

RELEVELING RUN DATE: 11 JUL 89 TIME: 15:53
 ARCATA VIA WILLOW CREEK AND WEAVERVILLE TO REDDING CA

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 4.0 MM 1ST-ORDER/CLASS II

RHK/NGS

03 MAY 1988

15 JUN 1988

SPSN	ACRN	Designation	Spur Codes	Distance km	Observed Ht meters	Normal Ortho Ht meters	Runs	Latitude DD MM SS	Longitude DDD MM SS
9501	LV0612	A 1402		0.000	17.62614	17.62614	0	40 52 45	124 04 51
9502	LV0613	B 1402		0.877	15.62172	15.62171	1	40 53 09	124 04 43
9503	LV0614	C 1402		2.166	13.17920	13.17917	1	40 53 51	124 04 55
1801	LV0608	D 1402		3.340	17.61196	17.61192	1	40 54 15	124 04 21
1802	LV0609	E 1402		4.709	19.57368	19.57363	1	40 54 37	124 03 40
1803	LV0338	L 75		4.911	17.94805	17.94800	1	40 54 35	124 03 35
1804	LV0610	F 1402		7.021	27.57888	27.57884	1	40 54 25	124 02 10
1805	LV0611	G 1402		8.881	24.93093	24.93091	1	40 53 53	124 01 10
1806	LU1701	H 1402		10.999	33.40760	33.40761	1	40 53 18	123 59 57
1807	LU1702	J 1402		12.267	94.91065	94.91066	2	40 53 15	123 59 02
1808	LU1703	K 1402		12.862	127.71266	127.71266	1	40 53 17	123 58 36
1809	LU1704	L 1402		13.675	171.46496	171.46501	1	40 53 05	123 58 06
1810	LU1705	M 1402		14.378	176.66543	176.66548	1	40 53 05	123 57 37
1811	LU1706	N 1402		16.865	178.97442	178.97432	1	40 53 38	123 56 02
1812	LU1707	P 1402		19.255	187.42576	187.42546	1	40 54 20	123 54 55
1813	LU1708	Q 1402		20.151	164.82051	164.82008	1	40 54 49	123 54 55
1814	LU1709	R 1402		20.321	174.48871	174.48826	2	40 54 53	123 54 55
1815	LU1710	S 1402		21.113	213.64594	213.64538	1	40 55 15	123 54 35
1816	LU1711	T 1402		22.210	279.28448	279.28372	1	40 55 47	123 54 39
1817	LU1712	U 1402		23.106	333.10749	333.10679	1	40 55 39	123 54 12
1818	LU1713	V 1402		24.244	402.75805	402.75713	1	40 56 03	123 53 58
1819	LU1714	W 1402		25.151	450.61522	450.61401	1	40 56 30	123 53 58
1820	LU1715	X 1402		25.734	483.18932	483.18790	1	40 56 48	123 53 54
1821	LU1716	Y 1402		26.817	543.71357	543.71210	1	40 56 52	123 53 16
1822	LU1717	Z 1402		27.620	582.69882	582.69746	1	40 56 44	123 52 47
1823	LU1718	A 1403		28.704	623.59867	623.59757	1	40 56 27	123 52 11
1824	LU1719	B 1403		29.559	665.28895	665.28816	2	40 56 08	123 51 50
1825	LU1499	V 649		30.271	689.67985	689.67937	1	40 55 50	123 51 25
1826	LU1720	C 1403		31.180	636.55046	636.55003	1	40 55 47	123 50 53
1827	LU1721	D 1403		31.675	595.07685	595.07658	1	40 55 37	123 50 31
1828	LU1722	E 1403		32.994	529.58610	529.58617	1	40 55 13	123 50 03
1829	LU1723	F 1403		34.166	460.15487	460.15523	1	40 54 50	123 49 27
1830	LU1724	G 1403		35.186	395.15774	395.15839	1	40 54 23	123 49 41
1831	LU1725	H 1403		36.213	332.73758	332.73828	1	40 54 18	123 49 04
1832	LU1726	J 1403		37.015	302.49463	302.49537	1	40 54 13	123 48 33

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SPSN	ACRN	Designation	Spur Codes	Distance km	Observed Ht meters	Normal Ortho Ht meters	Runs	Latitude			Longitude		
								DD	MM	SS	DDD	MM	SS
1833	LU1727	K 1403		37.375	317.46352	317.46429	2	40	54	09	123	48	21
1834	LU1728	L 1403		37.948	353.65615	353.65680	1	40	54	23	123	48	19
1835	LU1729	M 1403		38.803	406.34401	406.34444	1	40	54	46	123	48	25
1836	LU1730	N 1403		39.753	463.61895	463.61924	1	40	54	59	123	47	50
1837	LU1731	P 1403		40.724	519.85927	519.85926	1	40	55	23	123	47	47
1838	LU1732	Q 1403		41.696	569.82064	569.82067	1	40	55	20	123	48	26
1839	LU1733	R 1403		42.598	609.90151	609.90135	2	40	55	33	123	48	20
1840	LU1734	S 1403		43.553	643.51027	643.51009	1	40	55	34	123	47	36
1841	LU1735	T 1403		44.674	688.64557	688.64583	1	40	55	08	123	47	12
1842	LU1736	U 1403		45.807	753.08299	753.08385	1	40	54	35	123	47	06
1843	LU1737	W 1405		46.909	817.15546	817.15692	1	40	54	05	123	46	43
1844	LU1738	X 1405		48.002	839.99773	839.99959	1	40	53	43	123	46	07
1845	LU1739	Y 1405		49.008	794.54034	794.54166	1	40	54	12	123	45	49
1846	LU1740	Z 1405		50.084	760.13936	760.14042	1	40	54	25	123	45	09
1847	LU1741	A 1406		50.850	711.21182	711.21299	1	40	54	19	123	44	38
1848	LU1742	B 1406		51.580	659.55729	659.55844	1	40	54	20	123	44	07
1849	LU1743	C 1406		52.093	626.48840	626.48940	1	40	54	29	123	43	51
1850	LU1744	D 1406		53.184	555.86742	555.86846	1	40	54	26	123	43	15
1851	LU1745	E 1406		54.389	473.52252	473.52352	1	40	54	29	123	42	25
1852	LU1746	F 1406		55.838	444.43851	444.43909	1	40	55	05	123	41	55
1853	LU1747	G 1406		56.576	435.48792	435.48832	2	40	55	21	123	41	34
1854	LU1748	H 1406		57.863	403.55690	403.55698	1	40	55	51	123	41	05
1855	LU1749	K 1406		59.100	378.72121	378.72116	1	40	56	04	123	40	26
1856	LU1750	L 1406		59.910	333.16482	333.16457	1	40	56	26	123	40	08
1857	LU1751	M 1406		60.887	278.21315	278.21279	1	40	56	40	123	39	31
1858	LU1752	N 1406		61.623	247.27004	247.26963	1	40	56	48	123	39	02
1859	LU1753	P 1406		62.523	221.98813	221.98782	1	40	56	32	123	38	33
1860	LU1754	J 1406		63.607	179.15453	179.15427	1	40	56	23	123	37	49
1861	LU1518	465 B)	64.225	140.62508	140.62474	2	40	56	42	123	37	56
1860	LU1754	J 1406	*	63.607	179.15453	179.15427	1	40	56	23	123	37	49
1862	LU1755	Q 1406		64.699	212.13424	212.13411	1	40	55	57	123	37	26
1863	LU1756	R 1406		66.059	176.94439	176.94446	1	40	55	16	123	37	08
1864	LU1757	S 1406		67.791	175.63050	175.63079	1	40	54	26	123	36	40
1865	LU1758	T 1406		69.016	184.87522	184.87568	1	40	53	49	123	36	30
1866	LU1759	U 1406		70.272	181.21214	181.21275	2	40	53	17	123	36	04

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SPSN	ACRN	Designation	Spur Codes	Distance km	Observed Ht meters	Normal Ortho Ht meters	Runs	Latitude DD MM SS	Longitude DDD MM SS
1867	LU1760	V 1406		70.455	175.55011	175.55071	2	40 53 20	123 35 58
1868	LU1761	W 1406		72.371	182.93452	182.93507	1	40 53 31	123 34 56
1869	LU1762	X 1406		73.720	200.70269	200.70328	1	40 53 23	123 34 03
1870	LU1763	Y 1406		74.653	228.11969	228.12026	1	40 53 26	123 33 34
1871	LU1516	J 76		75.439	202.48681	202.48748	1	40 53 08	123 33 19
1872	LU1764	Z 1406		76.095	193.80096	193.80171	1	40 52 53	123 33 02
1873	LU1765	A 1422		77.053	249.86040	249.86116	2	40 52 52	123 32 30
1874	LU1766	B 1422		77.965	247.51624	247.51715	1	40 52 28	123 32 06
1875	LU1767	C 1422		79.270	223.08731	223.08831	1	40 52 13	123 31 16
1876	LU1768	D 1422		80.751	233.87992	233.88113	1	40 51 36	123 30 38
1878	LU1769	F 1422		82.107	271.34842	271.34963	1	40 51 36	123 29 51
1879	LU1770	G 1422		83.021	321.89888	321.90026	1	40 51 14	123 29 51
1880	LU1771	H 1422		84.095	369.02474	369.02626	1	40 50 58	123 28 57
1881	LU1772	J 1422		84.998	402.82165	402.82344	1	40 50 30	123 29 02
1882	LU1773	K 1422		85.962	427.85483	427.85688	1	40 50 05	123 29 16
1883	LU1774	L 1422		86.605	443.93150	443.93379	1	40 49 43	123 29 10
1884	LU1775	M 1422		87.917	413.85120	413.85386	1	40 49 09	123 28 46
1885	LU1776	N 1422		88.605	419.92433	419.92720	1	40 48 49	123 28 40
1886	LU1777	P 1422		89.700	447.23212	447.23528	1	40 48 23	123 28 12
1887	LU1778	Q 1422		90.539	405.35590	405.35925	1	40 48 05	123 27 52
1888	LU1779	R 1422		91.260	369.72385	369.72737	1	40 47 48	123 27 35
1889	LU1780	S 1422		92.045	334.27631	334.27999	1	40 47 30	123 27 16
1890	LU1781	T 1422		92.905	304.75116	304.75490	1	40 47 22	123 26 42
1892	LU1782	983.42 RESET		93.415	300.66987	300.67359	2	40 47 24	123 26 19
1893	LU1783	V 1422		95.325	314.18434	314.18822	1	40 47 03	123 25 10
1894	LU0910	P 76		96.312	307.26479	307.26850	1	40 47 25	123 24 42
1895	LU1784	W 1422		98.156	318.95654	318.96000	1	40 47 56	123 23 42
1896	LU1785	X 1422		100.094	325.53262	325.53620	2	40 47 41	123 22 29
1897	LU0913	S 76		102.024	356.02406	356.02766	1	40 47 39	123 21 16
1898	LU1786	Y 1422		103.056	333.58439	333.58816	1	40 47 19	123 20 47
1899	LU1787	Z 1422		105.076	344.06895	344.07288	1	40 47 00	123 19 59
1900	LU0914	T 76		105.569	358.16071	358.16476	1	40 46 47	123 19 47
1901	LU1788	A 1423		107.272	346.17219	346.17629	1	40 46 41	123 19 05
1902	LU0916	U 76		108.265	346.64416	346.64818	1	40 46 50	123 18 25
1903	LU1789	B 1423		109.511	352.12284	352.12712	1	40 46 21	123 18 32

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SPSN	ACRN	Designation	Spur Codes	Distance km	Observed Ht meters	Normal Ortho Ht meters	Runs	Latitude DD MM SS	Longitude DDD MM SS
1904	LU1790	C 1423		110.824	357.52514	357.52959	1	40 46 02	123 17 53
1905	LU0917	V 76		112.343	363.06985	363.07445	1	40 45 46	123 17 01
1906	LU1791	D 1423		114.328	375.52824	375.53326	1	40 45 01	123 16 30
1907	LU1792	E 1423		115.433	383.17333	383.17858	1	40 44 37	123 15 58
1908	LU1793	F 1423		116.847	378.50063	378.50572	2	40 44 54	123 15 04
1909	LU1794	G 1423		118.548	371.25430	371.25981	1	40 44 10	123 14 00
1910	LU1795	H 1423		120.917	379.36328	379.36863	1	40 44 27	123 12 33
1911	LU1796	J 1423		122.798	400.04511	400.05056	1	40 44 17	123 11 27
1912	LU1797	U 1422		124.674	407.94939	407.95452	1	40 44 48	123 10 19
1913	LU1798	J 1424		126.297	408.20264	408.20753	1	40 45 11	123 09 25
1914	LU1799	H 1424		128.133	416.56539	416.56986	1	40 45 51	123 08 34
1915	LU1800	Z 1423		130.301	430.64854	430.65280	1	40 46 11	123 07 38
1916	LU0929	1405 B)	130.758	427.90857	427.91270	2	40 46 23	123 07 38
1915	LU1800	Z 1423	*	130.301	430.64854	430.65280	1	40 46 11	123 07 38
1917	LU1801	Y 1423		132.609	427.11476	427.11915	1	40 45 59	123 06 12
1918	LU1802	X 1423		133.784	442.44363	442.44819	1	40 45 44	123 05 46
1919	LU1803	G 1424		135.114	438.67335	438.67765	1	40 46 07	123 05 07
1920	LU1804	F 1424		137.338	437.44218	437.44690	1	40 45 29	123 03 54
1921	LU1805	E 1424		138.830	439.42324	439.42845	1	40 44 45	123 03 47
1922	LU1806	W 1423		140.751	446.56636	446.57215	1	40 43 53	123 03 13
1923	LU1807	C 1424		141.799	453.23067	453.23671	1	40 43 31	123 02 55
1924	LU1808	B 1424		142.989	491.37274	491.37860	1	40 43 46	123 02 08
1925	LU1809	A 1424		144.279	530.08546	530.09116	1	40 43 58	123 01 15
1926	LU1810	D 1424		145.299	608.16966	608.17522	1	40 44 08	123 00 39
1927	LU1811	V 1423		146.121	672.90781	672.91311	1	40 44 24	123 00 13
1928	LU1812	U 1423		146.875	728.90455	728.90971	1	40 44 32	122 59 48
1929	LU1813	T 1423		147.611	775.69837	775.70383	1	40 44 16	122 59 55
1930	LU1814	S 1423		148.316	834.53043	834.53577	1	40 44 22	122 59 25
1931	LU1815	N 1423		148.991	886.30240	886.30785	1	40 44 17	122 58 58
1932	LU1816	M 1423		149.735	831.70113	831.70625	1	40 44 32	122 58 33
1933	LU1817	E 1422		150.589	766.77058	766.77542	1	40 44 46	122 58 13
1934	LU1818	L 1423		151.451	724.99071	724.99597	1	40 44 24	122 57 56
1935	LU1819	K 1423		152.626	679.47081	679.47641	1	40 44 05	122 57 21
1936	LU1820	R 1423		153.442	630.89522	630.90069	1	40 44 13	122 56 47
1937	LU0851	M 77		154.401	612.86687	612.87264	1	40 43 54	122 56 18

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SPSN	ACRN	Designation	Spur Codes	Distance km	Observed Ht meters	Normal Ortho Ht meters	Runs	Latitude DD MM SS	Longitude DDD MM SS
1938	LU1821	Q 1423		155.324	616.66631	616.67242	1	40 43 32	122 55 52
1939	LU1822	P 1423		156.384	600.67433	600.68089	1	40 43 03	122 55 31
1940	LU1823	L 1424		157.943	564.39589	564.40317	1	40 42 14	122 55 26
1941	LU1824	K 1424		159.178	549.33048	549.33830	1	40 41 36	122 55 44
1942	LU1825	M 1424		160.710	534.88974	534.89814	1	40 40 54	122 56 10
1943	LU1826	N 1424		162.350	519.52947	519.53842	1	40 40 13	122 56 34
1944	LU0855	B 45		163.950	504.39382	504.40341	1	40 39 24	122 56 33
1945	LU1827	P 1424		164.429	506.01504	506.02486	2	40 39 06	122 56 34
1946	LU1828	Q 1424		167.010	502.20565	502.21519	1	40 39 28	122 54 52
1947	LU0859	S 77 RESET		167.202	504.56637	504.57596	1	40 39 24	122 54 46
1948	LU1829	R 1424		168.907	520.27751	520.28714	2	40 39 21	122 53 41
1949	LU1830	S 1424		169.688	569.42630	569.43561	1	40 39 44	122 53 41
1950	LU1831	T 1424		170.528	617.70718	617.71623	1	40 40 01	122 53 18
1951	LU1832	U 1424		171.361	668.34452	668.35329	1	40 40 18	122 52 56
1952	LU1833	V 1424		172.168	685.23047	685.23919	1	40 40 21	122 52 22
1953	LU1834	W 1424		172.998	677.71635	677.72516	1	40 40 16	122 51 52
1954	LU1835	X 1424		174.227	649.43524	649.44388	1	40 40 26	122 51 12
1955	LU1836	Y 1424		175.392	657.73566	657.74423	1	40 40 30	122 50 23
1956	LU0863	W 77		176.434	637.03897	637.04749	1	40 40 33	122 49 39
1957	LU1837	Z 1424		177.365	672.78019	672.78893	1	40 40 20	122 49 09
1958	LU1838	A 1425		178.619	709.06893	709.07805	1	40 39 58	122 48 28
1959	LU1839	B 1425		179.900	732.63385	732.64310	1	40 39 51	122 47 44
1960	LU1840	C 1425		180.651	753.63691	753.64608	1	40 39 55	122 47 15
1961	LU1841	D 1425		181.678	781.54702	781.55648	1	40 39 40	122 46 40
1962	LU1842	E 1425		182.694	798.15772	798.16738	1	40 39 30	122 46 06
1963	LU0866	Y 77		184.042	824.11120	824.12113	1	40 39 17	122 45 15
1964	LU1843	F 1425		185.210	861.81022	861.82068	1	40 38 52	122 44 47
1965	LU1844	G 1425		185.940	893.20885	893.21960	2	40 38 39	122 44 48
1966	LU1845	H 1425		186.748	933.69908	933.71059	1	40 38 06	122 44 31
1967	LU1846	J 1425		187.483	971.55542	971.56700	1	40 38 03	122 44 02
1968	LU1847	K 1425		188.237	956.93703	956.94817	1	40 38 21	122 43 49
1969	LU1848	L 1425		189.057	915.38609	915.39695	1	40 38 33	122 43 33
1970	LU0874	V 329		189.848	874.59038	874.60090	1	40 38 48	122 43 18
1971	LU1849	M 1425		190.816	825.13946	825.14987	1	40 38 53	122 42 46
1972	LU1850	N 1425		191.814	774.76980	774.78015	1	40 38 56	122 42 24

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SPSN	ACRN	Designation	Spur Codes	Distance km	Observed Ht meters	Normal Ortho Ht meters	Runs	Latitude DD MM SS	Longitude DDD MM SS
1973	LU1851	P 1425		192.615	726.08761	726.09758	1	40 39 16	122 42 22
1974	LU1852	Q 1425		193.417	686.84833	686.85814	1	40 39 25	122 42 00
1975	LU1853	R 1425		194.402	634.33780	634.34728	1	40 39 45	122 41 59
1976	LU1854	A 1426		195.485	581.24735	581.25652	1	40 40 05	122 42 02
1977	LU1855	Z 1429		196.538	527.12733	527.13647	1	40 40 07	122 41 29
1978	LU1856	Y 1429		198.383	467.94251	467.95144	1	40 40 24	122 40 20
1979	LU0877	A 78		199.477	446.10765	446.11663	1	40 40 20	122 39 35
1980	LU1857	W 1429		200.341	436.82038	436.82937	2	40 40 19	122 39 05
1981	LU1858	X 1429		201.636	405.49759	405.50676	1	40 40 02	122 38 21
1982	LU1859	V 1429		202.801	383.70670	383.71604	2	40 39 45	122 37 38
1983	LU1860	U 1429		204.803	396.73792	396.74768	1	40 39 03	122 36 49
1984	LU0879	B 78		206.677	373.45145	373.46119	1	40 39 05	122 35 39
1985	LU1861	T 1429		207.619	401.59120	401.60090	1	40 39 09	122 35 16
1986	LU1862	S 1429		208.540	400.25243	400.26219	1	40 39 03	122 34 44
1987	LU1863	Q 1429		209.527	386.14152	386.15153	1	40 38 38	122 34 16
1988	LU1864	R 1429		210.704	382.69103	382.70134	1	40 38 07	122 33 43
1989	LU1865	P 1429		211.851	386.95266	386.96315	1	40 37 49	122 33 02
1990	LU1866	N 1429		213.118	393.14261	393.15328	1	40 37 31	122 32 14
1991	LU1867	M 1429		214.824	401.56534	401.57632	1	40 37 00	122 31 16
1992	LU0897	12		215.640	398.86825	398.87938	1	40 36 45	122 30 52
1993	LU0898	13		216.056	371.68676	371.69804	1	40 36 30	122 30 39
1994	LU0899	14		216.240	359.47141	359.48274	2	40 36 25	122 30 32
1995	LU0900	15		216.903	312.67104	312.68241	2	40 36 20	122 30 03
1996	LU0185	E 78 RESET		218.243	313.28518	313.29676	1	40 35 53	122 29 21
1997	LU1868	L 1429		219.206	276.97194	276.98368	1	40 35 32	122 28 59
1998	LU1869	J 1429		220.558	274.34068	274.35246	1	40 35 26	122 28 01
1999	LU0187	G 78		221.837	205.02099	205.03287	1	40 35 10	122 27 14
2000	LU1870	H 1429		222.534	221.33059	221.34250	1	40 35 04	122 26 46
2001	LU1871	G 1429		223.857	217.53407	217.54602	2	40 34 56	122 25 53
2002	LU1872	F 1429		225.199	205.22172	205.23361	1	40 35 07	122 24 57
2003	LU1873	K 1429		226.011	195.43300	195.44486	1	40 35 12	122 24 23
9506	LU1700	B 1427		227.135	173.68327	173.69513	1	40 35 13	122 23 38
2004	LU1874	I 15 RESET		227.505	170.73050	170.74237	1	40 35 10	122 23 24
2005	LU0189	J 78		227.906	169.51406	169.52597	1	40 35 01	122 23 31
9505	LU0009	J 15		228.052	169.23466	169.24657	1	40 35 00	122 23 31

+ 214.43 - 9.13

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SPSN	ACRN	Designation	Spur Codes	Distance km	Observed Ht meters	Normal Ortho Ht meters	Runs	Latitude DD MM SS	Longitude DDD MM SS
2006	LU0089	H 15		228.257	167.64247	167.65441	1	40 34 52	122 23 28
9504	LU1699	A 1427		228.621	169.04387	169.05585	1	40 34 42	122 23 25

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-- Rod Standardization --

Equip Code	Serial No	Manufacturer	Model	Grad Code	Rod Units	Std Temp (C)	Coef Expn (/C)	Rod Excess	Index Error
							X.0001	X.001	
316	345989	KERN	INVAR	2	HC	25.0	0.0135A	0.0013R	0.0340R
316	351925	KERN	INVAR	2	HC	25.0	0.0135A	0.0155R	0.0025R
means for rod pair number 1						25.0	0.0135	0.0084	
316	270712	KERN	INVAR	2	HC	25.0	0.0279R	0.0340U	-0.0410U
316	277919	KERN	INVAR	2	HC	25.0	0.0157R	0.0131R	0.0000R
means for rod pair number 2						25.0	0.0218	0.0235	
316	331474	KERN	INVAR	2	HC	25.0	0.0135A	0.0129R	0.0000R
316	331466	KERN	INVAR	2	HC	25.0	0.0135A	0.0012R	0.0000R
means for rod pair number 3						25.0	0.0135	0.0070	
316	331477	KERN	INVAR	2	HC	25.0	0.0135A	0.0084R	0.0000R
316	331468	KERN	INVAR	2	HC	25.0	0.0135A	0.0067R	0.0000R
means for rod pair number 4						25.0	0.0135	0.0075	

Parameter Flags: A - assumed, C - computed, R - from archival records
U - used previously computed value, ? - REDUC4 default
I - interpolated (25*), * - taken from 16* record

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Inst	Eq Code	Serial No	-- Instrument Information and Collimation Data --						Mag	Cal Date	Rod Pair	40*	
			Model	Stadia Const	Stadia Date	Micro Meter	Mag Const	Mag Sigma					
1	233	456502	NI-002	ZEISS/JENA									
	03	MAY 88	0750 T	-0.0040 \$	100	19780000	M			1	1	NOT USED	
	03	MAY 88	0900 T	-0.0040 \$	100	19780000	M			4	4		
	03	MAY 88	1319 T	-0.0040 \$	100	19780000	M			4	6		
	04	MAY 88	0736 T	-0.0040 \$	100	19780000	M			4	9		
	04	MAY 88	1225 T	-0.0040 \$	100	19780000	M			4	11		
	05	MAY 88	0726 T	-0.0040 \$	100	19780000	M			1	13		
	05	MAY 88	0830 T	-0.0040 \$	100	19780000	M			4	15		
	05	MAY 88	1159 T	-0.0040 \$	100	19780000	M			4	17		
	05	MAY 88	1306 T	-0.0040 \$	100	19780000	M			1	19		
2	233	456603	NI-002	ZEISS/JENA									
	03	MAY 88	0753 T	0.0060 \$	100	19781006	M			2	2	NOT USED	
	03	MAY 88	0851 T	0.0060 \$	100	19781006	M			3	3		
	03	MAY 88	1139 T	0.0060 \$	100	19781006	M			3	5		
	03	MAY 88	1433 T	0.0060 \$	100	19781006	M			3	7		
	04	MAY 88	0719 T	0.0060 \$	100	19781006	M			3	8		
	04	MAY 88	0931 T	0.0060 \$	100	19781006	M			3	10		
	04	MAY 88	1233 T	0.0060 \$	100	19781006	M			3	12		
	05	MAY 88	0825 T	0.0060 \$	100	19781006	M			2	14		
	05	MAY 88	1044 T	0.0060 \$	100	19781006	M			2	16		
	05	MAY 88	1244 T	0.0060 \$	100	19781006	M			2	18		
	09	MAY 88	0741 T	0.0060 \$	100	19781006	M			2	20		
	09	MAY 88	0814 T	0.0060 \$	100	19781006	M			2	21		
	09	MAY 88	0853 T	0.0060 \$	100	19781006	M			2	22		
	09	MAY 88	1235 T	0.0060 \$	100	19781006	M			2	23		
	09	MAY 88	1409 T	0.0060 \$	100	19781006	M			2	24	NOT USED	
	10	MAY 88	0729 T	0.0010 \$	100	19781006	M			2	25		
	10	MAY 88	1101 T	0.0010 \$	100	19781006	M			2	27		
	10	MAY 88	1238 T	0.0010 \$	100	19781006	M			2	29		
	11	MAY 88	1005 T	0.0010 \$	100	19781006	M			2	30		
	12	MAY 88	0722 T	0.0010 \$	100	19781006	M			2	31		
	12	MAY 88	0842 T	0.0010 \$	100	19781006	M			2	33		
	12	MAY 88	1035 T	0.0010 \$	100	19781006	M			2	34		
	13	MAY 88	0711 T	0.0010 \$	100	19781006	M			2	36		

* - collimation correction factor (rod unit per rod unit of stadia interval)
 \$ - collimation error (mm/m or radians x 1000)

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-- Instrument Information and Collimation Data --

Inst	Eq Code	Serial No	Model	Stadia Const	Stadia Date	Micro Meter	Mag Const	Mag Sigma	Mag Cal Date	Rod Pair	40*
2	233	456603	NI-002	ZEISS/JENA							
		13 MAY 88	0739 T	0.0010 \$	100	19781006	M			2	37
		13 MAY 88	0929 T	0.0010 \$	100	19781006	M			2	40
		13 MAY 88	1134 T	0.0010 \$	100	19781006	M			2	41
3	233	456591	NI-002	ZEISS/JENA							
		10 MAY 88	0733 T	-0.0120 \$	100	19780000	M			1	26
		10 MAY 88	1229 T	-0.0120 \$	100	19780000	M			1	28
		12 MAY 88	0751 T	-0.0120 \$	100	19780000	M			1	32
		12 MAY 88	1154 T	-0.0120 \$	100	19780000	M			1	35
		13 MAY 88	0743 T	-0.0120 \$	100	19780000	M			1	38
											NOT USED
4	233	456556	NI-002	ZEISS/JENA							
		13 MAY 88	0855 T	-0.0110 \$	100	19780000	M			1	39
		13 MAY 88	1157 T	-0.0110 \$	100	19780000	M			1	42
		16 MAY 88	1312 T	-0.0110 \$	100	19780000	M			1	43
		17 MAY 88	0748 T	-0.0110 \$	100	19780000	M			1	44
5	233	456558	NI-002	ZEISS/JENA							
		17 MAY 88	1114 T	-0.0100 \$	100	19780000	M			2	45
		17 MAY 88	1233 T	-0.0100 \$	100	19780000	M			2	46
6	233	423233	NI-002	ZEISS/JENA							
		17 MAY 88	1238 T	0.0090 \$	100	19000000	M			1	47
		18 MAY 88	0810 T	0.0090 \$	100	19000000	M			1	49
		18 MAY 88	1134 T	0.0090 \$	100	19000000	M			1	51
		19 MAY 88	0745 T	0.0090 \$	100	19000000	M			1	55
		19 MAY 88	1136 T	0.0090 \$	100	19000000	M			1	60
		20 MAY 88	0737 T	0.0090 \$	100	19000000	M			1	64
		20 MAY 88	0904 T	0.0090 \$	100	19000000	M			1	65
		20 MAY 88	0952 T	0.0090 \$	100	19000000	M			1	66
		20 MAY 88	1204 T	0.0090 \$	100	19000000	M			1	68

* - collimation correction factor (rod unit per rod unit of stadia interval)
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-- Instrument Information and Collimation Data --													
Inst	Eq Code	Serial No	Model	Stadia Const	Stadia Date	Micro Meter	Mag Const	Mag Sigma	Mag Date	Cal	Rod Pair	40*	
6	233	423233	NI-002	ZEISS/JENA									
	23	MAY 88	0740 T	0.0090 \$	100	19000000	M				1	70	
7	233	456581	NI-002	ZEISS/JENA									
	18	MAY 88	0727 T	0.0010 \$	100	19781006	M				2	48	
	18	MAY 88	0844 T	0.0010 \$	100	19781006	M				2	50	
	18	MAY 88	1143 T	0.0010 \$	100	19781006	M				2	52	
	18	MAY 88	1336 T	0.0010 \$	100	19781006	M				2	53	
	19	MAY 88	0716 T	0.0010 \$	100	19781006	M				2	54	
	19	MAY 88	0852 T	0.0010 \$	100	19781006	M				2	56	
	19	MAY 88	0935 T	0.0010 \$	100	19781006	M				2	58	
	19	MAY 88	1033 T	0.0010 \$	100	19781006	M				2	59	
	19	MAY 88	1149 T	0.0010 \$	100	19781006	M				2	61	
	19	MAY 88	1450 T	0.0010 \$	100	19781006	M				2	62	
	20	MAY 88	0727 T	0.0010 \$	100	19781006	M				2	63	
	20	MAY 88	0958 T	0.0010 \$	100	19781006	M				2	67	
	20	MAY 88	1256 T	0.0010 \$	100	19781006	M				2	69	
	23	MAY 88	0740 T	-0.0050 \$	100	19781006	M				2	71	
	23	MAY 88	1114 T	-0.0050 \$	100	19781006	M				2	73	
	23	MAY 88	1244 T	-0.0050 \$	100	19781006	M				2	75	
	23	MAY 88	1421 T	-0.0050 \$	100	19781006	M				2	76	
	24	MAY 88	0713 T	-0.0050 \$	100	19781006	M				2	78	
	24	MAY 88	0841 T	-0.0050 \$	100	19781006	M				2	79	
	24	MAY 88	1215 T	-0.0050 \$	100	19781006	M				2	81	
	24	MAY 88	1336 T	-0.0050 \$	100	19781006	M				2	82	
	25	MAY 88	0726 T	-0.0050 \$	100	19781006	M				2	84	
	25	MAY 88	1003 T	-0.0050 \$	100	19781006	M				2	85	
	25	MAY 88	1230 T	-0.0050 \$	100	19781006	M				2	87	
	26	MAY 88	0745 T	-0.0050 \$	100	19781006	M				2	90	
	26	MAY 88	0928 T	-0.0050 \$	100	19781006	M				2	91	
	26	MAY 88	1042 T	-0.0050 \$	100	19781006	M				2	92	
	26	MAY 88	1242 T	-0.0050 \$	100	19781006	M				2	94	
	27	MAY 88	0737 T	-0.0050 \$	100	19781006	M				2	96	
	27	MAY 88	0928 T	-0.0050 \$	100	19781006	M				2	97	
	27	MAY 88	1055 T	-0.0050 \$	100	19781006	M				2	98	

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-- Instrument Information and Collimation Data --													
Inst	Eq Code	Serial No	Model	Stadia Const	Stadia Date	Micro Meter	Mag Const	Mag Sigma	Mag Cal Date	Rod Pair	40*		
7	233	456581	NI-002	ZEISS/JENA									
	27 MAY 88	1319 T	-0.0050 \$	100	19781006	M				2	100		
	31 MAY 88	0754 T	-0.0020 \$	100	19781006	M				2	102		
	31 MAY 88	0847 T	-0.0020 \$	100	19781006	M				2	103		
	02 JUN 88	0756 T	-0.0020 \$	100	19781006	M				2	106		
	02 JUN 88	1019 T	-0.0020 \$	100	19781006	M				2	107		
	02 JUN 88	1317 T	-0.0020 \$	100	19781006	M				2	109		
	03 JUN 88	0746 T	-0.0020 \$	100	19781006	M				2	111		
	03 JUN 88	0840 T	-0.0020 \$	100	19781006	M				2	113		
	03 JUN 88	1022 T	-0.0020 \$	100	19781006	M				2	114		
	03 JUN 88	1253 T	-0.0020 \$	100	19781006	M				2	116		
	03 JUN 88	1405 T	-0.0020 \$	100	19781006	M				2	117		
	08 JUN 88	0725 T	0.0010 \$	100	19781006	M				3	119		
	08 JUN 88	0951 T	0.0010 \$	100	19781006	M				3	120		
	08 JUN 88	1251 T	0.0010 \$	100	19781006	M				3	121		
	09 JUN 88	0857 T	0.0010 \$	100	19781006	M				2	122		
	09 JUN 88	1108 T	0.0010 \$	100	19781006	M				2	123		
	09 JUN 88	1352 T	0.0010 \$	100	19781006	M				2	124		
	13 JUN 88	0733 T	-0.0090 \$	100	19781006	M				2	131		
	13 JUN 88	1100 T	-0.0090 \$	100	19781006	M				2	132		
	13 JUN 88	1302 T	-0.0090 \$	100	19781006	M				3	133		
	14 JUN 88	0725 T	-0.0090 \$	100	19781006	M				3	134		
	14 JUN 88	0952 T	-0.0090 \$	100	19781006	M				3	135		
	15 JUN 88	0830 T	-0.0090 \$	100	19781006	M				2	136		
8	216	174148	NI-004	ZEISS/JENA									
	19 MAY 88	0916 T	-0.0280 \$	100	19000000	M				1	57		
9	233	456599	NI-002	ZEISS/JENA									
	23 MAY 88	0925 T	0.0020 \$	100	19781006	M				1	72		
	23 MAY 88	1219 T	0.0020 \$	100	19781006	M				1	74		
	24 MAY 88	0711 T	0.0020 \$	100	19781006	M				1	77		
	24 MAY 88	1114 T	0.0020 \$	100	19781006	M				1	80		
	25 MAY 88	0701 T	0.0020 \$	100	19781006	M				1	83		

* - collimation correction factor (rod unit per rod unit of stadia interval)
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-- Instrument Information and Collimation Data --														
Inst	Eq Code	Serial No	Model	Stadia Const	Stadia Date	Micro Meter	Mag Const	Mag Sigma	Mag Date	Cal	Rod Pair	40*		
9	233	456599	NI-002	ZEISS/JENA										
	25	MAY 88	1131 T	0.0020	\$	100	19781006	M			4	86		
	25	MAY 88	1405 T	0.0020	\$	100	19781006	M			4	88		
	26	MAY 88	0701 T	0.0020	\$	100	19781006	M			4	89		
	26	MAY 88	1105 T	0.0020	\$	100	19781006	M			1	93		
	27	MAY 88	0650 T	0.0020	\$	100	19781006	M			1	95		
	27	MAY 88	1224 T	0.0020	\$	100	19781006	M			1	99		
	31	MAY 88	0724 T	0.0020	\$	100	19781006	M			1	101		
	01	JUN 88	1228 T	-0.0030	\$	100	19781006	M			1	104	NOT USED	
	02	JUN 88	0722 T	-0.0030	\$	100	19781006	M			1	105		
	02	JUN 88	1154 T	-0.0030	\$	100	19781006	M			1	108		
	03	JUN 88	0733 T	-0.0030	\$	100	19781006	M			1	110		
	03	JUN 88	0824 T	-0.0030	\$	100	19781006	M			1	112		
	03	JUN 88	1149 T	-0.0030	\$	100	19781006	M			1	115		
	06	JUN 88	1244 T	-0.0030	\$	100	19781006	M			1	118		
	10	JUN 88	0739 T	-0.0030	\$	100	19781006	M			1	126		
	10	JUN 88	0900 T	-0.0090	\$	100	19781006	M			1	127		
	10	JUN 88	1240 T	-0.0090	\$	100	19781006	M			1	130		
10	216	191615	NI-004	ZEISS/JENA										
	10	JUN 88	0725 T	0.0310	\$	100	19000000	M			3	125		
	10	JUN 88	1037 T	0.0310	\$	100	19000000	M			2	128		
	10	JUN 88	1143 T	0.0310	\$	100	19000000	M			2	129		

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Processing options used

" " Refraction code
"1" Position code
"B" Rejection code
" " Magnetic code

Percent of Runnings Corrected

100.0 Level Collimation
100.0 Rod Calibration
 0.0 average excess
 100.0 detailed calibration (from 43* records)
100.0 Temperature
 0.0 predicted temperatures
 100.0 observed temperatures
100.0 Astronomic
 0.0 Magnetic
100.0 Refraction
 0.4 computed by REDUC4
 0.0 taken from 43* records (predicted temperatures)
 99.6 taken from 43* records (observed temperatures)

Predicted temperatures are computed from the solar radiation model

Normal orthometric heights have been computed based on normal gravity
(USC & GS Special Publication 240)

Assumed thermal expansion values were used for some or all of the rods

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1.27 mm	Standard deviation of a 1 km single run section
0.90 mm	Standard deviation of a 1 km double run section
22	Sections used to compute standard deviations
228.621 km	Main line length
1.075 km	Spur line length
248.617 km	Unrejected leveling
210	Benchmarks
0	Temporary Benchmarks
209	Sections
0	River/Valley Crossings
231	Runnings
0.0	Percent of runnings rejected
0.0	Percent reruns