BSAP1

BAIKAL 1991 SEISMIC ARRAY PROJECT

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Table of Contents

Introduction

During July 7 and October 5, 1991, UCLA, U. of Wisconsin (UW), the Institute of Earth's Crust of Russian Academy of Sciences at Irkutsk and the Institute of Physics of the Earth, Moscow, conducted a joint seismic array study in the territory of the Baikal rift zone. 26 seismic stations (10 PASSCAL Reftek and 16 U. Wisconsin recorders) were installed about Lake Baikal (Figure 1 and Table 1). The UCLA field trip team installed and operated the 10 Reftek stations. All the stations were equipped with 1 Hz 3-D sensors and five of the stations were co-sited with broadband (4 Guralp and 1 STS2) seismometers. All seismographs synchronize internal clocks to signals from the Omega navigation system (locked to either Norway or Japan) which ensured that the timing error for most of the data was less than 2 ms.

This report provides information needed for others to use the unique data set recorded by the 10 UCLA Reftek stations during July 7 and October 5, 1991.

Station Information

• Recorders– The 10 Reftek-72A recorders were loaned to the experiment from the IRIS/PASSCAL Equipment Center at Lamont.

• Seismometers– 3 kinds of seismometers were deployed: 1) L4C Mark Products. These are 1 Hz 3 component sensors. There were 10 sets, one at each station; 5 sets were from UCLA, which have 3 separate components; the other 5 sets were borrowed from PASSCAL, with the 3 components were built into a single cylinder. 2) Four Guralp VBB CMG3s (vertical components only) with velocity response flat from 30 sec to 10 Hz at stations 01, 05, 07 and 10 (Table 1 and Figure 1). 3) One Strekiesen STS-2 broad-band 3 component sensor. Only one from UW was available which was installed at station 06. Not much data was gathered due to the poor performance of the recorder and data quality is poor due to strong low frequency noise at the site.

For all the 10 stations channel 1 to 3 recorded the L4C seismometers with the vertical on channel 1, north-south component on channel 2, and east-west component on channel3. All the Guralps were recorded on channel 4. For the STS-2 station, channel

4 was recorded vertical component of STS-2, channel 5 north-south and channel 6 the east-west.

• Station Locations– All the station coordinates were measured by using a GPS Pathfinder receiver (borrowed from UCLA's GPS group). The errors of the measurement on horizontal coordinates were less than 50 meters. Due to its poor accuracy on determining elevation, Russian 1:200,000 maps were used to obtain elevation instead of using the GPS measurement. Table 1 lists station coordinates and other information.

• DAS Movement– Some of the recorders (i.e., DAS, Reftek Data Aquisition System) were moved during the experiment for various reasons. The main reason for the movement was to replace a 'sick' DAS with a better one so as to get some useful data from each site. Detailed information about DAS movement can be found in Table 2.

• Station Performance and Problems– Installation and servicing were carried out using a combination land vehicles, Aeroflot helicopters and boats on lake Baikal. Stations were serviced once every 20 days for 3 months. Extremely tricky roads and shortage of gasoline limited the frequency of services. Cloudy and rainy weather in the short summer of Siberia caused some recorder power failure. All of these conditions, together with the non-ideal performance of the Reftek's made a final rate of success 78% for the 10 stations. (In the summer of 1992 the UCLA team operated another 22 Reftek stations along a 1282 km long profile in the region of Lake Baikal and Northern Mongolia. We prepared the 1992 experiment according to the experiences that we obtained in 1991 and achieved a success rate of 89%. Data from the 1992 project is being processed). Table 3 shows the performance of the 10 stations.

Most of the reasons for the loss of data can be found in the log files which are in a tape labelled LOGFILES. We suggest those have no experience on Reftek recordings contact the PASSCAL instrument center at Lamont to get some ideas about the using of Reftek data, especially when some of the data were recorded by unhealthy Refteks.

Data Information

• Recording Parameters– For most of the stations we programmed a 10 sample per second continuous data stream to record teleseismic events; a 50 sps triggering stream to record high frequency local and regional events; and for those stations co-sited with broadband stations, another continuous data stream with sample rate 1 sps and 32 bits data words was programmed to record surface waves with wide dynamic range. It must be pointed out that at the beginning of the project, a shorter recording length and a higher trigger ratio for the triggered data stream were used rather than the 'standard parameters' as shown on Table 4. Detailed parameters can be found in the log files.

• Data format– Data dumped from the station disks were converted to SEGY format by using the REF2SEGY routine (Version 91.099) written by Early et al. at the PASSCAL Instrument center. The resultant SEGY format data can easily be converted to other formats such as SAC, AH, and SIERRA by using routines provided by the instrument center.

• File name convention and data organization– Files are sorted into sub-directories according to the starting times and data stream that they belong to. For instance, under sub-directory R188.02 are files in data stream 02 with starting time within Julian day 188, from ALL the 10 stations.

File names contain the information about starting hour, minute, and second of the file, as well as DAS serial numbers and channel numbers. For instance, file 20.45.55.0369.2 under sub-directory R188.01 starts between 188:20:45:55.00 and 188:20 :45:56.00 (the exact starting time of each file can be found in the header of the file); the file was recorded by DAS 369 which was station 01 (Table 2) on channel 2 (i.e. the north-south component).

• Tapes– Totally 5 8mm-video tapes are submitted together with this report. Tape 1 through 4 contain tar-files in SEGY format. Each tape has 2 tar files (tape 4 has 1 file) and the size of each tar file is about 450 megabytes. Tape 5 is the log file tape containing log and error files created by the PASSCAL REF2LOG or REF2SEGY routines. From these files one can find most of the information need for using the data, such as timing error, recording parameters, and DAS problems. More detailed information for the 5 tapes can be found in Table 7.

Earthquake Information

• Event Statistics– According to the NOAA Earthquake Bulletin, 314 events with mb $\geq$ 5.0 occurred during July 7 and October 5, 1991 (Figure 2). 54 of them are larger than mb=5.5. 164 of these 314 events have delta distance from 30° to 85° to the center of the profile and can be used for teleseismic P wave travel time delay studies. As many as 111 events with mb $\geq$ 4.0 occurred in the area with delta distance less than 30°. Also recorded were 82 deep events with depth larger than 100 km. Most of these deep earthquakes are good sources for studies which favor using simple waveform such as calculation of receiver functions (Figure 3 and Table 5).

• Relative Location and Theoretical Arrival time of Good Events– We calculated the theoretical arrival times for the first arrivals of all the events occurred during the experiment with mb$\geq$ .4.0 (totally 1010 events) to all the 10 stations by using the IASPEI 1991 Earth model (Kennet and Engdahl 1991). Table 6 lists the theoretical arrival times for the 54 mb$\geq$ 5.5 events to station 05, which is approximately the center of the profile. More TAT (Theoretical Arrival Time) files are available by sending E-mail to "sgao@cyclop.ess.ucla.edu".

Example of Seismograms

Figures 4 and 5 show some seismograms recorded by the profile. Figure 4 compares teleseisms and spectra from a Northern California event from the 4 Guralp stations. Figure 5 is a seismic section from a teleseism from 1 Hz vertical sensors, on data stream 1, i.e. the continuous stream.

History of the Experiment

The idea for the lake Baikal experiment arose when Dr. Mikhail Kogan visited UCLA in 1989 and gave a seminar on convection models in the asthenosphere beneath lake Baikal. On his return to the USSR he and Dr. Lev Vinnik travelled from Moscow to Irkutsk to discuss the project with Drs. Nicolai Logachev and Yuliy Zorin. Paul Davis was invited to visit Moscow and Irkutsk in September 1989, where he discussed results of US studies of the Rio Grande and east African rifts. In December of that year, Drs. Logachev (Director of the Institute of the earth's Crust, Irkutsk) and Strakhov (Director of the Institute of the Physics of the Earth, Moscow) signed an agreement to fund the field portion of the project. Dr. Logachev visited UCLA in December 1989 and signed a protocol with Paul Davis including the Universities of UCLA and Wisconsin.

Participated Personals

Personals involved in the installation and operation of the 10 stations include:

- UCLA: *P.M.Davis*, C.Davis, S.Gao, H.Liu, and P.D.Slack

- Institute of Earth's Crust, Irkutsk: *Yu.A.Zorin*, A.Masalski, V.M.Kozhevnikov, and V.V.Mordvinova, T.Perepelova. Academian N.A.Logatchev, director of the Institute, performed excellent leadership to the entire project.

- Institute of Physics of the earth, Moscow: *M. Kogan,* S. Panasyuk, and M. Karpechov.

- PASSCAL Instrument Center, LDGO: *R.W.Busby*

In addition, our colleagues from U.of Wisconsin, Madison led by Prof. R.P.Meyer also contributed to the operation of the 10 Reftek station that were primary responsibility of the UCLA team.

Figure Captions

Figure 1: USA-USSR Baikal 1991 Seismic Array Study UCLA station Locations. Dots–Stations with L4C 3D sensors. Dots inside squares–stations with L4C 3D sensors and Guralp vertical sensors.

Figure 2: Geographic location of earthquakes with mb ≥ 5.0 occurred during July 7 and Oct 5, 1991. (Source: NOAA)

Figure 3: Epicentral locations of events occurred during the experiment period. The center of each polar plot is the location of station 05, which is approximately the center of the profile. Events are plotted according to their azimuth and delta distance (both in degrees) relative to station 05. See Table 5 for parameters of each group.

Figure 4: Comparison of teleseisms and spectra from a Northern California event from the 4 Guralp stations.

Figure 5: A seismic section from a teleseism from 1 Hz vertical sensors, on data stream 1, i.e. the continuous stream.

Table 1: 1991 Baikal Project UCLA station information.

Table 2: UCLA Baikal 1991 DAS movement chart.

Table 3: UCLA Baikal 1991 station performance chart. A 'W' indicates there is at least one file that started that day from that station.

Table 4: UCLA Baikal 1991 recording parameters. Note: Before day 210 the record length of data stream 02 might be 110 seconds rather than 180 secs.

Table 5: Event statistics. Source: NOAA. The time limits are from July 7 to Oct 5, 1991.

Table 6: Theoretical arrival time of the first arrival to UCLA station 05. The TAT was calculated from IASPEI 1991 Earth model.

Table 7: Tape information.

TABLE 1: 1991 Baikal Rift Project UCLA Station Information

Station-Number	Station-Name	Coordinates		Elevation (m)	Duration	Operational-Sensor Type
01	Novoselova	53.620°N	102.645°E	550	07/12–10/02,1991	L4C+Guralp
02	Suhoy-Zaglik	53.246°N	103.767°E	468	07/11–10/03,1991	L4C
03	Kukunut	52.984°N	104.714°E	610	07/09–10/03,1991	L4C
04	Turgenevka	53.034°N	105.648°E	820	07/08–10/05,1991	L4C
05	Tyrgan	52.767°N	106.345°E	910	07/07–10/05,1991	L4C+Guralp
06	Sakhoya	52.464°N	107.379°E	871	07/19–10/02,1991	L4C+STS2
07	Solonechanyu	52.264°N	108.273°E	830	07/21–10/02,1991	L4C+Guralp
08	Hasurta	52.207°N	109.078°E	810	07/22–10/02,1991	L4C
09	Hovinsk	52.118°N	110.024°E	772	07/30–10/02,1991	L4C
10	Uldurga	52.172°N	110.785°E	994	07/30–10/02,1991	L4C+Guralp

TABLE 2: UCLA Baikal 1991 DAS Movement Chart

Station-Number	Duration Start	Duration End	DAS Number
01	193:06	275:10	369
02	192:05	276:03	231
03	189:03	276:10	227
04	189:05	247:08	241
	252:10	267:05	084
	267:06	278:03	115
05	190:00	278:01	338
06	200:08	257:02	346
07	202:00	263:00	380
	263:08	276:00	241
08	203:08	275:08	388
09	210:01	275:04	378
10	211:12	230:22	084
	231:10	264:02	115
	264:03	275:05	380

Table 3.

PERFORMANCE CHART ----- UCLA BAIKAL 1991 REFTEK STATIONS

Date	JUL	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AUG	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21
JDay	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233
01						INS	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
02					INS	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	.	.	.	.	.	.	.	.
03		INS	W	W	W	W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
04		INS	W	W	W	W	W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	.	.	.	.	.
05			INS	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
06													INS	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	.	.	.	.	.
07															INS	W	.	.	.	.	.	.	.	.	.	.	.	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
08																INS	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
09																							INS	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
10																								INS	W	W	W	W	.	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W

Date	AUG	23	24	25	26	27	28	29	30	31	SEP	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	OCT	02	03	04	05	06
JDay	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279
01	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	.	.	W	W	W	W	W	DIG				
02	.	.	.	.	.	.	.	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	DIG			
03	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	DIG			
04	W	W	W	W	W	W	W	W	W	W	W	.	.	.	.	.	.	.	W	W	.	.	.	.	.	.	.	.	.	.	.	.	.	W	W	W	W	W	W	W	W	W	W	W	DIG	
05	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	DIG	
06	.	.	.	.	.	.	W	W	W	.	.	.	.	.	.	.	.	.	.	.	.	.	W	W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	DIG				
07	W	W	W	W	W	W	W	W	W	W	W	W	W	W	.	.	.	.	.	.	W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	DIG			
08	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	DIG				
09	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	.	W	W	W	W	W	W	W	W	W	W	W	W	DIG				
10	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	.	.	.	.	.	W	W	W	W	W	W	W	W	W	W	W	DIG				

INS->Installed; W->Working,data obtained; . -> Not working, no data obtained; DIG->Digged out; STL->Stolen; [blank]->Station not exist

TABLE 4: UCLA Baikal 1991 Recording Parameters

Data Stream#	Sample Rate (SPS)	Record Length (Seconds)	Data Form (Bits)	Stations
01	10	1800	16	ALL
02	50	180	16	ALL
03	1	3600	32	1,5,7,10

TABLE 5 Event Statistics

Group	Mag(mb)	Delta(deg)	Depth(km)	Number	Comments
1	≥5.0	0-180	0-700	314	Medium & Strong events
2	≥5.5	0-180	0-700	54	Strong events
3	≥5.0	30-85	0-700	164	Tele-events with p as first arrivals
4	≥4.0	0-30	0-700	111	Significant regional & local events
5	≥5.0	0-180	100-700	82	Medium & strong deep events
6	≥5.0	85-180	0-700	127	Tele-events for SKS & PKP studies etc.

Time limits are from July 7, 1991, to October 5, 1991.

TABLE 6

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EVENT TIME (yy-ddd-hh-mm-ss.ss)	LAT (deg)	LON (deg)	DEP (km)	MB	BAZ (deg)	DELTA (deg)	TTIME (sec)	ARRIVAL TIME (hh:mm:ss.ss)
91-190- 6-53-34.10	23.227N	65.524W	10.0	5.5	352.29	103.999	842.84	7: 7:36.94
91-194- 2-50-14.60	42.182N	125.641W	11.0	6.2	37.25	75.333	703.38	3: 1:57.98
91-194-12-15-13.30	48.738N	154.933E	40.0	5.7	77.77	30.532	369.46	12:21:22.76
91-195- 9- 9-11.90	36.334N	71.119E	212.0	6.4	250.45	29.621	345.44	9:14:57.34
91-196-12-22-11.90	45.172N	150.794E	24.0	5.6	86.71	29.746	364.45	12:28:16.35
91-199-11-56-30.60	44.888N	22.407E	11.0	5.7	297.49	52.827	555.34	12: 5:45.94
91-201-11-48-47.10	54.565N	161.654W	32.0	5.8	48.77	50.707	536.42	11:57:43.52
91-202-22-59- 9.60	3.008N	128.434E	34.0	5.9	151.90	52.867	552.26	23: 8:21.86
91-204-11-22-10.00	5.826N	125.983E	146.0	5.6	153.91	49.499	515.42	11:30:45.42
91-204-13-25-47.30	3.775N	95.932E	46.0	5.8	193.70	49.587	526.38	13:34:33.68
91-209-11-12- 7.20	0.989N	120.591E	615.0	5.5	162.04	52.952	500.57	11:20:27.77
91-210-13-52-39.80	14.220S	73.945W	96.0	5.5	0.45	141.547	998.43	14: 9:18.23
91-213- 3-22-42.10	27.073S	176.313W	12.0	5.5	116.32	103.935	842.22	3:36:44.32
91-215- 8-33-17.10	29.330N	129.081E	17.0	5.5	135.51	28.787	356.92	8:39:14.02
91-217- 6- 5-47.20	21.363S	174.396W	30.0	5.7	111.35	100.491	824.10	6:19:31.30
91-218- 2-17-31.60	3.827N	95.374E	18.0	6.0	194.44	49.619	530.14	2:26:21.74
91-218-14-49-30.50	35.725N	141.044E	28.0	5.9	111.03	29.753	363.98	14:55:34.48
91-220- 2- 9-44.70	0.972N	122.631E	12.0	5.9	159.55	53.377	559.23	2:19: 3.93
91-221- 6-28- 3.20	1.409N	122.706E	37.0	5.5	159.34	52.969	552.67	6:37:15.87
91-223-14-43-54.20	3.141S	130.320E	33.0	5.7	151.83	59.259	598.13	14:53:52.33
91-224-13- 2-30.20	14.170S	14.255W	10.0	5.5	286.31	119.552	911.88	13:17:42.08
91-226-12-53-26.00	54.389N	169.296W	274.0	5.7	52.46	47.223	485.62	13: 1:31.62
91-226-17-43- 7.40	3.159N	127.949E	123.0	5.5	152.43	52.586	540.85	17:52: 8.25
91-226-19-15- 3.60	13.593S	167.607E	13.0	6.1	121.05	84.342	751.80	19:27:35.40
91-227- 6-50-35.70	45.558S	72.233W	10.0	5.5	352.09	172.724	1208.82	7:10:44.52
91-227-13-35-59.40	16.064S	168.010E	170.0	5.9	122.04	86.625	744.18	13:48:23.58
91-228-22-26-17.20	41.697N	125.385W	10.0	5.5	37.33	75.849	706.50	22:38: 3.70
91-229- 6-18-34.00	10.045N	69.948W	10.0	5.5	355.89	117.359	902.14	6:33:36.14
91-229-19-29-40.00	40.235N	124.348W	12.0	6.0	37.35	77.507	715.54	19:41:35.54
91-229-22-17-14.60	41.821N	125.397W	13.0	6.2	37.27	75.736	705.36	22:28:59.96
91-231- 6- 5-51.30	46.944N	85.302E	29.0	5.5	255.14	14.746	206.51	6: 9:17.81
91-236-11-13-19.70	6.065S	130.368E	148.0	5.6	152.72	62.058	604.73	11:23:24.43
91-237- 6-40- 5.90	21.354S	174.174W	33.0	5.5	111.18	100.609	824.19	6:53:50.09
91-238-14-59-44.90	42.100N	144.635E	28.0	5.8	97.18	27.696	345.69	15: 5:30.59
91-238-20-54-23.00	6.882N	94.609E	21.0	5.8	196.10	46.746	507.48	21: 2:50.48
91-240-21-32-35.00	22.230S	179.639E	599.0	5.5	116.38	97.869	752.11	21:45: 7.11
91-245-11- 5-50.40	37.440N	95.402E	10.0	5.5	210.86	17.130	239.46	11: 9:49.86
91-246- 8-44-48.60	33.649N	138.778E	27.0	5.9	116.60	30.022	366.49	8:50:55.09
91-246- 9- 5-28.30	17.910S	116.001W	8.0	6.0	59.81	132.095	967.89	9:21:36.19
91-246-11-56-16.20	17.921S	115.992W	10.0	5.8	59.81	132.109	967.62	12:12:23.82
91-247-22-27-21.70	15.204N	120.404E	20.0	5.6	158.17	39.100	445.70	22:34:47.40
91-251-13-50-30.80	40.250S	175.053E	87.0	5.6	130.63	110.016	859.53	14: 4:50.33
91-257-19- 0- 0.00	37.226N	116.428W	0.0	5.5	33.10	82.970	741.42	19:12:21.42
91-258- 6-39-12.30	17.879S	116.021W	10.0	5.6	59.81	132.059	967.39	6:55:19.69
91-261- 9-48-13.10	14.646N	90.986W	5.0	5.7	18.02	111.216	875.71	10: 2:48.81
91-262- 1-41-48.00	48.818N	154.870E	35.0	5.6	77.66	30.459	369.30	1:47:57.30
91-263-11-16-11.50	36.191N	100.063E	13.0	5.5	197.46	17.157	239.40	11:20:10.90
91-264-15-19-48.10	16.232S	173.004W	17.0	5.8	107.16	97.228	811.59	15:33:19.69
91-265- 6-32-37.30	49.644N	156.549E	30.0	5.5	75.27	31.093	375.54	6:38:52.84
91-270-23- 1-25.60	3.359S	137.625E	63.0	5.5	143.98	61.823	612.33	23:11:37.93
91-271-20-26-56.10	5.814S	150.959E	28.0	5.8	131.75	69.486	665.86	20:38: 1.96
91-273- 0-21-46.40	20.878S	178.591W	566.0	6.3	114.23	97.755	754.59	0:34:20.99
91-273- 0-42-25.30	20.941S	178.713W	590.0	5.6	114.36	97.738	752.34	0:54:57.64
91-273- 9-44-42.10	22.535N	121.479E	24.0	5.5	153.17	32.334	387.22	9:51: 9.32

TABLE 7: UCLA Baikal 1991 Data Tape Information

Tape-Number	Duration Start End	File Number	File Size (Mb)
UCLA91 01	189-210	1	484
	211-220	2	510
UCLA91 02	221-230	1	540
	231-240	2	455
UCLA91 03	241-250	1	508
	251-260	2	400
UCLA91 04	261-278	1	659
UCLA91 05	Logfiles(91&92)	1	42

USA-USSR Baikal 1991 Seismic Array Study UCLA Station Locations

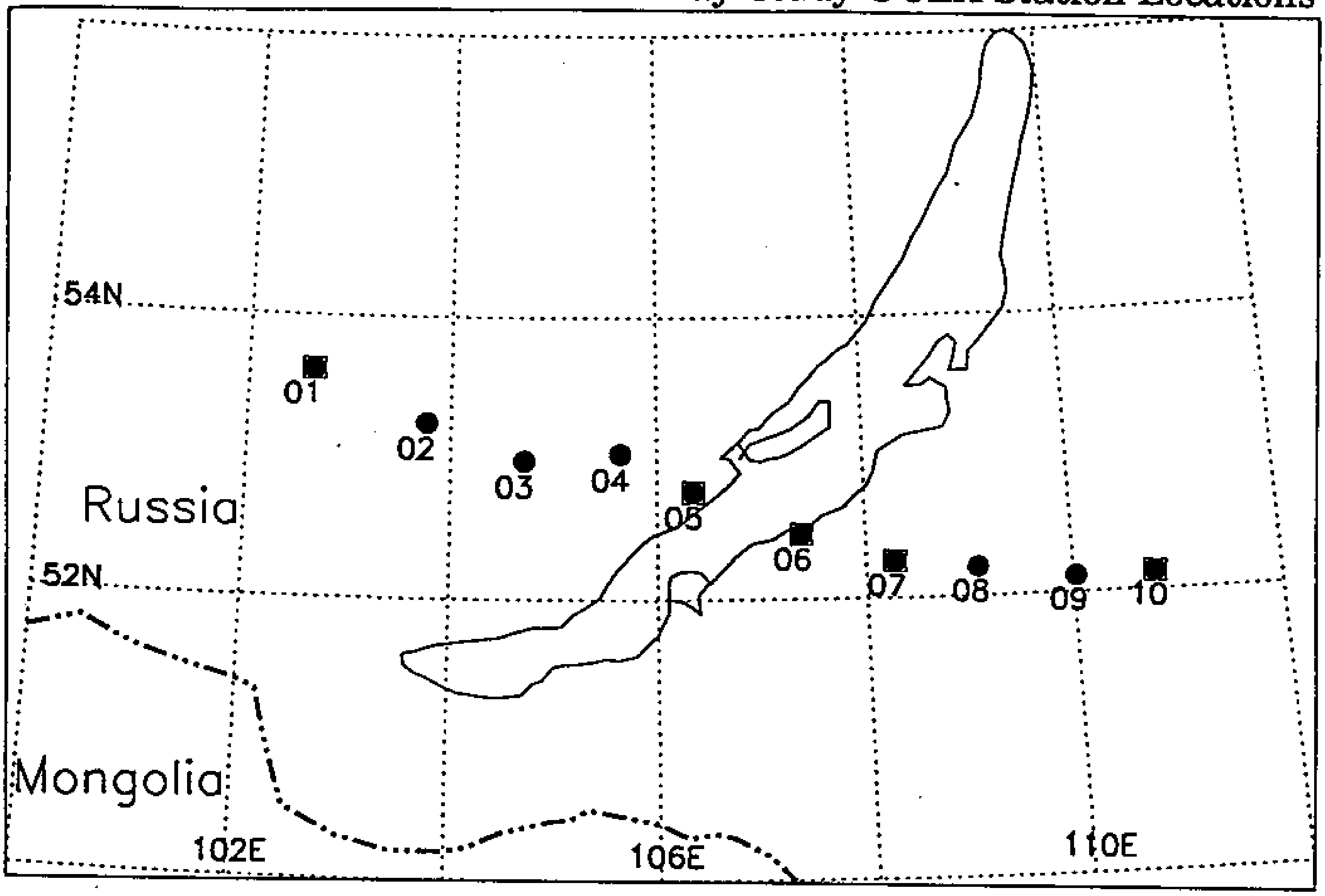


Figure 1

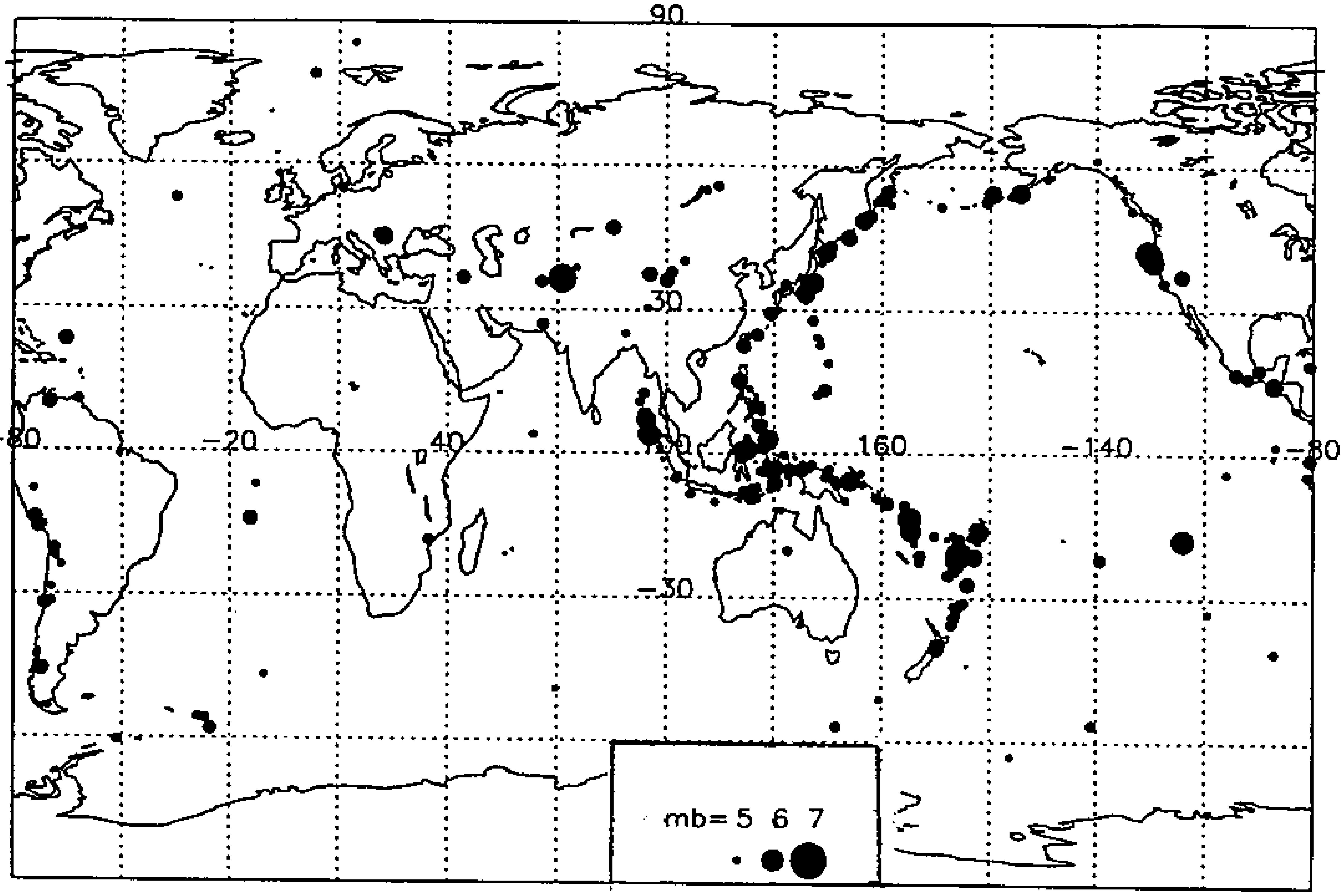


Figure 2

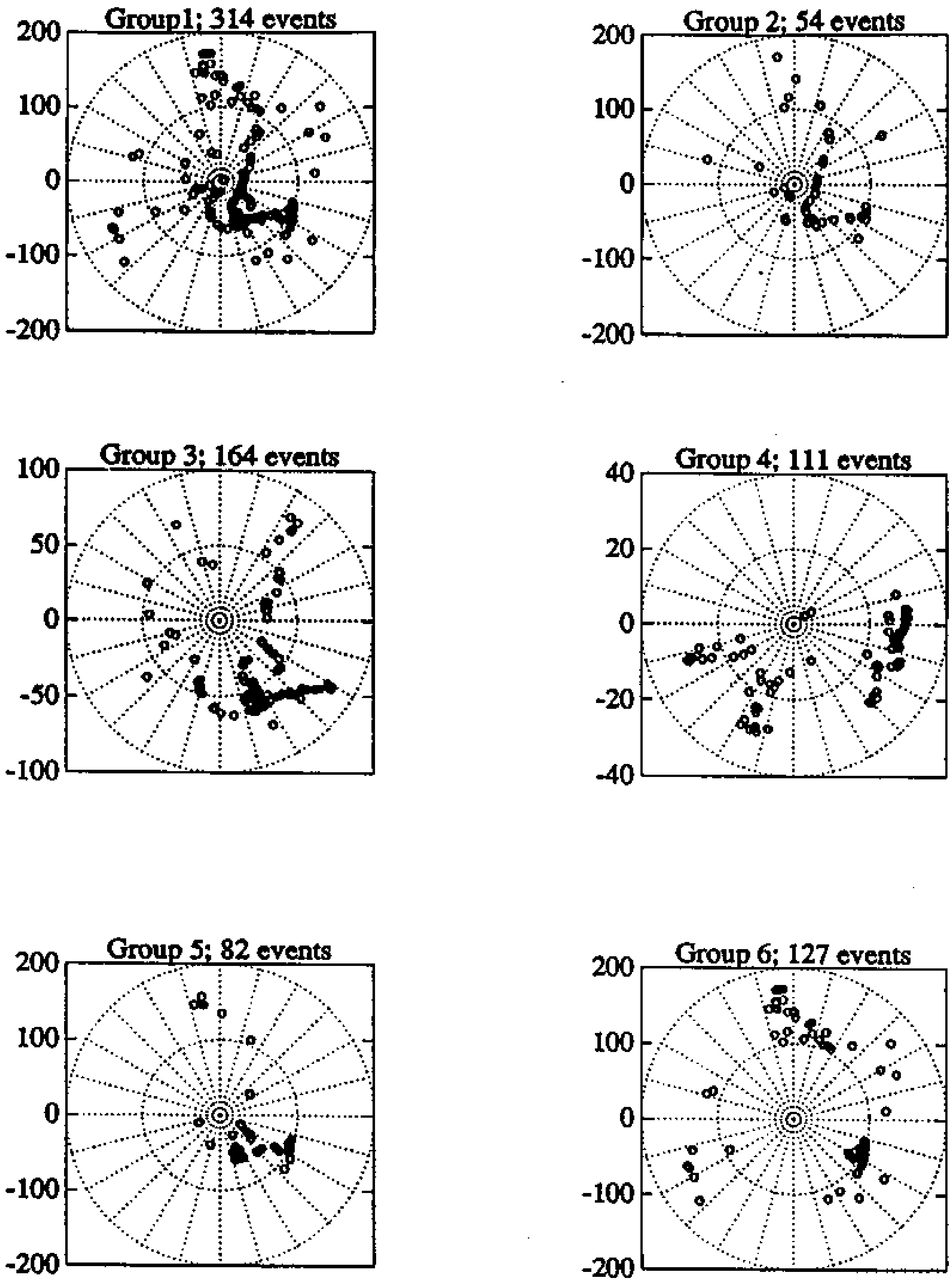
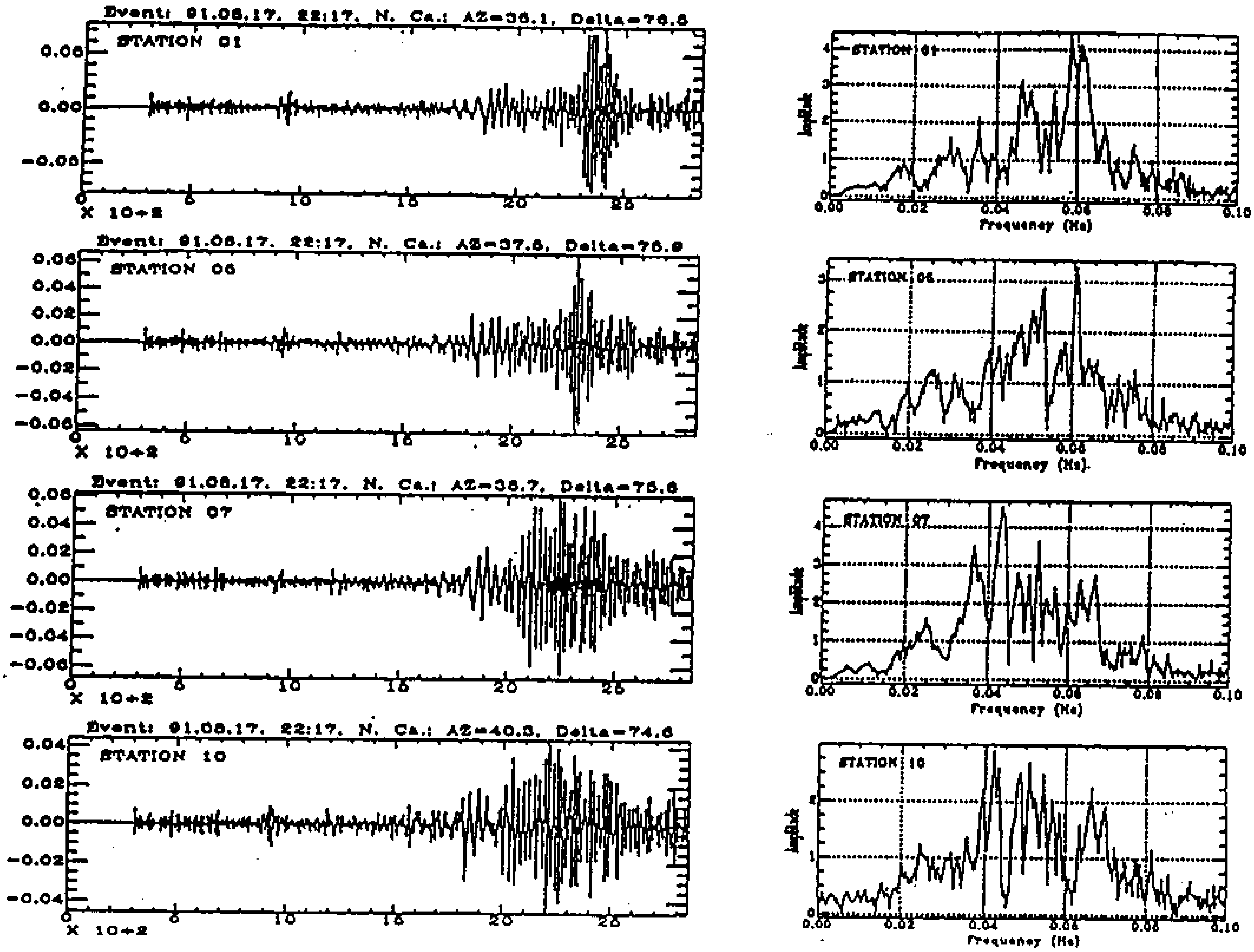
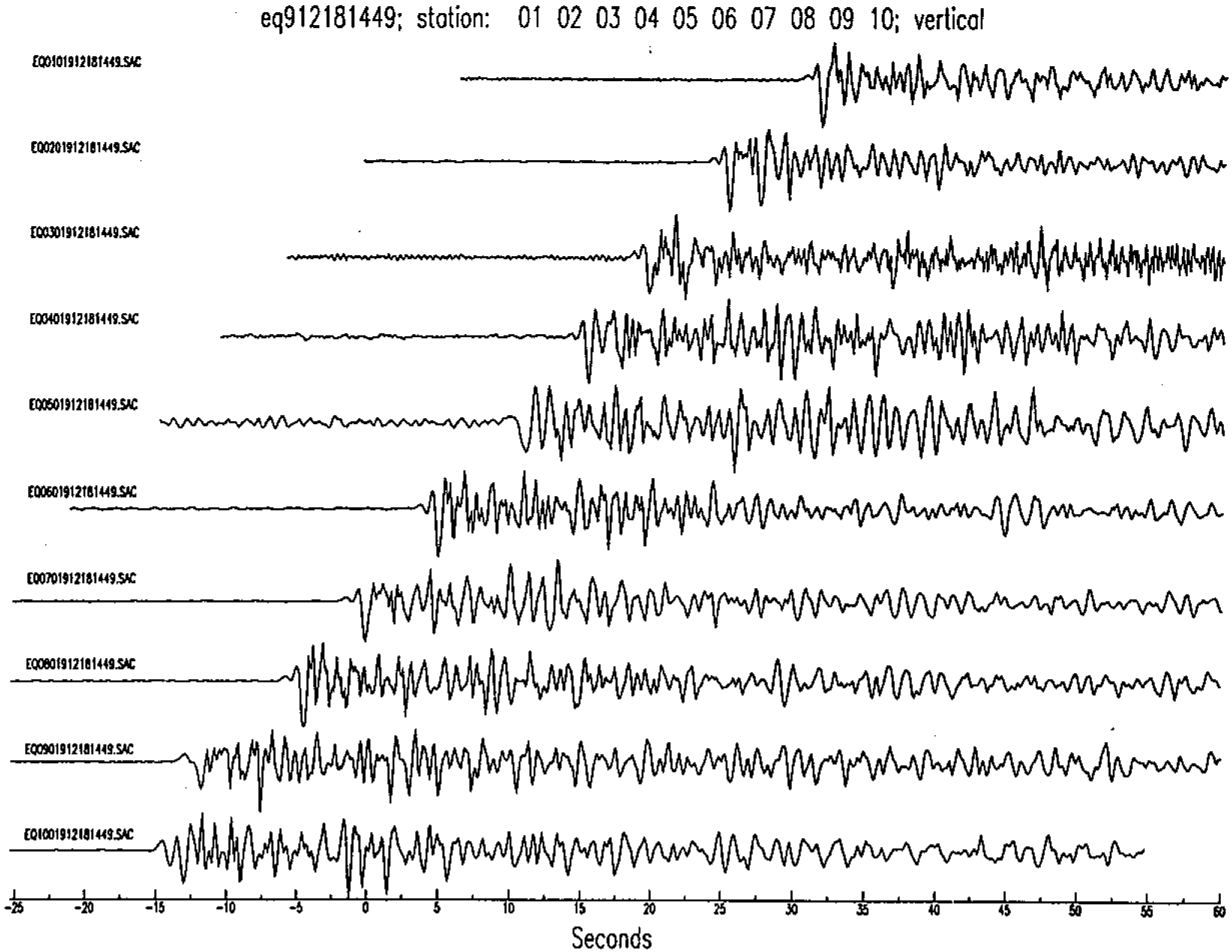

Group1; 314 events
200
100
0
-100
-200
Group 2; 54 events
200
100
0
-100
-200
Group 3; 164 events
100
50
0
-50
-100
Group 4; 111 events
40
20
0
-20
-40
Group 5; 82 events
200
100
0
-100
-200
Group 6; 127 events
200
100
0
-100
-200

Figure 3



STATION 01
STATION 06
STATION 07
STATION 10
X 10+2
Frequency (Hz)

Fig. 4



eq912181449; station: 01 02 03 04 05 06 07 08 09 10; vertical
EQ0101912181449.SAC
EQ0201912181449.SAC
EQ0301912181449.SAC
EQ0401912181449.SAC
EQ0501912181449.SAC
EQ0601912181449.SAC
EQ0701912181449.SAC
EQ0801912181449.SAC
EQ0901912181449.SAC
EQ1001912181449.SAC
-25 -20 -15 -10 -5 0 5 10 15 20 25 30 35 40 45 50 55 60
Seconds

Figure 5