

76-C

Quarterly Technical Report No. 5  
for  
Hanford and Central Seismic Networks  
July 1, 1976 through September 30, 1976

by  
Geophysics Program  
University of Washington  
Seattle, Washington 98195

October 1, 1976

## Progress of Research Tasks

We have completed about one-half of the field work for the calibration portion of our attenuation study. We planned on being done with the field portion by now; however, we are including the routine maintenance of each station, when visiting each site, which takes time in addition to the calibration.

We have met and discussed the U.S.G.S. preliminary report, with the maps, and have returned the maps to you. We are planning to incorporate the velocity model of J. Eaton in our work to the north of the Hanford Reservation. It will need some modification to fit our program.

The two biaxial tiltmeters will be checked out for stability. A recording system is being designed for installation later this year. The equipment needed for the down hole experiment has been ordered.

A site will be selected in the first part of November for the installation of the Wood-Anderson seismometer for the magnitude study. Installation of the instruments will be before the end of this year. The recorder and timing system along with other components cannot be completed until the location specifications are known. The instruments will be initially installed in the Entiat area.

Mr. David Rogers has done some comparison tests with our present velocity model on PIC2 and HYP071 programs. The conclusion is that HYP071 locations are better and should be used to refine the preliminary PIC2 locations. We will modify PIC2 in the future to obtain higher precision on preliminary epicenter location.

The U.S. Geological Survey Newport Observatory located near Newport, Washington, has been added to the eastern Washington Net and is being telemetered to the Geophysics Program for use in epicenter locations. The two horizontal channels from ODS and VTG have been removed and two new

vertical stations are to be located south of Chelan before the end of this year.

### Operational Status

During this quarter of 1976 there were no major problems encountered.

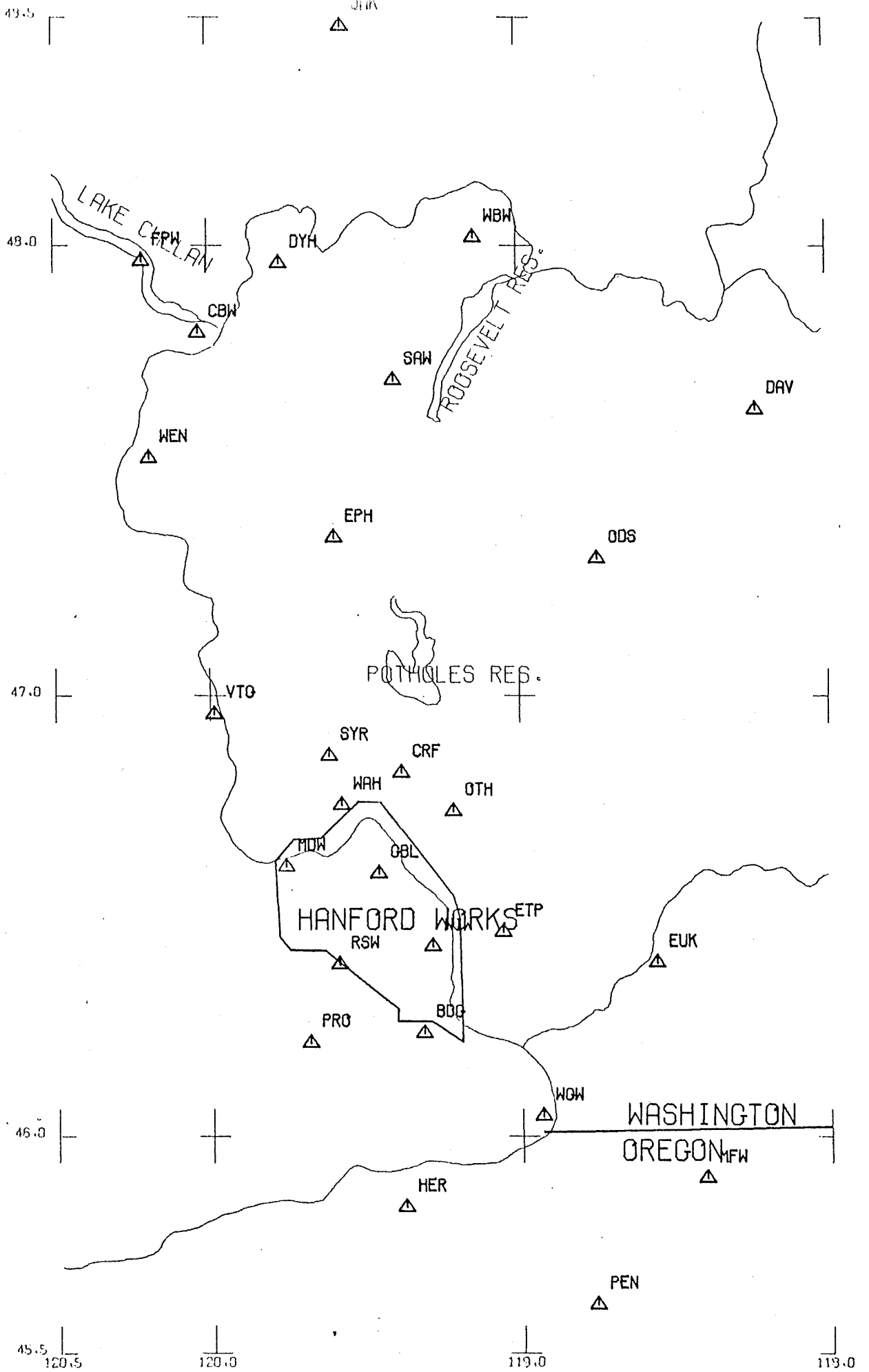
### Data

There was not much seismic activity in the old swarm areas. South of Chelan moderate activity appears to continue. There are a few events in the Arlington, Oregon, area but the locations are rather poor because they are outside of the array.

Figure 1 shows the present location of all seismic stations in the Hanford and Central Net. Figure 2 reflects the regional seismicity during this third quarter of 1976. A listing of all stations is given and the presently used crustal model in table 1. During this quarter there were 36 events located. These events are listed in table 2 and the event plus individual station arrivals are listed at the end of this report.

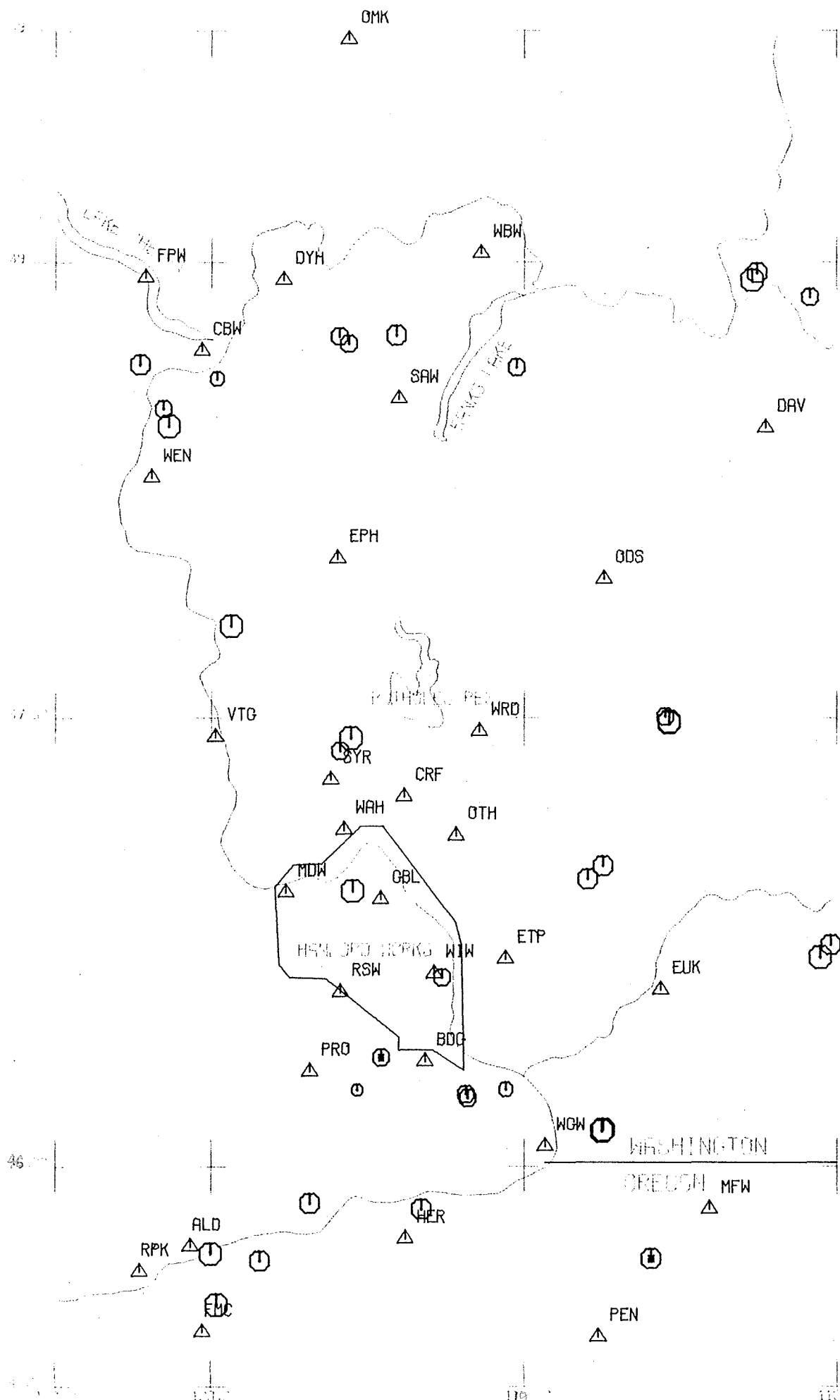
### Publications

There were no Geophysical Program publications during the third quarter of 1976 pertaining to Eastern Washington.



EASTERN WASHINGTON SEISMIC STATIONS

Fig. 1



EASTERN WASHINGTON JULY - SEPT 1976

Fig. 2

EASTERN WASHINGTON JULY - SEPT 76

----- PROGRAM HYP071-1 U OF W JAN 76 -----

	TEST(1)	TEST(2)	TEST(3)	TEST(4)	TEST(5)	TEST(6)	TEST(7)	TEST(8)	TEST(9)	TEST(10)	TEST(11)	TEST(12)	TEST(13)
STANDARD	.1000	10.0000	2.0000	.0500	5.0000	4.0000	-.8700	2.0000	.0035	100.0000	8.0000	.5000	1.0000
RESET TO	.1000	10.0000	2.0000	.0500	5.0000	4.0000	-.8700	2.0000	.0035	100.0000	8.0000	.5000	1.0000

L	STN	LAT	LONG	ELV	DELAY	FMGC	XMGC	KL	PRR	CALR	IC	DATE	HRMN
1	MDW	4636.80N	11945.65W	0	-.00	-.00	-.00	-.00	-.00	-.00	-.00	-0	-0
2	SYR	4651.78N	11937.07W	0	-.00	-.00	-.00	-.00	-.00	-.00	-.00	-0	-0
3	OTH	4644.34N	11912.99W	0	-.00	-.00	-.00	-.00	-.00	-.00	-.00	-0	-0
4	WAM	4645.12N	11934.68W	0	-.00	-.00	-.00	-.00	-.00	-.00	-.00	-0	-0
5	CRF	4649.51N	11923.09W	0	-.00	-.00	-.00	-.00	-.00	-.00	-.00	-0	-0
6	GBL	4635.86N	11927.59W	0	-.00	-.00	-.00	-.00	-.00	-.00	-.00	-0	-0
7	ETP	4627.89N	119 3.54W	0	-.00	-.00	-.00	-.00	-.00	-.00	-.00	-0	-0
8	BDC	4614.02N	11919.05W	0	-.00	-.00	-.00	-.00	-.00	-.00	-.00	-0	-0
9	EUK	4623.75N	11833.72W	0	-.00	-.00	-.00	-.00	-.00	-.00	-.00	-0	-0
10	PR0	4612.76N	11941.15W	0	-.00	-.00	-.00	-.00	-.00	-.00	-.00	-0	-0
11	PEN	4636.72N	11845.77W	0	-.00	-.00	-.00	-.00	-.00	-.00	-.00	-0	-0
12	RSW	4623.47N	11935.32W	0	-.00	-.00	-.00	-.00	-.00	-.00	-.00	-0	-0
13	WGW	46 2.68N	11855.96W	0	-.00	-.00	-.00	-.00	-.00	-.00	-.00	-0	-0
14	WIW	4623.93N	11917.29W	0	-.00	-.00	-.00	-.00	-.00	-.00	-.00	-0	-0
15	HER	4650.14N	11922.85W	0	-.00	-.00	-.00	-.00	-.00	-.00	-.00	-0	-0
16	MFW	4634.18N	11824.35W	0	-.00	-.00	-.00	-.00	-.00	-.00	-.00	-0	-0
17	OMK	4628.82N	11933.65W	0	-.00	-.00	-.00	-.00	-.00	-.00	-.00	-0	-0
18	DYH	4757.63N	11946.16W	0	-.00	-.00	-.00	-.00	-.00	-.00	-.00	-0	-0
19	WBW	48 1.07N	119 8.23W	0	-.00	-.00	-.00	-.00	-.00	-.00	-.00	-0	-0
20	SAW	4742.10N	11924.06W	0	-.00	-.00	-.00	-.00	-.00	-.00	-.00	-0	-0
21	CBW	4748.42N	120 1.96W	0	-.00	-.00	-.00	-.00	-.00	-.00	-.00	-0	-0
22	FPW	4758.04N	12012.77W	0	-.00	-.00	-.00	-.00	-.00	-.00	-.00	-0	-0
23	WEN	4731.77N	12011.65W	0	-.00	-.00	-.00	-.00	-.00	-.00	-.00	-0	-0
24	VTG	4657.48N	11959.24W	0	-.00	-.00	-.00	-.00	-.00	-.00	-.00	-0	-0
25	COL	4635.60N	11752.92W	0	-.00	-.00	-.00	-.00	-.00	-.00	-.00	-0	-0
26	EPH	4721.13N	11935.77W	0	-.00	-.00	-.00	-.00	-.00	-.00	-.00	-0	-0
27	ODS	4718.40N	11844.70W	0	-.00	-.00	-.00	-.00	-.00	-.00	-.00	-0	-0
28	DAV	4738.30N	11813.56W	0	-.00	-.00	-.00	-.00	-.00	-.00	-.00	-0	-0
29	WRD	4658.19N	119 8.60W	0	-.00	-.00	-.00	-.00	-.00	-.00	-.00	-0	-0
30	FMC	4637.47N	120 1.70W	0	-.00	-.00	-.00	-.00	-.00	-.00	-.00	-0	-0
31	RPK	4645.70N	12013.83W	0	-.00	-.00	-.00	-.00	-.00	-.00	-.00	-0	-0
32	ALD	4649.17N	120 4.00W	0	-.00	-.00	-.00	-.00	-.00	-.00	-.00	-0	-0

CRUSTAL MODEL 1

VELOCITY	DEPTH
3.700	.000
4.700	.800
5.100	1.500
6.100	7.500
6.800	15.000
8.000	28.000

Table 1

ZTR	XNEAR	XFAR	POS	IQ	KMS	KFM	IPUN	IMAG	IR	IPRN	CODE	LATR	LONR		
3	50	150	1.78	3	-0	-0	-0	1	1	0	020111*	-0	-.00	-0	-.00

														-AZ- ΔNR-	
YRDAY	TIME	SEC	LAT N	LONG W	Z	MAG	#PZ	GAP	ST	RMS	ER	ZER	QAL	DATE	
76184	135	53.02	46-59.47	118-32.02	2.15	2.05	5	164	38.6	.05	.0	.7	B1	July 2, 1976	
76184	313	57.53	47-55.39	118- 4.94	1.50	2.12	9	187	33.5	.30	3.4	3.5	D1	July 2, 1976	
76184	261	23.65	46-36.95	118-32.04	3.60	3.71	10	82	7.0	.08	.3	.7	B1	July 2, 1976	
76185	1531	44.52	46-40.28	118-44.73	5.01	2.34	7	237	30.8	.09	1.0	13.4	D1	July 3, 1976	
76185	1718	15.33	46-33.55	118-17.66	1.23	2.27	7	273	23.3	.16	1.8	3.0	C1	July 3, 1976	
76190	2114	38.29	45-54.98	119-41.05	.28	2.31	4	245	25.2	.00			C1	July 8, 1976	
76191	2635	2.45	47-57.62	118-16.13	1.50	3.07	8	153	36.0	.06	1.2	2.3	C1	July 9, 1976	
76192	1754	38.76	46-59.32	118-32.11	.38	3.09	13	164	46.3	.09	.0	6.7	C1	July 10, 1976	
76193	228	51.21	47-49.37	119-33.66	9.70	2.04	6	130	13.0	.24	2.7	5.5	C1	July 11, 1976	
76193	545	6.29	46-10.32	119- 3.38	5.10	1.71	12	143	17.1	.14	.0	1.2	B1	July 11, 1976	
76195	2227	34.47	45-47.13	119-50.74	3.00	2.35	7	158	22.3	.32	6.0	9.2	D1	July 13, 1976	
76196	1940	45.32	46-10.20	119-31.94	5.20	1.16	6	220	12.8	.10	2.3	.8	C1	July 14, 1976	
76198	2233	35.24	47-50.25	119-35.44	4.00	2.10	6	84	19.1	.09	.0	2.8	C1	July 16, 1976	
76199	23	10.47	46- 4.69	118-44.94	.84	2.77	13	115	14.7	.13	.0	1.9	B1	July 17, 1976	
76205	1759	35.74	46- 4.89	118-44.71	2.70	3.09	11	153	15.1	.30	2.0	2.7	C1	July 23, 1976	
76205	2113	55.29	47-46.19	119- 1.40	2.03	2.19	7	121	25.9	.06	.7	1.2	B1	July 23, 1976	
76206	442	40.07	46-14.60	119-27.47	10.60	1.77	10	87	10.9	.11	.0	.9	B1	July 24, 1976	
76208	721	8.70	45-41.17	119-58.99	9.00	3.11	15	129	7.7	.51	3.3	3.7	C1	July 26, 1976	
76208	2014	20.95	47-58.56	118-15.20	1.50	2.74	10	155	37.6	.32	3.2	4.7	C1	July 26, 1976	
76209	20	0	35.50	47-40.74	120- 9.22	4.50	1.75	7	162	16.8	.34	3.3	2.1	C1	July 27, 1976
76210	1855	2.68	47-12.16	119-56.10	.81	3.03	5	143	27.5	.08	.0	4.2	C1	July 28, 1976	
76212	153	15.04	46-57.23	119-33.13	.16	2.29	11	64	11.3	.18	.0	5.3	C1	July 30, 1976	
76217	138	16.35	46-23.10	118- 3.05	1.03	3.72	10	264	40.1	.21	3.4	3.0	D1	Aug. 5, 1976	
76218	21	8	6.42	46-25.41	119-15.64	1.80	1.26	7	118	2.3	.12	.8	2.4	B1	Aug. 5, 1976
76221	734	23.45	46-55.54	119-35.30	5.00	1.78	5	288	7.3	.03	3.7	3.0	D1	Aug. 8, 1976	
76222	1910	37.83	47-44.75	119-58.92	9.30	1.71	5	113	7.3	.31	3.0	8.0	D1	Aug. 9, 1976	
76230	2144	50.89	45-54.13	119-19.63	.06	2.44	13	112	8.5	.11	.4	2.2	B1	Aug. 17, 1976	
76239	153	37.27	47- .17	118-32.81	9.17	2.70	5	240	37.0	.20	6.9	5.2	D1	Aug. 26, 1976	
76240	1738	43.57	47-50.37	119-27.49	6.56	2.31	5	109	15.3	.02	.2	.3	C1	Aug. 27, 1976	
76243	1228	35.27	47-45.57	120-13.80	5.21	2.66	13	189	15.2	.33	2.0	1.5	D1	Aug. 30, 1976	
76243	1634	1.03	47-35.50	120- 3.13	5.71	3.78	7	183	13.2	.07	.0	.5	C1	Aug. 30, 1976	
76247	2321	46.56	46- 9.53	119-11.01	2.00	2.14	5	185	13.2	.10	1.0	2.3	C1	Sept. 3, 1976	
76251	1727	52.96	45-43.14	120- .07	3.00	2.75	7	284	45.4	.34	6.0	10.7	D1	Sept. 17, 1976	
76265	1718	11.24	46- 9.11	119-10.68	.19	2.24	7	107	14.2	.08	.4	10.4	C1	Sept. 21, 1976	
76267	255	43.25	45-47.38	118-35.57	13.25	2.32	5	165	19.2	.01	.2	.3	C1	Sept. 23, 1976	
76267	2325	46.39	46-24.76	118- .96	.38	2.46	8	285	80.1	.24	5.9	14.3	D1	Sept. 23, 1976	

Table 2