

# LAND

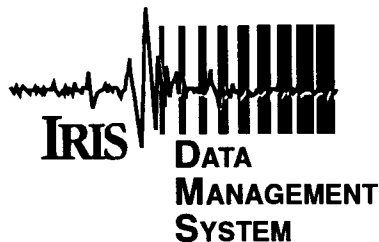
## DATA REPORT FOR LANDERS AFTERSHOCKS OF 1992 RECORDED USING PASSCAL INSTRUMENTS

Submitted By

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### PASSCAL Data Report 96-006



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**\*\*\* PASSCAL DATA REPORT \*\*\***

**ABSTRACT**

This report describes the distribution to the IRIS Data Management Center of data from Landers aftershocks collected by 15 PASSCAL 3-channel REFTEK instruments deployed across the Landers fault during July 12 to 18 of 1993. The data formats and the list of files on the data tape are discussed.

### Scientific Targets:

After M7.5 mainshock of Landers, California earthquake on June 28, 1992, we used portable REFTEK instruments of the southern California Earthquake Center (SCEC) to record aftershocks along and across the 70 km long Landers surface ruptures. We obtained unequivocal evidence for fault-zone seismic trapped waves. The results were reported in our papers published in *JGR* and *Science* (Li et al., 1994a,b).

Because the fault zone is characterized by slower velocities than surrounding intact rock, probably as a result of intense brecciation, high crack density and possible high fluid pressure, it naturally forms a waveguide. When an earthquake occurs within the fault zone, some seismic energy is trapped in the waveguide and propagates as normal modes that are formed by the constructive interference of multiple reflections at the boundaries between the low-velocity fault zone and high-velocity surrounding rock. Since the amplitudes and frequency contents of trapped waves are directly determined by the geometrical and mechanical properties of the fault zone, observations and modeling of these waves allow us to resolve the subsurface fine structure of the fault zone.

In order to collect more data, we carried out an extensive experiment using a dense seismic array including 15 PASSCAL three-channel instruments during October 12 to 18, 1992. In this experiment, we recorded about 100 Landers aftershocks with magnitudes of M1.0 - 3.0. This data set provides further evidence of fault-zone trapped waves.

### Data Collection:

We deployed 15 PASSCAL REFTEK 72A-02 DAS units with 200 Mb hard disks along Ekentardo road about 15 km north of the town of Landers. This linear seismic array is 2 km long, nearly perpendicularly across the surface break mapped after the Landers earthquake on June 28, 1992. Each PASSCAL instrument was connected to a three-component L22 2 Hz sensor. Positions of stations measured by internal GPS are showed in the REFTEK log files included on the DATA TAPE submitted to the IRIS Data Management Center.

The instrument parameters were down-loaded to the REFTEK units are shown in Table 1.

**Table 1. Instrument Parameters Used in the Experiment**

Parameter	Description
Trigger mode	event
Recording channels	1 - 3
Sample rate	250 samples/s
Preamplifier	8
Recording length	60 s
Pretrigger length	10 s
Short-term average length	0.1 s
Long-term average length	25 s
Trigger ratio (STA/LTA)	7.5

We used EXBYTE tape drive to dump the data from the instrument internal 200 Mb hard disks to the 8 mm tapes, and then transfer to the Sun station at USC. We sorted data from the field tapes based on the CIT/USGS southern California seismic network catalog during the time period from October 12 to 18, 1996 (Table 2). The data are stored in seven sub-directories. Table 2 shows names of sub-directories and spaces.

**Table 3. Sub-Directories in the Data Tape**

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R284.01	1.2 Mb	R288.01	32 Mb
R285.01	45 Mb	R289.01	36 Mb
R286.01	44 Mb	R290.01	36 Mb
R287.01	28 Mb	R291.01	26 Mb
Total:	245 Mbyte		

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The data format is SEGY created by the IRIS/PASSCAL software ref2segy. All data files are copied from Sun station to 8 mm tape as TAR format. The user can copy data files to their own Sun station hard disk using the command "tar xvf /dev/nrst0".

### Acknowledgments:

This experiment was carried out by Yong-Gang Li of University of Southern California and William H. K. Lee of U. S. Geological Survey at Monlo Park. The PASSCAL Instrument Center at Stanford provided considerable support. This project was supported by Southern California Earthquake Center. We also ask that any publications resulting from the use of this data set properly acknowledge the source of the data and the extensive efforts of the scientist who collected it.

Table 2. Location Parameters of Landers Aftershocks During This Experiment

yr	mo	day	hr	min	sec	latitude	longitude	Mg	depth	file ID
1992	10	12	0	1	56.58	34	9.31-116	24.41 A 1.8	0.73 18	0.16 3070090
1992	10	12	0	14	3.90	34	14.46-116	51.79 A 1.7	12.01 20	0.14 3070091
1992	10	12	0	17	30.09	34	26.37-116	27.84 B 0.0	13.00 13	0.15 3070141
1992	10	12	0	17	36.31	34	56.53-116	48.26 A 3.1	3.17 36	0.17 3070093
1992	10	12	0	42	17.56	34	15.50-116	26.41 A 2.1	3.17 26	0.14 3070094
1992	10	12	1	24	32.61	34	0.69-116	59.34 A 1.8	18.56 20	0.14 3070096
1992	10	12	1	27	25.10	34	32.77-116	33.29 A 1.8	3.12 11	0.15 3070097
1992	10	12	1	31	32.14	34	3.81-116	22.66 A 1.4	4.76 9	0.12 3070098
1992	10	12	1	35	31.99	34	37.62-116	32.92 B 1.7	7.80 10	0.09 3070099
1992	10	12	2	18	15.50	34	2.07-116	58.03 A 1.9	15.58 22	0.13 3070105
1992	10	12	2	21	36.27	34	0.06-116	18.98 A 1.3	10.27 19	0.14 3070106
1992	10	12	2	27	52.31	34	34.83-116	33.47 A 2.0	5.05 23	0.13 3070107
1992	10	12	2	46	48.87	33	58.00-116	18.91 A 1.3	11.56 13	0.09 3070110
1992	10	12	3	9	55.54	34	17.91-116	27.62 C 1.7	6.72 12	0.11 3070113
1992	10	12	3	22	43.74	34	10.58-116	25.74 A 2.4	4.25 22	0.17 3070114
1992	10	12	3	42	9.48	34	56.50-116	47.88 A 2.1	2.42 18	0.12 3070116
1992	10	12	3	42	30.03	34	58.94-116	57.63 A 1.8	4.61 9	0.10 3070421
1992	10	12	3	50	14.78	34	16.42-116	26.62 A 1.9	2.76 15	0.08 3070117
1992	10	12	3	56	6.75	34	20.81-116	28.05 A 2.6	1.74 39	0.14 3070119
1992	10	12	4	17	41.45	34	3.60-116	22.20 A 1.8	1.17 32	0.21 3070120
1992	10	12	4	18	28.67	34	1.74-116	21.05 A 1.4	4.70 10	0.09 3071782
1992	10	12	5	9	11.46	34	6.85-116	23.62 C 1.8	6.00 25	0.16 3070126
1992	10	12	5	21	19.65	34	6.72-116	59.33 A 1.7	4.37 18	0.12 3070130
1992	10	12	5	40	47.98	34	22.83-116	26.95 C 1.7	7.43 8	0.09 3070423
1992	10	12	5	41	3.05	34	18.59-116	26.34 C 1.6	7.12 8	0.05 3070424
1992	10	12	5	46	18.32	34	18.55-116	26.29 B 2.0	7.18 28	0.10 3070135
1992	10	12	5	52	33.87	34	56.54-116	47.65 A 2.1	1.74 21	0.16 3070136
1992	10	12	6	45	20.59	34	37.55-116	38.46 A 2.0	7.87 21	0.14 3070146
1992	10	12	6	50	54.04	34	56.57-116	47.94 A 2.6	2.88 35	0.17 3070147
1992	10	12	7	29	43.53	33	58.61-116	16.31 B 1.4	6.39 14	0.09 3070148
1992	10	12	7	34	11.94	34	36.46-116	38.02 A 1.9	9.33 11	0.10 3070149
1992	10	12	8	14	42.90	34	0.07-116	47.94 A 1.8	18.44 27	0.16 3070153
1992	10	12	9	7	46.63	34	34.09-116	25.37 C 1.9	6.00 13	0.11 3070160
1992	10	12	9	17	28.61	33	54.19-116	17.18 A 2.0	6.94 29	0.13 3070162
1992	10	12	9	25	2.92	34	59.68-116	56.96 A 1.6	9.54 11	0.15 3070163
1992	10	12	9	45	49.01	34	37.41-116	40.72 A 1.7	4.07 14	0.16 3070164
1992	10	12	9	57	6.68	34	16.64-116	26.80 A 2.2	2.78 31	0.13 3070165
1992	10	12	10	51	17.76	34	22.20-116	27.13 A 2.2	1.09 26	0.11 3070170
1992	10	12	11	21	28.42	34	33.22-116	32.28 A 1.6	4.93 13	0.12 3070172
1992	10	12	11	51	42.64	34	27.82-116	30.96 A 2.0	3.30 16	0.08 3070176
1992	10	12	11	58	32.21	34	56.24-116	47.96 A 1.8	2.29 13	0.11 3070177
1992	10	12	12	34	21.27	34	16.52-116	44.19 A 1.8	2.57 19	0.12 3070180
1992	10	12	13	24	17.53	34	22.13-116	25.80 A 1.6	2.81 13	0.11 3070183
1992	10	12	13	27	28.16	34	10.45-116	51.69 A 1.7	10.99 23	0.14 3070185
1992	10	12	13	32	14.19	33	39.16-116	42.27 A 0.9	16.45 9	0.16 3070187
1992	10	12	14	10	30.00	34	38.06-116	40.46 A 2.0	4.69 12	0.12 3070194
1992	10	12	14	14	5.21	34	35.73-116	17.35 C 2.3	6.00 13	0.14 3070195
1992	10	12	14	17	2.46	34	29.74-116	27.27 C 1.8	6.00 9	0.09 3070196
1992	10	12	15	8	43.39	34	38.10-116	29.91 A 2.1	3.33 20	0.14 3070202
1992	10	12	16	32	52.73	34	38.00-116	40.18 A 1.7	1.80 17	0.18 3070214
1992	10	12	16	45	6.85	34	38.15-116	37.30 C 1.8	6.12 8	0.09 3070215
1992	10	12	16	46	24.01	33	33.04-116	39.54 A 1.4	11.30 17	0.10 3070216
1992	10	12	17	10	51.69	34	54.47-116	54.23 A 1.8	3.98 11	0.13 3070217
1992	10	12	17	18	38.20	34	59.22-116	56.97 B 2.1	6.28 14	0.14 3070218
1992	10	12	17	28	38.21	34	37.65-116	33.33 A 2.4	9.74 30	0.14 3070219
1992	10	12	17	31	9.84	33	57.61-116	18.50 A 1.5	3.93 18	0.14 3070220
1992	10	12	17	32	43.39	34	22.93-116	27.55 A 1.9	3.51 10	0.08 3070221
1992	10	12	17	49	30.69	34	59.75-116	57.35 A 1.5	5.22 14	0.14 3070223
1992	10	12	17	56	43.91	34	34.22-116	50.17 A 1.7	0.88 11	0.10 3070224
1992	10	12	18	11	20.61	34	26.56-116	28.49 B 1.4	1.30 8	0.05 3070226
1992	10	12	18	41	48.01	33	58.64-116	21.88 B 1.4	6.18 9	0.14 3070230
1992	10	12	18	47	30.83	34	59.35-116	57.03 A 1.9	7.53 20	0.12 3070231



1992	10	12	20	20	9.38	34	9.82-116	24.62	C	1.5	5.37	8	0.14	3070236
1992	10	12	20	51	20.99	34	14.12-116	44.20	A	1.6	1.56	23	0.14	3070242
1992	10	12	21	48	53.63	34	10.43-116	25.32	A	1.6	12.87	18	0.16	3070249
1992	10	13	0	45	1.81	34	29.75-116	31.24	A	2.4	1.77	35	0.27	3070275
1992	10	13	1	54	31.01	33	57.96-116	21.32	A	1.5	9.09	23	0.13	3070277
1992	10	13	2	24	52.34	34	24.45-116	28.13	A	2.4	3.80	28	0.10	3070281
1992	10	13	3	51	11.70	34	37.44-116	32.14	A	1.6	10.82	15	0.18	3070292
1992	10	13	4	2	50.42	34	9.19-116	24.54	A	2.5	3.78	41	0.16	3070298
1992	10	13	4	44	5.30	34	58.92-116	56.88	A	1.8	7.63	16	0.15	3070299
1992	10	13	5	14	39.04	34	37.71-116	39.26	A	1.9	7.39	26	0.13	3070301
1992	10	13	5	48	5.47	34	38.66-116	31.25	B	2.1	6.00	40	0.22	3070303
1992	10	13	6	22	49.36	34	37.44-116	33.08	B	1.6	7.95	19	0.16	3070473
1992	10	13	6	23	44.60	34	35.94-116	37.67	A	2.0	2.95	32	0.19	3070306
1992	10	13	7	22	41.87	34	13.11-116	25.77	A	1.7	4.28	32	0.21	3070314
1992	10	13	7	29	6.20	33	57.74-116	18.48	A	1.8	4.56	34	0.19	3070315
1992	10	13	8	7	17.96	34	34.67-116	19.16	C	3.1	6.00	44	0.21	3070319
1992	10	13	8	17	53.47	34	10.09-116	26.27	A	1.5	3.30	22	0.21	3070321
1992	10	13	8	40	4.77	34	37.80-116	36.64	A	2.6	4.59	36	0.18	3070322
1992	10	13	8	54	43.27	34	36.32-116	0.84	C	2.2	2.41	21	0.16	3070325
1992	10	13	9	10	24.22	34	2.17-116	21.55	C	1.6	6.00	25	0.21	3070327
1992	10	13	9	45	19.22	34	23.12-116	27.39	A	2.2	4.68	55	0.19	3070331
1992	10	13	9	54	59.68	34	58.15-116	56.33	C	2.2	6.00	30	0.21	3070333
1992	10	13	10	58	6.78	34	58.60-116	58.24	C	2.1	6.00	25	0.25	3070339
1992	10	13	10	59	18.66	34	34.47-116	19.18	B	1.7	0.01	11	0.15	3070340
1992	10	13	11	29	0.72	34	3.12-116	19.16	A	1.3	3.07	19	0.21	3070343
1992	10	13	11	30	26.19	34	59.30-116	56.51	A	2.4	10.37	24	0.27	3070344
1992	10	13	12	35	16.07	34	22.22-116	25.90	A	1.8	1.79	19	0.14	3070349
1992	10	13	13	8	12.95	34	37.94-116	30.24	C	2.7	6.00	43	0.12	3070352
1992	10	13	14	38	46.38	34	36.56-116	38.49	A	2.1	10.79	33	0.20	3070361
1992	10	13	15	17	37.54	34	2.36-116	21.61	A	1.4	4.73	16	0.16	3070370
1992	10	13	15	57	3.04	34	37.52-116	40.07	A	3.4	7.49	91	0.17	3070374
1992	10	13	16	8	47.50	34	59.15-116	57.66	C	2.1	6.00	17	0.22	3070375
1992	10	13	16	28	36.49	34	23.24-116	26.73	C	1.8	6.00	16	0.26	3070377
1992	10	13	17	8	0.61	34	36.11-116	37.88	A	2.0	2.86	27	0.20	3070383
1992	10	13	17	49	29.19	34	2.41-116	22.00	A	1.6	4.28	20	0.23	3070392
1992	10	13	17	52	0.66	34	37.29-116	40.31	A	1.7	8.07	8	0.08	3070393
1992	10	13	18	36	19.48	34	21.57-116	27.82	B	1.7	1.87	8	0.05	3070398
1992	10	13	18	42	40.10	34	4.49-116	20.89	C	1.2	11.93	8	0.03	3070400
1992	10	13	18	51	15.12	33	56.87-116	19.65	A	1.5	4.96	22	0.14	3070401
1992	10	13	19	11	40.93	34	0.75-116	19.07	A	1.4	8.58	17	0.17	3070402
1992	10	13	20	2	1.39	34	56.41-116	47.98	A	2.4	2.15	23	0.17	3070406
1992	10	13	20	12	5.89	34	37.17-116	40.26	A	1.7	8.02	15	0.10	3070410
1992	10	13	20	28	52.04	33	59.87-116	19.65	A	2.8	8.49	58	0.18	3070412
1992	10	13	21	44	25.88	34	35.20-116	36.25	B	1.8	6.09	9	0.10	3070426
1992	10	13	23	8	6.74	34	9.87-116	26.65	A	1.7	2.45	23	0.18	3070445
1992	10	13	23	14	47.77	34	56.40-116	47.83	B	1.9	3.27	16	0.20	3070447
1992	10	13	23	34	58.83	34	59.29-116	57.21	A	2.0	8.27	14	0.11	3070448
1992	10	14	0	17	6.22	33	46.78-116	10.24	A	1.5	7.23	16	0.11	3070454
1992	10	14	2	5	16.20	34	26.03-116	31.83	A	1.9	5.68	16	0.09	3070469
1992	10	14	2	8	44.82	34	33.91-116	32.15	C	2.1	8.30	16	0.09	3070470
1992	10	14	2	13	59.86	34	24.11-116	27.81	A	2.1	12.21	24	0.11	3070472
1992	10	14	2	28	26.47	34	15.45-116	27.51	A	2.0	5.12	20	0.12	3070477
1992	10	14	3	6	49.20	34	32.02-116	31.32	C	1.7	9.15	16	0.12	3070480
1992	10	14	4	7	1.17	34	9.95-116	26.07	C	1.5	9.90	14	0.17	3070487
1992	10	14	4	32	18.05	34	0.20-116	20.89	A	2.9	1.38	45	0.18	3070490
1992	10	14	4	33	59.94	34	0.36-116	20.88	A	1.9	3.51	17	0.19	3070491
1992	10	14	5	51	0.66	34	35.67-116	36.70	A	1.9	6.97	18	0.14	3070496
1992	10	14	6	13	3.35	34	38.43-116	38.05	A	2.1	2.30	10	0.10	3070498
1992	10	14	8	50	14.62	34	28.67-116	31.26	C	1.6	9.08	17	0.14	3070522
1992	10	14	9	13	18.78	34	9.58-116	24.82	A	1.7	5.74	14	0.16	3070525
1992	10	14	9	18	50.09	34	8.88-116	24.66	A	1.6	3.12	22	0.20	3070526
1992	10	14	9	44	5.51	34	0.43-116	20.85	A	1.7	3.69	14	0.13	3070608
1992	10	14	9	44	13.04	34	0.02-116	20.58	A	1.7	4.98	14	0.10	3070529
1992	10	14	9	44	55.16	34	1.91-116	55.61	A	2.3	4.92	11	0.09	3070611
1992	10	14	9	47	0.01	34	30.67-116	31.67	C	1.7	6.00	20	0.13	3070530
1992	10	14	9	47	37.76	34	37.90-116	39.71	A	2.8	4.57	46	0.18	3070615

1992	10	14	9	48	26.64	34	37.91-116	39.86	A	2.1	4.62	15	0.12	3070617
1992	10	14	10	23	40.17	34	36.91-116	38.74	A	2.0	7.37	18	0.11	3070534
1992	10	14	10	29	32.68	34	22.52-116	29.17	A	1.8	0.01	18	0.07	3070535
1992	10	14	11	15	1.70	34	37.20-116	38.25	A	1.7	6.76	9	0.12	3070539
1992	10	14	12	4	9.55	34	9.82-116	24.20	B	1.6	9.39	17	0.11	3070545
1992	10	14	14	47	16.50	34	59.93-116	57.24	A	2.2	4.35	20	0.17	3070565
1992	10	14	15	27	27.25	34	29.61-116	30.14	A	1.9	1.70	20	0.14	3070570
1992	10	14	16	14	30.33	34	37.46-116	38.63	A	1.8	5.52	15	0.14	3070577
1992	10	14	16	31	43.81	34	29.70-116	29.45	A	1.9	5.66	16	0.11	3070578
1992	10	14	17	14	9.68	33	58.54-116	18.97	A	1.9	10.69	25	0.15	3070580
1992	10	14	18	5	43.30	33	56.60-116	18.63	A	1.6	4.22	10	0.06	3070587
1992	10	14	19	27	30.48	33	54.58-116	45.47	A	2.2	17.04	32	0.11	3070591
1992	10	14	19	40	32.09	34	0.01-116	54.32	A	1.7	23.70	24	0.13	3070594
1992	10	14	19	57	18.90	34	9.88-116	25.91	A	1.9	4.19	24	0.15	3070597
1992	10	14	20	2	25.26	34	24.14-116	27.53	A	2.0	1.64	12	0.18	2061637
1992	10	14	20	2	25.29	34	24.03-116	27.62	A	2.0	2.81	14	0.09	3070659
1992	10	14	21	3	25.40	34	28.31-116	30.61	C	1.5	6.00	15	0.17	3070606
1992	10	14	23	9	37.06	34	14.51-116	44.50	C	2.6	8.32	10	0.09	3070664
1992	10	14	23	9	41.13	34	29.94-116	30.71	C	2.8	7.66	33	0.11	3070628
1992	10	14	23	18	2.16	34	21.90-116	27.78	A	1.8	0.64	10	0.08	3070629
1992	10	14	23	31	28.51	34	6.66-116	54.20	A	1.7	3.42	29	0.18	3070633
1992	10	15	0	4	43.59	34	6.39-116	58.66	A	1.8	4.71	29	0.10	3070685
1992	10	15	0	19	41.67	34	15.27-116	27.27	A	1.4	3.39	13	0.14	3070639
1992	10	15	0	31	29.78	34	17.85-116	52.82	A	1.8	2.98	12	0.12	3070642
1992	10	15	0	32	6.14	34	47.81-116	17.46	A	2.2	4.45	13	0.15	3070669
1992	10	15	0	34	32.60	34	22.35-116	27.18	B	1.7	8.10	18	0.17	3070643
1992	10	15	0	58	43.91	34	24.58-116	29.28	C	1.9	6.00	20	0.29	3070645
1992	10	15	1	23	45.66	34	6.67-116	59.48	A	1.9	4.64	32	0.11	3070646
1992	10	15	1	40	19.62	34	55.84-116	54.80	A	2.6	0.01	29	0.17	3070651
1992	10	15	2	31	33.70	34	37.58-116	35.97	A	1.9	7.24	30	0.17	3070655
1992	10	15	2	32	47.36	34	59.65-116	57.53	C	1.4	6.00	14	0.24	3070656
1992	10	15	2	47	53.19	33	57.51-116	20.64	A	2.0	5.78	29	0.16	3070661
1992	10	15	2	52	9.58	34	6.52-116	59.49	A	1.9	4.44	34	0.11	3070662
1992	10	15	3	47	34.91	34	23.33-116	27.47	A	1.7	5.49	22	0.10	3070673
1992	10	15	3	48	42.34	34	39.90-116	41.57	A	1.7	2.68	17	0.18	3070674
1992	10	15	3	51	13.88	34	9.65-116	24.40	A	1.7	1.07	24	0.16	3070675
1992	10	15	4	19	6.62	34	6.51-116	59.26	A	2.0	4.33	38	0.14	3070677
1992	10	15	4	33	47.95	34	1.22-116	19.86	A	1.4	2.69	15	0.14	3070681
1992	10	15	4	51	26.58	34	54.18-116	55.60	A	1.9	4.18	20	0.15	2061670
1992	10	15	4	51	34.36	34	53.78-116	55.39	B	2.2	0.96	17	0.19	3070686
1992	10	15	5	37	48.36	34	21.57-116	27.36	B	1.7	9.11	14	0.10	3070688
1992	10	15	5	52	19.40	34	5.72-116	40.25	A	1.9	11.00	29	0.16	3070691
1992	10	15	6	32	37.53	34	6.72-116	59.46	A	1.3	4.53	16	0.11	3070693
1992	10	15	6	36	54.06	34	35.38-116	33.75	B	2.4	6.05	28	0.19	3070694
1992	10	15	6	55	19.04	34	56.24-116	44.26	C	2.0	6.00	16	0.18	3070696
1992	10	15	7	33	2.48	34	54.80-116	54.11	A	1.8	4.06	17	0.17	3070698
1992	10	15	7	37	23.35	33	53.78-116	16.81	A	1.2	5.43	15	0.10	3070699
1992	10	15	7	49	51.26	34	37.85-116	39.98	A	1.5	6.23	13	0.13	3070701
1992	10	15	7	57	55.37	34	5.23-116	25.13	A	1.4	6.00	11	0.17	3070702
1992	10	15	8	23	9.70	34	0.18-116	20.81	A	1.7	3.78	21	0.16	3070706
1992	10	15	8	30	21.05	34	1.92-116	19.21	A	2.0	2.62	25	0.18	3070708
1992	10	15	8	35	57.52	34	37.49-116	32.81	A	2.0	9.45	25	0.15	3070709
1992	10	15	8	46	16.83	33	58.40-116	34.71	B	1.8	6.92	27	0.13	3070710
1992	10	15	9	43	13.41	34	34.64-116	35.02	A	2.3	10.75	24	0.14	3070797
1992	10	15	10	10	13.90	33	58.20-116	23.93	A	1.6	2.90	14	0.16	3070720
1992	10	15	10	21	6.04	34	6.55-116	56.11	A	2.1	6.63	35	0.11	3070722
1992	10	15	11	2	56.34	34	27.34-116	30.72	A	1.7	2.72	19	0.12	3070728
1992	10	15	11	3	33.42	34	56.40-116	47.41	A	1.8	1.04	19	0.15	3072078
1992	10	15	11	5	16.79	34	24.93-116	29.67	A	1.9	3.68	19	0.10	3070730
1992	10	15	11	7	16.67	33	56.13-116	18.58	A	1.3	6.40	15	0.12	3070732
1992	10	15	11	12	12.29	34	5.97-116	41.92	C	1.6	5.49	15	0.10	3070733
1992	10	15	11	34	46.17	34	0.73-116	19.07	A	1.6	4.18	22	0.24	3070737
1992	10	15	12	21	18.62	33	52.33-116	19.42	A	2.3	2.40	31	0.16	3070738
1992	10	15	13	17	26.83	34	57.34-116	56.01	A	2.5	0.00	25	0.16	3070746
1992	10	15	13	23	50.30	34	10.34-116	26.31	A	2.2	5.53	31	0.16	3070747
1992	10	15	13	24	56.66	34	10.10-116	26.03	A	1.8	4.38	37	0.16	3072084

1992	10	15	14	8	39.43	34	29.34-116	28.95	A	1.8	3.32	8	0.08	3070755
1992	10	15	14	14	24.54	34	34.73-116	31.21	A	2.1	3.97	14	0.11	3070757
1992	10	15	14	56	22.99	34	21.13-116	28.65	B	1.5	1.37	7	0.06	3070770
1992	10	15	15	11	42.88	34	37.97-116	38.74	A	2.0	10.37	17	0.12	3070773
1992	10	15	17	10	25.28	34	37.11-116	39.47	A	1.8	4.34	10	0.12	3070781
1992	10	15	18	39	40.21	34	28.63-116	30.17	A	1.6	3.47	15	0.12	3070795
1992	10	15	19	8	9.38	34	24.86-116	26.25	A	1.8	2.23	15	0.10	3070801
1992	10	15	20	9	41.94	34	30.61-116	30.61	B	1.7	4.93	13	0.10	3070806
1992	10	15	20	45	9.83	34	37.67-116	39.54	A	1.6	6.83	15	0.12	3070811
1992	10	15	20	55	46.31	34	34.34-116	31.09	A	2.0	5.51	12	0.10	3070812
1992	10	15	20	59	19.35	34	10.22-116	25.46	A	2.1	1.61	19	0.17	3070813
1992	10	15	22	18	42.75	34	12.91-116	51.20	C	2.0	6.00	34	0.31	3070823
1992	10	15	22	40	26.88	34	10.23-116	25.58	A	1.5	2.63	16	0.20	3070825
1992	10	15	23	1	31.18	34	13.68-116	50.40	A	1.6	0.70	12	0.08	3070829
1992	10	15	23	29	22.48	34	22.51-116	27.63	A	1.8	4.96	20	0.10	3070833
1992	10	15	23	32	16.82	34	10.66-116	26.67	C	1.8	6.00	21	0.26	3070834
1992	10	15	23	51	9.80	34	28.25-116	30.21	C	2.3	6.00	26	0.13	3070837
1992	10	16	0	43	2.26	34	26.60-116	29.74	A	2.6	2.59	37	0.10	3070852
1992	10	16	1	9	34.37	33	57.48-116	20.68	A	2.8	5.39	38	0.16	3070854
1992	10	16	1	34	31.55	34	27.02-116	30.73	B	2.1	10.00	22	0.13	3070855
1992	10	16	3	35	2.07	34	33.51-116	33.71	B	2.0	3.31	12	0.11	3070981
1992	10	16	3	35	4.39	34	33.75-116	33.75	B	2.0	8.51	17	0.19	3070861
1992	10	16	4	1	40.43	34	25.37-116	28.60	C	2.2	5.89	17	0.05	3070867
1992	10	16	4	44	29.34	34	35.90-116	37.74	A	1.9	3.37	14	0.14	3070878
1992	10	16	5	6	59.18	34	56.31-116	47.98	B	1.6	2.47	14	0.12	3070880
1992	10	16	5	18	55.28	34	57.80-116	56.35	A	1.6	5.33	17	0.15	3070884
1992	10	16	5	21	19.94	34	34.56-116	31.24	A	2.1	3.77	16	0.15	3070885
1992	10	16	5	22	46.11	34	12.93-116	37.45	A	1.5	6.80	16	0.15	3070886
1992	10	16	6	24	44.75	34	12.85-116	25.91	A	2.0	4.01	24	0.11	3070890
1992	10	16	6	25	1.98	34	40.29-116	42.72	B	2.0	0.41	17	0.14	3070995
1992	10	16	6	32	20.63	34	53.55-116	41.81	A	2.3	6.00	18	0.18	3070893
1992	10	16	7	2	23.63	34	36.35-116	19.63	A	2.5	0.00	27	0.16	3070894
1992	10	16	7	51	0.15	34	9.65-116	25.55	A	2.5	9.65	29	0.14	3070897
1992	10	16	7	52	54.41	33	56.22-116	18.45	A	1.4	4.55	16	0.15	3070898
1992	10	16	8	6	29.79	34	10.15-116	25.36	B	1.5	11.97	12	0.08	3070899
1992	10	16	8	9	49.01	34	7.10-116	38.53	A	2.4	8.17	45	0.15	3070900
1992	10	16	8	40	44.58	34	25.97-116	29.81	A	1.6	2.58	12	0.10	3070903
1992	10	16	9	4	6.37	34	9.47-116	24.47	C	1.7	5.96	24	0.17	3070908
1992	10	16	9	24	33.45	33	57.32-116	20.94	A	1.7	7.01	20	0.16	3070911
1992	10	16	9	36	46.39	34	23.07-116	27.19	A	2.1	3.60	17	0.08	3070913
1992	10	16	10	28	31.23	34	6.45-116	24.11	C	1.5	6.24	18	0.14	3070919
1992	10	16	11	39	44.29	34	35.85-116	37.83	A	2.4	4.36	35	0.15	3070926
1992	10	16	11	42	50.51	34	6.84-116	24.16	B	1.5	11.18	19	0.14	3071050
1992	10	16	11	42	50.68	34	6.51-116	24.07	C	1.5	6.32	22	0.18	3071025
1992	10	16	12	28	28.84	34	57.95-116	56.23	A	2.5	0.01	22	0.17	3070931
1992	10	16	12	30	57.73	34	38.49-116	33.86	A	2.3	1.12	29	0.18	3070932
1992	10	16	14	2	37.62	33	53.45-116	16.72	A	1.4	4.89	13	0.15	3070944
1992	10	16	14	8	52.83	34	14.26-116	52.80	B	1.5	9.55	21	0.13	3070946
1992	10	16	15	22	13.31	34	56.51-116	47.28	A	2.3	3.02	31	0.15	3070958
1992	10	16	15	40	51.93	34	23.36-116	27.96	A	2.3	1.56	20	0.11	3070959
1992	10	16	16	30	53.08	33	58.45-116	50.20	A	1.7	12.00	14	0.11	3070963
1992	10	16	17	7	2.30	34	30.06-116	29.68	A	1.7	2.90	11	0.15	3070969
1992	10	16	17	24	20.77	33	56.08-116	58.79	A	1.5	18.58	19	0.09	3070971
1992	10	16	17	30	39.25	34	31.41-116	30.47	A	2.0	5.62	14	0.10	3070972
1992	10	16	17	56	4.40	34	19.22-116	27.41	A	2.4	2.56	33	0.13	3070973
1992	10	16	17	58	14.51	34	13.89-116	44.29	A	1.8	5.23	27	0.13	3070974
1992	10	16	18	15	6.71	34	17.87-116	27.19	A	1.9	3.02	21	0.10	3070992
1992	10	16	18	17	22.13	34	31.52-116	31.84	A	1.8	3.42	13	0.13	3070993
1992	10	16	18	48	10.39	34	27.69-116	28.08	A	1.7	1.94	14	0.09	3070996
1992	10	16	18	51	29.01	34	25.15-116	33.01	A	1.9	3.20	21	0.09	3070997
1992	10	16	19	25	49.45	34	20.72-116	26.91	A	2.3	1.16	29	0.12	3071002
1992	10	16	19	36	46.23	34	4.31-116	21.35	A	1.6	4.51	18	0.15	3071004
1992	10	16	19	54	15.67	34	54.95-116	56.19	A	2.1	1.44	17	0.16	3071005
1992	10	16	19	58	16.97	34	36.41-116	19.71	A	3.4	0.00	69	0.16	3071007
1992	10	16	21	13	4.67	34	29.85-116	31.24	A	2.0	0.01	37	0.16	3071014
1992	10	16	21	34	22.46	34	4.99-116	41.74	A	1.6	8.45	32	0.16	3071016

1992	10	16	22	9	15.32	34	11.19-116	24.57	A	1.8	2.60	23	0.18	3071023
1992	10	16	22	12	13.68	34	14.81-116	25.92	C	1.3	14.58	11	0.09	3071026
1992	10	16	22	25	13.21	33	37.58-116	40.23	A	1.4	14.85	18	0.19	3071028
1992	10	16	22	56	33.69	34	35.93-116	37.75	A	1.9	3.59	20	0.19	3071754
1992	10	16	22	59	52.39	34	14.17-116	51.38	C	0.6	9.73	9	0.04	3071755
1992	10	16	23	31	57.00	34	0.66-116	19.17	B	1.7	7.98	24	0.16	3071034
1992	10	17	0	9	28.45	34	59.57-116	57.99	B	2.0	5.94	12	0.25	3071040
1992	10	17	0	29	39.99	34	36.61-116	39.78	A	1.7	8.50	19	0.13	3071044
1992	10	17	0	37	26.59	34	18.13-116	26.50	A	1.7	0.16	21	0.17	3071048
1992	10	17	0	37	57.08	34	16.51-116	25.59	B	1.5	0.01	8	0.14	3071424
1992	10	17	1	16	9.00	34	23.35-116	27.84	A	1.9	3.02	28	0.19	3071056
1992	10	17	1	16	50.37	34	9.07-116	25.12	C	2.2	5.94	47	0.17	3071432
1992	10	17	1	32	20.98	34	36.42-116	19.67	A	2.8	0.00	55	0.17	3071756
1992	10	17	1	33	57.67	33	53.99-116	17.57	A	2.0	7.72	20	0.14	3071757
1992	10	17	1	33	58.26	33	58.71-116	59.45	A	0.0	5.42	7	0.10	3071764
1992	10	17	1	39	50.89	33	52.73-116	15.17	A	1.6	5.12	21	0.16	3071058
1992	10	17	1	42	28.26	33	52.71-116	15.03	A	1.9	5.00	20	0.17	3071060
1992	10	17	2	6	0.60	34	10.35-116	49.45	A	1.4	2.25	8	0.09	3071061
1992	10	17	2	28	21.51	34	0.29-116	19.87	A	1.8	2.10	23	0.17	3071063
1992	10	17	3	30	17.63	34	57.01-116	56.12	A	1.6	4.33	8	0.07	3071070
1992	10	17	3	48	23.65	34	58.57-116	56.99	C	2.4	6.00	31	0.23	3071077
1992	10	17	3	57	29.47	34	21.79-116	28.57	A	2.3	0.00	34	0.13	3071079
1992	10	17	4	0	0.83	33	55.11-116	19.69	A	1.1	6.49	12	0.15	3071080
1992	10	17	4	10	39.18	34	37.32-116	39.62	A	1.9	8.21	11	0.09	3071081
1992	10	17	4	23	57.32	34	56.22-116	47.22	B	1.8	2.76	14	0.13	3071082
1992	10	17	4	39	14.92	34	26.38-116	28.83	A	1.7	2.55	8	0.06	3071083
1992	10	17	5	7	58.62	34	10.38-116	49.77	C	1.3	6.00	8	0.05	3071086
1992	10	17	5	29	33.49	34	8.90-116	52.52	B	1.4	8.26	11	0.06	3071088
1992	10	17	5	34	34.49	33	57.53-116	58.16	A	1.4	20.14	14	0.42	3071090
1992	10	17	5	45	57.15	34	23.25-116	27.09	A	1.9	2.67	18	0.12	3071092
1992	10	17	6	35	54.64	34	37.20-116	37.06	A	1.5	5.35	8	0.10	3071096
1992	10	17	6	50	5.60	34	7.20-116	59.39	A	2.7	5.43	62	0.14	3071099
1992	10	17	6	58	39.10	34	21.47-116	27.48	A	2.8	2.39	40	0.13	3071102
1992	10	17	7	17	1.14	34	21.56-116	27.59	A	1.7	2.40	10	0.06	3071104
1992	10	17	7	48	30.95	34	56.71-116	56.21	A	2.4	0.72	32	0.15	3071108
1992	10	17	8	56	35.45	34	21.95-116	26.84	A	2.0	10.00	18	0.10	3071114
1992	10	17	9	41	47.18	34	11.01-116	57.80	A	1.4	16.10	12	0.15	3071116
1992	10	17	10	22	26.56	34	18.19-116	27.23	A	1.7	4.50	10	0.06	3071123
1992	10	17	10	34	23.38	34	10.36-116	25.86	B	1.7	10.03	21	0.17	3071125
1992	10	17	10	44	12.76	34	37.32-116	36.75	B	1.5	3.70	7	0.10	3071128
1992	10	17	11	13	19.04	34	58.75-116	56.89	A	1.6	8.90	14	0.11	3071134
1992	10	17	11	19	40.93	34	9.42-116	24.87	B	1.6	8.48	22	0.14	3071135
1992	10	17	11	38	15.45	34	22.53-116	28.29	A	1.6	0.72	14	0.11	3071138
1992	10	17	11	40	54.84	34	47.80-116	17.59	A	2.2	4.76	17	0.12	3071139
1992	10	17	11	49	18.20	34	33.63-116	16.19	A	2.1	0.12	18	0.13	3071617
1992	10	17	12	58	26.22	34	2.72-116	21.39	A	1.5	4.77	21	0.14	3071146
1992	10	17	13	8	54.76	34	56.61-116	56.10	A	2.3	0.01	22	0.17	3071147
1992	10	17	13	15	2.97	34	37.19-116	39.55	A	1.4	7.17	11	0.13	3071150
1992	10	17	13	24	45.83	34	37.26-116	34.63	A	1.9	6.09	27	0.16	3071151
1992	10	17	14	16	4.44	34	35.43-116	17.88	A	2.0	0.00	22	0.18	3071159
1992	10	17	14	21	25.89	34	24.99-116	29.05	C	2.1	6.00	18	0.22	3071160
1992	10	17	14	32	53.90	34	9.47-116	25.60	A	1.8	2.75	16	0.16	3071161
1992	10	17	14	33	0.50	34	10.16-116	24.94	A	1.8	0.40	32	0.19	3071669
1992	10	17	14	48	32.71	34	38.15-116	30.54	A	2.4	3.99	32	0.13	3071163
1992	10	17	14	59	49.76	34	31.85-116	44.37	C	1.6	13.36	8	0.13	3071165
1992	10	17	15	9	29.43	33	59.58-116	16.15	A	1.4	1.51	22	0.11	3071166
1992	10	17	15	15	35.65	34	56.73-116	47.52	A	1.8	3.09	18	0.12	3071167
1992	10	17	15	40	39.74	34	37.73-116	35.70	A	1.7	8.27	10	0.09	3071170
1992	10	17	15	53	42.39	34	33.11-116	29.90	A	1.6	3.83	14	0.14	3071441
1992	10	17	16	0	10.60	34	36.05-116	19.61	A	2.0	0.00	17	0.15	3071172
1992	10	17	16	12	49.72	33	59.44-116	18.46	A	2.1	4.00	32	0.18	3071173
1992	10	17	16	13	44.17	33	59.43-116	18.31	A	1.5	4.31	20	0.14	3071440
1992	10	17	16	29	5.61	34	36.23-116	19.85	A	1.9	0.00	14	0.14	3071175
1992	10	17	16	29	54.12	34	0.07-116	19.56	B	1.1	8.02	11	0.18	3071451
1992	10	17	16	30	54.95	33	58.02-116	18.96	A	1.5	6.38	17	0.13	3071176
1992	10	17	16	43	27.49	34	33.59-116	16.86	B	1.6	0.45	9	0.10	3071177

1992	10	17	16	44	37.77	34	25.31-116	28.85	A	1.8	3.07	25	0.13	3071178
1992	10	17	17	47	7.23	34	57.41-116	54.40	A	1.3	3.79	8	0.13	3071184
1992	10	17	17	53	15.36	33	57.76-116	19.19	A	1.7	6.48	27	0.14	3071186
1992	10	17	17	55	28.49	33	57.95-116	19.04	A	1.3	6.17	22	0.17	3071188
1992	10	17	17	55	35.75	34	35.05-116	37.29	A	1.6	3.81	17	0.18	3071686
1992	10	17	18	39	21.13	34	26.87-116	29.29	A	1.8	3.13	21	0.09	3071196
1992	10	17	18	41	32.86	34	11.81-116	25.86	A	1.8	2.39	20	0.11	3071197
1992	10	17	18	50	43.20	34	25.39-116	28.14	C	1.9	6.00	23	0.20	3071198
1992	10	17	18	56	37.17	34	57.53-116	48.50	C	1.5	6.00	9	0.25	3071199
1992	10	17	20	13	53.37	34	38.02-116	35.21	C	2.3	9.79	8	0.14	3071205
1992	10	17	21	12	39.32	33	58.04-116	19.00	A	1.4	7.61	20	0.10	3071213
1992	10	17	21	19	45.07	34	16.39-116	46.42	A	2.0	2.96	29	0.11	3071215
1992	10	17	21	39	13.78	34	37.15-116	35.88	A	2.0	9.94	23	0.11	3071220
1992	10	17	22	33	16.14	34	6.54-116	59.46	A	2.0	4.49	29	0.11	3071232
1992	10	17	23	5	49.95	34	38.18-116	30.99	B	1.4	4.62	7	0.08	3071253

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