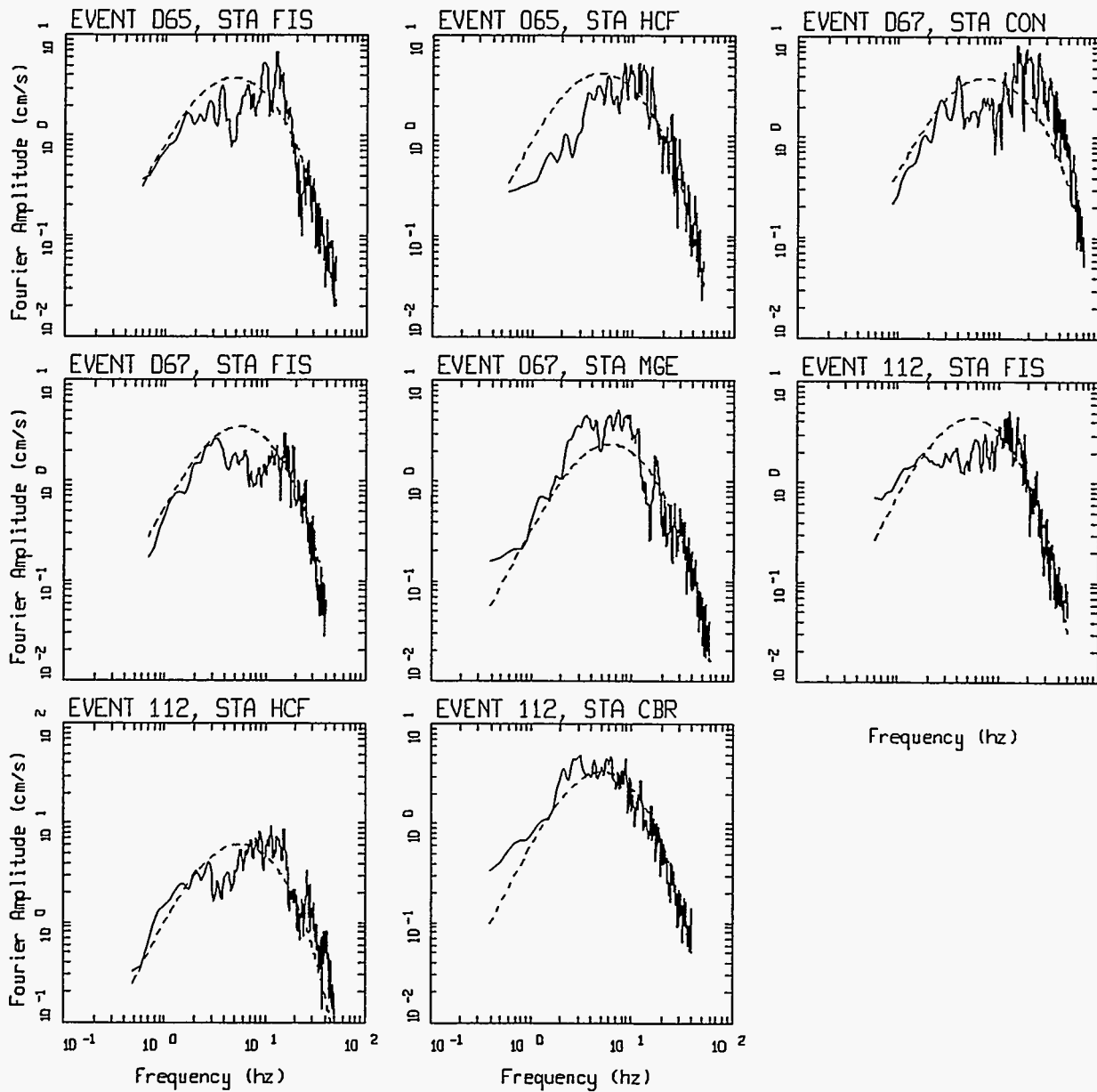
INEL-Probabilistic Analyses

RESULTS OF SPECTRAL INVERSION OF
1980 MAMMOTH LAKE, CA EARTHQUAKES

Figure
C-3(b)

Woodward-Clyde Federal Services





LEGEND

————— Decimated Input Data

----- Final Model Calculations

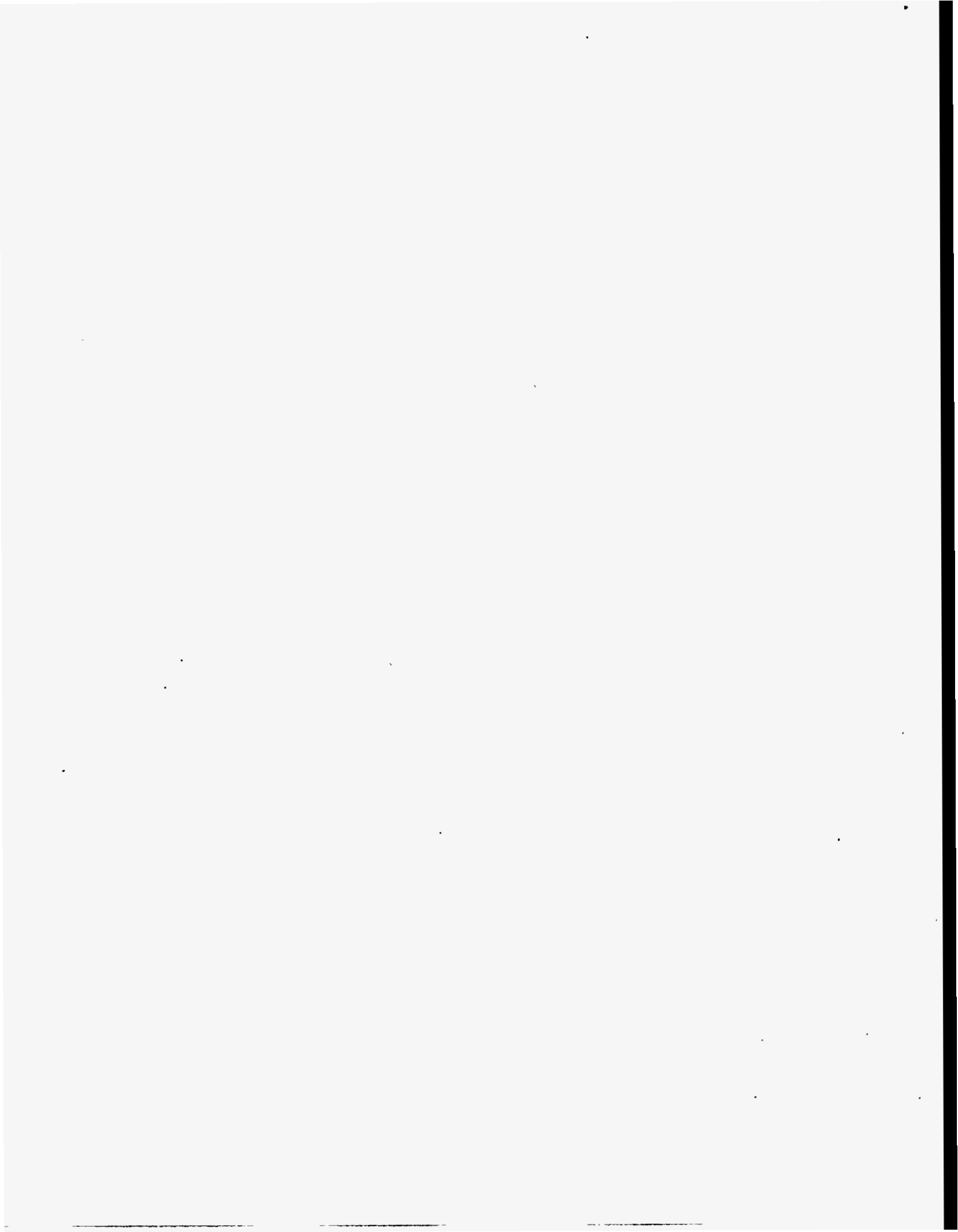
Project No.
SK9455

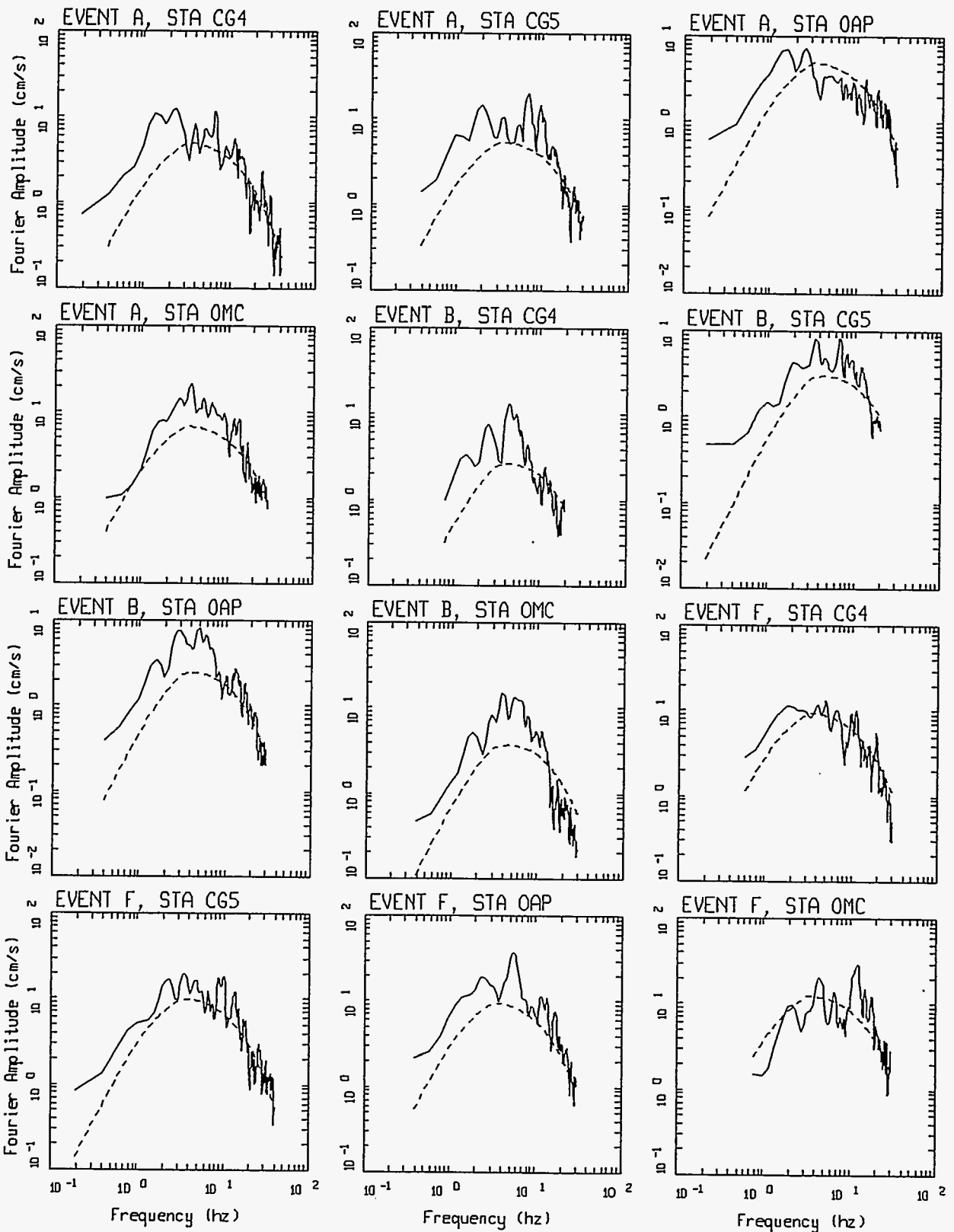
INEL-Probabilistic Analyses

Woodward-Clyde Federal Services

**RESULTS OF SPECTRAL INVERSION OF
1980 MAMMOTH LAKE, CA EARTHQUAKES**

**Figure
C-3(c)**

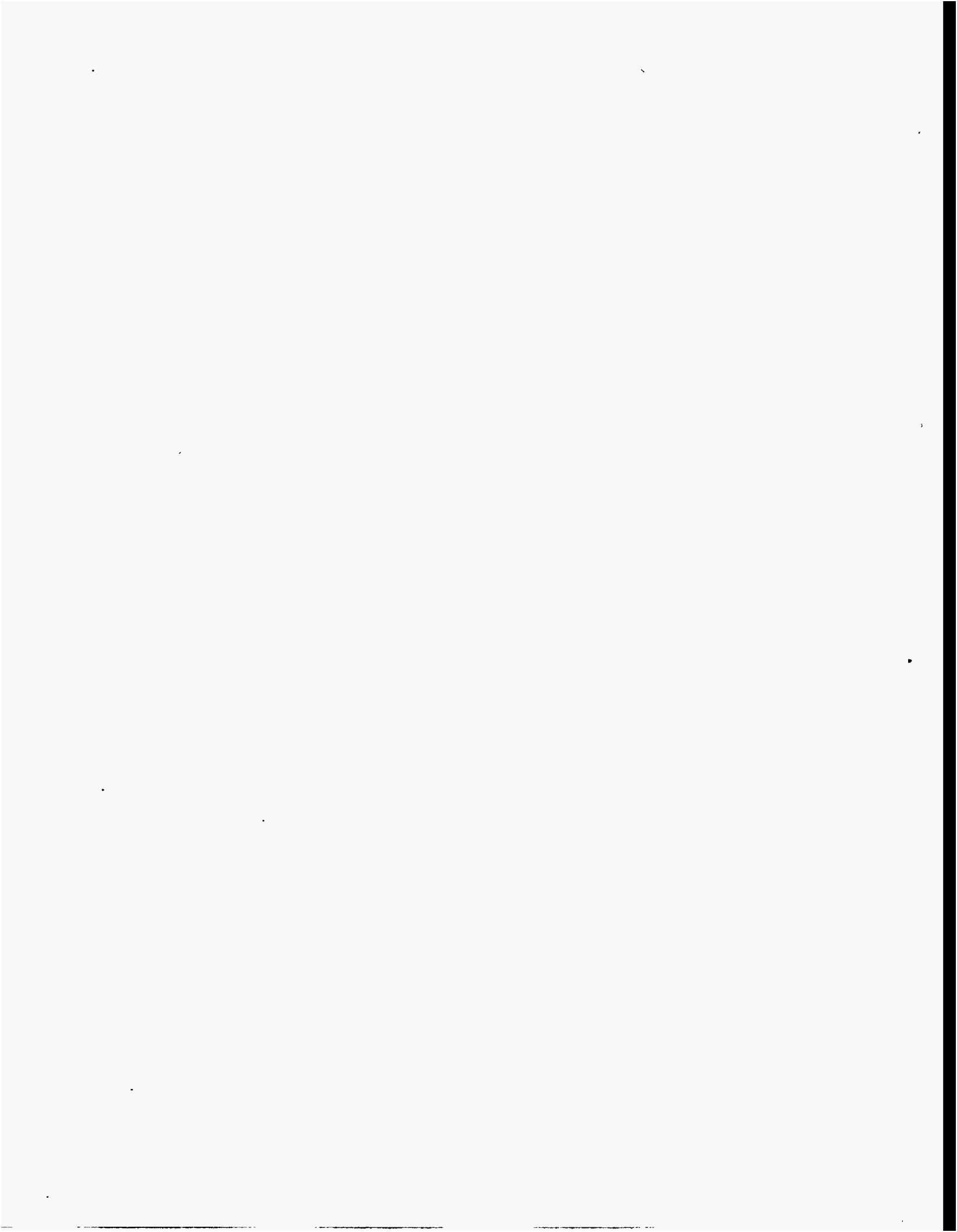


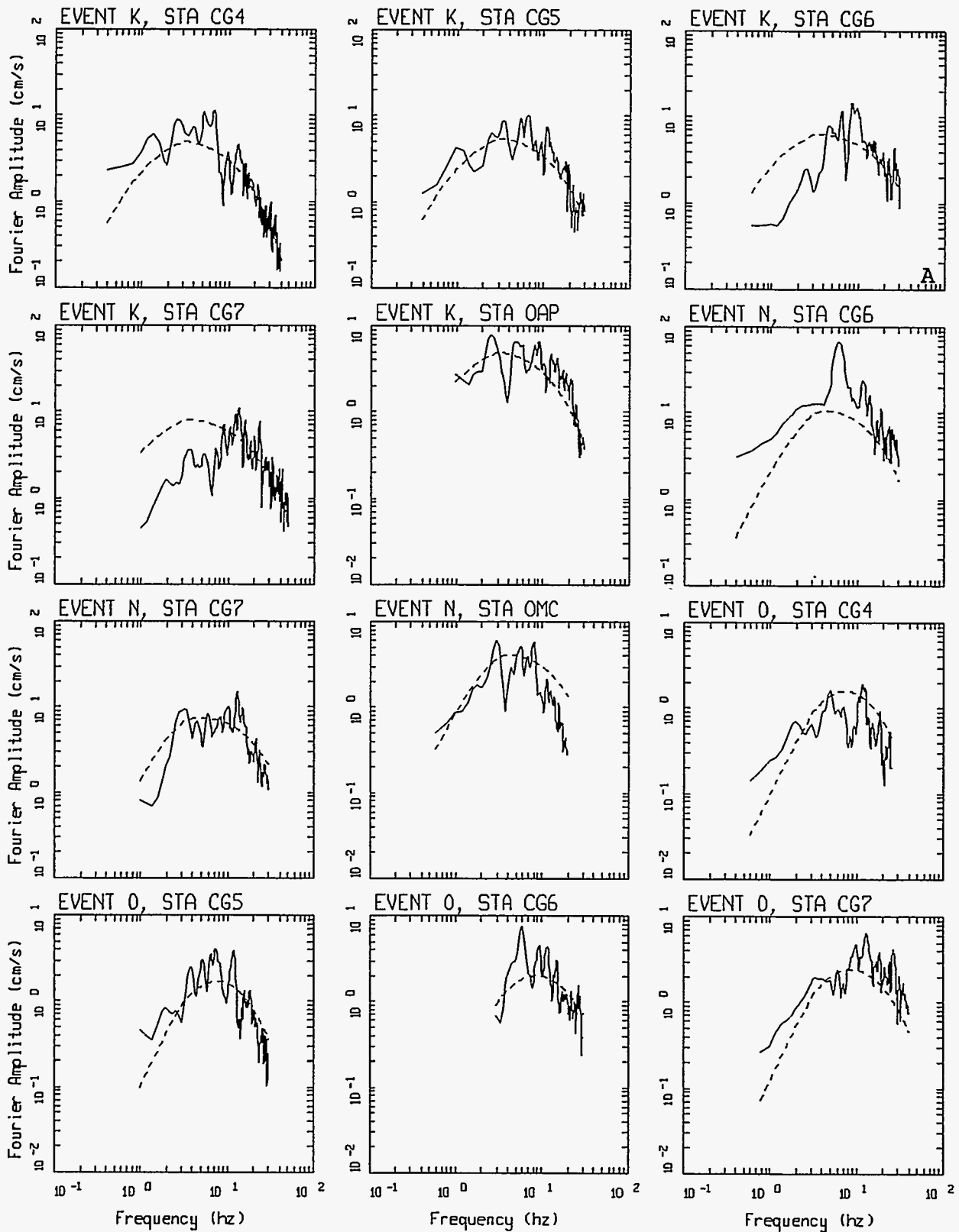


LEGEND

———— Data - - - - - Model

Project No. SK9455	INEL-Probabilistic Analyses	RESULTS OF SPECTRAL INVERSION OF 1975 OROVILLE, CA AFTERSHOCKS	Figure C-4(a)
Woodward-Clyde Federal Services			

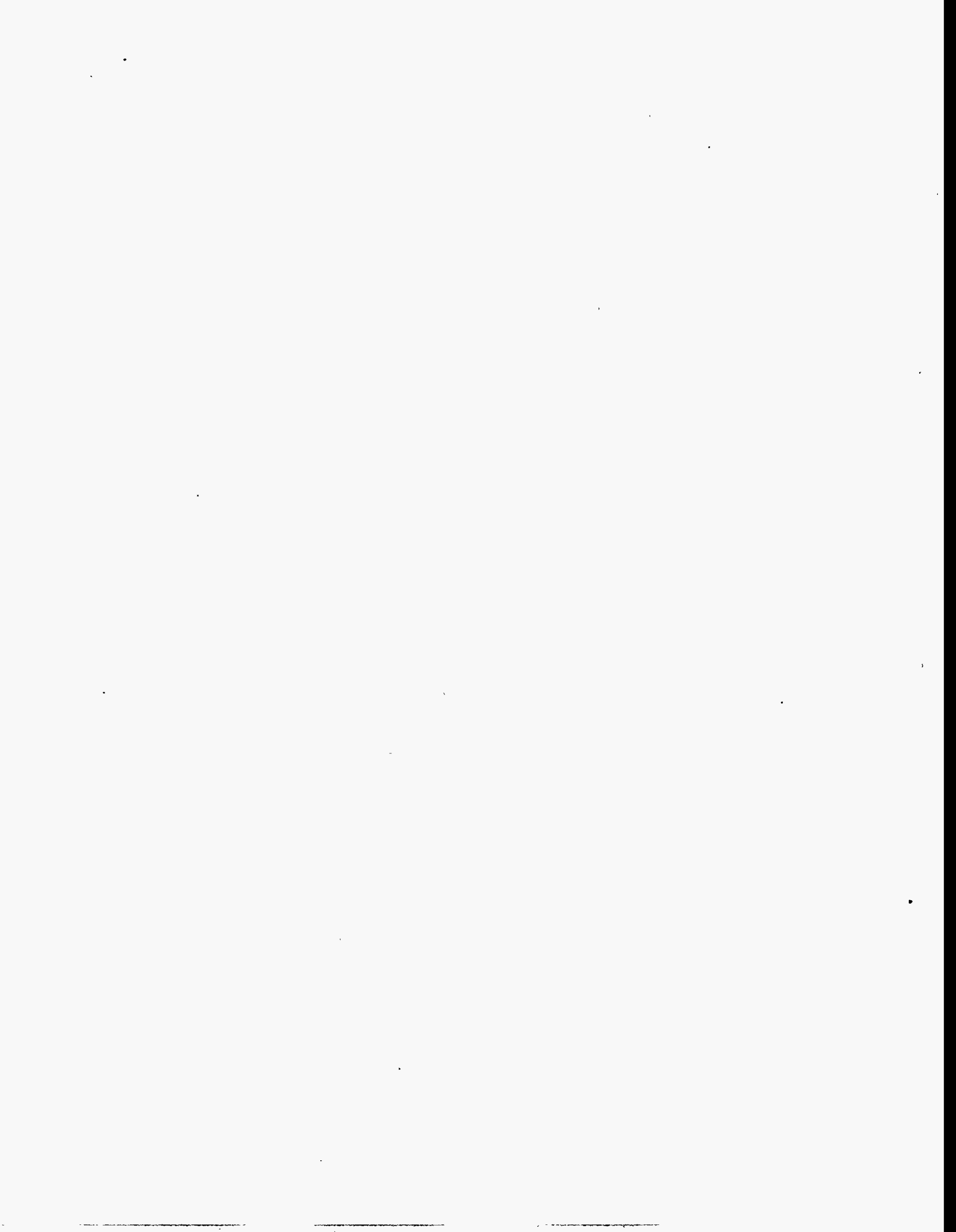


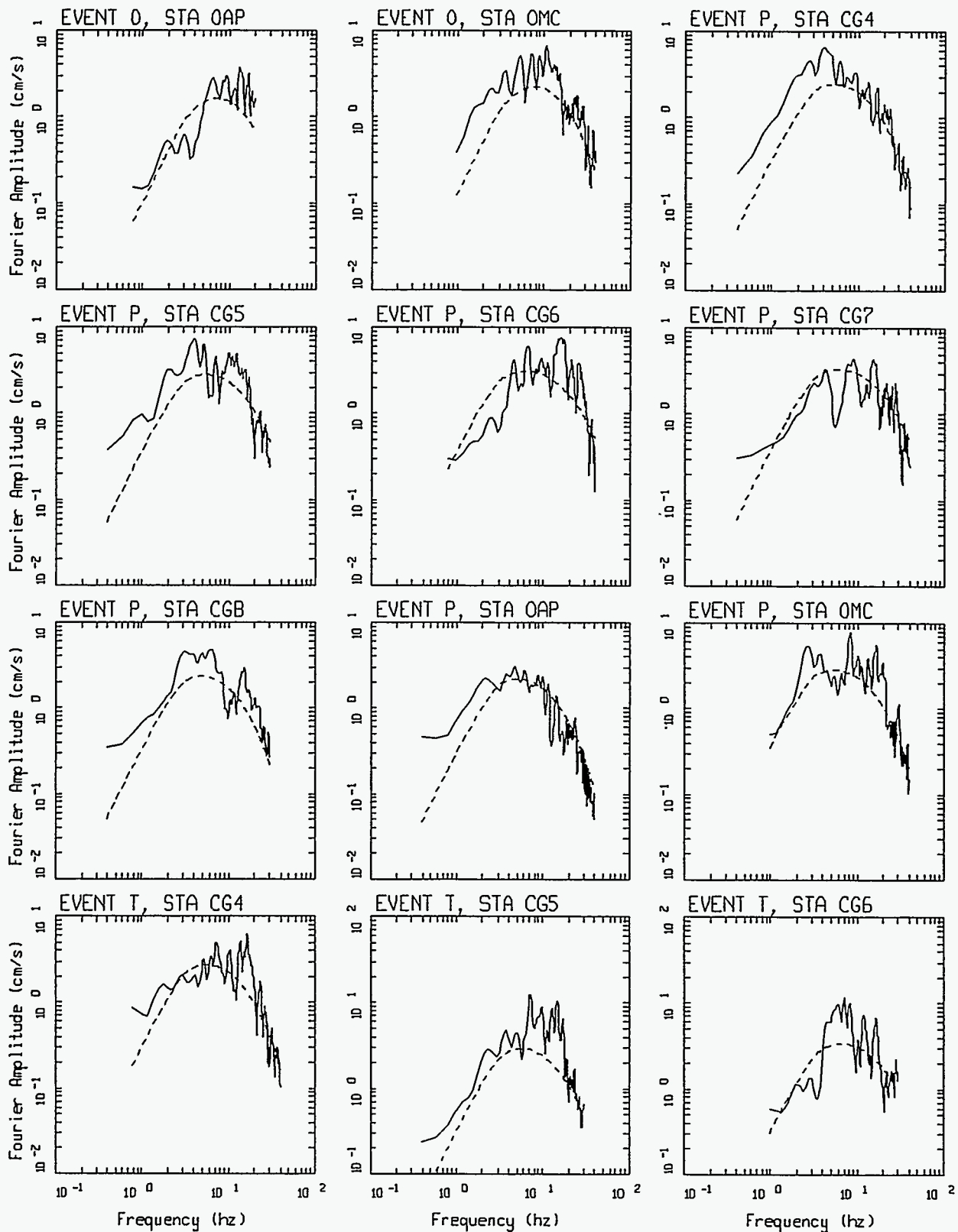


LEGEND

———— Data - - - - - Model

Project No. SK9455	INEL-Probabilistic Analyses	RESULTS OF SPECTRAL INVERSION OF 1975 OROVILLE, CA AFTERSHOCKS	Figure C-4(b)
Woodward-Clyde Federal Services			

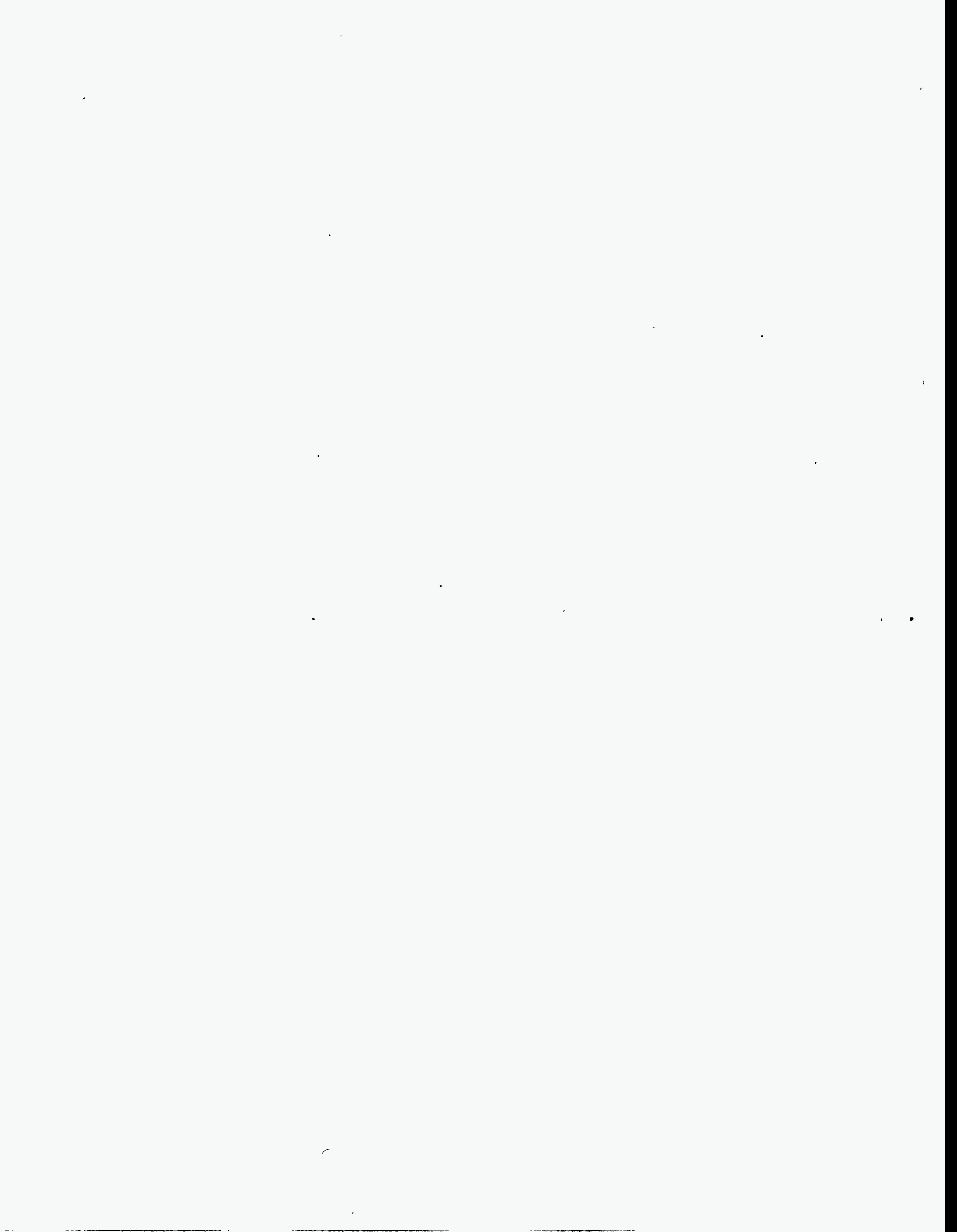


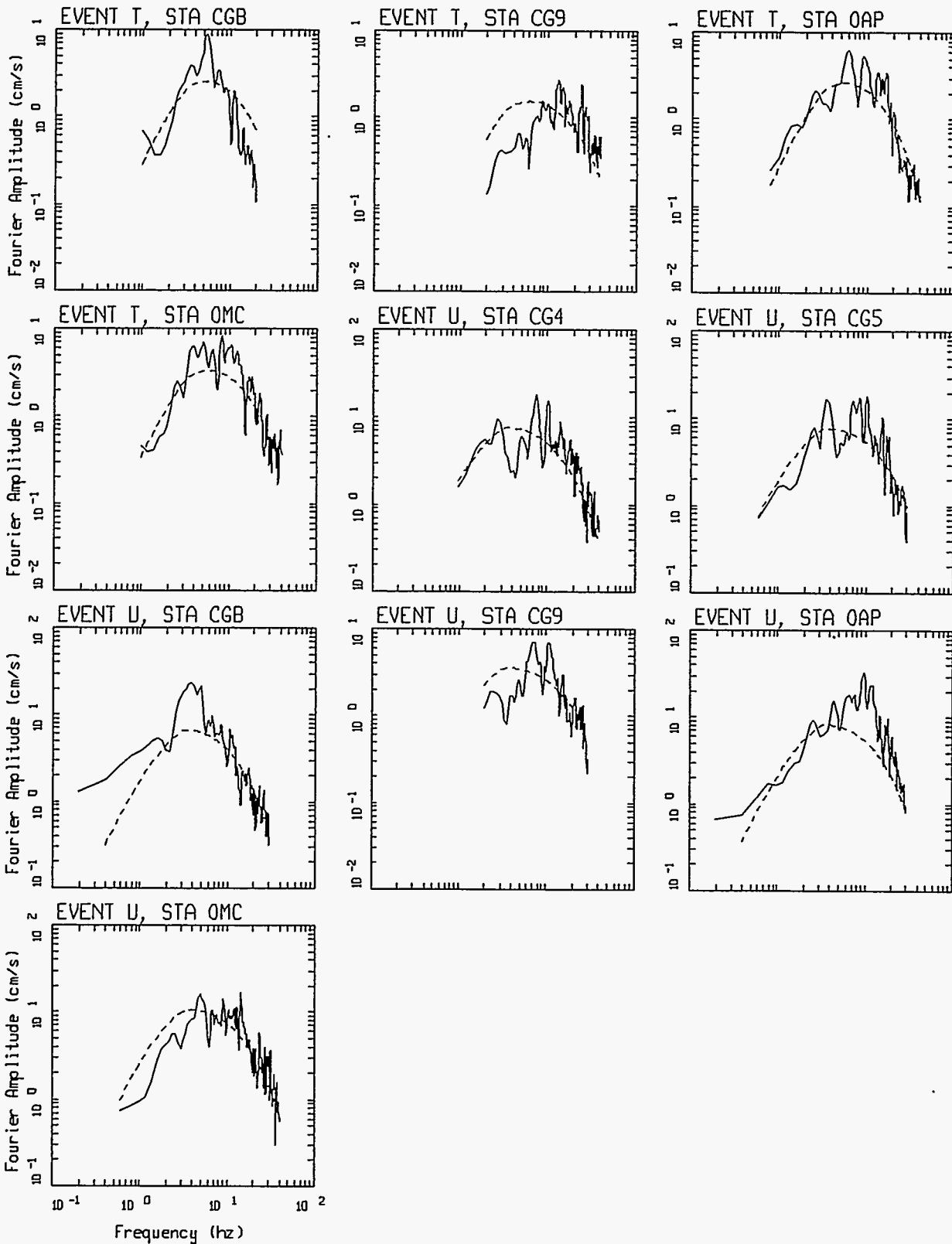


LEGEND

———— Data - - - - - Model

Project No. SK9455	INEL-Probabilistic Analyses	RESULTS OF SPECTRAL INVERSION OF 1975 OROVILLE, CA AFTERSHOCKS	Figure C-4(c)
Woodward-Clyde Federal Services			

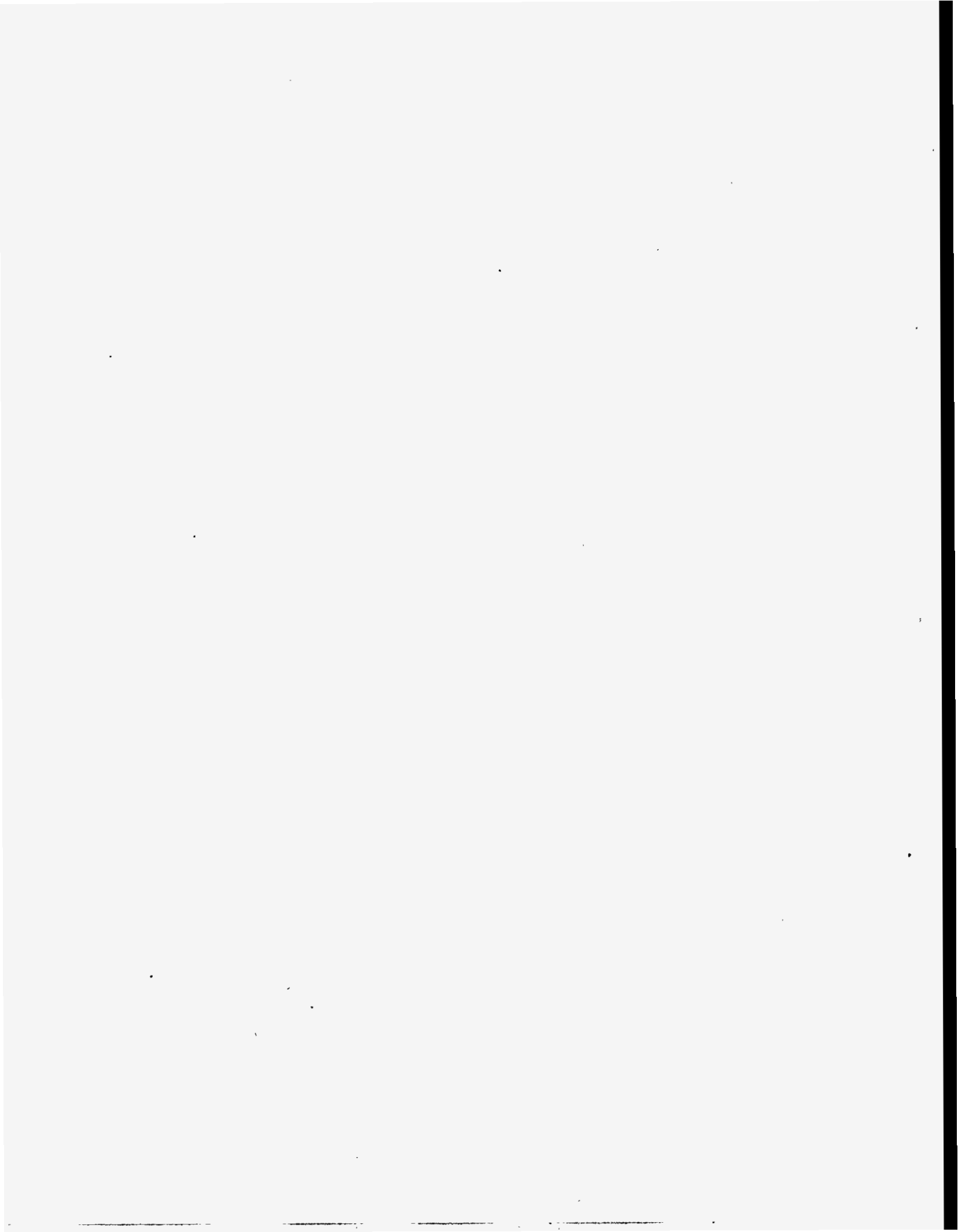




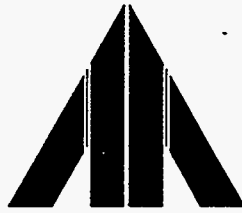
LEGEND

———— Data - - - - - Model

Project No. SK9455	INEL-Probabilistic Analyses	RESULTS OF SPECTRAL INVERSION OF 1975 OROVILLE, CA AFTERSHOCKS	Figure C-4(d)
Woodward-Clyde Federal Services			



APPENDIX D
BOREHOLE VELOCITY AND DAMPING MEASUREMENTS
AT ANL WEST D BOREHOLE ANL-1



AGBABIAN ASSOCIATES
engineers and consultants

**BOREHOLE VELOCITY AND DAMPING
MEASUREMENTS**

AT

**ARGONNE NATIONAL LABORATORY WEST
BOREHOLE ANL-1**

February 17, 1995

BOREHOLE VELOCITY AND DAMPING MEASUREMENTS

AT

ARGONNE NATIONAL LABORATORY WEST, BOREHOLE ANL-1

Prepared for

**Argonne National Laboratory - West
Contract 31-109-38-9410-W**

Prepared by

**Agbabian Associates, Inc.
1111 South Arroyo Parkway, Suite 405
Pasadena, California 91105
(818) 441-1060
Project 9455**

**February 17, 1995
Report 9455-6554**

TABLE OF CONTENTS

INTRODUCTION.....	1
SCOPE OF WORK.....	2
INSTRUMENTATION	
Suspension Instrumentation.....	3
Downhole Velocity Instrumentation.....	4
Damping Instrumentation.....	6
MEASUREMENT PROCEDURES	
Suspension Measurement Procedure.....	7
Downhole Velocity Measurement Procedure.....	8
Damping Measurement Procedure.....	9
ANALYSIS	
Suspension Data Analysis.....	10
Downhole Velocity Data Analysis.....	12
Damping Data Analysis.....	12
RESULTS	
Suspension Results.....	15
Downhole Velocity Results.....	15
Damping Results.....	16

SUMMARY

Discussion of Results.....	17
Quality Assurance.....	17
Data Reliability.....	18

FIGURES

Figure 1. Concept illustration of P-S logging system.....	19
Figure 2. Filtered (400 Hz lowpass) 32.8 ft record from ANL-1.....	20
Figure 3. Unfiltered 32.8 ft record from ANL-1.....	21
Figure 4. Suspension P- and S_H -wave velocities 0 - 604 feet.....	22
Figure 5. Suspension S_H -wave velocities 0 - 604 feet.....	23
Figure 6. Suspension P- and S_H -wave velocities 643 - 820 feet.....	24
Figure 7. Suspension S_H -wave velocities 643 - 820 feet.....	25
Figure 8. Suspension P- and S_H -wave velocities 886 - 1142 feet.....	26
Figure 9. Suspension S_H -wave velocities 886 - 1142 feet.....	27
Figure 10. Suspension P- and S_H -wave velocities 1742 - 1762 feet.....	28
Figure 11. Suspension S_H -wave velocities 1742 - 1762 feet.....	29
Figure 12. Downhole and Suspension S_H -wave velocities 0- 195 feet.....	30
Figure 13. Downhole corrected S_H -wave travel times.....	31
Figure 14. Downhole S_H -wave travel times and best fit velocity layers.....	32
Figure 15. Damping waveforms.....	33
Figure 16. Spectral Slope and Damping.....	34

TABLES

Table 1. Suspension depth and velocity data 0-604 feet.....	32
Table 2. Suspension depth and velocity data 643-820 feet.....	33
Table 3. Suspension depth and velocity data 886-1142 feet.....	34
Table 4. Suspension depth and velocity data 1742-1762 feet.....	35
Table 5. Downhole depth and velocity data 0-195 feet.....	36

APPENDICES

APPENDIX A: Suspension velocity measurement quality assurance suspension source to receiver analysis results	
APPENDIX B: Suspension S_H -wave R1/R2 waveform records with S-R1/S-R2 first arrival picks	
APPENDIX C: Suspension P-wave R1/R2 waveform records with S-R1/S-R2 first arrival picks	
APPENDIX D: Downhole S_H -wave waveform records with uncorrected first arrival picks	
APPENDIX E: Downhole P-wave waveform records with uncorrected first arrival picks	
APPENDIX F: OYO Model 170 suspension velocity logging system NIST traceable calibration procedure	

INTRODUCTION

In-situ velocity and damping measurements were performed in corehole ANL - 1 at the Argonne National Laboratory - West facility at the Idaho National Engineering Laboratory, located near Idaho Falls, Idaho. Suspension P- and S_H -velocity measurements were collected to a maximum depth of 1762 ft. Downhole P- and S_H -velocity measurements and in-situ damping measurements were performed to a depth of 195 ft. Data acquisition was performed during two visits, the first between August 11 and 15 1994, and the second between January 23 and January 28, 1995. The work was conducted by Rob Steller, John Diehl, Bob Nigbor, and Justin Warner of Agbabian Associates for Argonne National Laboratory - West, with Mssr. Chris Martin and Brent Harris acting as technical liaisons for ANL - W. The work was performed under Argonne Contract 31-109-38-9410-W.

This report describes the field measurements, data analysis, and results of this work.

SCOPE OF WORK

This report presents the results of corehole velocity and damping measurements performed during two visits to the Idaho National Engineering Laboratory. During the first visit, on August 11 -15, 1994, suspension velocity measurements were performed to a depth of 604 ft in the 4 inch PVC cased corehole designated ANL-1. During the same visit, downhole velocity and in-situ damping measurements were performed to a depth of 195 ft (the maximum depth which surface-generated energy could be measured). On January 23 through January 28, 1995, suspension velocity measurements were performed in corehole ANL-1 at the following depth ranges; 643 - 820 ft, 886 - 1142 ft, and 1742 - 1762 ft. The regions not logged were excluded due to the presence of steel drill rod or significant rubble zones identified by corehole video logs. The purpose of these tests was to acquire shear wave velocities, compressional wave velocities, and damping as a function of depth which, in turn, will be used to characterize ground response to earthquake motion.

The OYO Model 170 Suspension Logging Recorder and Suspension Logging Probe were used to obtain in-situ horizontal shear and compressional wave velocity measurements at 3.28 ft intervals. The OYO Model 170 Suspension Logging Recorder and Agbabian Associates' proprietary variable azimuth borehole geophone were used to obtain in-situ horizontal shear wave velocity, compressional wave velocity, and in-situ damping measurements to a depth of 195 ft. The acquired data was analyzed and a profile of velocity versus depth was produced for both compressional and horizontally polarized shear waves.

A detailed reference for the velocity and damping measurement techniques used in this study is:

Guidelines for Determining Design Basis Ground Motions, Report TR-102293,
Electric Power Research Institute, Palo Alto, California, November 1993,
Sections 7 and 8.

INSTRUMENTATION

Suspension Instrumentation

Suspension soil velocity measurements were performed using the Model 170 Suspension Logging system, manufactured by OYO Corporation. This system directly determines the average velocity of a 3.28 ft (1 meter) high segment of the soil column surrounding the corehole of interest by measuring the elapsed time between arrivals of a wave propagating upward through the soil column. The geophones that detect the wave, and the source that generates the wave, are moved as a unit in the corehole producing relatively constant amplitude signals at all depths.

The suspension system probe consists of a combined reversible polarity solenoid horizontal shear-wave generator (S_H) and compressional-wave generator (P), joined to two biaxial geophones by a flexible isolation cylinder, as shown in Figure 1. The separation of the two geophones is 3.28 ft, allowing average wave velocity in the region between the geophones to be determined by inversion of the wave travel time between the two geophones. The total length of the probe as used in this survey is approximately 19 ft; the center point of the geophones is approximately 13 ft above the bottom end of the probe. The probe receives control signals from, and sends the amplified geophone signals to, instrumentation on the surface via an armored 7 conductor cable. The cable is wound onto the drum of a winch and is used to support the probe. Cable travel is measured to provide probe depth data.

The entire probe is suspended by the cable and centered in the corehole by nylon "whiskers", therefore, source motion is not coupled directly to the corehole walls; rather, the source motion creates a horizontally propagating impulsive pressure wave in the fluid filling the corehole and surrounding the source. This pressure wave is converted to P and S_H -waves in the surrounding soil and rock as it impinges upon the corehole wall. These waves propagate through the soil and rock surrounding the corehole, in turn causing a pressure wave to be generated in the fluid surrounding the geophones as the soil waves pass their location.

In operation, a distinct, repeatable pattern of impulses is generated at each depth as follows:

1. The source is fired in one direction producing dominantly horizontal shear with some vertical compression, and the signals from the horizontal geophones situated parallel to the axis of motion of the source are recorded.
2. The source is fired again in the opposite direction and the horizontal geophone signals are recorded.
3. The source is fired again and the vertical geophone signals are recorded. The repeated source pattern facilitates the picking of the P and S_H-wave arrivals; reversal of the source changes the polarity of the S_H-wave pattern but not the P-wave pattern.

The data from each geophone during each source activation is recorded as a different channel on the recording system. The Model 170 has six channels (two simultaneous recording channels), each with a 12 bit 1024 sample record. The recorded data is displayed on a CRT display and on paper tape output as six channels with a common time scale. Data is stored on 3.5 inch floppy diskettes for further processing. Up to 8 sampling sequences can be summed to improve the signal to noise ratio of the signals.

Review of the displayed data on the CRT or paper tape allows the operator to set the gains, filters, delay time, pulse length (energy), sample rate, and summing number in order to optimize the quality of the data before recording. Calibration of the Model 170 digital recorder is performed every six months, using a NTIS traceable frequency source and counter, as outlined in Appendix F.

Downhole Velocity Instrumentation

Downhole soil velocities were measured using a proprietary variable azimuth downhole geophone and the OYO Model 170 Digital Logging recorder. This system orients the downhole geophones parallel to the axis of excitation at the surface, insuring that signals received at the downhole geophones are of maximum amplitude, and are not subject to errors in travel time caused by incorrect phase of first arrival picks, as found with non-orientable downhole probes.

The downhole probe consists of a horizontal and vertical geophone mounted on a rotatable structure with a fluxgate magnetometer compass sensor. The compass/geophone assembly is mounted with preamplifiers and compass drive circuitry inside a 2.5 inch diameter case approximately 30 inches in length. The compass/geophone assembly can be rotated from the surface control module to match the azimuth of the horizontal geophone axis with the azimuth of the surface shear wave source. The probe receives control signals from, and sends the amplified geophone signals to, instrumentation on the surface via an armored 7 conductor cable. The cable is wound onto the drum of a winch and is used to support the probe. Cable travel is measured to provide probe depth data. The probe is locked into the corehole by inflation of an external rubber bladder that runs the length of the probe.

20 pound sledge hammer blows against the ends of a steel capped traction plank are used as an S_H -wave energy source. The traction plank is weighted by placing under the wheels of a 10,000 pound truck. 16 pound sledge hammer blows against a steel plate on the soil surface are used as a P-wave energy source. System triggering is performed by a piezoelectric hammer switch mounted on each hammer handle. A vertical and horizontal geophone are mounted near the corehole collar to record reference wave forms to verify consistent triggering from each hammer blow.

In operation, the S_H -wave produced by swinging the hammer in one direction produces an output at both the surface and downhole horizontal geophones which is digitized and recorded. The hammer is then swung in the opposite direction, and the horizontal output signals are again recorded, producing a shear-wave record of polarity opposite to the previous record. A vertical hammer blow is executed, and the responses of the vertical geophones to the resultant P-wave are recorded.

The signal from each geophone generated by each hammer blow is recorded as a different channel on the recording system. The Model 170 recorder has six channels (two simultaneous recording channels), each with a 12 bit 1024 sample record. The recorded data is displayed on a CRT display and on paper tape output as six channels with a common time scale. Data and all system parameters are stored on 3.5 inch floppy diskettes for further processing. Up to 8 hammer blows can be summed to improve the signal to noise ratio of the signals.

Review of the displayed data on the CRT or paper tape allows the operator to set the gains, filters, sample rate, and summing number in order to optimize the quality of the data before recording to floppy diskette. Calibration of the Model 170 digital recorder is performed every six months, using a NTIS traceable frequency source and counter, as outlined in Appendix F.

Damping Instrumentation

Measurements of in-situ S_H -wave attenuation (damping) were made using a procedure similar to that for downhole velocity measurements described in the previous section. Downhole horizontal velocity waveforms were measured using two proprietary variable azimuth downhole geophone probes (described in the previous section), one at a reference depth of 53' and the other at various depths below the reference. Data were recorded on a Kinometrics Model SSR-1 data logger. The data logger was configured to record 2 channels (reference and moveable geophones), each recording at 500 samples per second with 16-bit resolution.

20 pound sledge hammer blows against the ends of a steel capped traction plank are used as an S_H -wave energy source. The traction plank is weighted by placing under the wheels of a 10,000 pound truck. System triggering is performed by a piezoelectric hammer switch mounted on each hammer handle.

In operation, the S_H -wave pulse produced by swinging the hammer in one direction produces a velocity waveform at both the fixed (53') reference and moveable downhole horizontal geophones which is digitized and recorded. The hammer is then swung in the opposite direction, and the horizontal output signals are again recorded, producing a shear-wave record of polarity opposite to the previous record. This is repeated four times for each depth of the moveable geophone probe. Each hammer blow is recorded as a separate 8-second data file in the data logger, and later transferred to diskette for further processing.

MEASUREMENT PROCEDURES

Suspension Measurement Procedure

The Corehole was first logged as a 620 ft deep, 4 inch diameter screw joint PVC cased corehole filled with clean water. The casing was grouted with a neat cement grout, emplaced in several lifts. Grout was not placed with a tremie tube, leaving some question as to the completeness of the grout seal. Although the bottom of the casing had been capped, the borehole did not hold water without the addition of a large bentonite plug. With the plug in place, the water level was maintained at grade level by the addition of a continuous trickle of water. Further drilling through the bentonite plug and casing cap indicated that little or no grout had filled the void beneath the end of the casing.

The suspension probe was positioned with the mid-point of the receiver spacing at grade level, and mechanical and electronic depth counters were set to zero. The probe was lowered to the bottom of the corehole, stopping at 3.28 ft intervals to collect data. During this logging run, the deepest measurement was taken with the probe depth reference point located at 604 ft, placing the tip of the probe at the bottom of the PVC casing at approximately 620 ft.

For the subsequent logging runs, the suspension probe was lowered through the bore of the "H" drill rod which had been used to drill the corehole below the PVC casing to a depth of 1742 ft. Below 1742 ft, the corehole was nominal 3 inch diameter bare rock, as drilled with "NX" rod through the center of the "H" rod, which was used as temporary casing to protect against collapse of the rubble zones. Following completion of measurements below 1742 ft, the "H" rod was severed at approximately 1250 ft and withdrawn to a depth of 886 ft. Following completion of measurements below 886 ft, the remaining "H" rod was removed.

For these logging runs, the suspension probe was again positioned with the mid-point of the receiver spacing at grade level, and mechanical and electronic depth counters were set to zero. The probe was lowered to the maximum depth to be measured, and then raised to the bottom of the remaining "H" drill rod, stopping at 3.28 ft intervals to collect data. After removal of all the "H" drill rod, measurements were stopped when the probe reached static water table at 643 ft.

At each measurement depth the measurement sequence of two opposite horizontal records and one vertical record was performed, and the gains were adjusted as required. The data from each depth was printed on paper tape, checked, and recorded on diskette before moving to the next depth.

Upon completion of each measurement run, the probe zero depth indication was verified prior to removal from the corehole.

Downhole Velocity Measurement Procedure

Prior to performing downhole measurements in ANL-1 the water level was allowed to drop below the region in which measurements were to be collected. The downhole probe compass azimuth was checked at the surface, and compared to the azimuth of the traction plank S_H -wave source (N17E). The mechanical and electronic depth encoders were set to zero with the geophones located at ground level. The probe was then lowered to a depth of 195 ft at the desired intervals. At each desired depth, the probe was locked in place by inflating the rubber bladder to 20 PSI.

The compass/geophone assembly was then rotated to match the azimuth of the surface S_H -source. At each sampling depth the measurement sequence of two opposite horizontal records and one vertical record was performed, and the gains adjusted as required. The waveform data from each depth was printed on paper tape, checked, and recorded on diskette before moving to the next depth. Upon removal of the probe from the corehole, depth indications were re-checked with the geophones located at ground level.

Damping Measurement Procedure

Damping measurements were made after completion of the downhole velocity measurements described in the previous section. The moveable geophone probe was lowered below 53 feet depth. The reference geophone probe was then lowered to a depth of 53 feet, locked in place, and oriented parallel to the surface source (N17E). The reference depth of 53' was selected because it is at the top of a significant geological layer and is sufficiently far away from the surface hammer source to not be in the near-field portion of the source (about 2 wavelengths at 100 Hz).

The moveable geophone probe was lowered to a depth of 57 feet, locked in place, and oriented parallel to the surface source. Waveform data from both geophone probes were recorded simultaneously for four forward and four reverse hammer blows. This was repeated with the moveable geophone probe at depths of 64, 71, 77, 84, 90, 97, 103, 113, 123, 133, 143, 153, 162, 177, and 195 feet. Recorded waveform data were transferred to diskette for later computer analysis.

DATA ANALYSIS

Suspension Data Analysis

The recorded digital records were analyzed to locate the first minima on the vertical axis records, indicating the arrival of P-wave energy. The difference in travel time between receiver 1 and receiver 2 (R1-R2) arrivals was used to calculate the P-wave velocity for that 3.28 ft interval. When observable, P-wave arrivals on the horizontal axis records were used to verify the velocities determined from the vertical axis data.

The P-wave velocity calculated from the travel time over the 7.02 ft interval from source to receiver 1 (S-R1) was calculated and plotted for quality assurance of the velocity derived from the travel time between receivers. In this analysis, the depth values as recorded were increased by 5.15 ft to correspond to the mid-point of the 7.02 ft S-R1 interval. Travel times were obtained by picking the first break of the P-wave signal at the near receiver and subtracting 3.95 milliseconds, the calculated and experimentally verified delay from source trigger pulse (beginning of record) to source impact. This delay corresponds to the duration of acceleration of the solenoid before impact.

The recorded digital records were studied to establish the presence of clear S_H -wave pulses, as indicated by the presence of opposite polarity pulses on each pair of horizontal records. Ideally, the S_H -wave signals from the 'normal' and 'reverse' source pulses are very nearly inverted images of each other. Digital FFT - IFFT lowpass filtering was used to remove the higher frequency P-wave signal from the S_H -wave signal. Different filter cutoffs were used to separate P- and S_H -waves at different depths, ranging from 800 Hz in the slowest zones to 4000 Hz in the regions of highest velocity.

Generally, the first maxima was picked for the 'normal' signals and the first minima for the 'reverse' signals, although other points on the waveform were used if the first pulse was distorted. The absolute arrival time of the 'normal' and 'reverse' signals may vary by +/- 0.2 milliseconds, due to differences in the actuation time of the solenoid source caused by constant mechanical bias in the source or by corehole inclination. This variation does not affect the R1-R2 velocity

determinations, as the differential time is measured between arrivals of waves created by the same source actuation. The final velocity value is the average of the values obtained from the 'normal' and 'reverse' source actuations.

As with the P-wave data, S_H -wave velocity calculated from the travel time over the 7.02 ft interval from source to first receiver was calculated and plotted for verification of the velocity derived from the travel time between receivers. In this analysis, the depth values were increased by 5.15 ft to correspond to the mid-point of the 7.02 ft S-R1 interval. Travel times were obtained by picking the first break of the S_H -wave signal at the near receiver and subtracting 3.95 milliseconds, the calculated and experimentally verified delay from the beginning of the record at the source trigger pulse to source impact.

Below 643 ft, the P-wave arrivals at R2 were more clearly defined than at R1, so quality assurance calculations were made using the travel time over the 10.30 ft interval from source to receiver 2 (S-R2). In this analysis, the depth values as recorded were increased by 3.51 ft to correspond to the mid-point of the 10.30 ft S-R2 interval. Travel times were obtained by picking the first break of the P-wave signal at the far receiver and subtracting 3.95 milliseconds, the calculated and experimentally verified delay from source trigger pulse (beginning of record) to source impact. This delay corresponds to the duration of acceleration of the solenoid before impact.

In the 1742 - 1762 ft depth range, the near channels of data were not recorded correctly due to instrument malfunction, permitting only the use of S-R2 analysis for both P- and S_H -wave data.

Figure 2 shows an example of R1 - R2 measurements on the filtered record for a depth of 659.4 ft. In Figure 2, the time difference over the 3.28 ft interval of 0.465 millisecond is equivalent to a S_H -wave velocity of 7056 ft/sec. Whenever possible, time differences were determined from several phase points on the S_H -waveform records to verify the data obtained from the first arrival of the S_H -wave pulse. Figure 3 displays the same record before filtering with a 3000 Hz FFT - IFFT digital lowpass filter.

Downhole Velocity Data Analysis

The digital records were analyzed to locate the first arrival of energy on each downhole geophone record. The horizontal records were studied to verify the presence of clear S_H -wave pulses, as indicated by the presence of opposite polarity pulses on each pair of horizontal records. Ideally, the shear-wave signals from the 'normal' and 'reverse' hammer blows are very nearly inverted images of each other. Digital FFT - IFFT lowpass filtering was used to remove higher frequency cultural noise from the S_H -wave signal.

Trigger timing was checked by comparing the records obtained from the surface geophones; if any shifting of trigger time was seen, these values were used to correct the total downhole travel time. Total travel time was corrected for changes in path length due to 9 ft offset of the sources from the corehole collar.

Total corrected P- and S-wave travel time was then plotted versus depth. A piece wise linear curve fit was then performed on the time travel curves to determine the different velocity zones present in the formation surrounding the corehole. This analysis was performed graphically by an experienced geophysicist. The slope of each segment of the linear curve fit was then calculated to provide the average S_H -wave velocity of that segment of the soil column.

Damping Data Analysis

An important property of soil for earthquake response analysis is its attenuation (denoted Q) or damping (denoted D , $D=1/2Q$). These quantities describe the amount of energy absorbed by dynamic hysteretic or viscous action of the soil. Damping varies with strain level. The only way to measure damping at earthquake strain levels is in the laboratory. However, small-strain attenuation can be measured in-situ. These in-situ values can then be used to anchor laboratory measurement results.

In-situ material damping D for the ANL-1 site was estimated from recorded waveform pairs using the "Spectral Slope Method" described in Guidelines for Determining Design Basis

Ground Motions, Report TR-102293, Electric Power Research Institute, Palo Alto, California, November 1993, Section 8. This is a frequency domain method applicable to waveform pairs recorded at different depths. It relies upon two basic assumptions regarding wave propagation from the surface source:

1. Damping is frequency independent for the normal range of measured data frequencies (10 - 100 Hz).
2. Scattering/spreading effects are removed in the spectral slope calculation process.

The Spectral Slope Method has been used extensively to estimate low-strain material damping at soil sites. However, the ANL-1 corehole site is not soil, but is alternating layers of hard rock and soil/rubble. The two assumptions above may not be valid for this difficult site. The effect of these assumptions on the reliability of the damping estimates is discussed in the SUMMARY section at the end of the report.

Selected horizontal waveform pairs (53' reference and moveable geophone probes) measured as described previously were used for attenuation calculations.

Spectral slope calculations were performed using the commercial MACRAN time series analysis software (from University Software Systems, Los Angeles, California). The measured velocity time histories were imported into MACRAN, scaled to correct units, and time-aligned. The transfer function was calculated between the measurement and reference depth signals. For most analyses, several hammer blows were averaged in this calculation. The coherence between the two waveforms was also calculated. Coherence was used to determine the frequency band for spectral slope analysis. This frequency band was determined somewhat qualitatively. However, in general the selected frequency band had coherences greater than about 0.7. The frequency band selected for this analysis was 20 - 70.

For selected depths, damping(D) was calculated from the transfer function magnitude within the selected frequency band as follows:

1. Take the natural log of the transfer function magnitude.
2. Least-square fit a line to the $\ln(\text{magnitude})$ vs. frequency curve. The slope of this line is the "spectral slope".
3. Estimate the average SH velocity (called V) between the reference and measurement depth from the suspension or downhole velocity data.
4. The distance between the measurement locations is called X .
5. Calculate Q from the formula $Q = -(3.14 * X) / (V * \text{spectral slope})$
6. Calculate D from Q using the formula $D = 1 / (2 * Q)$

RESULTS

Suspension Results

Suspension R1-R2 P- and S_H -wave velocity data from 0 - 604 ft, 643 - 820 ft, and 886 - 1142 ft regions are plotted in Figures 4, 6, and 8 respectively. The S_H -wave velocity data are presented at an expanded scale in Figures 5, 7, and 9 respectively. Suspension S-R2 P- and S_H -wave velocity data from 1742 - 1762 ft are plotted in Figure 10. The S_H -wave velocity data are presented at an expanded scale in Figure 11.

The suspension velocity data presented in Figures 4 through 11 are presented in Tables 1 through 4. P- and S_H -wave velocity data from R1-R2 analysis and quality assurance analysis of S-R1 data are plotted together in Figures A1 through A8 to aid in visual comparison. It must be noted that R1-R2 data is an average velocity over a 3.28 ft segment of the soil column; S-R1 data is an average over 7.02 ft and S-R2 data is an average over 10.30 ft, creating a significant smoothing relative to the R1-R2 plots. S-R1 or S-R2 data are presented in tabular format in Tables A1 through A4. Good correspondence between the shape of the P- and S_H -wave velocity curves is observed for all data sets. The velocities derived from S-R1 or S-R2 and R1-R2 data are in close agreement, providing verification of the higher resolution R1-R2 data.

Depth sequential S_H - and P-wave records with picks from S-R1 or S-R2 analysis used for quality assurance are presented in Appendices B and C. Calibration procedures and records for the measurement system are presented in Appendix F.

Downhole Velocity Results

Downhole data was collected to a depth of 195 ft, at which point all signals became undetectable due to wave splitting and attenuation. Significant signal loss was observed at a depth of approximately 100 feet where a significant low velocity zone is present. Clearly identifiable P-wave energy was not detectable at any point in the corehole; this is very uncommon. System function was verified before and after the measurement run.

Downhole S_H -wave velocity data superimposed on suspension S_H -wave velocity data are plotted in Figure 12. Corrected downhole travel times are plotted in Figure 13. Corrected downhole S_H -wave travel time and curve fit velocities are plotted in Figure 14. The downhole velocity data presented in Figures 12 through 14 are tabulated in Table 5.

Depth sequential S_H - and P-wave records with uncorrected downhole arrivals are presented in Appendices D and E. Calibration procedures and records for the measurement system are included in Appendix F.

Damping Results

Analysis of the damping data was very difficult for this site. Figure 15 shows sample velocity waveforms from 53' and 195'. It is evident from these complex waveforms that significant scattering is occurring in this profile. Also, the reference waveform at 53' is very complex, possibly due to the sensor location at the bottom of a rubble zone.

Only the data from 133' and 195' yielded reasonable values of spectral slope, as shown in Figure 16. Calculated damping was 9% from 53' to 133 feet and 19% from 53 feet to 195 feet. These values are high, and reflect the presence of strong frequency-dependent scattering.

The Spectral Slope Method has been used extensively to estimate intrinsic low-strain material damping at soil sites. However, the ANL-1 corehole site is not soil, but is alternating layers of hard rock and soil/rubble. The assumptions used in the Spectral Slope Method may not be valid for this difficult site. The effect of these assumptions on the reliability of the damping estimates is discussed in the SUMMARY section at the end of the report.

SUMMARY

Discussion of Results

Both P- and S_H-wave velocities were measured using the Suspension Method for the following depth ranges in the ANL-1 corehole:

- 0 - 604 ft.
- 643 - 820 ft.
- 886 - 1142 ft.
- 1742 - 1762 ft.

The Downhole Method produced S_H-wave velocities in the top 195 ft. Surface-generated energy did not penetrate deeper than 195 ft.

Measured S_H-velocities ranged from 1976 ft/sec at 52.5 ft depth to 9373 ft/sec at 807.1 ft depth. There is considerable variation in the velocities due to the site geology, which has layers of hard basalts with thin rubble zones.

Damping measurements were attempted at this difficult site using the Spectral Slope Method. Calculated damping values were 9% (53 - 133 ft.) and 19% (53 - 195 ft.). These high values reflect strong frequency-dependent scattering of the surface-generated downgoing waves, not intrinsic material damping.

Quality Assurance

These velocity and damping measurements at the ANL-1 corehole were performed by highly qualified professional staff members of Agbabian Associates, Inc. under the supervision and quality assurance of Dr. Robert L. Nigbor, P.E.. Industry-standard or better methods and levels of care were employed for both measurements and analyses. All work was performed under Agbabian Associates quality assurance procedures, which include:

- Use of NIST-traceable calibrations, where applicable, for field and laboratory instrumentation
- Use of standard field data logs
- Where applicable, use of independent verification of data (for example, comparison of receiver-to-receiver and source-to-receiver velocities for the suspension velocity measurements)
- Independent review of calculations and results by a registered professional engineer, geologist, or geophysicist.

Data Reliability

P- and S_H -wave velocity measurement using the Suspension Method gives average velocities over a 1-meter interval of depth. This high resolution results in the large scatter of values shown in the graphs. Individual measurements are very reliable; the estimated precision is +/- 5%. Good field procedures and quality assurance add to the high reliability of these data.

S_H -wave velocity measured using the Downhole Method calculates interval velocities by differentiating a total travel time curve. Thin layers, either high or low velocity, can be missed by this method. For the ANL-1 site, the extreme layering reduces confidence in the downhole data. Estimated precision is +/- 20%.

There is good agreement between the two independent velocity measurement methods in the top 195 ft of the profile, which also adds confidence to the results.

Damping results are highly uncertain due to the site geology. The Spectral Slope Method has been used extensively to estimate intrinsic low-strain material damping at soil sites, but appears not to work well at the ANL-1 site. Attenuation due to frequency-dependent scattering dominates the intrinsic material damping. The calculated values of 9% and 19% reflect this scattering component, not the intrinsic material damping.

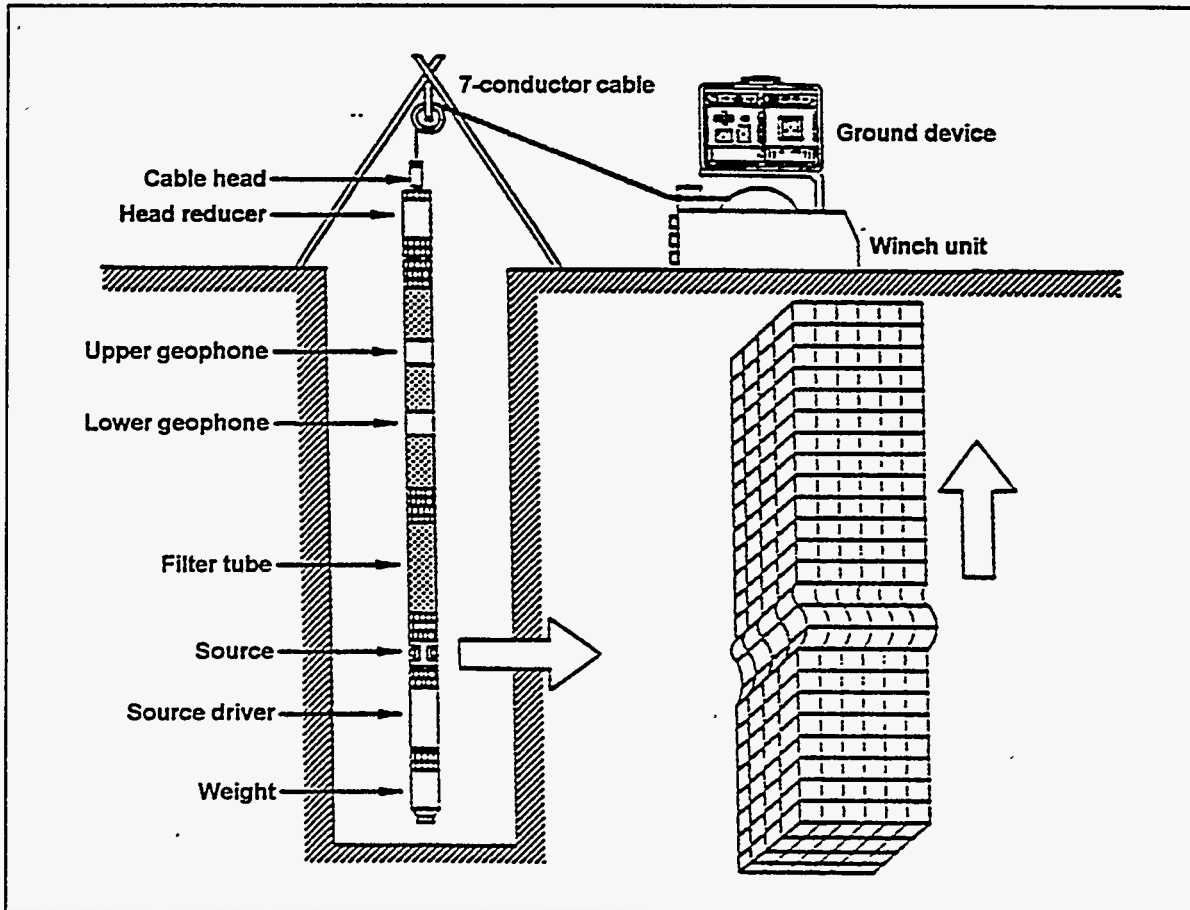


Figure 1. Concept illustration of P-S logging system

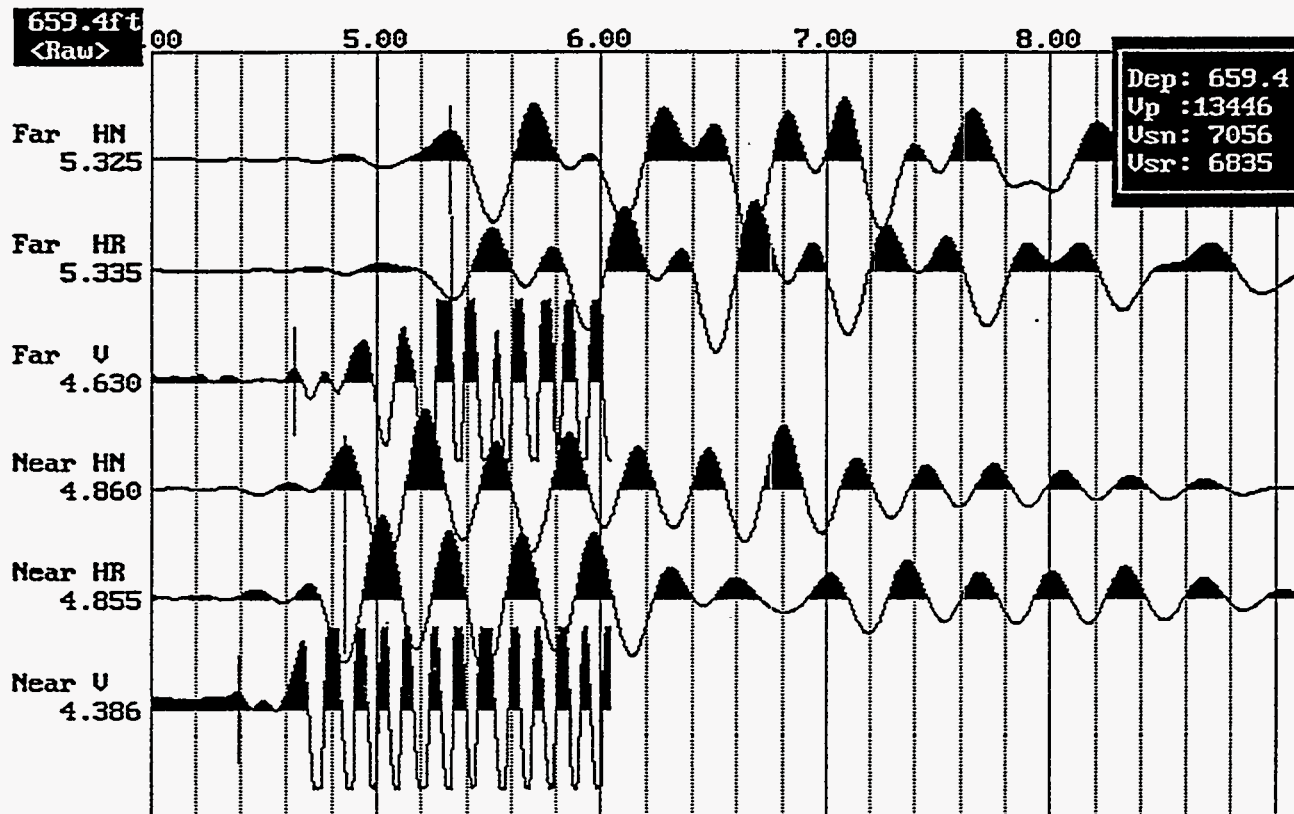


Figure 2. Filtered (3000 Hz lowpass) 659.4 ft record from ANL-1

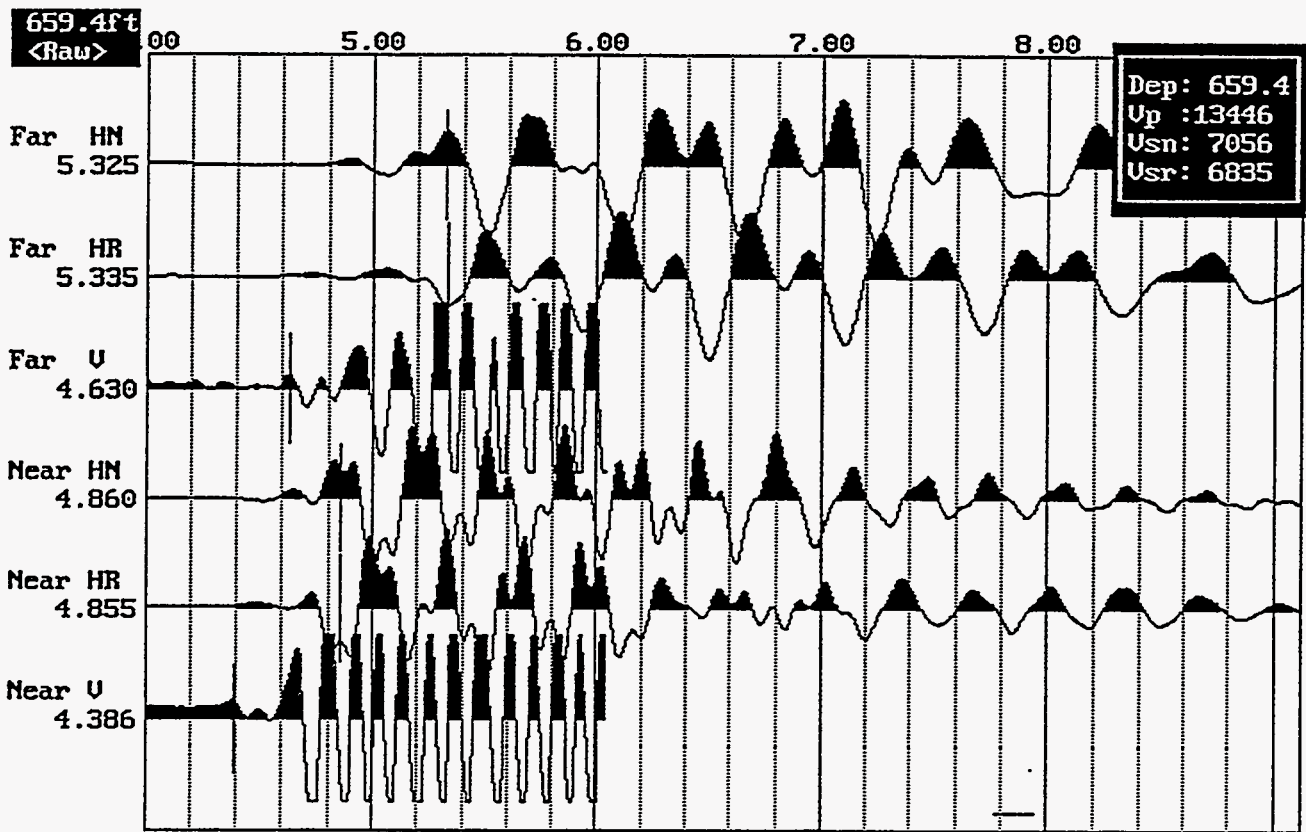


Figure 3. Unfiltered 659.4 ft record from ANL-1

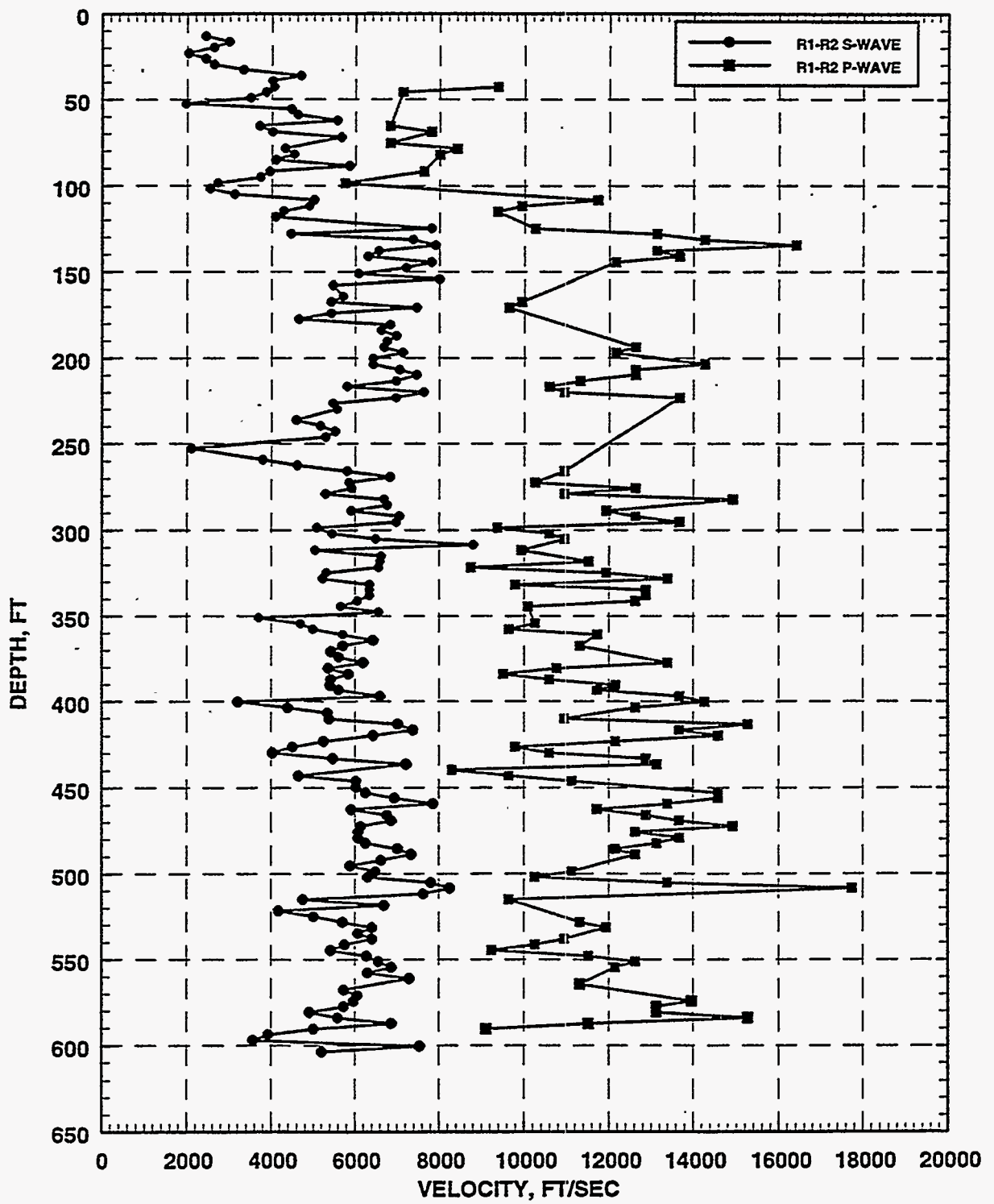


Figure 4. Suspension R1-R2 P- and S_H-wave velocities 0 - 604 ft.

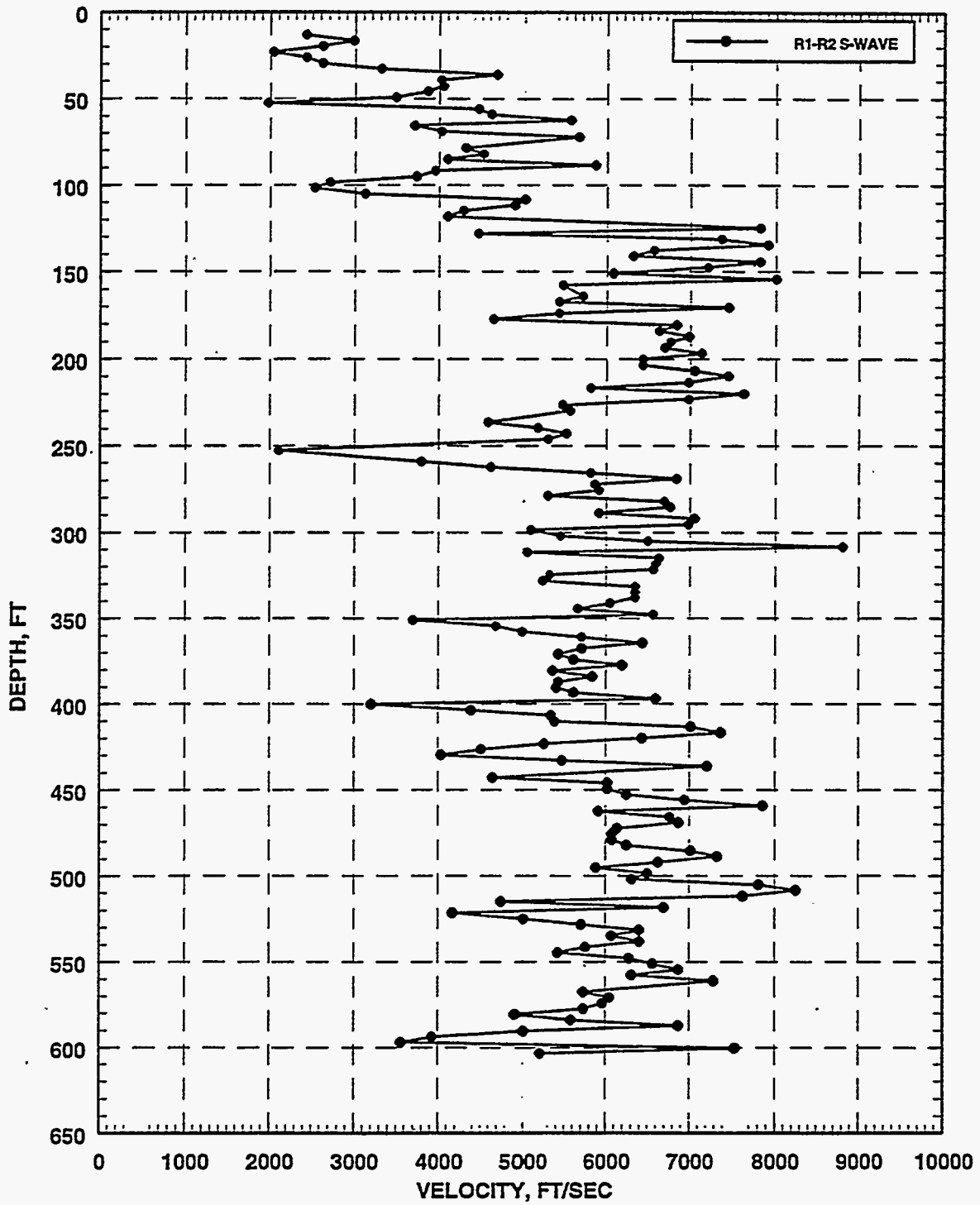


Figure 5. Suspension R1-R2 S_H -wave velocities 0 - 604 ft.

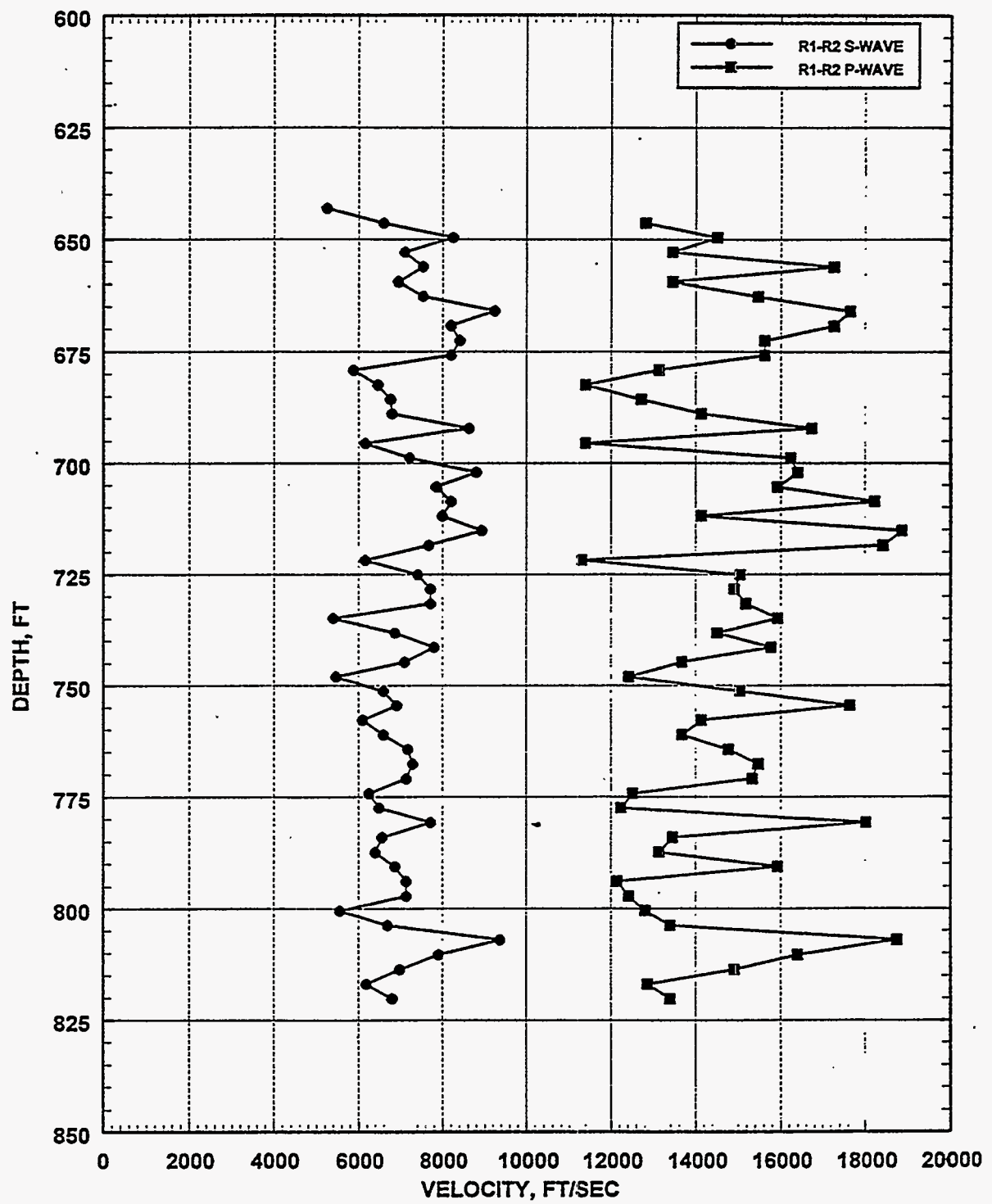


Figure 6. Suspension R1-R2 P- and S_H-wave velocities 643 - 820 ft.

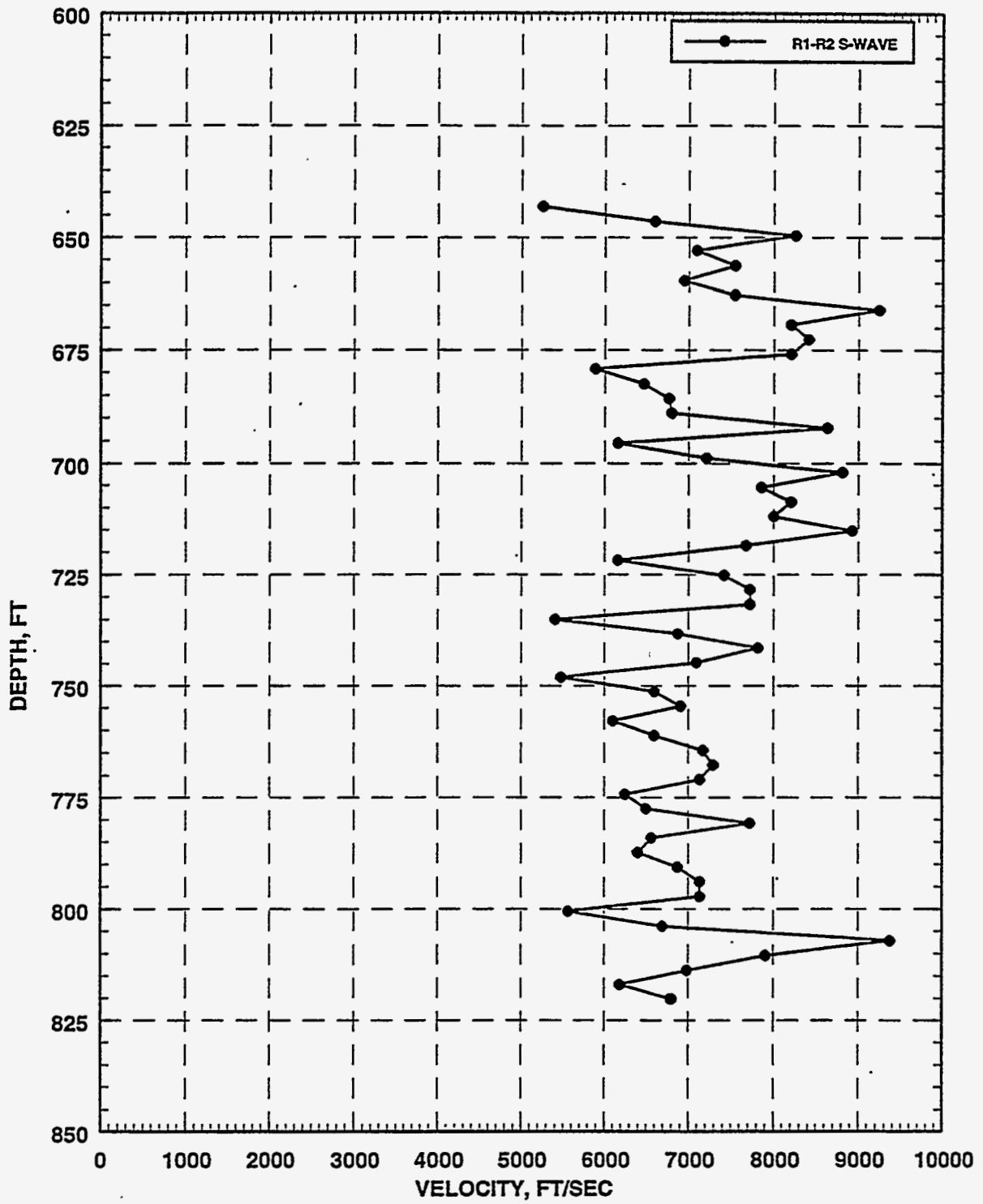


Figure 7. Suspension R1-R2 S_H -wave velocities 643 - 820 ft.

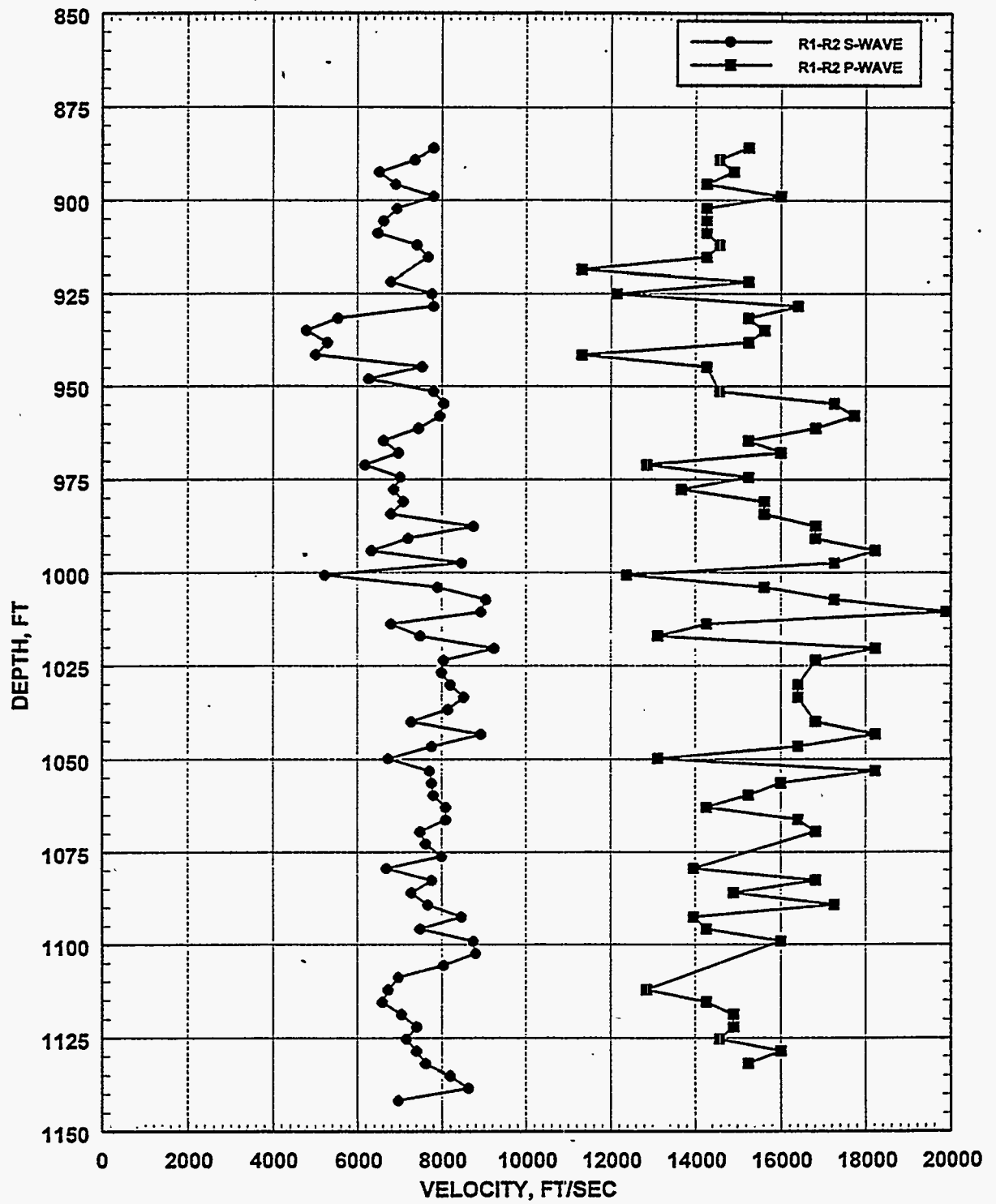


Figure 8. Suspension R1-R2 P- and S_H -wave velocities 886 - 1142 ft.

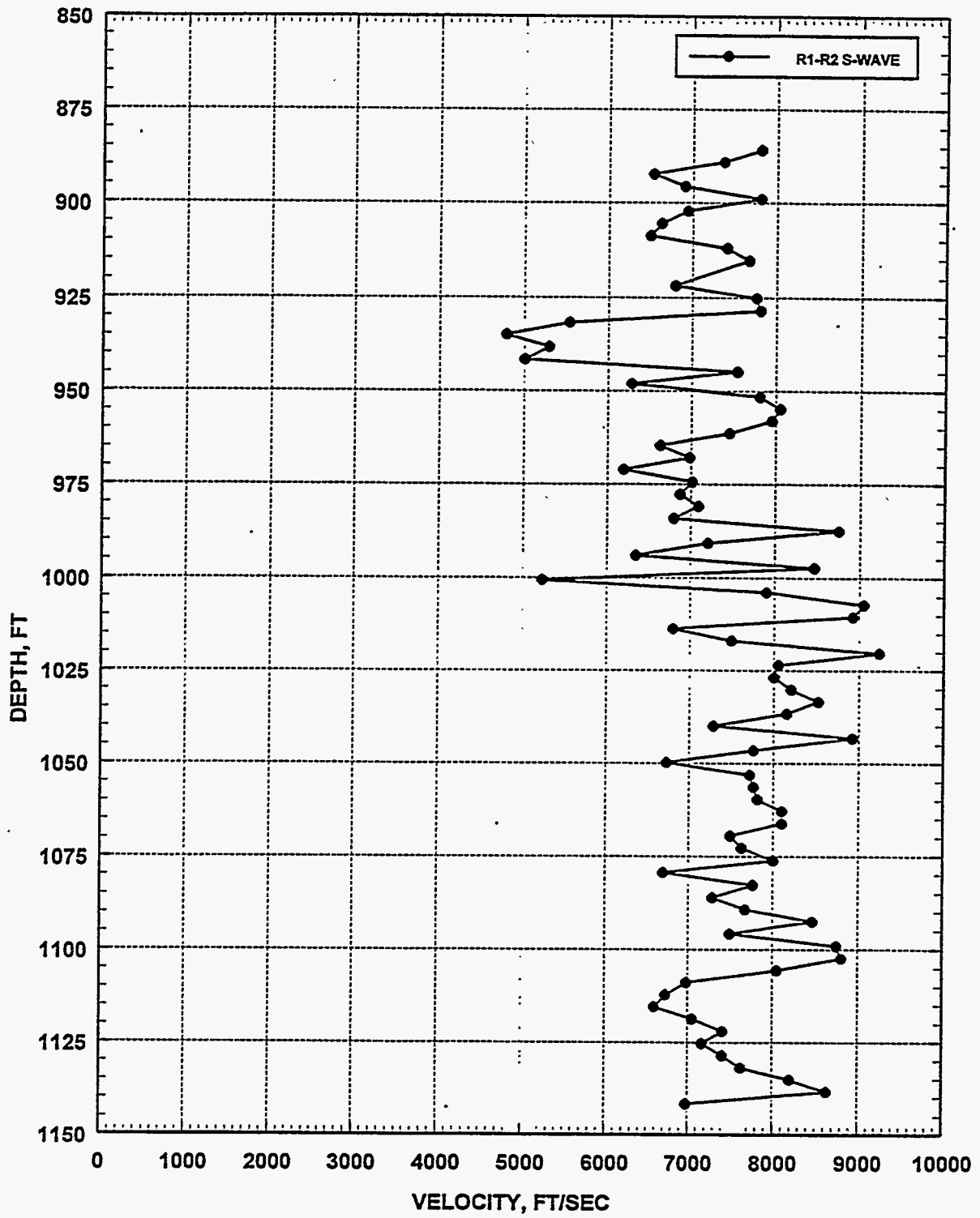


Figure 9. Suspension R1-R2 S_H -wave velocities 886 - 1142 ft.

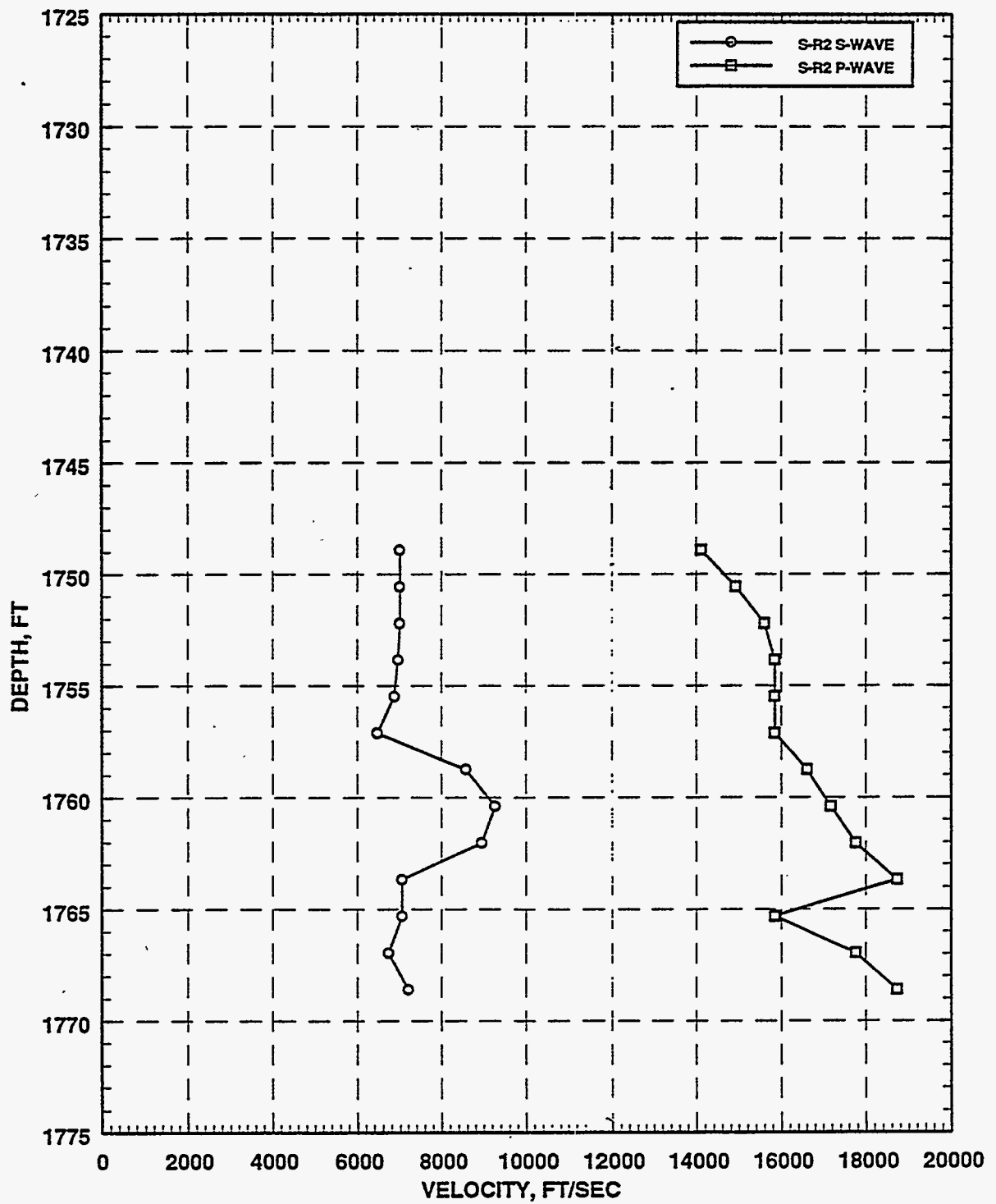


Figure 10. Suspension S-R2 P- and S_H-wave velocities 1742 - 1762 ft.

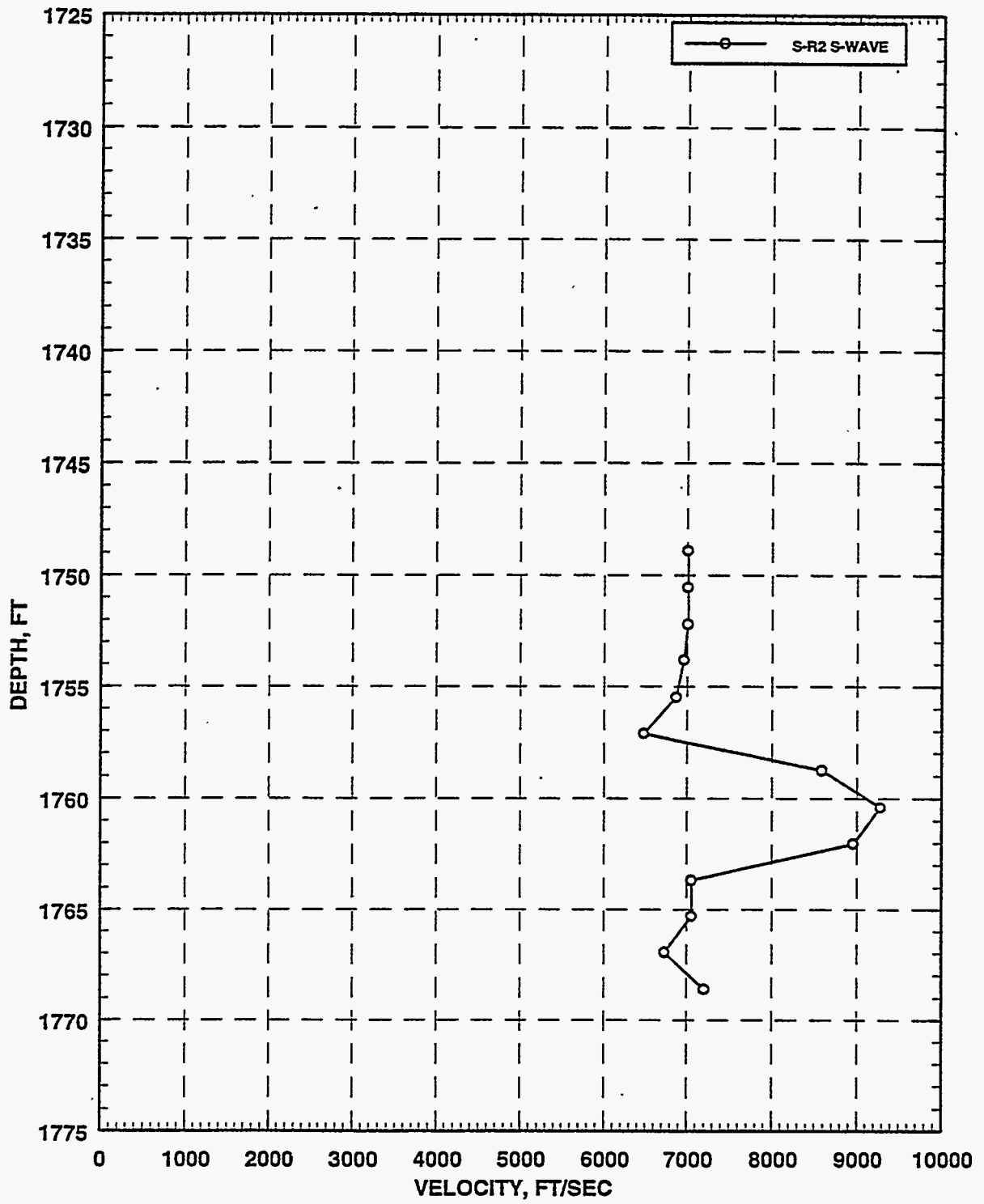


Figure 11. Suspension S-R2 S_H -wave velocities 1742 - 1762 ft.

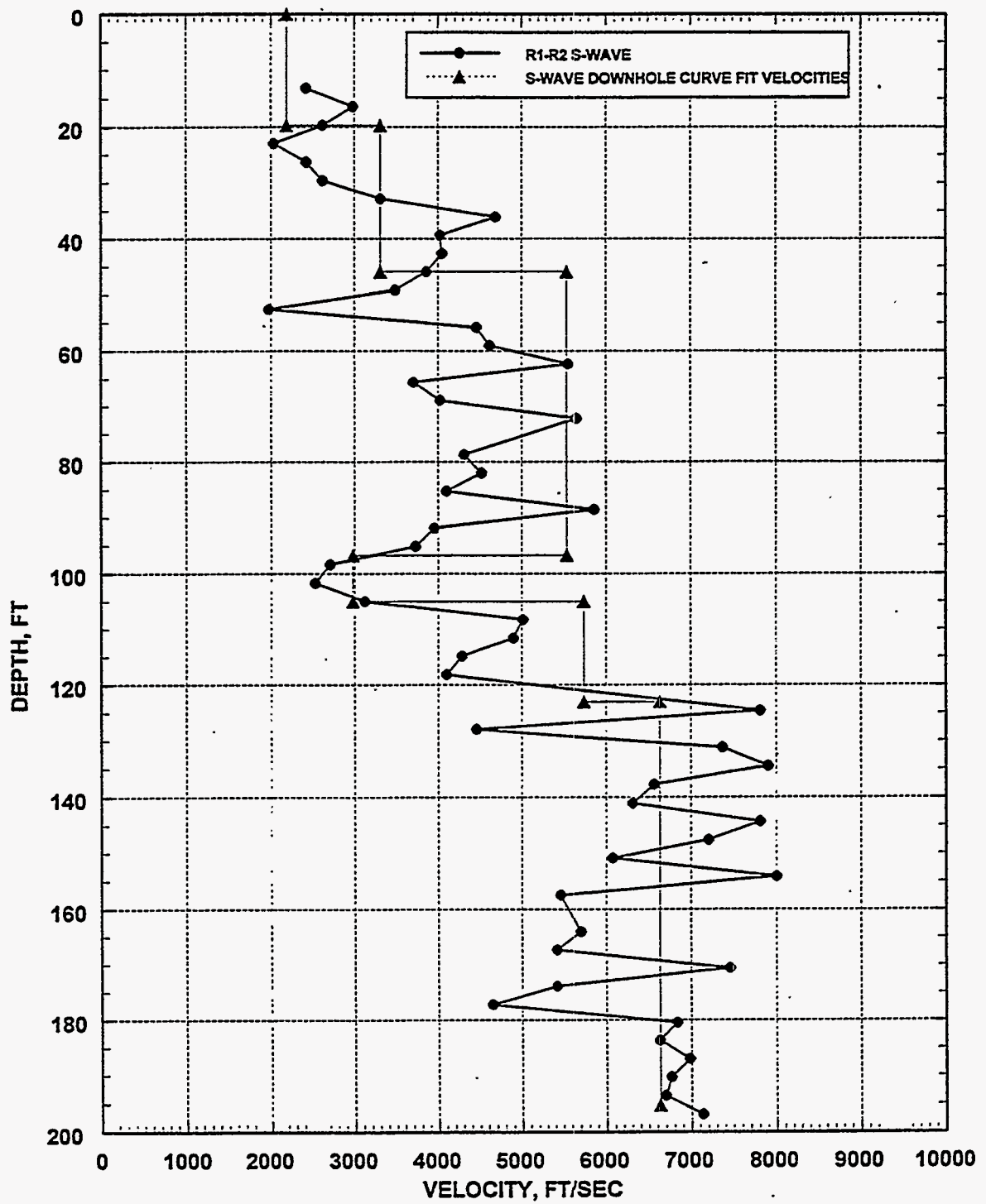


Figure 12. Downhole Curve Fit S_H -wave velocities and Suspension R1-R2 S_H -wave velocities, 0-195 ft.

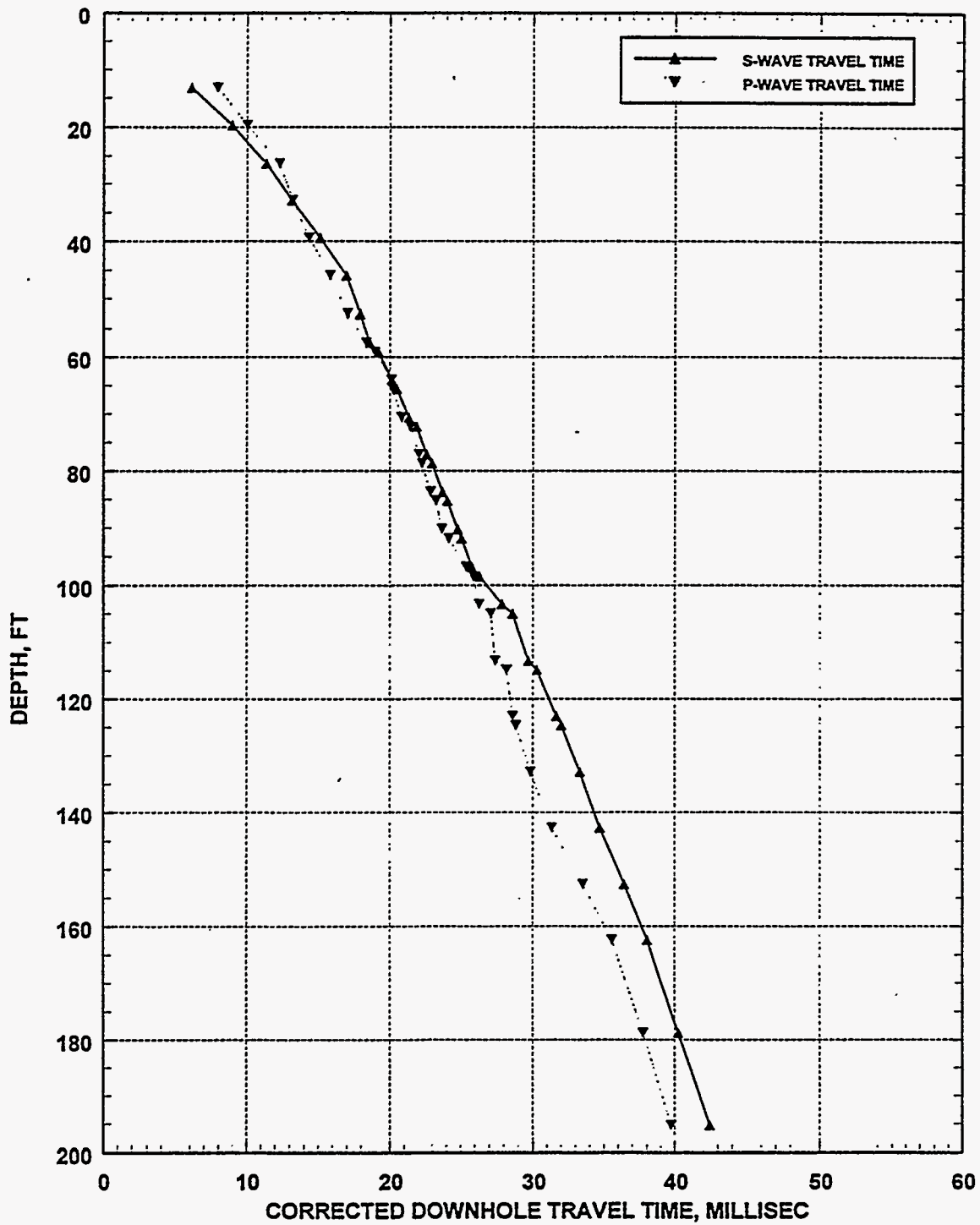


Figure 13. Downhole corrected P- and S_H-wave travel times

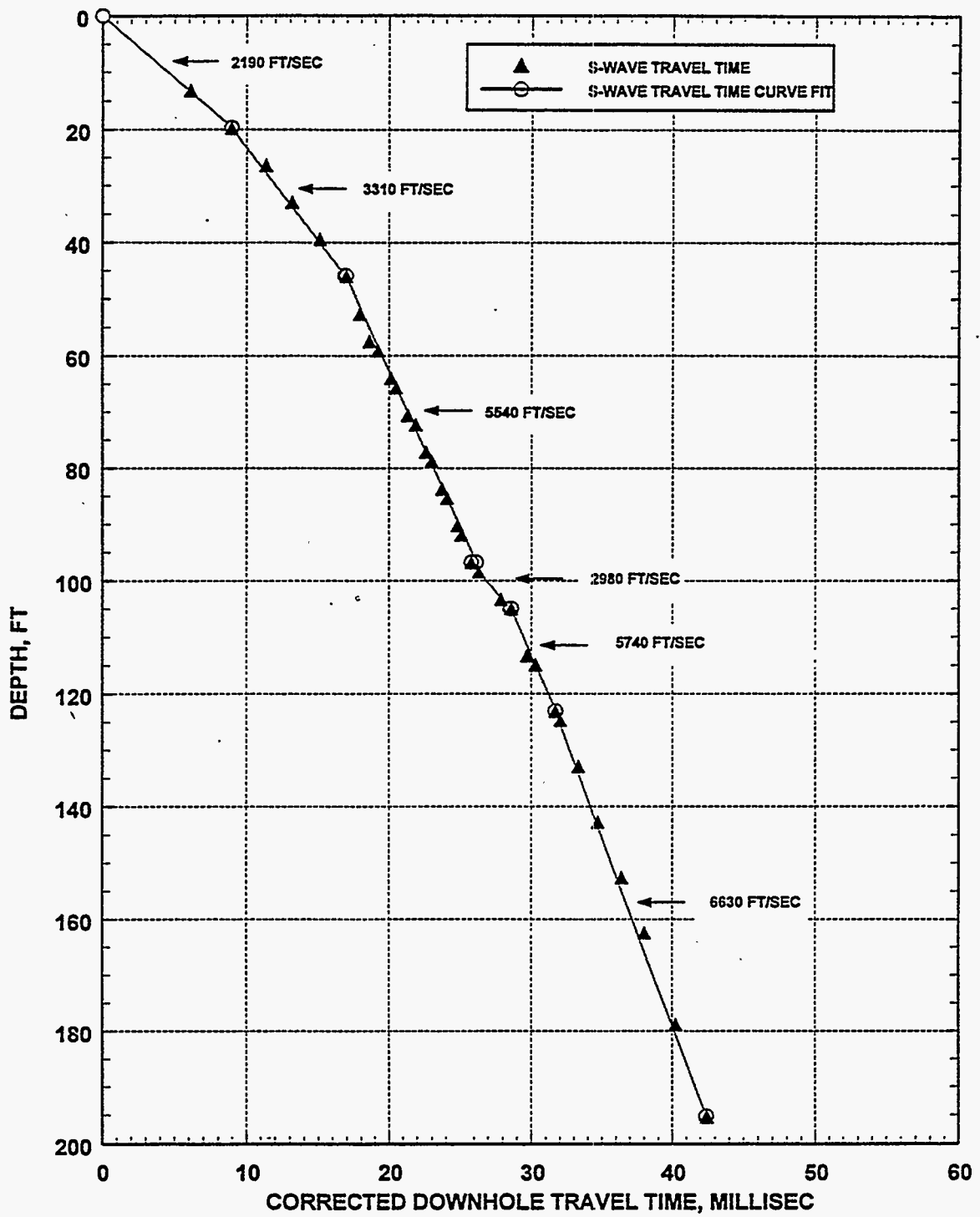


Figure 14. Downhole S_H -wave travel time and best fit velocity layers

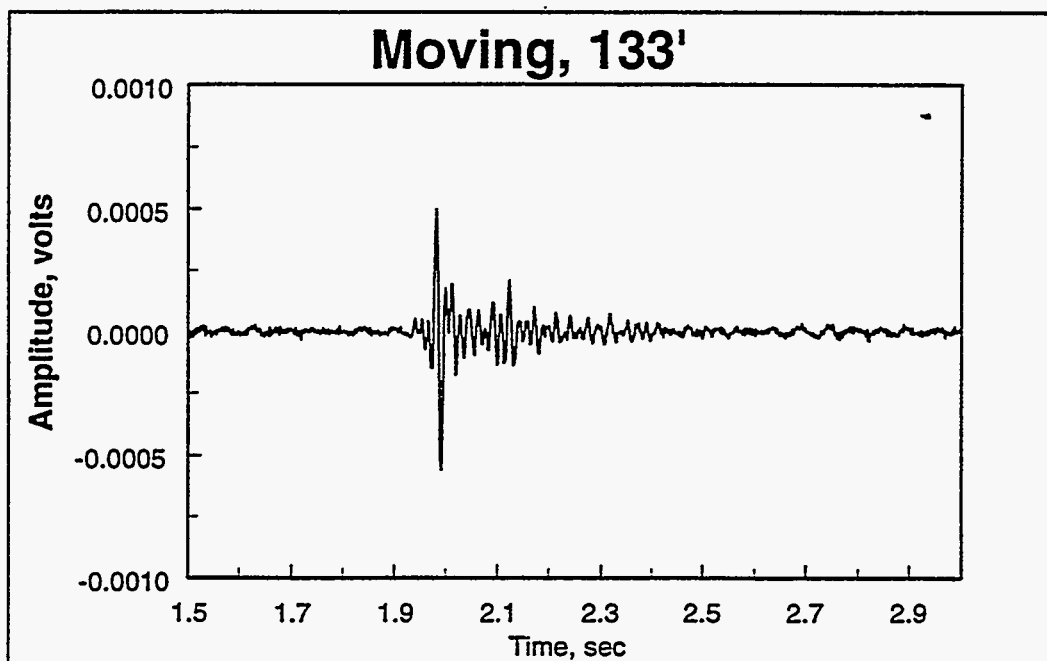
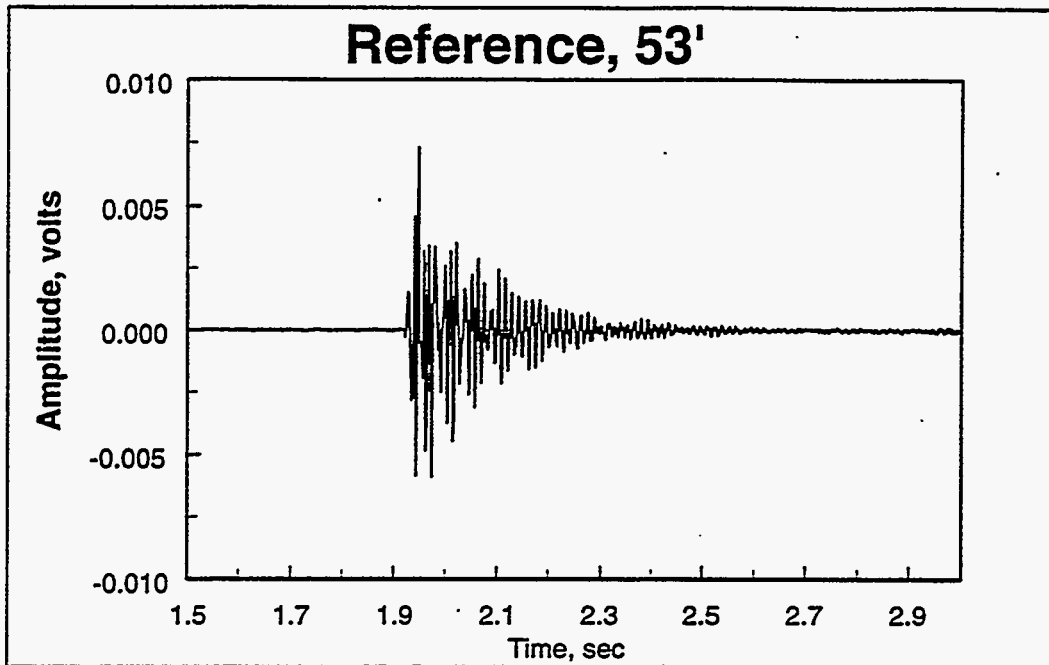


Figure 15. Damping Waveforms for Moveable Geophone Probe at 133.

Corehole ANL-1, Reference at 53'

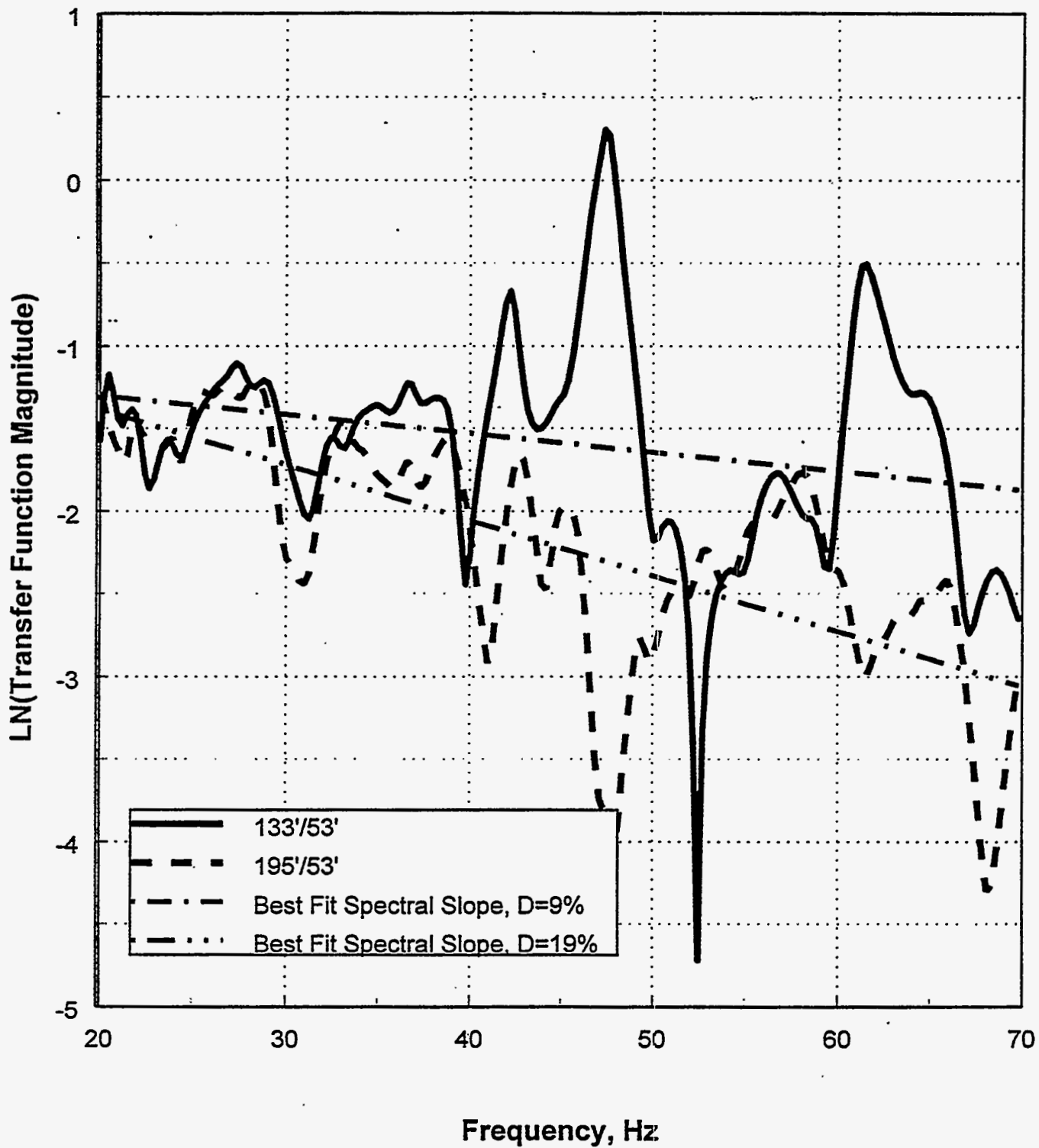


Figure 16. Calculated Spectral Slopes and Damping for 133 and 195 feet.

Depth (ft)	Vs (ft/s)	Vp (ft/s)
13.12	2430.252	
16.4	2982.582	
19.69	2624.672	
22.97	2037.789	
26.25	2430.251	
29.53	2624.673	
32.81	3313.98	
36.09	4686.912	
39.37	4025.571	
42.65	4050.417	9373.83
45.93	3859.811	7132.26
49.21	3490.255	
52.49	1976.41	
55.77	4463.727	
59.06	4620.901	
62.34	5560.744	
65.62	3707.164	6835.083
68.9	4025.571	7811.522
72.18	5656.621	
75.46		6835.083
78.74	4316.895	8412.413
82.02	4525.295	8002.052
85.3	4101.05	
88.58	5858.641	
91.86	3952.819	7629.863
95.14	3728.227	
98.43	2711.437	5755.857
101.71	2533.467	
104.99	3124.61	
108.27	5008.916	11717.276
111.55	4896.777	9941.941
114.83	4288.679	9373.83
118.11	4101.049	
121.39		
124.67	7811.522	10252.619
127.95	4463.729	13123.359
131.23	7372.679	14264.52
134.51	7905.64	16404.215
137.8	6561.68	13123.359
141.08	6309.308	13670.179
144.36	7811.527	12151.26
147.64	7210.638	
150.92	6075.627	
154.2	8002.047	
157.48	5468.067	
160.76		
164.04	5705.806	
167.32	5422.878	9941.941
170.6	7456.455	9649.524
173.88	5422.878	
177.17	4653.674	
180.45	6835.083	
183.73	6627.958	
187.01	6980.51	
190.29	6764.62	
193.57	6695.591	12618.604
196.85	7132.26	12151.26
200.13	6433.022	
203.41	6433.02	14264.52
206.69	7055.571	12618.604
209.65	7456.455	12618.604

Depth (ft)	Vs (ft/s)	Vp (ft/s)
213.25	6980.51	11313.242
216.54	5806.798	10583.356
219.82	7629.859	10936.126
223.1	6980.51	13670.179
226.38	5468.067	
229.66	5560.747	
232.94		
236.22	4588.588	
239.5	5166.677	
242.78	5514.019	
246.06	5291.678	
249.34		
252.62	2109.865	
255.91		
259.19	3792.878	
262.47	4620.901	
265.75	5806.796	10936.126
269.03	6835.083	
272.31	5858.643	10252.635
275.59	5911.423	12618.604
278.87	5291.678	10936.126
282.15	6695.591	14912.892
285.43	6764.616	
288.71	5911.423	11930.322
291.99	7055.571	12618.627
295.28	6980.514	13670.179
298.56	5086.574	9373.83
301.84	5445.377	10583.356
305.12	6496.714	10936.144
308.4	8807.625	
311.68	5047.445	9941.941
314.96	6627.961	
318.24	6594.654	11511.726
321.52	6561.68	8748.906
324.8	5313.103	11930.322
328.08	5228.43	13391.189
331.69	6339.788	9793.551
334.65	6339.788	12866.033
337.93	6339.785	12866.033
341.21	6047.628	12618.627
344.49	5656.621	10094.897
347.77	6561.68	
351.05	3696.722	
354.33	4686.914	10252.619
357.61	4989.87	9649.538
360.89	5705.808	11717.296
364.17	6433.02	
367.45	5705.808	11313.242
370.73	5422.878	
374.02	5608.273	
377.3	6190.265	13391.189
380.58	5356.474	10756.842
383.86	5832.602	9509.687
387.14	5422.875	10583.356
390.42	5400.559	12151.26
393.37	5608.273	11717.296
396.98	6594.651	13670.179
400.26	3208.645	14264.52
403.54	4389.084	12618.627
406.82	5334.701	
410.1	5378.427	10936.144

Depth (ft)	Vs (ft/s)	Vp (ft/s)
413.39	7017.84	15259.71
416.67	7372.674	13670.179
419.95	6433.022	14581.486
423.23	5249.344	12151.26
426.51	4509.744	9793.551
429.79	4037.957	10583.356
433.07	5468.067	12866.033
436.35	7210.631	13123.359
439.63		8305.925
442.91	4653.671	9649.524
446.19	6019.892	11121.488
449.48	6019.892	
452.76	6249.221	14581.517
456.04	6943.575	14581.517
459.32	7858.299	13391.189
462.6	5911.423	11717.276
465.88	6764.62	12866.058
469.16	6870.866	13670.153
472.44	6132.41	14912.923
475.72	6075.63	12618.627
479	6075.63	13670.153
482.28	6249.218	13123.359
485.56	7017.836	12151.26
488.85	7331.49	12618.604
492.13	6627.958	
495.41	5884.916	
498.69	6496.711	11121.488
501.97	6309.311	10252.619
505.25	7811.522	13391.189
508.53	8253.685	17734.275
511.81	7629.863	
515.09	4754.842	9649.524
518.37	6695.591	
521.65	4179.414	
524.93	5008.918	
528.22	5705.811	11313.242
531.5	6401.638	11930.322
534.78	6075.63	
538.06	6401.641	10936.126
541.34	5755.857	10252.635
544.62	5422.875	9241.803
547.9	6279.119	11511.705
551.18	6561.68	12618.604
554.46	6870.869	12151.26
557.74	6309.302	
561.02	7290.75	
564.3		11313.242
567.59	5730.728	
570.87	6047.631	
574.15	5965.167	13961.014
577.43	5730.725	13123.359
580.71	4915.114	13123.359
583.99	5584.41	15259.71
587.27	6870.866	11511.705
590.55	5008.916	9113.441
593.83	3929.151	
597.11	3566.13	
600.39	7542.162	
603.67	5207.683	

Table 1. Suspension R1-R2 depth and velocity data for 0 - 604 ft.

Depth (ft)	Vs (ft/s)	Vp (ft/s)
643.04	5249.344	
646.33	6594.654	12815.803
649.61	8253.68	14516.972
652.89	7093.706	13446.067
656.17	7542.158	17267.572
659.45	6943.579	13446.067
662.73	7542.162	15475.632
666.01	9241.808	17638.891
669.29	8202.103	17267.572
672.57	8412.407	15623.044
675.85	8202.098	15623.044
679.13	5884.913	13123.359
682.41	6464.713	11391.819
685.7	6764.616	12716.415
688.98	6799.669	14141.559
692.26	8633.792	16738.971
695.54	6161.202	11391.801
698.82	7210.638	16241.772
702.1	8807.62	16404.176
705.38	7858.299	15926.382
708.66	8202.098	18226.906
711.94	8002.047	14141.559
715.22	8927.454	18855.373
718.5	7674.479	18431.688
721.78	6161.202	11313.225
725.07	7414.33	15049.729
728.35	7719.629	14912.923
731.63	7719.624	15189.068
734.91	5400.561	15926.419
738.19	6870.869	14517.002
741.47	7811.527	15773.255
744.75	7093.71	13670.179
748.03	5468.065	12427.427
751.31	6594.654	15049.729
754.59	6907.029	17638.936
757.87	6103.887	14141.559
761.15	6594.654	13670.153
764.44	7171.231	14778.55
767.72	7290.757	15475.667
771	7132.264	15331.011
774.28	6249.221	12522.309
777.56	6496.711	12241.935
780.84	7719.62	18026.625
784.12	6561.68	13446.067
787.4	6401.635	13123.359
790.68	6870.874	15926.382
793.96	7132.264	12151.26
797.24	7132.26	12427.427
800.52	5560.747	12815.778
803.81	6695.588	13391.189
807.09	9373.824	18747.635
810.37	7905.639	16404.254
813.65	6980.51	14912.857
816.93	6190.262	12866.033
820.21	6799.667	13391.189

Table 2. Suspension R1-R2 depth and velocity data for 643 - 820 ft.

Depth (ft)	Vs (ft/s)	Vp (ft/s)
885.83	7811.522	15259.71
889.11	7372.674	14581.486
892.39	6529.037	14912.892
895.67	6907.029	14264.52
898.95	7811.527	16004.104
902.23	6943.575	14264.52
905.51	6627.961	14264.52
908.79	6496.711	14264.52
912.07	7414.33	14581.517
915.35	7674.479	14264.52
918.64		11313.242
921.92	6799.669	15259.71
925.2	7765.304	12151.26
928.48	7811.522	16404.215
931.76	5537.28	15259.744
935.04	4789.548	15623.044
938.32	5291.678	15259.744
941.6	5008.916	11313.242
944.88	7542.162	14264.52
948.16	6279.119	
951.44	7811.522	14581.517
954.72	8051.145	17267.572
958.01	7953.549	17734.275
961.29	7456.455	16824.848
964.57	6627.961	15259.71
967.85	6980.507	16004.104
971.13	6190.267	12866.033
974.41	7017.84	15259.744
977.69	6870.869	13670.153
980.97	7093.705	15623.044
984.25	6799.669	15623.044
987.53	8748.912	16824.805
990.81	7210.642	16824.848
994.09	6339.788	18226.906
997.38	8466.683	17267.572
1000.66	5228.43	12380.512
1003.94	7905.635	15623.044
1007.22	9050.588	17267.572
1010.5	8927.459	19883.824
1013.78	6799.669	14264.52

Depth (ft)	Vs (ft/s)	Vp (ft/s)
1017.06	7499.063	13123.359
1020.34	9241.803	18226.857
1023.62	8051.14	16824.805
1026.9	8002.052	
1030.18	8202.098	16404.215
1033.46	8521.662	16404.215
1036.75	8151.157	
1040.03	7290.757	16824.805
1043.31	8927.454	18226.857
1046.59	7765.304	16404.215
1049.87	6729.929	13123.359
1053.15	7719.624	18226.906
1056.43	7765.304	16004.104
1059.71	7811.522	15259.71
1062.99	8100.84	14264.52
1066.27	8100.835	16404.176
1069.55	7499.063	16824.805
1072.83	7629.859	
1076.12	8002.047	
1079.4	6695.595	13961.014
1082.68	7765.304	16824.805
1085.96	7290.753	14912.923
1089.24	7674.475	17267.572
1092.52	8466.683	13961.041
1095.8	7499.063	14264.52
1099.08	8748.906	16004.104
1102.36	8807.625	
1105.64	8051.14	
1108.92	6980.51	
1112.2	6729.929	12866.033
1115.49	6594.654	14264.52
1118.77	7055.571	14912.923
1122.05	7414.33	14912.923
1125.33	7171.238	14581.517
1128.61	7414.33	16004.104
1131.89	7629.859	15259.71
1135.17	8202.103	
1138.45	8633.786	
1141.73	6980.507	

Table 3. Suspension R1-R2 depth and velocity data for 886 - 1142 ft.

Depth (ft)	Vs (ft/s)	Vp (ft/s)
1748.92	7007	14110
1750.56	7007	14928
1752.2	7007	15606
1753.84	6959	15846
1755.48	6867	15846
1757.12	6478	15846
1758.76	8583	16613
1760.4	9279	17167
1762.04	8957	17759
1763.68	7055	18727
1765.32	7055	15846
1766.96	6732	17759
1768.6	7203	18727

Table 4. Suspension S-R2 depth and velocity data for 1742 - 1762 ft.

Depth (ft)	Downhole Layer Vs (ft/s)	Downhole Layer Vp (ft/s)	Corrected Sh travel (ms)	Corrected P travel (ms)
13.12	2190		6.102	7.916
19.69	2190		8.959	10.004
	3310			
26.25	3310		11.351	12.297
32.81	3310		13.164	13.212
39.37	3310		15.110	14.330
45.93	3310		16.977	15.800
	5540			
52.49	5540		17.938	17.051
57.41	5540		18.623	18.376
59.06	5540		19.228	18.981
63.98	5540		20.152	20.102
65.62	5540		20.508	20.211
70.54	5540		21.327	20.831
72.18	5540		21.881	21.434
77.1	5540		22.597	22.050
78.74	5540		23.000	22.255
83.66	5540		23.713	22.868
85.3	5540		24.066	23.271
90.22	5540		24.827	23.682
91.86	5540		25.080	24.184
96.78	5540		25.789	25.390
	2980			
98.43	2980		26.340	25.892
103.35	2980		27.894	26.300
104.99	2980		28.595	27.101
	5740			
113.19	5740		29.706	27.413
114.83	5740		30.307	28.213
123.03	5740		31.665	28.624
	6630			
124.67	6630		32.017	28.825
132.87	6630		33.324	29.832
142.72	6630		34.731	31.338
152.56	6630		36.437	33.542
162.4	6630		38.042	35.545
178.81	6630		40.249	37.752
195.21	6630		42.455	39.758

Table 5. Downhole depth and velocity data 0 - 195 ft.

APPENDIX A

**ARGONNE NATIONAL LABORATORY - WEST
SUSPENSION VELOCITY MEASUREMENT
QUALITY ASSURANCE**

**SUSPENSION SOURCE TO RECEIVER ANALYSIS
RESULTS FOR BOREHOLE ANL-1**

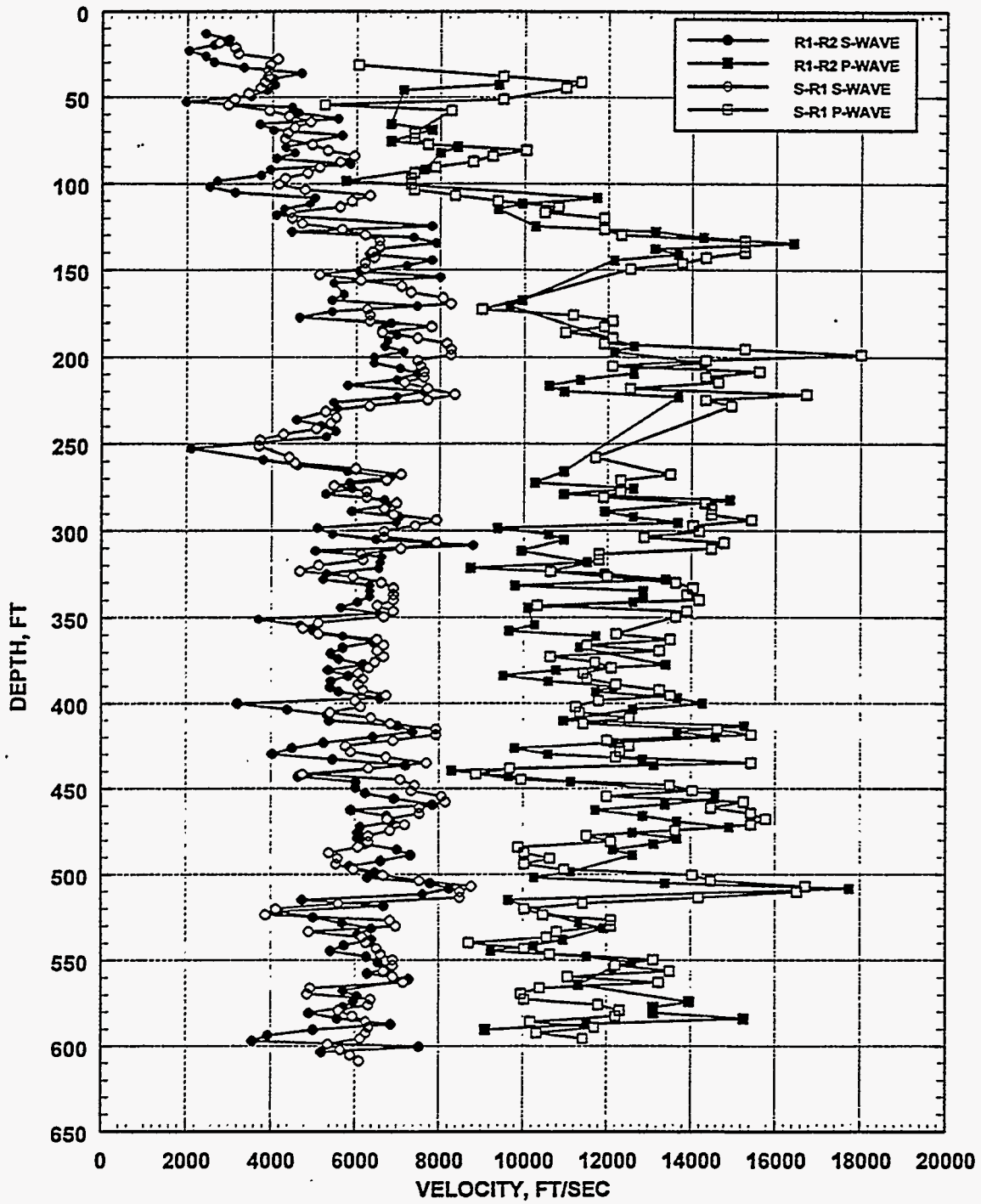


Figure A-1, INEL Corehole ANL-1; 0 - 604 ft
 R1-R2 high resolution analysis and S-R1 quality assurance analysis
 P- and S_H -wave data collected on 8/12/94

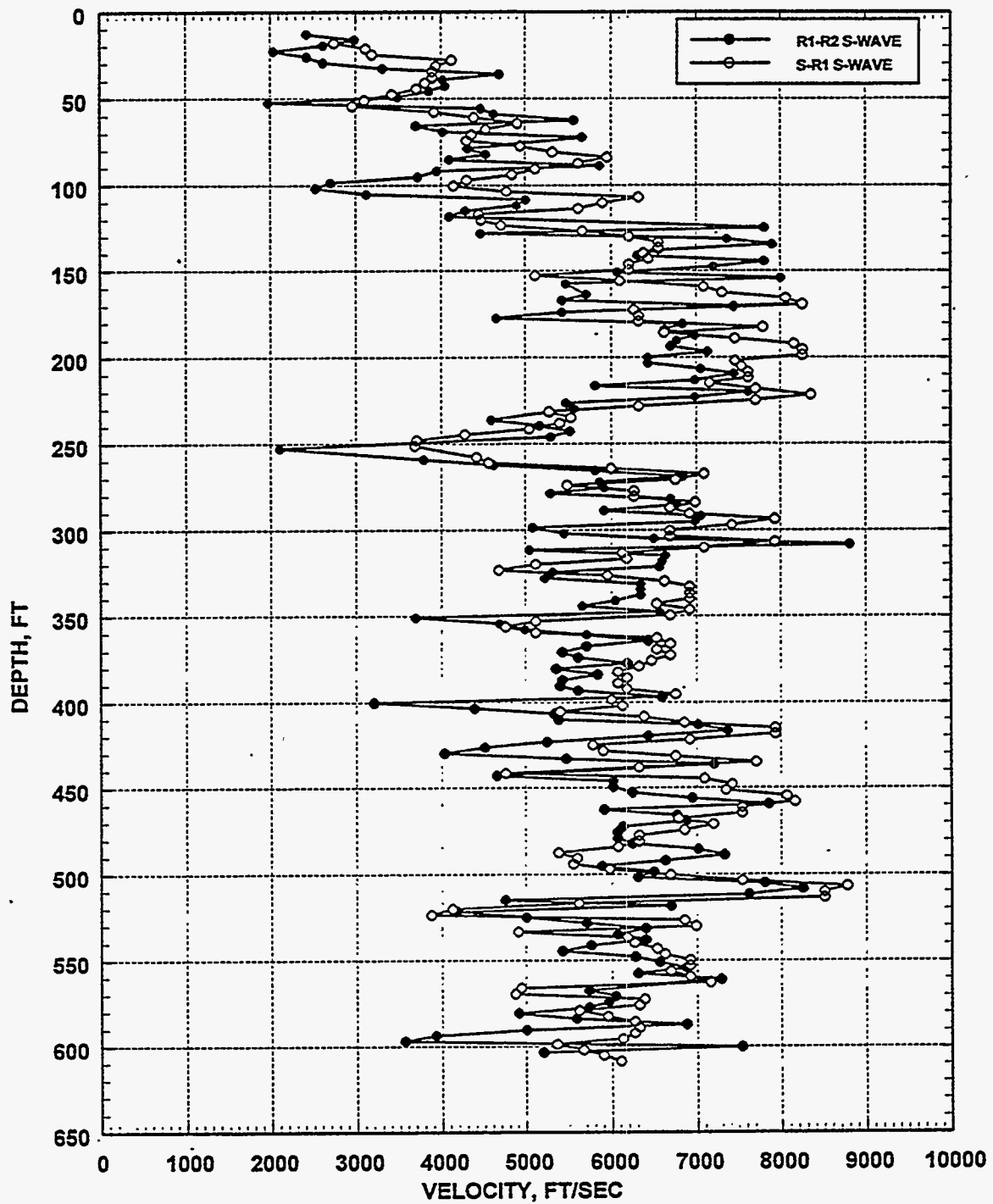


Figure A-2, INEL Corehole ANL-1; 0 - 604 ft
 R1-R2 high resolution analysis and S-R1 quality assurance analysis
 S_H -wave data collected on 8/12/94

Depth (ft)	S-R1 Vs (ft/s)	S-R1 Vp (ft/s)
18.27	2753	
21.55	3120	
24.84	3191	
28.12	4129	
31.4	3944	6052
34.68	3900	
37.96	3900	9486
41.24	3815	11323
44.52	3714	10969
47.8	3424	
51.08	3106	9486
54.36	2962	5239
57.64	3922	8259
60.92	4388	
64.21	4909	
67.49	4529	
70.77	4360	7389
74.05	4307	7389
77.33	4944	7714
80.61	5318	10029
83.89	5949	9237
87.17	5616	8775
90.45	5124	7888
93.73	4841	7389
97.01	4307	7313
100.29	4154	7313
103.58	4776	7389
106.86	6324	8357
110.14	5899	9360
113.42	5616	10800
116.7	4443	10478
119.98	4471	11898
123.26	4711	
126.54	5661	11898
129.82	6212	12316
133.1	6561	15261
136.38	6561	15261
139.66	6382	15261
142.95	6440	14327
146.23	6212	13765
149.51	6212	12536
152.79	5124	
156.07	6104	
159.35	7091	
162.63	7313	
165.91	8069	
169.19	8259	
172.47	6268	9000
175.75	6324	11143
179.03	6324	12103
182.32	7800	11898
185.6	6623	10969
188.88	7468	12103
192.16	8163	11898
195.44	8259	15261
198.72	8259	18000
202	7468	14327
205.28	7548	12103
208.56	7630	15600
211.84	7630	14327
214.8	7163	14625

Depth (ft)	S-R1 Vs (ft/s)	S-R1 Vp (ft/s)
218.4	7714	12536
221.69	8357	16714
224.97	7714	14327
228.25	6324	14936
231.53	5278	
234.81	5528	
238.09	5400	
241.37	5050	
244.65	4280	
247.93	3714	
251.21	3695	
254.49		
257.77	4415	11700
261.06	4558	
264.34	6000	
267.62	7091	13500
270.9	6750	12316
274.18	5484	
277.46	6268	12316
280.74	6268	11898
284.02	6985	14327
287.3	6686	14474
290.58	6916	14474
293.86	7932	15429
297.14	7429	14040
300.43	6686	14182
303.71	6686	12881
306.99	7932	14779
310.27	7091	14474
313.55	6131	11798
316.83	6185	11798
320.11	5124	
323.39	4680	10636
326.67	5949	12000
329.95	6623	13631
333.23	6916	14040
336.84	6916	13901
339.8	6916	14182
343.08	6530	10324
346.36	6916	13901
349.64	6686	13631
352.92	5124	
356.2	4759	
359.48	5124	12209
362.76	6530	13500
366.04	6686	11508
369.32	6530	13245
372.6	6686	10636
375.88	6470	11700
379.17	6324	12103
382.45	6078	11415
385.73	6185	11508
389.01	6078	12209
392.29	6185	13245
395.57	6750	13500
398.52	6000	11798
402.13	6131	11232
405.41	5400	11323
408.69	6382	12536
411.97	6849	11415
415.25	7932	14625

Depth (ft)	S-R1 Vs (ft/s)	S-R1 Vp (ft/s)
418.54	7932	15429
421.82	6916	12000
425.1	5778	12536
428.38	5899	12316
431.66	6750	12209
434.94	7714	15429
438.22	6324	9683
441.5	4759	8886
444.78	7091	9957
448.06	7429	13500
451.34	7351	14040
454.63	8069	12000
457.91	8163	15261
461.19	7548	14474
464.47	7548	15429
467.75	6783	15775
471.03	7200	15429
474.31	6849	13631
477.59	6324	11508
480.87	6324	12103
484.15	6078	9887
487.43	5379	10029
490.71	5594	10636
494	5549	10029
497.28	5974	10969
500.56	6686	14040
503.84	7548	14474
507.12	8775	16714
510.4	8509	16518
513.68	8509	14182
516.96	5616	11415
520.24	4129	10029
523.52	3878	10478
526.8	6849	12103
530.08	6985	12103
533.37	4909	10800
536.65	6185	10556
539.93	6268	8720
543.21	6530	10029
546.49	6623	10636
549.77	6916	13121
553.05	6916	12209
556.33	6686	13500
559.61	6916	11055
562.89	7163	13245
566.17	4944	10400
569.45	4875	9957
572.74	6382	10029
576.02	6324	11798
579.3	5616	12316
582.58	5949	12099
585.86	6268	10174
589.14	6324	11700
592.42	6268	10324
595.7	6131	11415
598.98	5359	
602.26	5661	
605.54	5899	
608.82	6104	

Table A-1, INEL Corehole ANL-1; 0 - 604 ft
S-R1 quality assurance analysis P- and S_H-wave data collected on 8/12/94

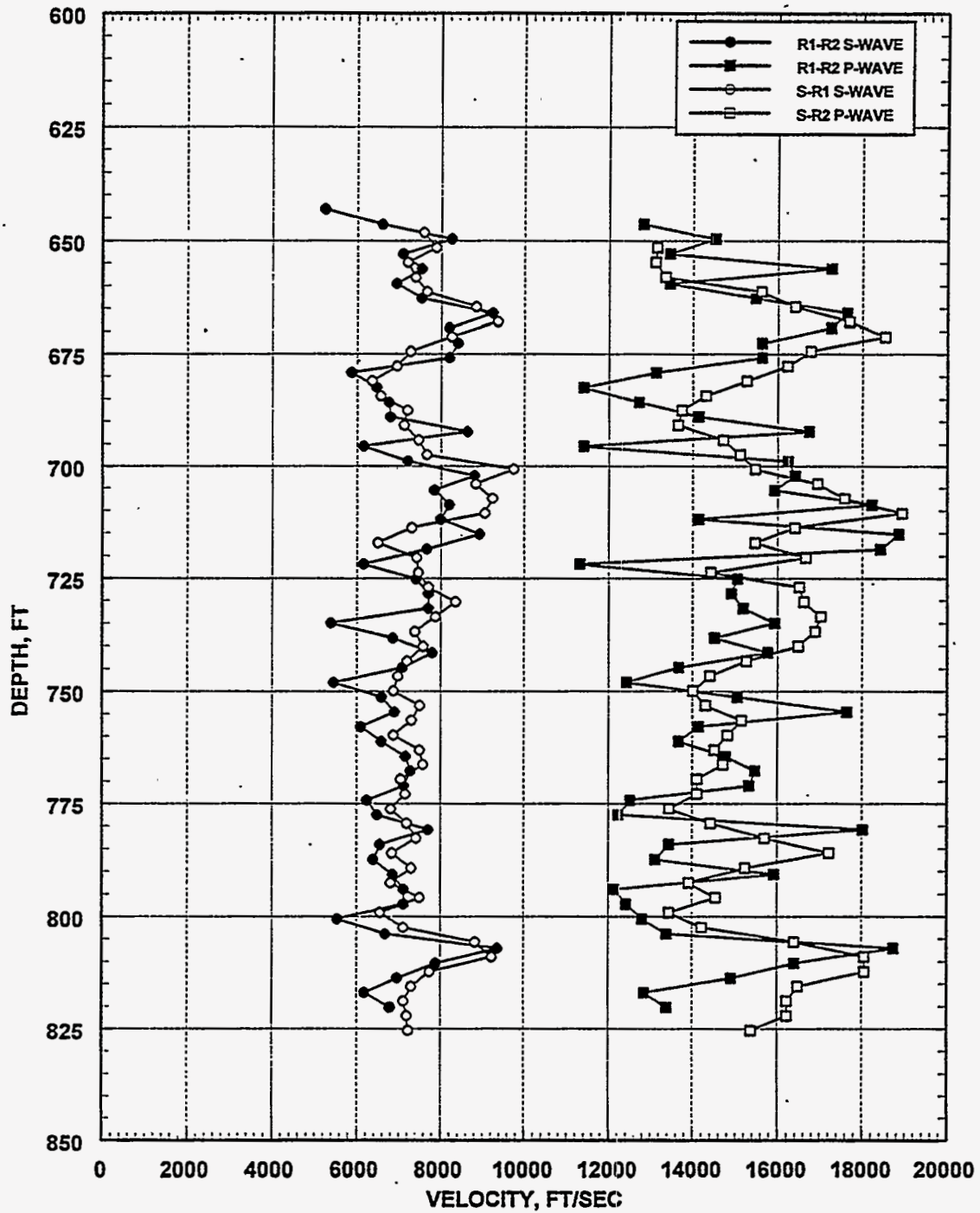


Figure A-3, INEL Corehole ANL-1; 643 - 820 ft
 R1-R2 high resolution analysis and S-R1/R2 quality assurance analysis
 P- and S_H-wave data collected on 1/28/95

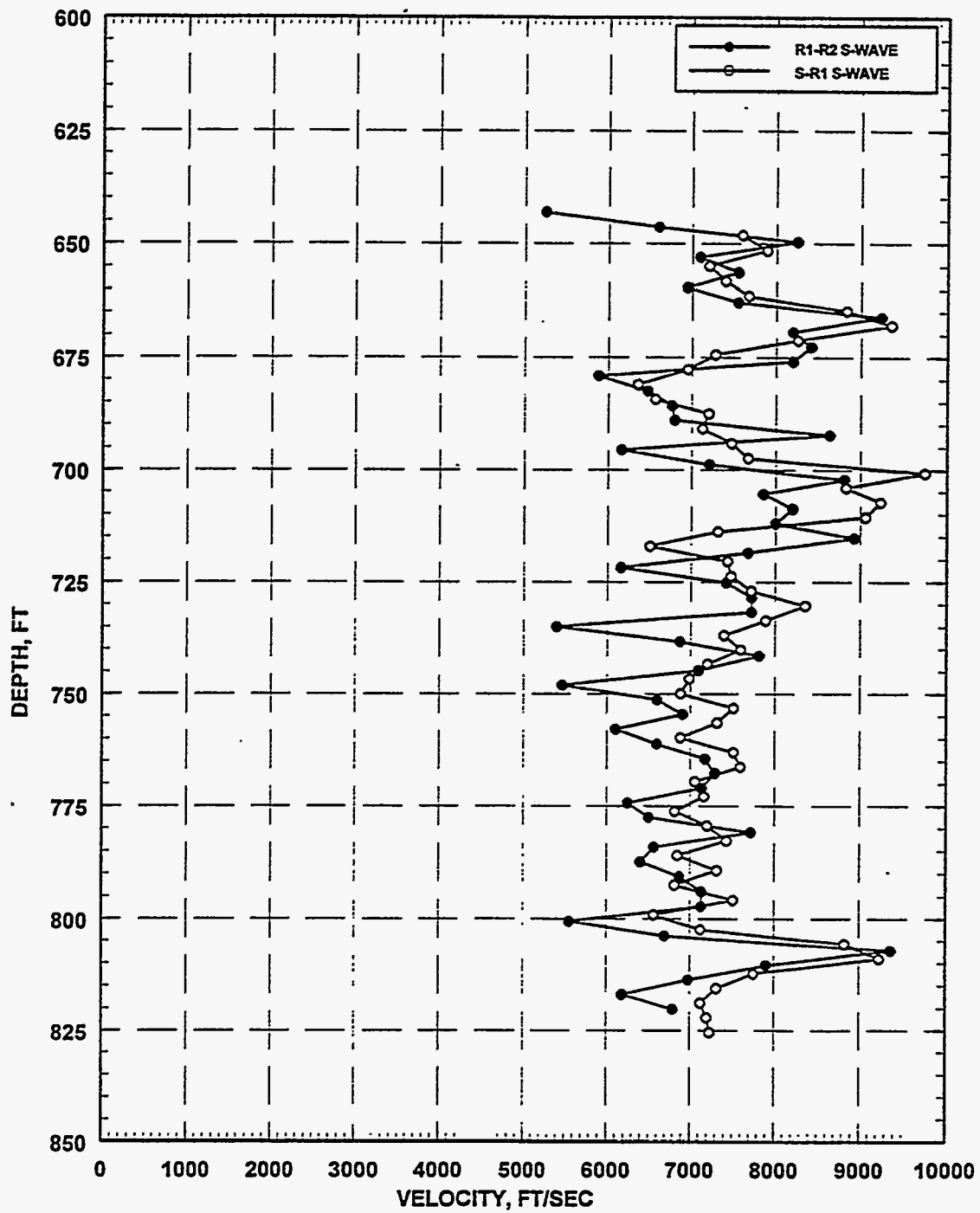


Figure A-4, INEL Corehole ANL-1; 643 - 820 ft
 R1-R2 high resolution analysis and S-R1/R2 quality assurance analysis
 S_H -wave data collected on 1/28/95

Depth (ft)	S-R1 Vs (ft/s)	S-R2 Vp (ft/s)
648.19	7589	
651.48	7888	13138
654.76	7200	13104
658.04	7389	13342
661.32	7672	15606
664.6	8830	16401
667.88	9360	17698
671.16	8259	18525
674.44	7275	16775
677.72	6950	16220
681	6353	15259
684.28	6561	14306
687.56	7200	13733
690.85	7127	13642
694.13	7468	14714
697.41	7672	15103
700.69	9750	15465
703.97	8830	16941
707.25	9237	17577
710.53	9058	18934
713.81	7313	16401
717.09	6500	15465
720.37	7429	16667
723.65	7468	14426
726.93	7714	16506
730.22	8357	16613
733.5	7888	17025
736.78	7389	16885
740.06	7589	16480
743.34	7200	15259
746.62	6985	14406
749.9	6882	14014
753.18	7508	14306
756.46	7313	15147
759.74	6882	14820
763.02	7508	14507
766.3	7589	14714
769.59	7055	14110
772.87	7163	14110
776.15	6816	13446
779.43	7200	14426
782.71	7429	15701
785.99	6849	17224
789.27	7313	15237
792.55	6816	13919
795.83	7508	14548
799.11	6561	13446
802.39	7127	14227
805.67	8830	16401
808.96	9237	18070
812.24	7757	18070
815.52	7313	16480
818.8	7127	16220
822.08	7200	16220
825.36	7237	15373

Table A-2, INEL Corehole ANL-1; 643 - 820 ft
S-R1/R2 quality assurance analysis P- and S_H-wave data collected on 1/28/95

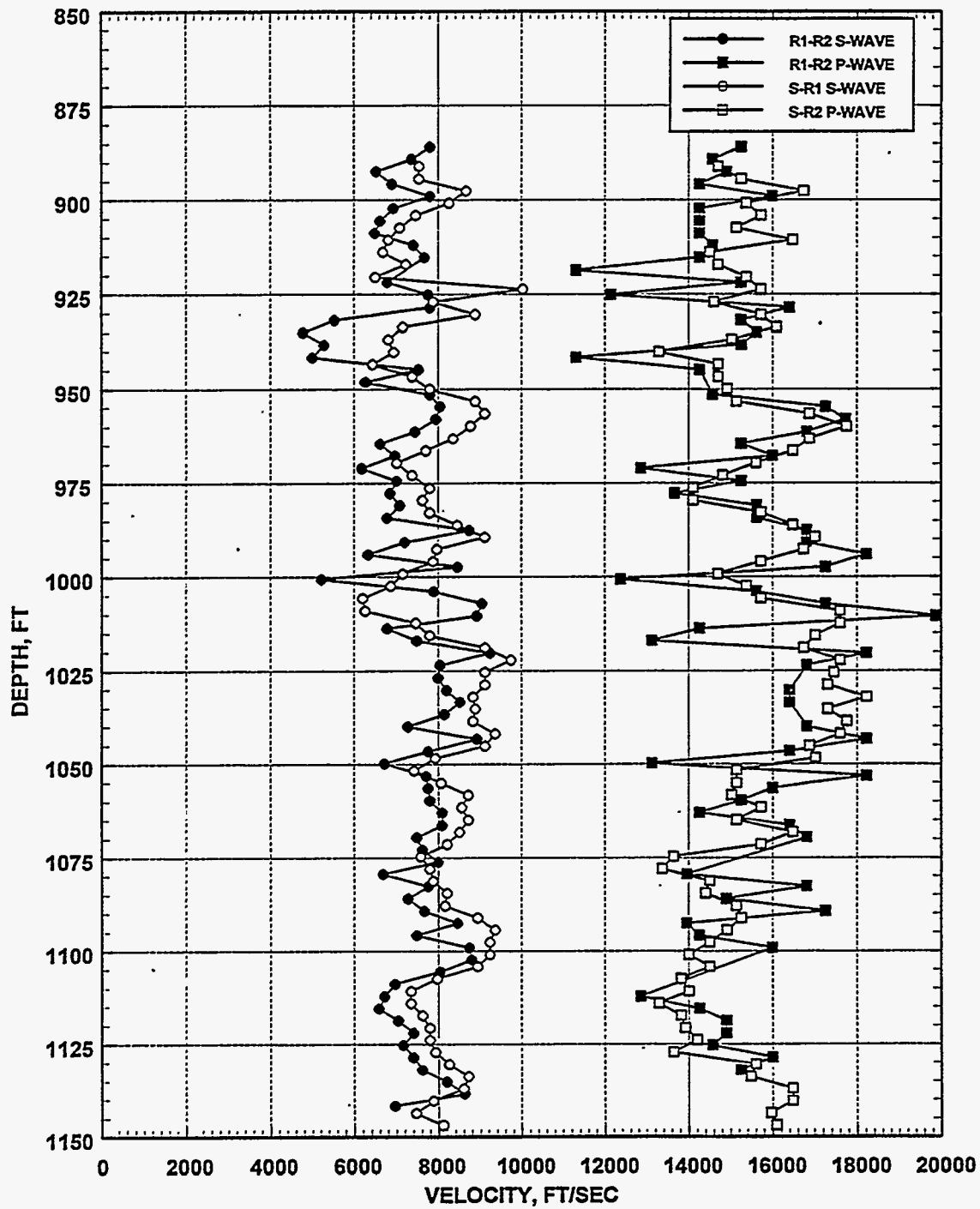


Figure A-5, INEL Corehole ANL-1; 886 - 1142 ft
 R1-R2 high resolution analysis and S-R1/R2 quality assurance analysis
 P- and S_H -wave data collected on 1/27/95

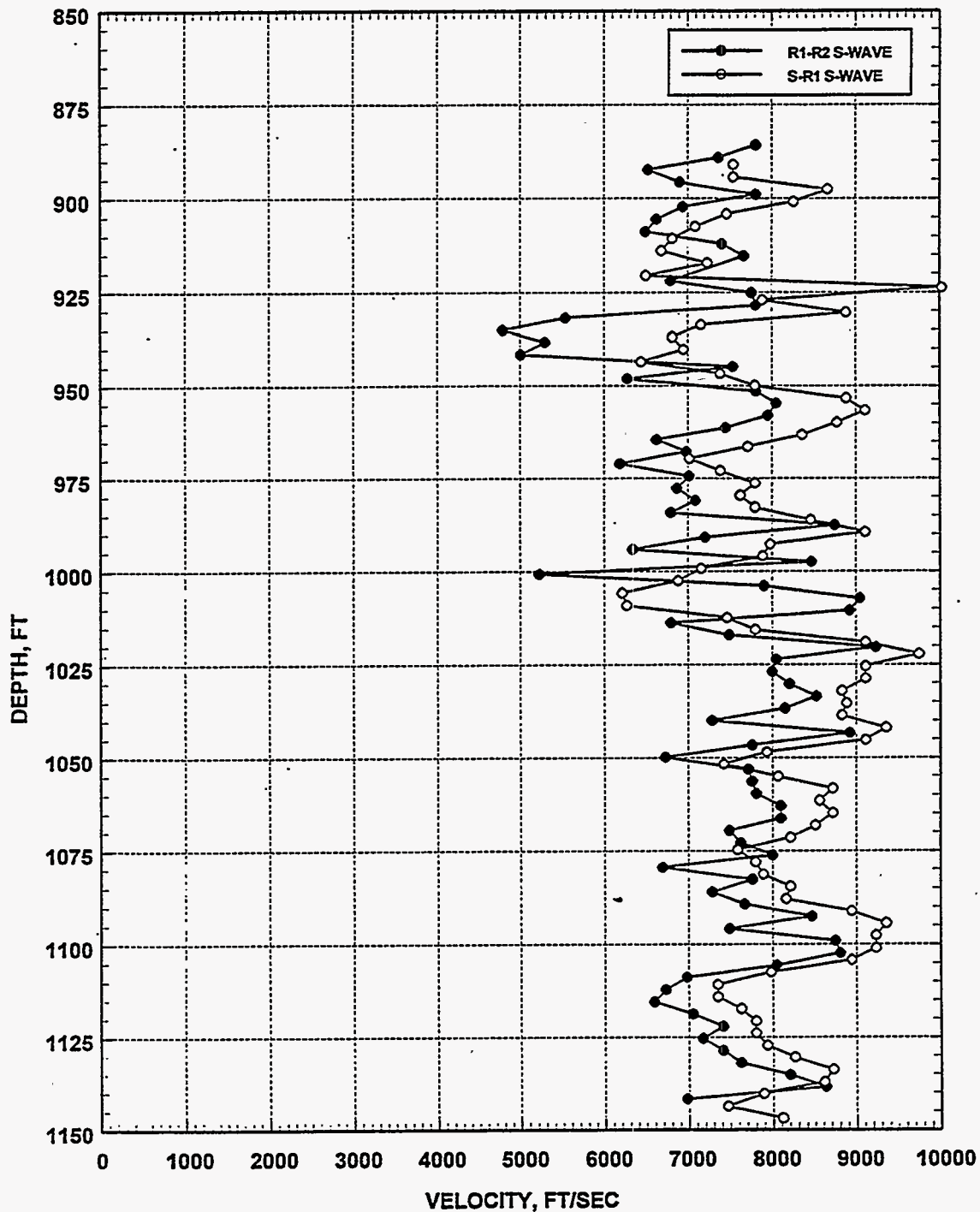


Figure A-6, INEL Corehole ANL-1; 886 - 1142ft
 R1-R2 high resolution analysis and S-R1/R2 quality assurance analysis
 S_H -wave data collected on 1/27/95

Depth (ft)	S-R1	S-R2
	Vs (ft/s)	Vp (ft/s)
890.98	7548	14714
894.26	7548	15259
897.54	8667	16748
900.82	8259	15373
904.1	7468	15725
907.38	7091	15147
910.66	6816	16480
913.94	6686	14507
917.22	7237	14714
920.5	6500	15373
923.79	10029	15725
927.07	7888	14610
930.35	8886	15725
933.63	7163	16094
936.91	6816	15036
940.19	6950	13290
943.47	6440	14714
946.75	7389	14714
950.03	7800	14928
953.31	8886	15147
956.59	9117	16885
959.87	8775	17759
963.16	8357	16885
966.44	7714	16480
969.72	7020	15606
973	7389	14820
976.28	7800	14110
979.56	7630	14110
982.84	7800	15725
986.12	8458	16480
989.4	9117	17025
992.68	7977	16748
995.96	7888	15725
999.24	7163	14714
1002.53	6882	15373
1005.81	6212	15725
1009.09	6268	17607
1012.37	7468	17607
1015.65	7800	17025
1018.93	9117	16748

Depth (ft)	S-R1	S-R2
	Vs (ft/s)	Vp (ft/s)
1022.21	9750	17607
1025.49	9117	17458
1028.77	9117	17311
1032.05	8830	18230
1035.33	8886	17311
1038.61	8830	17759
1041.9	9360	17607
1045.18	9117	16885
1048.46	7932	17025
1051.74	7429	15147
1055.02	8069	15147
1058.3	8720	15036
1061.58	8561	15725
1064.86	8720	15147
1068.14	8509	16480
1071.42	8211	15725
1074.7	7589	13642
1077.98	7800	13377
1081.27	7888	14507
1084.55	8211	14406
1087.83	8163	15147
1091.11	8943	15259
1094.39	9360	14928
1097.67	9237	14507
1100.95	9237	14014
1104.23	8943	14507
1107.51	7977	13826
1110.79	7351	14014
1114.07	7351	13290
1117.35	7630	13826
1120.64	7800	13919
1123.92	7800	14207
1127.2	7932	13642
1130.48	8259	15606
1133.76	8720	15489
1137.04	8613	16480
1140.32	7888	16480
1143.6	7468	15969
1146.88	8116	16094

Table A-3, INEL Corehole ANL-1; 886 - 1142 ft
S-R1/R2 quality assurance analysis P- and S_H-wave data.
data collected on 1/27/95

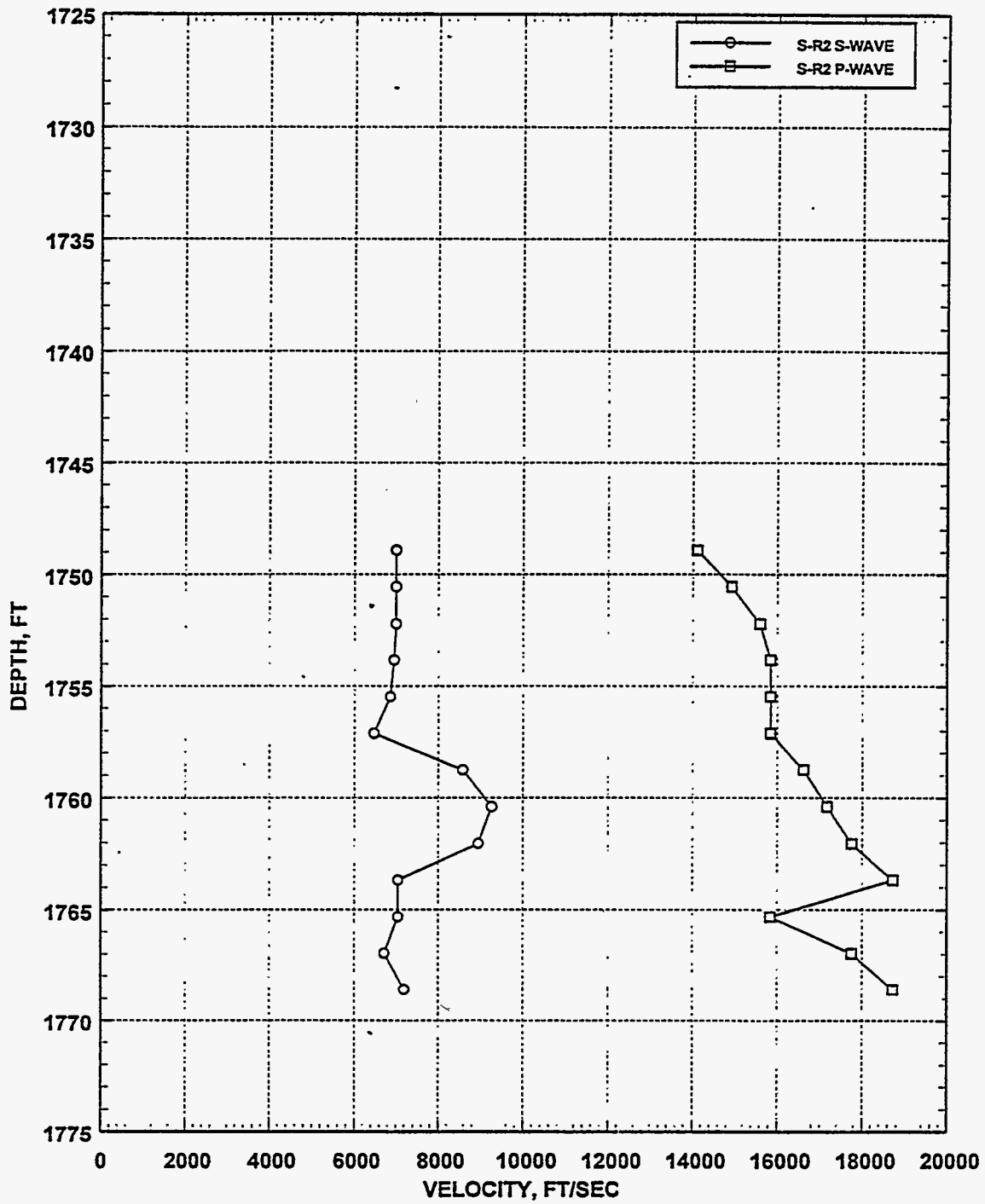


Figure A-7, INEL Corehole ANL-1; 1742 - 1762 ft
 S-R2 quality assurance analysis
 P- and S_H-wave data collected on 1/23/95

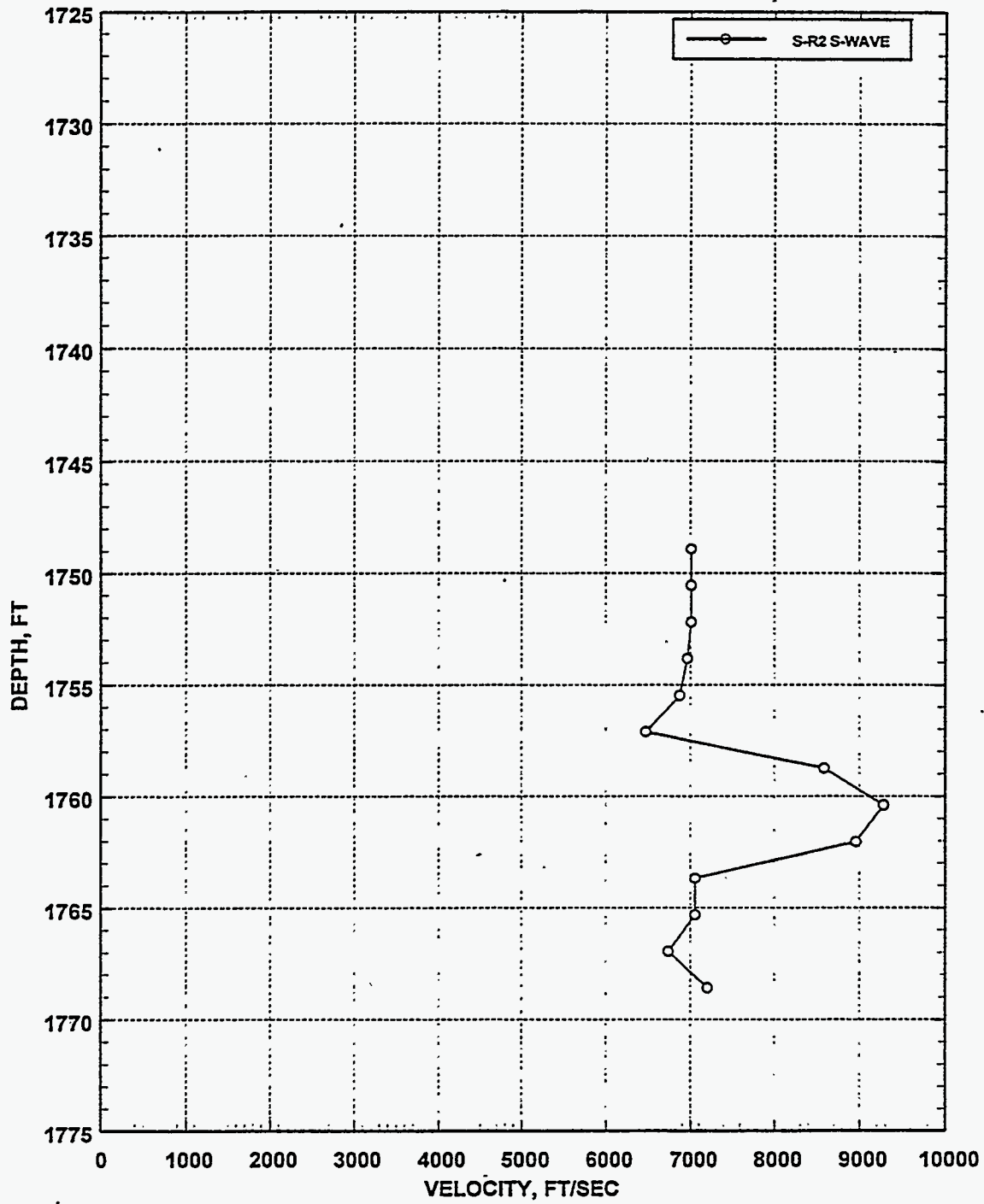


Figure A-8, INEL Corehole ANL-1; 1742 - 1762 ft
 S-R2 quality assurance analysis
 S_H-wave data collected on 1/23/95

depth (ft)	S-R2	S-R2
	Vs (ft/s)	Vp (ft/s)
1748.92	7007	14110
1750.56	7007	14928
1752.2	7007	15606
1753.84	6959	15846
1755.48	6867	15846
1757.12	6478	15846
1758.76	8583	16613
1760.4	9279	17167
1762.04	8957	17759
1763.68	7055	18727
1765.32	7055	15846
1766.96	6732	17759
1768.6	7203	18727

Table A-4, INEL Corehole ANL-1; 1742 - 1762 ft
S-R2 quality assurance analysis P- and S_H-wave data collected on 1/23/95

APPENDIX B

ARGONNE NATIONAL LABORATORY - WEST

BOREHOLE ANL-1

SUSPENSION S_H -WAVE R1 WAVEFORM RECORDS

WITH S-R1 FIRST ARRIVAL PICKS

Near-Hn <Filter>

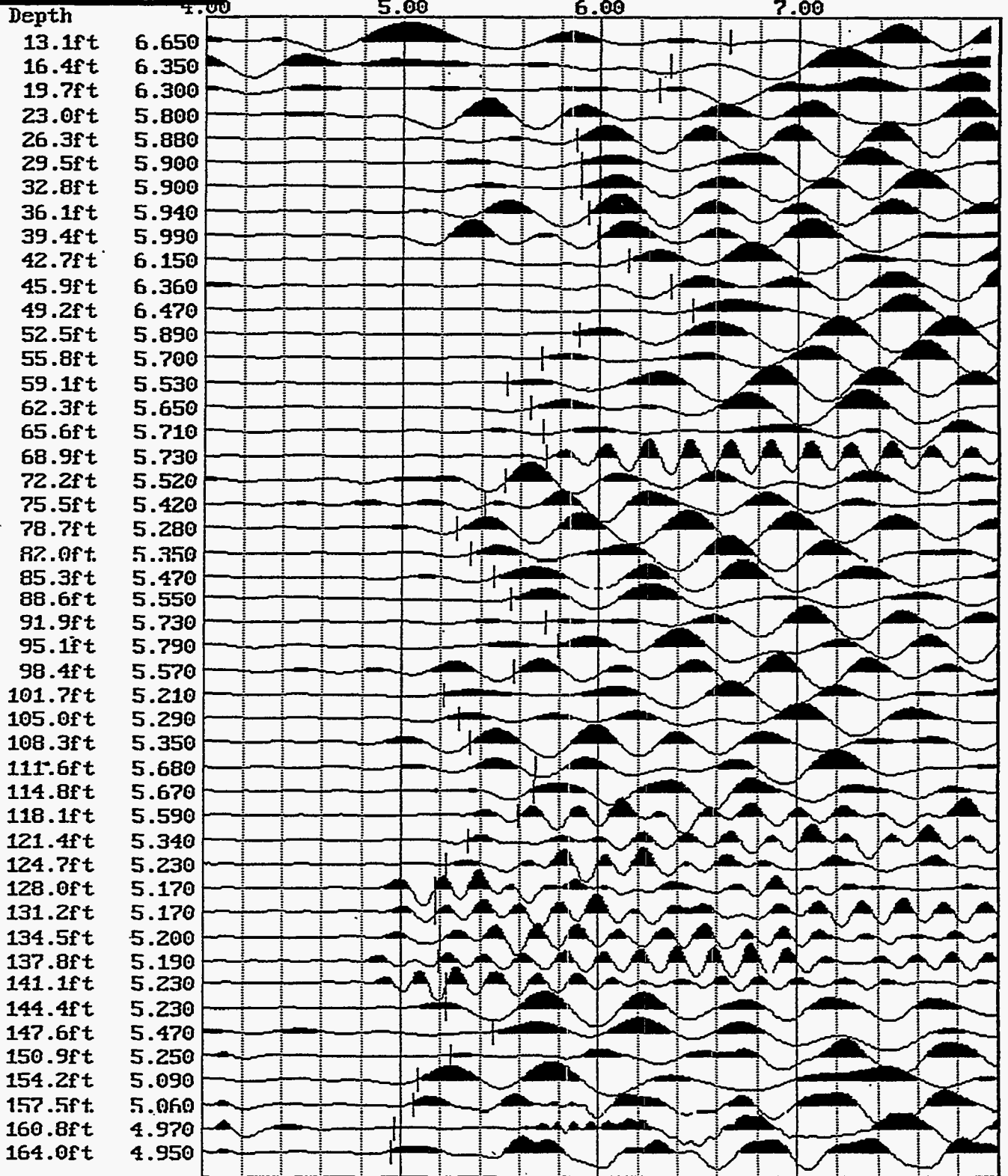


Figure B-1, INEL Corehole ANL-1; 0 - 604 ft
Suspension SH-wave R1 records collected on 8/12/94
"Normal" direction, filtered, with S-R1 first arrival picks in milliseconds

Near-Hn <Filter>

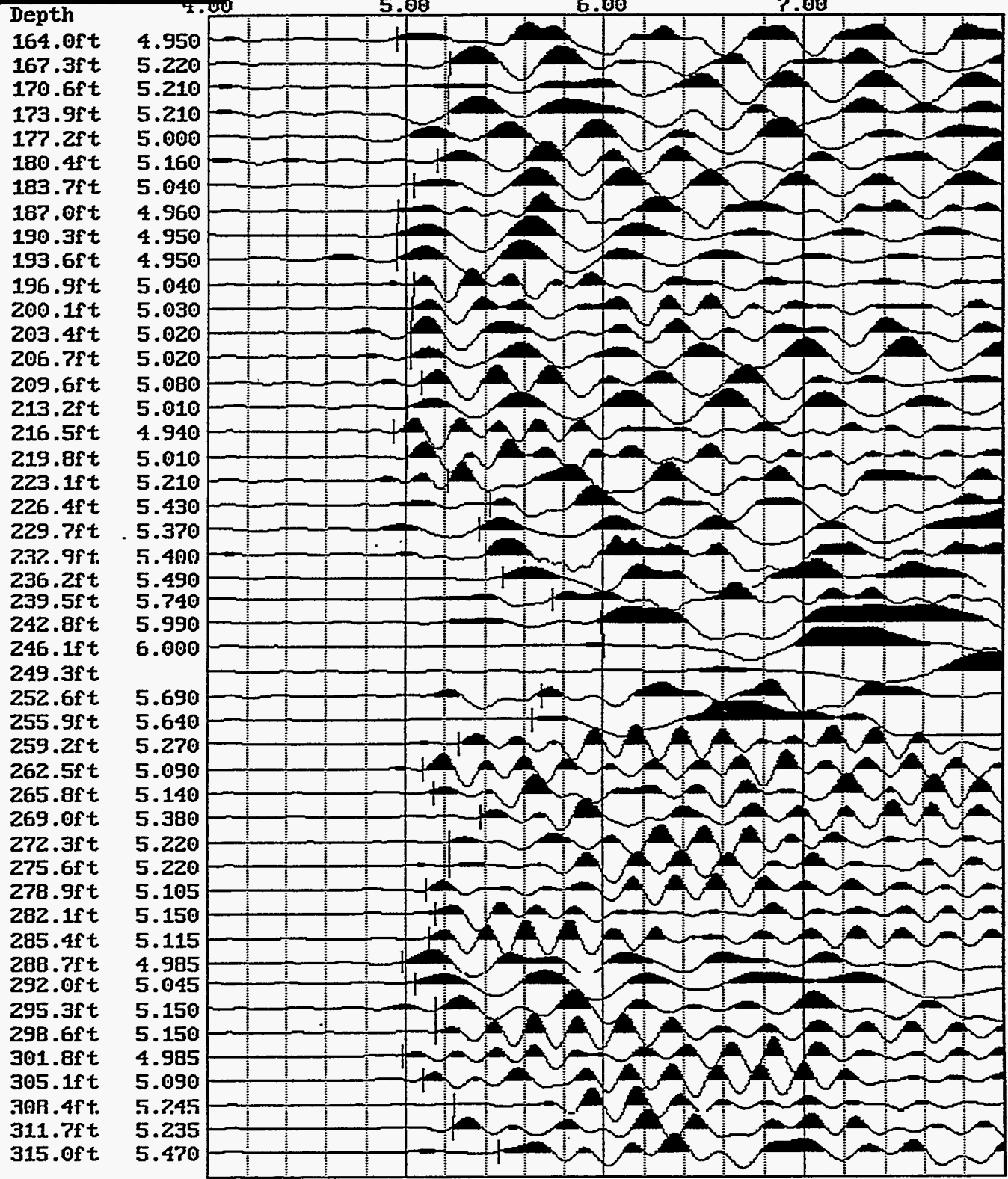


Figure B-1 continued, INEL Corehole ANL-1; 0 - 604 ft
Suspension SH-wave R1 records collected on 8/12/94
"Normal" direction, filtered, with S-R1 first arrival picks in milliseconds

Near-Hn <Filter>

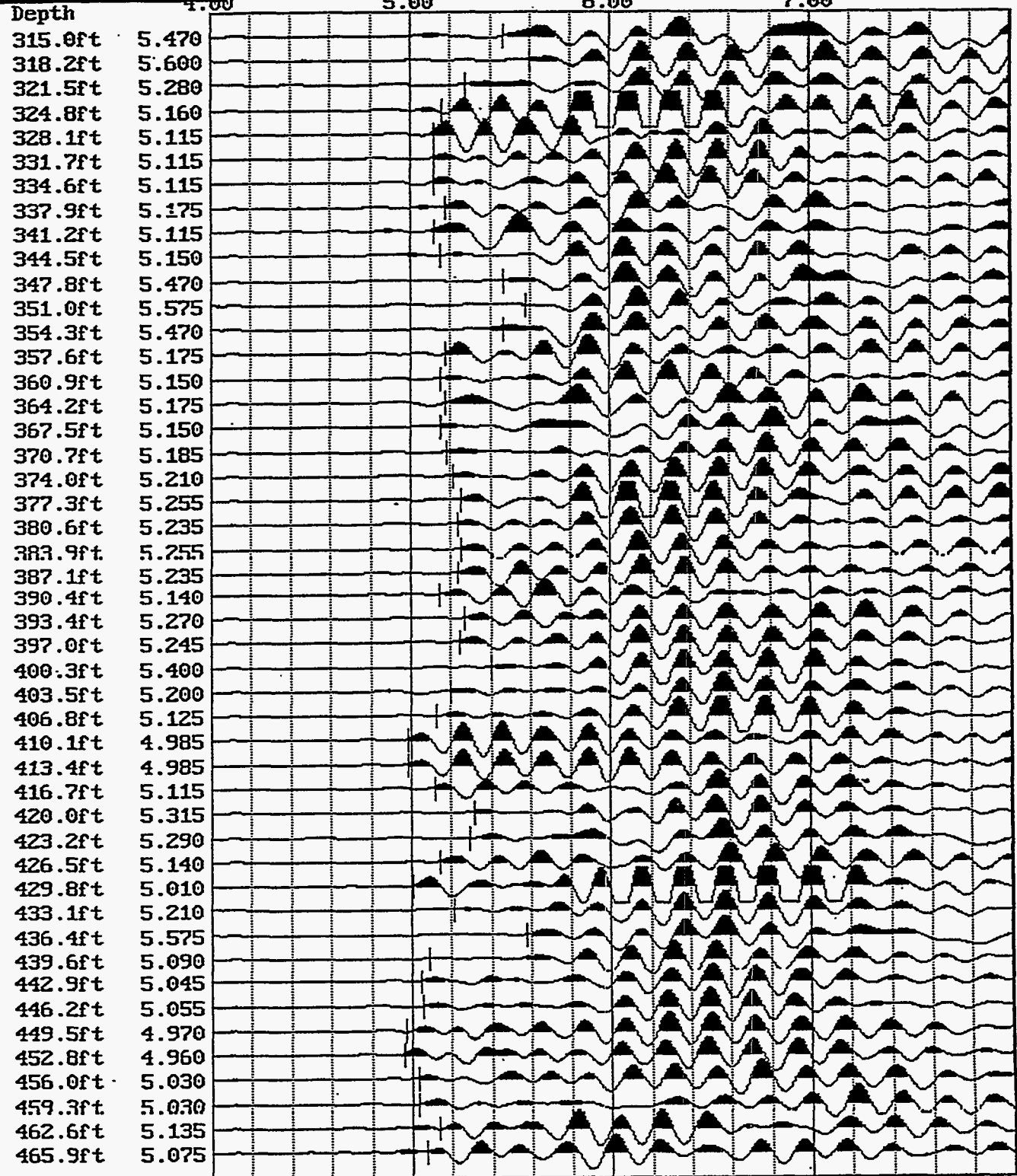


Figure B-1 continued, INEL Corehole ANL-1; 0 - 604 ft
Suspension SH-wave R1 records collected on 8/12/94
"Normal" direction, filtered, with S-R1 first arrival picks in milliseconds

Near-Hn <Filter>

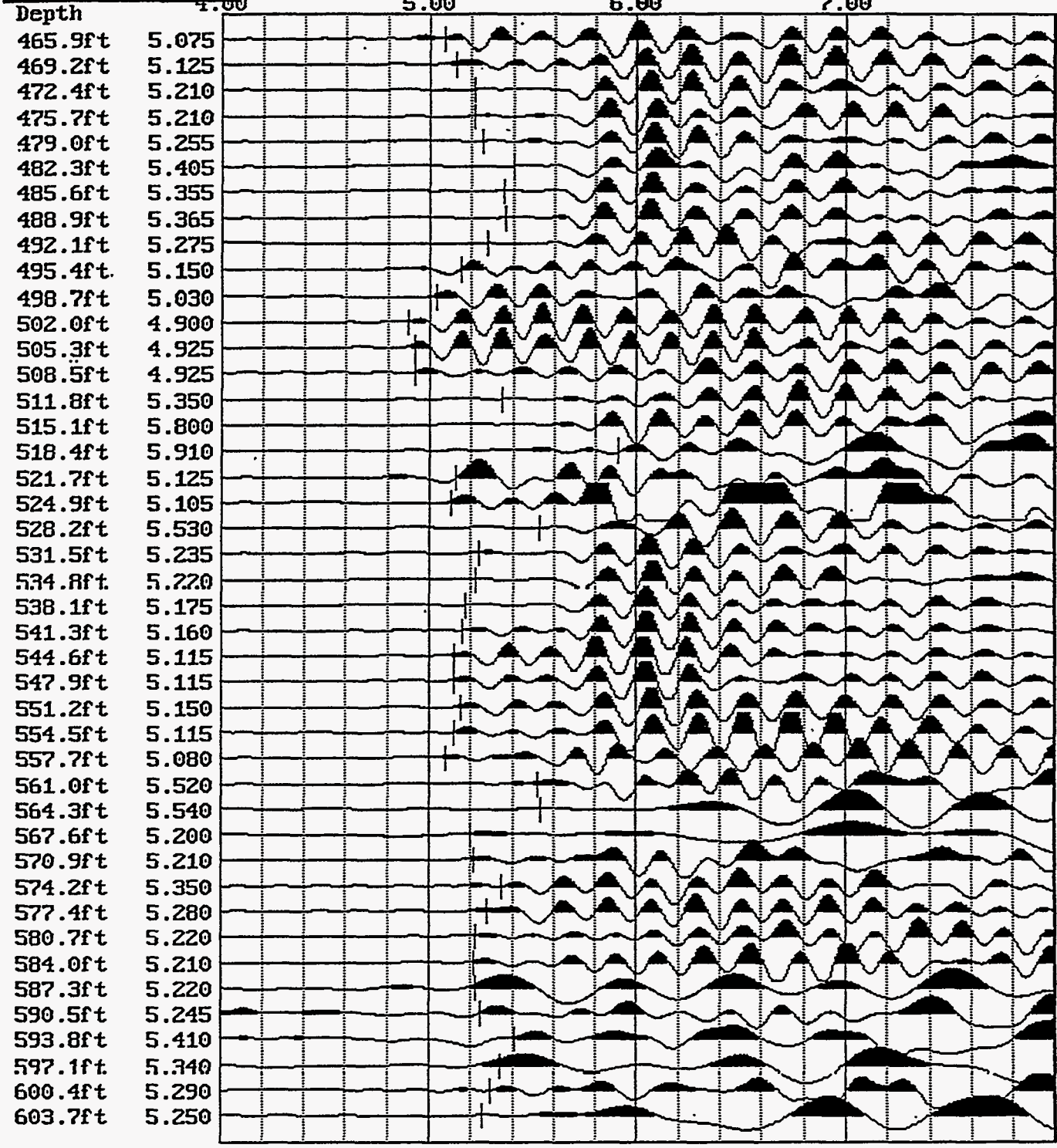


Figure B-1 continued, INEL Corehole ANL-1; 0 - 604 ft
Suspension SH-wave R1 records collected on 8/12/94
"Normal" direction, filtered, with S-R1 first arrival picks in milliseconds

Near-Hn <Filter>

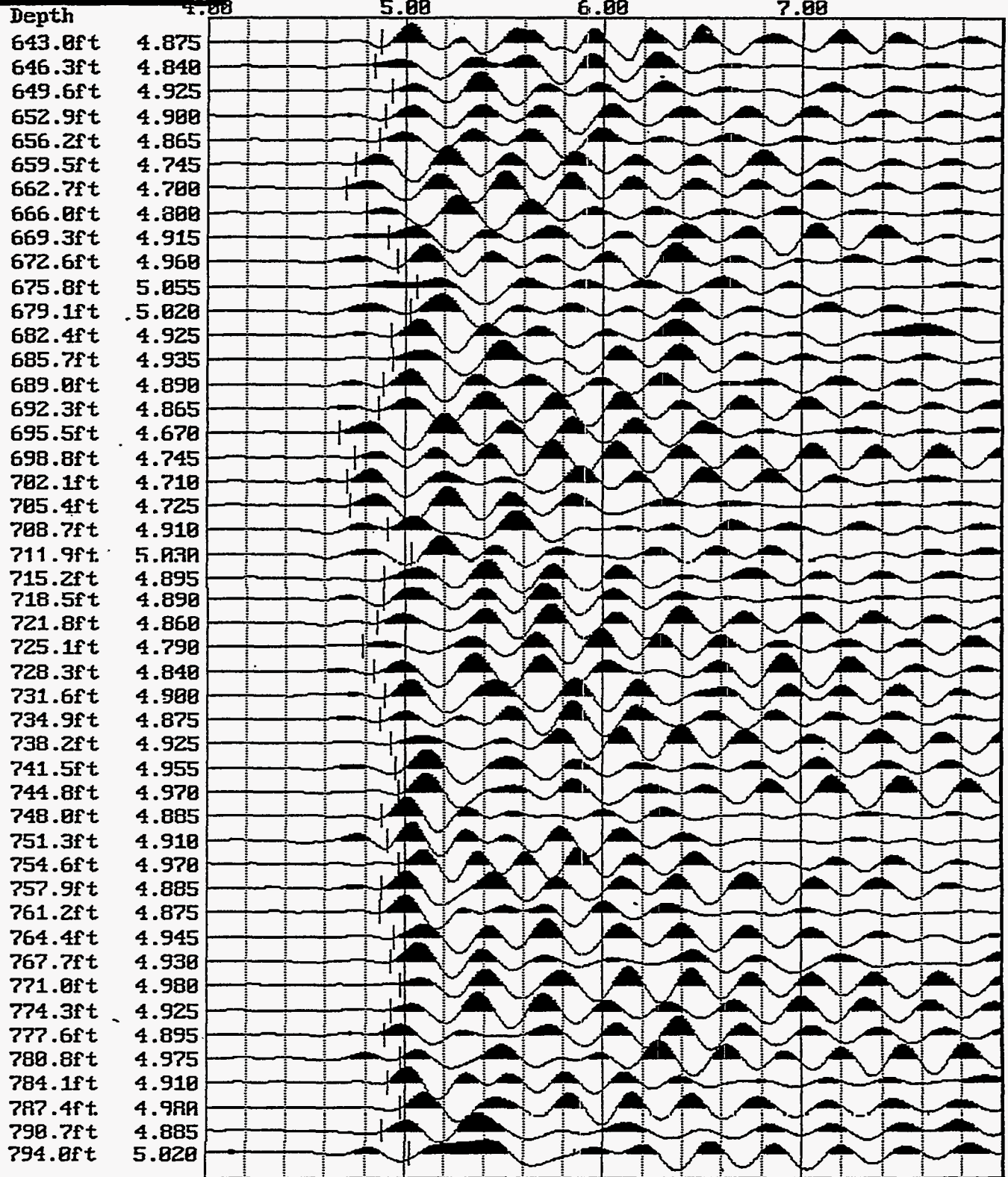


Figure B-2, INEL Corehole ANL-1; 643 - 820 ft
Suspension SH-wave R1 records collected on 1/28/95
"Normal" direction, filtered, with S-R1 first arrival picks in milliseconds

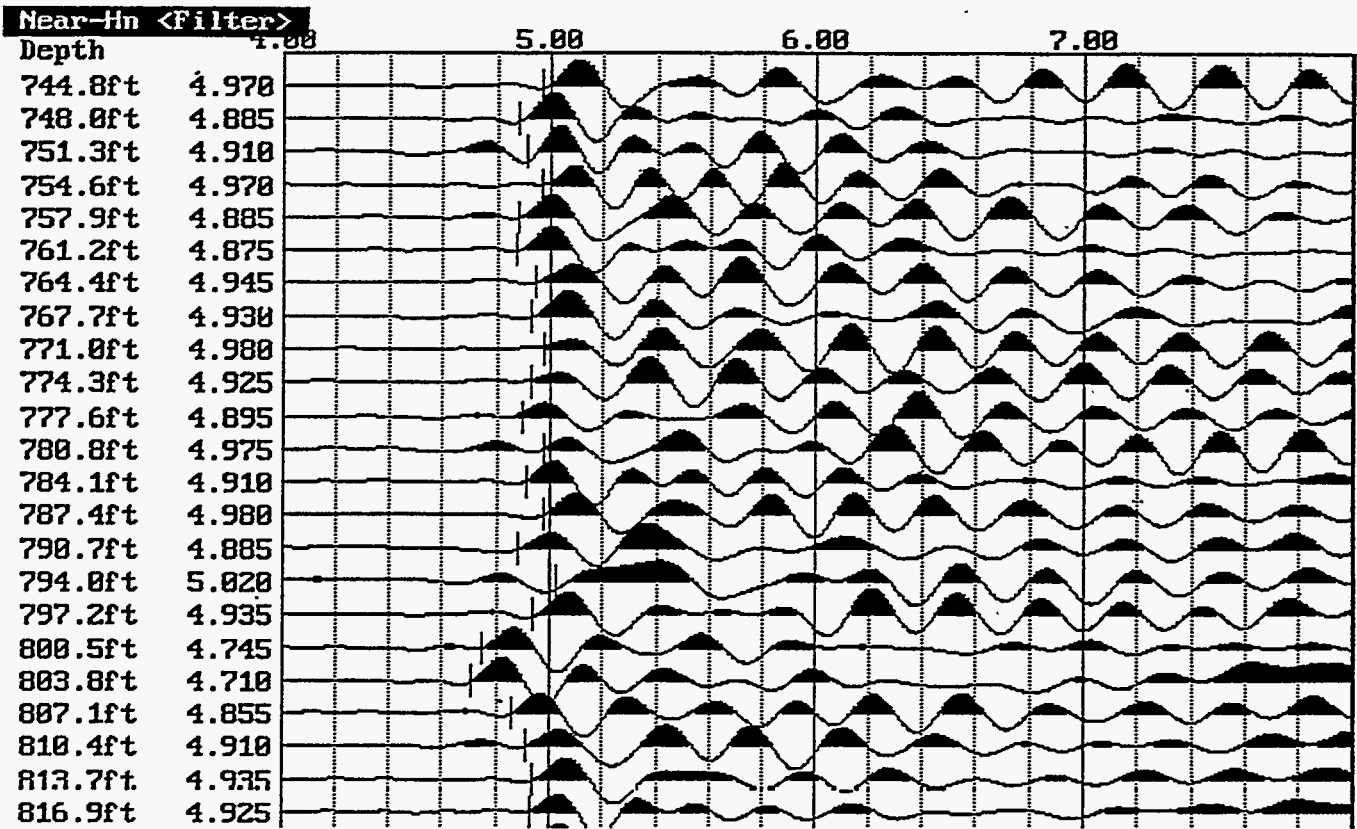


Figure B-2 continued, INEL Corehole ANL-1; 643 - 820 ft
 Suspension SH-wave R1 records collected on 1/28/95
 "Normal" direction, filtered, with S-R1 first arrival picks in milliseconds

Near-Hn <Filter>

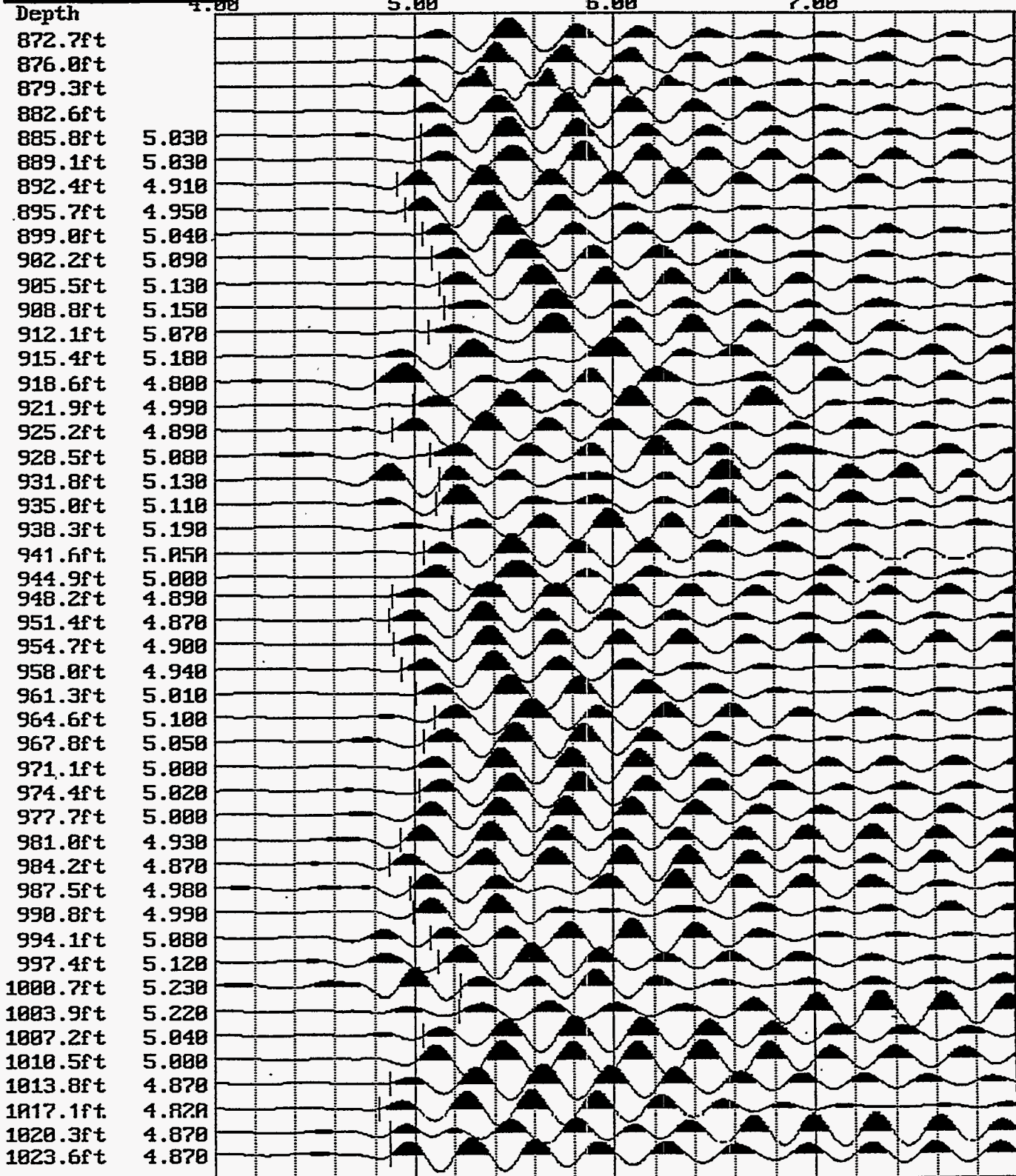


Figure B-3, INEL Corehole ANL-1; 886 - 1142 ft.

Suspension SH-wave R1 records collected on 1/27/95

"Normal" direction, filtered, with S-R1 first arrival picks in milliseconds

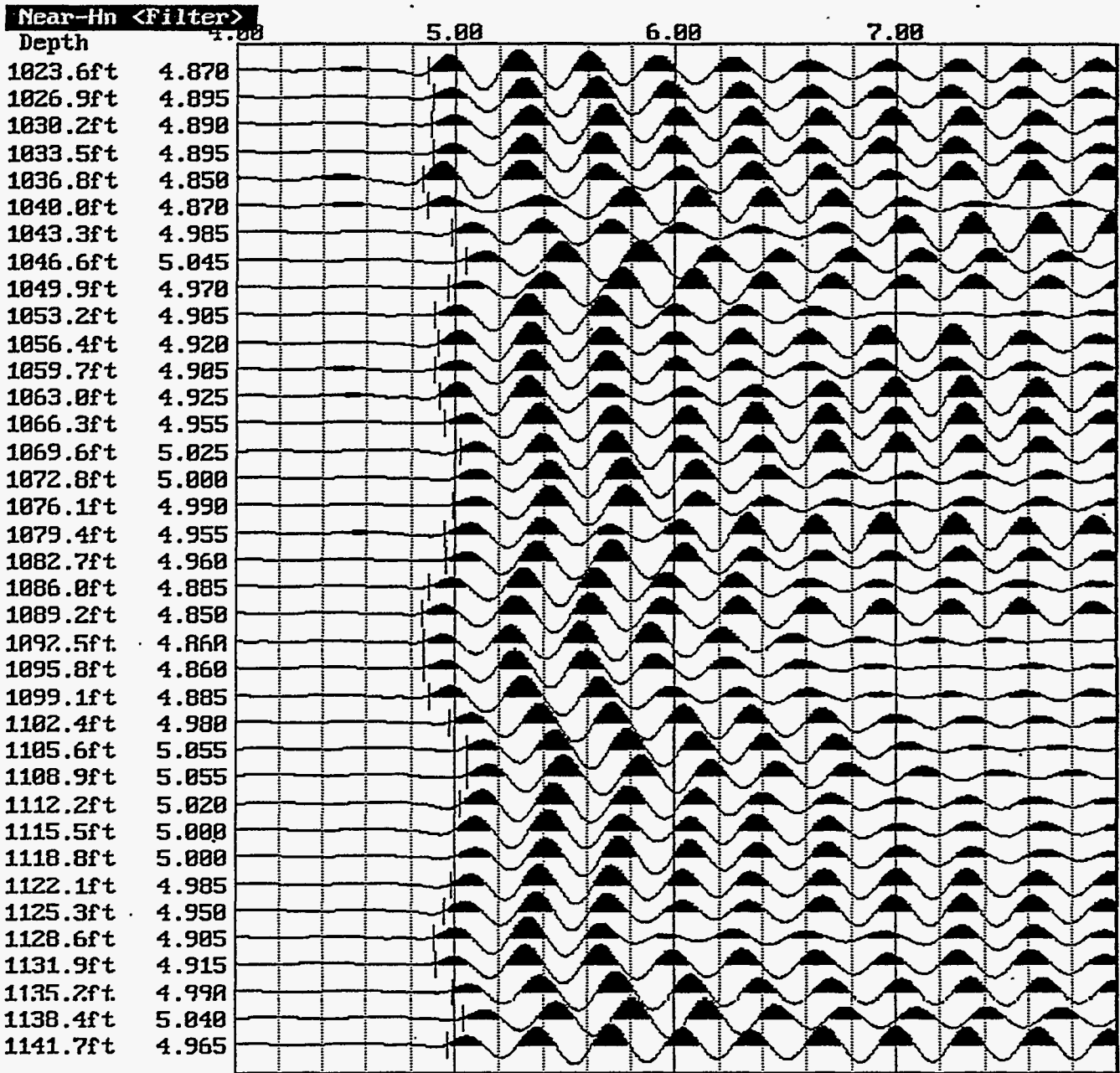


Figure B-3 continued, INEL Corehole ANL-1; 886 - 1142 ft
 Suspension SH-wave R1 records collected on 1/27/95
 "Normal" direction, filtered, with S-R1 first arrival picks in milliseconds

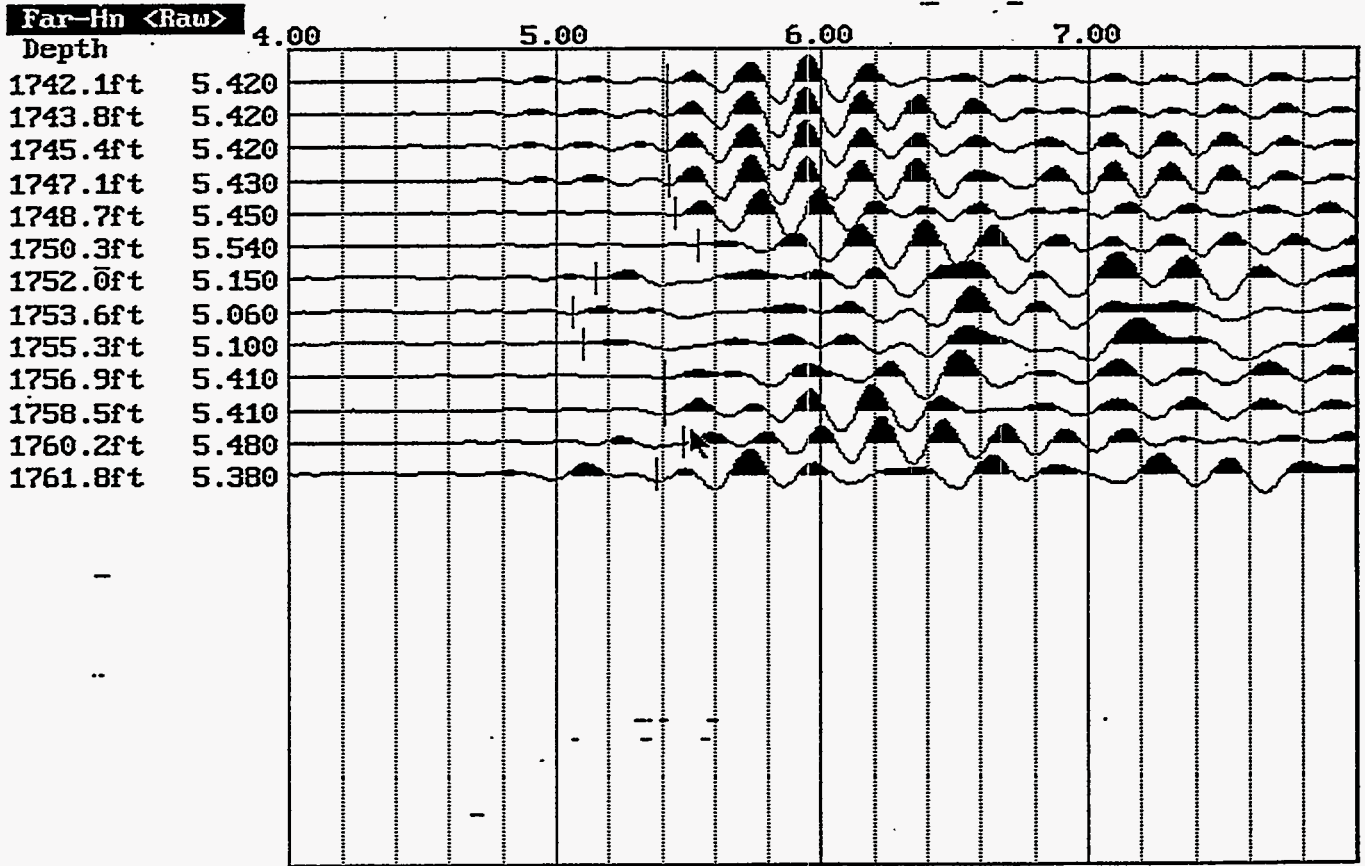


Figure B-4, INEL Corehole ANL-1; 1742 - 1762 ft

Suspension SH-wave R1 records collected on 1/23/95

"Normal" direction, filtered, with S-R2 first arrival picks in milliseconds

APPENDIX C

ARGONNE NATIONAL LABORATORY - WEST

BOREHOLE ANL-1

SUSPENSION P-WAVE R2 WAVEFORM RECORDS

WITH S-R2 FIRST ARRIVAL PICKS

Near-U <Raw>

Depth

13.1ft
16.4ft
19.7ft
23.0ft
26.3ft
29.5ft
32.8ft
36.1ft
39.4ft
42.7ft
45.9ft
49.2ft
52.5ft
55.8ft
59.1ft
62.3ft
65.6ft
68.9ft
72.2ft
75.5ft
78.7ft
82.0ft
85.3ft
88.6ft
91.9ft
95.1ft
98.4ft
101.7ft
105.0ft
108.3ft
111.6ft
114.8ft
118.1ft
121.4ft
124.7ft
128.0ft
131.2ft
134.5ft
137.8ft
141.1ft
144.4ft
147.6ft
150.9ft
154.2ft
157.5ft
160.8ft
164.0ft

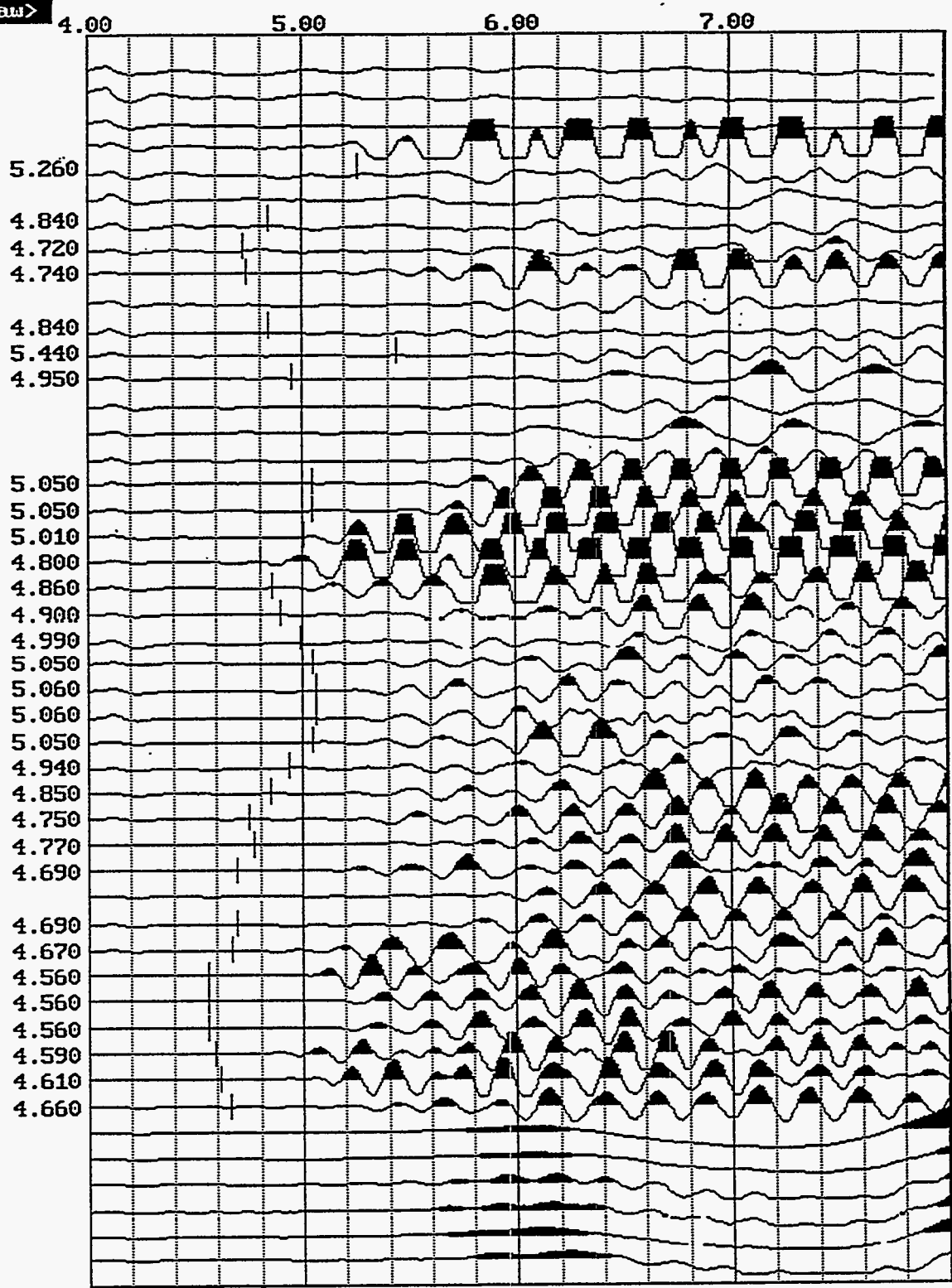


Figure C-1, INEL Corehole ANL-1; 0 - 604 ft
Suspension P-wave R1 records collected on 8/12/94
Vertical, with S-R1 first arrival picks in milliseconds

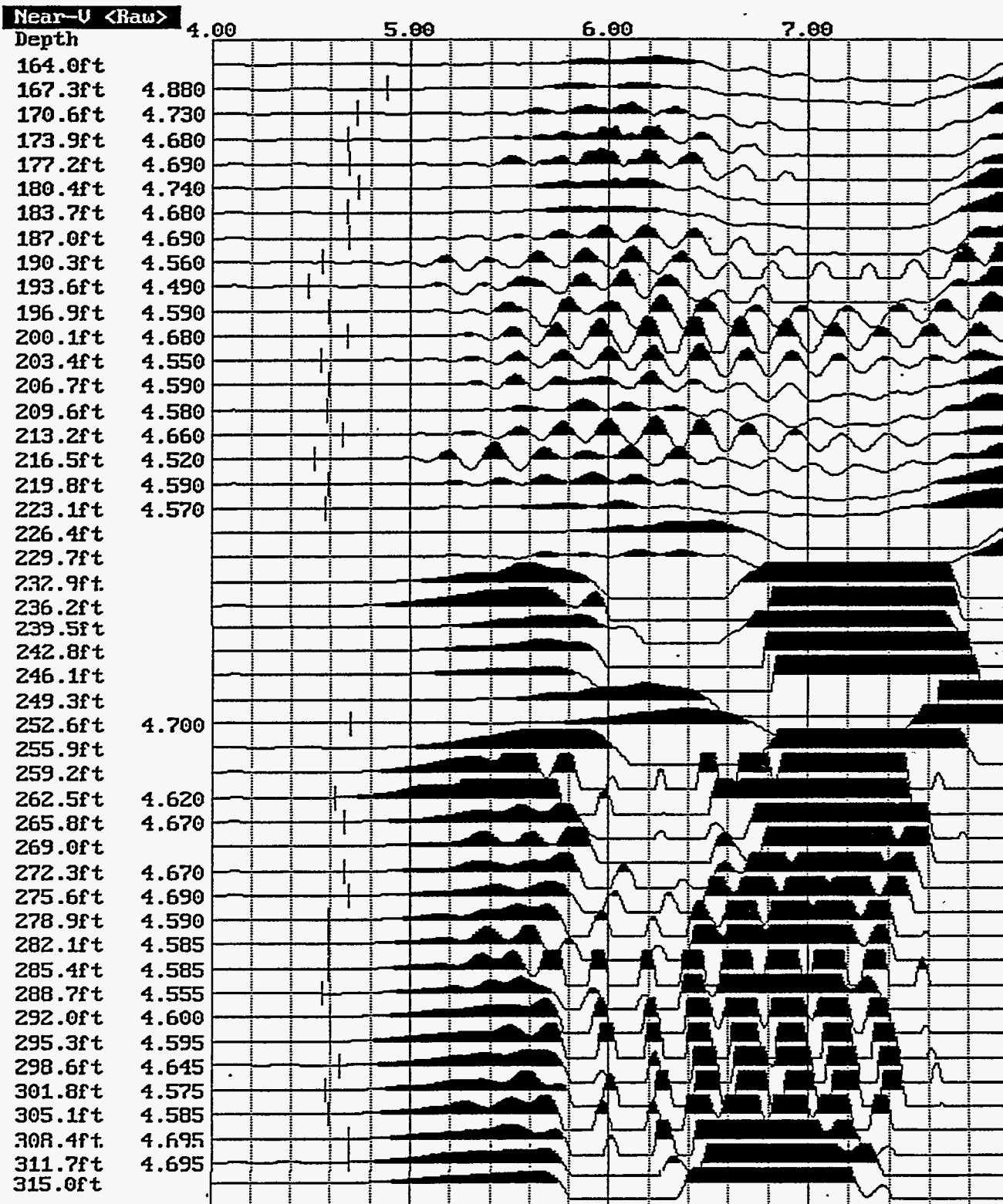


Figure C-1 continued, INEL Corehole ANL-1; 0 - 604 ft
 Suspension P-wave R1 records collected on 8/12/94
 Vertical, with S-R1 first arrival picks in milliseconds

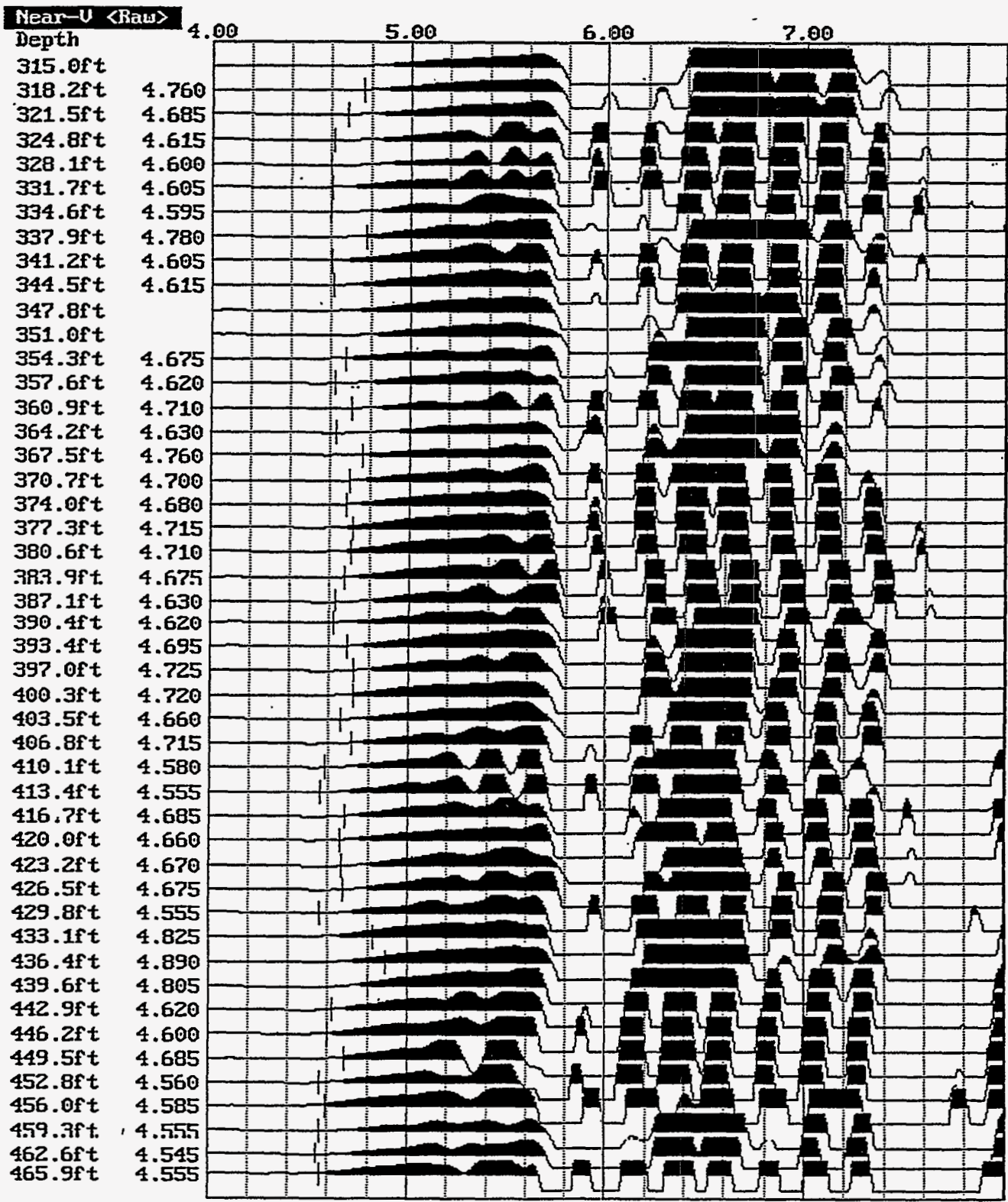


Figure C-1 continued, INEL Corehole ANL-1; 0 - 604 ft
 Suspension P-wave R1 records collected on 8/12/94
 Vertical, with S-R1 first arrival picks in milliseconds

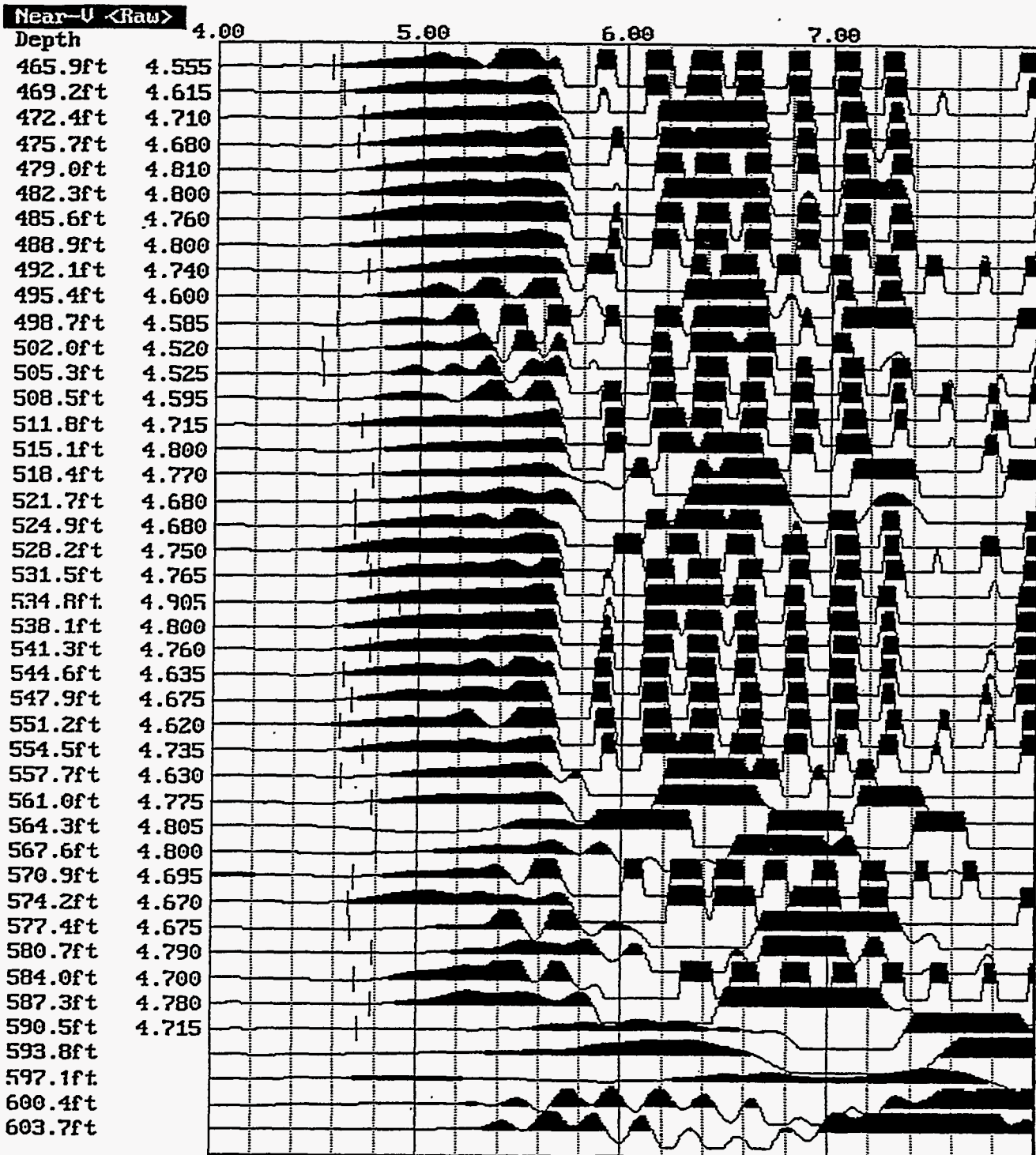


Figure C-1 continued, INEL Corehole ANL-1; 0 - 604 ft
 Suspension P-wave R1 records collected on 8/12/94
 Vertical, with S-R1 first arrival picks in milliseconds

Far-U <Raw>

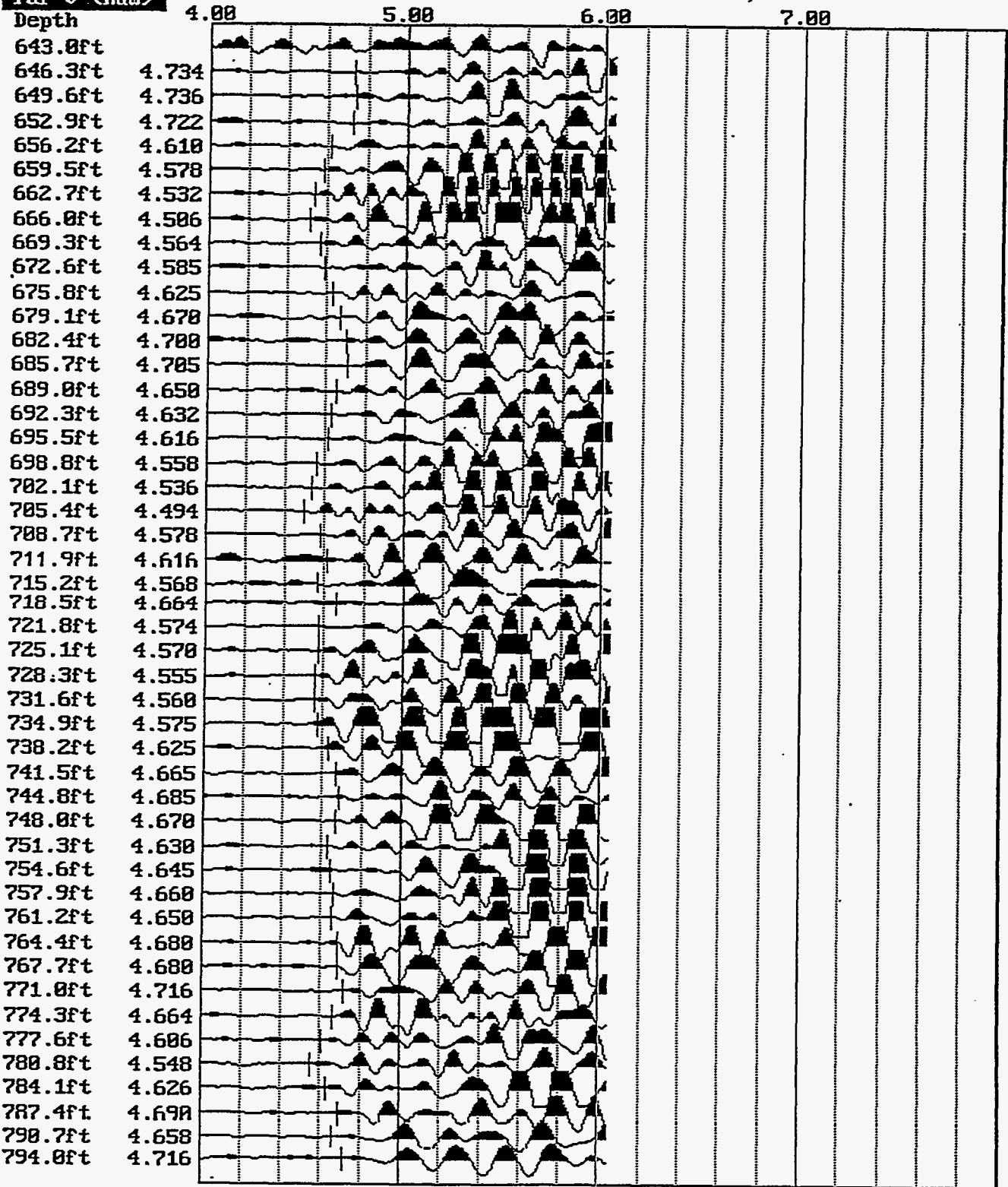


Figure C-2, INEL Corehole ANL-1; 643 - 820 ft
Suspension P-wave R2 records collected on 1/28/95
Vertical, with S-R2 first arrival picks in milliseconds

Far-U <Raw>

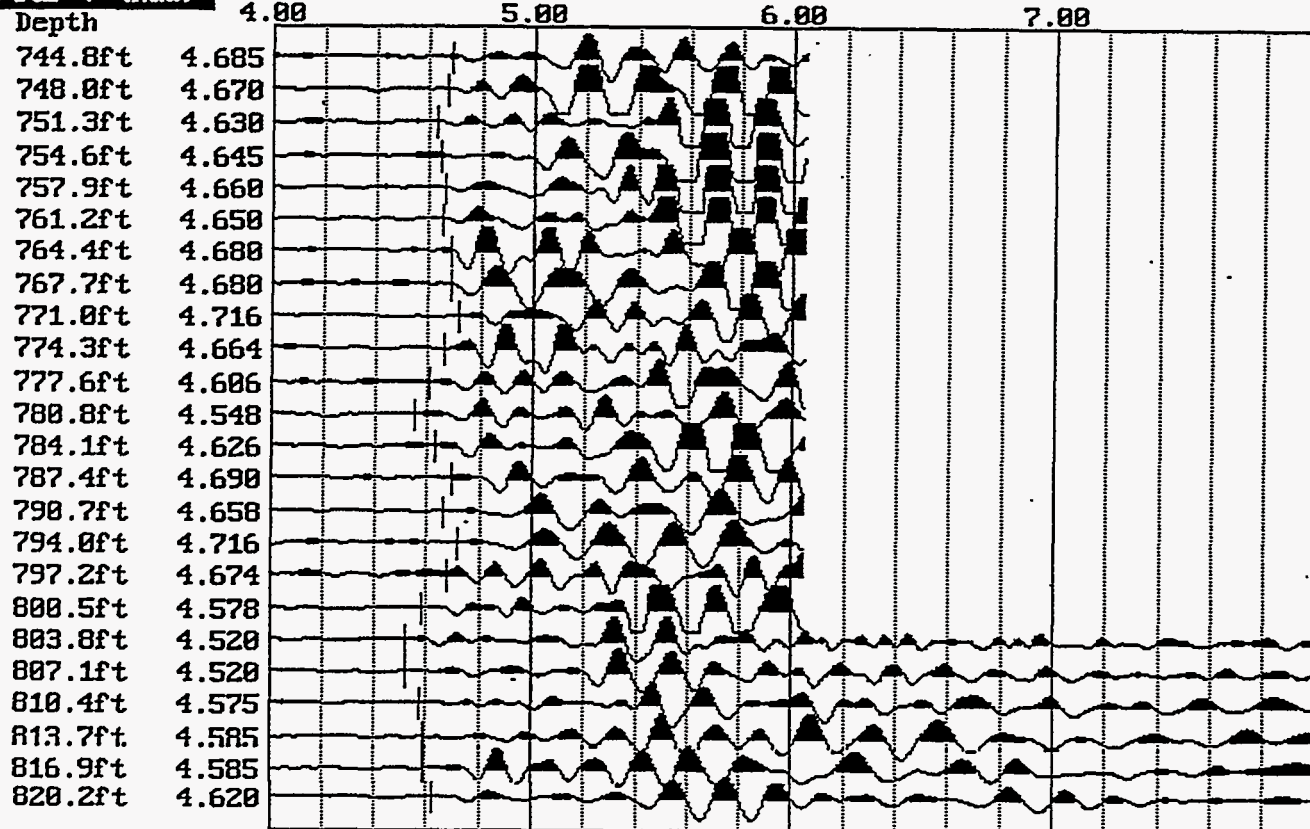


Figure C-2 continued, INEL Corehole ANL-1; 643 - 820 ft
Suspension P-wave R2 records collected on 1/28/95
Vertical, with S-R2 first arrival picks in milliseconds

Far-U <Raw>

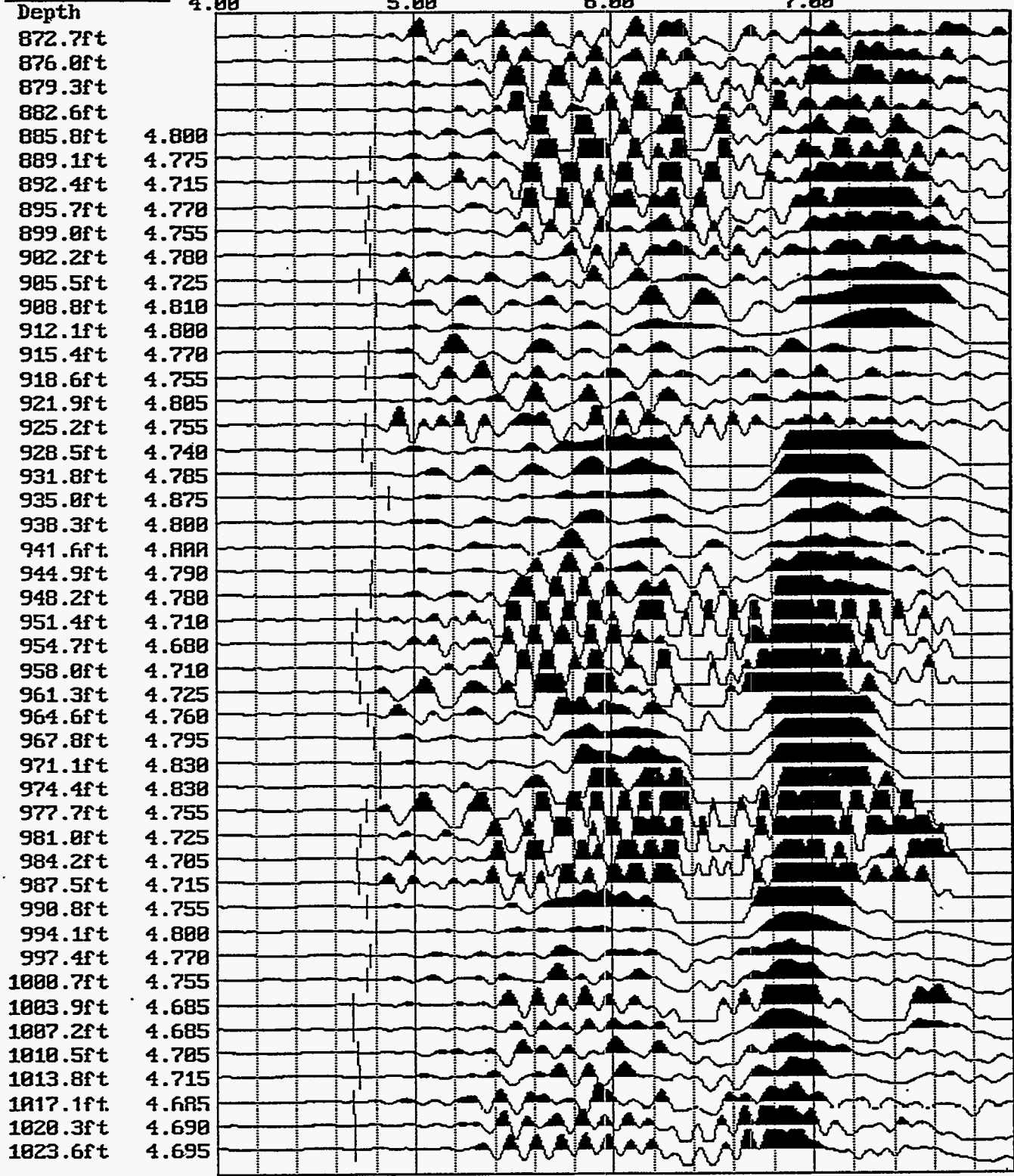


Figure C-3, INEL Corehole ANL-1; 886 - 1142 ft
Suspension P-wave R2 records collected on 1/27/95
Vertical, with S-R2 first arrival picks in milliseconds

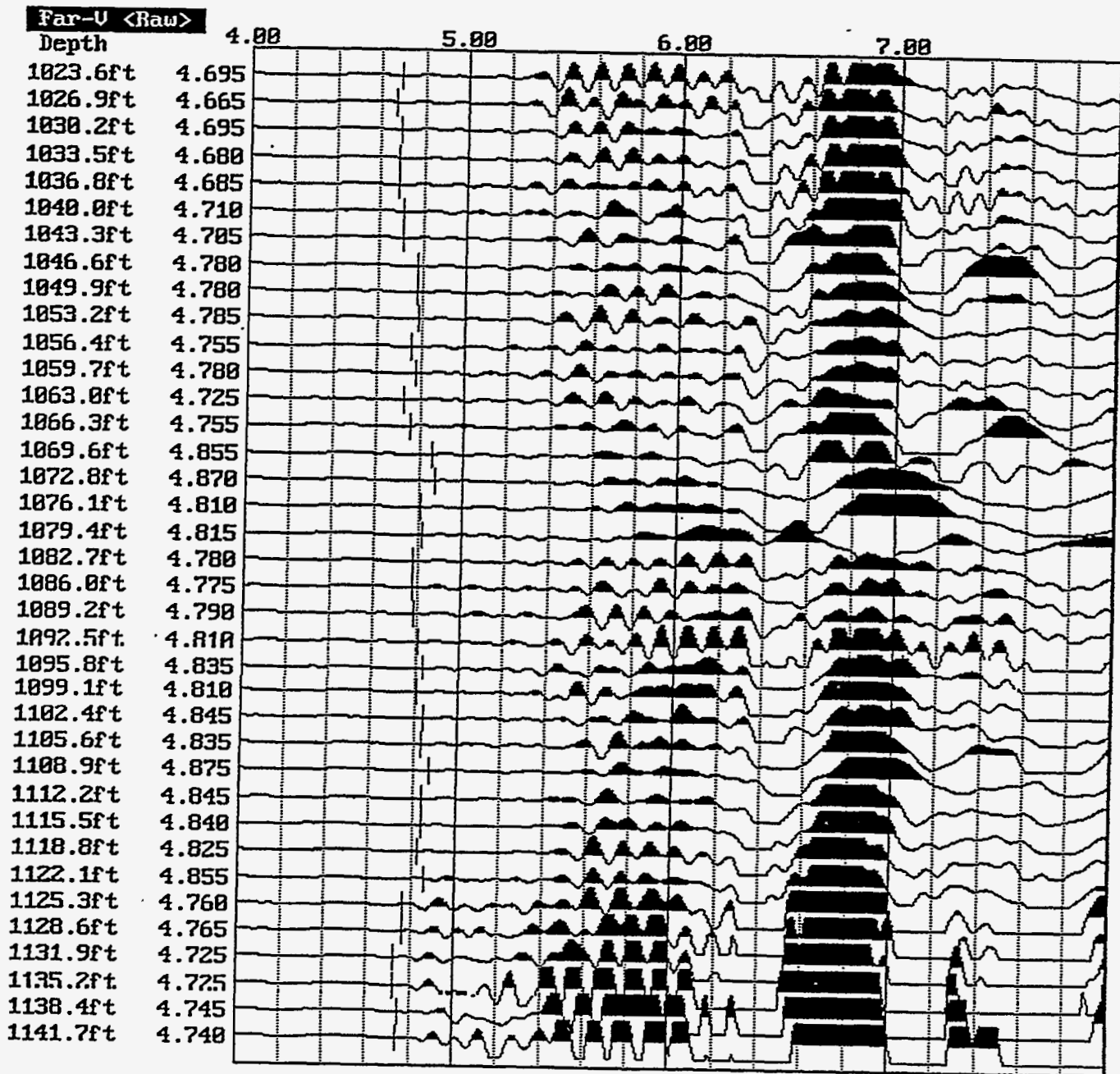


Figure C-3 continued, INEL Corehole ANL-1; 886 - 1142 ft
 Suspension P-wave R2 records collected on 1/27/95
 Vertical, with S-R2 first arrival picks in milliseconds

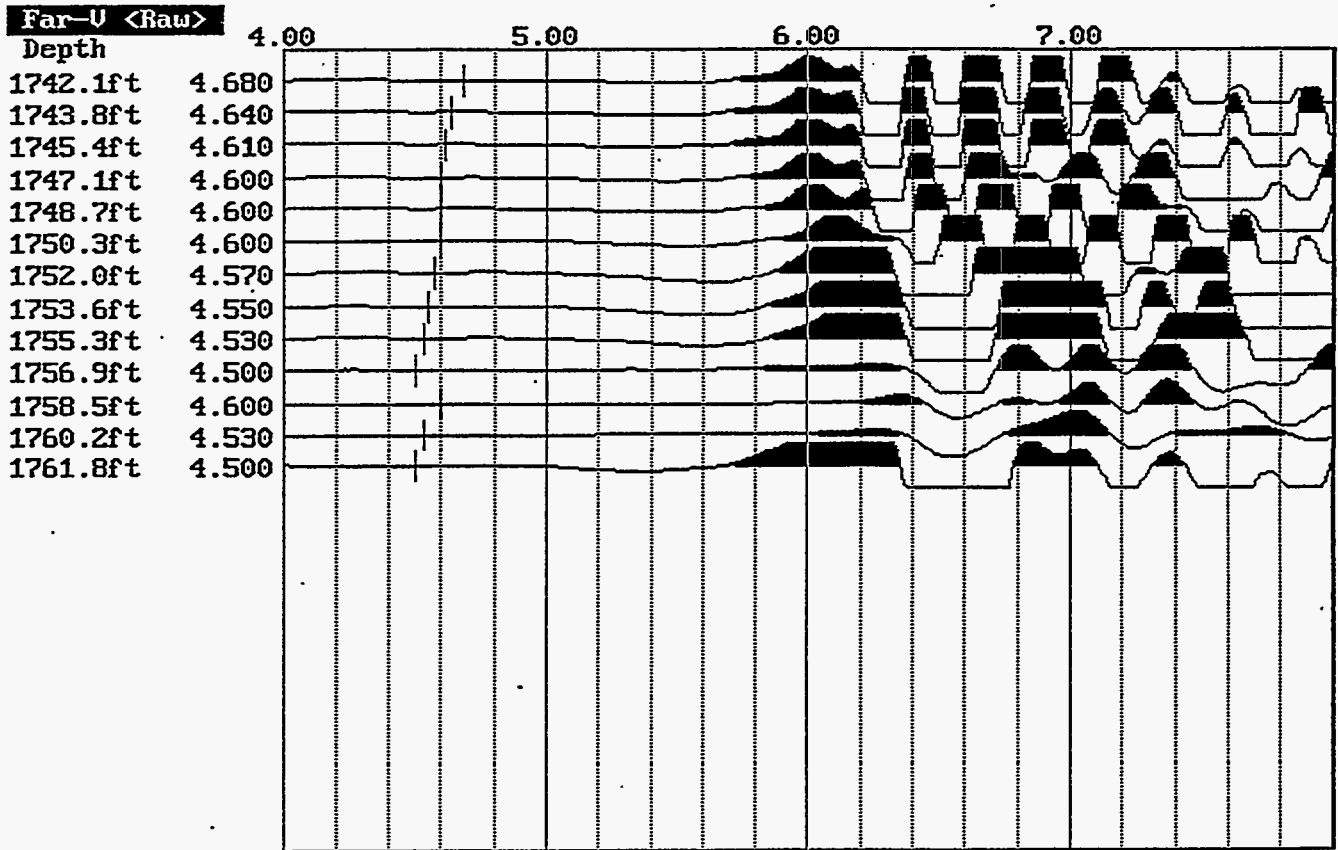


Figure C-4, INEL Corehole ANL-1; 1742 - 1762 ft
 Suspension P-wave R2 records collected on 1/23/95
 Vertical, with S-R2 first arrival picks in milliseconds

APPENDIX D

ARGONNE NATIONAL LABORATORY - WEST
BOREHOLE ANL-1
DOWNHOLE S_H -WAVE WAVEFORM RECORDS
WITH UNCORRECTED FIRST ARRIVAL PICKS

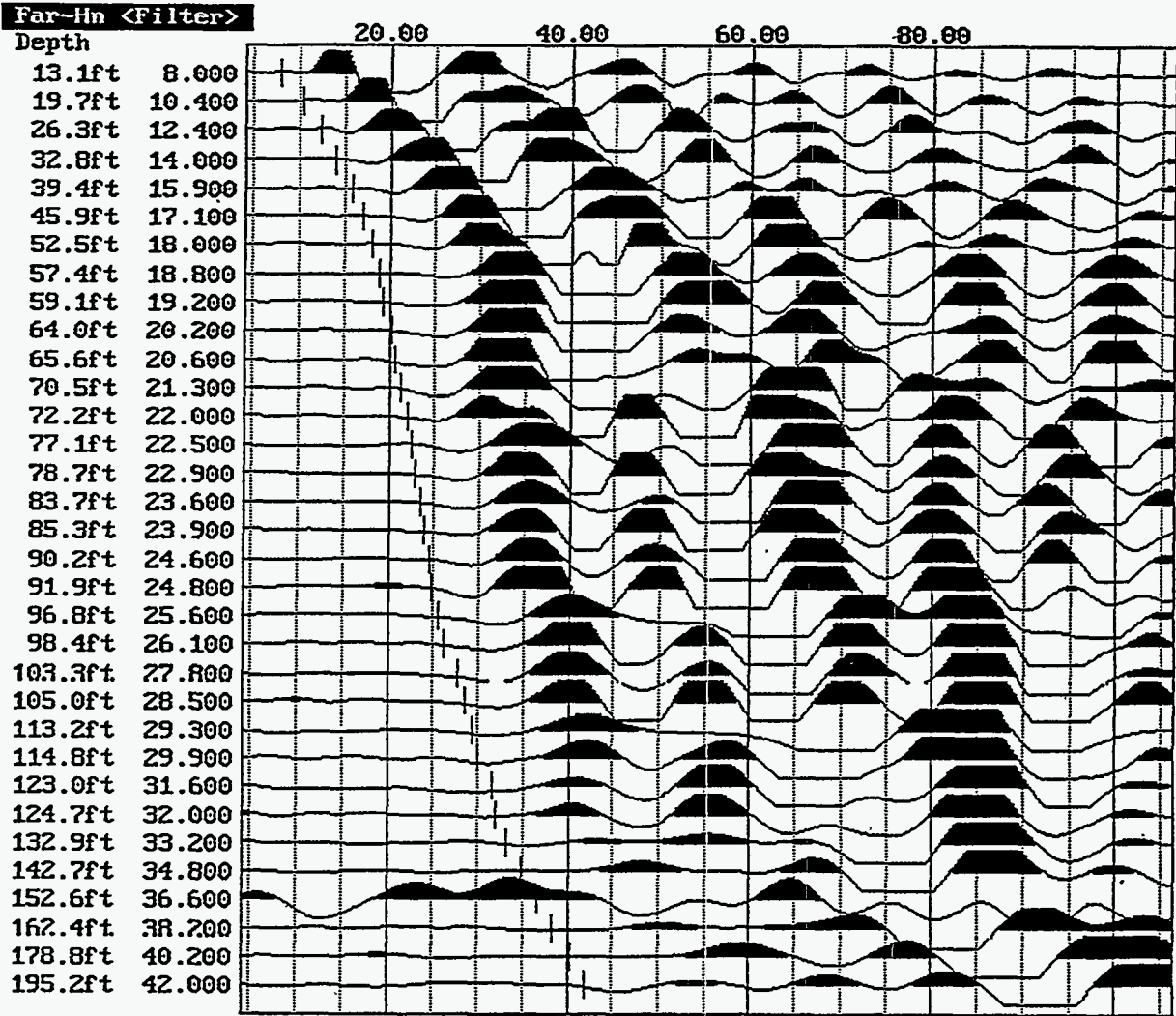


Figure D-1, Corehole ANL-1
 Downhole S_H -wave records collected on 8/12/94
 "Normal" direction, filtered, with uncorrected first arrival picks in milliseconds

APPENDIX E

ARGONNE NATIONAL LABORATORY - WEST

BOREHOLE ANL-1

DOWNHOLE P-WAVE WAVEFORM RECORDS

WITH UNCORRECTED FIRST ARRIVAL PICKS

Far-U <Filter>

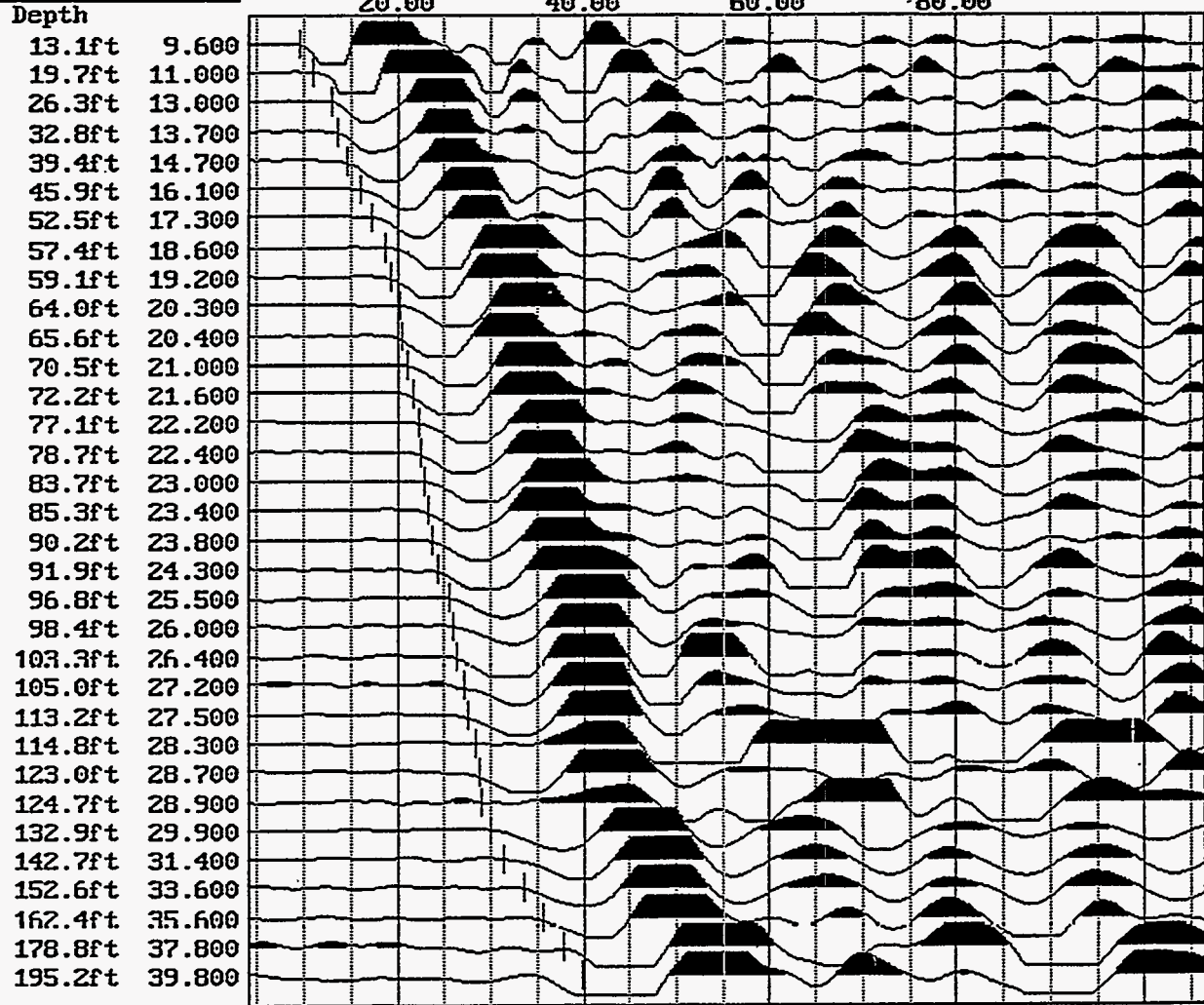


Figure E-1, Corehole ANL-1
Downhole P-wave records collected on 8/12/94
Filtered, with uncorrected first arrival picks in milliseconds

APPENDIX F

OYO MODEL 170 SUSPENSION VELOCITY

LOGGING SYSTEM NIST TRACEABLE

CALIBRATION PROCEDURE

TABLE F-1

**AGBABIAN ASSOCIATES' VELOCITY LOGGING
EQUIPMENT DESCRIPTION AND
CALIBRATION PROCEDURES**

EQUIPMENT	FUNCTION	CALIBRATION REQUIREMENTS	MAINTENANCE REQUIREMENTS
OYO Model 170 Suspension Logging Data Logger	Records data from probe and sends control signals to probe	Every six months, calibrate sample clock using an NTIS- traceable external signal counter and signal generator per attached procedure. (see Attachment)	Diagnose and repair by manufacturer's authorized representative if sample clock is out of specification or instrument fails.
OYO Model 170 Suspension Logging Probe	Suspended in borehole to provide both seismic source and sense wave arrivals at two locations 1 meter apart	No sensor calibration is necessary, as amplitude is not important to the velocity measurement.	Repair as needed by manufacturer- trained personnel.
Winch System (several interchangeable models available)	The winch and cable suspend the probe in the borehole and connect it to the data logger	No calibration required	Repair as needed. Lubricate moving parts frequently, and keep cable clean.

CALIBRATION PROCEDURE FOR AGBABIAN ASSOCIATES' VELOCITY LOGGING SYSTEM

1.0 OYO Model 170 Data Logger Unit

1.1 Purpose

The purpose of this calibration procedure is to verify that the sample clock of the OYO Model 170 is accurate to within 1%.

1.2 Calibration Frequency

The calibration described in this procedure shall be performed every six months minimum.

1.3 Test Equipment

- Function Generator, Krohn Hite 5400B or equivalent
- Frequency Counter, HP 5315A or equivalent, current NIST traceable calibration
- Test cable, function generator to OYO 170 Data Logger input channels

1.4 Procedure

- Connect function generator to OYO Model 170 data logger using test cable
- Set up function generator to produce a 100.0 Hz, 0.250 volt peak square wave
- Record a data record with 100 microsecond sample period
- Measure the square wave frequency in the digital data using the data logger's screen display or utility software

1.5 Calibration Criteria

The measured square wave frequency in the digital data must fall between 99.0 and 101.0 Hz to be deemed acceptable. If outside this range, the data logger must be repaired and retested.



AGBABIAN ASSOCIATES
engineers and consultants

1111 South Arroyo Parkway, Suite 405, Pasadena, CA 91105 • (818) 441-1060 • FAX: (818) 441-0757

OYO 170 SUSPENSION PS LOG RECORDER CALIBRATION SHEET REV. 3/84

SYSTEM MFG.: OYO CORPORATION MODEL NO.: 3331
 SERIAL NO.: 12004 CALIBRATION DATE: 9/6/94
 BY: P. STEVENSON CAL DUE DATE: 3/6/95

COUNTER MFG.: H. P. MODEL NO.: 5315 A
 SERIAL NO.: AO 3580 CALIBRATION DATE: 6/2/94
 BY: SIMCO # 719 CAL DUE DATE: 12/2/94

SIG GEN MFG.: KROHN HITE MODEL NO.: 5400B
 SERIAL NO.: 3281 CALIBRATION DATE: 6/6/94
 BY: SIMCO # 779 CAL DUE DATE: 6/6/95

SYSTEM SETTINGS:

GAIN: ALL CHANNELS TO 10
 FILTER: ALL LOW TO 5HZ, ALL HI TO 25KHZ
 RANGE: 100MICROSEC
 DELAY: 4MILLISEC (STD)
 STACK: 1 (STD)
 PULSE: 1.6MILLISEC (STD)
 DISPLAY: VARIABLE (STD)
 PRINT: SHORT/VERT SIZE=1 (STD)
 SYSTEM: MODE=SEMI AUTO (STD)
 SYSTEM: DATA FORMAT=HIGH-LOW (STD)
 SYSTEM: SHEAVE=500 PULSEM (STD)
 SYSTEM: DATE=CORRECT DATE & TIME

✓
✓
✓
✓
✓
✓
✓
✓
✓
✓
✓

SET FREQUENCY TO 100.0 HZ, SINE WAVE AMPLITUDE TO 0.250 VOLTS PEAK (0.1768 VOLTS RMS). SET SQUARE WAVE AMPLITUDE TO 0.250 VOLTS PEAK. RECORD BOTH ON DISKETTE AND PAPER TAPE. ANALYZE AND PRINT WAVEFORMS FROM ANALYSIS UTILITY. ATTACH PAPER COPIES OF PRINTOUT AND PAPER TAPES TO THIS FORM. AVERAGE FREQUENCY MUST BE BETWEEN 99.0 AND 101.0 HZ.: ✓

WAVEFORM	FILE NO	FREQ.	TIME FOR 9 CYCLES Hn	TIME FOR 9 CYCLES Hr	TIME FOR 9 CYCLES V	AVG FREQ.
SINE	007	100.02	90.0	90.0	90.0	100.0
SQUARE	008	100.02	90.0	90.0	89.9	100.0



REPORT NUMBER: 125064

SIMCO ELECTRONICS
2201 NORTH HOLLYWOOD WAY, BURBANK, CA 91505

CERTIFICATE OF CALIBRATION

for

KINEMATRICS

HEWLETT-PACKARD, 5315A, FREQUENCY COUNTER
I.D. NO.:5149-46 S/N:1948A03880
DEPT. NO.: SERV ASSET NO.: 546 PO: 25385

CALIBRATION DATE: 06/02/94
NEXT CAL: 12/02/94

REASON FOR SERVICE: PERIODIC CHECK
CONDITION ON ARRIVAL: MEETS MANUFACTURER'S SPEC'S.
DISPOSITION: CLEAN/CALIBRATE TO MFR'S SPEC

DETAIL OF WORK PERFORMED:

TEMPERATURE: 72 Degrees Fahrenheit

RELATIVE HUMIDITY: 45 %

PARTS REPLACED:

STANDARDS USED:

TYPE/MODEL	CONT-ITEM	DUE DATE/INTVL	ACCY.	NIST NO.
FREQ STANDARD/8131	1015*145	07/03/94(S)	+/-2x10 ⁻⁸	WVVB
OSCILLATOR/239A	1004*129	09/11/94(S)	+/- .25dB AC	245850
SINEWAVE GENERATOR/SG503	1005*62	06/20/94(S)	+/-3% FLAT	808886

I, JESUS PARDO, TECHNICIAN
CERTIFY THAT THE ABOVE WORK WAS COMPLETED IN ACCORDANCE WITH INDUSTRY
ACCEPTED METHODS. SIMCO'S CALIBRATION SYSTEM COMPLIES WITH MIL-STD-45662A
AND CALIBRATION WAS PERFORMED USING STANDARDS WHICH ARE TRACEABLE TO THE
NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY.

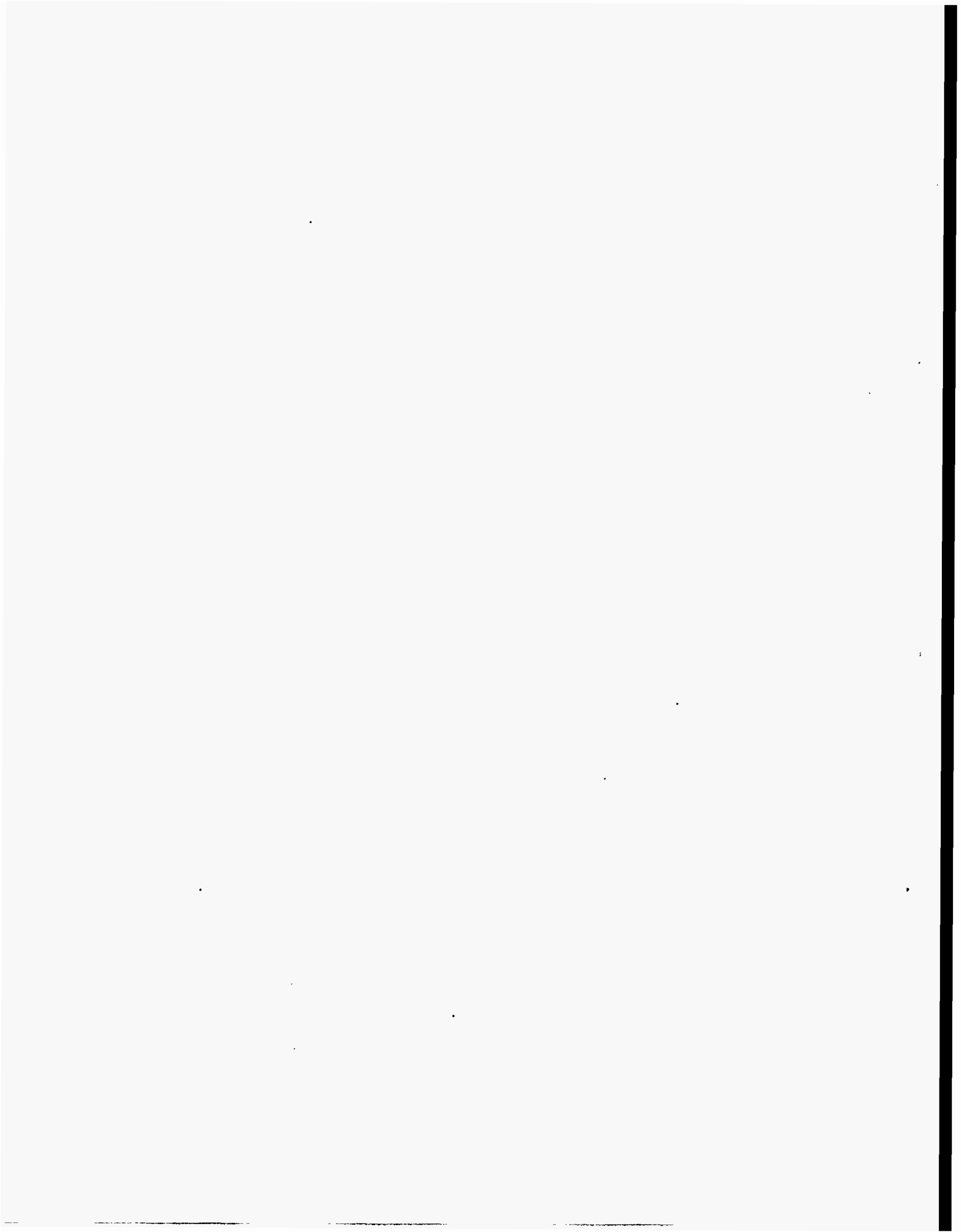
I, PAUL KEEP, SUPERVISOR *Paul Keep*
ACCEPT THIS INSTRUMENT AS CONFORMING TO CUSTOMER REQUIREMENTS.
DATED: 06/02/94

TABLE F2

**AGBABIAN ASSOCIATES' VELOCITY LOGGING
EQUIPMENT DESCRIPTION AND
CALIBRATION PROCEDURES**

EQUIPMENT	FUNCTION	CALIBRATION REQUIREMENTS	MAINTENANCE REQUIREMENTS
OYO Model 170 Suspension Logging Data Logger	Records data from probe and sends control signals to probe	Every six months, calibrate sample clock using an NTIS- traceable external signal counter and signal generator per attached procedure. (see Attachment)	Diagnose and repair by manufacturer's authorized representative if sample clock is out of specification or instrument fails.
Agbabian Associates Variable Azimuth Downhole Logging Probe	Suspended and locked in borehole to sense wave arrivals at different locations in borehole	No sensor calibration is necessary, as amplitude is not important to the velocity measurement.	Repair as needed by manufacturer- trained personnel.
Winch System (several interchangeable models available)	The winch and cable suspend the probe in the borehole and connect it to the data logger	No calibration required	Repair as needed. Lubricate moving parts frequently, and keep cable clean.

APPENDIX E
SITE-SPECIFIC GEOLOGIC PROFILES

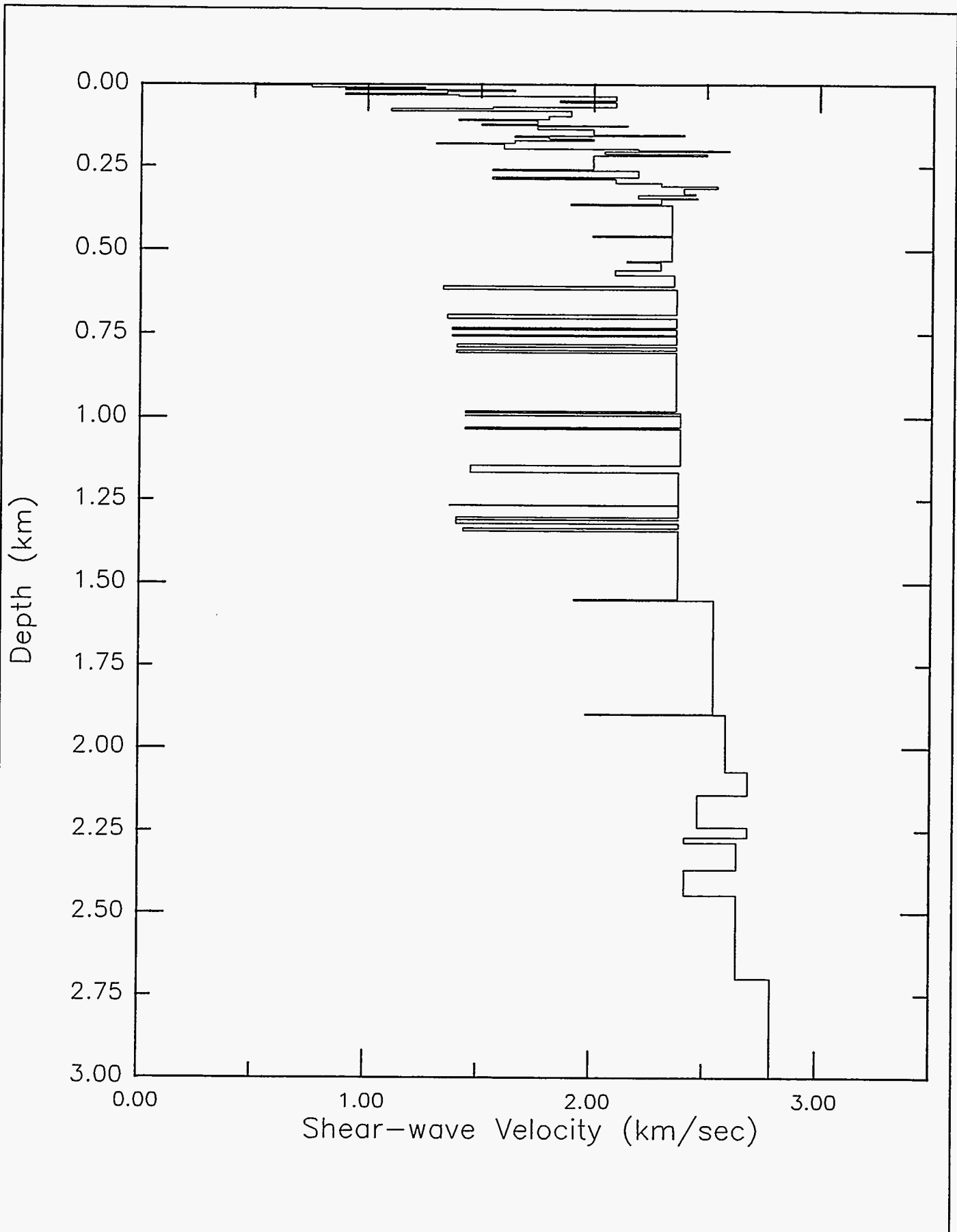


ANL SHEAR-WAVE PROFILE

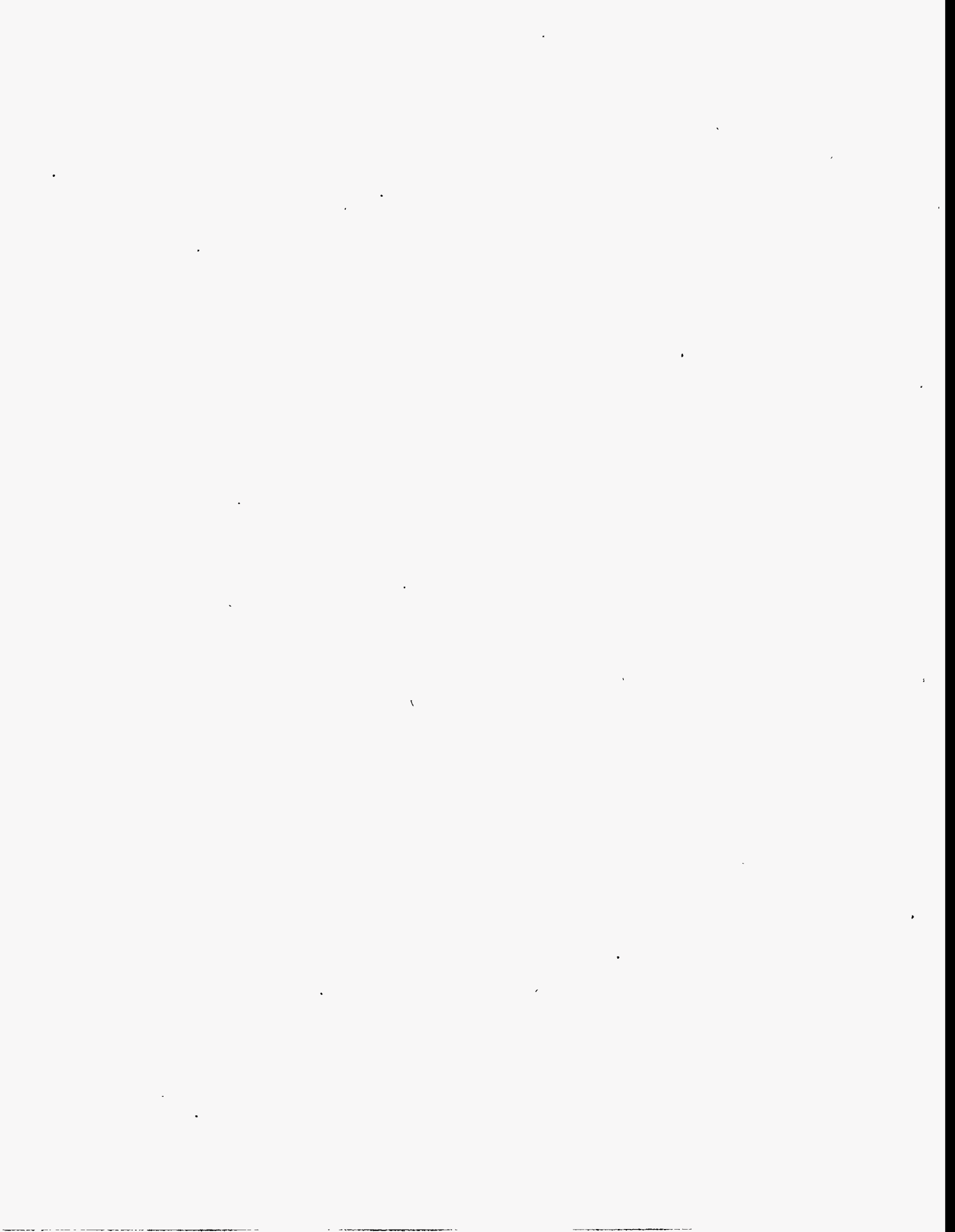
LAYER	THICKNESS (m)	DEPTH (m)	V _s m/sec	DENSITY (g/cm ³)
1	3.50	0.00	500	2.40
2	6.50	3.50	750	2.40
3	3.00	10.00	1250	2.40
4	4.00	13.00	900	2.40
5	5.00	17.00	1650	2.50
6	6.00	22.00	1350	2.40
7	4.00	28.00	900	2.40
8	4.00	32.00	1400	2.40
9	13.00	36.00	2100	2.70
10	6.00	49.00	1850	2.50
11	14.00	55.00	2100	2.70
12	6.00	69.00	1550	2.40
13	6.00	75.00	1100	2.40
14	17.00	81.00	1900	2.60
15	9.00	98.00	1800	2.50
16	4.00	107.00	1400	2.40
17	10.00	111.00	1750	2.50
18	5.00	121.00	1500	2.40
19	2.00	126.00	2150	2.80
20	9.00	128.00	1750	2.50
21	16.00	137.00	2000	2.70
22	4.00	153.00	2400	2.90
23	5.00	157.00	1650	2.50
24	5.00	162.00	1800	2.50
25	5.00	167.00	2000	2.70
26	8.00	172.00	1650	2.50
27	3.00	180.00	1300	2.40
28	14.00	183.00	1600	2.40
29	5.00	197.00	2200	2.80
30	3.00	202.00	2600	2.90
31	7.00	205.00	2050	2.70
32	6.00	212.00	2500	2.90
33	41.00	218.00	2000	2.70
34	4.00	259.00	1550	2.40
35	20.00	263.00	2200	2.80
36	5.00	283.00	1550	2.40
37	12.00	288.00	2100	2.70
38	10.00	300.00	2300	2.80
39	6.00	310.00	2550	2.90
40	16.00	316.00	2400	2.90
41	4.00	332.00	2450	2.90
42	10.00	336.00	2200	2.80
43	2.00	346.00	2460	2.90
44	15.00	348.00	2300	2.80
45	4.00	363.00	1900	2.60
46	91.00	367.00	2350	2.80
47	3.00	458.00	2000	2.70
48	73.00	461.00	2350	2.80
49	4.00	534.00	2150	2.80

ANL SHEAR-WAVE PROFILE

LAYER	THICKNESS (m)	DEPTH (m)	V _s m/sec	DENSITY (g/cm ³)
50	23.00	538.00	2300	2.80
51	15.00	561.00	2100	2.70
52	33.90	576.00	2361	2.90
53	8.50	609.90	1338	2.15
54	73.80	618.40	2372	2.90
55	11.30	692.20	1358	2.20
56	28.50	703.50	2372	2.90
57	5.60	732.00	1378	2.20
58	15	737.60	2372	2.90
59	4.50	752.60	1378	2.20
60	23.80	757.10	2372	2.90
61	8.30	780.90	1399	2.20
62	10.90	789.20	2372	2.90
63	6.10	800.10	1398	2.20
64	175.30	806.20	2372	2.90
65	5.10	981.50	1439	2.25
66	6.40	986.60	2392	2.90
67	1.90	993.00	1439	2.25
68	34.40	994.90	2392	2.90
69	4.90	1029.30	1439	2.25
70	110.30	1034.20	2392	2.90
71	22.60	1144.50	1463	2.25
72	98.10	1167.10	2385	2.25
73	1.50	1265.20	1370	2.00
74	36.30	1266.70	2385	2.30
75	6.10	1303.00	1400	2.10
76	1.80	1309.10	2385	2.40
77	9.80	1310.90	1400	2.10
78	15.50	1320.70	2385	2.45
79	7.40	1336.20	1430	2.10
80	206.40	1343.60	2385	2.50
81	3.00	1550.00	1925	1.80
82	344.00	1553.00	2544	2.50
83	3.00	1897.00	1980	1.80
84	172.00	1900.00	2600	2.50
85	71.00	2072.00	2700	2.55
86	97.00	2143.00	2475	2.45
87	30.00	2240.00	2700	2.60
88	16.00	2270.00	2420	2.50
89	82.00	2286.00	2650	2.50
90	79.00	2368.00	2420	2.50
91	253.00	2447.00	2650	2.50
92	-	2700.00	2800	2.60



Project No. SK9455	INEL-Probabilistic Analyses	SHEAR-WAVE VELOCITY PROFILE FOR ANL	Figure E-1
Woodward-Clyde Federal Services			

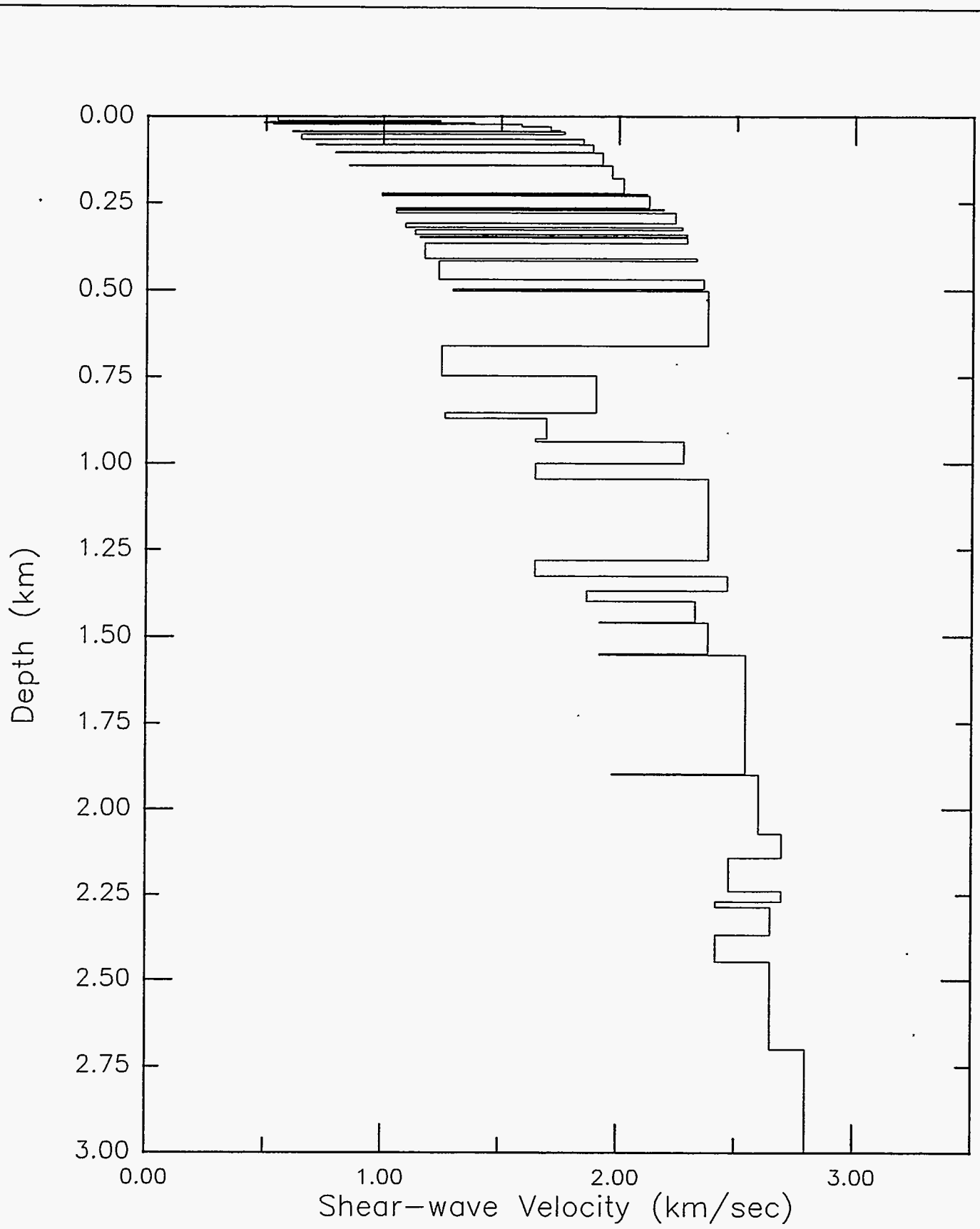


ATR SHEAR-WAVE PROFILE

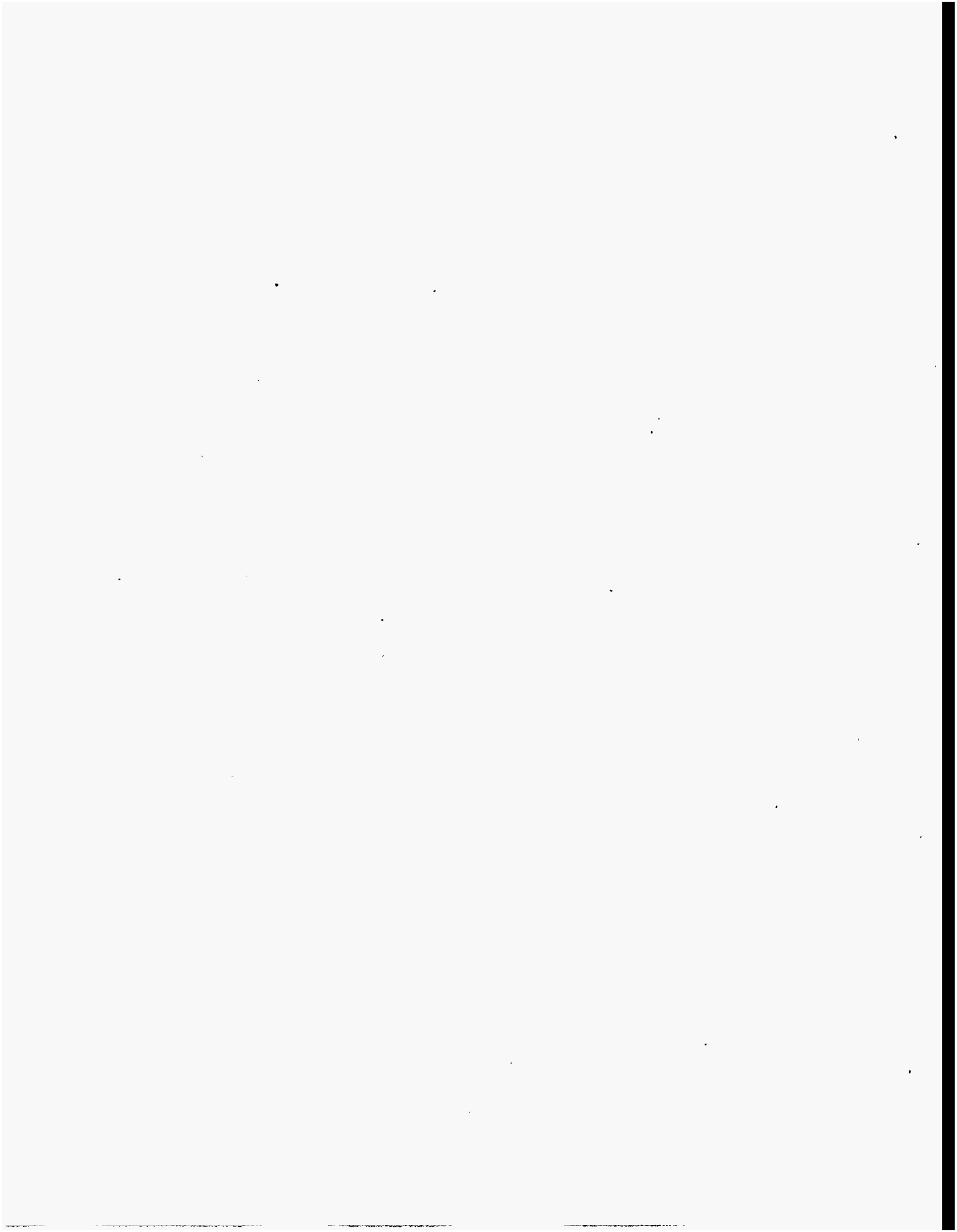
LAYER	THICKNESS (m)	DEPTH (m)	V _s m/sec	DENSITY (g/cm ³)
1	11.50	0.00	548	1.70
2	3.74	11.50	1240	2.40
3	3.06	15.24	489	1.71
4	2.40	18.30	1382	2.42
5	1.45	20.70	528	1.72
6	7.85	22.15	1585	2.44
7	10.00	30.00	1707	2.45
8	2.70	40.00	1748	2.46
9	3.02	42.70	610	1.76
10	6.08	45.72	1768	2.47
11	14.60	51.80	650	1.77
12	14.37	66.40	1850	2.53
13	2.43	80.77	711	1.81
14	20.40	83.20	1890	2.56
15	3.10	103.60	793	1.83
16	35.00	106.70	1931	2.60
17	2.50	141.70	854	1.89
18	35.80	144.20	1972	2.65
19	41.00	180.00	2020	2.70
20	2.70	221.00	993	1.98
21	1.80	223.70	2120	2.72
22	3.10	225.50	993	1.99
23	35.40	228.60	2130	2.74
24	4.22	264.00	1054	2.03
25	3.68	268.22	2190	2.76
26	7.00	271.90	1054	2.04
27	28.95	278.90	2240	2.77
28	12.15	307.85	1095	2.06
29	6.14	320.00	2270	2.80
30	13.86	326.14	1135	2.07
31	5.00	340.00	2290	2.80
32	4.00	345.00	1155	2.08
33	16.76	349.00	2290	2.81
34	44.20	365.76	1176	2.09
35	6.10	409.96	2331	2.84
36	53.34	416.06	1236	2.11
37	27.43	469.40	2360	2.86
38	6.10	496.83	1297	2.13
39	157.07	502.93	2380	2.88
40	87.00	660.00	1250	2.10
41	106.00	747.00	1908	2.45
42	16.00	853.00	1265	1.70
43	58.50	869.00	1696	2.45
44	8.50	927.50	1650	1.70
45	64.00	936.00	2280	2.48
46	45.00	1000.00	1650	1.70
47	235.00	1045.00	2385	2.50
48	46.00	1280.00	1650	1.80
49	42.00	1326.00	2465	2.40

ATR SHEAR-WAVE PROFILE

LAYER	THICKNESS	DEPTH	V _s	DENSITY
	(m)	(m)	m/sec	(g/cm ³)
50	30.00	1368.00	1870	1.80
51	59.00	1398.00	2330	2.45
52	3.00	1457.00	1925	1.80
53	90.00	1460.00	2385	2.45
54	3.00	1550.00	1925	1.80
55	344.00	1553.00	2544	2.50
56	3.00	1897.00	1980	1.80
57	172.00	1900.00	2600	2.50
58	71.00	2072.00	2700	2.55
59	97.00	2143.00	2475	2.45
60	30.00	2240.00	2700	2.60
61	16.00	2270.00	2420	2.50
62	82.00	2286.00	2650	2.50
63	79.00	2368.00	2420	2.50
64	253.00	2447.00	2650	2.50
65	--	2700.00	2800	2.60



Project No. SK9455	INEL-Probabilistic Analyses	SHEAR-WAVE VELOCITY PROFILE FOR ATR	Figure E-2
Woodward-Clyde Federal Services			

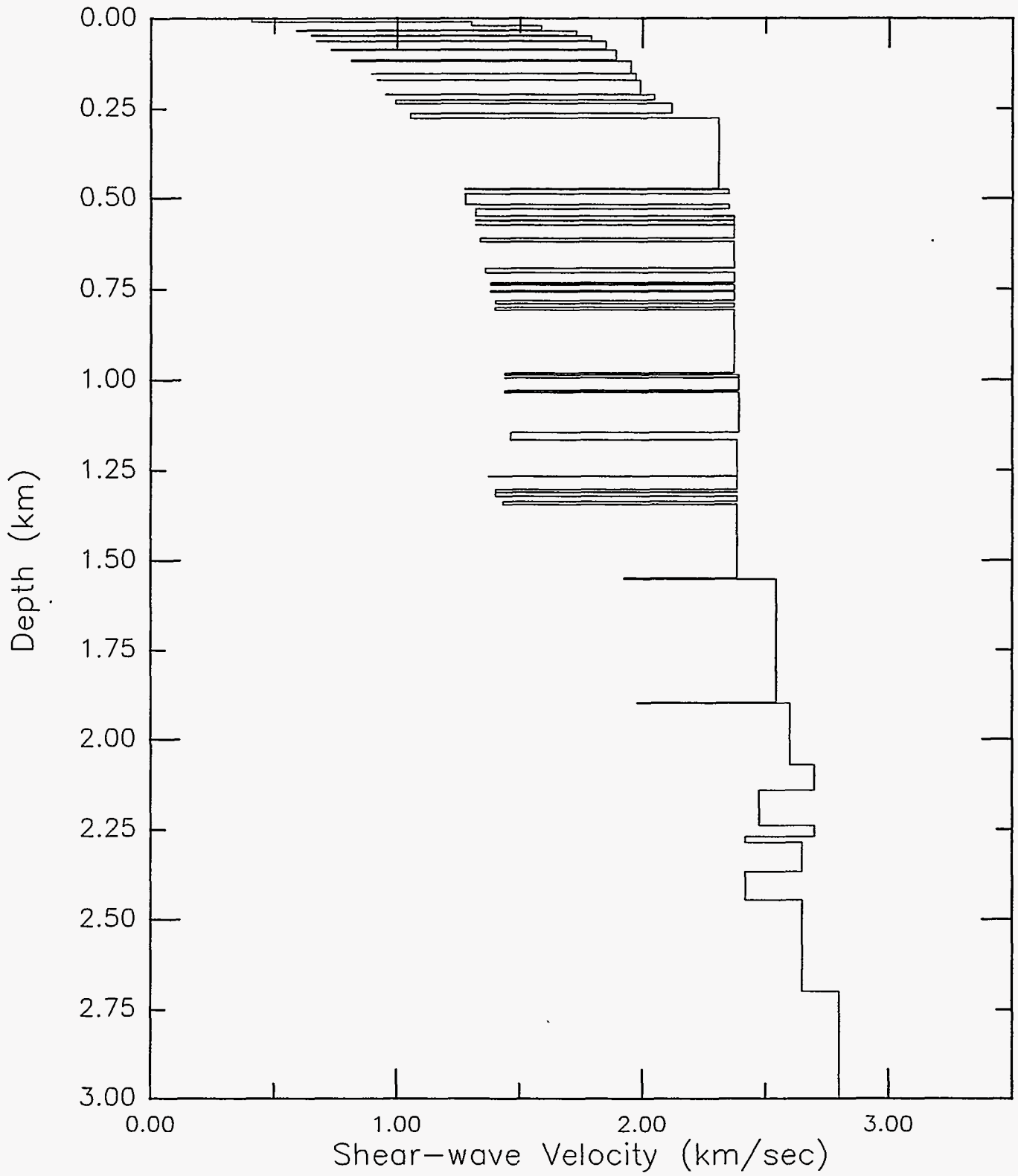


CPP SHEAR-WAVE PROFILE

LAYER	THICKNESS (m)	DEPTH (m)	V _s m/sec	DENSITY (g/cm ³)
1	9.75	0.00	406	1.70
2	10.25	9.75	1301	2.40
3	12.30	20.00	1585	2.43
4	2.40	32.30	589	1.74
5	12.30	34.70	1728	2.47
6	2.10	47.00	650	1.76
7	13.70	49.10	1789	2.49
8	0.90	62.80	671	1.78
9	20.80	63.70	1850	2.52
10	3.00	84.50	732	1.81
11	26.80	87.50	1890	2.57
12	4.70	114.30	813	1.86
13	33.70	119.00	1951	2.61
14	0.60	152.70	894	1.90
15	17.70	153.30	1972	2.66
16	0.60	171.00	917	1.93
17	37.80	171.60	1992	2.69
18	0.90	209.40	953	1.98
19	15.20	210.30	2050	2.71
20	8.60	225.50	993	2.00
21	28.70	234.10	2120	2.75
22	13.00	262.80	1054	2.05
23	198.20	275.80	2310	2.80
24	1.70	474.00	1277	2.10
25	12.00	475.70	2351	2.85
26	29.50	487.70	1277	2.15
27	11.30	517.20	2351	2.85
28	20.70	528.50	1318	2.15
29	9.80	549.20	2372	2.90
30	1.50	559.00	1318	2.15
31	11.60	560.50	2372	2.90
32	1.80	572.10	1318	2.15
33	36.00	573.90	2372	2.90
34	8.50	609.90	1338	2.15
35	73.80	618.40	2372	2.90
36	11.30	692.20	1358	2.20
37	28.50	703.50	2372	2.90
38	5.60	732.00	1378	2.20
39	15.00	737.60	2372	2.90
40	4.50	752.60	1378	2.20
41	23.80	757.10	2372	2.90
42	8.30	780.90	1399	2.20
43	10.90	789.20	2372	2.90
44	6.10	800.10	1398	2.20
45	175.30	806.20	2372	2.90
46	5.10	981.50	1439	2.25
47	6.40	986.60	2392	2.90
48	1.90	993.00	1439	2.25
49	34.40	994.90	2392	2.90

CPP SHEAR-WAVE PROFILE

LAYER	THICKNESS	DEPTH	V _s	DENSITY
	(m)	(m)	m/sec	(g/cm ³)
50	4.90	1029.30	1439	2.25
51	110.30	1034.20	2392	2.90
52	22.60	1144.50	1463	2.25
53	98.10	1167.10	2385	2.25
54	1.50	1265.20	1370	2.00
55	36.30	1266.70	2385	2.30
56	6.10	1303.00	1400	2.10
57	1.80	1309.10	2385	2.40
58	9.80	1310.90	1400	2.10
59	15.50	1320.70	2385	2.45
60	7.40	1336.20	1430	2.10
61	206.40	1343.60	2385	2.50
62	3.00	1550.00	1925	1.80
63	344.00	1553.00	2544	2.50
64	3.00	1897.00	1980	1.80
65	172.00	1900.00	2600	2.50
66	71.00	2072.00	2700	2.55
67	97.00	2143.00	2475	2.45
68	30.00	2240.00	2700	2.60
69	16.00	2270.00	2420	2.50
70	82.00	2286.00	2650	2.50
71	79.00	2368.00	2420	2.50
72	253.00	2447.00	2650	2.50
73	—	2700.00	2800	2.60



Project No. SK9455	INEL-Probabilistic Analyses	SHEAR-WAVE VELOCITY PROFILE FOR CPP	Figure E-3
Woodward-Clyde Federal Services			

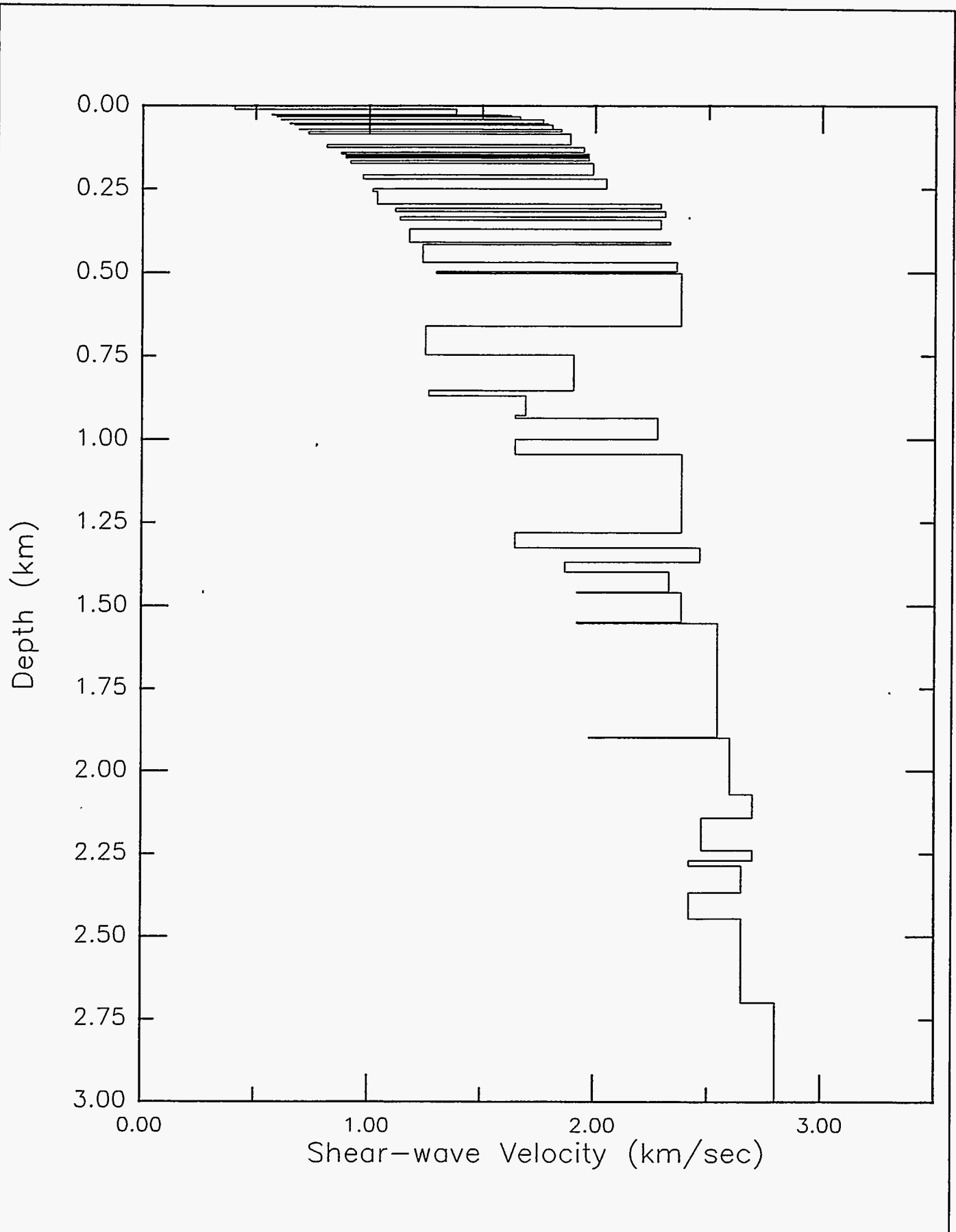


NRF SHEAR-WAVE PROFILE

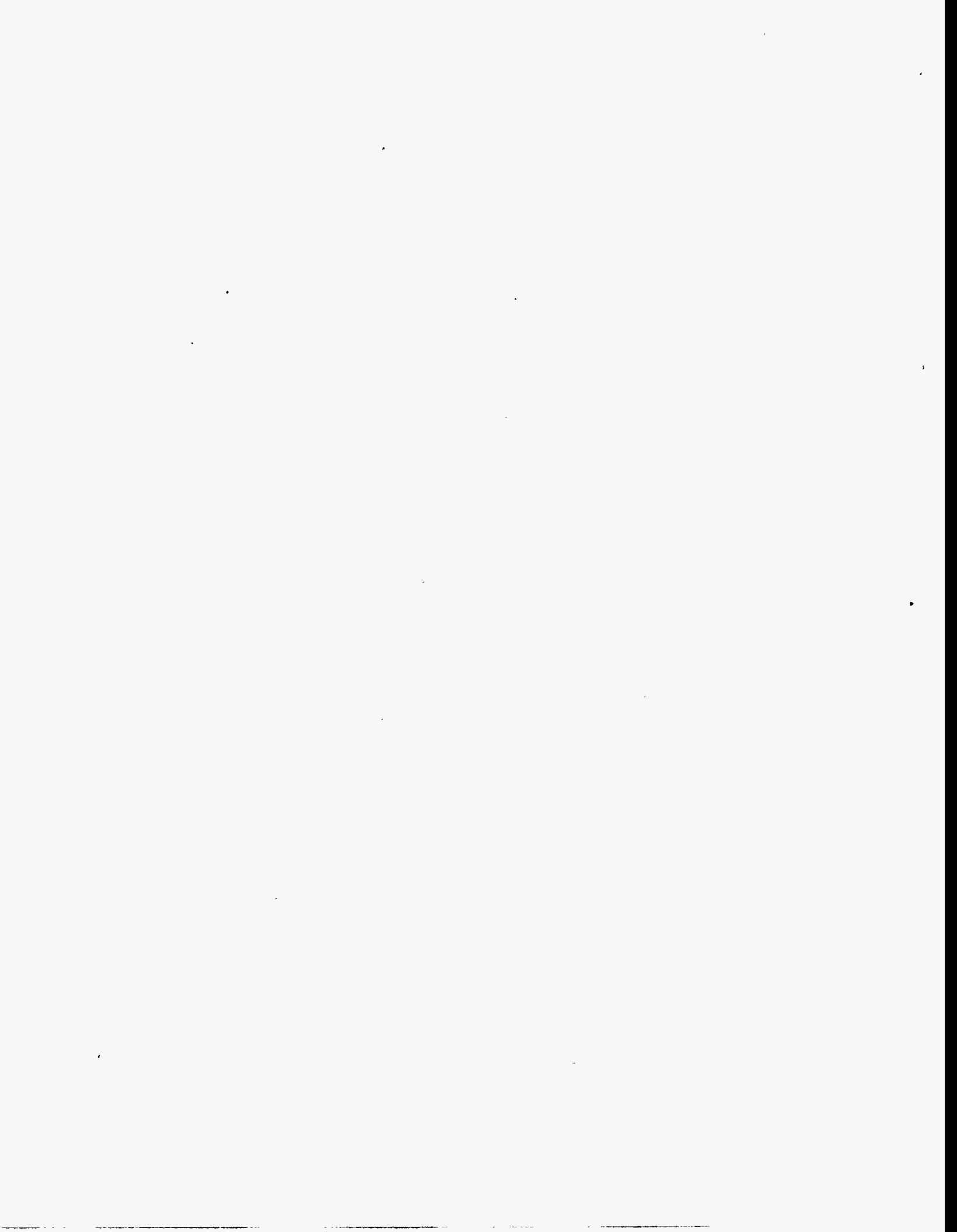
LAYER	THICKNESS (m)	DEPTH (m)	V _s m/sec	DENSITY (g/cm ³)
1	10.67	0.00	406	1.69
2	16.15	10.67	1382	2.41
3	0.48	26.82	569	1.73
4	2.26	27.30	1585	2.43
5	0.30	29.56	589	1.73
6	3.36	29.86	1626	2.44
7	0.31	33.22	589	1.74
8	8.22	33.53	1667	2.46
9	0.31	41.75	610	1.75
10	11.89	42.06	1768	2.48
11	0.30	53.95	650	1.77
12	2.75	54.25	1789	2.49
13	0.91	57.00	671	1.78
14	0.30	57.91	671	1.78
15	13.41	58.21	1809	2.51
16	0.30	71.62	691	1.79
17	6.71	71.92	1850	2.53
18	6.40	78.63	732	1.81
19	32.62	85.03	1890	2.57
20	7.92	117.65	813	1.87
21	14.63	125.57	1951	2.61
22	5.79	140.20	874	1.89
23	2.14	145.99	1972	2.63
24	4.26	148.13	894	1.90
25	2.75	152.39	1972	2.64
26	1.82	155.14	894	1.91
27	7.64	156.96	1972	2.65
15	9.14	164.60	915	1.93
16	33.53	173.74	1992	2.69
17	12.19	207.27	973	1.97
18	28.96	219.46	2050	2.72
19	9.14	248.42	1014	2.04
20	36.58	257.56	1034	2.05
21	13.72	294.14	2290	2.78
22	9.14	307.86	1115	2.06
23	16.76	317.00	2310	2.80
24	9.14	333.76	1135	2.07
25	25.91	342.90	2291	2.81
26	41.15	368.81	1176	2.10
27	6.10	409.96	2331	2.84
28	53.34	416.06	1236	2.11
29	27.43	469.40	2360	2.86
30	6.10	496.83	1297	2.13
31	157.07	502.93	2380	2.88
32	87.00	660.00	1250	2.10
33	106.00	747.00	1908	2.45
34	16.00	853.00	1265	1.70
35	58.50	869.00	1696	2.45
36	8.50	927.50	1650	1.70

NRF SHEAR-WAVE PROFILE

LAYER	THICKNESS	DEPTH	V _s	DENSITY
	(m)	(m)	m/sec	(g/cm ³)
37	64.00	936.00	2280	2.48
38	45.00	1000.00	1650	1.70
39	235.00	1045.00	2385	2.50
40	46.00	1280.00	1650	1.80
41	42.00	1326.00	2465	2.40
42	30.00	1368.00	1870	1.80
43	59.00	1398.00	2330	2.45
44	3.00	1457.00	1925	1.80
45	90.00	1460.00	2385	2.45
46	3.00	1550.00	1925	1.80
47	344.00	1553.00	2544	2.50
48	3.00	1897.00	1980	1.80
49	172.00	1900.00	2600	2.50
50	71.00	2072.00	2700	2.55
51	97.00	2143.00	2475	2.45
52	30.00	2240.00	2700	2.60
53	16.00	2270.00	2420	2.50
54	82.00	2286.00	2650	2.50
55	79.00	2368.00	2420	2.50
56	253.00	2447.00	2650	2.50
57	--	2700.00	2800	2.60



Project No. SK9455	INEL-Probabilistic Analyses	SHEAR-WAVE VELOCITY PROFILE FOR NRF	Figure E-4
Woodward-Clyde Federal Services			

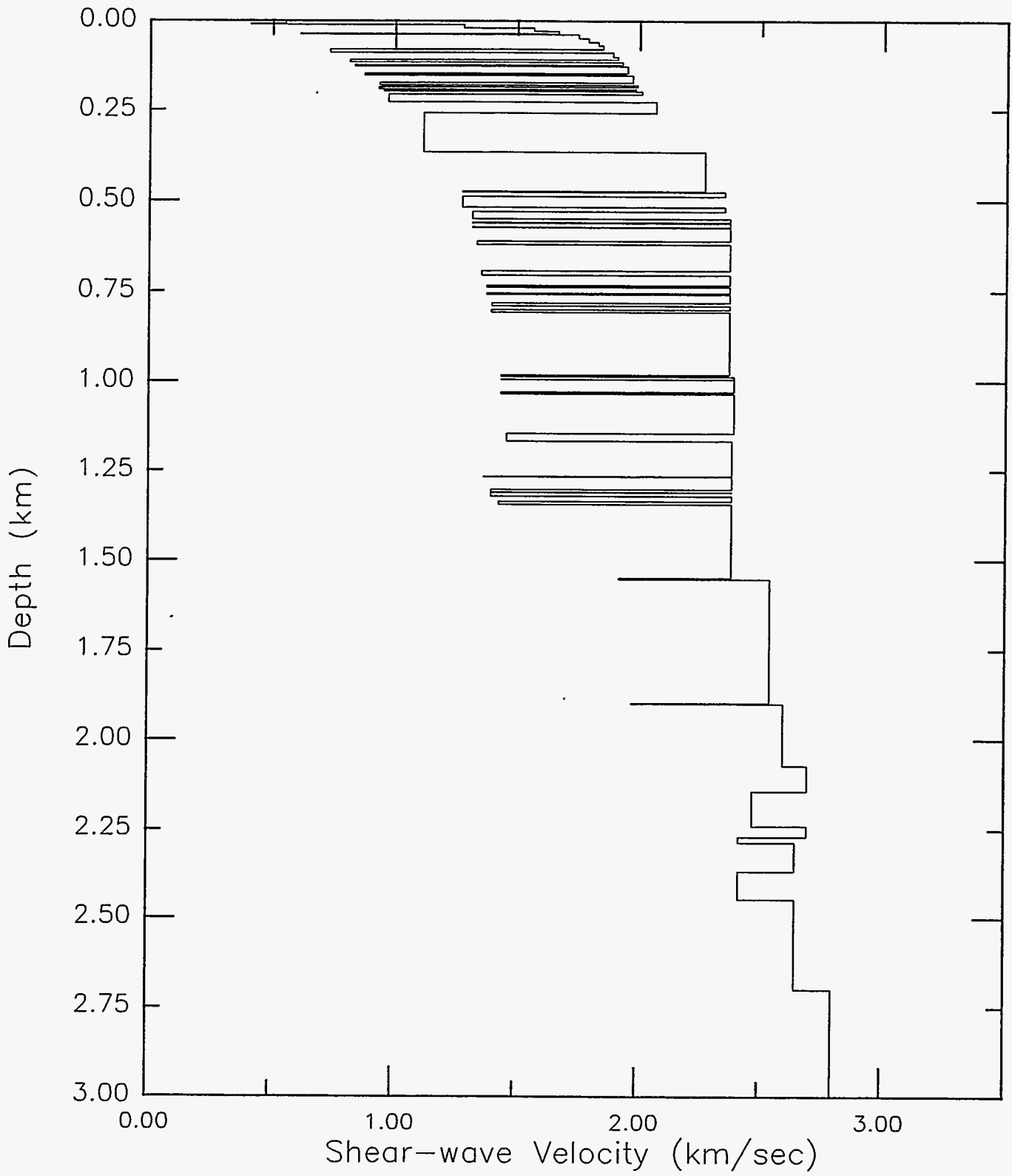


PBF SHEAR-WAVE PROFILE

LAYER	THICKNESS (m)	DEPTH (m)	V _s m/sec	DENSITY (g/cm ³)
1	1.07	0.00	203	1.69
2	6.39	1.07	549	2.38
3	3.06	7.46	406	1.70
4	9.48	10.52	1280	2.40
5	10.00	20.00	1565	2.43
6	5.98	30.00	1667	2.45
7	2.28	35.98	610	1.74
8	11.74	38.26	1748	2.47
9	10.00	50.00	1789	2.49
10	10.00	60.00	1829	2.51
11	9.88	70.00	1850	2.53
12	8.99	79.88	732	1.81
13	12.65	88.87	1890	2.56
14	7.93	101.52	1910	2.57
15	5.95	109.45	813	1.85
16	8.99	115.40	1930	2.60
17	3.96	124.39	833	1.86
18	19.36	128.35	1951	2.62
19	5.03	147.71	873	1.90
20	20.89	152.74	1972	2.66
21	5.94	173.63	935	1.93
22	6.43	179.57	1992	2.68
23	4.50	186.00	932	1.94
24	3.00	190.50	1986	2.69
25	4.00	193.50	953	1.95
26	8.20	197.50	2010	2.70
27	21.30	205.70	973	1.98
28	30.50	227.00	2070	2.73
29	107.50	257.50	1115	2.03
30	109.00	365.00	2270	2.80
31	1.70	474.00	1277	2.10
32	12.00	475.70	2351	2.85
33	29.50	487.70	1277	2.15
34	11.30	517.20	2351	2.85
35	20.70	528.50	1318	2.15
36	9.80	549.20	2372	2.90
37	1.50	559.00	1318	2.15
38	11.60	560.50	2372	2.90
39	1.80	572.10	1318	2.15
40	36.00	573.90	2372	2.90
41	8.50	609.90	1338	2.15
42	73.80	618.40	2372	2.90
43	11.30	692.20	1358	2.20
44	28.50	703.50	2372	2.90
45	5.60	732.00	1378	2.20
46	15.00	737.60	2372	2.90
47	4.50	752.60	1378	2.20
48	23.80	757.10	2372	2.90
49	8.30	780.90	1399	2.20

PBF SHEAR-WAVE PROFILE

LAYER	THICKNESS	DEPTH	V _s	DENSITY
	(m)	(m)	m/sec	(g/cm ³)
50	10.90	789.20	2372	2.90
51	6.10	800.10	1398	2.20
52	175.30	806.20	2372	2.90
53	5.10	981.50	1439	2.25
54	6.40	986.60	2392	2.90
55	1.90	993.00	1439	2.25
56	34.40	994.90	2392	2.90
57	4.90	1029.30	1439	2.25
58	110.30	1034.20	2392	2.90
59	22.60	1144.50	1463	2.25
60	98.10	1167.10	2385	2.25
61	1.50	1265.20	1370	2.00
62	36.30	1266.70	2385	2.30
63	6.10	1303.00	1400	2.10
64	1.80	1309.10	2385	2.40
65	9.80	1310.90	1400	2.10
66	15.50	1320.70	2385	2.45
67	7.40	1336.20	1430	2.10
68	206.40	1343.60	2385	2.50
69	3.00	1550.00	1925	1.80
70	344.00	1553.00	2544	2.50
71	3.00	1897.00	1980	1.80
72	172.00	1900.00	2600	2.50
73	71.00	2072.00	2700	2.55
74	97.00	2143.00	2475	2.45
75	30.00	2240.00	2700	2.60
76	16.00	2270.00	2420	2.50
77	82.00	2286.00	2650	2.50
78	79.00	2368.00	2420	2.50
79	253.00	2447.00	2650	2.50
80	--	2700.00	2800	2.60



Project No. SK9455	INEL-Probabilistic Analyses	SHEAR-WAVE VELOCITY PROFILE FOR PBF	Figure E-5
Woodward-Clyde Federal Services			

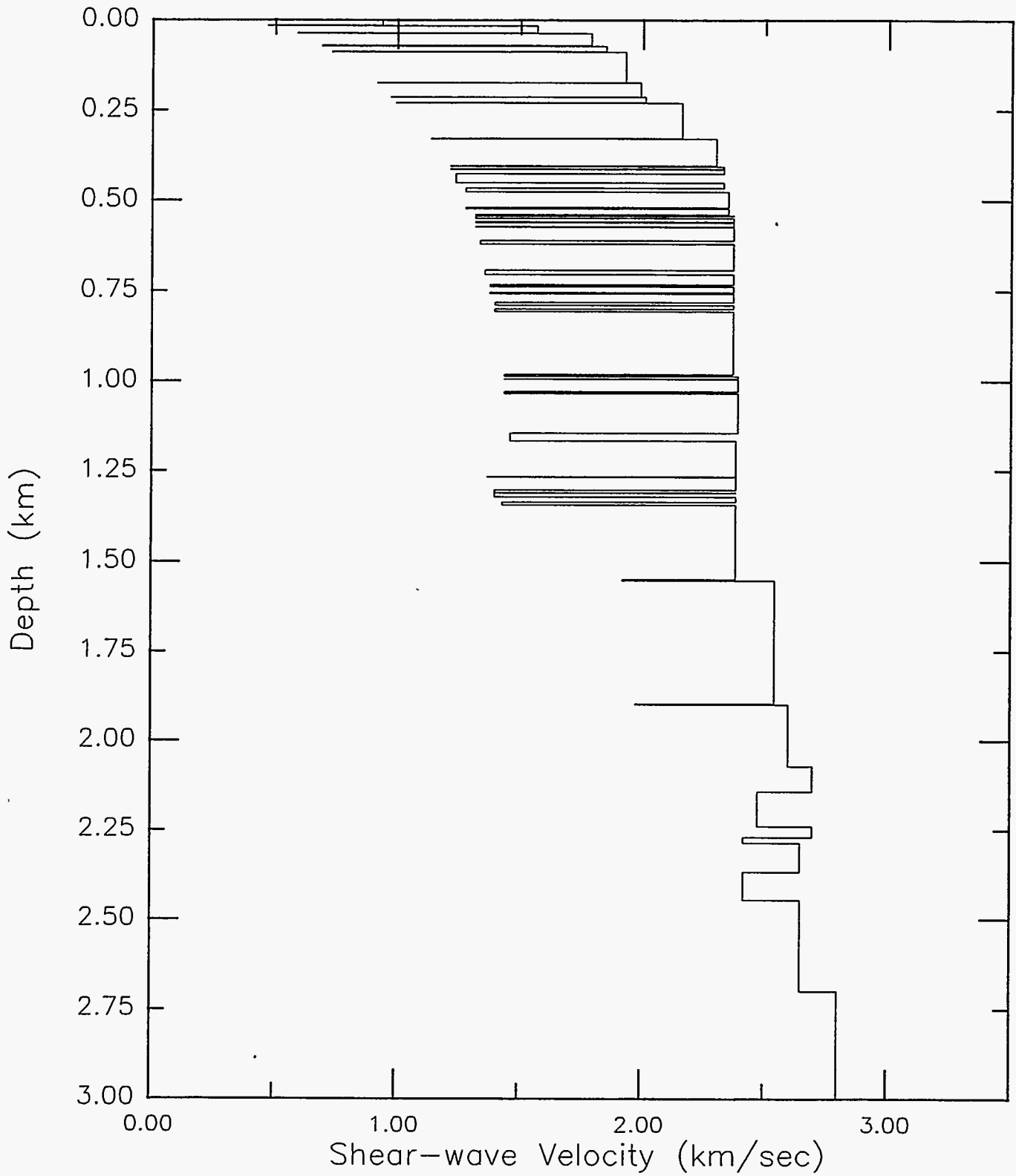


RWMC SHEAR-WAVE PROFILE

LAYER	THICKNESS (m)	DEPTH (m)	V _s m/sec	DENSITY (g/cm ³)
1	0.91	0.00	203	1.68
2	13.72	0.91	935	2.39
3	1.52	14.63	467	1.70
4	19.75	16.15	1565	2.42
5	0.70	35.90	589	1.73
6	33.50	36.60	1789	2.49
7	3.40	70.10	691	1.79
8	14.30	73.50	1850	2.53
9	1.80	87.80	732	1.82
10	82.90	89.60	1931	2.60
11	1.20	172.50	915	1.93
12	39.00	173.70	1992	2.69
13	1.30	212.70	973	1.97
14	13.40	214.00	2010	2.72
15	1.20	227.40	993	1.99
16	97.50	228.60	2160	2.77
17	1.90	326.10	1135	2.07
18	74.30	328.00	2300	2.82
19	3.10	402.30	1216	2.10
20	5.50	405.40	2331	2.84
21	2.40	410.90	1216	2.10
22	12.20	413.30	2331	2.85
23	25.00	425.50	1236	2.11
24	14.60	450.50	2331	2.86
25	10.40	465.10	1277	2.12
26	43.30	475.50	2351	2.88
27	3.60	518.80	1277	2.13
28	15.90	522.40	2351	2.88
29	3.70	538.30	1318	2.13
30	2.00	542.00	2372	2.89
29	5.20	544.00	1318	2.15
30	9.80	549.20	2372	2.90
31	1.50	559.00	1318	2.15
32	11.60	560.50	2372	2.90
33	1.80	572.10	1318	2.15
34	36.00	573.90	2372	2.90
35	8.50	609.90	1338	2.15
36	73.80	618.40	2372	2.90
37	11.30	692.20	1358	2.20
38	28.50	703.50	2372	2.90
39	5.60	732.00	1378	2.20
40	15.00	737.60	2372	2.90
41	4.50	752.60	1378	2.20
42	23.80	757.10	2372	2.90
43	8.30	780.90	1399	2.20
44	10.90	789.20	2372	2.90
45	6.10	800.10	1398	2.20
46	175.30	806.20	2372	2.90
47	5.10	981.50	1439	2.25

RWMC SHEAR-WAVE PROFILE

LAYER	THICKNESS	DEPTH	V _s	DENSITY
	(m)	(m)	m/sec	(g/cm ³)
48	6.40	986.60	2392	2.90
49	1.90	993.00	1439	2.25
50	34.40	994.90	2392	2.90
51	4.90	1029.30	1439	2.25
52	110.30	1034.20	2392	2.90
53	22.60	1144.50	1463	2.25
54	98.10	1167.10	2385	2.25
55	1.50	1265.20	1370	2.00
56	36.30	1266.70	2385	2.30
57	6.10	1303.00	1400	2.10
58	1.80	1309.10	2385	2.40
59	9.80	1310.90	1400	2.10
60	15.50	1320.70	2385	2.45
61	7.40	1336.20	1430	2.10
62	206.40	1343.60	2385	2.50
63	3.00	1550.00	1925	1.80
64	344.00	1553.00	2544	2.50
65	3.00	1897.00	1980	1.80
66	172.00	1900.00	2600	2.50
67	71.00	2072.00	2700	2.55
68	97.00	2143.00	2475	2.45
69	30.00	2240.00	2700	2.60
70	16.00	2270.00	2420	2.50
71	82.00	2286.00	2650	2.50
72	79.00	2368.00	2420	2.50
73	253.00	2447.00	2650	2.50
74	—	2700.00	2800	2.60



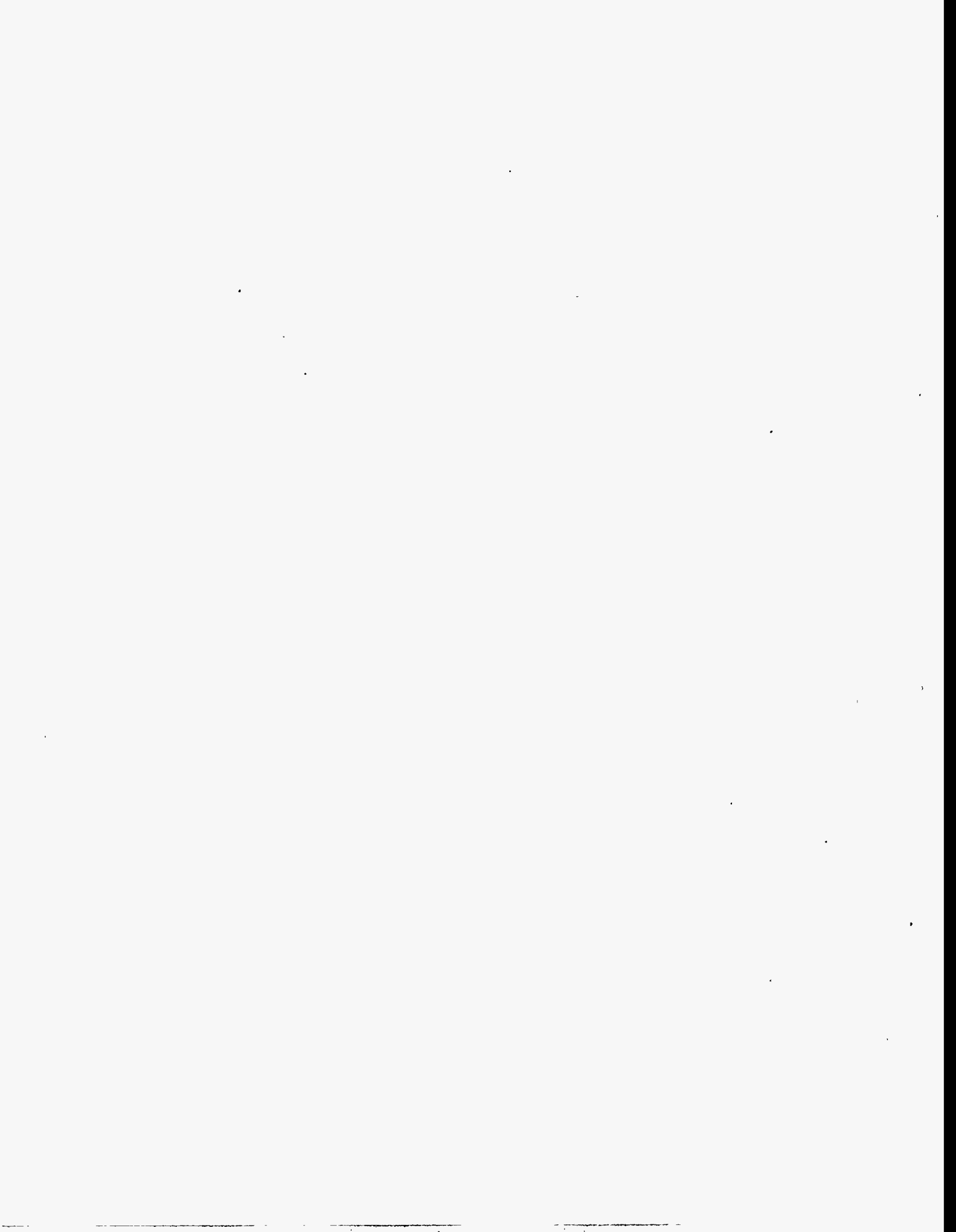
Project No.
SK9455

INEL-Probabilistic Analyses

Woodward-Clyde Federal Services

SHEAR-WAVE VELOCITY PROFILE
FOR RWMC

Figure
E-6

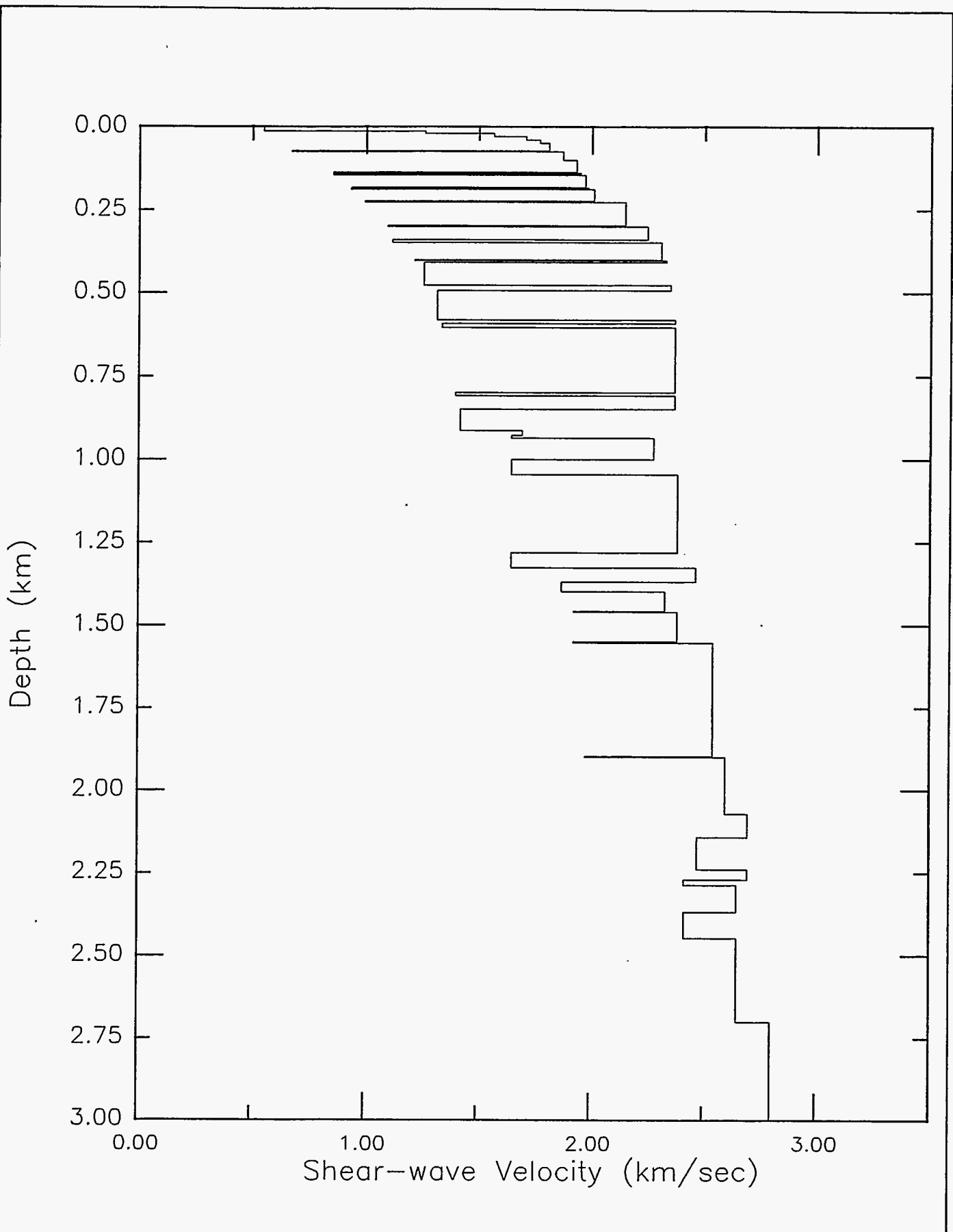


TAN SHEAR-WAVE PROFILE

LAYER	THICKNESS	DEPTH	V _s	DENSITY
	(m)	(m)	m/sec	(g/cm ³)
1	12.50	0.00	548	1.70
2	7.50	12.50	1260	2.40
3	10.00	20.00	1565	2.42
4	10.00	30.00	1707	2.45
5	10.00	40.00	1768	2.48
6	22.00	50.00	1809	2.50
7	2.10	72.00	671	1.79
8	25.90	74.10	1870	2.54
9	35.60	100.00	1931	2.59
10	3.40	135.60	853	1.87
11	2.50	139.00	1951	2.63
12	3.00	141.50	854	1.89
13	37.20	144.50	1972	2.65
14	2.00	181.70	935	1.93
15	1.90	183.70	1986	2.66
16	2.80	185.60	932	1.93
17	34.10	188.40	2010	2.70
18	4.60	222.50	993	1.99
19	69.20	227.10	2150	2.75
20	3.00	296.30	1095	2.05
21	40.10	299.30	2250	2.80
22	9.00	339.40	1115	2.06
23	50.90	348.40	2310	2.82
24	3.00	399.30	1216	2.10
25	5.20	402.30	2331	2.83
26	69.50	407.50	1256	2.11
27	16.70	477.00	2351	2.88
28	88.30	493.70	1317	2.13
29	9.30	582.00	2371	2.88
30	12.20	591.30	1337	2.14
31	195.10	603.50	2371	2.89
32	9.10	798.60	1398	2.16
33	42.30	807.70	2371	2.89
34	64.00	850.00	1420	2.18
35	13.50	914.00	1696	2.45
36	8.50	927.50	1650	1.70
37	64.00	936.00	2280	2.48
38	45.00	1000.00	1650	1.70
39	235.00	1045.00	2385	2.50
40	46.00	1280.00	1650	1.80
41	42.00	1326.00	2465	2.40
42	30.00	1368.00	1870	1.80
43	59.00	1398.00	2330	2.45
44	3.00	1457.00	1925	1.80
45	90.00	1460.00	2385	2.45
46	3.00	1550.00	1925	1.80
47	344.00	1553.00	2544	2.50
48	3.00	1897.00	1980	1.80
49	172.00	1900.00	2600	2.50

TAN SHEAR-WAVE PROFILE

LAYER	THICKNESS	DEPTH	V _s	DENSITY
	(m)	(m)	m/sec	(g/cm ³)
50	71.00	2072.00	2700	2.55
51	97.00	2143.00	2475	2.45
52	30.00	2240.00	2700	2.60
53	16.00	2270.00	2420	2.50
54	82.00	2286.00	2650	2.50
55	79.00	2368.00	2420	2.50
56	253.00	2447.00	2650	2.50
57	--	2700.00	2800	2.60



Project No. SK9455	INEL-Probabilistic Analyses	SHEAR-WAVE VELOCITY PROFILE FOR TAN	Figure E-7
Woodward-Clyde Federal Services			

