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Principal facts for 397
gravity stations in the vicinity of Newberry Volcano, Oregon
by
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Open-File Report 82-652

This report is preliminary and has not been reviewed for
conformity with U.S. Geological Survey editorial standards.

Any use of trade names is for descriptive purposes only
and does not imply endorsement by the USGS.

This report makes available the principal facts for 397 gravity stations in the vicinity of Newberry Volcano, Oregon. The observed gravity values have been reduced to the gravity datum of Woollard and Rose (1963). The primary base station is California Division of Mines and Geology base station 173 (Chapman, 1966, p. 36) at Menlo Park, California, where the observed gravity is 979,958.74 mGal. Free air anomalies were calculated using the International Gravity Formula of 1930. Terrain corrections for all stations to a radial distance of 166.7 km were calculated using a procedure developed by Plouff (1977). Most terrain corrections were calculated by computer all the way in to the station, but inner zones of some stations were determined by hand where local relief indicated that the digitization model of the terrain would not be sufficiently accurate. The terrain correction in general is the major source of inaccuracy in the complete Bouguer anomaly and may be in error as much as 10 percent. Further details of the data reduction procedures and were described by Robbins and others (1974) and Oliver and others (1981).

The data of this report consist of 201 stations, numbered discontinuously between 1 and 271, established by John D. Luetscher of the U.S. Geological Survey in the 1960's, and another 196 stations established by Andrew Griscom and Carter W. Roberts in 1975, 1976, and 1979 on traverses by road, foot, boat, helicopter, and motor toboggan. The data from the 1970's were obtained with a Lacoste and Romberg gravity meter and the observed gravity values are generally accurate to about 0.05 mGal. The gravity meter used in the data set from the 1960's was not properly compensated for temperature changes according to Luetscher and reoccupation of about 70 selected stations has indicated discrepancies as large as 3 mGal. In order to obtain maximum data quality near the top of Newberry Volcano we have retained only those stations from the 1960's that are located low on the flanks of the volcano, and we have also

reoccupied all earlier stations of the 1960's from individual traverses that showed excessive discrepancies. However, certain stations from this earlier set may be in error by as much as 2 mGal.

In Table 1 that follows, the column headings are self-explanatory, except possibly the last four. "Terrain hand" is the inner zone hand correction that was measured where deemed necessary. "Terrain total" includes the correction calculated by computer as well as the hand correction, if present. The two "Bouguer anomaly" columns are reduced for densities of 2.67 and 2.50 g/cm³, respectively.

References

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- Woollard, G. P., and Rose, J. C., 1963, International gravity measurements: Tulsa, Oklahoma, Society of Exploration Geophysicists, 518 p.

TABLE 1. PRINCIPAL FACTS FOR GRAVITY STATIONS IN THE NEWBERRY VOLCANO AREA, OREGON

STATION	CODE	LATITUDE		LONGITUDE		ELEVATION FEET	OBSERVED	FREE AIR	TERRAIN	BOUGUER	ANOMALY
		DEG	MIN	DEG	MIN		GRAVITY MGAL	(1930) MGAL	HAND TOTAL MGAL		
1		43	45.14	121	27.57	4203.0	980127.88	6.25	0.002	0.56	-137.84
3		43	34.24	121	14.48	5504.0	980022.59	39.61	0.002	1.17	-148.40
5		43	50.09	121	16.21	5575.0	980050.74	50.61	0.002	1.87	-139.13
6		43	53.04	121	4.98	4440.0	980122.97	11.74	0.585	1.28	-139.75
7		43	46.92	121	2.76	4890.0	980081.16	21.42	0.002	0.84	-145.91
14		43	42.87	121	22.63	4819.0	980090.88	30.56	0.002	1.29	-133.90
16		43	44.44	121	22.56	4729.0	980098.30	27.16	0.002	1.29	-134.22
17		43	43.95	121	23.19	4593.0	980105.20	22.01	0.002	1.20	-134.79
18		43	44.02	121	24.20	4419.0	980115.83	16.19	0.002	1.05	-134.81
19		43	43.62	121	25.16	4313.0	980121.45	12.44	0.002	1.06	-134.91
20		43	43.28	121	23.80	4561.0	980106.08	20.89	0.002	1.01	-135.01
21		43	42.93	121	23.25	4677.0	980098.93	25.17	0.002	1.18	-134.53
22		43	41.97	121	22.57	4735.0	980095.56	28.70	0.002	1.38	-132.80
23		43	42.17	121	21.36	5100.0	980074.20	41.34	0.002	1.56	-132.47
24		43	41.08	121	22.66	4773.0	980090.30	28.35	0.002	1.09	-134.74
25		43	44.75	121	26.89	4215.0	980126.19	6.27	0.002	0.68	-138.10
26		43	44.23	121	27.08	4239.0	980123.02	6.14	0.002	0.63	-139.11
27		43	43.87	121	26.04	4265.0	980123.47	9.58	0.002	0.93	-136.26
28		43	42.88	121	25.95	4295.0	980118.50	8.91	0.002	1.09	-137.80
29		43	42.63	121	26.35	4276.0	980117.00	6.00	0.002	1.21	-139.93
30		43	43.10	121	26.78	4244.0	980122.00	7.29	0.002	0.93	-137.83
31		43	42.21	121	27.43	4237.0	980115.94	1.91	0.002	0.88	-143.02
32		43	42.22	121	28.56	4219.0	980113.92	-1.82	0.002	0.54	-146.47
33		43	42.13	121	25.77	4329.0	980114.00	8.74	0.002	0.91	-139.32
34		43	41.26	121	25.64	4336.0	980111.08	7.78	0.002	0.86	-140.56
35		43	40.33	121	25.38	4402.0	980107.62	11.92	0.002	0.70	-138.84
36		43	40.52	121	26.41	4314.0	980109.84	5.59	0.002	0.70	-142.16
37		43	40.48	121	27.39	4270.0	980109.60	1.27	0.002	0.67	-145.00
38		43	40.48	121	28.34	4245.0	980109.99	-0.69	0.002	0.55	-146.22
39		43	40.48	121	29.08	4230.0	980106.01	-6.08	0.002	0.47	-151.18
40		43	39.63	121	29.42	4236.0	980103.31	-6.94	0.002	0.43	-152.28
41		43	38.89	121	29.68	4237.0	980101.57	-7.47	0.002	0.44	-152.84
42		43	38.13	121	29.56	4243.0	980100.82	-6.52	0.002	0.44	-152.09
43		43	37.75	121	28.26	4247.0	980105.21	-1.18	0.002	0.54	-146.79
44		43	38.77	121	28.80	4246.0	980103.56	-4.46	0.002	0.49	-150.08
45		43	39.62	121	27.93	4272.0	980107.57	0.72	0.002	0.52	-145.77
46		43	38.78	121	27.51	4261.0	980108.58	1.96	0.002	0.69	-143.98
47		43	37.44	121	27.25	4334.0	980100.83	3.08	0.002	0.57	-145.48
48		43	38.13	121	26.71	4363.0	980101.32	5.26	0.002	0.62	-144.25
49		43	37.92	121	25.54	4524.0	980093.30	12.69	0.002	0.73	-142.22
50		43	38.71	121	25.47	4448.0	980099.45	10.51	0.002	0.95	-141.58
51		43	38.82	121	26.40	4327.0	980105.99	5.51	0.002	0.83	-142.55
52		43	39.77	121	26.68	4330.0	980105.10	3.48	0.002	0.57	-144.95
53		43	44.40	121	27.97	4215.0	980127.48	8.09	0.002	0.53	-136.44
54		43	43.88	121	28.07	4221.0	980120.55	2.51	0.002	0.53	-142.23
55		43	42.98	121	28.33	4226.0	980115.23	-0.99	0.002	0.53	-145.90
56		43	39.61	121	25.60	4409.0	980104.26	10.30	0.002	0.65	-140.75
57		43	39.42	121	24.63	4491.0	980101.59	15.63	0.002	0.83	-138.06
58		43	39.54	121	23.15	4723.0	980091.93	27.59	0.002	0.88	-133.99
59		43	39.60	121	22.03	4800.0	980086.29	29.10	0.002	1.05	-134.95

TABLE 1--CONTINUED

STATION	CODE	LATITUDE		LONGITUDE		ELEVATION FEET	OBSERVED GRAVITY	FREE AIR (1930)	TERRAIN HAND TOTAL	BOUGUER 2.67	ANOMALY 2.50
		DEG	MIN	DEG	MIN		MGAL	MGAL	MGAL	MGAL	MGAL
60		43	40.47	121	22.02	4802.0	980089.44	31.13	0.002	1.24	-132.80
61		43	41.35	121	23.82	4558.0	980102.89	20.32	0.002	1.00	-135.49
66		43	41.08	121	20.00	5334.0	980057.20	47.97	0.002	1.90	-133.50
67		43	37.87	121	24.44	4636.0	980088.87	18.86	0.002	0.74	-139.88
68		43	37.82	121	23.56	4763.0	980081.95	23.95	0.002	0.92	-138.96
69		43	37.46	121	22.33	4853.0	980075.23	26.23	0.002	1.46	-139.22
70		43	36.94	121	21.54	4910.0	980068.49	25.63	0.002	0.99	-142.24
71		43	36.27	121	21.63	4845.0	980069.57	21.61	0.002	1.26	-143.77
72		43	35.18	121	21.59	4815.0	980066.36	17.22	0.002	0.64	-147.75
73		43	34.47	121	19.65	4914.0	980061.72	22.95	0.002	0.94	-145.11
74		43	34.48	121	18.19	5131.0	980047.71	29.32	0.002	0.89	-146.22
75		43	33.77	121	17.61	5222.0	980040.74	31.97	0.002	1.00	-146.57
76		43	34.64	121	16.62	5203.0	980045.02	33.16	0.002	0.91	-144.82
77		43	35.48	121	15.51	5345.0	980038.93	39.15	0.002	1.25	-143.35
78		43	36.21	121	15.73	5531.0	980027.12	43.72	0.002	1.43	-144.96
79		43	36.04	121	16.65	5343.0	980038.66	37.85	0.002	1.14	-144.69
80		43	35.32	121	16.68	5267.0	980041.73	34.86	0.002	1.36	-144.86
81		43	35.12	121	17.59	5174.0	980047.17	31.86	0.002	0.88	-145.16
82		43	35.13	121	18.48	5069.0	980053.69	28.50	0.002	0.84	-144.97
83		43	36.04	121	18.89	5038.0	980056.35	26.87	0.002	0.85	-145.52
84		43	36.00	121	20.24	4926.0	980064.34	24.40	0.002	0.83	-144.18
85		43	45.61	121	27.25	4214.0	980127.50	6.20	0.002	0.58	-138.25
86		43	46.14	121	27.10	4216.0	980126.62	4.71	0.002	0.58	-139.80
87		43	45.68	121	25.58	4285.0	980123.95	9.22	0.002	0.76	-137.48
88		43	45.41	121	24.38	4375.0	980120.85	14.98	0.002	0.90	-134.66
89		43	45.12	121	23.63	4521.0	980110.65	18.94	0.002	1.08	-135.52
90		43	44.81	121	21.96	4755.0	980095.35	26.10	0.002	1.53	-135.93
91		43	45.81	121	23.12	4420.0	980120.30	18.06	0.002	1.42	-132.60
92		43	46.44	121	23.64	4439.0	980119.01	17.61	0.002	0.96	-134.17
93		43	47.22	121	24.27	4421.0	980121.82	17.55	0.002	0.84	-133.72
94		43	47.38	121	25.58	4304.0	980127.52	12.02	0.002	0.72	-135.37
95		43	46.57	121	25.53	4289.0	980125.98	10.28	0.002	0.89	-136.42
96		43	47.79	121	26.49	4222.0	980132.01	8.18	0.002	0.64	-136.47
97		43	49.05	121	25.52	4213.0	980137.68	11.11	0.002	1.04	-132.84
98		43	48.71	121	23.79	4484.0	980118.74	18.16	0.002	0.90	-135.22
99		43	49.65	121	24.91	4351.0	980131.48	16.98	0.002	0.72	-132.02
100		43	50.15	121	24.10	4324.0	980134.04	16.25	0.002	0.91	-131.63
101		43	50.88	121	23.81	4433.0	980129.83	21.19	0.002	0.84	-130.50
102		43	52.19	121	24.13	4449.0	980128.97	19.86	0.002	0.79	-132.42
103		43	48.89	121	15.27	5844.0	980032.07	59.03	0.002	2.41	-139.37
109		43	46.51	121	8.77	5826.0	980024.51	53.35	0.002	2.22	-144.62
111		43	50.66	121	17.30	5663.0	980043.97	51.26	1.68S	4.12	-139.24
112		43	50.85	121	15.94	5436.0	980063.05	48.72	0.002	1.73	-136.41
113		43	52.35	121	17.52	4973.0	980092.60	32.50	0.002	1.38	-137.14
115		43	52.71	121	23.70	4412.0	980133.45	20.08	0.002	0.77	-130.95
116		43	53.17	121	22.72	4422.0	980134.79	21.67	0.002	0.80	-129.68
117		43	53.72	121	22.08	4507.0	980130.60	24.65	0.002	0.78	-129.64
119		43	55.24	121	20.00	4540.0	980128.47	23.33	0.002	0.90	-131.96
120		43	55.40	121	17.96	4563.0	980124.99	21.77	0.002	1.06	-134.15
121		43	54.72	121	17.68	4584.0	980125.14	24.92	0.002	0.86	-131.92

TABLE 1--CONTINUED

STATION	CODE	LATITUDE		LONGITUDE		ELEVATION FEET	OBSERVED	FREE AIR	TERRAIN	BOUGUER 2.67	ANOMALY	
		DEG	MIN	DEG	MIN		GRAVITY MGAL	(1930) MGAL	HAND TOTAL MGAL		2.50 MGAL	
122		43	54.51	121	15.58	4769.0	980112.13	29.61	0.002	1.23	-133.19	-122.83
123		43	54.02	121	15.45	4894.0	980103.31	33.28	0.002	1.23	-133.81	-123.17
124		43	53.68	121	16.70	4858.0	980104.69	31.78	0.002	1.35	-133.95	-123.40
125		43	53.08	121	18.27	4809.0	980106.29	29.68	0.002	1.11	-134.61	-124.15
126		43	53.80	121	19.23	4669.0	980117.38	26.53	0.002	0.89	-133.19	-123.02
127		43	54.50	121	19.49	4545.0	980127.27	23.71	0.002	0.81	-131.84	-121.94
128		43	54.32	121	21.42	4508.0	980130.19	23.43	0.002	0.78	-130.89	-121.06
129		43	33.17	121	15.38	5314.0	980031.08	31.86	0.002	1.06	-149.77	-138.21
130		43	31.83	121	15.46	5086.0	980040.85	22.21	0.002	0.68	-151.99	-140.90
131		43	30.39	121	15.48	4952.0	980043.72	14.65	0.002	0.54	-155.11	-144.30
132		43	31.12	121	16.78	4939.0	980046.44	15.05	0.002	0.54	-154.26	-143.48
133		43	30.51	121	18.18	4841.0	980054.13	14.45	0.002	0.51	-151.54	-140.97
142		43	36.13	121	29.12	4298.0	980096.09	-3.07	0.002	0.39	-150.58	-141.19
143		43	34.74	121	27.65	4314.0	980091.95	-3.62	0.002	0.43	-151.64	-142.21
144		43	33.53	121	27.33	4394.0	980087.61	1.38	0.002	0.42	-149.39	-139.79
145		43	30.66	121	27.01	4364.0	980085.97	1.23	0.002	0.64	-148.29	-138.77
146		43	30.10	121	25.86	4557.0	980075.50	9.74	0.002	0.54	-146.49	-136.55
147		43	31.45	121	25.52	4489.0	980080.94	6.76	0.002	0.51	-147.17	-137.37
148		43	31.45	121	24.12	4654.0	980071.65	12.98	0.002	0.50	-146.62	-136.45
149		43	32.72	121	23.50	4748.0	980066.63	14.89	0.002	0.74	-147.69	-137.34
150		43	33.01	121	25.68	4457.0	980085.00	5.47	0.002	0.46	-147.42	-137.68
151		43	34.47	121	25.88	4493.0	980083.97	5.63	0.002	0.52	-148.43	-138.62
152		43	36.20	121	25.89	4575.0	980083.94	10.71	0.002	0.62	-146.06	-136.08
153		43	36.62	121	23.64	4753.0	980076.32	19.19	0.002	0.75	-143.55	-133.19
154		43	49.86	121	19.36	5171.0	980079.68	41.93	0.002	1.48	-134.38	-123.16
155		43	50.26	121	20.21	4999.0	980090.66	36.15	0.002	1.32	-134.44	-123.58
157		43	50.98	121	22.33	4662.0	980114.62	27.35	0.002	0.99	-132.03	-121.88
158		43	51.09	121	18.58	5624.0	980042.24	45.22	3.375	6.49	-141.58	-129.69
160		43	45.59	121	20.60	5053.0	980080.53	38.11	0.002	1.93	-133.71	-122.77
165		43	46.94	121	21.63	4742.0	980100.94	27.26	0.002	1.24	-134.61	-124.30
166		43	47.99	121	23.06	4543.0	980116.07	22.11	0.002	1.00	-133.18	-123.30
167		43	48.70	121	20.39	4860.0	980093.81	28.58	0.002	1.69	-136.88	-126.35
169		43	51.82	121	22.75	4534.0	980123.25	22.69	0.002	0.94	-132.36	-122.49
170		43	41.36	121	26.79	4274.0	980113.59	4.31	0.002	0.78	-141.98	-132.67
184		43	43.40	121	11.74	6378.0	979992.29	77.68	0.002	3.22	-138.14	-124.40
187		43	31.81	121	13.92	5145.0	980035.89	22.83	0.002	0.73	-153.35	-142.13
199		43	38.31	121	14.54	5849.0	980015.28	58.61	0.002	1.98	-140.39	-127.72
199		43	38.31	121	14.57	5860.0	980015.28	59.64	0.002	1.99	-139.72	-127.03
200		43	36.17	121	13.89	5540.0	980025.91	43.42	0.002	1.29	-145.71	-133.67
203		43	45.64	121	6.09	5582.0	980035.06	42.28	0.002	1.68	-147.89	-135.78
204		43	46.08	121	4.04	5133.0	980063.84	28.20	0.002	1.22	-147.07	-135.91
205		43	47.81	121	1.82	4749.0	980092.80	18.47	0.002	0.83	-144.05	-133.70
206		43	47.96	121	0.27	4664.0	980094.95	12.41	0.002	0.80	-147.23	-137.07
207		43	46.86	121	0.10	4741.0	980088.64	14.99	0.002	0.81	-147.28	-136.94
208		43	45.65	121	1.52	4940.0	980074.95	21.82	0.002	0.72	-147.35	-136.58
209		43	45.36	121	3.62	5148.0	980062.20	29.06	0.002	1.05	-146.90	-135.70
211		43	48.10	121	2.75	4788.0	980092.23	21.13	0.002	0.80	-142.75	-132.32
212		43	48.85	121	2.71	4722.0	980097.32	18.89	0.002	0.86	-142.67	-132.39
213		43	50.75	121	2.80	4475.0	980118.07	13.57	0.002	0.76	-139.63	-129.88
214		43	50.50	121	1.79	4511.0	980114.72	13.98	0.002	0.91	-140.31	-130.48

TABLE 1--CONTINUED

STATION	CODE	LATITUDE		LONGITUDE		ELEVATION FEET	OBSERVED	FREE AIR	TERRAIN		BOUGUER	ANOMALY
		DEG	MIN	DEG	MIN		GRAVITY MGAL	(1930) MGAL	HAND	TOTAL	2.67	2.50
215		43	49.64	121	0.61	4404.0	980118.54	9.04	0.002	0.75	-141.75	-132.15
216		43	49.88	121	3.70	4627.0	980105.40	16.50	0.002	0.88	-141.80	-131.72
217		43	50.49	121	4.39	4543.0	980113.84	16.12	0.002	0.85	-139.32	-129.42
218		43	51.19	121	5.09	4604.0	980111.69	18.66	0.002	0.89	-138.84	-128.81
219		43	51.84	121	6.37	4630.0	980109.90	18.33	0.002	0.87	-140.07	-129.99
220		43	50.66	121	6.11	4820.0	980097.26	25.32	0.002	1.06	-139.40	-128.91
221		43	49.41	121	6.00	4960.0	980085.58	28.68	0.002	1.14	-140.75	-129.97
222		43	48.59	121	4.42	4917.0	980084.88	25.17	0.002	1.08	-142.85	-132.15
224		43	47.54	121	4.38	5041.0	980072.94	26.46	0.002	1.08	-145.80	-134.83
226		43	48.13	121	3.74	4909.0	980082.55	22.78	0.002	1.01	-145.04	-134.35
227		43	47.79	121	6.51	5293.0	980056.98	33.81	0.002	1.51	-146.65	-135.16
228		43	48.37	121	6.75	5234.0	980061.58	31.99	0.002	1.43	-146.53	-135.16
229		43	49.19	121	7.92	5224.0	980067.16	35.40	0.002	1.47	-142.74	-131.39
230		43	48.35	121	8.18	5512.0	980047.07	43.64	0.002	2.08	-143.74	-131.81
231		43	48.88	121	9.82	5476.0	980052.35	44.74	0.002	1.70	-141.79	-129.91
232		43	50.41	121	7.09	4906.0	980090.68	27.20	0.002	1.11	-140.41	-129.74
233		43	52.61	121	13.81	5168.0	980081.38	39.22	0.002	1.38	-137.09	-125.87
234		43	52.08	121	12.93	5236.0	980073.82	38.85	0.002	1.81	-139.36	-128.02
236		43	51.89	121	11.55	5183.0	980076.22	36.55	0.002	1.57	-140.09	-128.84
237		43	52.04	121	10.20	4991.0	980085.32	27.38	0.002	1.43	-142.83	-131.99
238		43	50.42	121	8.27	5025.0	980082.88	30.57	0.002	1.26	-140.97	-130.05
239		43	49.72	121	10.22	5359.0	980061.53	41.66	0.002	1.61	-140.95	-129.33
240		43	46.56	121	27.67	4196.0	980127.28	2.86	0.002	0.55	-141.00	-131.84
241		43	49.94	121	26.42	4173.0	980139.24	7.57	0.002	0.69	-135.35	-126.25
242		43	51.81	121	26.38	4172.0	980145.40	10.83	0.002	0.70	-132.05	-122.96
243		43	53.00	121	27.21	4156.0	980148.02	10.16	0.002	0.83	-132.05	-122.99
244		43	54.11	121	26.41	4166.0	980152.78	14.19	0.002	0.83	-128.36	-119.28
245		43	55.32	121	26.03	4200.0	980152.84	15.62	0.002	0.78	-128.14	-118.98
246		43	52.17	121	25.48	4268.0	980141.03	14.94	0.002	0.70	-131.23	-121.92
247		43	53.54	121	24.61	4254.0	980144.51	15.05	0.002	0.70	-130.65	-121.37
248		43	53.96	121	23.41	4323.0	980141.51	17.90	0.002	0.74	-130.12	-120.69
249		43	55.57	121	24.98	4202.0	980153.14	15.74	0.002	0.70	-128.17	-119.01
250		43	59.95	121	18.68	3908.0	980178.63	7.01	0.002	0.53	-126.99	-118.46
251		43	58.52	121	17.96	4020.0	980168.88	9.93	0.002	0.76	-127.68	-118.92
252		43	58.11	121	16.26	4140.0	980160.53	13.48	0.002	0.66	-128.35	-119.32
253		43	57.38	121	15.75	4230.0	980152.43	14.94	0.002	0.77	-129.86	-120.64
254		43	58.31	121	15.10	4055.0	980166.03	10.69	0.002	0.62	-128.26	-119.41
255		43	58.35	121	13.77	4007.0	980168.75	8.84	0.002	0.83	-128.26	-119.53
256		43	59.60	121	13.39	3820.0	980184.21	4.84	0.002	0.46	-126.21	-117.87
257		43	59.61	121	11.57	3785.0	980186.28	3.61	0.002	0.46	-126.25	-117.98
258		43	58.73	121	10.65	3956.0	980173.07	7.79	0.002	0.50	-127.88	-119.25
259		43	58.25	121	9.75	3987.0	980169.81	8.17	0.002	0.53	-128.54	-119.84
260		43	56.16	121	7.99	4220.0	980145.68	9.08	0.002	0.60	-135.55	-126.34
261		43	55.11	121	6.39	4248.0	980139.19	6.80	0.002	0.76	-138.63	-129.37
262		43	56.11	121	5.91	4177.0	980145.39	4.83	0.002	0.76	-138.17	-129.06
263		43	54.22	121	5.89	4297.0	980132.92	6.48	0.002	0.91	-140.48	-131.12
264		43	52.52	121	3.91	4439.0	980122.31	11.77	0.505	1.16	-139.80	-130.15
268		43	53.38	121	7.63	4438.0	980125.68	13.75	0.002	0.78	-138.17	-128.49
269		43	54.72	121	9.32	4462.0	980128.33	16.64	0.002	0.74	-136.14	-126.41
270		43	56.01	121	11.34	4342.0	980140.07	15.16	0.002	0.73	-133.52	-124.05

TABLE 1--CONTINUED

STATION	CODE	LATITUDE		LONGITUDE		ELEVATION FEET	OBSERVED	FREE AIR	TERRAIN	BOUGUER		ANOMALY
		DEG	MIN	DEG	MIN		GRAVITY MGAL	(1930) MGAL	HAND TOTAL MGAL	2.67 MGAL	2.50 MGAL	
271		43	56.95	121	13.33	4313.0	980146.07	17.03	0.00Z	0.79	-130.60	-121.20
600		43	44.78	121	15.22	7433.0	979920.80	103.24	1.25S	9.01	-142.77	-127.11
601		43	44.89	121	14.58	7689.0	979899.54	105.86	1.99S	11.14	-146.73	-130.65
602		43	45.45	121	13.48	7132.0	979945.73	98.88	0.19S	5.41	-140.47	-125.23
603		43	45.15	121	12.59	7295.0	979932.10	101.02	0.61S	5.80	-142.50	-126.99
604		43	44.95	121	12.00	7397.0	979923.24	102.04	2.12S	9.21	-142.54	-126.97
605		43	44.34	121	11.22	7055.0	979947.93	95.52	0.86S	5.64	-140.98	-125.92
606		43	43.25	121	10.42	7040.0	979944.38	92.19	0.13S	4.75	-144.68	-129.60
607		43	42.58	121	10.69	7086.0	979940.56	93.70	0.70S	5.57	-143.92	-128.79
700		43	43.40	121	11.58	6413.0	979991.17	79.85	0.00Z	3.48	-136.91	-123.11
701		43	40.82	121	15.53	7325.0	979917.88	96.12	0.00Z	9.51	-145.71	-130.31
702		43	42.63	121	13.75	6374.0	979987.88	74.05	0.00Z	3.38	-141.48	-127.75
703		43	43.31	121	11.32	6455.0	979987.97	80.73	0.00Z	4.09	-136.85	-123.00
704		43	43.12	121	11.06	6535.0	979981.09	81.65	0.00Z	4.52	-138.23	-124.23
705		43	42.84	121	11.05	6624.0	979975.12	84.46	0.00Z	4.09	-138.88	-124.66
706		43	42.59	121	11.12	6710.0	979969.70	87.50	0.00Z	4.10	-138.77	-124.36
707		43	42.37	121	11.43	6839.0	979959.07	89.32	0.00Z	3.98	-141.47	-126.78
708		43	42.20	121	11.51	6925.0	979953.59	92.18	0.00Z	4.57	-140.96	-126.11
709		43	41.80	121	10.66	6900.0	979952.78	89.62	0.00Z	4.45	-142.78	-127.98
710		43	41.38	121	10.30	6647.0	979967.59	81.29	0.00Z	3.65	-143.28	-128.98
711		43	41.59	121	9.69	6410.0	979985.37	76.49	0.00Z	3.78	-139.87	-126.09
712		43	42.27	121	8.16	6248.0	979992.66	67.53	0.00Z	2.80	-144.27	-130.79
713		43	42.51	121	8.39	6241.0	979995.82	69.67	0.00Z	3.05	-141.64	-128.19
714		43	42.88	121	8.36	6270.0	979995.69	71.71	0.00Z	2.88	-140.76	-127.24
715		43	43.55	121	8.64	6365.0	979989.47	73.41	0.00Z	3.21	-141.98	-128.26
716		43	41.53	121	7.68	5965.0	980009.05	58.44	0.00Z	2.07	-144.43	-131.51
717		43	44.31	121	11.85	6421.0	979993.46	81.52	0.00Z	4.99	-134.00	-120.28
718		43	43.39	121	14.40	6433.0	979989.00	79.57	0.00Z	3.39	-137.96	-124.11
719		43	45.92	121	17.33	6700.0	979968.39	80.25	0.00Z	8.00	-141.78	-127.65
720		43	46.81	121	16.59	6637.0	979968.46	73.06	0.00Z	9.73	-145.09	-131.20
721		43	46.93	121	15.67	6130.0	980016.28	73.06	0.00Z	4.24	-133.28	-120.14
722		43	46.11	121	15.19	7273.0	979930.22	95.63	0.00Z	8.44	-145.50	-130.15
723		43	45.58	121	14.58	7283.0	979936.63	103.77	0.00Z	6.79	-139.34	-123.87
724		43	45.16	121	14.41	7250.0	979937.08	101.75	0.00Z	6.57	-140.46	-125.04
725		43	45.01	121	14.68	7362.0	979928.63	104.05	0.00Z	6.84	-141.71	-126.06
726		43	44.54	121	15.20	7300.0	979926.93	97.23	0.00Z	7.53	-145.72	-130.25
727		43	44.16	121	14.19	6720.0	979972.92	89.30	0.00Z	5.01	-135.40	-121.10
728		43	41.10	121	13.90	7100.0	979940.57	97.25	1.23D	5.53	-139.89	-124.79
729		43	40.90	121	14.14	7613.0	979900.09	105.27	1.77D	11.89	-143.99	-128.12
730		43	41.47	121	12.40	7321.0	979924.10	100.99	0.23D	6.48	-143.73	-128.15
731		43	39.69	121	13.54	6485.0	979970.67	71.69	1.15D	4.54	-146.47	-132.58
732		43	39.71	121	14.95	6440.0	979975.25	72.01	1.16D	5.11	-144.04	-130.28
733		43	50.15	121	16.91	6157.0	980000.68	55.16	4.41D	10.18	-146.16	-133.34
734		43	47.55	121	10.03	6090.0	980006.07	58.16	1.45D	4.61	-146.44	-133.41
735		43	44.95	121	9.09	6232.0	980001.72	71.06	0.15D	2.96	-140.04	-126.60
736		43	39.39	121	12.62	6293.0	979987.00	70.43	0.02D	2.55	-143.16	-129.56
737		43	40.06	121	11.86	6355.0	979986.38	74.63	0.18D	2.97	-140.66	-126.95
738		43	38.26	121	12.54	6017.0	980000.33	59.52	0.29D	2.51	-144.69	-131.68
750		43	41.13	121	14.92	7375.0	979917.36	99.84	0.75D	8.57	-144.64	-129.07
751		43	40.97	121	14.37	7628.0	979899.64	106.12	2.22D	12.51	-143.02	-127.16

TABLE 1--CONTINUED

STATION	CODE	LATITUDE		LONGITUDE		ELEVATION FEET	OBSERVED	FREE AIR	TERRAIN	BOUGUER 2.67	ANOMALY 2.50	
		DEG	MIN	DEG	MIN		GRAVITY MGAL	(1930) MGAL	HAND TOTAL MGAL			MGAL
752		43	40.53	121	13.87	7114.0	979931.80	90.66	0.700	6.89	-146.60	-131.50
753		43	41.02	121	13.46	7449.0	979910.50	100.09	1.000	8.86	-146.61	-130.90
754		43	41.31	121	13.37	7118.0	979940.03	98.09	0.170	5.29	-140.91	-125.69
755		43	41.61	121	13.05	7135.0	979939.41	98.62	0.130	5.38	-140.87	-125.62
756		43	41.60	121	12.64	7139.0	979938.52	98.12	0.780	5.92	-140.96	-125.74
757		43	41.83	121	12.71	7501.0	979910.14	103.40	1.550	10.18	-143.75	-128.02
758		43	41.57	121	13.58	7205.0	979935.60	101.44	0.560	6.47	-139.34	-124.01
759		43	41.98	121	13.55	6760.0	979970.99	94.41	0.730	4.67	-133.00	-118.52
760		43	42.14	121	13.47	6470.0	979986.16	82.09	0.390	4.10	-136.00	-122.11
761		43	42.41	121	13.54	6415.0	979987.17	77.52	0.140	3.40	-139.38	-125.57
762		43	42.50	121	11.84	6617.0	979975.58	84.78	0.800	4.39	-138.03	-123.85
763		43	42.84	121	12.21	6443.0	979985.55	77.89	0.280	3.45	-139.92	-126.06
764		43	41.98	121	14.76	6440.0	979989.44	82.79	0.330	4.16	-134.21	-120.39
N001		43	42.08	121	11.36	7008.0	979946.89	93.46	0.002	4.55	-142.53	-127.50
N001		43	42.04	121	11.33	7008.0	979946.98	93.56	0.002	4.53	-142.45	-127.43
N002		43	41.53	121	8.43	6088.9	980002.89	63.92	0.002	2.52	-142.73	-129.57
N002		43	41.53	121	8.46	6088.9	980002.89	63.92	0.002	2.54	-142.71	-129.55
N003		43	41.61	121	6.76	5761.0	980022.33	52.43	0.002	1.82	-143.72	-131.23
N004		43	41.85	121	4.84	5463.0	980042.79	44.52	0.002	1.22	-142.04	-130.16
N005		43	41.60	121	3.17	5246.6	980051.98	33.75	0.002	1.09	-145.54	-134.12
N006		43	42.24	121	2.31	5200.0	980056.64	33.07	0.002	0.94	-144.77	-133.45
N007		43	43.37	121	1.53	5034.5	980067.57	26.75	0.002	0.81	-145.56	-134.59
N008		43	39.27	121	1.68	5053.0	980061.29	28.37	0.002	0.83	-144.56	-133.55
N009		43	38.18	121	1.27	5013.2	980061.88	26.86	0.002	0.65	-144.89	-133.95
N010		43	35.00	121	3.16	4898.0	980059.35	18.28	0.002	0.47	-149.70	-139.01
N011		43	35.00	121	4.46	5009.0	980051.17	20.53	0.002	0.58	-151.14	-140.21
N012		43	34.52	121	6.82	5120.0	980041.92	22.44	0.002	0.71	-152.90	-141.74
N013		43	34.05	121	10.29	5228.0	980041.07	32.44	0.002	0.98	-146.32	-134.94
N014		43	42.64	121	17.77	6019.0	980019.42	72.22	0.002	2.75	-131.82	-118.83
N015		43	42.61	121	19.03	5789.0	980033.79	65.02	0.002	2.56	-131.35	-118.85
N016		43	42.61	121	20.21	5446.0	980054.68	53.68	0.002	2.34	-131.19	-119.42
N017		43	42.35	121	19.57	5584.0	980047.27	59.62	0.002	2.34	-129.96	-117.88
N018		43	42.38	121	17.85	6022.0	980019.70	73.17	0.002	2.75	-130.97	-117.97
N019		43	33.92	121	21.08	4824.0	980065.60	19.20	0.002	0.67	-146.05	-135.53
N020		43	32.73	121	21.11	5013.0	980051.70	24.85	0.002	0.69	-146.85	-135.92
N021		43	32.74	121	22.31	4908.0	980058.07	21.34	0.002	0.76	-146.70	-136.00
N022		43	30.98	121	22.29	4795.0	980061.76	17.05	0.002	0.51	-147.37	-136.90
N023		43	30.13	121	22.28	4746.0	980062.97	14.93	0.002	0.56	-147.76	-137.40
N024		43	30.33	121	20.92	4762.0	980061.63	14.79	0.002	0.55	-148.45	-138.06
N025		43	32.04	121	19.83	4954.0	980052.56	21.20	0.002	0.66	-148.51	-137.70
N026		43	32.21	121	17.51	4934.0	980053.58	20.09	0.002	0.75	-148.85	-138.09
N027		43	32.98	121	18.39	5156.0	980042.65	28.86	0.002	1.05	-147.37	-136.15
N028		43	37.05	121	7.70	5464.0	980029.05	38.09	0.002	1.12	-148.60	-136.72
N029		43	36.52	121	11.45	5697.0	980016.39	48.12	0.002	1.54	-146.12	-133.75
N030		43	31.21	121	9.20	4974.0	980047.49	19.26	0.002	0.81	-150.99	-140.15
N031		43	31.80	121	6.71	4770.0	980061.38	13.09	0.002	0.63	-150.35	-139.95
N032		43	30.28	121	3.13	4562.9	980070.74	5.27	0.002	0.26	-151.45	-141.47
N033		43	32.05	121	3.11	4702.0	980065.20	10.14	0.002	0.34	-151.26	-140.98
N034		43	42.65	121	21.16	5188.5	980068.71	43.45	0.002	1.74	-133.21	-121.96
N035		43	42.92	121	22.13	4909.0	980086.26	34.32	0.002	1.44	-133.07	-122.41

TABLE 1--CONTINUED

STATION	CODE	LATITUDE		LONGITUDE		ELEVATION FEET	OBSERVED	FREE AIR	TERRAIN	BOUGUER 2.67	ANOMALY
		DEG	MIN	DEG	MIN		GRAVITY MGAL	(1930) MGAL	HAND TOTAL MGAL		2.50
N036		43	44.80	121	20.78	5118.0	980073.25	38.13	0.002 2.14	-135.71	-124.64
N037		43	46.57	121	17.83	5697.0	980041.12	57.75	0.002 3.80	-134.23	-122.01
N038		43	47.24	121	17.25	5753.0	980036.80	57.69	0.002 3.01	-137.00	-124.60
N039		43	46.29	121	19.30	5143.0	980077.52	42.51	0.002 2.43	-131.90	-120.79
N040		43	47.62	121	19.09	5113.0	980080.58	40.75	0.002 2.03	-133.03	-121.97
N041		43	45.46	121	19.53	5368.0	980062.55	49.93	0.002 2.51	-132.09	-120.50
N042		43	48.04	121	21.54	4737.0	980103.79	27.99	0.002 1.14	-133.81	-123.51
N043		43	49.13	121	17.95	5559.0	980049.62	49.43	0.002 2.16	-139.47	-127.44
N044		43	49.72	121	13.35	5766.0	980038.79	57.17	0.002 2.08	-138.89	-126.41
N045		43	47.78	121	15.12	6063.0	980019.51	68.72	0.002 2.72	-136.85	-123.76
N046		43	47.75	121	14.71	6117.0	980015.72	70.04	0.002 2.80	-137.29	-124.09
N047		43	46.99	121	13.99	6431.0	979991.81	76.78	0.002 3.67	-140.40	-126.57
N048		43	46.83	121	13.32	6390.0	979997.27	78.63	0.002 3.49	-137.33	-123.58
N049		43	46.97	121	11.78	6197.0	980008.13	71.14	0.002 3.12	-138.60	-125.24
N050		43	46.58	121	10.50	5977.0	980020.12	63.05	0.002 3.34	-138.96	-126.10
N051		43	45.95	121	9.48	5958.0	980021.10	63.19	0.002 2.63	-138.88	-126.02
N052		43	44.95	121	9.10	6236.0	980001.76	71.48	0.002 2.93	-139.79	-126.34
N053		43	44.01	121	8.72	6204.0	980001.71	69.83	0.002 3.02	-140.25	-126.88
N054		43	43.12	121	8.28	6300.0	979994.23	72.71	0.002 3.05	-140.62	-127.04
N055		43	41.41	121	9.47	6317.0	979989.26	71.91	0.002 3.06	-141.99	-128.37
N056		43	41.39	121	10.33	6664.0	979967.41	82.69	0.002 3.71	-142.40	-128.07
N057		43	40.79	121	7.14	5785.0	980019.00	52.59	0.002 1.64	-144.56	-132.01
N058		43	40.29	121	4.66	5391.0	980041.14	38.45	0.002 1.05	-145.82	-134.08
N059		43	38.35	121	7.45	5547.0	980026.03	40.92	0.002 1.31	-148.43	-136.37
N060		43	37.05	121	3.90	5113.0	980051.91	27.97	0.002 0.75	-147.09	-135.95
N061		43	35.71	121	0.41	4905.0	980060.89	19.41	0.002 0.46	-148.82	-138.11
N062		43	43.04	121	4.89	5391.0	980043.29	36.47	0.002 1.30	-147.55	-135.83
N063		43	52.82	121	6.65	4512.0	980120.07	15.94	0.002 1.00	-138.30	-128.48
N064		43	51.90	121	8.07	4729.0	980103.81	21.46	0.002 1.02	-140.19	-129.90
N065		43	51.56	121	9.16	4934.0	980092.18	29.60	0.002 1.36	-138.72	-128.00
N066		43	50.10	121	11.15	5551.0	980051.77	49.37	0.002 1.84	-139.58	-127.55
N067		43	42.78	121	16.61	6330.7	979999.14	81.02	0.002 3.11	-133.30	-119.66
N068		43	42.76	121	16.50	6331.7	979999.36	81.36	0.002 3.00	-133.10	-119.45
N069		43	42.79	121	16.37	6332.0	979999.59	81.57	0.002 2.94	-132.96	-119.30
N070		43	42.56	121	14.65	6332.0	979992.56	74.89	0.002 3.05	-139.53	-125.88
N071		43	42.82	121	14.50	6332.0	979991.48	73.42	0.002 3.08	-140.98	-127.32
N072		43	43.08	121	14.40	6334.5	979992.08	73.86	0.002 3.45	-140.25	-126.61
N073		43	43.21	121	13.09	6379.0	979987.24	73.01	0.002 3.40	-142.67	-128.94
N074		43	43.12	121	12.52	6379.0	979987.75	73.65	0.002 3.01	-142.41	-128.66
N075		43	43.24	121	11.78	6379.0	979992.66	78.38	0.002 3.25	-137.44	-123.70
N076		43	43.70	121	11.65	6379.0	979994.07	79.10	0.002 3.64	-136.34	-122.62
N077		43	43.93	121	11.70	6379.0	979993.97	78.66	0.52S 3.84	-136.58	-122.88
N078		43	40.15	121	11.40	6422.0	979982.67	77.08	0.002 2.81	-140.66	-126.79
N079		43	39.79	121	11.71	6345.0	979984.48	72.19	0.002 2.73	-142.99	-129.29
N080		43	39.44	121	12.77	6289.0	979988.29	71.27	0.002 2.82	-141.92	-128.34
N081		43	38.78	121	15.04	5834.0	980018.07	59.28	0.002 2.38	-138.80	-126.19
N082		43	39.08	121	15.97	5824.0	980021.13	60.95	0.002 2.21	-136.96	-124.36
N083		43	38.03	121	13.81	5831.0	980013.71	55.77	0.08S 1.83	-142.76	-130.12
N084		43	38.17	121	12.15	6220.0	979985.44	63.84	0.002 2.87	-146.94	-133.52
N085		43	38.95	121	8.75	5847.0	980009.75	51.93	0.002 1.72	-147.26	-134.58

TABLE 1--CONTINUED

STATION	CODE	LATITUDE		LONGITUDE		ELEVATION FEET	OBSERVED	FREE AIR	TERRAIN	BOUGUER		ANOMALY
		DEG	MIN	DEG	MIN		GRAVITY MGAL	(1930) MGAL	HAND TOTAL MGAL	2.67 MGAL	2.50 MGAL	
N086		43	39.27	121	9.50	5983.0	980003.65	58.13	0.00Z	1.86	-145.57	-132.60
N087		43	43.18	121	12.18	6379.2	979989.82	75.65	0.00Z	3.02	-140.41	-126.66
N088		43	43.35	121	13.19	6378.7	979986.26	71.79	0.00Z	4.07	-143.21	-129.52
N088		43	43.38	121	13.14	6378.7	979986.26	71.74	0.00Z	3.59	-143.73	-130.01
N089		43	43.50	121	13.24	6378.8	979987.15	72.46	1.57S	4.58	-142.03	-128.37
N090		43	43.68	121	13.56	6379.0	979990.46	75.52	0.00Z	4.46	-139.10	-125.43
N091		43	43.81	121	13.28	6379.1	979991.79	76.67	0.00Z	3.67	-138.75	-125.03
N091		43	43.84	121	13.26	6379.1	979991.79	76.59	0.00Z	3.70	-138.70	-124.98
N092		43	43.93	121	13.60	6379.1	979992.61	77.30	1.37S	5.16	-136.62	-123.00
N093		43	44.12	121	13.40	6379.1	979993.78	78.19	3.98S	7.94	-132.95	-119.51
N094		43	44.20	121	13.07	6379.6	979993.92	78.26	4.12S	8.06	-132.78	-119.34
N095		43	44.23	121	12.83	6379.6	979994.90	79.19	3.51S	7.75	-132.16	-118.70
N096		43	44.16	121	12.40	6381.6	979994.85	79.43	0.00Z	3.58	-136.15	-122.43
N096A		43	44.19	121	11.92	6378.9	979995.97	80.26	0.00Z	4.11	-134.71	-121.02
N097		43	43.49	121	11.67	6378.8	979992.50	77.83	0.00Z	3.40	-137.84	-124.11
N098		43	42.34	121	14.07	6383.0	979989.34	76.79	0.00Z	3.48	-138.94	-125.21
N099		43	41.98	121	16.15	6605.0	979976.39	85.24	0.00Z	4.85	-136.70	-122.57
N100		43	41.31	121	16.55	7013.0	979944.72	92.91	2.37S	10.03	-137.76	-123.07
N101		43	41.37	121	15.21	7981.0	979870.39	109.44	6.55S	21.59	-142.65	-126.60
N102		43	42.71	121	16.85	6281.0	980002.02	79.33	0.00Z	3.09	-133.31	-119.77
N103		43	42.45	121	17.00	6208.0	980006.29	77.13	0.00Z	3.19	-132.92	-119.54
N104		43	40.61	121	18.61	5531.0	980044.62	54.61	0.00Z	2.98	-132.52	-120.60
N105		43	39.53	121	18.56	5396.0	980048.45	47.38	0.00Z	1.93	-136.19	-124.50
N106		43	38.69	121	18.63	5290.0	980051.34	41.57	0.00Z	1.41	-138.89	-127.40
N107		43	37.01	121	18.71	5142.0	980054.87	33.71	0.00Z	1.03	-142.06	-130.87
N108		43	38.30	121	20.32	5086.0	980063.22	34.86	0.00Z	1.26	-138.77	-127.71
N109		43	38.44	121	21.89	4859.0	980079.26	29.36	0.00Z	1.13	-136.63	-126.06
N110		43	39.29	121	19.90	5096.0	980066.80	37.89	0.00Z	1.71	-135.63	-124.58
N111		43	39.73	121	17.15	5645.0	980034.12	56.14	0.00Z	2.69	-135.17	-122.99
N112		43	39.98	121	16.22	5936.0	980014.38	63.37	0.00Z	4.21	-136.36	-123.65
N113		43	43.14	121	16.53	6332.0	979999.53	80.99	0.00Z	3.22	-133.27	-119.62
N114		43	43.37	121	16.43	6331.9	979999.94	81.04	0.00Z	3.58	-132.85	-119.23
N115		43	43.56	121	16.34	6332.6	980000.17	81.05	1.17S	4.20	-132.24	-118.66
N116		43	43.87	121	15.82	6331.8	980002.09	82.43	0.96S	4.35	-130.69	-117.12
N117		43	43.92	121	15.62	6331.9	980002.97	83.24	0.93S	4.45	-129.77	-116.21
N118		43	43.89	121	15.45	6332.2	980002.18	82.53	0.00Z	4.34	-130.61	-117.04
N119		43	43.91	121	15.17	6332.2	980000.69	81.01	1.24S	4.97	-131.50	-117.97
N120		43	43.87	121	14.92	6331.9	979998.48	78.83	0.00Z	4.65	-133.99	-120.44
N121		43	43.71	121	14.63	6331.9	979995.30	75.89	0.00Z	4.11	-137.47	-123.88
N122		43	43.47	121	14.63	6331.9	979995.75	76.70	0.00Z	3.39	-137.38	-123.75
N123		43	42.49	121	14.87	6332.0	979994.08	76.51	0.00Z	3.07	-137.89	-124.24
N124		43	42.40	121	15.10	6332.1	979997.16	79.74	0.00Z	3.17	-134.57	-120.92
N125		43	42.41	121	15.38	6331.9	979999.09	81.63	0.00Z	3.26	-132.58	-118.94
N126		43	42.62	121	15.67	6331.9	979999.42	81.65	0.00Z	2.99	-132.83	-119.17
N127		43	42.92	121	15.97	6332.6	979999.89	81.73	0.00Z	2.86	-132.90	-119.23
N128		43	42.81	121	13.40	6380.0	979987.67	74.13	0.00Z	3.56	-141.42	-127.69
N129		43	42.78	121	13.71	6406.0	979985.38	74.33	0.00Z	3.41	-142.26	-128.47
N130		43	41.61	121	17.90	5991.0	980019.75	71.46	0.00Z	3.06	-131.30	-118.39
PAULB		43	43.00	121	16.00	6335.0	979997.98	79.93	0.00Z	2.87	-134.78	-121.11