TABLE K: Technical Description of Data Reduction Flow

step	procedure [programs in square brackets; see list below]
0	start w/ original field data tapes (Reftek Data Acquisition System (DAS) format).
1	read field tapes to disk, converting from Reftek DAS format to IRIS SEG-Y trace file format. [PASSCAL's "ref2segy" program].
2	Determine DAS clock drift history. [PASSCAL's "clockrate"]. Visually inspect the DAS clock history for each DAS. [PASSCAL's "clockview"].
3	Perform clock drift correction. [USC modification of PASSCAL's "clockcor"]. USC saves the clock correction value in a header while the PASSCAL version does not.
4	Remove Reftek amplitude DC shift from each SEG-Y trace file. [USC wrote a program to do this efficiently and to store the debias value in a trace header].
FOR EACH RECEIVER STATION: START PIPE FLOW:	[All USC software below were written in a generalized manner in order to be used by other experiments. Also, the software is constructed to use UNIX pipe flow in order to minimize disk I/O.]
5	Extract seismograms out of SEG-Y trace files; each original trace consists of back-to-back 10-minute-long files. Seismograms are output in true-SEG-Y format. [USC modified PASSCAL's "segygather" not to write the source depth into its official SEG-Y trace header as the DEBIAS value from Step 4 above was stored there.
6	Convert source and receiver lat/long into UTM. Trace header lat/longs are used to calculate UTMs; these are stored as additional trace headers. [USC wrote the program to do this].
7	Perform linear moveout (reduced traveltime) correction. Store correction value in trace headers. [USC wrote the program to do this].
8	Modify SEG-Y trace headers so that the entire series of CRG's will form a proper SEG-Y data set when merged during Step 9. Also fill in fields describing data/experiment and also set trace indexing values. See Table N for SEG-Y definition for LARSE data.
END PIPE FLOW:	Output is a single huge SEG-Y disk file containing the common receiver gather (CRG) seismograms for all 22,128 Ewing air-gun shots collected at the station.
9	For every 7 CRG's, read the disk files and write the seismograms to tape using LARSE SEG-Y tape format (Table N). 25 tapes are needed to archive the 174 CRG's. [USC wrote the program which will read the 7 disk files and create the exabyte SEG-Y tapes].

10 Using the same 7 CRG disk files, read the files and write intermediate tapes which will be read at the IRIS Data Management Center (DMC) where the data (Product 1) will be resorted into a more usable form (Product 2). At the DMC, the data are sorted by ship track (Table A) using these intermediate tapes. [USC wrote the program which reads the 7 disk files and creates the intermediate tapes].

LIST OF PROGRAMS

ref2segy	[IRIS] Translates data from Reftek DAS format to IRIS SEG-Y.
clockrate	[IRIS] Determines DAS clock drift history.
clockview	[IRIS] Displays clock drift history.
usc_clockcor	[IRIS/USC] Performs clock drift correction.
usc_debias	[USC] Removes DC mean from Reftek data.
*pipe	
usc_segygather	[IRIS/USC] Creates air-gun seismograms.
usc_utm	[USC] Computes source/receiver UTM from lat/long.
usc_lmo	[USC] Performs linear moveout (reduced traveltime) shift.
usc_segyhdrfix	[USC] Fixes trace headers (see Table N)
*end of pipe	
usc_segyjoin	[USC] Places 7 LARSE common receiver gathers onto 1 exabyte tape in true SEG-Y format (Product 1).
usc_segylinemux	[USC] Places 7 LARSE common receiver gathers onto 1 exabyte tape for sorting at IRIS-DMC.

Auxilliary Programs For Quality Control

true2sierra	[USC] Converts "segygather" output files ("true" SEG-Y format into SierraSeis-compatible SEG-Y format.
usc_ewing2segygather	[USC] Converts the Ewing shot time text file into the format needed by "segygather".
usc_makegeomfiles	[USC] Creates a station/DAS file for all stations as needed by "segygather" (run just once).
usc_segydump	[USC] Prints selected IRIS-SEG-Y trace header values and reel headers from a true SEG-Y disk file (for verification that "segygather" worked).
usc_segylook	[USC] Prints selected LARSE-SEG-Y trace header values and reel headers from a true SEG-Y disk file (for verification that the pipe flow worked).
usc_tapelook	[USC] Prints selected SEG-Y trace headers from an exabyte tape (to verify that the final Product 1 archive tapes are OK).
usc_segywindow	[USC] Extracts one ship line of data out of the entire common receiver gather to be used by SierraSeis for plotting (for verification that the reduced velocity was applied correctly).

TABLE L: Description of Product One

PRODUCT 1: ARCHIVE TAPES

Each CRG is 22,128 traces x 30 sec/trace x 100 samples/sec = 270 mb.
174 gathers @ 7 gathers/tape -> 25 SEG-Y tapes (8 mm).
Each trace is in reduced travel time (Vreduce = 6.0 km/sec) with the first data sample at -5.0 sec and the last data sample at 25.0 sec.

Line: 1 = Seal Beach - Mojave
2 = Malibu - Northridge - west Mojave
3 = east-west Los Angeles basin

Tape	Gather #	Station #	Line	Stn	Gath in line	Stat in line
1	1	1	1	4004	1	1
	2	2	1	4003	2	2
	3	3	1	4002	3	3
	4	4	1	4001	4	4
	5	5	1	2455	5	5
	6	6	1	2445	6	6
	7	7	1	2435	7	7
2	8	8	1	2400	8	8
	9	8	1	2400	9	8
	10	9	1	2370	10	9
	11	10	1	2355	11	10
	12	11	1	2340	12	11
	13	12	1	2315	13	12
	14	13	1	2300	14	13
3	15	14	1	2275	15	14
	16	15	1	2255	16	15
	17	16	1	2240	17	16
	18	17	1	2210	18	17
	19	18	1	2200	19	18
	20	19	1	2185	20	19
	21	20	1	2160	21	20
4	22	21	1	2150	22	21
	23	22	1	2130	23	22
	24	23	1	2109	24	23
	25	24	1	2080	25	24
	26	25	1	2065	26	25
	27	26	1	2039	27	26
	28	27	1	2020	28	27
5	29	28	1	2000	29	28
	30	29	1	20	30	29
	31	30	1	42	31	30
	32	31	1	60	32	31
	33	32	1	80	33	32
	34	32	1	80	34	32
	35	33	1	100	35	33
6	36	34	1	118	36	34
	37	35	1	141	37	35
	38	36	1	156	38	36
	39	37	1	177	39	37
	40	38	1	198	40	38
	41	39	1	219	41	39
	42	40	1	235	42	40
7	43	41	1	259	43	41
	44	42	1	277	44	42
	45	43	1	297	45	43
	46	44	1	323	46	44
	47	45	1	342	47	45
	48	46	1	360	48	46
	49	47	1	378	49	47
8	50	48	1	400	50	48
	51	49	1	420	51	49
	52	50	1	445	52	50
	53	51	1	460	53	51
	54	52	1	480	54	52
	55	53	1	500	55	53
	56	54	1	515	56	54
9	57	55	1	540	57	55
	58	56	1	560	58	56
	59	57	1	580	59	57
	60	58	1	600	60	58
	61	59	1	620	61	59
	62	60	1	650	62	60
	63	61	1	660	63	61
10	64	62	1	680	64	62
	65	63	1	700	65	63
	66	64	1	720	66	64
	67	65	1	740	67	65
	68	66	1	770	68	66
	69	67	1	800	69	67
	70	68	1	820	70	68

Tape	Gather #	Station #	Line	Stn	Gath in line	Stat in line
11	71	69	1	840	71	69
	72	70	1	860	72	70
	73	71	1	880	73	71
	74	72	1	900	74	72
	75	73	1	920	75	73
	76	74	1	940	76	74
	77	75	1	960	77	75
12	78	76	1	980	78	76
	79	77	1	1000	79	77
	80	78	1	1020	80	78
	81	79	1	1040	81	79
	82	80	1	1060	82	80
	83	81	1	1080	83	81
	84	82	1	1100	84	82
13	85	83	1	1120	85	83
	86	84	1	1140	86	84
	87	85	2	7001	1	1
	88	86	2	7002	2	2
	89	87	2	7003	3	3
	90	88	2	7004	4	4
	91	89	2	7005	5	5
14	92	90	2	7006	6	6
	93	91	2	7007	7	7
	94	92	2	7008	8	8
	95	93	2	7009	9	9
	96	94	2	7010	10	10
	97	95	2	7011	11	11
	98	96	2	7012	12	12
15	99	97	2	7013	13	13
	100	98	2	7014	14	14
	101	99	2	7015	15	15
	102	100	2	7016	16	16
	103	101	2	7017	17	17
	104	102	2	7018	18	18
	105	103	2	7019	19	19
16	106	104	2	7020	20	20
	107	105	2	7021	21	21
	108	106	2	7022	22	22
	109	107	2	7023	23	23
	110	108	2	7024	24	24
	111	109	2	7025	25	25
	112	110	2	7026	26	26
17	113	111	2	7027	27	27
	114	112	2	7028	28	28
	115	113	2	7029	29	29
	116	114	2	7030	30	30
	117	115	2	7031	31	31
	118	116	2	7032	32	32
	119	117	2	7033	33	33
18	120	118	2	7034	34	34
	121	119	2	7035	35	35
	122	120	2	7036	36	36
	123	121	2	7037	37	37
	124	122	2	7038	38	38
	125	123	2	7039	39	39
	126	124	2	7040	40	40
19	127	125	2	7041	41	41
	128	126	2	7042	42	42
	129	127	2	7043	43	43
	130	128	2	7044	44	44
	131	129	2	7045	45	45
	132	130	2	7046	46	46
	133	131	2	7050	47	47
20	134	132	3	6001	1	1
	135	133	3	6002	2	2
	136	134	3	6003	3	3
	137	135	3	6004	4	4
	138	136	3	6005	5	5
	139	137	3	6006	6	6
	140	138	3	6007	7	7
21	141	139	3	6008	8	8
	142	140	3	6009	9	9
	143	141	3	6010	10	10
	144	142	3	6011	11	11
	145	143	3	6012	12	12
	146	144	3	6013	13	13
	147	145	3	6014	14	14
22	148	146	3	6015	15	15
	149	147	3	6016	16	16
	150	148	3	6017	17	17
	151	149	3	6018	18	18
	152	150	3	6019	19	19
	153	151	3	6020	20	20
	154	152	3	6021	21	21
23	155	153	3	6022	22	22
	156	154	3	6023	23	23
	157	155	3	6024	24	24
	158	156	3	6025	25	25
	159	157	3	6026	26	26
	160	158	3	6027	27	27
	161	159	3	6028	28	28
24	162	160	3	6029	29	29
	163	161	3	6030	30	30
	164	162	3	6031	31	31
	165	163	3	6032	32	32
	166	164	3	6033	33	33
	167	165	3	6034	34	34
	168	166	3	6035	35	35
25	169	167	3	6036	36	36
	170	168	3	6037	37	37
	171	169	3	6038	38	38
	172	170	3	6039	39	39
	173	171	3	6040	40	40
	174	172	3	6041	41	41

TABLE M: Description of Product Two

PRODUCT 2: RESEARCH TAPES

Data sorted by ship track.
Each trace = 30 sec reduced, 100 sps = 12240 bytes/trace

Gathers 1- 86 = Line 1 (86 gathers)
Gathers 87-133 = Line 2 (47 gathers)
Gathers 134-174 = Line 3 (41 gathers)

Ship track #	Ship track name	# of air-gun shots (traces)	gather size (mb)	# tapes	gaths tape 1	gaths tape 2	gaths tape 3	gaths tape 4
1	01	653	5.4	1	1-174			
2	01R	2310	19.0	3	1- 66	67-132	133-174	
3	01X	848	7.0	1	1-174			
4	01Y	968	8.0	2	1-159	160-174		
5	TR1	976	8.0	2	1-157	158-174		
6	03	2446	20.2	3	1- 63	64-126	127-174	
7	03R	2488	20.5	3	1- 62	63-124	125-174	
8	TR2	394	3.2	1	1-174			
9	02	3117	25.7	4	1- 49	50- 98	99-147	148-174
10	02R	722	5.9	1	1-174			
11	02X	1296	10.7	2	1-119	120-174		
12	02Y	1519	12.5	2	1-101	102-174		
13	02Z	783	6.5	1	1-174			
14	TR3	1074	8.8	2	1-143	144-174		
15	01A	1227	10.1	2	1-125	126-174		
16	01B	1307	10.8	2	1-118	119-174		
Total		22,128	270.85	32				

TABLE N: SEG-Y Trace Header Table

Bold descriptions are specific to LARSE

Size	Bytes	Original SEG-Y	LARSE SEG-Y
long	1- 4	Sequence number within line	Sequence number within line
long	5- 8	Sequence number within reel	Sequence number within reel
long	9- 12	Original field record number	**Common Receiver Gather index# [1-174]**
long	13- 16	Original trace record number	**Common Receiver Trace index# [1-22,138]**
long	17- 20	Energy source point number	**SP# for this line [101-N_EOL]**
long	21- 24	CDP ensemble number	CDP number [empty]
long	25- 28	Trace number in CDP ensemble	CDP trace number [empty]
short	29- 30	Trace identification code:	SEG-Y Trace identification code **=1**
short	31- 32	No. vertically summed traces	No. vertically summed traces
short	33- 34	No. horizontally summed traces	No. horizontally summed traces
short	35- 36	flag: 1 = production, 2 = test"	flag: 1 = production, 2 = test [**set to 1**]
long	37- 40	Source to receiver distance	**Source-receiver offset**
long	41- 44	Receiver group elevation	Receiver group elevation [from geometry]
long	45- 48	Source surface elevation	Source surface elevation [**0 for sea level**]
long	49- 52	Source depth	Source depth (**air-gun depths**)
long	53- 56	Datum elevation at receiver	Elevation at receiver wrt WGS-84 spheroid
long	57- 60	Datum elevation at source	Elevation at source wrt WGS-84 spheroid
long	61- 64	Water depth at source	Water depth at source [depth of air-gun s]
long	65- 68	Water depth at receiver group	Water depth at receiver
short	69- 70	Elevation value scaler	Elevation value scaler [**set to 1**]
short	71- 72	Coordinate value scaler	Coordinate value scaler [**set to -10**]
long	73- 76	Source X-coordinate	**Source long deci-sec of arc** (/36000.)
long	77- 80	Source Y-coordinate	**Source lat deci-sec of arc** (/36000.)
long	81- 84	Receiver X-coordinate	**Receiver long deci-sec of arc** (/36000.)
long	85- 88	Receiver Y-coordinate	**Receiver lat deci-sec of arc** (/36000.)
short	89- 90	Coordinate units (1-m/ft 2-sec-arc)	Coordinate units [constant at **2=deg**]
short	91- 92	Weathering vel at CDP (unit/sec)	Weathering velocity [empty]
short	93- 94	Sub-weathering vel.	**LMO reducing velocity (m/s) [6000]**
short	95- 96	Uphole time at source in microsec	Uphole time at source in microsec
short	97- 98	Uphole time at rec. in microsec	Uphole time at rec. in microsec
short	99-100	Shotpoint static in msec	Source static (msec)
short	101-102	Receiver static at CDP in msec	Receiver static (msec)
short	103-104	"Total static applied *10,000"	**Total static applied *10,000**
short	105-106	Lag time A (msec)	Lag time A (msec)
short	107-108	Lag time B	Lag time B
short	109-110	Delay recording time	**Relative time of first sample (msec) [-5000]**
short	111-112	Front mute time in sec	**Polarity [set = 1] (see below)**
short	113-114	Tail mute in sec	**Orientation (see below)**
short	115-116	Number of samples in this trace	**#Samples if <2^15; else=32767 (see 229-232)**
short	117-118	Sampling interval in microsec	**Sampling interval in microsec**
short	119-120	Gain type: 1=fixed 2=binary...	**PASSCAL:Gain type**
short	121-122	Instrument gain constant	**PASSCAL:instrument gain constant**
short	123-124	Instrument inital gain in dB	**instrument inital gain in dB**
short	125-126	Correlated trace? 1=no 2=yes	**\ UTM source X**
short	127-128	Sweep start frequency	**/ "**

short	129-130	Sweep end frequency	**\ UTM source Y**
short	131-132	Sweep length in milliseconds	**/ "**
short	133-134	"Sweep type 1=lin, 2=parab..	**\ UTM receiver X**
short	135-136	Sweep taper at start of trace	**/ "**
short	137-138	Sweep taper at end of trace	**\ UTM receiver Y**
short	139-140	Taper type	**/ "**
short	141-142	Alias filter frequency	**Colocation station (0=NO, 1=YES)**
short	143-144	Alias filter slope	alias filter slope
short	145-146	Notch filter frequency	notch filter frequency
short	147-148	Notch filter slope	notch filter slope
short	149-150	Low-cutoff frequency	low-cutoff frequency
short	151-152	Hi-cutoff frequency	**Deployment # (1, 2, or 3) not used**
short	153-154	Low-cutoff slope	**Ship track # [1-16]**
short	155-156	Hi-cutoff slope	**Ship track trace # [1-EOL]**
short	157-158	Year data was recorded	**Year of trace first sample**
short	159-160	Day of year	**Day of trace first sample**
short	161-162	Hour of day (24 hour clock)	**Hour of trace first sample**
short	163-164	Minute of hour	**Minute of trace first sample**
short	165-166	Second of minute	**Second of trace first samle**
short	167-168	Time code: 1=local 2=GMT...	**Time code [GMT=2]**
short	169-170	Trace weighting factor	**Common station gather # [1-172]**
short	171-172	Geophone group # roll switch	**Line # [1,2,3]**
short	173-174	Group # of 1st trace in field data	**PASSCAL: Field stake #**
short	175-176	Group # of last trace in field	**C.S.G. this line [1-84,47, or 41]**
short	177-178	Gap size	**C.R.G. this line [1-86,47, or 41]**
short	179-180	Over travel of line taper	**Component (Z=1, N-S=2, E-W=3)**
short	181-182		**\ Microsec of trace first sample**
short	183-184		**/ "**
short	185-186		**Charge size (kg); airgun size (cu in)**
short	187-188		**Shot/trigger time - year**
short	189-190		**Shot/trigger time- Julian day**
short	191-192		**Shot/trigger time - hour**
short	193-194		**Shot/trigger time - minute**
short	195-196		**Shot/trigger time - second**
short	197-198		**\ Shot/trigger time - microsec**
short	199-200		**/ "**
long	201-204		Override for sample interval (IASPEI)
short	205-206		**Azimuth of sensor orient axis**
short	207-208		**Geophone inclination**
short	209-210		**\ LMO static (x/v) (ms)**
short	211-212		**/ "**
short	213-214		**LMO has been used (0=Y, 1=N)**
short	215-216		**Recording instrument type (coded)**
short	217-218		**correction to be applied: (SET=0)**
short	219-220		**Azimuth of source-receiver (min of arc)**
short	221-222		**Geophone type (coded)**
short	223-224		**Geophone number**
short	225-226		**DAS #**
short	227-228		not to be used
long	229-232		**Number of samples (see 115-116)**
short	233-234		**\ Reftek amplitude bias removed**
short	235-236		**/ "**
short	237-238		**Timing correction from clockcorr**
short	239-240		blank

Table N (Continued)
Values of LARSE-Specific header values

Size	Bytes	LARSE SEG-Y
long	9- 12	**Common Receiver Gather index#. [1-174]** (***CRG#*** below)
short	171-172	**Line # [1,2,3]** (***Line#*** below)
short	177-178	**C.R.G. this line [1-86,47, or 41]** (1-***n_CRG*** below)

	CRG#	***Line#***	***n_CRG***
Gathers	1- 86 =	1	(86 gathers)
Gathers	87-133 =	2	(47 gathers)
Gathers	134-174 =	3	(41 gathers)

Size	Bytes	LARSE SEG-Y
long	13- 16	**Common Receiver Trace index#. [1-22,138]** (***CRT#*** below)
long	17- 20	**R/V Ewing Shot Point# for this line. [101- SP end]** (***SP#*** below)
short	153-154	**Ship track # [1-16]** (***Track #*** below)
short	155-156	**Ship track trace # [1-# Traces]** (1-***#TRCS*** below)

	Track#	***CRT#***	***#TRCS***	***SP#***	
Line Name	Internal Ship Track#	Cum Air-gun Sources	# Traces (# of shots)	Shot Point: start	end
01	1	1- 653	653	101	753
01R	2	654- 2963	2310	105	2414
01X	3	2964- 3811	848	101	935
01Y	4	3812- 4779	968	101	1068
TR1	5	4780- 5755	976	101	783
03	6	5756- 8201	2446	101	2546
03R	7	8202-10689	2488	101	2587
TR2	8	10690-11083	394	101	494
02	9	11084-14200	3117	101	3215
02R	10	14201-14922	722	101	822
02X	11	14923-16218	1296	101	1369
02Y	12	16219-17737	1519	101	1619
02Z	13	17738-18520	783	101	883
TR3	14	18521-19594	1074	101	1174
01A	15	19595-20821	1227	101	1327
01B	16	20822-22128	1307	101	1407

Size	Bytes	LARSE SEG-Y
short	111-112	**Polarity (set = 1)** The convention used is POSITIVE DEFLECTION = GROUND UP, NORTH, OR EAST
short	113-114	**Orientation (set = 1)** [only vertical component recorded for this data]. For channel 1 (vertical component): SET = 0. For channels 2 and 3 (horizontal components): 0--North arrow on geophone points North 1--North arrow on geophone points West 2--North arrow on geophone points East

Size	Bytes	LARSE SEG-Y	
short	141-142	**Colocation station (0=NO, 1=YES)** (see Table J).	
short	173-174	**PASSCAL: Field stake #** see Tables D, E, F, or J	
short	215-216	**Recording instrument type [Set= 13]** Modified IASPEI: 1=PRS1 3=GEOS 7=SGR 9=PRS4 13=REFTEK (all types)	
short	221-222	**Geophone type (coded)** Modifield IASPEI: 1=L28 (4.5 Hz; PASSCAL) 2=L22 (2 Hz) 3=L10B (8 Hz) 4=L4 (1 Hz) 5=L4 (2 Hz) 6=FBA 7=L28 (4.5 Hz; UTEP)	
short	225-226	**DAS #** (see Table J).	

Size	Bytes	LARSE SEG-Y	
long	73- 76	**Source long deci-sec of arc** (/36000.)	} [divide by 36000 to get
long	77- 80	**Source lat deci-sec of arc** (/36000.)	} in decimal degrees]
long	81- 84	**Receiver long deci-sec of arc** (/36000.)	} " "
long	85- 88	**Receiver lat deci-sec of arc** (/36000.)	} " "
short	125-126	**\ UTM source X**	}
short	127-128	**/ "**	}
short	129-130	**\ UTM source Y**	} see Tables D, E, F
short	131-132	**/ "**	}
short	133-134	**\ UTM receiver X**	}
short	135-136	**/ "**	}
short	137-138	**\ UTM receiver Y**	}
short	139-140	**/ "**	}

Size	Bytes	LARSE SEG-Y	
short	157-158	**Year of trace first sample**	}
short	159-160	**Day of trace first sample**	} see Tables B,C
short	161-162	**Hour of trace first sample**	} (add -5000 msec to
short	163-164	**Minute of trace first sample**	} shot time)
short	165-166	**Second of trace first sample**	}
short	187-188	**Shot/trigger time - year**	}
short	189-190	**Shot/trigger time- Julian day**	}
short	191-192	**Shot/trigger time - hour**	} see Tables B,C
short	193-194	**Shot/trigger time - minute**	}
short	195-196	**Shot/trigger time - second**	}
short	197-198	**\ Shot/trigger time - microsec**	}
short	199-200	**/ "**	}

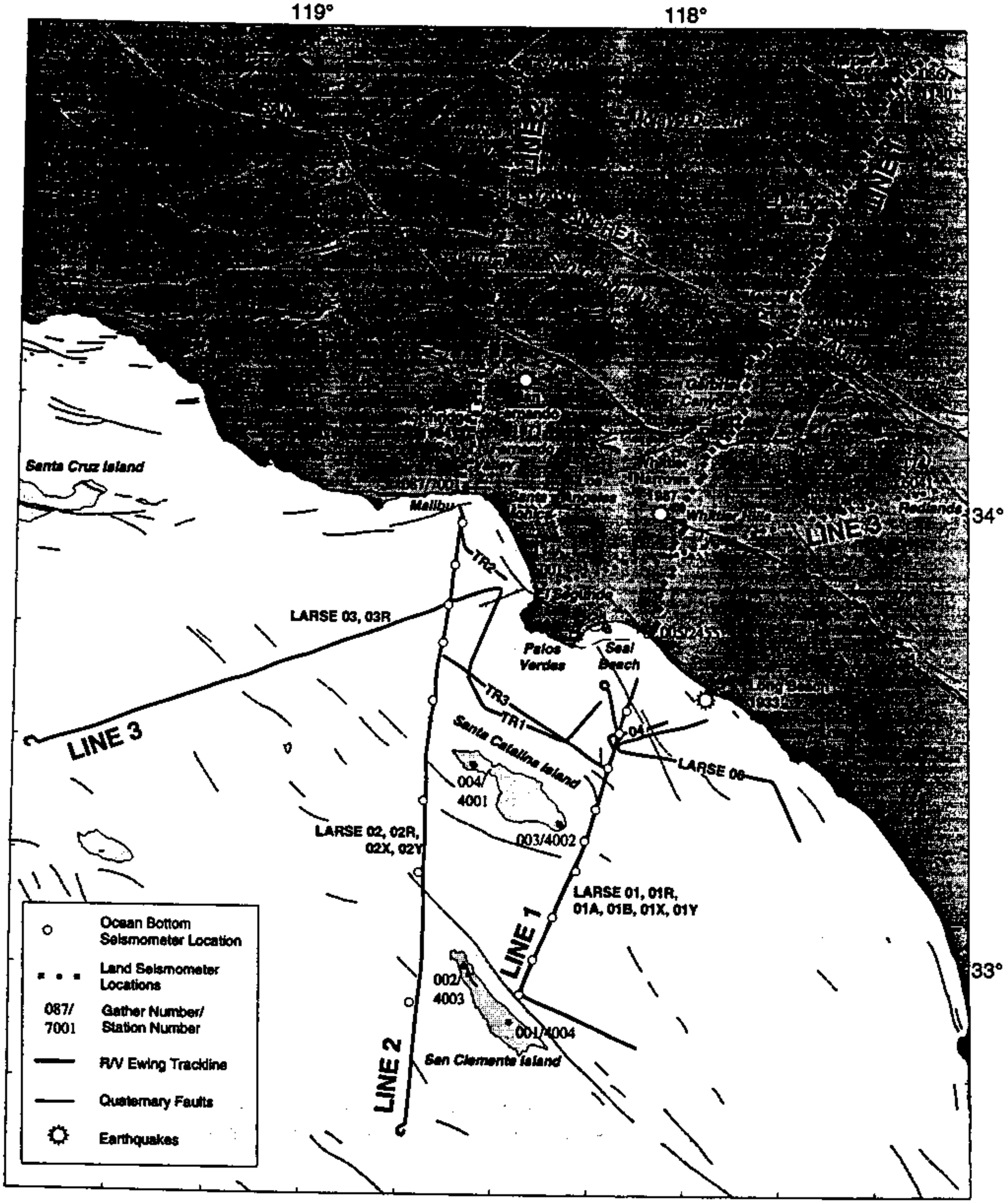


Fig. 1a. Map presenting an overview of offshore-onshore part of the LARSE experiment, showing locations of LARSE lines 1 to 6, and transit lines TR1 to TR3. Ocean Bottom Seismometer locations along lines 1 and 2 are shown as unfilled circles. Locations of stations along the three land arrays are also shown.

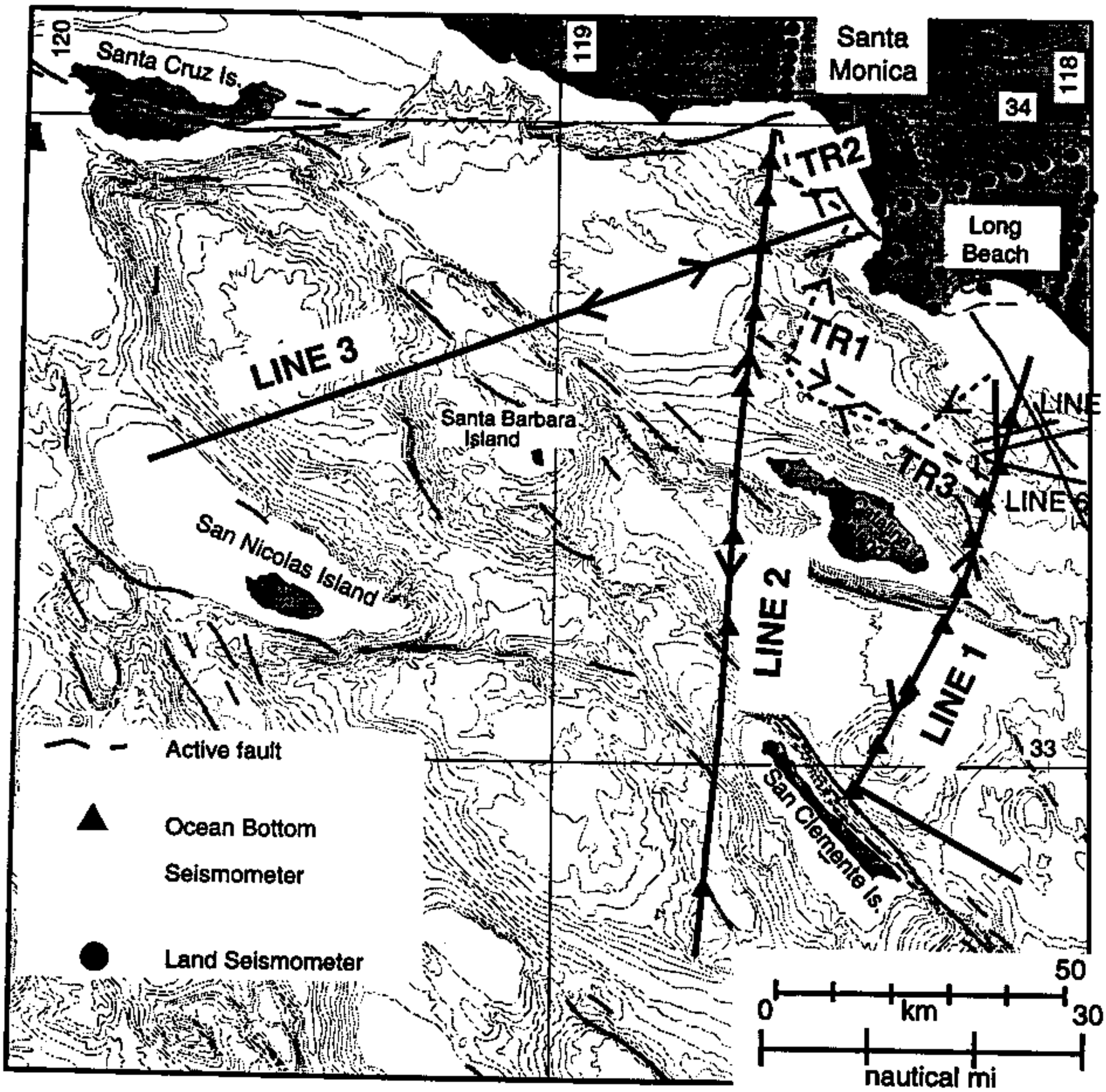


Fig. 1b. Detail map showing Ewing LARSE MCS reflection lines in Inner California Borderland. Unlabeled bathymetric contours provide indication of seafloor topography. Arrows along lines indicate direction ship traveled

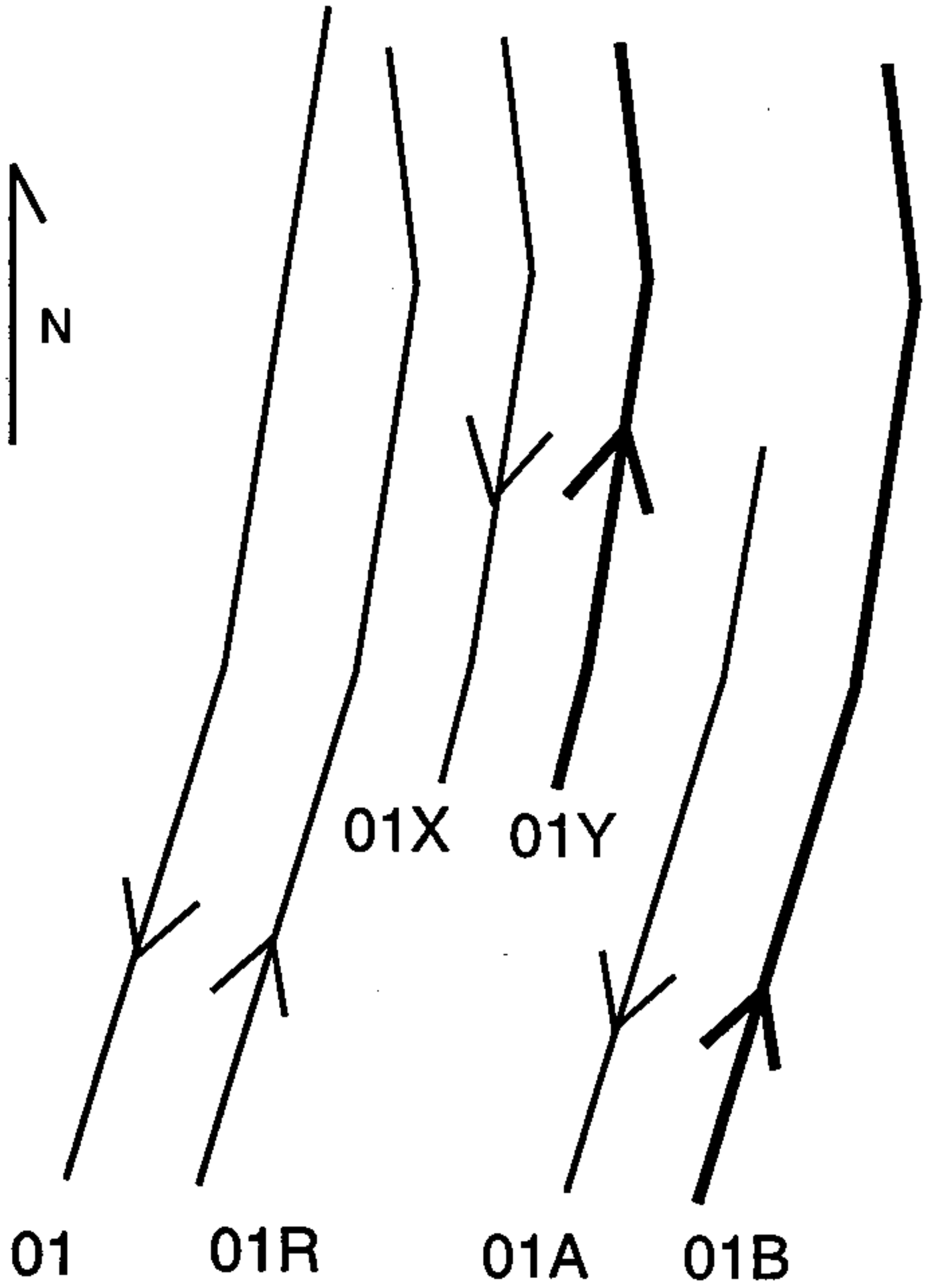


Fig. 2a. Schematic trackline plot for LARSE Line 1, showing the individual passes made over the line. Note that passes have been offset from each other for clarity. Arrow shows direction of **Ewing** track. Except for the first pass, LA01, the northern ends of all of the passes were kinked to the northwest to avoid the coastal shipping lanes. Heavy lines indicate ship tracks acquired during late night hours (2200 to 0600 L).

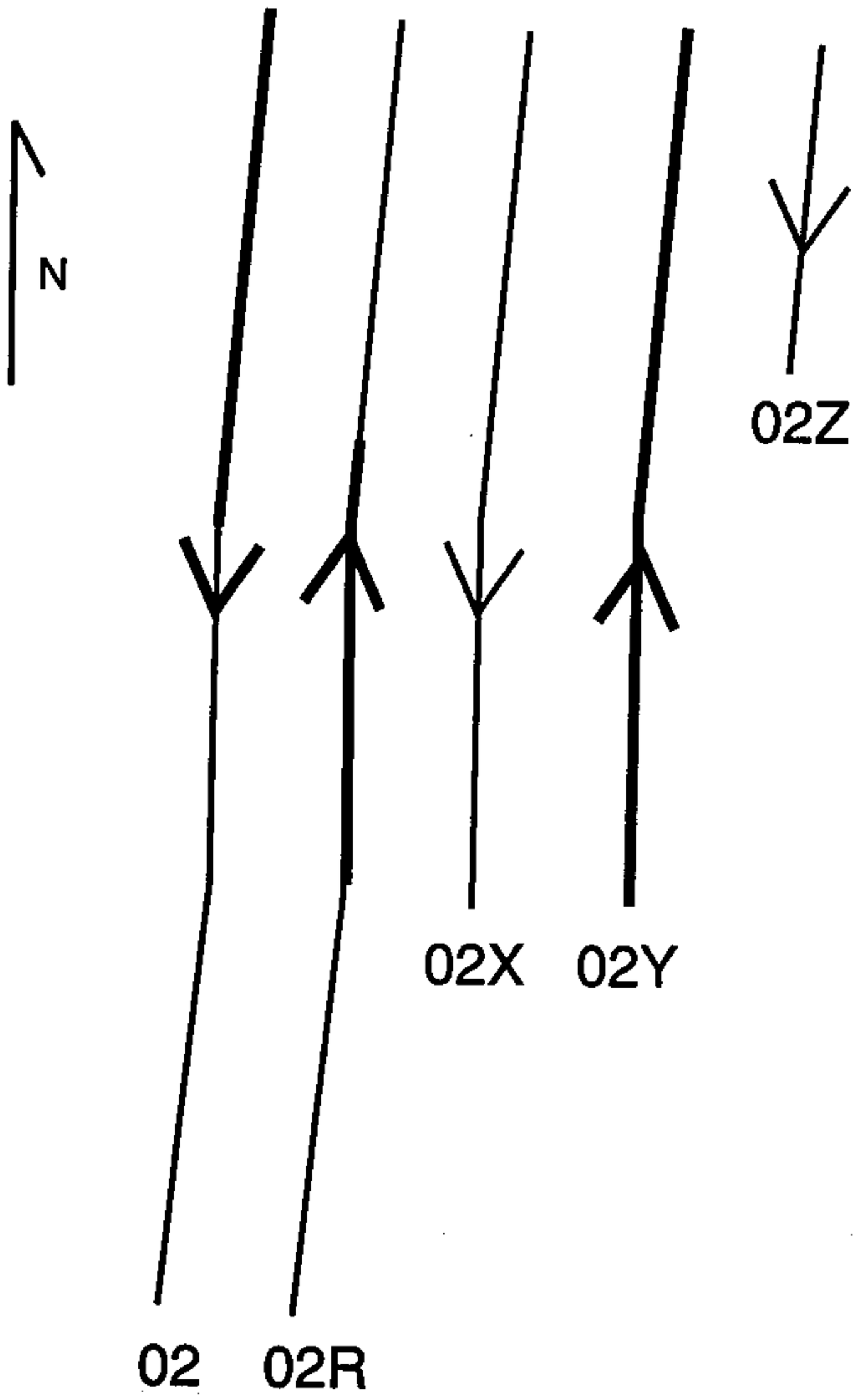
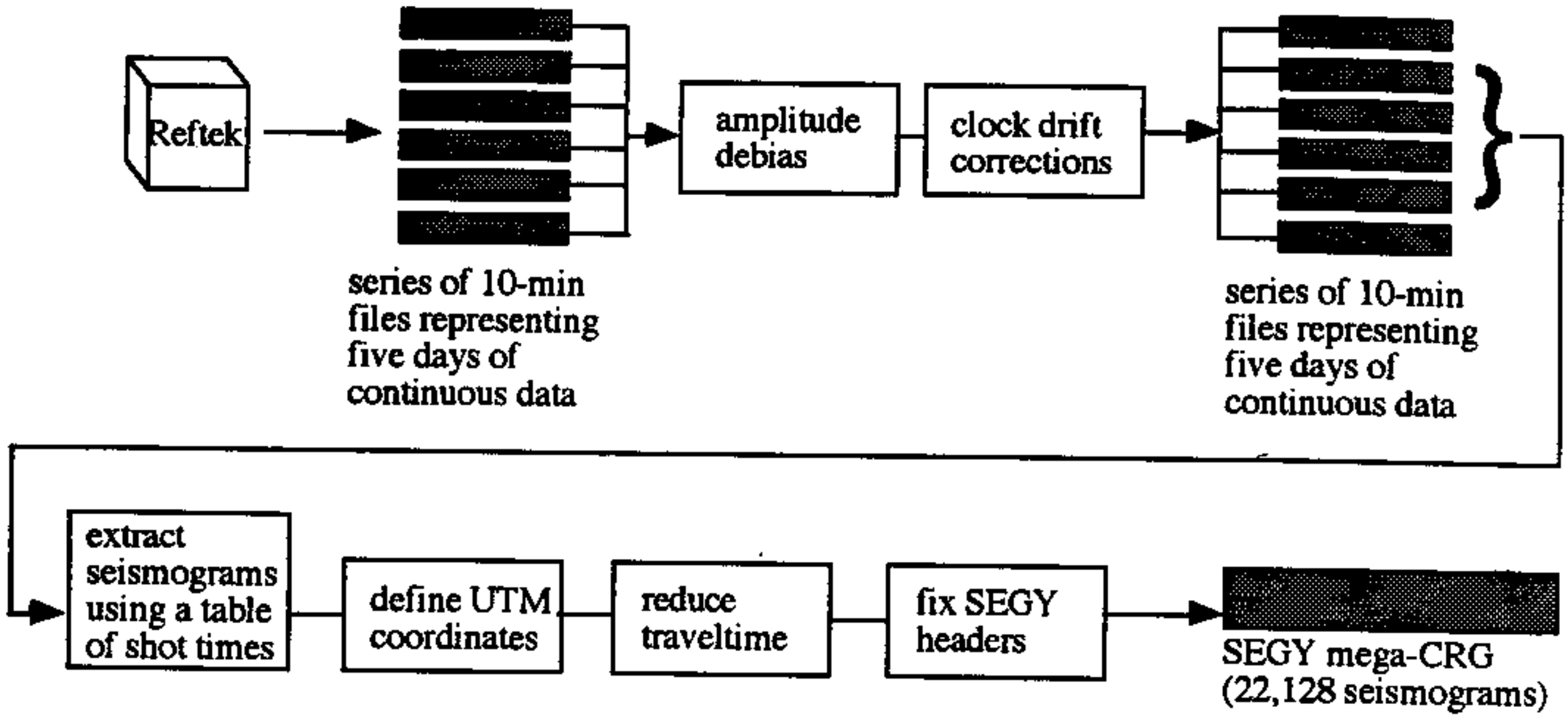
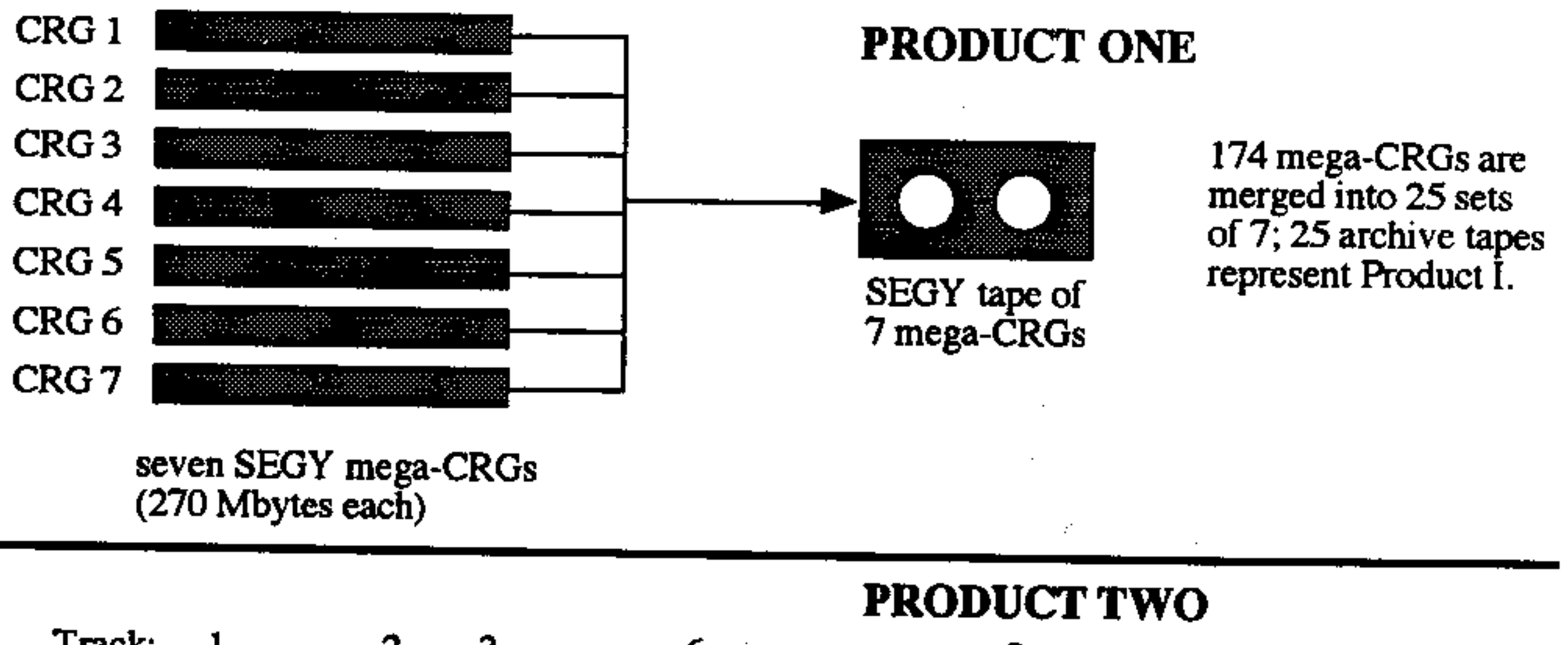


Fig. 2b. Schematic trackline plot for LARSE Line 2, showing the individual passes made over the line. Note that passes have been offset from each other for clarity. Arrows indicate direction of Ewing track. Heavy lines indicate tracklines acquired at late night hours (2200 to 0600 L).

DATA REDUCTION FLOW





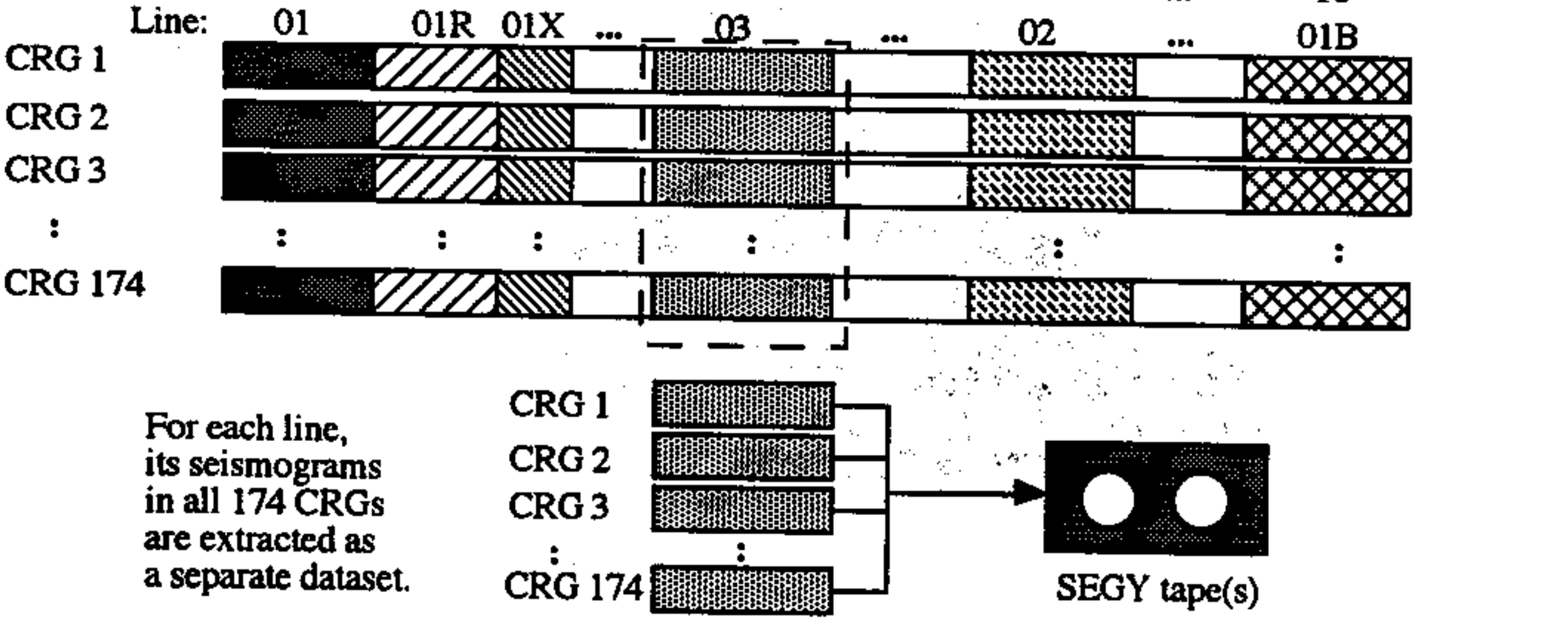


Fig. 3. Schematic of data reduction flow illustrating Product 1 and Product 2.

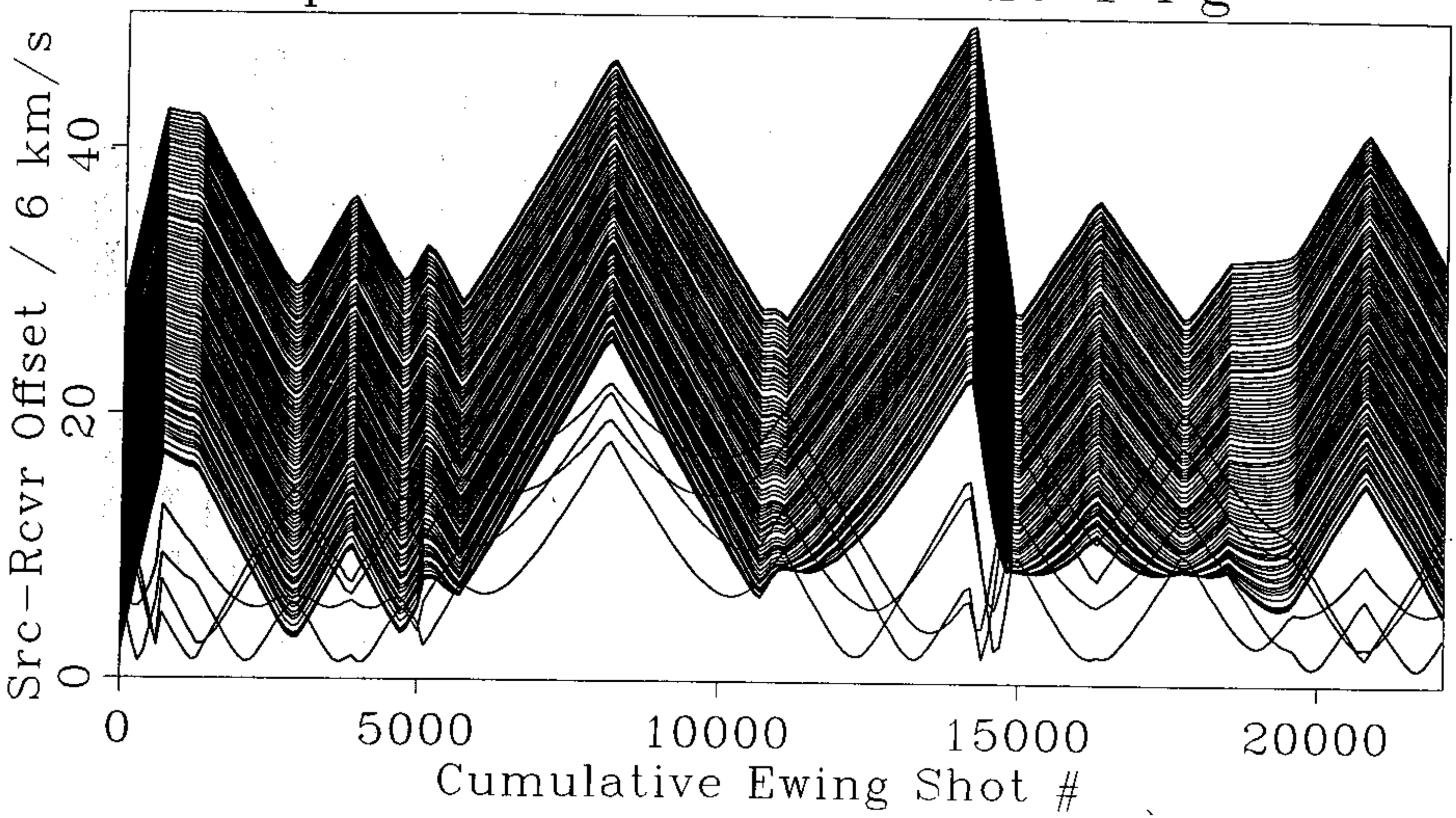


Fig. 4a. Source-receiver offset distance is displayed represented as travel time (t=offset/6.0). Cumulative *Ewing* shot number ranges between 1 to 22,128 (see Table A). Separate ship tracks are in general represented by line segments of the same slope or moveout. Steep moveout indicates the *Ewing* track was oblique to be accurately aligned to the station.

The slopes for Lines 01 and 01R are different due to the different shot spacing for the two lines (90 sec vs 20 sec at ~4.5 knots). The same is true for Lines 02 and 02R.

Line 1. Lowermost four curves represent the San Clemente and Santa Catalina gathers. Remaining curves represent gathers 5 through 86 of the onland Seal Beach stations (curve with maximum offset/travel time is gather 86 at a station in central Mojave).

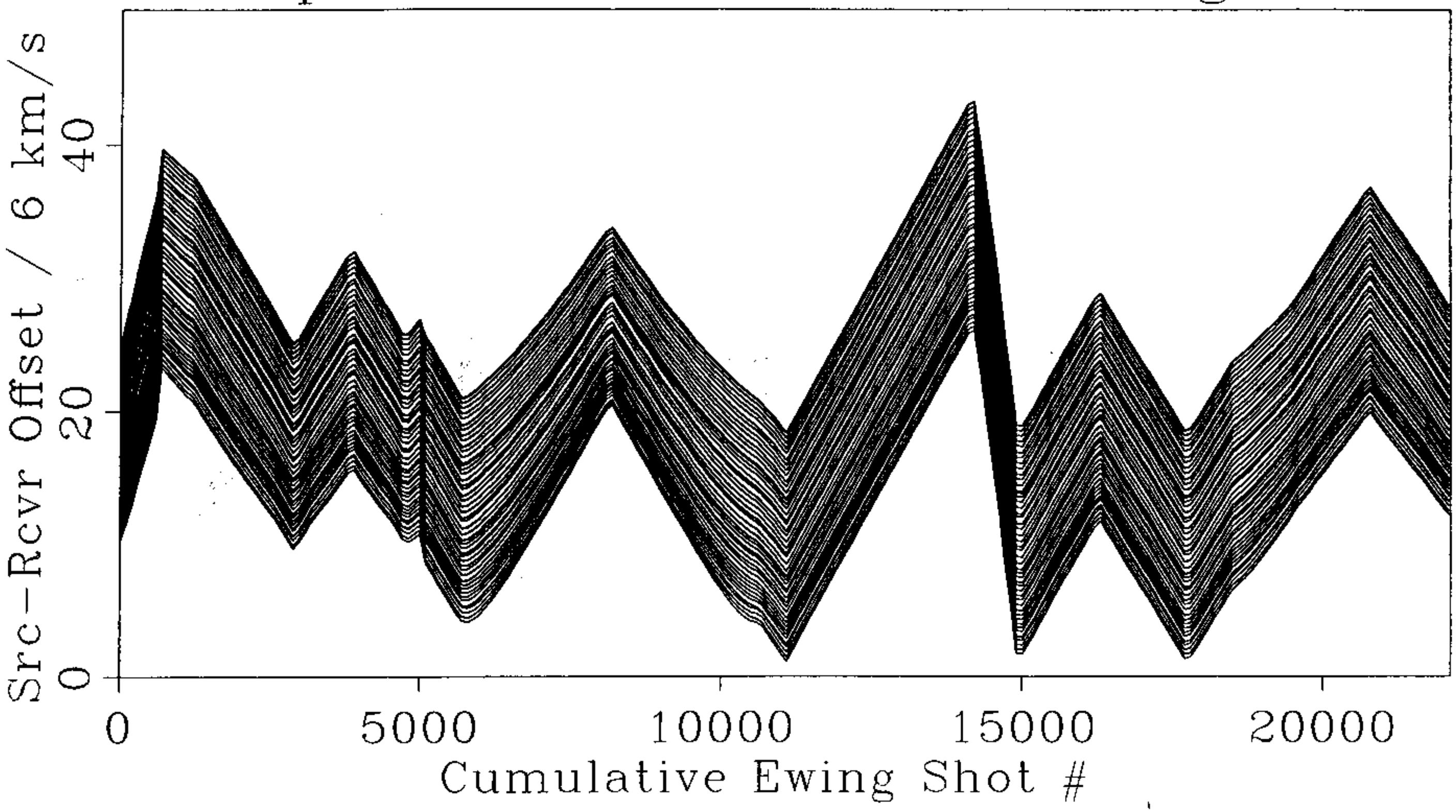


Fig. 4b. Line 2. Earliest curve (gather 1) is at station 7001 at Malibu; latest curve (gather 47) is at station 7050 in the west Mojave.

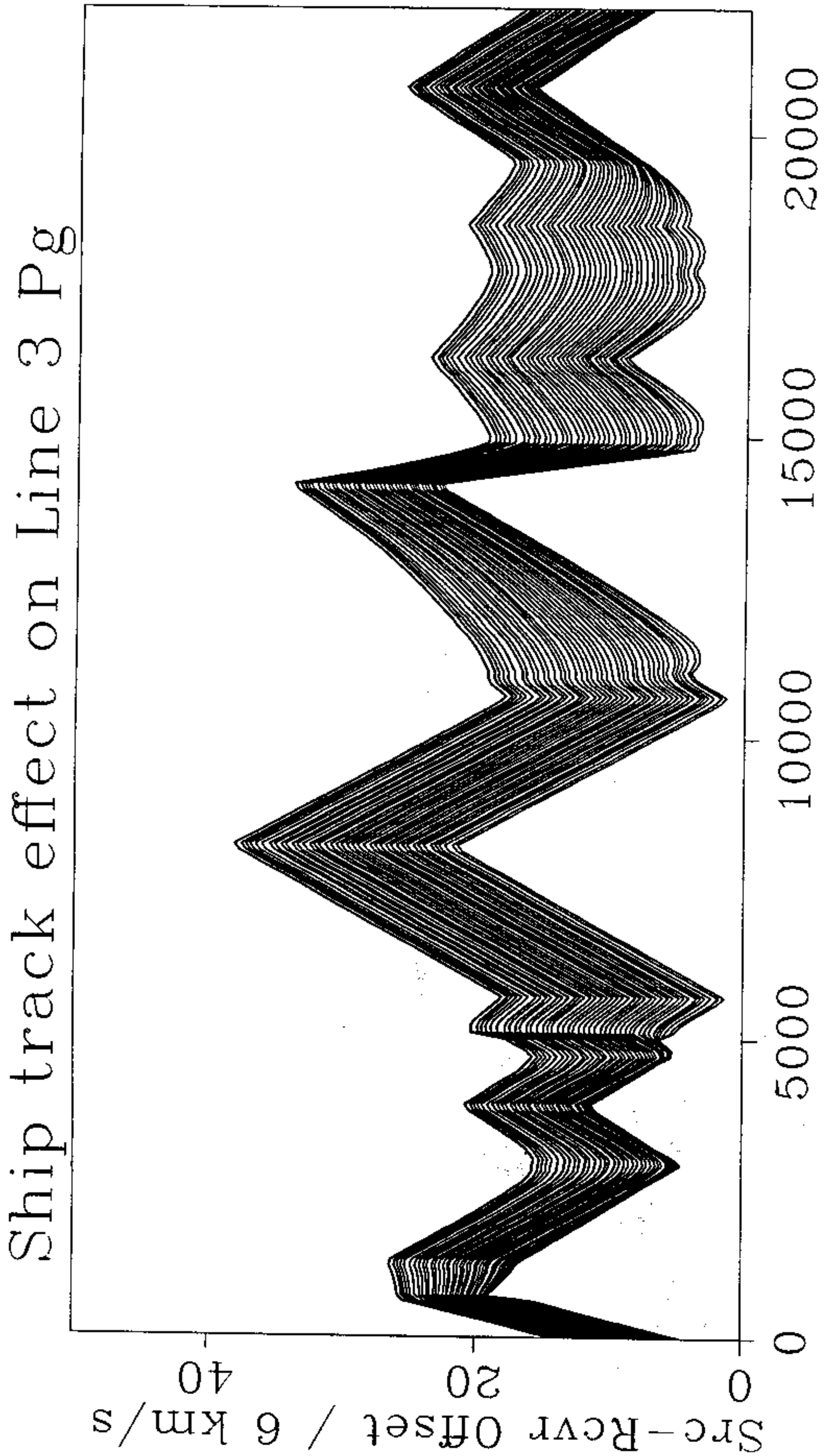


Fig. 4c. Line 3. Earliest curve (gather 1) is at station 6001 at El Segundo; latest curve (gather 41) is at station 6041 in the west Mojave.

APPENDIX CAPTION

Inline Portion of Each of 174 Common Receiver Gathers.

Figures A-001 to A-031: Seal Beach Array - Line 1Y (ship track 04): gathers 001 to 031 representing stations 4004 to 2000.

Figures A-032 to A-086: Seal Beach Array - Line 1B (ship track 16): gathers 032 to 086 representing stations 0020 to 1140.

Figures A-087 to A-133: Northridge Array - Line 02 (ship track 09): gathers 087 to 133 representing stations 7001 to 7050 .

Figures A-134 to A-174: Los Angeles Basin Array - Line 03 (ship track 06): gathers 134 to 174 representing stations 6001 to 6041.