

Autoguiding Log For 17 February 2006

CCDSOFT Tracking Report

Start Date Time = 2006-02-17T07:03:33.656  
 Camera = Imager's built-in autoguider  
 X Axis = Enabled  
 Y Axis = Enabled  
 ExposureTime = 3.00  
 Aggressiveness Factor = 7  
 Calibration Time X = 10.00  
 Calibration Time Y = 10.00  
 Calibration declination = 13.17  
 Declination now = 12.74  
 Minimum Move = 0.05  
 Maximum Move = 0.75  
 Backlash X = 0.00  
 Backlash Y = 0.05  
 Delay After Move = 0.00  
 Autoguide using Relays

Calibration Determined Velocity Vectors (pixels/sec)

XPlus Speed= 17.04160 (XPlus X= -11.29674, XPlus Y= 12.75930) Angle= 131.52000  
 XMinus Speed= 17.19250 (XMinus X= 11.43776, XMinus Y= -12.83588) Angle= 311.70000  
 YPlus Speed= 3.51580 (YPlus X= 2.64199, YPlus Y= 2.31965) Angle= 41.28000  
 YMinus Speed= 3.37040 (YMinus X= -2.61370, YMinus Y= -2.12794) Angle= 219.15000

Elapsed Secs	RefCentroidX	RefCentroidY	CurCentroidX	CurCentroidY	GuideErrX	GuideErrY	TotGuideErr	XPlusRelay	XMinusRelay	YPlusRelay	YMinusRelay	PECIndex RA	PECIndex Dec
0.0000	16.0000	16.0000	15.9469	16.3064	-0.0531	-0.3064	0.3110	0	0	0	6	0	0
12.7190	16.0000	16.0000	17.0170	15.7880	1.0170	-0.2120	1.0389	7	0	0	27	0	0
16.8130	16.0000	16.0000	16.7360	15.6811	0.7360	-0.3189	0.8021	6	0	0	15	0	0
20.6720	16.0000	16.0000	16.6921	15.5632	0.6921	-0.4368	0.8184	6	0	0	10	0	0
24.5940	16.0000	16.0000	16.5825	15.9222	0.5825	-0.0778	0.5877	0	0	0	16	0	0
28.7350	16.0000	16.0000	16.9408	15.9114	0.9408	-0.0886	0.9450	5	0	0	28	0	0

\*\*\*\*\*  
 \* Autoguider Report for m63\_lum.00000919.M63.FIT \*  
 \*\*\*\*\*

CCDSOFT Tracking Report

Start Date Time = 2006-02-17T07:04:08.312  
 Camera = Imager's built-in autoguider  
 X Axis = Enabled  
 Y Axis = Enabled  
 ExposureTime = 3.00  
 Aggressiveness Factor = 7  
 Calibration Time X = 10.00  
 Calibration Time Y = 10.00  
 Calibration declination = 13.17  
 Declination now = 12.74  
 Minimum Move = 0.05  
 Maximum Move = 0.75  
 Backlash X = 0.00  
 Backlash Y = 0.05  
 Delay After Move = 0.00  
 Autoguide using Relays

Calibration Determined Velocity Vectors (pixels/sec)

XPlus Speed= 17.04160 (XPlus X= -11.29674, XPlus Y= 12.75930) Angle= 131.52000  
 XMinus Speed= 17.19250 (XMinus X= 11.43776, XMinus Y= -12.83588) Angle= 311.70000  
 YPlus Speed= 3.51580 (YPlus X= 2.64199, YPlus Y= 2.31965) Angle= 41.28000  
 YMinus Speed= 3.37040 (YMinus X= -2.61370, YMinus Y= -2.12794) Angle= 219.15000

Elapsed Secs	RefCentroidX	RefCentroidY	CurCentroidX	CurCentroidY	GuideErrX	GuideErrY	TotGuideErr	XPlusRelay	XMinusRelay	YPlusRelay	YMinusRelay	PECIndex RA	PECIndex Dec
0.0000	16.0000	16.0000	16.8769	15.8715	0.8769	-0.1285	0.8863	5	0	0	25	0	0
12.7810	16.0000	16.0000	17.1730	15.8189	1.1730	-0.1811	1.1869	7	0	0	32	0	0
16.8120	16.0000	16.0000	16.4769	15.8520	0.4769	-0.1480	0.4993	0	0	0	11	0	0
22.5460	16.0000	16.0000	16.5448	15.2149	0.5448	-0.7851	0.9556	7	0	0	0	0	0
26.5000	16.0000	16.0000	16.1376	15.9667	0.1376	-0.0333	0.1416	0	0	0	0	0	0
30.4530	16.0000	16.0000	16.5616	15.6028	0.5616	-0.3972	0.6878	5	0	0	7	0	0
34.2500	16.0000	16.0000	16.4984	15.8404	0.4984	-0.1596	0.5234	0	0	0	11	0	0
38.0150	16.0000	16.0000	16.2094	15.6991	0.2094	-0.3009	0.3666	0	0	0	0	0	0
41.7030	16.0000	16.0000	16.3992	15.4851	0.3992	-0.5149	0.6515	5	0	0	0	0	0
45.7030	16.0000	16.0000	15.8595	16.0761	-0.1405	0.0761	0.1598	0	0	0	0	0	0
49.5000	16.0000	16.0000	16.1677	15.7499	0.1677	-0.2501	0.3011	0	0	0	0	0	0
53.2340	16.0000	16.0000	16.1118	16.0068	0.1118	0.0068	0.1120	0	0	0	0	0	0
56.8750	16.0000	16.0000	16.3167	15.8929	0.3167	-0.1071	0.3343	0	0	0	7	0	0
60.5460	16.0000	16.0000	16.4895	15.5497	0.4895	-0.4503	0.6651	5	0	0	0	0	0
64.2500	16.0000	16.0000	16.2903	15.9427	0.2903	-0.0573	0.2959	0	0	0	7	0	0
67.8750	16.0000	16.0000	16.3242	15.6935	0.3242	-0.3065	0.4462	0	0	0	0	0	0

71.7030	16.0000	16.0000	16.7292	15.3297	0.7292	-0.6703	0.9905	8	0	0	5	0	0
75.5000	16.0000	16.0000	15.9157	15.7473	-0.0843	-0.2527	0.2664	0	0	9	0	0	0
79.2650	16.0000	16.0000	16.4338	15.2725	0.4338	-0.7275	0.8470	7	0	6	0	0	0
83.1710	16.0000	16.0000	15.8879	16.1765	-0.1121	0.1765	0.2090	0	0	0	0	0	0
86.9680	16.0000	16.0000	16.3688	15.5351	0.3688	-0.4649	0.5935	0	0	0	0	0	0
90.6560	16.0000	16.0000	16.2015	15.8248	0.2015	-0.1752	0.2671	0	0	0	0	0	0
94.2500	16.0000	16.0000	16.0810	15.9270	0.0810	-0.0730	0.1091	0	0	0	0	0	0
98.2500	16.0000	16.0000	16.3782	15.7577	0.3782	-0.2423	0.4492	0	0	0	5	0	0
102.2180	16.0000	16.0000	16.3705	15.8577	0.3705	-0.1423	0.3969	0	0	0	8	0	0
106.2340	16.0000	16.0000	16.5603	15.8763	0.5603	-0.1237	0.5738	0	0	0	14	0	0
110.0310	16.0000	16.0000	16.3469	15.4685	0.3469	-0.5315	0.6347	0	0	0	0	0	0
113.8120	16.0000	16.0000	16.3043	15.6326	0.3043	-0.3674	0.4770	0	0	0	0	0	0
117.3750	16.0000	16.0000	16.6856	15.2129	0.6856	-0.7871	1.0438	8	0	0	0	0	0
121.2340	16.0000	16.0000	16.4041	15.8533	0.4041	-0.1467	0.4299	0	0	0	9	0	0
125.1870	16.0000	16.0000	16.2877	15.1451	0.2877	-0.8549	0.9020	7	0	14	0	0	0
128.8430	16.0000	16.0000	16.3402	15.4419	0.3402	-0.5581	0.6536	5	0	0	0	0	0
132.6710	16.0000	16.0000	16.2374	15.9787	0.2374	-0.0213	0.2383	0	0	0	7	0	0
136.5930	16.0000	16.0000	16.0048	15.7300	0.0048	-0.2700	0.2701	0	0	7	0	0	0
140.5000	16.0000	16.0000	16.1144	16.1365	0.1144	0.1365	0.1781	0	0	0	7	0	0
144.2960	16.0000	16.0000	15.7663	15.9798	-0.2337	-0.0202	0.2346	0	0	7	0	0	0
148.1400	16.0000	16.0000	15.7591	16.1218	-0.2409	0.1218	0.2700	0	0	0	0	0	0
151.8280	16.0000	16.0000	16.1437	15.9348	0.1437	-0.0652	0.1578	0	0	0	0	0	0
155.6250	16.0000	16.0000	15.9857	15.9632	-0.0143	-0.0368	0.0395	0	0	0	0	0	0
159.5310	16.0000	16.0000	16.5741	15.9297	0.5741	-0.0703	0.5784	0	0	0	16	0	0
163.1560	16.0000	16.0000	16.2863	15.7627	0.2863	-0.2373	0.3719	0	0	0	0	0	0
166.9530	16.0000	16.0000	16.5570	15.4016	0.5570	-0.5984	0.8175	7	0	0	0	0	0
170.6090	16.0000	16.0000	16.2464	15.8286	0.2464	-0.1714	0.3001	0	0	0	0	0	0
174.5150	16.0000	16.0000	16.3321	15.2348	0.3321	-0.7652	0.8341	6	0	10	0	0	0
178.2960	16.0000	16.0000	16.3223	16.0630	0.3223	0.0630	0.3284	0	0	0	11	0	0
181.9060	16.0000	16.0000	16.2717	15.7209	0.2717	-0.2791	0.3895	0	0	0	0	0	0
185.9210	16.0000	16.0000	16.3513	15.8835	0.3513	-0.1165	0.3701	0	0	0	8	0	0
189.7810	16.0000	16.0000	16.0958	16.0167	0.0958	0.0167	0.0973	0	0	0	0	0	0
193.7650	16.0000	16.0000	16.0285	15.7108	0.0285	-0.2892	0.2906	0	0	7	0	0	0
197.4530	16.0000	16.0000	15.7872	16.1351	-0.2128	0.1351	0.2521	0	0	0	0	0	0
201.0930	16.0000	16.0000	16.0571	16.0619	0.0619	0.0571	0.0842	0	0	0	0	0	0
205.0000	16.0000	16.0000	16.2028	15.9669	0.2028	-0.0331	0.2055	0	0	0	5	0	0
208.7030	16.0000	16.0000	15.9394	16.0349	-0.0606	0.0349	0.0700	0	0	0	0	0	0
212.6560	16.0000	16.0000	15.9827	15.6165	-0.0173	-0.3835	0.3839	0	0	10	0	0	0
216.5780	16.0000	16.0000	16.1168	16.2931	0.1168	0.2931	0.3155	0	0	0	11	0	0
220.6400	16.0000	16.0000	15.8465	16.3989	-0.1535	0.3989	0.4274	0	0	0	5	0	0
224.2650	16.0000	16.0000	16.2301	15.8910	0.2301	-0.1090	0.2547	0	0	0	0	0	0
227.9370	16.0000	16.0000	15.9011	16.2541	-0.0989	0.2541	0.2727	0	0	0	0	0	0
231.6870	16.0000	16.0000	15.9842	16.2731	-0.0158	0.2731	0.2736	0	0	0	7	0	0
235.5150	16.0000	16.0000	15.7703	16.2546	-0.2297	0.2546	0.3429	0	0	0	0	0	0
239.0780	16.0000	16.0000	15.8025	16.2238	-0.1975	0.2238	0.2985	0	0	0	0	0	0
242.9060	16.0000	16.0000	15.8523	16.1158	-0.1477	0.1158	0.1877	0	0	0	0	0	0
246.4680	16.0000	16.0000	15.8688	16.2666	-0.1312	0.2666	0.2971	0	0	0	0	0	0
250.0460	16.0000	16.0000	15.7035	16.2089	-0.2965	0.2089	0.3627	0	0	0	0	0	0
253.6870	16.0000	16.0000	15.7741	16.3946	-0.2259	0.3946	0.4547	0	0	0	0	0	0
257.5780	16.0000	16.0000	15.6944	16.5503	-0.3056	0.5503	0.6295	0	0	0	0	0	0
261.1250	16.0000	16.0000	15.7938	16.3623	-0.2062	0.3623	0.4169	0	0	0	0	0	0
264.9840	16.0000	16.0000	15.8811	16.6186	-0.1189	0.6186	0.6299	0	0	0	12	0	0
269.0310	16.0000	16.0000	15.5973	16.1986	-0.4027	0.1986	0.4490	0	0	7	0	0	0
273.1710	16.0000	16.0000	15.3563	16.9417	-0.6437	0.9417	1.1407	0	9	0	0	0	0
277.2180	16.0000	16.0000	15.7447	16.5154	-0.2553	0.5154	0.5751	0	0	0	5	0	0
281.1250	16.0000	16.0000	15.4909	16.3405	-0.5091	0.3405	0.6125	0	0	6	0	0	0
285.0000	16.0000	16.0000	15.6294	16.8642	-0.3706	0.8642	0.9403	0	7	0	10	0	0
288.6400	16.0000	16.0000	15.6912	16.2573	-0.3088	0.2573	0.4020	0	0	0	0	0	0
292.5310	16.0000	16.0000	15.5461	16.3043	-0.4539	0.3043	0.5465	0	0	5	0	0	0
296.2810	16.0000	16.0000	15.6591	16.6279	-0.3409	0.6279	0.7145	0	5	0	5	0	0
299.9210	16.0000	16.0000	15.8529	16.2133	-0.1471	0.2133	0.2591	0	0	0	0	0	0
303.6090	16.0000	16.0000	15.7167	16.2781	-0.2833	0.2781	0.3970	0	0	0	0	0	0
307.4680	16.0000	16.0000	15.7306	16.3623	-0.2694	0.3623	0.4515	0	0	0	0	0	0
311.0930	16.0000	16.0000	15.8716	16.1515	-0.1284	0.1515	0.1986	0	0	0	0	0	0
314.8900	16.0000	16.0000	15.4157	16.9249	-0.5843	0.9249	1.0940	0	9	0	5	0	0
318.6090	16.0000	16.0000	16.0997	15.8498	0.0997	-0.1502	0.1802	0	0	0	0	0	0
322.2030	16.0000	16.0000	15.8699	16.3026	-0.1301	0.3026	0.3294	0	0	0	0	0	0
326.1560	16.0000	16.0000	15.8720	16.3054	-0.1280	0.3054	0.3311	0	0	0	0	0	0
330.0150	16.0000	16.0000	15.7639	16.7002	-0.2361	0.7002	0.7389	0	5	0	10	0	0
333.9210	16.0000	16.0000	15.3318	16.1074	-0.6682	0.1074	0.6768	0	0	17	0	0	0
338.2030	16.0000	16.0000	16.4366	16.4290	0.4366	0.4290	0.6121	0	0	0	25	0	0
342.2960	16.0000	16.0000	15.6555	15.5796	-0.3445	-0.4204	0.5435	0	0	21	0	0	0
345.9370	16.0000	16.0000	16.1487	15.9566	0.1487	-0.0434	0.1549	0	0	0	0	0	0
349.5930	16.0000	16.0000	15.9684	16.0843	-0.0316	0.0843	0.0900	0	0	0	0	0	0
353.3280	16.0000	16.0000	16.1186	15.9698	0.1186	-0.0302	0.1224	0	0	0	0	0	0
357.1710	16.0000	16.0000	16.6231	15.7784	0.6231	-0.2216	0.6613	0	0	0	14	0	0
360.7500	16.0000	16.0000	16.1584	15.7325	0.1584	-0.2675	0.3108	0	0	0	0	0	0
364.5310	16.0000	16.0000	16.4095	15.3655	0.4095	-0.6345	0.7551	6	0	0	0	0	0
368.1400	16.0000	16.0000	16.3292	15.7983	0.3292	-0.2017	0.3861	0	0	0	5	0	0

	372.0310	16.0000	16.0000	16.2269	15.5233	0.2269	-0.4767	0.5280	0	0	5	0	0	0
	375.8120	16.0000	16.0000	16.3883	15.3876	0.3883	-0.6124	0.7252	5	0	0	0	0	0
	379.5310	16.0000	16.0000	16.4235	15.6383	0.4235	-0.3617	0.5569	0	0	0	0	0	0
	383.4060	16.0000	16.0000	16.6142	15.9373	0.6142	-0.0627	0.6174	0	0	0	18	0	0
	387.4060	16.0000	16.0000	16.5092	15.0635	0.5092	-0.9365	1.0660	8	0	9	0	0	0
	391.0930	16.0000	16.0000	16.2028	15.4582	0.2028	-0.5418	0.5785	0	0	8	0	0	0
	395.2500	16.0000	16.0000	16.8203	15.4854	0.8203	-0.5146	0.9684	7	0	0	12	0	0
	399.0000	16.0000	16.0000	16.4507	15.2982	0.4507	-0.7018	0.8341	7	0	0	0	0	0
	402.7650	16.0000	16.0000	16.3547	15.5724	0.3547	-0.4276	0.5556	0	0	0	0	0	0
	406.8430	16.0000	16.0000	16.3725	15.2751	0.3725	-0.7249	0.8150	6	0	7	0	0	0
	410.8430	16.0000	16.0000	16.4876	15.7785	0.4876	-0.2215	0.5356	0	0	0	9	0	0
	414.9370	16.0000	16.0000	16.5650	15.0738	0.5650	-0.9262	1.0849	9	0	7	0	0	0
	418.8900	16.0000	16.0000	16.7814	15.5579	0.7814	-0.4421	0.8978	7	0	0	13	0	0
	422.7340	16.0000	16.0000	16.3935	15.1966	0.3935	-0.8034	0.8946	7	0	0	0	0	0
	426.4370	16.0000	16.0000	16.2365	15.7923	0.2365	-0.2077	0.3147	0	0	0	0	0	0
	430.4060	16.0000	16.0000	16.3689	15.7659	0.3689	-0.2341	0.4369	0	0	0	5	0	0
	434.3280	16.0000	16.0000	16.6013	15.2884	0.6013	-0.7116	0.9316	7	0	0	0	0	0
	438.1560	16.0000	16.0000	16.4793	15.7117	0.4793	-0.2883	0.5593	0	0	0	7	0	0
	442.2810	16.0000	16.0000	16.1208	15.3443	0.1208	-0.6557	0.6668	0	0	13	0	0	0
	446.2030	16.0000	16.0000	16.7555	15.5380	0.7555	-0.4620	0.8855	7	0	0	11	0	0
	450.0310	16.0000	16.0000	16.4514	15.5191	0.4514	-0.4809	0.6596	5	0	0	0	0	0
	453.9680	16.0000	16.0000	16.8915	15.1741	0.8915	-0.8259	1.2153	9	0	0	7	0	0
	457.9370	16.0000	16.0000	16.5151	15.7296	0.5151	-0.2704	0.5817	0	0	0	9	0	0
	461.7650	16.0000	16.0000	16.5492	14.9893	0.5492	-1.0107	1.1503	9	0	0	9	0	0
	465.7650	16.0000	16.0000	16.0353	15.6239	0.0353	-0.3761	0.3778	0	0	9	0	0	0

\*\*\*\*\*  
\* Autoguider Report for m63\_lum.00000920.M63.FIT \*  
\*\*\*\*\*

CCDSofT Tracking Report

Start Date Time = 2006-02-17T07:12:07.000

Camera = Imager's built-in autoguider

X Axis = Enabled

Y Axis = Enabled

ExposureTime = 3.00

Aggressiveness Factor = 7

Calibration Time X = 10.00

Calibration Time Y = 10.00

Calibration declination = 13.17

Declination now = 12.74

Minimum Move = 0.05

Maximum Move = 0.75

Backlash X = 0.00

Backlash Y = 0.05

Delay After Move = 0.00

Autoguide using Relays

Calibration Determined Velocity Vectors (pixels/sec)

XPlus Speed= 17.04160 (XPlus X= -11.29674, XPlus Y= 12.75930) Angle= 131.52000  
XMinus Speed= 17.19250 (XMinus X= 11.43776, XMinus Y= -12.83588) Angle= 311.70000  
YPlus Speed= 3.51580 (YPlus X= 2.64199, YPlus Y= 2.31965) Angle= 41.28000  
YMinus Speed= 3.37040 (YMinus X= -2.61370, YMinus Y= -2.12794) Angle= 219.15000

Elapsed Secs	RefCentroidX	RefCentroidY	CurCentroidX	CurCentroidY	GuideErrX	GuideErrY	TotGuideErr	XPlusRelay	XMinusRelay	YPlusRelay	YMinusRelay	PECIndex RA	PECIndex Dec
	0.0000	16.0000	16.0000	16.4244	15.8731	0.4244	-0.1269	0.4429	0	0	10	0	0
	12.4840	16.0000	16.0000	15.4193	15.5561	-0.5807	-0.4439	0.7309	0	0	28	0	0
	16.2190	16.0000	16.0000	16.6025	15.5656	0.6025	-0.4344	0.7428	5	0	0	7	0
	19.7190	16.0000	16.0000	16.1051	16.0042	0.1051	0.0042	0.1052	0	0	0	0	0
	25.2810	16.0000	16.0000	16.2113	16.0271	0.2113	0.0271	0.2130	0	0	0	7	0
	29.0160	16.0000	16.0000	16.3018	15.6149	0.3018	-0.3851	0.4893	0	0	0	0	0
	32.7500	16.0000	16.0000	16.3469	15.6088	0.3469	-0.3912	0.5228	0	0	0	0	0
	36.7660	16.0000	16.0000	16.6420	15.4000	0.6420	-0.6000	0.8787	7	0	0	0	0
	40.8910	16.0000	16.0000	16.6015	15.9814	0.6015	-0.0186	0.6018	0	0	0	18	0
	44.8130	16.0000	16.0000	15.8087	15.8541	-0.1913	-0.1459	0.2406	0	0	9	0	0
	48.4380	16.0000	16.0000	16.2325	15.8226	0.2325	-0.1774	0.2924	0	0	0	0	0
	52.3750	16.0000	16.0000	15.8825	16.1841	-0.1175	0.1841	0.2184	0	0	0	0	0
	56.1880	16.0000	16.0000	16.0041	15.8432	0.0041	-0.1568	0.1568	0	0	0	0	0
	59.9380	16.0000	16.0000	16.1971	16.0003	0.1971	0.0003	0.1971	0	0	0	6	0
	63.9060	16.0000	16.0000	16.1793	15.7587	0.1793	-0.2413	0.3006	0	0	0	0	0
	67.6720	16.0000	16.0000	16.4075	15.7383	0.4075	-0.2617	0.4843	0	0	0	6	0
	71.4220	16.0000	16.0000	16.6047	15.3073	0.6047	-0.6927	0.9195	7	0	0	0	0
	75.3590	16.0000	16.0000	16.4515	15.8752	0.4515	-0.1248	0.4684	0	0	0	11	0
	79.3280	16.0000	16.0000	16.4304	15.2056	0.4304	-0.7944	0.9035	7	0	7	0	0
	83.2500	16.0000	16.0000	16.1846	16.0243	0.1846	0.0243	0.1846	0	0	0	6	0
	87.1090	16.0000	16.0000	16.2379	15.6906	0.2379	-0.3094	0.3903	0	0	0	0	0
	90.9530	16.0000	16.0000	16.1513	15.9838	0.1513	-0.0162	0.1522	0	0	0	0	0
	94.8440	16.0000	16.0000	16.2966	16.0247	0.2966	0.0247	0.2976	0	0	0	10	0
	98.5470	16.0000	16.0000	15.8491	15.9298	-0.1509	-0.0702	0.1664	0	0	6	0	0

102.1720	16.0000	16.0000	15.6411	16.2137	-0.3589	0.2137	0.4177	0	0	0	0	0	0
105.8750	16.0000	16.0000	16.0894	16.0606	0.0894	0.0606	0.1080	0	0	0	0	0	0
109.7970	16.0000	16.0000	15.9360	16.0640	-0.0640	-0.3942	0.3993	12	0	0	0	0	0
113.3590	16.0000	16.0000	15.9242	16.2377	-0.0758	0.2377	0.2495	0	0	0	0	0	0
117.3910	16.0000	16.0000	16.5442	16.0065	0.5442	0.0065	0.5442	0	0	17	0	0	0
121.4220	16.0000	16.0000	15.7767	15.8926	-0.2233	-0.1074	0.2478	0	9	0	0	0	0
125.3750	16.0000	16.0000	16.4433	15.9086	0.4433	-0.0914	0.4526	0	0	11	0	0	0
129.0940	16.0000	16.0000	16.0550	16.0249	0.0550	0.0249	0.0604	0	0	0	0	0	0
132.8280	16.0000	16.0000	15.8047	16.0611	-0.1953	0.0611	0.2046	0	0	0	0	0	0
136.6880	16.0000	16.0000	15.7954	16.4784	-0.2046	0.4784	0.5203	0	0	6	0	0	0
140.2970	16.0000	16.0000	15.4221	16.4936	-0.5779	0.4936	0.7600	0	6	0	0	0	0
144.0630	16.0000	16.0000	15.8726	16.0846	-0.1274	0.0846	0.1529	0	0	0	0	0	0
147.7970	16.0000	16.0000	15.7707	16.1590	-0.2293	0.1590	0.2790	0	0	0	0	0	0
151.4840	16.0000	16.0000	15.8196	16.4185	-0.1804	0.4185	0.4557	0	0	0	0	0	0
155.3910	16.0000	16.0000	16.2471	16.1314	0.2471	0.1314	0.2798	0	0	11	0	0	0
159.4060	16.0000	16.0000	15.7915	15.7710	-0.2085	-0.2290	0.3096	12	0	0	0	0	0
163.3130	16.0000	16.0000	16.3176	16.2012	0.3176	0.2012	0.3759	0	0	15	0	0	0
167.0940	16.0000	16.0000	16.0591	15.7717	0.0591	-0.2283	0.2358	0	0	0	0	0	0
170.9220	16.0000	16.0000	16.2674	15.4777	0.2674	-0.5223	0.5868	0	5	0	0	0	0
174.8130	16.0000	16.0000	16.6556	15.2998	0.6556	-0.7002	0.9592	7	0	0	0	0	0
178.6880	16.0000	16.0000	15.6345	15.9199	-0.3655	-0.0801	0.3742	0	13	0	0	0	0
182.4840	16.0000	16.0000	16.4258	16.2095	0.4258	0.2095	0.4746	0	0	18	0	0	0
186.2500	16.0000	16.0000	16.2921	16.0461	0.2921	0.0461	0.2957	0	0	10	0	0	0
190.2660	16.0000	16.0000	15.7874	15.9480	-0.2126	-0.0520	0.2189	0	7	0	0	0	0
194.1880	16.0000	16.0000	16.1002	15.3540	0.1002	-0.6460	0.6537	0	14	0	0	0	0
198.1560	16.0000	16.0000	16.3710	16.0777	0.3710	0.0777	0.3791	0	0	14	0	0	0
201.9220	16.0000	16.0000	16.1042	15.6482	0.1042	-0.3518	0.3670	0	6	0	0	0	0
205.6250	16.0000	16.0000	15.8146	16.0303	-0.1854	0.0303	0.1879	0	0	0	0	0	0
209.5470	16.0000	16.0000	16.2789	15.9474	0.2789	-0.0526	0.2838	0	0	7	0	0	0
213.5470	16.0000	16.0000	16.1992	15.4092	0.1992	-0.5908	0.6235	0	9	0	0	0	0
217.3910	16.0000	16.0000	16.3043	15.9922	0.3043	-0.0078	0.3044	0	0	9	0	0	0
221.3590	16.0000	16.0000	16.8769	15.3012	0.8769	-0.6988	1.1213	9	0	9	0	0	0
225.5470	16.0000	16.0000	15.5227	15.6641	-0.4773	-0.3359	0.5836	0	23	0	0	0	0
229.4840	16.0000	16.0000	16.5116	16.3003	0.5116	0.3003	0.5932	0	0	24	0	0	0
233.3280	16.0000	16.0000	15.7275	15.7949	-0.2725	-0.2051	0.3410	0	13	0	0	0	0
237.2810	16.0000	16.0000	16.2592	16.0281	0.2592	0.0281	0.2607	0	0	9	0	0	0
240.9380	16.0000	16.0000	16.3253	15.7413	0.3253	-0.2587	0.4156	0	0	0	0	0	0
245.0310	16.0000	16.0000	16.3780	16.0980	0.3780	0.0980	0.3905	0	0	14	0	0	0
249.0630	16.0000	16.0000	16.3401	15.1842	0.3401	-0.8158	0.8839	7	11	0	0	0	0
252.7500	16.0000	16.0000	16.3629	15.4062	0.3629	-0.5938	0.6959	5	0	0	0	0	0
256.4690	16.0000	16.0000	15.8555	15.7149	-0.1445	-0.2851	0.3196	0	11	0	0	0	0
260.5470	16.0000	16.0000	16.4454	15.9972	0.4454	-0.0028	0.4454	0	0	14	0	0	0
264.3280	16.0000	16.0000	16.2374	15.7554	0.2374	-0.2446	0.3409	0	0	0	0	0	0
268.1720	16.0000	16.0000	16.1285	15.4249	0.1285	-0.5751	0.5893	0	11	0	0	0	0
272.0000	16.0000	16.0000	16.3868	15.8464	0.3868	-0.1536	0.4162	0	0	8	0	0	0
275.9380	16.0000	16.0000	16.4635	15.8661	0.4635	-0.1339	0.4825	0	0	11	0	0	0
280.0000	16.0000	16.0000	15.9301	15.5797	-0.0699	-0.4203	0.4261	0	13	0	0	0	0
283.9690	16.0000	16.0000	16.3460	16.1121	0.3460	0.1121	0.3637	0	0	14	0	0	0
287.9690	16.0000	16.0000	15.8128	15.6698	-0.1872	-0.3302	0.3796	0	14	0	0	0	0
291.8750	16.0000	16.0000	16.3046	16.3307	0.3046	0.3307	0.4496	0	0	18	0	0	0
295.7340	16.0000	16.0000	15.7772	15.9087	-0.2228	-0.0913	0.2408	0	9	0	0	0	0
299.7030	16.0000	16.0000	16.5830	15.9256	0.5830	-0.0744	0.5877	0	0	16	0	0	0
303.4220	16.0000	16.0000	16.0164	15.8998	0.0164	-0.1002	0.1015	0	0	0	0	0	0
307.1720	16.0000	16.0000	15.6822	15.9834	-0.3178	-0.0166	0.3182	0	9	0	0	0	0
310.9690	16.0000	16.0000	16.0007	16.3413	0.0007	0.3413	0.3413	0	0	9	0	0	0
314.5940	16.0000	16.0000	15.7953	16.3503	-0.2047	0.3503	0.4057	0	0	0	0	0	0
318.4380	16.0000	16.0000	16.1782	16.0546	0.1782	0.0546	0.1863	0	0	7	0	0	0
322.1720	16.0000	16.0000	15.4934	16.3635	-0.5066	0.3635	0.6235	0	5	0	0	0	0
326.0780	16.0000	16.0000	15.9301	16.4173	-0.0699	0.4173	0.4231	0	0	8	0	0	0
329.9690	16.0000	16.0000	15.5601	16.6625	-0.4399	0.6625	0.7952	0	6	0	0	0	0
333.7030	16.0000	16.0000	15.5084	16.2331	-0.4916	0.2331	0.5441	0	8	0	0	0	0
337.4840	16.0000	16.0000	16.1005	16.2105	0.1005	0.2105	0.2333	0	0	9	0	0	0
341.4380	16.0000	16.0000	15.6883	16.2045	-0.3117	0.2045	0.3728	0	0	0	0	0	0
345.2190	16.0000	16.0000	15.6617	16.0236	-0.3383	0.0236	0.3391	0	9	0	0	0	0
349.2190	16.0000	16.0000	16.2479	16.3277	0.2479	0.3277	0.4109	0	0	16	0	0	0
353.0470	16.0000	16.0000	15.9678	16.0846	-0.0322	0.0846	0.0906	0	0	0	0	0	0
356.6880	16.0000	16.0000	16.1577	15.7722	0.1577	-0.2278	0.2771	0	0	0	0	0	0
360.2810	16.0000	16.0000	15.8578	16.1571	-0.1422	0.1571	0.2119	0	0	0	0	0	0
364.1250	16.0000	16.0000	16.2323	15.9119	0.2323	-0.0881	0.2484	0	0	0	0	0	0
367.9220	16.0000	16.0000	15.9721	16.1763	-0.0279	0.1763	0.1785	0	0	0	0	0	0
371.6720	16.0000	16.0000	16.1820	15.9114	0.1820	-0.0886	0.2024	0	0	0	0	0	0
375.3590	16.0000	16.0000	16.0669	16.0513	0.0669	0.0513	0.0843	0	0	0	0	0	0
379.1250	16.0000	16.0000	15.9463	16.3316	-0.0537	0.3316	0.3360	0	0	7	0	0	0
383.0780	16.0000	16.0000	16.3967	16.1775	0.3967	0.1775	0.4346	0	0	17	0	0	0
386.9840	16.0000	16.0000	16.1978	16.4713	0.1978	0.4713	0.5111	0	0	18	0	0	0
390.8130	16.0000	16.0000	16.3170	16.3269	0.3170	0.3269	0.4554	0	0	18	0	0	0
395.0160	16.0000	16.0000	16.6333	16.2909	0.6333	0.2909	0.6969	0	0	28	0	0	0
398.8440	16.0000	16.0000	16.1536	16.3196	0.1536	0.3196	0.3546	0	0	13	0	0	0
402.7500	16.0000	16.0000	16.2689	16.3923	0.2689	0.3923	0.4756	0	0	18	0	0	0

	406.8130	16.0000	16.0000	16.3904	16.5010	0.3904	0.5010	0.6352	0	0	0	25	0	0
	410.8280	16.0000	16.0000	16.2775	16.6667	0.2775	0.6667	0.7221	0	0	0	26	0	0
	414.7340	16.0000	16.0000	16.6307	16.1421	0.6307	0.1421	0.6465	0	0	0	23	0	0
	418.7970	16.0000	16.0000	16.6386	16.5290	0.6386	0.5290	0.8293	0	0	0	34	0	0
	422.7810	16.0000	16.0000	16.8644	16.2718	0.8644	0.2718	0.9061	0	0	0	35	0	0
	426.9840	16.0000	16.0000	16.5732	16.8373	0.5732	0.8373	1.0147	0	0	0	40	0	0
	431.2340	16.0000	16.0000	17.0215	16.3921	1.0215	0.3921	1.0942	0	0	0	43	0	0
	435.3280	16.0000	16.0000	16.5685	16.5154	0.5685	0.5154	0.7674	0	0	0	31	0	0
	439.2500	16.0000	16.0000	16.6352	16.3149	0.6352	0.3149	0.7090	0	0	0	28	0	0
	443.3440	16.0000	16.0000	16.7739	16.5155	0.7739	0.5155	0.9298	0	0	0	38	0	0
	447.5160	16.0000	16.0000	16.7900	16.5551	0.7900	0.5551	0.9655	0	0	0	39	0	0
	451.6720	16.0000	16.0000	17.5152	15.9511	1.5152	-0.0489	1.5160	8	0	0	47	0	0
	455.9530	16.0000	16.0000	17.2870	16.2154	1.2870	0.2154	1.3049	5	0	0	46	0	0
	460.5310	16.0000	16.0000	17.4694	16.0270	1.4694	0.0270	1.4697	7	0	0	48	0	0
	464.6720	16.0000	16.0000	17.2340	16.3213	1.2340	0.3213	1.2751	0	0	0	48	0	0
	469.0630	16.0000	16.0000	17.5857	16.1736	1.5857	0.1736	1.5951	7	0	0	55	0	0

\*\*\*\*\*  
\* Auto guider Report for m63\_lum.0000921.M63.FIT \*  
\*\*\*\*\*

CCDSOFT Tracking Report  
Start Date Time = 2006-02-17T07:20:09.390  
Camera = Imager's built-in auto guider  
X Axis = Enabled  
Y Axis = Enabled  
ExposureTime = 3.00  
Aggressiveness Factor = 7  
Calibration Time X = 10.00  
Calibration Time Y = 10.00  
Calibration declination = 13.17  
Declination now = 12.74  
Minimum Move = 0.05  
Maximum Move = 0.75  
Backlash X = 0.00  
Backlash Y = 0.05  
Delay After Move = 0.00  
Auto guide using Relays

Calibration Determined Velocity Vectors (pixels/sec)  
XPlus Speed= 17.04160 (XPlus X= -11.29674, XPlus Y= 12.75930) Angle= 131.52000  
XMinus Speed= 17.19250 (XMinus X= 11.43776, XMinus Y= -12.83588) Angle= 311.70000  
YPlus Speed= 3.51580 (YPlus X= 2.64199, YPlus Y= 2.31965) Angle= 41.28000  
YMinus Speed= 3.37040 (YMinus X= -2.61370, YMinus Y= -2.12794) Angle= 219.15000

	Elapsed Secs	RefCentroidX	RefCentroidY	CurCentroidX	CurCentroidY	GuideErrX	GuideErrY	TotGuideErr	XPlusRelay	XMinusRelay	YPlusRelay	YMinusRelay	PECIndex RA	PECIndex Dec
	0.0000	16.0000	16.0000	15.9395	13.7943	-0.0605	-2.2057	2.2066	13	0	59	0	0	0
	12.9060	16.0000	16.0000	16.7934	15.1007	0.7934	-0.8993	1.1992	9	0	0	0	0	0
	16.7350	16.0000	16.0000	16.9337	14.9514	0.9337	-1.0486	1.4040	11	0	0	0	0	0
	20.8280	16.0000	16.0000	16.3970	15.2831	0.3970	-0.7169	0.8195	6	0	7	0	0	0
	24.7350	16.0000	16.0000	15.9672	15.4659	-0.0328	-0.5341	0.5351	0	0	14	0	0	0
	28.6410	16.0000	16.0000	16.5052	15.1920	0.5052	-0.8080	0.9530	7	0	6	0	0	0
	32.3130	16.0000	16.0000	16.0333	15.5585	0.0333	-0.4415	0.4428	0	0	10	0	0	0
	37.8280	16.0000	16.0000	16.4873	15.5464	0.4873	-0.4536	0.6657	5	0	0	0	0	0
	41.7810	16.0000	16.0000	16.4824	15.7762	0.4824	-0.2238	0.5318	0	0	0	9	0	0
	45.4530	16.0000	16.0000	16.3649	15.6981	0.3649	-0.3019	0.4736	0	0	0	0	0	0
	49.2190	16.0000	16.0000	16.4289	15.4830	0.4289	-0.5170	0.6717	5	0	0	0	0	0
	53.0780	16.0000	16.0000	16.6149	15.3826	0.6149	-0.6174	0.8713	7	0	0	0	0	0
	56.9060	16.0000	16.0000	16.8491	15.8238	0.8491	-0.1762	0.8672	5	0	0	22	0	0
	60.8130	16.0000	16.0000	16.6117	15.8410	0.6117	-0.1590	0.6320	0	0	0	15	0	0
	64.8280	16.0000	16.0000	17.1354	15.2512	1.1354	-0.7488	1.3601	10	0	0	16	0	0
	68.8130	16.0000	16.0000	16.7921	15.6818	0.7921	-0.3182	0.8536	6	0	0	17	0	0
	72.6720	16.0000	16.0000	17.0269	15.5451	1.0269	-0.4549	1.1231	8	0	0	21	0	0
	76.4220	16.0000	16.0000	16.3445	15.2257	0.3445	-0.7743	0.8475	6	0	7	0	0	0
	80.2660	16.0000	16.0000	16.0528	15.5990	0.0528	-0.4010	0.4044	0	0	9	0	0	0
	84.2030	16.0000	16.0000	16.5297	15.5667	0.5297	-0.4333	0.6843	5	0	0	5	0	0
	88.0630	16.0000	16.0000	16.0936	15.9571	0.0936	-0.0429	0.1030	0	0	0	0	0	0
	91.9530	16.0000	16.0000	16.4353	15.5411	0.4353	-0.4589	0.6325	0	0	0	0	0	0
	95.8130	16.0000	16.0000	16.3114	16.0455	0.3114	0.0455	0.3147	0	0	0	11	0	0
	99.6250	16.0000	16.0000	15.9803	15.6062	-0.0197	-0.3938	0.3943	0	0	11	0	0	0
	103.7500	16.0000	16.0000	16.8370	15.5964	0.8370	-0.4036	0.9292	7	0	0	16	0	0
	107.7810	16.0000	16.0000	15.8597	15.7878	-0.1403	-0.2122	0.2544	0	0	9	0	0	0
	111.6560	16.0000	16.0000	16.5324	15.5397	0.5324	-0.4603	0.7038	5	0	0	0	0	0
	115.4380	16.0000	16.0000	16.4168	15.5622	0.4168	-0.4378	0.6045	0	0	0	0	0	0
	119.4380	16.0000	16.0000	16.3967	15.8240	0.3967	-0.1760	0.4340	0	0	0	8	0	0
	123.1880	16.0000	16.0000	16.3169	15.5641	0.3169	-0.4359	0.5389	0	0	0	0	0	0
	127.0780	16.0000	16.0000	16.2328	15.9805	0.2328	-0.0195	0.2336	0	0	0	7	0	0
	130.8440	16.0000	16.0000	16.0991	15.7425	0.0991	-0.2575	0.2760	0	0	0	0	0	0
	134.6880	16.0000	16.0000	15.6646	16.0860	-0.3354	0.0860	0.3463	0	0	7	0	0	0

138.1720	16.0000	16.0000	15.8834	16.2408	-0.1166	0.2408	0.2675	0	0	0	0	0	0
142.0000	16.0000	16.0000	15.7389	16.3901	-0.2611	0.3901	0.4694	0	0	0	0	0	0
145.8130	16.0000	16.0000	15.8329	16.4006	-0.1671	0.4006	0.4341	0	0	0	0	0	0
149.9380	16.0000	16.0000	15.9663	16.3402	-0.0337	0.3402	0.3419	0	0	0	7	0	0
153.8600	16.0000	16.0000	15.8734	16.3537	-0.1266	0.3537	0.3756	0	0	0	0	0	0
157.6100	16.0000	16.0000	15.9367	16.1907	-0.0633	0.1907	0.2009	0	0	0	0	0	0
161.3130	16.0000	16.0000	16.2487	16.1487	0.2487	0.1487	0.2898	0	0	0	11	0	0
164.8750	16.0000	16.0000	16.0684	15.9468	0.0684	-0.0532	0.0866	0	0	0	0	0	0
168.6410	16.0000	16.0000	16.3772	15.3426	0.3772	-0.6574	0.7579	6	0	0	0	0	0
172.6250	16.0000	16.0000	16.5030	15.9814	0.5030	-0.0186	0.5034	0	0	0	15	0	0
176.8600	16.0000	16.0000	15.7827	15.5514	-0.2173	-0.4486	0.4984	0	0	18	0	0	0
180.7190	16.0000	16.0000	16.1958	16.0221	0.1958	0.0221	0.1971	0	0	0	7	0	0
184.4380	16.0000	16.0000	15.8539	16.0645	-0.1461	0.0645	0.1597	0	0	0	0	0	0
188.1880	16.0000	16.0000	15.8308	16.2367	-0.1692	0.2367	0.2910	0	0	0	0	0	0
191.9380	16.0000	16.0000	15.6036	16.3088	-0.3964	0.3088	0.5025	0	0	0	0	0	0
195.8910	16.0000	16.0000	15.6081	16.6751	-0.3919	0.6751	0.7806	0	6	0	0	0	0
199.6880	16.0000	16.0000	16.1154	16.3664	0.1154	0.3664	0.3841	0	0	0	13	0	0
203.3440	16.0000	16.0000	15.6003	16.3173	-0.3997	0.3173	0.5104	0	0	0	0	0	0
207.5780	16.0000	16.0000	15.6753	15.9258	-0.3247	-0.0742	0.3331	0	0	0	11	0	0
211.5310	16.0000	16.0000	16.2264	16.3716	0.2264	0.3716	0.4351	0	0	0	0	16	0
215.5470	16.0000	16.0000	15.4298	16.2289	-0.5702	0.2289	0.6145	0	0	0	11	0	0
219.4220	16.0000	16.0000	15.8950	16.5495	-0.1050	0.5495	0.5594	0	0	0	0	11	0
223.2350	16.0000	16.0000	15.4844	16.4829	-0.5156	0.4829	0.7064	0	5	0	0	0	0
227.0000	16.0000	16.0000	15.6739	16.1320	-0.3261	0.1320	0.3518	0	0	0	6	0	0
230.9690	16.0000	16.0000	15.5000	16.8587	-0.5000	0.8587	0.9937	0	0	7	0	0	0
234.5780	16.0000	16.0000	15.7930	16.3318	-0.2070	0.3318	0.3911	0	0	0	0	0	0
238.2660	16.0000	16.0000	15.9637	16.2955	-0.0363	0.2955	0.2978	0	0	0	0	6	0
242.1720	16.0000	16.0000	15.6965	16.0343	-0.3035	0.0343	0.3055	0	0	8	0	0	0
246.0160	16.0000	16.0000	15.9073	16.4129	-0.0927	0.4129	0.4232	0	0	0	0	7	0
249.9380	16.0000	16.0000	15.4481	16.0866	-0.5519	0.0866	0.5587	0	0	0	14	0	0
253.9380	16.0000	16.0000	16.3138	16.5887	0.3138	0.5887	0.6671	0	0	0	0	25	0
257.7970	16.0000	16.0000	15.5636	15.7102	-0.4364	-0.2898	0.5238	0	0	0	21	0	0
261.7190	16.0000	16.0000	15.8251	16.2168	-0.1749	0.2168	0.2785	0	0	0	0	0	0
265.5310	16.0000	16.0000	16.2838	15.9696	0.2838	-0.0304	0.2854	0	0	0	0	8	0
269.2660	16.0000	16.0000	15.8381	16.2398	-0.1619	0.2398	0.2893	0	0	0	0	0	0
273.0780	16.0000	16.0000	15.6757	16.0137	-0.3243	0.0137	0.3246	0	0	0	9	0	0
277.0000	16.0000	16.0000	15.8686	16.4004	-0.1314	0.4004	0.4215	0	0	0	0	6	0
280.6560	16.0000	16.0000	15.7605	16.4097	-0.2395	0.4097	0.4746	0	0	0	0	0	0
284.4220	16.0000	16.0000	15.8046	16.4832	-0.1954	0.4832	0.5212	0	0	0	0	6	0
287.9380	16.0000	16.0000	15.5937	16.3348	-0.4063	0.3348	0.5265	0	0	0	0	0	0
291.7660	16.0000	16.0000	15.7974	16.5162	-0.2026	0.5162	0.5546	0	0	0	0	7	0
295.6250	16.0000	16.0000	15.7073	16.1636	-0.2927	0.1636	0.3353	0	0	0	0	0	0
299.4850	16.0000	16.0000	15.5472	16.6860	-0.4528	0.6860	0.8219	0	0	0	0	0	0
303.5310	16.0000	16.0000	16.2248	16.1355	0.2248	0.1355	0.2624	0	0	0	0	10	0
307.1100	16.0000	16.0000	16.1140	15.6822	0.1140	-0.3178	0.3376	0	0	0	0	0	0
311.0160	16.0000	16.0000	15.7471	15.7799	-0.2529	-0.2201	0.3353	0	0	0	13	0	0
314.7660	16.0000	16.0000	16.2588	15.8142	0.2588	-0.1858	0.3186	0	0	0	0	0	0
318.4850	16.0000	16.0000	16.0970	16.0788	0.0970	0.0788	0.1250	0	0	0	0	0	0
322.6410	16.0000	16.0000	16.7956	16.0892	0.7956	0.0892	0.8005	0	0	0	0	28	0
326.9380	16.0000	16.0000	15.2832	15.1505	-0.7168	-0.8495	1.1115	0	0	0	44	0	0
330.7810	16.0000	16.0000	15.9475	15.5024	-0.0525	-0.4976	0.5004	0	0	0	14	0	0
334.5470	16.0000	16.0000	16.2809	15.4590	0.2809	-0.5410	0.6096	0	0	0	5	0	0
338.2660	16.0000	16.0000	16.4031	15.4181	0.4031	-0.5819	0.7079	0	5	0	0	0	0
341.9380	16.0000	16.0000	16.3513	15.5791	0.3513	-0.4209	0.5482	0	0	0	0	0	0
345.6250	16.0000	16.0000	16.3895	15.6630	0.3895	-0.3370	0.5150	0	0	0	0	0	0
349.5630	16.0000	16.0000	16.6042	15.3886	0.6042	-0.6114	0.8596	0	7	0	0	0	0
353.6410	16.0000	16.0000	16.7794	15.3923	0.7794	-0.6077	0.9884	0	7	0	0	9	0
357.5310	16.0000	16.0000	16.4572	15.8141	0.4572	-0.1859	0.4935	0	0	0	0	9	0
361.2030	16.0000	16.0000	16.8568	15.3908	0.8568	-0.6092	1.0513	0	0	0	0	11	0
364.8130	16.0000	16.0000	16.3934	15.8734	0.3934	-0.1266	0.4132	0	0	0	0	9	0
368.6560	16.0000	16.0000	16.2821	15.8465	0.2821	-0.1535	0.3211	0	0	0	0	0	0
372.5940	16.0000	16.0000	16.6136	15.7194	0.6136	-0.2806	0.6747	0	0	0	0	12	0
376.2810	16.0000	16.0000	16.0879	15.7931	0.0879	0.0879	0.2248	0	0	0	0	0	0
379.9220	16.0000	16.0000	16.3269	15.4522	0.3269	-0.5478	0.6380	0	0	0	0	0	0
383.8280	16.0000	16.0000	16.4513	15.5302	0.4513	-0.4698	0.6515	0	5	0	0	0	0
387.5470	16.0000	16.0000	16.1557	15.9657	0.1557	-0.0343	0.1594	0	0	0	0	0	0
391.3910	16.0000	16.0000	16.2859	15.6798	0.2859	-0.3202	0.4293	0	0	0	0	0	0
395.2500	16.0000	16.0000	16.3962	15.8579	0.3962	-0.1421	0.4209	0	0	0	0	9	0
398.8910	16.0000	16.0000	16.2343	15.3872	0.2343	-0.6128	0.6561	0	0	0	9	0	0
402.9530	16.0000	16.0000	16.6094	15.8137	0.6094	-0.1863	0.6373	0	0	0	0	14	0
406.9690	16.0000	16.0000	16.3672	15.3352	0.3672	-0.6648	0.7594	0	6	0	0	0	0
411.0310	16.0000	16.0000	16.6151	15.7883	0.6151	-0.2117	0.6505	0	0	0	0	14	0
414.9850	16.0000	16.0000	16.3455	15.2883	0.3455	-0.7117	0.7911	0	6	0	0	0	0
418.7030	16.0000	16.0000	16.5746	15.7970	0.5746	-0.2030	0.6094	0	0	0	0	13	0
422.8910	16.0000	16.0000	15.7285	15.5096	-0.2715	-0.4904	0.5605	0	0	0	21	0	0
427.0000	16.0000	16.0000	16.9631	15.8350	0.9631	-0.1650	0.9771	0	6	0	0	26	0
431.0310	16.0000	16.0000	15.7317	15.5848	-0.2683	-0.4152	0.4944	0	0	0	18	0	0
434.7970	16.0000	16.0000	16.2291	16.0348	0.2291	0.0348	0.2317	0	0	0	0	8	0
438.5780	16.0000	16.0000	16.4194	15.4791	0.4194	-0.5209	0.6688	0	5	0	0	0	0

	442.3130	16.0000	16.0000	15.9834	15.9156	-0.0166	-0.0844	0.0860	0	0	0	0	0	0
	446.1720	16.0000	16.0000	16.3358	15.4294	0.3358	-0.5706	0.6623	5	0	0	0	0	0
	450.2970	16.0000	16.0000	16.3812	16.0894	0.3812	0.0894	0.3915	0	0	0	14	0	0
	454.1880	16.0000	16.0000	16.2568	15.3785	0.2568	-0.6215	0.6725	0	0	8	0	0	0
	457.9850	16.0000	16.0000	16.5495	16.5444	0.5495	-0.3556	0.6545	0	0	0	8	0	0
	462.1250	16.0000	16.0000	16.6579	15.1687	0.6579	-0.8313	1.0601	8	0	0	0	0	0
	465.7970	16.0000	16.0000	16.2770	15.6048	0.2770	-0.3952	0.4826	0	0	0	0	0	0
	469.5780	16.0000	16.0000	16.2883	15.9745	0.2883	-0.0255	0.2894	0	0	0	8	0	0
	473.5000	16.0000	16.0000	16.2821	15.3767	0.2821	-0.6233	0.6842	5	0	7	0	0	0
	477.3130	16.0000	16.0000	16.0939	16.0640	0.0939	0.0640	0.1136	0	0	0	0	0	0
	481.4060	16.0000	16.0000	16.1752	16.0363	0.1752	0.0363	0.1790	0	0	0	6	0	0

\*\*\*\*\*  
\* Auto guider Report for m63\_lum.00000922.M63.FIT \*  
\*\*\*\*\*

CCDSof Tracking Report  
Start Date Time = 2006-02-17T07:28:23.562  
Camera = Imager's built-in auto guider  
X Axis = Enabled  
Y Axis = Enabled  
ExposureTime = 3.00  
Aggressiveness Factor = 7  
Calibration Time X = 10.00  
Calibration Time Y = 10.00  
Calibration declination = 13.17  
Declination now = 12.74  
Minimum Move = 0.05  
Maximum Move = 0.75  
Backlash X = 0.00  
Backlash Y = 0.05  
Delay After Move = 0.00  
Auto guide using Relays

Calibration Determined Velocity Vectors (pixels/sec)  
XPlus Speed= 17.04160 (XPlus X= -11.29674, XPlus Y= 12.75930) Angle= 131.52000  
XMinus Speed= 17.19250 (XMinus X= 11.43776, XMinus Y= -12.83588) Angle= 311.70000  
YPlus Speed= 3.51580 (YPlus X= 2.64199, YPlus Y= 2.31965) Angle= 41.28000  
YMinus Speed= 3.37040 (YMinus X= -2.61370, YMinus Y= -2.12794) Angle= 219.15000

Elapsed Secs	RefCentroidX	RefCentroidY	CurCentroidX	CurCentroidY	GuideErrX	GuideErrY	TotGuideErr	XPlusRelay	XMinusRelay	YPlusRelay	YMinusRelay	PECIndex	RA	PECIndex	Dec
	0.0000	16.0000	16.0000	17.2350	15.8845	1.2350	-0.1155	1.2404	7	0	0	37	0	0	0
	13.1560	16.0000	16.0000	15.7248	14.4794	-0.2752	-1.5206	1.5453	7	0	48	0	0	0	0
	16.9060	16.0000	16.0000	16.2572	15.2714	0.2572	-0.7286	0.7727	5	0	11	0	0	0	0
	20.9680	16.0000	16.0000	15.9520	15.4098	-0.0480	-0.5902	0.5922	0	0	16	0	0	0	0
	24.9530	16.0000	16.0000	15.8424	15.7168	-0.1576	-0.2832	0.3241	0	0	11	0	0	0	0
	30.2970	16.0000	16.0000	16.3565	15.7453	0.3565	-0.2547	0.4382	0	0	0	0	0	0	0
	33.9840	16.0000	16.0000	16.5083	15.5834	0.5083	-0.4166	0.6572	5	0	0	5	0	0	0
	37.6560	16.0000	16.0000	16.2868	15.8710	0.2868	-0.1290	0.3145	0	0	0	5	0	0	0
	41.3900	16.0000	16.0000	16.4285	15.5264	0.4285	-0.4736	0.6387	0	0	0	0	0	0	0
	45.3590	16.0000	16.0000	16.5798	15.6759	0.5798	-0.3241	0.6642	0	0	0	10	0	0	0
	49.1250	16.0000	16.0000	17.1735	15.2724	1.1735	-0.7276	1.3808	10	0	0	18	0	0	0
	53.0150	16.0000	16.0000	16.7834	15.4969	0.7834	-0.5031	0.9310	7	0	0	11	0	0	0
	57.0780	16.0000	16.0000	16.6797	15.5043	0.6797	-0.4957	0.8413	7	0	0	9	0	0	0
	61.1560	16.0000	16.0000	16.3796	16.0672	0.3796	0.0672	0.3855	0	0	0	14	0	0	0
	64.8590	16.0000	16.0000	16.2603	15.6209	0.2603	-0.3791	0.4598	0	0	0	0	0	0	0
	69.0470	16.0000	16.0000	16.4306	15.8638	0.4306	-0.1362	0.4516	0	0	0	10	0	0	0
	73.0000	16.0000	16.0000	16.1379	15.4822	0.1379	-0.5178	0.5359	0	0	9	0	0	0	0
	76.6720	16.0000	16.0000	16.4140	15.5904	0.4140	-0.4096	0.5824	0	0	0	0	0	0	0
	80.5620	16.0000	16.0000	16.3768	15.8690	0.3768	-0.1310	0.3989	0	0	0	8	0	0	0
	84.3280	16.0000	16.0000	16.1498	15.5058	0.1498	-0.4942	0.5164	0	0	8	0	0	0	0
	88.3120	16.0000	16.0000	16.4864	15.5325	0.4864	-0.4675	0.6747	5	0	0	0	0	0	0
	92.1870	16.0000	16.0000	16.3281	15.8122	0.3281	-0.1878	0.3781	0	0	0	5	0	0	0
	96.0310	16.0000	16.0000	16.5159	15.2506	0.5159	-0.7494	0.9099	7	0	0	0	0	0	0
	99.8590	16.0000	16.0000	16.4922	15.5010	0.4922	-0.4990	0.7009	5	0	0	0	0	0	0
	103.4840	16.0000	16.0000	16.4736	15.5780	0.4736	-0.4220	0.6344	0	0	0	0	0	0	0
	107.3750	16.0000	16.0000	16.6453	15.5874	0.6453	-0.4126	0.7660	6	0	0	9	0	0	0
	111.4220	16.0000	16.0000	16.2148	15.4083	0.2148	-0.5917	0.6295	0	0	0	9	0	0	0
	115.1090	16.0000	16.0000	16.3292	15.6798	0.3292	-0.3202	0.4592	0	0	0	0	0	0	0
	119.0780	16.0000	16.0000	16.2568	15.8875	0.2568	-0.1125	0.2803	0	0	0	5	0	0	0
	122.8430	16.0000	16.0000	16.3245	15.5874	0.3245	-0.4126	0.5249	0	0	0	0	0	0	0
	126.6250	16.0000	16.0000	16.5911	15.9428	0.5911	-0.0572	0.5939	0	0	0	17	0	0	0
	130.6870	16.0000	16.0000	15.9944	14.9136	-0.0056	-1.0864	1.0864	6	0	28	0	0	0	0
	134.4530	16.0000	16.0000	16.2899	15.6914	0.2899	-0.3086	0.4234	0	0	0	0	0	0	0
	138.2500	16.0000	16.0000	16.3890	15.5317	0.3890	-0.4683	0.6088	0	0	0	0	0	0	0
	142.0150	16.0000	16.0000	16.6264	15.3897	0.6264	-0.6103	0.8746	7	0	0	0	0	0	0
	145.8280	16.0000	16.0000	16.6753	15.2808	0.6753	-0.7192	0.9866	8	0	0	0	0	0	0
	150.0310	16.0000	16.0000	16.5159	15.8039	0.5159	-0.1961	0.5519	0	0	0	11	0	0	0
	153.8120	16.0000	16.0000	16.8964	15.2880	0.8964	-0.7120	1.1448	9	0	0	10	0	0	0

157.4840	16.0000	16.0000	16.3303	15.8246	0.3303	-0.1754	0.3740	0	0	0	6	0	0
161.4220	16.0000	16.0000	15.9759	15.3715	-0.0241	-0.6285	0.6290	0	0	17	0	0	0
165.4530	16.0000	16.0000	16.5372	15.9830	0.5372	-0.0170	0.5375	0	0	0	16	0	0
169.1720	16.0000	16.0000	16.2240	15.5911	0.2240	-0.4089	0.4663	0	0	0	0	0	0
173.0310	16.0000	16.0000	16.0436	15.7058	0.0436	-0.2942	0.2974	0	0	6	0	0	0
177.0930	16.0000	16.0000	16.4105	15.9674	0.4105	-0.0326	0.4118	0	0	0	12	0	0
181.0310	16.0000	16.0000	16.1443	15.4969	0.1443	-0.5031	0.5233	0	0	9	0	0	0
185.0000	16.0000	16.0000	16.4259	15.9549	0.4259	-0.0451	0.4283	0	0	0	12	0	0
188.8590	16.0000	16.0000	15.8574	15.4302	-0.1426	-0.5698	0.5873	0	0	18	0	0	0
192.9840	16.0000	16.0000	16.8095	15.7318	0.8095	-0.2682	0.8528	6	0	0	18	0	0
196.8590	16.0000	16.0000	15.9604	15.9232	-0.0396	-0.0768	0.0864	0	0	0	0	0	0
200.3900	16.0000	16.0000	15.9646	15.8441	-0.0354	-0.1559	0.1599	0	0	0	0	0	0
204.3900	16.0000	16.0000	15.6256	16.1416	-0.3744	0.1416	0.4003	0	0	7	0	0	0
208.5150	16.0000	16.0000	16.2928	16.1815	0.2928	0.1815	0.3445	0	0	0	14	0	0
212.4840	16.0000	16.0000	15.5617	16.0157	-0.4383	0.0157	0.4386	0	0	12	0	0	0
216.3430	16.0000	16.0000	16.0025	16.3153	0.0025	0.3153	0.3153	0	0	0	8	0	0
220.0930	16.0000	16.0000	15.7653	16.2623	-0.2347	0.2623	0.3520	0	0	0	0	0	0
223.6400	16.0000	16.0000	15.8450	16.3000	-0.1550	0.3000	0.3377	0	0	0	0	0	0
227.4220	16.0000	16.0000	15.8216	16.2683	-0.1784	0.2683	0.3222	0	0	0	0	0	0
231.2500	16.0000	16.0000	16.0118	16.2319	0.0118	0.2319	0.2322	0	0	0	6	0	0
234.8590	16.0000	16.0000	15.5428	16.4206	-0.4572	0.4206	0.6213	0	0	0	0	0	0
238.6090	16.0000	16.0000	15.7755	16.1659	-0.2245	0.1659	0.2792	0	0	0	0	0	0
242.5310	16.0000	16.0000	15.4178	16.3928	-0.5822	0.3928	0.7023	0	5	7	0	0	0
246.4220	16.0000	16.0000	15.8909	16.3675	-0.1091	0.3675	0.3833	0	0	0	6	0	0
250.2340	16.0000	16.0000	15.7916	16.3384	-0.2084	0.3384	0.3974	0	0	0	0	0	0
253.9530	16.0000	16.0000	15.6092	16.7031	-0.3908	0.7031	0.8044	0	6	0	5	0	0
257.5000	16.0000	16.0000	15.7999	16.2311	-0.2001	0.2311	0.3056	0	0	0	0	0	0
261.2650	16.0000	16.0000	15.5206	16.4090	-0.4794	0.4090	0.6302	0	0	0	0	0	0
265.0000	16.0000	16.0000	15.6210	16.5206	-0.3790	0.5206	0.6439	0	0	0	0	0	0
268.7500	16.0000	16.0000	15.3872	16.8736	-0.6128	0.8736	1.0671	0	8	0	0	0	0
272.4530	16.0000	16.0000	15.6552	16.4582	-0.3448	0.4582	0.5734	0	0	0	0	0	0
276.1720	16.0000	16.0000	15.9030	16.4053	-0.0970	0.4053	0.4168	0	0	0	7	0	0
279.9530	16.0000	16.0000	15.6994	16.1168	-0.3006	0.1168	0.3225	0	0	5	0	0	0
283.9220	16.0000	16.0000	15.7272	16.8216	-0.2728	0.8216	0.8658	0	6	0	12	0	0
287.7810	16.0000	16.0000	15.6541	16.0154	-0.3459	0.0154	0.3463	0	0	9	0	0	0
291.4370	16.0000	16.0000	15.7743	16.2321	-0.2257	0.2321	0.3237	0	0	0	0	0	0
295.3750	16.0000	16.0000	16.0431	16.2257	0.0431	0.2257	0.2298	0	0	0	7	0	0
299.1870	16.0000	16.0000	15.7150	16.1168	-0.2850	0.1168	0.3080	0	0	5	0	0	0
302.7500	16.0000	16.0000	15.7560	16.2050	-0.2440	0.2050	0.3187	0	0	0	0	0	0
306.5000	16.0000	16.0000	15.7337	16.3048	-0.2663	0.3048	0.4047	0	0	0	0	0	0
310.2500	16.0000	16.0000	15.5652	16.5378	-0.4348	0.5378	0.6916	0	5	0	0	0	0
313.7810	16.0000	16.0000	15.8867	16.2745	-0.1133	0.2745	0.2970	0	0	0	0	0	0
318.0150	16.0000	16.0000	16.1886	16.3692	0.1886	0.3692	0.4145	0	0	0	16	0	0
322.0620	16.0000	16.0000	15.6691	15.7747	-0.3309	-0.2253	0.4003	0	0	16	0	0	0
325.7340	16.0000	16.0000	16.0940	16.0186	0.0940	0.0186	0.0958	0	0	0	0	0	0
329.3750	16.0000	16.0000	15.9975	16.0961	-0.0025	0.0961	0.0962	0	0	0	0	0	0
333.2500	16.0000	16.0000	16.3413	15.8245	0.3413	-0.1755	0.3838	0	0	0	6	0	0
336.9680	16.0000	16.0000	16.5366	15.7024	0.5366	-0.2976	0.6136	0	0	0	9	0	0
341.0780	16.0000	16.0000	15.9474	15.7042	-0.0526	-0.2958	0.3004	0	0	9	0	0	0
345.0930	16.0000	16.0000	16.6251	15.6091	0.6251	-0.3909	0.7373	5	0	0	9	0	0
348.9370	16.0000	16.0000	16.0154	15.8603	0.0154	-0.1397	0.1406	0	0	0	0	0	0
352.7970	16.0000	16.0000	16.3831	15.6189	0.3831	-0.3811	0.5404	0	0	0	0	0	0
356.5150	16.0000	16.0000	16.2343	15.6297	0.2343	-0.3703	0.4382	0	0	0	0	0	0
360.2650	16.0000	16.0000	16.4181	15.6845	0.4181	-0.3155	0.5238	0	0	0	0	0	0
364.0310	16.0000	16.0000	16.5420	15.5074	0.5420	-0.4926	0.7324	6	0	0	0	0	0
367.7810	16.0000	16.0000	16.2315	15.7756	0.2315	-0.2244	0.3225	0	0	0	0	0	0
371.7340	16.0000	16.0000	16.6191	15.4834	0.6191	-0.5166	0.8063	6	0	0	6	0	0
375.5620	16.0000	16.0000	16.2942	15.3517	0.2942	-0.6483	0.7119	5	0	0	8	0	0
379.3750	16.0000	16.0000	16.2061	16.2009	0.2061	0.2009	0.2878	0	0	0	11	0	0
383.2340	16.0000	16.0000	16.3925	15.3979	0.3925	-0.6021	0.7187	5	0	0	0	0	0
387.2500	16.0000	16.0000	15.9124	15.6248	-0.0876	-0.3752	0.3853	0	0	12	0	0	0
391.2970	16.0000	16.0000	16.6270	15.7535	0.6270	-0.2465	0.6737	0	0	0	14	0	0
395.1400	16.0000	16.0000	16.4137	15.4096	0.4137	-0.5904	0.7210	5	0	0	0	0	0
399.0150	16.0000	16.0000	16.4809	15.3113	0.4809	-0.6887	0.8400	7	0	0	0	0	0
402.8430	16.0000	16.0000	16.3555	15.6061	0.3555	-0.3939	0.5306	0	0	0	0	0	0
406.6560	16.0000	16.0000	16.6082	15.6385	0.6082	-0.3615	0.7075	5	0	0	9	0	0
410.6400	16.0000	16.0000	16.2044	15.2958	0.2044	-0.7042	0.7332	0	0	12	0	0	0
414.3590	16.0000	16.0000	16.2745	15.7051	0.2745	-0.2949	0.4029	0	0	0	0	0	0
418.6090	16.0000	16.0000	16.7316	15.7828	0.7316	-0.2172	0.7632	5	0	0	18	0	0
422.7810	16.0000	16.0000	16.0513	15.1779	0.0513	-0.8221	0.8237	5	0	20	0	0	0
426.8120	16.0000	16.0000	16.3346	15.8338	0.3346	-0.1662	0.3736	0	0	0	6	0	0
430.6400	16.0000	16.0000	16.4292	15.1824	0.4292	-0.8176	0.9234	7	0	0	8	0	0
434.3750	16.0000	16.0000	16.3315	15.4973	0.3315	-0.5027	0.6022	0	0	0	0	0	0
438.2810	16.0000	16.0000	16.4794	15.4749	0.4794	-0.5251	0.7110	5	0	0	0	0	0
442.3280	16.0000	16.0000	16.7022	15.4108	0.7022	-0.5892	0.9166	7	0	0	7	0	0
446.1560	16.0000	16.0000	16.4933	15.8302	0.4933	-0.1698	0.5217	0	0	0	11	0	0
450.1250	16.0000	16.0000	16.4191	15.2677	0.4191	-0.7323	0.8438	7	0	0	7	0	0
453.8750	16.0000	16.0000	16.2501	15.7762	0.2501	-0.2238	0.3356	0	0	0	0	0	0
457.7340	16.0000	16.0000	16.6031	15.7973	0.6031	-0.2027	0.6363	0	0	0	14	0	0

	461.6400	16.0000	16.0000	16.2212	15.4136	0.2212	-0.5864	0.6267	0	0	9	0	0	0
	465.5930	16.0000	16.0000	16.4536	15.7849	0.4536	-0.2151	0.5020	0	0	0	9	0	0
	469.4370	16.0000	16.0000	16.5425	15.2338	0.5425	-0.7662	0.9388	7	0	0	0	0	0
	473.2180	16.0000	16.0000	16.2775	15.3955	0.2775	-0.6045	0.6651	0	0	7	0	0	0

CCDSOFT Tracking Report  
Start Date Time = 2006-02-17T07:39:24.625  
Camera = Imager's built-in autoguider  
X Axis = Enabled  
Y Axis = Enabled  
ExposureTime = 3.00  
Aggressiveness Factor = 7  
Calibration Time X = 10.00  
Calibration Time Y = 10.00  
Calibration declination = 13.17  
Declination now = 12.74  
Minimum Move = 0.05  
Maximum Move = 0.75  
Backlash X = 0.00  
Backlash Y = 0.05  
Delay After Move = 0.00  
Autoguide using Relays

Calibration Determined Velocity Vectors (pixels/sec)  
XPlus Speed= 17.04160 (XPlus X= -11.29674, XPlus Y= 12.75930) Angle= 131.52000  
XMinus Speed= 17.19250 (XMinus X= 11.43776, XMinus Y= -12.83588) Angle= 311.70000  
YPlus Speed= 3.51580 (YPlus X= 2.64199, YPlus Y= 2.31965) Angle= 41.28000  
YMinus Speed= 3.37040 (YMinus X= -2.61370, YMinus Y= -2.12794) Angle= 219.15000

	Elapsed Secs	RefCentroidX	RefCentroidY	CurCentroidX	CurCentroidY	GuideErrX	GuideErrY	TotGuideErr	XPlusRelay	XMinusRelay	YPlusRelay	YMinusRelay	PECIndex	RA	PECIndex	Dec
	0.0000	16.0000	16.0000	15.8782	16.3049	-0.1218	0.3049	0.3283	0	0	0	0	0	0	0	0

\*\*\*\*\*  
\* Autoguider Report for m63\_lum.00000923.M63.FIT \*  
\*\*\*\*\*

CCDSOFT Tracking Report  
Start Date Time = 2006-02-17T07:39:38.906  
Camera = Imager's built-in autoguider  
X Axis = Enabled  
Y Axis = Enabled  
ExposureTime = 3.00  
Aggressiveness Factor = 7  
Calibration Time X = 10.00  
Calibration Time Y = 10.00  
Calibration declination = 13.17  
Declination now = 12.74  
Minimum Move = 0.05  
Maximum Move = 0.75  
Backlash X = 0.00  
Backlash Y = 0.05  
Delay After Move = 0.00  
Autoguide using Relays

Calibration Determined Velocity Vectors (pixels/sec)  
XPlus Speed= 17.04160 (XPlus X= -11.29674, XPlus Y= 12.75930) Angle= 131.52000  
XMinus Speed= 17.19250 (XMinus X= 11.43776, XMinus Y= -12.83588) Angle= 311.70000  
YPlus Speed= 3.51580 (YPlus X= 2.64199, YPlus Y= 2.31965) Angle= 41.28000  
YMinus Speed= 3.37040 (YMinus X= -2.61370, YMinus Y= -2.12794) Angle= 219.15000

	Elapsed Secs	RefCentroidX	RefCentroidY	CurCentroidX	CurCentroidY	GuideErrX	GuideErrY	TotGuideErr	XPlusRelay	XMinusRelay	YPlusRelay	YMinusRelay	PECIndex	RA	PECIndex	Dec
	0.0000	16.0000	16.0000	16.3006	15.4778	0.3006	-0.5222	0.6026	0	0	0	0	0	0	0	0
	12.1250	16.0000	16.0000	16.4556	15.4632	0.4556	-0.5368	0.7041	5	0	0	0	0	0	0	0
	16.0620	16.0000	16.0000	16.2813	15.9697	0.2813	-0.0303	0.2830	0	0	0	8	0	0	0	0
	21.5310	16.0000	16.0000	16.5308	15.6290	0.5308	-0.3710	0.6476	0	0	0	7	0	0	0	0
	25.1560	16.0000	16.0000	16.5539	15.7125	0.5539	-0.2875	0.6240	0	0	0	10	0	0	0	0
	28.8910	16.0000	16.0000	16.8283	15.3348	0.8283	-0.6652	1.0624	0	0	0	9	0	0	0	0
	32.8120	16.0000	16.0000	16.6088	15.4949	0.6088	-0.5051	0.7911	6	0	0	6	0	0	0	0
	36.8910	16.0000	16.0000	16.5189	15.7653	0.5189	-0.2347	0.5695	0	0	0	10	0	0	0	0
	40.8750	16.0000	16.0000	16.9853	15.7163	0.9853	-0.2837	1.0253	7	0	0	0	24	0	0	0
	44.8440	16.0000	16.0000	17.0417	15.7286	1.0417	-0.2714	1.0765	7	0	0	0	26	0	0	0
	48.7500	16.0000	16.0000	16.4483	16.2481	0.4483	-0.2481	0.5124	0	0	0	0	21	0	0	0
	52.8120	16.0000	16.0000	16.7942	15.9031	0.7942	-0.0969	0.8001	0	0	0	0	23	0	0	0
	56.7190	16.0000	16.0000	16.7358	16.1880	0.7358	0.1880	0.7595	0	0	0	0	28	0	0	0
	60.4840	16.0000	16.0000	16.2613	15.4181	0.2613	-0.5819	0.6379	0	0	7	0	0	0	0	0
	64.3590	16.0000	16.0000	16.2112	15.7881	0.2112	-0.2119	0.2992	0	0	0	0	0	0	0	0
	68.3590	16.0000	16.0000	16.2570	15.8160	0.2570	-0.1840	0.3161	0	0	0	0	0	0	0	0
	72.2500	16.0000	16.0000	16.3002	15.7777	0.3002	-0.2223	0.3735	0	0	0	0	0	0	0	0
	75.9530	16.0000	16.0000	16.1446	15.9771	0.1446	-0.0229	0.1464	0	0	0	0	0	0	0	0
	79.8590	16.0000	16.0000	16.3798	15.5692	0.3798	-0.4308	0.5743	0	0	0	0	0	0	0	0

83.7660	16.0000	16.0000	16.4544	15.8270	0.4544	-0.1730	0.4862	0	0	0	9	0	0
87.8910	16.0000	16.0000	16.5365	15.8962	0.5365	-0.1038	0.5464	0	0	0	14	0	0
91.6250	16.0000	16.0000	16.6725	15.3302	0.6725	-0.6698	0.9491	7	0	0	0	0	0
95.5780	16.0000	16.0000	16.2407	16.0276	0.2407	0.0276	0.2423	0	0	0	8	0	0
99.3910	16.0000	16.0000	16.4369	15.4588	0.4369	-0.5412	0.6956	5	0	0	0	0	0
103.2970	16.0000	16.0000	16.2010	15.9598	0.2010	-0.0402	0.2050	0	0	0	5	0	0
107.0000	16.0000	16.0000	16.0871	15.8291	0.0871	-0.1709	0.1918	0	0	0	0	0	0
110.7500	16.0000	16.0000	16.1043	15.8862	0.1043	-0.1138	0.1544	0	0	0	0	0	0
114.5940	16.0000	16.0000	15.9380	16.0756	-0.0620	0.0756	0.0977	0	0	0	0	0	0
118.1560	16.0000	16.0000	16.2736	15.8381	0.2736	-0.1619	0.3179	0	0	0	0	0	0
122.0620	16.0000	16.0000	16.1822	16.0553	0.1822	0.0553	0.1904	0	0	0	7	0	0
125.7340	16.0000	16.0000	16.1359	15.9801	0.1359	-0.0199	0.1373	0	0	0	0	0	0
129.4060	16.0000	16.0000	16.3653	15.5728	0.3653	-0.4272	0.5621	0	0	0	0	0	0
133.2340	16.0000	16.0000	16.3227	15.8541	0.3227	-0.1459	0.3541	0	0	0	6	0	0
137.2190	16.0000	16.0000	16.4138	15.2911	0.4138	-0.7089	0.8209	6	0	6	0	0	0
141.0470	16.0000	16.0000	16.3176	15.9229	0.3176	-0.0771	0.3268	0	0	0	8	0	0
144.7970	16.0000	16.0000	16.1541	15.6983	0.1541	-0.3017	0.3388	0	0	0	0	0	0
148.3750	16.0000	16.0000	16.3336	15.5153	0.3336	-0.4847	0.5884	0	0	0	0	0	0
152.1560	16.0000	16.0000	16.3389	15.8779	0.3389	-0.1221	0.3602	0	0	0	7	0	0
155.8910	16.0000	16.0000	16.2178	15.3066	0.2178	-0.6934	0.7268	5	0	11	0	0	0
159.6250	16.0000	16.0000	16.0704	16.0729	0.0704	0.0729	0.1014	0	0	0	0	0	0
163.2030	16.0000	16.0000	15.9695	16.0816	-0.0305	0.0816	0.0871	0	0	0	0	0	0
167.1720	16.0000	16.0000	16.0671	16.0408	0.0671	0.0408	0.0785	0	0	0	0	0	0
170.9690	16.0000	16.0000	16.1681	16.1308	0.1681	0.1308	0.2130	0	0	0	9	0	0
174.7340	16.0000	16.0000	16.2770	15.9647	0.2770	-0.0353	0.2793	0	0	0	7	0	0
178.5470	16.0000	16.0000	16.1504	15.6800	0.1504	-0.3200	0.3535	0	0	0	0	0	0
182.3910	16.0000	16.0000	15.8450	16.0138	-0.1550	0.0138	0.1556	0	0	0	0	0	0
186.0620	16.0000	16.0000	16.0991	15.5979	0.0991	-0.4021	0.4141	0	0	7	0	0	0
189.8750	16.0000	16.0000	16.1228	16.0273	0.1228	0.0273	0.1258	0	0	0	0	0	0
193.8280	16.0000	16.0000	16.4762	15.8216	0.4762	-0.1784	0.5085	0	0	0	10	0	0
197.6870	16.0000	16.0000	16.2177	15.3264	0.2177	-0.6736	0.7079	5	0	11	0	0	0
201.7660	16.0000	16.0000	16.2971	15.9795	0.2971	-0.0205	0.2978	0	0	0	9	0	0
205.4370	16.0000	16.0000	16.2967	15.5188	0.2967	-0.4812	0.5653	0	0	0	0	0	0
209.2030	16.0000	16.0000	16.1376	15.7551	0.1376	-0.2449	0.2809	0	0	0	0	0	0
213.0160	16.0000	16.0000	16.1649	15.6953	0.1649	-0.3047	0.3464	0	0	0	0	0	0
216.9220	16.0000	16.0000	16.4736	15.8028	0.4736	-0.1972	0.5130	0	0	0	9	0	0
220.9060	16.0000	16.0000	16.3338	15.4190	0.3338	-0.5810	0.6701	5	0	5	0	0	0
224.8440	16.0000	16.0000	16.6665	15.7048	0.6665	-0.2952	0.7289	5	0	0	14	0	0
228.8280	16.0000	16.0000	16.0453	15.4270	0.0453	-0.5730	0.5747	0	0	14	0	0	0
232.7030	16.0000	16.0000	16.6277	15.3512	0.6277	-0.6488	0.9027	7	0	0	0	0	0
236.5470	16.0000	16.0000	16.3974	15.7421	0.3974	-0.2579	0.4738	0	0	0	6	0	0
240.3120	16.0000	16.0000	16.4376	15.6032	0.4376	-0.3968	0.5907	0	0	0	0	0	0
244.2810	16.0000	16.0000	16.8164	14.9606	0.8164	-1.0394	1.3217	10	0	0	0	0	0
248.0160	16.0000	16.0000	16.6469	15.5092	0.6469	-0.4908	0.8120	6	0	0	7	0	0
251.9840	16.0000	16.0000	16.5642	15.4798	0.5642	-0.5202	0.7675	6	0	0	0	0	0
255.8120	16.0000	16.0000	16.5489	15.6827	0.5489	-0.3173	0.6340	0	0	0	9	0	0
259.5940	16.0000	16.0000	16.3707	15.3575	0.3707	-0.6425	0.7417	6	0	5	0	0	0
263.5470	16.0000	16.0000	16.3912	15.8267	0.3912	-0.1733	0.4278	0	0	0	8	0	0
267.3440	16.0000	16.0000	16.4795	15.2820	0.4795	-0.7180	0.8634	7	0	0	0	0	0
271.0780	16.0000	16.0000	16.5271	15.3940	0.5271	-0.6060	0.8031	6	0	0	0	0	0
274.9060	16.0000	16.0000	16.3823	15.8588	0.3823	-0.1412	0.4075	0	0	0	8	0	0
279.0940	16.0000	16.0000	15.8635	15.3919	-0.1365	-0.6081	0.6232	0	0	20	0	0	0
283.1870	16.0000	16.0000	16.5746	15.7742	0.5746	-0.2258	0.6174	0	0	0	12	0	0
286.9840	16.0000	16.0000	16.2858	15.7883	0.2858	-0.2117	0.3557	0	0	0	0	0	0
290.9220	16.0000	16.0000	17.0121	15.0786	1.0121	-0.9214	1.3687	11	0	0	8	0	0
294.7660	16.0000	16.0000	16.2809	15.3632	0.2809	-0.6368	0.6960	5	0	8	0	0	0
298.6870	16.0000	16.0000	16.7383	15.4352	0.7383	-0.5648	0.9295	7	0	0	9	0	0
302.5940	16.0000	16.0000	16.1151	15.8576	0.1151	-0.1424	0.1831	0	0	0	0	0	0
306.3280	16.0000	16.0000	16.3499	15.6162	0.3499	-0.3838	0.5194	0	0	0	0	0	0
310.0780	16.0000	16.0000	16.4762	15.7271	0.4762	-0.2729	0.5488	0	0	0	8	0	0
313.7660	16.0000	16.0000	16.2727	15.5129	0.2727	-0.4871	0.5583	0	0	0	0	0	0
317.6870	16.0000	16.0000	16.2816	15.2624	0.2816	-0.7376	0.7895	6	0	11	0	0	0
321.6410	16.0000	16.0000	16.6036	15.8218	0.6036	-0.1782	0.6294	0	0	0	14	0	0
325.6720	16.0000	16.0000	16.4564	15.1622	0.4564	-0.8378	0.9541	7	0	8	0	0	0
329.5470	16.0000	16.0000	16.6736	15.4202	0.6736	-0.5798	0.8888	0	0	0	6	0	0
333.2970	16.0000	16.0000	16.3444	15.5979	0.3444	-0.4021	0.5295	0	0	0	0	0	0
337.2340	16.0000	16.0000	16.6483	15.1745	0.6483	-0.8255	1.0496	8	0	0	0	0	0
341.1720	16.0000	16.0000	16.4953	15.5290	0.4953	-0.4710	0.6835	5	0	0	0	0	0
344.8440	16.0000	16.0000	16.2055	15.6876	0.2055	-0.3124	0.3740	0	0	0	0	0	0
348.6560	16.0000	16.0000	16.5655	15.7007	0.5655	-0.2993	0.6398	0	0	0	10	0	0
352.4370	16.0000	16.0000	16.4589	15.5014	0.4589	-0.4986	0.6776	5	0	0	0	0	0
356.1720	16.0000	16.0000	16.3320	15.7276	0.3320	-0.2724	0.4294	0	0	0	0	0	0
360.2030	16.0000	16.0000	16.6989	15.7893	0.6989	-0.2107	0.7300	0	0	0	16	0	0
364.1090	16.0000	16.0000	16.0012	15.1550	0.0012	-0.8450	0.8450	0	0	22	0	0	0
368.0620	16.0000	16.0000	16.6531	15.9589	0.6531	-0.0411	0.6544	0	0	0	20	0	0
371.9220	16.0000	16.0000	15.6424	15.6979	-0.3576	-0.3021	0.4681	0	0	18	0	0	0
375.5310	16.0000	16.0000	16.5132	15.4923	0.5132	-0.5077	0.7219	5	0	0	0	0	0
379.5780	16.0000	16.0000	16.5695	15.6697	0.5695	-0.3303	0.6584	0	0	0	9	0	0
383.3910	16.0000	16.0000	16.4523	15.3802	0.4523	-0.6198	0.7673	6	0	0	0	0	0

	387.1250	16.0000	16.0000	16.3467	15.6619	0.3467	-0.3381	0.4843	0	0	0	0	0	0
	391.0000	16.0000	16.0000	16.2439	16.0208	0.2439	0.0208	0.2448	0	0	0	8	0	0
	394.6720	16.0000	16.0000	16.2374	15.5790	0.2374	-0.4210	0.4834	0	0	0	0	0	0
	398.3750	16.0000	16.0000	15.9091	16.0338	-0.0909	0.0338	0.0970	0	0	0	0	0	0
	402.1410	16.0000	16.0000	16.0088	16.1776	0.0088	0.1776	0.1778	0	0	0	0	0	0
	406.0310	16.0000	16.0000	15.7895	16.3064	-0.2105	0.3064	0.3717	0	0	0	0	0	0
	409.8750	16.0000	16.0000	16.1298	16.2675	0.1298	0.2675	0.2973	0	0	0	11	0	0
	413.7030	16.0000	16.0000	15.5791	16.0526	-0.4209	0.0526	0.4241	0	0	11	0	0	0
	417.7810	16.0000	16.0000	16.0936	16.4381	0.0936	0.4381	0.4480	0	0	0	14	0	0
	421.5620	16.0000	16.0000	15.6745	16.0370	-0.3255	0.0370	0.3276	0	0	9	0	0	0
	425.5310	16.0000	16.0000	16.4300	16.0030	0.4300	0.0030	0.4300	0	0	0	14	0	0
	429.7190	16.0000	16.0000	16.0507	15.3875	0.0507	-0.6125	0.6146	0	0	14	0	0	0
	433.5470	16.0000	16.0000	16.6458	15.7895	0.6458	-0.2105	0.6792	0	0	0	15	0	0
	437.5000	16.0000	16.0000	15.7265	15.7660	-0.2735	-0.2340	0.3599	0	0	14	0	0	0
	441.5310	16.0000	16.0000	16.4027	15.9909	0.4027	-0.0091	0.4028	0	0	0	12	0	0
	445.1720	16.0000	16.0000	15.9742	15.8733	-0.0258	-0.1267	0.1293	0	0	0	0	0	0
	448.9370	16.0000	16.0000	16.0435	16.0631	0.0435	0.0631	0.0767	0	0	0	0	0	0
	452.7500	16.0000	16.0000	16.0245	16.0267	0.0267	0.0267	0.0362	0	0	0	0	0	0
	456.6870	16.0000	16.0000	15.7911	16.2714	-0.2089	0.2714	0.3425	0	0	0	0	0	0
	460.3440	16.0000	16.0000	15.7580	16.3613	-0.2420	0.3613	0.4348	0	0	0	0	0	0
	464.1720	16.0000	16.0000	15.8356	16.3956	-0.1644	0.3956	0.4284	0	0	0	0	0	0
	467.8120	16.0000	16.0000	15.6614	16.5589	-0.3386	0.5589	0.6534	0	0	0	0	0	0

\*\*\*\*\*  
\* Autoguider Report for m63\_lum.00000924.M63.FIT \*  
\*\*\*\*\*

CCDSof Tracking Report  
Start Date Time = 2006-02-17T07:47:37.312  
Camera = Imager's built-in autoguider  
X Axis = Enabled  
Y Axis = Enabled  
ExposureTime = 3.00  
Aggressiveness Factor = 7  
Calibration Time X = 10.00  
Calibration Time Y = 10.00  
Calibration declination = 13.17  
Declination now = 12.74  
Minimum Move = 0.05  
Maximum Move = 0.75  
Backlash X = 0.00  
Backlash Y = 0.05  
Delay After Move = 0.00  
Autoguide using Relays

Calibration Determined Velocity Vectors (pixels/sec)  
XPlus Speed= 17.04160 (XPlus X= -11.29674, XPlus Y= 12.75930) Angle= 131.52000  
XMinus Speed= 17.19250 (XMinus X= 11.43776, XMinus Y= -12.83588) Angle= 311.70000  
YPlus Speed= 3.51580 (YPlus X= 2.64199, YPlus Y= 2.31965) Angle= 41.28000  
YMinus Speed= 3.37040 (YMinus X= -2.61370, YMinus Y= -2.12794) Angle= 219.15000

	Elapsed Secs	RefCentroidX	RefCentroidY	CurCentroidX	CurCentroidY	GuideErrX	GuideErrY	TotGuideErr	XPlusRelay	XMinusRelay	YPlusRelay	YMinusRelay	PECIndex	RA	PECIndex	Dec
	0.0000	16.0000	16.0000	14.8382	16.7874	-1.1618	0.7874	1.4035	0	11	14	0	0	0	0	
	12.4680	16.0000	16.0000	15.4332	16.8460	-0.5668	0.8460	1.0183	0	8	0	0	0	0	0	
	16.3750	16.0000	16.0000	15.5209	16.8629	-0.4791	0.8629	0.9870	0	7	0	7	0	0	0	
	20.2810	16.0000	16.0000	16.0329	16.0873	0.0329	0.0873	0.0933	0	0	0	0	0	0	0	
	25.7030	16.0000	16.0000	15.7356	16.7016	-0.2644	0.7016	0.7497	0	5	0	9	0	0	0	
	29.5930	16.0000	16.0000	15.5489	16.0194	-0.4511	0.0194	0.4515	0	0	13	0	0	0	0	
	33.4370	16.0000	16.0000	16.1313	16.2843	0.1313	0.2843	0.3132	0	0	0	11	0	0	0	
	37.1250	16.0000	16.0000	15.7066	16.2492	-0.2934	0.2492	0.3850	0	0	0	0	0	0	0	
	40.9530	16.0000	16.0000	16.3109	15.8898	0.3109	-0.1102	0.3299	0	0	0	7	0	0	0	
	44.7650	16.0000	16.0000	15.8851	15.9868	-0.1149	-0.0132	0.1156	0	0	0	0	0	0	0	
	48.4210	16.0000	16.0000	15.8089	16.1593	-0.1911	0.1593	0.2488	0	0	0	0	0	0	0	
	52.2650	16.0000	16.0000	16.0201	15.8684	0.0201	-0.1316	0.1331	0	0	0	0	0	0	0	
	56.1710	16.0000	16.0000	15.7266	16.0936	-0.2734	0.0936	0.2890	0	0	5	0	0	0	0	
	59.8280	16.0000	16.0000	16.0249	16.0801	0.0249	0.0801	0.0839	0	0	0	0	0	0	0	
	63.6870	16.0000	16.0000	15.7834	16.2760	-0.2166	0.2760	0.3508	0	0	0	0	0	0	0	
	67.6250	16.0000	16.0000	16.0355	16.2581	0.0355	0.2581	0.2606	0	0	0	7	0	0	0	
	71.5000	16.0000	16.0000	15.8744	16.3026	-0.1256	0.3026	0.3276	0	0	0	0	0	0	0	
	75.5150	16.0000	16.0000	16.0424	16.6645	0.0424	0.6645	0.6658	0	0	0	0	18	0	0	
	79.5620	16.0000	16.0000	15.3875	15.8673	-0.6125	-0.1327	0.6267	0	0	21	0	0	0	0	
	83.3900	16.0000	16.0000	16.0691	16.1859	0.0691	0.1859	0.1983	0	0	0	7	0	0	0	
	87.0150	16.0000	16.0000	15.6131	16.4597	-0.3869	0.4597	0.6099	0	0	0	0	0	0	0	
	90.6090	16.0000	16.0000	16.0333	16.1209	0.0333	0.1209	0.1254	0	0	0	0	0	0	0	
	94.3430	16.0000	16.0000	15.5625	16.2992	-0.4375	0.2992	0.5300	0	0	0	0	0	0	0	
	98.1250	16.0000	16.0000	16.2829	16.0811	0.2829	0.0811	0.2943	0	0	0	0	11	0	0	
	101.8430	16.0000	16.0000	15.7932	15.9133	-0.2068	-0.0867	0.2242	0	0	8	0	0	0	0	
	106.1400	16.0000	16.0000	16.1116	16.5454	0.1116	0.5454	0.5567	0	0	0	18	0	0	0	
	110.1250	16.0000	16.0000	15.7055	15.9618	-0.2945	-0.0382	0.2970	0	0	9	0	0	0	0	

113.8280	16.0000	16.0000	15.7553	16.4228	-0.2447	0.4228	0.4885	0	0	0	0	0	0
117.4840	16.0000	16.0000	15.8225	16.1371	-0.1775	0.1371	0.2243	0	0	0	0	0	0
121.2180	16.0000	16.0000	16.0491	16.1379	0.0491	0.1379	0.1464	0	0	0	0	0	0
124.9370	16.0000	16.0000	16.0620	16.1005	0.0620	0.1005	0.1181	0	0	0	0	0	0
128.6400	16.0000	16.0000	16.3191	16.0149	0.3191	0.0149	0.3195	0	0	0	10	0	0
132.2650	16.0000	16.0000	16.1548	15.8992	0.1548	-0.1008	0.1847	0	0	0	0	0	0
135.9060	16.0000	16.0000	16.3124	15.7460	0.3124	-0.2540	0.4026	0	0	0	0	0	0
139.5930	16.0000	16.0000	16.6073	15.3339	0.6073	-0.6661	0.9014	7	0	0	0	0	0
143.4370	16.0000	16.0000	16.4092	16.0630	0.4092	0.0630	0.4140	0	0	0	14	0	0
147.3280	16.0000	16.0000	16.5047	15.4212	0.5047	-0.5788	0.7680	6	0	0	0	0	0
151.3590	16.0000	16.0000	15.7164	16.0932	-0.2836	0.0932	0.2985	0	6	0	0	0	0
155.4210	16.0000	16.0000	16.2771	15.9952	0.2771	-0.0048	0.2772	0	0	0	9	0	0
159.3430	16.0000	16.0000	16.1343	16.0592	0.1343	0.0592	0.1468	0	0	0	5	0	0
163.2500	16.0000	16.0000	16.2583	16.3203	0.2583	0.3203	0.4115	0	0	0	16	0	0
167.2180	16.0000	16.0000	16.2454	16.1427	0.2454	0.1427	0.2838	0	0	0	11	0	0
171.2810	16.0000	16.0000	16.2464	16.3704	0.2464	0.3704	0.4449	0	0	0	17	0	0
175.3430	16.0000	16.0000	16.5529	16.1026	0.5529	0.1026	0.5624	0	0	0	20	0	0
179.2650	16.0000	16.0000	16.5736	16.1986	0.5736	0.1986	0.6070	0	0	0	23	0	0
183.2960	16.0000	16.0000	16.6182	16.2172	0.6182	0.2172	0.6553	0	0	0	25	0	0
187.3590	16.0000	16.0000	16.8282	16.0697	0.8282	0.0697	0.8312	0	0	0	28	0	0
191.4210	16.0000	16.0000	16.5245	16.4147	0.5245	0.4147	0.6687	0	0	0	28	0	0
195.4210	16.0000	16.0000	17.0553	15.9764	1.0553	-0.0236	1.0556	5	0	0	33	0	0
199.3280	16.0000	16.0000	16.6387	16.4543	0.6387	0.4543	0.7838	0	0	0	32	0	0
203.4210	16.0000	16.0000	16.7860	16.1584	0.7860	0.1584	0.8018	0	0	0	29	0	0
207.5310	16.0000	16.0000	16.6745	16.3562	0.6745	0.3562	0.7628	0	0	0	30	0	0
211.5460	16.0000	16.0000	16.6911	16.3836	0.6911	0.3836	0.7904	0	0	0	32	0	0
215.5460	16.0000	16.0000	16.9946	16.4000	0.9946	0.4000	1.0720	0	0	0	42	0	0
219.5150	16.0000	16.0000	16.6703	16.4313	0.6703	0.4313	0.7970	0	0	0	32	0	0
223.5620	16.0000	16.0000	16.9781	16.1160	0.9781	0.1160	0.9849	0	0	0	34	0	0
227.5780	16.0000	16.0000	16.7550	16.4165	0.7550	0.4165	0.8623	0	0	0	35	0	0
231.9210	16.0000	16.0000	17.0963	16.2357	1.0963	0.2357	1.1213	0	0	0	41	0	0
236.0620	16.0000	16.0000	17.3586	15.9494	1.3586	-0.0506	1.3595	7	0	0	42	0	0
240.3280	16.0000	16.0000	17.0947	16.3457	1.0947	0.3457	1.1480	0	0	0	44	0	0
244.7810	16.0000	16.0000	17.5839	16.0482	1.5839	0.0482	1.5846	8	0	0	52	0	0
249.1250	16.0000	16.0000	16.9782	16.7289	0.9782	0.7289	1.2199	0	0	0	50	0	0
253.0620	16.0000	16.0000	16.3532	15.7869	0.3532	-0.2131	0.4125	0	0	0	5	0	0
256.8120	16.0000	16.0000	16.2311	15.7952	0.2311	-0.2048	0.3088	0	0	0	0	0	0
260.7180	16.0000	16.0000	16.1245	15.8062	0.1245	-0.1938	0.2304	0	0	0	0	0	0
264.4210	16.0000	16.0000	16.0031	16.0135	0.0031	0.0135	0.0139	0	0	0	0	0	0
268.1870	16.0000	16.0000	16.0576	16.0231	0.0576	0.0231	0.0621	0	0	0	0	0	0
272.0310	16.0000	16.0000	16.2514	15.8945	0.2514	-0.1055	0.2726	0	0	0	5	0	0
275.7810	16.0000	16.0000	16.0616	15.9489	0.0616	-0.0511	0.0801	0	0	0	0	0	0
279.5310	16.0000	16.0000	16.3335	15.9143	0.3335	-0.0857	0.3443	0	0	0	8	0	0
283.3590	16.0000	16.0000	16.3142	15.6961	0.3142	-0.3039	0.4371	0	0	0	0	0	0
287.0460	16.0000	16.0000	16.1825	15.9328	0.1825	-0.0672	0.1945	0	0	0	0	0	0
290.6400	16.0000	16.0000	16.4272	15.5328	0.4272	-0.4672	0.6331	0	0	0	0	0	0
294.5930	16.0000	16.0000	16.2454	15.8042	0.2454	-0.1958	0.3139	0	0	0	0	0	0
298.4530	16.0000	16.0000	16.3731	15.4980	0.3731	-0.5020	0.6254	0	0	0	0	0	0
302.0930	16.0000	16.0000	16.0969	15.9917	0.0969	-0.0083	0.0973	0	0	0	0	0	0
305.9530	16.0000	16.0000	16.1577	16.0847	0.1577	0.0847	0.1790	0	0	0	7	0	0
309.9060	16.0000	16.0000	16.1588	15.4187	0.1588	-0.5813	0.6026	0	0	10	0	0	0
313.8120	16.0000	16.0000	16.5031	16.1219	0.5031	0.1219	0.5177	0	0	0	19	0	0
317.7810	16.0000	16.0000	15.7847	15.2640	-0.2153	-0.7360	0.7668	0	0	25	0	0	0
321.8900	16.0000	16.0000	16.4972	15.9266	0.4972	-0.0734	0.5026	0	0	0	14	0	0
325.7960	16.0000	16.0000	16.3080	15.3326	0.3080	-0.6674	0.7351	5	0	8	0	0	0
329.8280	16.0000	16.0000	17.1256	15.4517	1.1256	-0.5483	1.2521	9	0	0	21	0	0
333.7810	16.0000	16.0000	16.1311	15.2237	0.1311	-0.7763	0.7873	5	0	16	0	0	0
337.8430	16.0000	16.0000	17.1164	15.4075	1.1164	-0.5925	1.2638	9	0	0	20	0	0
341.8900	16.0000	16.0000	15.6332	15.5256	-0.3668	-0.4744	0.5996	0	0	23	0	0	0
346.0150	16.0000	16.0000	16.5071	16.2955	0.5071	0.2955	0.5869	0	0	0	23	0	0
349.8280	16.0000	16.0000	15.7936	15.6179	-0.2064	-0.3821	0.4343	0	16	0	0	0	0
353.8120	16.0000	16.0000	16.7917	16.2261	0.7917	0.2261	0.8233	0	0	0	31	0	0
358.0780	16.0000	16.0000	15.3219	15.1633	-0.6781	-0.8367	1.0769	0	0	42	0	0	0
361.7030	16.0000	16.0000	15.8558	15.9247	-0.1442	-0.0753	0.1627	0	6	0	0	0	0
365.5930	16.0000	16.0000	16.2894	15.8906	0.2894	-0.1094	0.3093	0	0	6	0	0	0
369.2650	16.0000	16.0000	16.1742	15.8332	0.1742	-0.1668	0.2411	0	0	0	0	0	0
373.0620	16.0000	16.0000	16.1968	15.6888	0.1968	-0.3112	0.3682	0	0	0	0	0	0
376.9680	16.0000	16.0000	16.7269	15.3136	0.7269	-0.6864	0.9998	8	0	0	5	0	0
381.2650	16.0000	16.0000	16.5519	16.0878	0.5519	0.0878	0.5588	0	0	0	20	0	0
384.9680	16.0000	16.0000	16.4520	15.5368	0.4520	-0.4632	0.6472	5	0	0	0	0	0
388.5930	16.0000	16.0000	16.1897	15.9131	0.1897	-0.0869	0.2086	0	0	0	0	0	0
392.3280	16.0000	16.0000	16.2258	15.7620	0.2258	-0.2380	0.3281	0	0	0	0	0	0
396.2810	16.0000	16.0000	16.4606	15.7585	0.4606	-0.2415	0.5200	0	0	8	0	0	0
400.1090	16.0000	16.0000	16.1383	15.6627	0.1383	-0.3373	0.3645	0	0	0	0	0	0
403.8590	16.0000	16.0000	16.2103	15.9034	0.2103	-0.0966	0.2314	0	0	0	0	0	0
407.5930	16.0000	16.0000	16.0938	15.9582	0.0938	-0.0418	0.1027	0	0	0	0	0	0
411.4530	16.0000	16.0000	16.2044	15.8509	0.2044	-0.1491	0.2531	0	0	0	0	0	0
415.2180	16.0000	16.0000	16.3631	15.8061	0.3631	-0.1939	0.4116	0	0	6	0	0	0
419.1710	16.0000	16.0000	16.3304	15.6019	0.3304	-0.3981	0.5173	0	0	0	0	0	0

	423.0620	16.0000	16.0000	16.7498	15.3523	0.7498	-0.6477	0.9908	8	0	0	7	0	0
	426.9060	16.0000	16.0000	16.4238	15.2885	0.4238	-0.7115	0.8282	7	0	6	0	0	0
	430.8900	16.0000	16.0000	16.2848	15.9447	0.2848	-0.0553	0.2901	0	0	0	7	0	0
	434.8590	16.0000	16.0000	16.3707	15.1783	0.3707	-0.8217	0.9014	7	0	10	0	0	0
	438.7960	16.0000	16.0000	16.3372	16.0815	0.3372	0.0815	0.3469	0	0	0	13	0	0
	442.7180	16.0000	16.0000	16.0803	15.6094	0.0803	-0.3906	0.3987	0	0	7	0	0	0
	446.4530	16.0000	16.0000	15.8792	16.0874	-0.1208	0.0874	0.1492	0	0	0	0	0	0
	450.2180	16.0000	16.0000	16.0941	15.9923	0.0941	-0.0077	0.0944	0	0	0	0	0	0
	453.9680	16.0000	16.0000	16.0887	16.0854	0.0887	0.0854	0.1231	0	0	0	0	0	0
	457.7180	16.0000	16.0000	16.0132	16.1440	0.0132	0.1440	0.1446	0	0	0	0	0	0
	461.7810	16.0000	16.0000	16.1724	16.1193	0.1724	0.1193	0.2097	0	0	0	8	0	0
	465.5310	16.0000	16.0000	15.9379	15.8903	-0.0621	-0.1097	0.1260	0	0	0	0	0	0
	469.3280	16.0000	16.0000	15.7535	15.9114	-0.2465	-0.0886	0.2620	0	0	9	0	0	0

\*\*\*\*\*  
 \* Auto guider Report for m63\_lum.00000925.M63.FIT \*  
 \*\*\*\*\*

CCDSOFT Tracking Report  
 Start Date Time = 2006-02-17T07:55:38.906  
 Camera = Imager's built-in autoguider  
 X Axis = Enabled  
 Y Axis = Enabled  
 ExposureTime = 3.00  
 Aggressiveness Factor = 7  
 Calibration Time X = 10.00  
 Calibration Time Y = 10.00  
 Calibration declination = 13.17  
 Declination now = 12.74  
 Minimum Move = 0.05  
 Maximum Move = 0.75  
 Backlash X = 0.00  
 Backlash Y = 0.05  
 Delay After Move = 0.00  
 Autoguide using Relays

Calibration Determined Velocity Vectors (pixels/sec)  
 XPlus Speed= 17.04160 (XPlus X= -11.29674, XPlus Y= 12.75930) Angle= 131.52000  
 XMinus Speed= 17.19250 (XMinus X= 11.43776, XMinus Y= -12.83588) Angle= 311.70000  
 YPlus Speed= 3.51580 (YPlus X= 2.64199, YPlus Y= 2.31965) Angle= 41.28000  
 YMinus Speed= 3.37040 (YMinus X= -2.61370, YMinus Y= -2.12794) Angle= 219.15000

Elapsed Secs	RefCentroidX	RefCentroidY	CurCentroidX	CurCentroidY	GuideErrX	GuideErrY	TotGuideErr	XPlusRelay	XMinusRelay	YPlusRelay	YMinusRelay	PECIndex RA	PECIndex Dec
	0.0000	16.0000	16.0000	16.0742	15.8725	0.0742	-0.1275	0.1475	0	0	0	0	0
	12.0000	16.0000	16.0000	16.0731	16.0047	0.0731	0.0047	0.0733	0	0	0	0	0
	15.5470	16.0000	16.0000	16.1073	16.0445	0.1073	0.0445	0.1162	0	0	0	0	0
	21.3280	16.0000	16.0000	16.1998	16.1594	0.1998	0.1594	0.2556	0	0	10	0	0
	25.0470	16.0000	16.0000	15.7424	16.2191	-0.2576	0.2191	0.3382	0	0	0	0	0
	28.6410	16.0000	16.0000	15.9177	15.9987	-0.0823	-0.0013	0.0823	0	0	0	0	0
	32.1880	16.0000	16.0000	15.9768	15.9881	-0.0232	-0.0119	0.0261	0	0	0	0	0
	35.8440	16.0000	16.0000	16.0225	15.9746	0.0225	-0.0254	0.0339	0	0	0	0	0
	39.6570	16.0000	16.0000	15.9227	16.2071	-0.0773	0.2071	0.2210	0	0	0	0	0
	43.4220	16.0000	16.0000	15.5852	16.5459	-0.4148	0.5459	0.6856	0	5	0	0	0
	47.1100	16.0000	16.0000	16.0813	15.9354	0.0813	-0.0646	0.1038	0	0	0	0	0
	50.7350	16.0000	16.0000	15.7824	16.4403	-0.2176	0.4403	0.4911	0	0	0	0	0
	54.5470	16.0000	16.0000	15.7129	16.5181	-0.2871	0.5181	0.5923	0	0	0	0	0
	58.3130	16.0000	16.0000	16.1180	16.4134	0.1180	0.4134	0.4299	0	0	14	0	0
	62.1570	16.0000	16.0000	15.2789	16.5872	-0.7211	0.5872	0.9299	0	7	6	0	0
	65.8910	16.0000	16.0000	15.9069	16.2071	-0.0931	0.2071	0.2270	0	0	0	0	0
	69.4380	16.0000	16.0000	15.6757	16.3967	-0.3243	0.3967	0.5124	0	0	0	0	0
	73.3440	16.0000	16.0000	15.7986	16.5782	-0.2014	0.5782	0.6123	0	0	8	0	0
	77.1880	16.0000	16.0000	15.6435	16.4661	-0.3565	0.4661	0.5869	0	0	0	0	0
	81.2660	16.0000	16.0000	15.2813	16.8474	-0.7187	0.8474	1.1111	0	9	0	0	0
	84.9220	16.0000	16.0000	15.7124	16.3602	-0.2876	0.3602	0.4609	0	0	0	0	0
	88.7500	16.0000	16.0000	15.6641	16.4461	-0.3359	0.4461	0.5584	0	0	0	0	0
	92.8130	16.0000	16.0000	15.6603	16.8098	-0.3397	0.8098	0.8782	0	7	0	10	0
	96.8130	16.0000	16.0000	15.6365	15.6867	-0.3635	-0.3133	0.4799	0	0	18	0	0
	100.7030	16.0000	16.0000	15.6971	16.6038	-0.3029	0.6038	0.6756	0	5	0	6	0
	104.5000	16.0000	16.0000	15.9804	16.2196	-0.0196	0.2196	0.2205	0	0	0	0	0
	108.2970	16.0000	16.0000	15.7640	16.4410	-0.2360	0.4410	0.5002	0	0	0	0	0
	112.0630	16.0000	16.0000	15.6664	16.4580	-0.3336	0.4580	0.5666	0	0	0	0	0
	115.7030	16.0000	16.0000	15.6874	16.4335	-0.3126	0.4335	0.5345	0	0	0	0	0
	119.5320	16.0000	16.0000	15.6698	16.7544	-0.3302	0.7544	0.8235	0	6	0	9	0
	123.1250	16.0000	16.0000	15.7965	16.0512	-0.2035	0.0512	0.2098	0	0	0	0	0
	127.0000	16.0000	16.0000	16.1129	16.1113	0.1129	0.1113	0.1585	0	0	0	6	0
	130.9380	16.0000	16.0000	15.9168	15.9588	-0.0832	-0.0412	0.0928	0	0	0	0	0
	134.7820	16.0000	16.0000	16.0518	15.5705	0.0518	-0.4295	0.4326	0	0	9	0	0
	138.9220	16.0000	16.0000	16.1818	16.1401	0.1818	0.1401	0.2295	0	0	0	9	0
	142.7190	16.0000	16.0000	16.1482	15.4491	0.1482	-0.5509	0.5705	0	0	9	0	0

146.5630	16.0000	16.0000	16.3569	15.9951	0.3569	-0.0049	0.3569	0	0	0	11	0	0
150.3440	16.0000	16.0000	16.1516	15.6466	0.1516	-0.3534	0.3846	0	0	0	0	0	0
154.0160	16.0000	16.0000	16.4327	15.4537	0.4327	-0.5463	0.6968	5	0	0	0	0	0
157.7190	16.0000	16.0000	16.2369	15.9757	0.2369	-0.0243	0.2382	0	0	0	7	0	0
161.6880	16.0000	16.0000	16.1718	15.3724	0.1718	-0.6276	0.6507	0	0	11	0	0	0
165.6570	16.0000	16.0000	16.4463	15.7773	0.4463	-0.2227	0.4987	0	0	0	8	0	0
169.3600	16.0000	16.0000	16.3990	15.3340	0.3990	-0.6660	0.7763	6	0	5	0	0	0
173.3130	16.0000	16.0000	16.7288	15.4169	0.7288	-0.5831	0.9333	7	0	0	8	0	0
177.1880	16.0000	16.0000	16.1054	15.7352	0.1054	-0.2648	0.2850	0	0	0	0	0	0
180.9690	16.0000	16.0000	16.4657	15.4483	0.4657	-0.5517	0.7220	5	0	0	0	0	0
184.6720	16.0000	16.0000	16.2245	15.7128	0.2245	-0.2872	0.3645	0	0	0	0	0	0
188.4220	16.0000	16.0000	16.2643	15.6889	0.2643	-0.3111	0.4082	0	0	0	0	0	0
192.2030	16.0000	16.0000	16.6679	15.2661	0.6679	-0.7339	0.9923	8	0	0	0	0	0
196.0000	16.0000	16.0000	16.3943	15.7716	0.3943	-0.2284	0.4557	0	0	0	7	0	0
199.7970	16.0000	16.0000	16.5357	15.0486	0.5357	-0.9514	1.0918	9	0	9	0	0	0
203.6880	16.0000	16.0000	16.4597	15.7473	0.4597	-0.2527	0.5246	0	0	0	8	0	0
207.5630	16.0000	16.0000	16.3796	15.4128	0.3796	-0.5872	0.6992	5	0	0	0	0	0
211.3280	16.0000	16.0000	16.4092	15.4625	0.4092	-0.5375	0.6755	0	0	0	0	0	0
214.8600	16.0000	16.0000	16.3050	15.7995	0.3050	-0.2005	0.3650	0	0	0	0	0	0
218.7660	16.0000	16.0000	16.3721	15.6471	0.3721	-0.3529	0.5129	0	0	0	0	0	0
222.6100	16.0000	16.0000	16.5581	15.4739	0.5581	-0.5261	0.7670	6	0	0	0	0	0
226.4530	16.0000	16.0000	16.5561	15.6661	0.5561	-0.3339	0.6486	0	0	0	9	0	0
230.6720	16.0000	16.0000	16.4619	15.0534	0.4619	-0.9466	1.0533	8	0	11	0	0	0
234.6880	16.0000	16.0000	16.4740	15.7067	0.4740	-0.2933	0.5574	0	0	0	7	0	0
238.5000	16.0000	16.0000	16.6255	15.0686	0.6255	-0.9314	1.1219	9	0	5	0	0	0
242.3440	16.0000	16.0000	16.5112	15.7715	0.5112	-0.2285	0.5600	0	0	0	10	0	0
246.1570	16.0000	16.0000	16.2885	15.2339	0.2885	-0.7661	0.8186	6	0	11	0	0	0
250.0940	16.0000	16.0000	16.6217	15.7857	0.6217	-0.2143	0.6576	0	0	0	14	0	0
254.1720	16.0000	16.0000	16.1262	15.1942	0.1262	-0.8058	0.8157	5	0	17	0	0	0
258.0630	16.0000	16.0000	16.5626	16.0785	0.5626	0.0785	0.5681	0	0	0	20	0	0
261.7820	16.0000	16.0000	15.8879	15.4803	-0.1121	-0.5197	0.5317	0	0	16	0	0	0
265.7660	16.0000	16.0000	16.3250	15.9276	0.3250	-0.0724	0.3329	0	0	0	8	0	0
269.6100	16.0000	16.0000	16.2604	15.6837	0.2604	-0.3163	0.4097	0	0	0	0	0	0
273.4220	16.0000	16.0000	16.3406	15.7403	0.3406	-0.2597	0.4283	0	0	0	0	0	0
277.1880	16.0000	16.0000	16.7441	15.2968	0.7441	-0.7032	1.0238	8	0	0	5	0	0
280.9690	16.0000	16.0000	16.1854	15.7191	0.1854	-0.2809	0.3366	0	0	0	0	0	0
285.1250	16.0000	16.0000	16.3167	15.3428	0.3167	-0.6572	0.7295	5	0	7	0	0	0
289.0320	16.0000	16.0000	16.5364	15.7859	0.5364	-0.2141	0.5775	0	0	0	11	0	0
293.1880	16.0000	16.0000	16.1037	15.3602	0.1037	-0.6398	0.6482	0	0	14	0	0	0
297.1880	16.0000	16.0000	16.8698	15.8052	0.8698	-0.1948	0.8914	5	0	0	23	0	0
301.1880	16.0000	16.0000	15.4804	15.4275	-0.5196	-0.5725	0.7731	0	0	30	0	0	0
305.0160	16.0000	16.0000	16.4452	15.8551	0.4452	-0.1449	0.4682	0	0	0	10	0	0
308.8440	16.0000	16.0000	16.3929	15.8349	0.3929	-0.1651	0.4262	0	0	0	8	0	0
312.5320	16.0000	16.0000	16.3334	15.6843	0.3334	-0.3157	0.4592	0	0	0	0	0	0
316.5160	16.0000	16.0000	16.6491	15.4741	0.6491	-0.5259	0.8354	7	0	0	7	0	0
320.4690	16.0000	16.0000	16.2511	16.0282	0.2511	0.0282	0.2527	0	0	0	9	0	0
324.5630	16.0000	16.0000	16.1977	15.3723	0.1977	-0.6277	0.6581	0	0	10	0	0	0
328.5780	16.0000	16.0000	16.5776	15.9283	0.5776	-0.0717	0.5820	0	0	0	16	0	0
332.3910	16.0000	16.0000	16.0724	15.1425	0.0724	-0.8575	0.8606	5	0	20	0	0	0
336.4380	16.0000	16.0000	16.6271	15.6435	0.6271	-0.3565	0.7214	0	0	0	11	0	0
340.3910	16.0000	16.0000	16.0742	15.9161	0.0742	-0.0839	0.1120	0	0	0	0	0	0
344.3130	16.0000	16.0000	16.0071	15.7827	0.0071	-0.2173	0.2174	0	0	5	0	0	0
348.0470	16.0000	16.0000	16.1248	16.0136	0.1248	0.0136	0.1256	0	0	0	0	0	0
352.0320	16.0000	16.0000	16.3753	15.8943	0.3753	-0.1057	0.3899	0	0	0	9	0	0
355.9220	16.0000	16.0000	15.9988	15.8352	-0.0012	-0.1648	0.1648	0	0	0	0	0	0
359.7970	16.0000	16.0000	15.8895	15.9181	-0.1105	-0.0819	0.1375	0	0	5	0	0	0
363.5320	16.0000	16.0000	16.3558	15.8527	0.3558	-0.1473	0.3851	0	0	0	7	0	0
367.4530	16.0000	16.0000	16.0352	16.0046	0.0352	0.0046	0.0355	0	0	0	0	0	0
371.5940	16.0000	16.0000	16.2883	15.8936	0.2883	-0.1064	0.3073	0	0	0	6	0	0
375.5940	16.0000	16.0000	16.2200	15.7497	0.2200	-0.2503	0.3332	0	0	0	0	0	0
379.2030	16.0000	16.0000	16.2452	15.7732	0.2452	-0.2268	0.3340	0	0	0	0	0	0
383.0630	16.0000	16.0000	16.5381	15.4620	0.5381	-0.5380	0.7609	6	0	0	0	0	0
386.8440	16.0000	16.0000	16.1805	16.0766	0.1805	0.0766	0.1961	0	0	0	7	0	0
390.6250	16.0000	16.0000	16.0852	15.7298	0.0852	-0.2702	0.2834	0	0	0	0	0	0
394.5470	16.0000	16.0000	16.0434	16.0280	0.0434	0.0280	0.0516	0	0	0	0	0	0
398.1410	16.0000	16.0000	15.8908	16.0739	-0.1092	0.0739	0.1318	0	0	0	0	0	0
401.9380	16.0000	16.0000	15.8126	16.1241	-0.1874	0.1241	0.2247	0	0	0	0	0	0
405.5470	16.0000	16.0000	16.0163	16.0707	0.0163	0.0707	0.0725	0	0	0	0	0	0
409.2500	16.0000	16.0000	15.9291	16.2406	-0.0709	0.2406	0.2508	0	0	0	0	0	0
413.2970	16.0000	16.0000	16.0211	16.2438	0.0211	0.2438	0.2448	0	0	0	7	0	0
417.4380	16.0000	16.0000	15.6434	16.0525	-0.3566	0.0525	0.3604	0	0	9	0	0	0
421.3600	16.0000	16.0000	16.2648	16.0658	0.2648	0.0658	0.2728	0	0	0	10	0	0
425.1570	16.0000	16.0000	15.8371	16.0841	-0.1629	0.0841	0.1833	0	0	0	0	0	0
428.9070	16.0000	16.0000	16.1108	15.9464	0.1108	-0.0536	0.1231	0	0	0	0	0	0
432.7190	16.0000	16.0000	16.0320	16.0148	0.0320	0.0148	0.0352	0	0	0	0	0	0
436.2660	16.0000	16.0000	16.2060	15.9169	0.2060	-0.0831	0.2221	0	0	0	0	0	0
440.2030	16.0000	16.0000	16.3784	15.7370	0.3784	-0.2630	0.4608	0	0	0	5	0	0
444.2190	16.0000	16.0000	15.8424	15.7497	-0.1576	-0.2503	0.2958	0	0	11	0	0	0
448.2350	16.0000	16.0000	16.4296	15.8980	0.4296	-0.1020	0.4415	0	0	0	11	0	0

	452.2190	16.0000	16.0000	15.7929	15.8402	-0.2071	-0.1598	0.2616	0	0	10	0	0	0
	456.3130	16.0000	16.0000	16.3216	16.1096	0.3216	0.1096	0.3397	0	0	0	13	0	0
	460.2500	16.0000	16.0000	16.1859	16.1859	0.1859	-0.3799	0.4229	0	0	0	0	0	0
	464.2500	16.0000	16.0000	15.9901	15.6232	-0.0099	-0.3768	0.3770	0	0	10	0	0	0

\*\*\*\*\*  
\* Auto guider Report for m63\_lum.00000926.M63.FIT \*  
\*\*\*\*\*

CCDSOFT Tracking Report  
Start Date Time = 2006-02-17T08:03:37.234  
Camera = Imager's built-in auto guider  
X Axis = Enabled  
Y Axis = Enabled  
ExposureTime = 3.00  
Aggressiveness Factor = 7  
Calibration Time X = 10.00  
Calibration Time Y = 10.00  
Calibration declination = 13.17  
Declination now = 12.74  
Minimum Move = 0.05  
Maximum Move = 0.75  
Backlash X = 0.00  
Backlash Y = 0.05  
Delay After Move = 0.00  
Auto guide using Relays

Calibration Determined Velocity Vectors (pixels/sec)  
XPlus Speed= 17.04160 (XPlus X= -11.29674, XPlus Y= 12.75930) Angle= 131.52000  
XMinus Speed= 17.19250 (XMinus X= 11.43776, XMinus Y= -12.83588) Angle= 311.70000  
YPlus Speed= 3.51580 (YPlus X= 2.64199, YPlus Y= 2.31965) Angle= 41.28000  
YMinus Speed= 3.37040 (YMinus X= -2.61370, YMinus Y= -2.12794) Angle= 219.15000

Elapsed Secs	RefCentroidX	RefCentroidY	CurCentroidX	CurCentroidY	GuideErrX	GuideErrY	TotGuideErr	XPlusRelay	XMinusRelay	YPlusRelay	YMinusRelay	PECIndex RA	PECIndex Dec
	0.0000	16.0000	16.0000	17.7532	15.8839	1.7532	-0.1161	1.7570	10	0	0	53	0
	13.4380	16.0000	16.0000	15.4449	14.1833	-0.5551	-1.8167	1.8996	8	0	64	0	0
	17.4060	16.0000	16.0000	16.0693	14.9999	0.0693	-1.0001	1.0025	6	0	24	0	0
	21.3280	16.0000	16.0000	15.8716	15.2721	-0.1284	-0.7279	0.7391	0	0	23	0	0
	25.3440	16.0000	16.0000	15.6073	15.3367	-0.3927	-0.6633	0.7708	0	0	29	0	0
	29.4690	16.0000	16.0000	15.6429	15.0683	-0.3571	-0.9317	0.9978	0	0	35	0	0
	34.1880	16.0000	16.0000	16.4087	15.5273	0.4087	-0.4727	0.6249	0	0	0	0	0
	40.1410	16.0000	16.0000	17.0118	15.2666	1.0118	-0.7334	1.2497	9	0	0	13	0
	43.8750	16.0000	16.0000	16.3136	16.0164	0.3136	0.0164	0.3141	0	0	0	10	0
	47.8590	16.0000	16.0000	16.7464	15.6778	0.7464	-0.3222	0.8129	6	0	0	15	0
	52.0160	16.0000	16.0000	16.5053	16.1230	0.5053	0.1230	0.5201	0	0	0	19	0
	55.9530	16.0000	16.0000	16.6182	16.1468	0.6182	0.1468	0.6354	0	0	0	23	0
	60.1720	16.0000	16.0000	16.4587	16.3546	0.4587	0.3546	0.5798	0	0	0	23	0
	64.3440	16.0000	16.0000	16.2389	16.8489	0.2389	0.8489	0.8819	0	0	0	30	0
	68.3750	16.0000	16.0000	16.1456	16.4612	0.1456	0.4612	0.4837	0	0	0	16	0
	72.2190	16.0000	16.0000	15.7683	16.7579	-0.2317	0.7579	0.7926	0	5	0	12	0
	76.0630	16.0000	16.0000	15.8808	15.9240	-0.1192	-0.0760	0.1413	0	0	5	0	0
	79.8280	16.0000	16.0000	16.0787	16.1920	0.0787	0.1920	0.2075	0	0	0	7	0
	83.8280	16.0000	16.0000	15.5947	16.1847	-0.4053	0.1847	0.4454	0	0	7	0	0
	87.6880	16.0000	16.0000	16.1818	16.1936	0.1818	0.1936	0.2655	0	0	0	11	0
	91.5000	16.0000	16.0000	15.6568	16.2045	-0.3432	0.2045	0.3995	0	0	0	0	0
	95.3750	16.0000	16.0000	15.7584	16.0882	-0.2416	0.0882	0.2572	0	0	0	0	0
	99.2190	16.0000	16.0000	15.4025	16.3475	-0.5975	0.3475	0.6912	0	5	8	0	0
	103.3280	16.0000	16.0000	15.8768	16.5870	-0.1232	0.5870	0.5998	0	0	0	11	0
	107.2030	16.0000	16.0000	15.6364	16.1647	-0.3636	0.1647	0.3991	0	0	6	0	0
	111.0310	16.0000	16.0000	15.6620	16.4682	-0.3380	0.4682	0.5775	0	0	0	0	0
	114.7500	16.0000	16.0000	16.0029	16.3788	0.0029	0.3788	0.3788	0	0	0	9	0
	118.5630	16.0000	16.0000	15.3322	16.3927	-0.6678	0.3927	0.7747	0	6	9	0	0
	122.7190	16.0000	16.0000	16.1278	16.6932	0.1278	0.6932	0.7049	0	0	0	22	0
	126.7190	16.0000	16.0000	15.3213	15.8837	-0.6787	-0.1163	0.6886	0	0	23	0	0
	130.2660	16.0000	16.0000	15.7287	16.3084	-0.2713	0.3084	0.4107	0	0	0	0	0
	134.3750	16.0000	16.0000	16.1469	16.1026	0.1469	0.1026	0.1792	0	0	0	7	0
	138.2970	16.0000	16.0000	15.8949	16.2931	-0.1051	0.2931	0.3113	0	0	0	0	0
	142.0630	16.0000	16.0000	16.1027	16.2864	0.1027	0.2864	0.3043	0	0	0	10	0
	146.1560	16.0000	16.0000	15.5151	16.2100	-0.4849	0.2100	0.5284	0	0	9	0	0
	150.0940	16.0000	16.0000	15.7443	16.7408	-0.2557	0.7408	0.7837	0	5	0	11	0
	154.0780	16.0000	16.0000	15.8240	15.9302	-0.1760	-0.0698	0.1893	0	0	7	0	0
	157.8440	16.0000	16.0000	15.8284	16.3216	-0.1716	0.3216	0.3645	0	0	0	0	0
	161.8440	16.0000	16.0000	16.0357	16.1789	0.0357	0.1789	0.1824	0	0	0	5	0
	165.6720	16.0000	16.0000	15.9993	16.3473	-0.0007	0.3473	0.3473	0	0	0	9	0
	169.5310	16.0000	16.0000	15.4978	16.2990	-0.5022	0.2990	0.5845	0	0	7	0	0
	173.5470	16.0000	16.0000	16.2592	16.4222	0.2592	0.4222	0.4955	0	0	0	19	0
	177.6880	16.0000	16.0000	15.2984	15.8913	-0.7016	-0.1087	0.7099	0	0	23	0	0
	181.5000	16.0000	16.0000	16.1536	16.0087	0.1536	0.0087	0.1539	0	0	0	0	0
	185.4060	16.0000	16.0000	16.0659	16.1816	0.0659	0.1816	0.1931	0	0	0	7	0

189.2970	16.0000	16.0000	16.1045	16.2296	0.1045	0.2296	0.2523	0	0	0	9	0	0
193.1090	16.0000	16.0000	16.3948	16.1016	0.3948	0.1016	0.4077	0	0	0	15	0	0
197.2190	16.0000	16.0000	15.5266	15.3097	-0.4734	-0.6903	0.8370	0	0	32	0	0	0
200.7970	16.0000	16.0000	16.4381	15.4744	0.4381	-0.5256	0.6842	5	0	0	0	0	0
204.7500	16.0000	16.0000	16.1299	16.2268	0.1299	0.2268	0.2613	0	0	0	9	0	0
208.6090	16.0000	16.0000	16.4897	15.9282	0.4897	-0.0718	0.4950	0	0	0	14	0	0
212.4060	16.0000	16.0000	16.1634	15.7948	0.1634	-0.2052	0.2624	0	0	0	0	0	0
216.1880	16.0000	16.0000	15.9729	15.8088	-0.0271	-0.1912	0.1931	0	0	5	0	0	0
219.9220	16.0000	16.0000	16.3647	15.7254	0.3647	-0.2746	0.4566	0	0	0	0	0	0
223.8280	16.0000	16.0000	16.5272	15.8627	0.5272	-0.1373	0.5447	0	0	0	13	0	0
227.8750	16.0000	16.0000	16.3622	14.9542	0.3622	-1.0458	1.1068	8	0	16	0	0	0
232.1410	16.0000	16.0000	17.0888	15.4868	1.0888	-0.5132	1.2037	9	0	0	21	0	0
235.8910	16.0000	16.0000	16.4235	15.7389	0.4235	-0.2611	0.4976	0	0	0	7	0	0
239.8910	16.0000	16.0000	16.1671	14.8291	0.1671	-1.1709	1.1828	8	0	25	0	0	0
243.5310	16.0000	16.0000	16.1418	15.6837	0.1418	-0.3163	0.3466	0	0	0	0	0	0
247.4530	16.0000	16.0000	16.4417	15.4020	0.4417	-0.5980	0.7434	6	0	0	0	0	0
251.4220	16.0000	16.0000	16.1270	15.4680	0.1270	-0.5320	0.5470	0	0	10	0	0	0
255.1720	16.0000	16.0000	16.3285	15.8374	0.3285	-0.1626	0.3666	0	0	0	6	0	0
259.1560	16.0000	16.0000	16.5002	15.8906	0.5002	-0.1094	0.5120	0	0	0	13	0	0
262.9840	16.0000	16.0000	16.6252	15.4836	0.6252	-0.5164	0.8109	6	0	0	6	0	0
266.7500	16.0000	16.0000	16.3861	15.1866	0.3861	-0.8134	0.9004	7	0	9	0	0	0
270.4690	16.0000	16.0000	16.5443	15.7501	0.5443	-0.2499	0.5989	0	0	0	11	0	0
274.3590	16.0000	16.0000	16.3399	15.4058	0.3399	-0.5942	0.6846	5	0	5	0	0	0
278.2970	16.0000	16.0000	16.8331	15.4282	0.8331	-0.5718	1.0105	7	0	0	11	0	0
281.9060	16.0000	16.0000	16.2461	15.8848	0.2461	-0.1152	0.2717	0	0	0	0	0	0
285.8280	16.0000	16.0000	16.6254	15.5993	0.6254	-0.4007	0.7427	5	0	0	9	0	0
289.8750	16.0000	16.0000	16.0958	15.1424	0.0958	-0.8576	0.8629	5	0	19	0	0	0
293.9060	16.0000	16.0000	16.3307	15.8442	0.3307	-0.1558	0.3655	0	0	0	6	0	0
297.5940	16.0000	16.0000	16.4613	15.3514	0.4613	-0.6486	0.7959	6	0	0	0	0	0
301.5780	16.0000	16.0000	16.0435	15.8492	0.0435	-0.1508	0.1569	0	0	0	0	0	0
305.5000	16.0000	16.0000	16.5901	15.6827	0.5901	-0.3173	0.6700	0	0	0	10	0	0
309.4690	16.0000	16.0000	16.0185	15.1707	0.0185	-0.8293	0.8295	0	0	21	0	0	0
313.6090	16.0000	16.0000	16.6951	15.9797	0.6951	-0.0203	0.6954	0	0	0	21	0	0
317.3590	16.0000	16.0000	16.6010	15.2261	0.6010	-0.7739	0.9798	7	0	0	0	0	0
321.0630	16.0000	16.0000	16.3908	15.4022	0.3908	-0.5978	0.7142	5	0	0	0	0	0
324.7970	16.0000	16.0000	16.4506	15.3634	0.4506	-0.6366	0.7799	6	0	0	0	0	0
328.7190	16.0000	16.0000	16.2010	15.3672	0.2010	-0.6328	0.6640	0	0	10	0	0	0
332.8750	16.0000	16.0000	17.2487	15.7803	1.2487	-0.2197	1.2679	8	0	0	34	0	0
337.1410	16.0000	16.0000	15.6499	14.7487	-0.3501	-1.2513	1.2994	5	0	43	0	0	0
341.2970	16.0000	16.0000	16.1002	15.3095	0.1002	-0.6905	0.6977	0	0	0	15	0	0
345.2500	16.0000	16.0000	16.3517	15.1314	0.3517	-0.8686	0.9371	7	0	0	12	0	0
349.0160	16.0000	16.0000	15.8824	15.8997	-0.1176	-0.1003	0.1546	0	0	6	0	0	0
352.9380	16.0000	16.0000	16.5344	15.4026	0.5344	-0.5974	0.8015	6	0	0	0	0	0
356.7660	16.0000	16.0000	16.0236	15.8424	0.0236	-0.1576	0.1594	0	0	0	0	0	0
360.7970	16.0000	16.0000	15.7067	15.8274	-0.2933	-0.1726	0.3403	0	0	13	0	0	0
364.7500	16.0000	16.0000	16.1958	15.9971	0.1958	-0.0029	0.1958	0	0	0	6	0	0
368.6410	16.0000	16.0000	16.4688	16.0059	0.4688	0.0059	0.4689	0	0	0	15	0	0
372.4380	16.0000	16.0000	16.7201	15.3170	0.7201	-0.6830	0.9925	8	0	0	5	0	0
376.4380	16.0000	16.0000	16.4584	15.9000	0.4584	-0.1000	0.4692	0	0	0	11	0	0
380.2970	16.0000	16.0000	16.5800	15.7159	0.5800	-0.2841	0.6458	0	0	0	11	0	0
383.9690	16.0000	16.0000	16.4838	15.8606	0.4838	-0.1394	0.5035	0	0	0	11	0	0
387.8910	16.0000	16.0000	16.3247	16.0749	0.3247	0.0749	0.3332	0	0	0	12	0	0
391.6560	16.0000	16.0000	16.4237	15.7214	0.4237	-0.2786	0.5071	0	0	0	6	0	0
395.6410	16.0000	16.0000	16.0693	16.5994	0.0693	0.5994	0.6034	0	0	0	18	0	0
399.7030	16.0000	16.0000	15.7418	15.5322	-0.2582	-0.4678	0.5343	0	0	20	0	0	0
403.6560	16.0000	16.0000	15.9418	16.3934	-0.0582	0.3934	0.3977	0	0	0	8	0	0
407.4690	16.0000	16.0000	15.8849	16.2680	-0.1151	0.2680	0.2917	0	0	0	0	0	0
411.3130	16.0000	16.0000	16.3219	16.5447	0.3219	0.5447	0.6327	0	0	0	24	0	0
415.2500	16.0000	16.0000	15.4491	15.8935	-0.5509	-0.1065	0.5611	0	0	19	0	0	0
419.0630	16.0000	16.0000	15.9753	15.8511	-0.0247	-0.1489	0.1509	0	0	0	0	0	0
422.8590	16.0000	16.0000	16.1136	15.9704	0.1136	-0.0296	0.1174	0	0	0	0	0	0
426.8280	16.0000	16.0000	15.9282	15.3445	-0.0718	-0.6555	0.6594	0	0	19	0	0	0
430.5630	16.0000	16.0000	16.2033	15.7081	0.2033	-0.2919	0.3557	0	0	0	0	0	0
434.2190	16.0000	16.0000	16.0493	16.0353	0.0493	0.0353	0.0606	0	0	0	0	0	0
438.1880	16.0000	16.0000	16.3479	16.2848	0.3479	0.2848	0.4496	0	0	0	18	0	0
442.2340	16.0000	16.0000	16.0455	16.6781	0.0455	0.6781	0.6796	0	0	0	18	0	0
446.3130	16.0000	16.0000	15.6313	16.0793	-0.3687	0.0793	0.3771	0	0	9	0	0	0
450.2030	16.0000	16.0000	16.0488	16.3902	0.0488	0.3902	0.3932	0	0	0	11	0	0
454.2660	16.0000	16.0000	15.6255	16.0128	-0.3745	0.0128	0.3747	0	0	11	0	0	0
458.3280	16.0000	16.0000	16.4704	16.5068	0.4704	0.5068	0.6915	0	0	0	28	0	0
462.5940	16.0000	16.0000	14.8076	15.4917	-1.1924	-0.5083	1.2962	0	0	49	0	0	0
466.6410	16.0000	16.0000	15.3647	16.0524	-0.6353	0.0524	0.6374	0	0	17	0	0	0
470.6250	16.0000	16.0000	15.5585	15.5439	-0.4415	-0.4561	0.6348	0	0	25	0	0	0
474.6880	16.0000	16.0000	15.1445	15.9846	-0.8555	-0.0154	0.8556	0	0	25	0	0	0
478.6880	16.0000	16.0000	15.3406	15.8211	-0.6594	-0.1789	0.6832	0	0	24	0	0	0
482.7500	16.0000	16.0000	15.0715	16.3505	-0.9285	0.3505	0.9924	0	7	18	0	0	0

CCDSOFT Tracking Report  
Start Date Time = 2006-02-17T08:14:58.171  
Camera = Imager's built-in autoguider

X Axis = Enabled  
 Y Axis = Enabled  
 ExposureTime = 3.00  
 Aggressiveness Factor = 7  
 Calibration Time X = 10.00  
 Calibration Time Y = 10.00  
 Calibration declination = 13.17  
 Declination now = 12.74  
 Minimum Move = 0.05  
 Maximum Move = 0.75  
 Backlash X = 0.00  
 Backlash Y = 0.05  
 Delay After Move = 0.00  
 Autoguide using Relays

Calibration Determined Velocity Vectors (pixels/sec)  
 XPlus Speed= 17.04160 (XPlus X= -11.29674, XPlus Y= 12.75930) Angle= 131.52000  
 XMinus Speed= 17.19250 (XMinus X= 11.43776, XMinus Y= -12.83588) Angle= 311.70000  
 YPlus Speed= 3.51580 (YPlus X= 2.64199, YPlus Y= 2.31965) Angle= 41.28000  
 YMinus Speed= 3.37040 (YMinus X= -2.61370, YMinus Y= -2.12794) Angle= 219.15000

Elapsed Secs	RefCentroidX	RefCentroidY	CurCentroidX	CurCentroidY	GuideErrX	GuideErrY	TotGuideErr	XPlusRelay	XMinusRelay	YPlusRelay	YMinusRelay	PECIndex	RA	PECIndex	Dec
0.0000	16.0000	16.0000	16.2262	16.3819	0.2262	0.3819	0.4438	0	0	0	0	17		0	0
12.5790	16.0000	16.0000	16.6148	15.9057	0.6148	-0.0943	0.6220	0	0	0	0	17		0	0
16.7350	16.0000	16.0000	16.5116	16.1839	0.5116	0.1839	0.5436	0	0	0	0	21		0	0

\*\*\*\*\*  
 \* Autoguider Report for m63\_lum.00000927.M63.FIT \*  
 \*\*\*\*\*

CCDSoft Tracking Report  
 Start Date Time = 2006-02-17T08:15:20.609  
 Camera = Imager's built-in autoguider  
 X Axis = Enabled  
 Y Axis = Enabled  
 ExposureTime = 3.00  
 Aggressiveness Factor = 7  
 Calibration Time X = 10.00  
 Calibration Time Y = 10.00  
 Calibration declination = 13.17  
 Declination now = 12.74  
 Minimum Move = 0.05  
 Maximum Move = 0.75  
 Backlash X = 0.00  
 Backlash Y = 0.05  
 Delay After Move = 0.00  
 Autoguide using Relays

Calibration Determined Velocity Vectors (pixels/sec)  
 XPlus Speed= 17.04160 (XPlus X= -11.29674, XPlus Y= 12.75930) Angle= 131.52000  
 XMinus Speed= 17.19250 (XMinus X= 11.43776, XMinus Y= -12.83588) Angle= 311.70000  
 YPlus Speed= 3.51580 (YPlus X= 2.64199, YPlus Y= 2.31965) Angle= 41.28000  
 YMinus Speed= 3.37040 (YMinus X= -2.61370, YMinus Y= -2.12794) Angle= 219.15000

Elapsed Secs	RefCentroidX	RefCentroidY	CurCentroidX	CurCentroidY	GuideErrX	GuideErrY	TotGuideErr	XPlusRelay	XMinusRelay	YPlusRelay	YMinusRelay	PECIndex	RA	PECIndex	Dec
0.0000	16.0000	16.0000	17.1959	15.4174	1.1959	-0.5826	1.3303	9	0	0	0	23		0	0
12.8590	16.0000	16.0000	17.1579	15.9081	1.1579	-0.0919	1.1616	7	0	0	0	35		0	0
16.9530	16.0000	16.0000	17.0758	15.8033	1.0758	-0.1967	1.0936	7	0	0	0	29		0	0
20.9680	16.0000	16.0000	16.7692	16.1172	0.7692	0.1172	0.7780	0	0	0	0	28		0	0
24.7810	16.0000	16.0000	16.3708	15.4679	0.3708	-0.5321	0.6486	5	0	0	0	0		0	0
28.6560	16.0000	16.0000	16.3517	15.8354	0.3517	-0.1646	0.3883	0	0	0	0	7		0	0
34.2650	16.0000	16.0000	16.3303	15.6791	0.3303	-0.3209	0.4605	0	0	0	0	0		0	0
38.2810	16.0000	16.0000	16.4738	15.8280	0.4738	-0.1720	0.5041	0	0	0	0	10		0	0
41.9530	16.0000	16.0000	16.5322	15.5843	0.5322	-0.4157	0.6753	5	0	0	0	6		0	0
45.6560	16.0000	16.0000	16.3415	15.4877	0.3415	-0.5123	0.6157	0	0	0	0	0		0	0
49.6400	16.0000	16.0000	16.5130	15.3898	0.5130	-0.6102	0.7972	6	0	0	0	0		0	0
53.3590	16.0000	16.0000	16.7355	15.3940	0.7355	-0.6060	0.9530	7	0	0	0	7		0	0
57.2650	16.0000	16.0000	16.4061	15.6960	0.4061	-0.3040	0.5073	0	0	0	0	0		0	0
60.9840	16.0000	16.0000	16.7179	15.2035	0.7179	-0.7965	1.0723	9	0	0	0	0		0	0
64.7810	16.0000	16.0000	16.4061	15.8005	0.4061	-0.1995	0.4525	0	0	0	0	7		0	0
68.8280	16.0000	16.0000	16.1370	15.3279	0.1370	-0.6721	0.6859	0	0	13	0	0		0	0
72.5930	16.0000	16.0000	16.3536	15.6707	0.3536	-0.3293	0.4832	0	0	0	0	0		0	0
76.2970	16.0000	16.0000	16.3193	15.7939	0.3193	-0.2061	0.3801	0	0	0	0	0		0	0
80.2500	16.0000	16.0000	16.6407	15.4069	0.6407	-0.5931	0.8731	7	0	0	0	0		0	0
84.3900	16.0000	16.0000	16.5189	15.8798	0.5189	-0.1202	0.5326	0	0	0	0	13		0	0
88.3900	16.0000	16.0000	16.7339	15.3210	0.7339	-0.6790	0.9998	8	0	0	0	5		0	0
92.1560	16.0000	16.0000	16.4521	15.5579	0.4521	-0.4421	0.6323	0	0	0	0	0		0	0
95.9840	16.0000	16.0000	16.5837	15.7406	0.5837	-0.2594	0.6388	0	0	0	0	11		0	0
99.9370	16.0000	16.0000	16.9924	14.6867	0.9924	-1.3133	1.6461	13	0	0	0	0		0	0

103.6560	16.0000	16.0000	16.6465	15.1453	0.6465	-0.8547	1.0716	9	0	0	0	0	0
107.4680	16.0000	16.0000	16.5223	15.0848	0.5223	-0.9152	1.0537	8	0	8	0	0	0
111.3900	16.0000	16.0000	16.5234	15.6827	0.5234	-0.3173	0.6123	0	0	0	8	0	0
115.3900	16.0000	16.0000	16.6379	15.3280	0.6379	-0.6720	0.9265	7	0	0	0	0	0
119.0000	16.0000	16.0000	16.6053	15.3654	0.6053	-0.6346	0.8770	7	0	0	0	0	0
122.8430	16.0000	16.0000	16.3932	15.9009	0.3932	-0.0991	0.4055	0	0	0	9	0	0
126.5000	16.0000	16.0000	16.3008	15.5379	0.3008	-0.4621	0.5514	0	0	0	0	0	0
130.3750	16.0000	16.0000	16.1195	15.7316	0.1195	-0.2684	0.2938	0	0	0	0	0	0
134.2180	16.0000	16.0000	16.2440	15.8006	0.2440	-0.1994	0.3151	0	0	0	0	0	0
138.2500	16.0000	16.0000	16.5424	15.5363	0.5424	-0.4637	0.7136	5	0	0	5	0	0
142.0000	16.0000	16.0000	16.2974	15.7254	0.2974	-0.2746	0.4048	0	0	0	0	0	0
145.9060	16.0000	16.0000	16.8263	15.2221	0.8263	-0.7779	1.1349	9	0	0	6	0	0
149.7180	16.0000	16.0000	16.1059	15.6255	0.1059	-0.3745	0.3891	0	0	7	0	0	0
153.4060	16.0000	16.0000	16.3952	15.7302	0.3952	-0.2698	0.4785	0	0	0	5	0	0
157.3280	16.0000	16.0000	16.5626	15.3639	0.5626	-0.6361	0.8492	7	0	0	0	0	0
161.0780	16.0000	16.0000	16.1297	15.9125	0.1297	-0.0875	0.1565	0	0	0	0	0	0
164.9060	16.0000	16.0000	16.5454	15.7366	0.5454	-0.2634	0.6056	0	0	0	10	0	0
168.9370	16.0000	16.0000	15.8418	15.9058	-0.1582	-0.0942	0.1842	0	0	7	0	0	0
173.0150	16.0000	16.0000	16.4190	15.7536	0.4190	-0.2464	0.4861	0	0	0	7	0	0
176.8750	16.0000	16.0000	16.1799	15.8584	0.1799	-0.1416	0.2289	0	0	0	0	0	0
180.8280	16.0000	16.0000	15.7126	15.7863	-0.2874	-0.2137	0.3581	0	0	0	0	0	0
184.6720	16.0000	16.0000	16.5724	16.0527	0.5724	0.0527	0.5749	0	0	0	19	0	0
188.6090	16.0000	16.0000	16.0693	15.5362	0.0693	-0.4638	0.4689	0	0	9	0	0	0
192.5150	16.0000	16.0000	16.6281	15.6345	0.6281	-0.3655	0.7267	5	0	0	10	0	0
196.3280	16.0000	16.0000	16.4772	15.1629	0.4772	-0.8371	0.9636	7	0	0	7	0	0
200.2340	16.0000	16.0000	16.5034	15.8670	0.5034	-0.1330	0.5207	0	0	0	12	0	0
204.4060	16.0000	16.0000	16.3181	15.1047	0.3181	-0.8953	0.9502	7	0	0	14	0	0
208.4840	16.0000	16.0000	16.5120	16.1837	0.5120	0.1837	0.5440	0	0	0	21	0	0
212.3900	16.0000	16.0000	15.6982	15.2246	-0.3018	-0.7754	0.8321	0	0	29	0	0	0
216.4680	16.0000	16.0000	16.2027	16.0011	0.2027	0.0011	0.2027	0	0	0	6	0	0
220.4370	16.0000	16.0000	16.1677	15.9759	0.1677	-0.0241	0.1695	0	0	0	0	0	0
224.2970	16.0000	16.0000	16.1761	15.9762	0.1761	-0.0238	0.1777	0	0	0	0	0	0
228.1870	16.0000	16.0000	16.2878	16.0280	0.2878	0.0280	0.2891	0	0	0	9	0	0
232.0780	16.0000	16.0000	16.3447	15.8283	0.3447	-0.1717	0.3851	0	0	0	6	0	0
236.3590	16.0000	16.0000	16.3401	15.9146	0.3401	-0.0854	0.3507	0	0	0	8	0	0
240.1400	16.0000	16.0000	15.9634	15.7078	-0.0366	-0.2922	0.2945	0	0	0	9	0	0
244.2030	16.0000	16.0000	16.6261	15.7083	0.6261	-0.2917	0.6907	0	0	0	12	0	0
248.4220	16.0000	16.0000	15.7325	15.7770	-0.2675	-0.2230	0.3483	0	0	14	0	0	0
252.5930	16.0000	16.0000	16.4848	15.9561	0.4848	-0.0439	0.4867	0	0	0	14	0	0
256.3900	16.0000	16.0000	15.9764	16.0339	-0.0236	0.0339	0.0413	0	0	0	0	0	0
260.2030	16.0000	16.0000	15.7402	15.8952	-0.2598	-0.1048	0.2801	0	0	10	0	0	0
264.0930	16.0000	16.0000	16.1204	16.5517	0.1204	0.5517	0.5647	0	0	0	18	0	0
268.1560	16.0000	16.0000	15.5429	16.0206	-0.4571	0.0206	0.4576	0	0	0	13	0	0
272.2180	16.0000	16.0000	16.1183	16.6657	0.1183	0.6657	0.6761	0	0	0	21	0	0
276.4060	16.0000	16.0000	15.3280	15.9064	-0.6720	-0.0936	0.6785	0	0	22	0	0	0
280.4840	16.0000	16.0000	16.2566	16.5583	0.2566	0.5583	0.6144	0	0	0	23	0	0
284.4680	16.0000	16.0000	15.4334	16.0505	-0.5666	0.0505	0.5688	0	0	15	0	0	0
288.5150	16.0000	16.0000	16.0405	16.2135	0.0405	0.2135	0.2173	0	0	0	7	0	0
292.4840	16.0000	16.0000	16.0819	16.1633	0.0819	0.1633	0.1827	0	0	0	7	0	0
296.4680	16.0000	16.0000	15.4668	16.3838	-0.5332	0.3838	0.6570	0	0	5	0	0	0
300.4060	16.0000	16.0000	15.9840	16.2493	-0.0160	0.2493	0.2499	0	0	0	6	0	0
304.1090	16.0000	16.0000	15.5132	16.7953	-0.4868	0.7953	0.9325	0	0	7	0	0	0
307.9530	16.0000	16.0000	15.7243	16.2855	-0.2757	0.2855	0.3969	0	0	0	0	0	0
311.5780	16.0000	16.0000	15.5040	16.7703	-0.4960	0.7703	0.9161	0	0	7	0	0	0
315.4680	16.0000	16.0000	15.6885	16.4785	-0.3115	0.4785	0.5709	0	0	0	0	0	0
319.5310	16.0000	16.0000	15.7443	16.7342	-0.2557	0.7342	0.7774	0	0	5	0	11	0
323.5150	16.0000	16.0000	15.3656	16.3703	-0.6344	0.3703	0.7346	0	0	5	9	0	0
327.4680	16.0000	16.0000	16.0582	16.5746	0.0582	0.5746	0.5776	0	0	0	0	16	0
331.2810	16.0000	16.0000	15.5262	16.0673	-0.4738	0.0673	0.4786	0	0	0	12	0	0
335.4680	16.0000	16.0000	15.7551	16.7708	-0.2449	0.7708	0.8088	0	0	6	0	12	0
339.2030	16.0000	16.0000	15.9285	16.0666	-0.0715	0.0666	0.0977	0	0	0	0	0	0
342.8590	16.0000	16.0000	15.6985	16.2492	-0.3015	0.2492	0.3912	0	0	0	0	0	0
346.5780	16.0000	16.0000	15.6696	16.2281	-0.3304	0.2281	0.4015	0	0	0	0	0	0
350.3750	16.0000	16.0000	15.7799	16.3300	-0.2201	0.3300	0.3967	0	0	0	0	0	0
354.1720	16.0000	16.0000	15.6580	16.7193	-0.3420	0.7193	0.7965	0	0	6	0	7	0
357.9840	16.0000	16.0000	15.7282	16.2124	-0.2718	0.2124	0.3449	0	0	0	0	0	0
361.7030	16.0000	16.0000	15.4983	16.7296	-0.5017	0.7296	0.8855	0	0	7	0	0	0
365.4680	16.0000	16.0000	16.1209	16.1360	0.1209	0.1360	0.1820	0	0	0	0	7	0
369.3590	16.0000	16.0000	15.7437	16.0147	-0.2563	0.0147	0.2567	0	0	0	7	0	0
373.2810	16.0000	16.0000	15.9878	16.0813	-0.0122	0.0813	0.0822	0	0	0	0	0	0
377.2180	16.0000	16.0000	16.3926	16.0179	0.3926	0.0179	0.3930	0	0	0	0	13	0
381.0470	16.0000	16.0000	16.0122	16.0356	0.0122	0.0356	0.0376	0	0	0	0	0	0
384.9060	16.0000	16.0000	16.1601	15.5688	0.1601	-0.4312	0.4599	0	0	0	6	0	0
388.7650	16.0000	16.0000	16.7158	15.7390	0.7158	-0.2610	0.7619	0	0	5	0	16	0
392.9370	16.0000	16.0000	15.9882	15.3972	-0.0118	-0.6028	0.6029	0	0	16	0	0	0
396.7340	16.0000	16.0000	16.5788	15.6395	0.5788	-0.3605	0.6819	0	0	5	0	9	0
400.4680	16.0000	16.0000	16.1186	15.7122	0.1186	-0.2878	0.3113	0	0	0	0	0	0
404.0150	16.0000	16.0000	16.5638	15.4392	0.5638	-0.5608	0.7952	0	0	6	0	0	0
407.8750	16.0000	16.0000	16.3361	15.8566	0.3361	-0.1434	0.3654	0	0	0	7	0	0

	411.6250	16.0000	16.0000	16.1995	15.6130	0.1995	-0.3870	0.4354	0	0	0	0	0	0
	415.6720	16.0000	16.0000	16.3714	15.4379	0.3714	-0.5621	0.6738	5	0	0	0	0	0
	419.7180	16.0000	16.0000	16.1802	15.7804	0.1802	-0.2196	0.2841	0	0	0	0	0	0
	423.4840	16.0000	16.0000	16.7562	15.4067	0.7562	-0.5933	0.9612	7	0	0	0	9	0
	427.1250	16.0000	16.0000	16.4673	15.4400	0.4673	-0.5600	0.7294	6	0	0	0	0	0
	431.1720	16.0000	16.0000	16.0139	15.6601	0.0139	-0.3399	0.3402	0	0	8	0	0	0
	435.2340	16.0000	16.0000	16.7443	15.5624	0.7443	-0.4376	0.8634	7	0	0	12	0	0
	439.0150	16.0000	16.0000	15.9598	15.8348	-0.0402	-0.1652	0.1701	0	0	5	0	0	0
	443.0780	16.0000	16.0000	16.6359	15.6476	0.6359	-0.3524	0.7270	5	0	0	11	0	0
	447.1090	16.0000	16.0000	16.2012	15.8902	0.2012	-0.1098	0.2292	0	0	0	0	0	0
	451.0620	16.0000	16.0000	16.6254	15.4026	0.6254	-0.5974	0.8648	7	0	0	0	0	0
	454.7650	16.0000	16.0000	16.4206	15.8513	0.4206	-0.1487	0.4462	0	0	0	9	0	0
	458.5150	16.0000	16.0000	16.3928	15.8643	0.3928	-0.1357	0.4156	0	0	0	9	0	0
	462.4220	16.0000	16.0000	16.6330	15.3974	0.6330	-0.6026	0.8740	7	0	0	0	0	0
	466.2500	16.0000	16.0000	16.4395	15.7721	0.4395	-0.2279	0.4951	0	0	0	8	0	0
	470.0150	16.0000	16.0000	16.7082	15.4975	0.7082	-0.5025	0.8684	7	0	0	9	0	0
	473.8430	16.0000	16.0000	16.4293	15.8657	0.4293	-0.1343	0.4498	0	0	0	10	0	0
	478.0470	16.0000	16.0000	16.6026	15.8788	0.6026	-0.1212	0.6146	0	0	0	16	0	0

\*\*\*\*\*  
\* Auto guider Report for m63\_lum.0000928.M63.FIT \*  
\*\*\*\*\*

CCDSOFT Tracking Report  
Start Date Time = 2006-02-17T08:23:31.281  
Camera = Imager's built-in auto guider  
X Axis = Enabled  
Y Axis = Enabled  
ExposureTime = 3.00  
Aggressiveness Factor = 7  
Calibration Time X = 10.00  
Calibration Time Y = 10.00  
Calibration declination = 13.17  
Declination now = 12.74  
Minimum Move = 0.05  
Maximum Move = 0.75  
Backlash X = 0.00  
Backlash Y = 0.05  
Delay After Move = 0.00  
Auto guide using Relays

Calibration Determined Velocity Vectors (pixels/sec)  
XPlus Speed= 17.04160 (XPlus X= -11.29674, XPlus Y= 12.75930) Angle= 131.52000  
XMinus Speed= 17.19250 (XMinus X= 11.43776, XMinus Y= -12.83588) Angle= 311.70000  
YPlus Speed= 3.51580 (YPlus X= 2.64199, YPlus Y= 2.31965) Angle= 41.28000  
YMinus Speed= 3.37040 (YMinus X= -2.61370, YMinus Y= -2.12794) Angle= 219.15000

	Elapsed Secs	RefCentroidX	RefCentroidY	CurCentroidX	CurCentroidY	GuideErrX	GuideErrY	TotGuideErr	XPlusRelay	XMinusRelay	YPlusRelay	YMinusRelay	PECIndex RA	PECIndex Dec
	0.0000	16.0000	16.0000	16.7286	15.2127	0.7286	-0.7873	1.0727	9	0	0	0	0	0
	12.3750	16.0000	16.0000	16.4348	15.5582	0.4348	-0.4418	0.6198	0	0	0	0	0	0
	18.0000	16.0000	16.0000	16.6054	15.5728	0.6054	-0.4272	0.7410	5	0	0	8	0	0
	21.8290	16.0000	16.0000	16.4333	15.8199	0.4333	-0.1801	0.4692	0	0	0	9	0	0
	25.7660	16.0000	16.0000	16.3831	15.8200	0.3831	-0.1800	0.4233	0	0	0	7	0	0
	29.7820	16.0000	16.0000	17.0383	15.6923	1.0383	-0.3077	1.0829	7	0	0	25	0	0
	33.7350	16.0000	16.0000	16.6612	15.9575	0.6612	-0.0425	0.6626	0	0	0	20	0	0
	37.6570	16.0000	16.0000	17.1277	15.8574	1.1277	-0.1426	1.1367	7	0	0	32	0	0
	41.5940	16.0000	16.0000	17.0472	15.9152	1.0472	-0.0848	1.0506	6	0	0	31	0	0
	45.7500	16.0000	16.0000	16.8869	16.1852	0.8869	0.1852	0.9060	0	0	0	33	0	0
	49.7970	16.0000	16.0000	17.0480	15.8839	1.0480	-0.1161	1.0544	6	0	0	30	0	0
	53.7970	16.0000	16.0000	16.8328	16.2146	0.8328	0.2146	0.8600	0	0	0	32	0	0
	57.8910	16.0000	16.0000	17.0659	16.0487	1.0659	0.0487	1.0670	5	0	0	35	0	0
	62.0000	16.0000	16.0000	16.7314	16.7778	0.7314	0.7778	1.0677	0	0	0	44	0	0
	66.0940	16.0000	16.0000	16.7410	16.4279	0.7410	0.4279	0.8557	0	0	0	35	0	0
	70.1410	16.0000	16.0000	16.8675	16.7336	0.8675	0.7336	1.1361	0	0	0	46	0	0
	74.4220	16.0000	16.0000	17.1112	16.6316	1.1112	0.6316	1.2781	0	0	0	52	0	0
	78.6410	16.0000	16.0000	17.3355	16.3790	1.3355	0.3790	1.3882	0	0	0	53	0	0
	83.0630	16.0000	16.0000	17.3396	16.7283	1.3396	0.7283	1.5248	0	0	0	62	0	0
	87.5000	16.0000	16.0000	17.7758	16.1307	1.7758	0.1307	1.7806	9	0	0	60	0	0
	91.9220	16.0000	16.0000	17.3072	16.7919	1.3072	0.7919	1.5283	0	0	0	63	0	0
	95.8750	16.0000	16.0000	16.4603	15.1155	0.4603	-0.8845	0.9971	7	0	9	0	0	0
	99.9070	16.0000	16.0000	16.5124	16.1221	0.5124	0.1221	0.5267	0	0	0	19	0	0
	104.1100	16.0000	16.0000	16.1502	15.2099	0.1502	-0.7901	0.8043	5	0	16	0	0	0
	108.0630	16.0000	16.0000	16.1936	16.0627	0.1936	0.0627	0.2034	0	0	0	7	0	0
	112.0940	16.0000	16.0000	16.2661	15.9137	0.2661	-0.0863	0.2798	0	0	0	6	0	0
	115.9070	16.0000	16.0000	15.9719	15.9288	-0.0281	-0.0712	0.0765	0	0	0	0	0	0
	119.4690	16.0000	16.0000	15.7395	16.1109	-0.2605	0.1109	0.2831	0	0	0	0	0	0
	123.0470	16.0000	16.0000	16.0152	16.1345	0.0152	0.1345	0.1354	0	0	0	0	0	0
	126.8130	16.0000	16.0000	16.0331	16.1644	0.0331	0.1644	0.1677	0	0	0	5	0	0
	130.5630	16.0000	16.0000	15.7652	16.1447	-0.2348	0.1447	0.2758	0	0	0	0	0	0

134.3750	16.0000	16.0000	16.2135	15.8431	0.2135	-0.1569	0.2650	0	0	0	0	0	0
138.2500	16.0000	16.0000	15.6987	16.0222	-0.3013	0.0222	0.3021	0	0	8	0	0	0
142.2350	16.0000	16.0000	16.5306	16.1180	0.5306	0.1180	0.5435	0	0	0	20	0	0
146.1250	16.0000	16.0000	15.7772	15.7122	-0.2228	-0.2878	0.3640	0	0	14	0	0	0
149.8910	16.0000	16.0000	16.3393	16.1735	0.3393	0.1735	0.3811	0	0	0	15	0	0
153.5000	16.0000	16.0000	16.0804	15.8293	0.0804	-0.1707	0.1886	0	0	0	0	0	0
157.2970	16.0000	16.0000	15.8616	15.9918	-0.1384	-0.0082	0.1386	0	0	0	0	0	0
161.1100	16.0000	16.0000	15.7749	15.9088	-0.2251	-0.0912	0.2428	0	0	9	0	0	0
165.2350	16.0000	16.0000	16.1121	16.2393	0.1121	0.2393	0.2643	0	0	0	9	0	0
169.2040	16.0000	16.0000	15.7817	16.1324	-0.2183	0.1324	0.2553	0	0	0	0	0	0
172.9690	16.0000	16.0000	15.9194	16.1017	-0.0806	0.1017	0.1298	0	0	0	0	0	0
176.6880	16.0000	16.0000	15.8660	16.1567	0.1567	-0.1340	0.2062	0	0	0	0	0	0
180.3440	16.0000	16.0000	16.1184	16.0537	0.1184	0.0537	0.1300	0	0	0	0	0	0
183.9690	16.0000	16.0000	16.1129	16.0232	0.1129	0.0232	0.1152	0	0	0	0	0	0
187.6720	16.0000	16.0000	16.1380	16.0346	0.1380	0.0346	0.1423	0	0	0	5	0	0
191.4380	16.0000	16.0000	16.3659	15.7655	0.3659	-0.2345	0.4346	0	0	0	5	0	0
195.5000	16.0000	16.0000	15.8846	15.8296	-0.1154	-0.1704	0.2057	0	0	7	0	0	0
199.2350	16.0000	16.0000	16.4270	16.0239	0.4270	0.0239	0.4276	0	0	0	14	0	0
203.3910	16.0000	16.0000	15.7835	15.3070	-0.2165	-0.6930	0.7260	0	0	24	0	0	0
207.1410	16.0000	16.0000	16.3688	16.0657	0.3688	0.0657	0.3746	0	0	0	13	0	0
211.0940	16.0000	16.0000	16.4590	15.9122	0.4590	-0.0878	0.4673	0	0	0	12	0	0
215.2350	16.0000	16.0000	15.7177	15.4781	-0.2823	-0.5219	0.5933	0	0	22	0	0	0
219.1570	16.0000	16.0000	16.7519	15.8909	0.7519	-0.1091	0.7598	0	0	0	21	0	0
223.0630	16.0000	16.0000	16.3784	15.2940	0.3784	-0.7060	0.8011	6	0	7	0	0	0
226.9380	16.0000	16.0000	16.5506	15.7972	0.5506	-0.2028	0.5868	0	0	0	12	0	0
230.8440	16.0000	16.0000	16.4238	15.2553	0.4238	-0.7447	0.8569	7	0	0	0	0	0
234.7350	16.0000	16.0000	16.1812	16.0545	0.1812	0.0545	0.1892	0	0	0	7	0	0
238.5790	16.0000	16.0000	16.3638	15.4369	0.3638	-0.5631	0.6704	5	0	0	0	0	0
242.2820	16.0000	16.0000	15.7573	16.1598	-0.2427	0.1598	0.2906	0	0	0	0	0	0
246.1250	16.0000	16.0000	16.1059	16.0816	0.1059	0.0816	0.1337	0	0	0	5	0	0
250.1250	16.0000	16.0000	15.8685	15.8819	-0.1315	-0.1181	0.1767	0	0	7	0	0	0
254.1410	16.0000	16.0000	16.2532	16.3587	0.2532	0.3587	0.4391	0	0	0	17	0	0
258.2660	16.0000	16.0000	15.6212	15.3568	-0.3788	-0.6432	0.7465	0	0	28	0	0	0
262.0320	16.0000	16.0000	15.7991	16.0102	-0.2009	0.0102	0.2012	0	0	5	0	0	0
265.9540	16.0000	16.0000	16.2156	15.9184	0.2156	-0.0816	0.2306	0	0	0	0	0	0
269.8910	16.0000	16.0000	16.2424	16.0170	0.2424	0.0170	0.2430	0	0	0	8	0	0
273.6880	16.0000	16.0000	16.4864	15.8555	0.4864	-0.1445	0.5074	0	0	0	11	0	0
277.6880	16.0000	16.0000	16.3985	15.2473	0.3985	-0.7527	0.8516	7	0	7	0	0	0
281.7190	16.0000	16.0000	16.1875	16.6959	0.1875	0.6959	0.7207	0	0	0	24	0	0
285.6880	16.0000	16.0000	15.7960	15.7180	-0.2040	-0.2820	0.3480	0	0	13	0	0	0
289.6720	16.0000	16.0000	16.2196	16.3057	0.2196	0.3057	0.3764	0	0	0	15	0	0
293.4690	16.0000	16.0000	15.5759	16.2130	-0.4241	0.2130	0.4746	0	0	7	0	0	0
297.2190	16.0000	16.0000	15.7625	16.0235	-0.2375	0.0235	0.2387	0	0	6	0	0	0
301.0630	16.0000	16.0000	15.9775	16.5413	-0.0225	0.5413	0.5417	0	0	0	13	0	0
305.0470	16.0000	16.0000	15.3434	16.3157	-0.6566	0.3157	0.7285	0	5	11	0	0	0
309.0160	16.0000	16.0000	15.7420	16.6067	-0.2580	0.6067	0.6592	0	0	0	7	0	0
312.8600	16.0000	16.0000	15.9973	16.3608	-0.0027	0.3608	0.3608	0	0	0	9	0	0
316.5630	16.0000	16.0000	15.6952	16.3139	-0.3048	0.3139	0.4375	0	0	0	0	0	0
320.2820	16.0000	16.0000	15.5241	16.5147	-0.4759	0.5147	0.7010	0	5	0	0	0	0
323.8910	16.0000	16.0000	15.6046	16.4033	-0.3954	0.4033	0.5648	0	0	0	0	0	0
327.8600	16.0000	16.0000	15.9905	16.3137	-0.0095	0.3137	0.3139	0	0	0	7	0	0
331.9850	16.0000	16.0000	15.5785	15.8423	-0.4215	-0.1577	0.4501	0	0	16	0	0	0
335.7660	16.0000	16.0000	16.2014	16.2363	0.2014	0.2363	0.3105	0	0	0	12	0	0
339.6720	16.0000	16.0000	15.4595	16.2682	-0.5405	0.2682	0.6034	0	0	9	0	0	0
343.8130	16.0000	16.0000	16.2240	16.3325	0.2240	0.3325	0.4009	0	0	0	16	0	0
347.6720	16.0000	16.0000	15.3897	16.3223	-0.6103	0.3223	0.6901	0	5	9	0	0	0
351.2820	16.0000	16.0000	15.6488	16.3057	-0.3512	0.3057	0.4656	0	0	0	0	0	0
355.2970	16.0000	16.0000	16.0342	16.2343	0.0342	0.2343	0.2368	0	0	0	7	0	0
359.1570	16.0000	16.0000	15.4546	16.0885	-0.5454	0.0885	0.5525	0	0	14	0	0	0
363.0790	16.0000	16.0000	16.0212	16.6326	0.0212	0.6326	0.6329	0	0	0	17	0	0
366.9380	16.0000	16.0000	15.5875	16.1845	-0.4125	0.1845	0.4519	0	0	7	0	0	0
370.8910	16.0000	16.0000	15.9872	16.6913	-0.0128	0.6913	0.6914	0	0	0	17	0	0
374.9070	16.0000	16.0000	15.5740	15.7425	-0.4260	0.7425	0.4978	0	0	19	0	0	0
378.7970	16.0000	16.0000	15.9891	16.6450	-0.0109	0.6450	0.6451	0	0	0	16	0	0
382.7040	16.0000	16.0000	15.7198	15.9948	-0.2802	-0.0052	0.2802	0	0	8	0	0	0
386.5790	16.0000	16.0000	15.9949	16.6134	-0.0051	0.6134	0.6134	0	0	0	16	0	0
390.7500	16.0000	16.0000	15.2782	15.8100	-0.7218	-0.1900	0.7464	0	0	26	0	0	0
394.8440	16.0000	16.0000	16.0330	16.8043	0.0330	0.8043	0.8050	0	0	0	22	0	0
398.7190	16.0000	16.0000	15.4067	16.0956	-0.5933	0.0956	0.6010	0	0	15	0	0	0
402.8130	16.0000	16.0000	16.0928	16.4328	0.0928	0.4328	0.4426	0	0	0	14	0	0
406.7350	16.0000	16.0000	15.4859	16.1491	-0.5141	0.1491	0.5353	0	0	11	0	0	0
410.6720	16.0000	16.0000	16.1500	16.3342	0.1500	0.3342	0.3663	0	0	0	13	0	0
414.3440	16.0000	16.0000	15.9681	16.1289	-0.0319	0.1289	0.1327	0	0	0	0	0	0
418.2660	16.0000	16.0000	15.5178	16.0765	-0.4822	0.0765	0.4883	0	0	12	0	0	0
422.4220	16.0000	16.0000	16.3570	16.3076	0.3570	0.3076	0.4712	0	0	0	19	0	0
426.3600	16.0000	16.0000	15.4610	16.0243	-0.5390	0.0243	0.5395	0	0	15	0	0	0
430.4690	16.0000	16.0000	16.5765	15.9978	0.5765	-0.0022	0.5765	0	0	0	18	0	0
434.5470	16.0000	16.0000	15.8971	15.7432	-0.1029	-0.2568	0.2766	0	0	9	0	0	0
438.4690	16.0000	16.0000	16.4270	15.7092	0.4270	-0.2908	0.5166	0	0	0	6	0	0

	442.3910	16.0000	16.0000	16.0611	15.7283	0.0611	-0.2717	0.2785	0	0	5	0	0	0
	446.5940	16.0000	16.0000	16.4029	15.8495	0.4029	-0.1505	0.4301	0	0	0	9	0	0
	450.4690	16.0000	16.0000	16.2024	15.3374	0.6928	-0.6626	0.6928	0	0	11	0	0	0
	454.2820	16.0000	16.0000	16.5487	15.6793	0.5487	-0.3207	0.6356	0	0	0	9	0	0
	458.1100	16.0000	16.0000	16.5093	15.3882	0.5093	-0.6118	0.7960	6	0	0	0	0	0
	461.9850	16.0000	16.0000	16.4969	15.5940	0.4969	-0.4060	0.6417	0	0	0	5	0	0

\*\*\*\*\*  
\* Autoguider Report for m63\_lum.00000929.M63.FIT \*  
\*\*\*\*\*

CCDSOFT Tracking Report  
Start Date Time = 2006-02-17T08:31:25.593  
Camera = Imager's built-in autoguider  
X Axis = Enabled  
Y Axis = Enabled  
ExposureTime = 3.00  
Aggressiveness Factor = 7  
Calibration Time X = 10.00  
Calibration Time Y = 10.00  
Calibration declination = 13.17  
Declination now = 12.74  
Minimum Move = 0.05  
Maximum Move = 0.75  
Backlash X = 0.00  
Backlash Y = 0.05  
Delay After Move = 0.00  
Autoguide using Relays

Calibration Determined Velocity Vectors (pixels/sec)  
XPlus Speed= 17.04160 (XPlus X= -11.29674, XPlus Y= 12.75930) Angle= 131.52000  
XMinus Speed= 17.19250 (XMinus X= 11.43776, XMinus Y= -12.83588) Angle= 311.70000  
YPlus Speed= 3.51580 (YPlus X= 2.64199, YPlus Y= 2.31965) Angle= 41.28000  
YMinus Speed= 3.37040 (YMinus X= -2.61370, YMinus Y= -2.12794) Angle= 219.15000

Elapsed Secs	RefCentroidX	RefCentroidY	CurCentroidX	CurCentroidY	GuideErrX	GuideErrY	TotGuideErr	XPlusRelay	XMinusRelay	YPlusRelay	YMinusRelay	PECIndex RA	PECIndex Dec
	0.0000	16.0000	16.0000	17.4723	13.6071	1.4723	-2.3929	2.8095	22	0	18	0	0
	12.7660	16.0000	16.0000	17.4528	14.7291	1.4528	-1.2709	1.9302	15	0	0	13	0
	16.7820	16.0000	16.0000	16.5086	15.0238	0.5086	-0.9762	1.1008	9	0	10	0	0
	20.7820	16.0000	16.0000	16.8795	15.6149	0.8795	-0.3851	0.9601	7	0	0	18	0
	24.8280	16.0000	16.0000	15.7416	15.1469	0.1469	-0.2584	0.8914	0	0	30	0	0
	28.7660	16.0000	16.0000	16.6089	15.9692	0.6089	-0.0308	0.6097	0	0	0	18	0
	32.6250	16.0000	16.0000	16.7169	15.3234	0.7169	-0.6766	0.9858	8	0	0	5	0
	36.4530	16.0000	16.0000	16.3546	15.5455	0.3546	-0.4545	0.5765	0	0	0	0	0
	42.2820	16.0000	16.0000	16.9277	15.0784	0.9277	-0.9216	1.3077	10	0	0	5	0
	46.3910	16.0000	16.0000	16.3648	15.1241	0.3648	-0.8759	0.9488	7	0	11	0	0
	50.2970	16.0000	16.0000	16.9240	15.4231	0.9240	-0.5769	1.0893	8	0	0	14	0
	54.4530	16.0000	16.0000	16.1890	15.2086	0.1890	-0.7914	0.8137	5	0	15	0	0
	58.6720	16.0000	16.0000	17.0020	15.8275	1.0020	-0.1725	1.0168	6	0	0	28	0
	63.2500	16.0000	16.0000	15.5105	14.7806	0.7806	-0.4895	1.3140	0	0	46	0	0
	66.9380	16.0000	16.0000	16.1361	15.8417	0.1361	-0.1583	0.2087	0	0	0	0	0
	70.7190	16.0000	16.0000	16.4821	15.5420	0.4821	-0.4580	0.6650	5	0	0	0	0
	74.6100	16.0000	16.0000	16.3467	15.6086	0.3467	-0.3914	0.5229	0	0	0	0	0
	78.4530	16.0000	16.0000	16.5469	15.2600	0.5469	-0.7400	0.9202	7	0	0	0	0
	82.4220	16.0000	16.0000	16.6171	15.6834	0.6171	-0.3166	0.6936	5	0	0	11	0
	86.2820	16.0000	16.0000	16.7342	15.6586	0.7342	-0.3414	0.8097	6	0	0	14	0
	90.1250	16.0000	16.0000	16.5549	15.3014	0.5549	-0.6986	0.8922	7	0	0	0	0
	93.9530	16.0000	16.0000	16.4876	15.7340	0.4876	-0.2660	0.5555	0	0	0	8	0
	98.0160	16.0000	16.0000	16.6056	15.0436	0.6056	-0.9564	1.1320	9	0	7	0	0
	101.9690	16.0000	16.0000	16.6021	15.9174	0.6021	-0.0826	0.6077	0	0	0	17	0
	105.9380	16.0000	16.0000	16.3024	15.1201	0.3024	-0.8799	0.9304	7	0	14	0	0
	109.8910	16.0000	16.0000	16.7037	15.9022	0.7037	-0.0978	0.7105	0	0	0	20	0
	113.7660	16.0000	16.0000	16.2043	15.3257	0.2043	-0.6743	0.7046	5	0	11	0	0
	117.5940	16.0000	16.0000	16.4002	15.8399	0.4002	-0.1601	0.4310	0	0	0	8	0
	121.5320	16.0000	16.0000	16.0326	15.8475	0.0326	-0.1525	0.1559	0	0	0	0	0
	125.2500	16.0000	16.0000	15.9302	15.8471	-0.0698	-0.1529	0.1681	0	0	6	0	0
	129.1720	16.0000	16.0000	16.4074	15.9298	0.4074	-0.0702	0.4134	0	0	0	11	0
	133.1100	16.0000	16.0000	16.0973	15.7880	0.0973	-0.2120	0.2332	0	0	0	0	0
	137.0160	16.0000	16.0000	16.2556	15.2738	0.2556	-0.7262	0.7699	5	0	11	0	0
	141.0000	16.0000	16.0000	16.5224	16.2204	0.5224	-0.2204	0.5670	0	0	0	22	0
	144.9850	16.0000	16.0000	15.9649	15.3578	0.3578	-0.0351	0.6431	0	0	18	0	0
	148.8440	16.0000	16.0000	16.0107	16.0097	0.0107	0.0097	0.0145	0	0	0	0	0
	152.8910	16.0000	16.0000	16.2975	16.2553	0.2975	0.2975	0.3253	0	0	0	16	0
	156.9070	16.0000	16.0000	15.6055	15.3733	0.3733	-0.3945	0.7405	0	0	28	0	0
	161.0940	16.0000	16.0000	16.3539	16.6548	0.3539	-0.6548	0.7443	0	0	0	28	0
	165.2190	16.0000	16.0000	15.6707	15.8383	0.8383	-0.3293	0.3669	0	0	14	0	0
	168.9220	16.0000	16.0000	16.1829	16.2251	0.1829	0.2251	0.2900	0	0	0	11	0
	173.0160	16.0000	16.0000	15.8107	15.8602	0.8602	-0.1893	0.2353	0	0	9	0	0
	176.8750	16.0000	16.0000	16.2777	16.1129	0.2777	0.1129	0.2998	0	0	0	11	0

180.7660	16.0000	16.0000	15.7895	15.9459	-0.2105	-0.0541	0.2173	0	0	7	0	0	0
185.0320	16.0000	16.0000	16.6763	15.8914	0.6763	-0.1086	0.6850	0	0	0	18	0	0
189.3750	16.0000	16.0000	15.7149	15.2129	-0.2851	-0.7871	0.8372	0	0	29	0	0	0
193.3750	16.0000	16.0000	16.5842	15.7178	0.5842	-0.2822	0.6488	0	0	0	11	0	0
197.2190	16.0000	16.0000	16.2155	15.7865	0.2155	-0.2135	0.3034	0	0	0	0	0	0
201.1250	16.0000	16.0000	16.2282	15.9763	0.2282	-0.0237	0.2294	0	0	0	7	0	0
205.0160	16.0000	16.0000	16.3706	15.6659	0.3706	-0.3341	0.4990	0	0	0	0	0	0
208.8600	16.0000	16.0000	16.1522	16.0344	0.1522	0.0344	0.1560	0	0	0	5	0	0
212.7030	16.0000	16.0000	15.9918	15.8490	-0.0082	-0.1510	0.1512	0	0	0	0	0	0
216.6570	16.0000	16.0000	15.4858	16.0001	-0.5142	0.0001	0.5142	0	0	15	0	0	0
220.7660	16.0000	16.0000	16.3857	16.2754	0.3857	0.2754	0.4739	0	0	0	19	0	0
224.8600	16.0000	16.0000	15.9092	15.8678	-0.0908	-0.1322	0.1603	0	0	6	0	0	0
228.7190	16.0000	16.0000	16.1102	16.2720	0.1102	0.2720	0.2935	0	0	0	10	0	0
232.5940	16.0000	16.0000	16.0353	15.4802	0.0353	-0.5198	0.5210	0	0	12	0	0	0
236.3130	16.0000	16.0000	16.3415	15.9455	0.3415	-0.0545	0.3458	0	0	0	9	0	0
240.1100	16.0000	16.0000	16.2032	16.1061	0.2032	0.1061	0.2292	0	0	0	9	0	0
243.9690	16.0000	16.0000	15.8506	15.8947	-0.1494	-0.1053	0.1828	0	0	7	0	0	0
248.1250	16.0000	16.0000	15.9568	16.6735	-0.0432	0.6735	0.6749	0	0	0	16	0	0
252.2820	16.0000	16.0000	15.1892	15.8622	-0.8108	-0.1378	0.8224	0	0	28	0	0	0
256.1570	16.0000	16.0000	15.4762	16.8903	-0.5238	0.8903	1.0330	0	8	0	6	0	0
260.0940	16.0000	16.0000	16.1710	16.4818	0.1710	0.4818	0.5112	0	0	0	18	0	0
264.0160	16.0000	16.0000	15.7123	15.9964	-0.2877	-0.0036	0.2877	0	0	8	0	0	0
267.8600	16.0000	16.0000	15.6333	16.0728	-0.3667	0.0728	0.3738	0	0	9	0	0	0
272.0630	16.0000	16.0000	16.1540	16.7832	0.1540	0.7832	0.7982	0	0	0	25	0	0
276.1100	16.0000	16.0000	15.2069	15.9306	-0.7931	-0.0694	0.7961	0	0	25	0	0	0
280.0320	16.0000	16.0000	16.1182	16.1450	0.1182	0.1450	0.1871	0	0	0	7	0	0
283.8750	16.0000	16.0000	15.9792	16.4387	-0.0208	0.4387	0.4392	0	0	0	10	0	0
287.8600	16.0000	16.0000	15.5768	16.0789	-0.4232	0.0789	0.4305	0	0	10	0	0	0
291.5320	16.0000	16.0000	16.0752	16.0969	0.0752	0.0969	0.1227	0	0	0	0	0	0
295.7350	16.0000	16.0000	16.2150	16.7559	0.2150	0.7559	0.7858	0	0	0	26	0	0
299.9220	16.0000	16.0000	15.5019	15.5845	-0.4981	-0.4155	0.6487	0	0	25	0	0	0
303.6880	16.0000	16.0000	15.5737	16.4087	-0.4263	0.4087	0.5905	0	0	0	0	0	0
307.5630	16.0000	16.0000	16.0635	16.6032	0.0635	0.6032	0.6066	0	0	0	18	0	0
311.5470	16.0000	16.0000	15.4105	15.9892	-0.5895	-0.0108	0.5896	0	0	18	0	0	0
315.4530	16.0000	16.0000	16.0853	16.5722	0.0853	0.5722	0.5785	0	0	0	17	0	0
319.1720	16.0000	16.0000	15.7568	16.2813	-0.2432	0.2813	0.3718	0	0	0	0	0	0
322.9380	16.0000	16.0000	15.5743	16.5780	-0.4257	0.5780	0.7178	0	5	0	0	0	0
326.7500	16.0000	16.0000	15.7138	16.1819	-0.2862	0.1819	0.3391	0	0	0	0	0	0
330.5470	16.0000	16.0000	16.1219	15.9098	0.1219	-0.0902	0.1516	0	0	0	0	0	0
334.5000	16.0000	16.0000	16.0492	16.3638	0.0492	0.3638	0.3671	0	0	0	11	0	0
338.4850	16.0000	16.0000	16.0832	15.6171	0.0832	-0.3829	0.3918	0	0	7	0	0	0
342.5630	16.0000	16.0000	16.3288	16.0546	0.3288	0.0546	0.3333	0	0	0	11	0	0
346.5630	16.0000	16.0000	15.8834	15.3512	-0.1166	-0.6488	0.6592	0	0	20	0	0	0
350.5630	16.0000	16.0000	16.1582	16.2962	0.1582	0.2962	0.3358	0	0	0	12	0	0
354.3440	16.0000	16.0000	16.3274	16.0937	0.3274	0.0937	0.3405	0	0	0	13	0	0
358.2820	16.0000	16.0000	16.1940	15.3083	0.1940	-0.6917	0.7184	5	0	12	0	0	0
362.1250	16.0000	16.0000	16.3961	15.8782	0.3961	-0.1218	0.4144	0	0	0	9	0	0
365.9380	16.0000	16.0000	16.1962	15.6553	0.1962	-0.3447	0.3966	0	0	0	0	0	0
369.7500	16.0000	16.0000	16.1497	15.5928	0.1497	-0.4072	0.4338	0	0	6	0	0	0
373.5940	16.0000	16.0000	16.5247	15.8055	0.5247	-0.1945	0.5596	0	0	0	11	0	0
377.5320	16.0000	16.0000	16.3847	14.8472	0.3847	-1.1528	1.2153	9	0	18	0	0	0
381.5470	16.0000	16.0000	16.6397	15.7292	0.6397	-0.2708	0.6947	0	0	0	13	0	0
385.5630	16.0000	16.0000	16.5993	15.0653	0.5993	-0.9347	1.1104	9	0	6	0	0	0
389.7030	16.0000	16.0000	16.4666	16.1750	0.4666	0.1750	0.4984	0	0	0	19	0	0
393.8910	16.0000	16.0000	15.7159	15.3627	-0.2841	-0.6373	0.6977	0	0	25	0	0	0
397.6880	16.0000	16.0000	16.2682	15.9860	0.2682	-0.0140	0.2686	0	0	0	8	0	0
401.5320	16.0000	16.0000	16.2921	15.8268	0.2921	-0.1732	0.3395	0	0	0	0	0	0
405.5000	16.0000	16.0000	16.4785	16.0074	0.4785	0.0074	0.4786	0	0	0	15	0	0
409.4530	16.0000	16.0000	16.1890	15.2328	0.1890	-0.7672	0.7902	5	0	14	0	0	0
413.5320	16.0000	16.0000	16.5283	15.7759	0.5283	-0.2241	0.5738	0	0	0	11	0	0
417.3910	16.0000	16.0000	16.4658	15.3803	0.4658	-0.6197	0.7753	6	0	0	0	0	0
421.1410	16.0000	16.0000	16.1284	15.7765	0.1284	-0.2235	0.2577	0	0	0	0	0	0
424.9690	16.0000	16.0000	16.3627	15.6437	0.3627	-0.3563	0.5084	0	0	0	0	0	0
428.7500	16.0000	16.0000	16.2423	15.9951	0.2423	-0.0049	0.2423	0	0	0	7	0	0
432.5160	16.0000	16.0000	16.3495	15.3269	0.3495	-0.6731	0.7584	6	0	7	0	0	0
436.3750	16.0000	16.0000	16.2675	16.2144	0.2675	0.2144	0.3428	0	0	0	14	0	0
440.1100	16.0000	16.0000	16.0574	15.6312	0.0574	-0.3688	0.3732	0	0	7	0	0	0
444.2970	16.0000	16.0000	15.9350	15.3998	-0.0650	-0.6002	0.6037	0	0	17	0	0	0
448.2660	16.0000	16.0000	16.5224	16.8312	0.5224	0.8312	0.9817	0	0	0	38	0	0
452.7500	16.0000	16.0000	15.1718	14.7606	-0.8282	-1.2394	1.4906	0	0	57	0	0	0
456.6410	16.0000	16.0000	15.5138	15.6149	-0.4862	-0.3851	0.6202	0	0	24	0	0	0
460.5630	16.0000	16.0000	15.8610	15.6378	-0.1390	-0.3622	0.3880	0	0	14	0	0	0
464.3280	16.0000	16.0000	16.2329	15.5873	0.2329	-0.4127	0.4739	0	0	0	0	0	0
468.1570	16.0000	16.0000	15.9992	15.3535	-0.0008	-0.6465	0.6465	0	0	16	0	0	0
472.1570	16.0000	16.0000	16.2431	14.9810	0.2431	-1.0190	1.0476	7	0	19	0	0	0
475.8750	16.0000	16.0000	16.3523	15.2838	0.3523	-0.7162	0.7982	6	0	8	0	0	0
479.6250	16.0000	16.0000	16.1982	15.6744	0.1982	-0.3256	0.3812	0	0	0	0	0	0
483.2970	16.0000	16.0000	16.1648	15.8101	0.1648	-0.1899	0.2514	0	0	0	0	0	0
487.2660	16.0000	16.0000	16.5695	15.8562	0.5695	-0.1438	0.5874	0	0	0	14	0	0



203.8440	16.0000	16.0000	16.4824	15.7690	0.4824	-0.2310	0.5348	0	0	0	9	0	0
207.5000	16.0000	16.0000	16.2390	15.7040	0.2390	-0.2960	0.3805	0	0	0	0	0	0
211.2190	16.0000	16.0000	16.3513	15.6177	0.3513	-0.3823	0.5192	0	0	0	0	0	0
215.0940	16.0000	16.0000	16.1796	15.4588	0.1796	-0.5412	0.5702	0	0	9	0	0	0
219.0470	16.0000	16.0000	16.4858	16.1277	0.4858	0.1277	0.5023	0	0	0	18	0	0
223.3120	16.0000	16.0000	15.6860	15.3727	-0.3140	-0.6273	0.7015	0	0	25	0	0	0
227.0940	16.0000	16.0000	16.0751	16.2988	0.0751	0.2988	0.3081	0	0	0	10	0	0
230.8120	16.0000	16.0000	16.1330	16.2234	0.1330	0.2234	0.2600	0	0	0	9	0	0
234.5780	16.0000	16.0000	15.7799	16.3424	-0.2201	0.3424	0.4070	0	0	0	0	0	0
238.0940	16.0000	16.0000	15.5622	16.3281	-0.4378	0.3281	0.5471	0	0	0	0	0	0
241.7340	16.0000	16.0000	15.7429	16.3765	-0.2571	0.3765	0.4559	0	0	0	0	0	0
245.6090	16.0000	16.0000	15.6357	16.6415	-0.3643	0.6415	0.7378	0	5	0	0	0	0
249.2970	16.0000	16.0000	16.1676	16.3781	0.1676	0.3781	0.4135	0	0	0	15	0	0
253.4530	16.0000	16.0000	15.2938	15.9885	-0.7062	-0.0115	0.7063	0	0	21	0	0	0
257.4840	16.0000	16.0000	15.9727	16.6769	-0.0273	0.6769	0.6775	0	0	0	16	0	0
261.3910	16.0000	16.0000	15.7015	15.8437	-0.2985	-0.1563	0.3370	0	0	13	0	0	0
265.5310	16.0000	16.0000	15.9696	16.7274	-0.0304	0.7274	0.7281	0	0	0	18	0	0
269.6560	16.0000	16.0000	15.5044	16.0364	-0.4956	0.0364	0.4970	0	0	14	0	0	0
273.6870	16.0000	16.0000	15.9866	16.9971	-0.0134	0.9971	0.9972	0	6	0	25	0	0
277.7810	16.0000	16.0000	15.2143	15.9583	-0.7857	-0.0417	0.7868	0	0	24	0	0	0
281.5000	16.0000	16.0000	15.1837	16.7038	-0.8163	0.7038	1.0778	0	8	5	0	0	0
285.3280	16.0000	16.0000	15.6803	16.4027	-0.3197	0.4027	0.5142	0	0	0	0	0	0
289.3590	16.0000	16.0000	15.6289	16.7072	-0.3711	0.7072	0.7986	0	6	0	6	0	0
293.1410	16.0000	16.0000	15.6941	16.7491	-0.3059	0.7491	0.8091	0	6	0	9	0	0
297.0310	16.0000	16.0000	15.6794	16.2505	-0.3206	0.2505	0.4068	0	0	0	0	0	0
301.1250	16.0000	16.0000	16.0566	16.6016	0.0566	0.6016	0.6043	0	0	0	17	0	0
305.1560	16.0000	16.0000	15.1752	16.1853	-0.8248	0.1853	0.8453	0	5	19	0	0	0
309.2030	16.0000	16.0000	16.1581	16.6005	0.1581	0.6005	0.6210	0	0	0	21	0	0
313.2810	16.0000	16.0000	15.2241	16.0886	-0.7759	0.0886	0.7810	0	0	21	0	0	0
317.1560	16.0000	16.0000	15.8363	16.6683	-0.1637	0.6683	0.6881	0	0	0	12	0	0
321.0780	16.0000	16.0000	15.4435	16.4515	-0.5565	0.4515	0.7166	0	5	0	0	0	0
325.0310	16.0000	16.0000	16.0098	16.3130	0.0098	0.3130	0.3132	0	0	0	8	0	0
328.7660	16.0000	16.0000	15.6403	16.3286	-0.3597	0.3286	0.4872	0	0	0	0	0	0
332.8590	16.0000	16.0000	15.6644	16.6085	-0.3356	0.6085	0.6949	0	5	0	0	0	0
336.7970	16.0000	16.0000	15.8654	16.1438	-0.1346	0.1438	0.1970	0	0	0	0	0	0
340.6720	16.0000	16.0000	15.7304	16.2869	-0.2696	0.2869	0.3937	0	0	0	0	0	0
344.7190	16.0000	16.0000	16.1322	16.2356	0.1322	0.2356	0.2702	0	0	0	10	0	0
348.5940	16.0000	16.0000	15.8700	15.9272	-0.1300	-0.0728	0.1490	0	0	5	0	0	0
352.4690	16.0000	16.0000	16.1448	16.2352	0.1448	0.2352	0.2762	0	0	0	10	0	0
356.5620	16.0000	16.0000	15.7470	15.3184	-0.2530	-0.6816	0.7270	0	0	25	0	0	0
360.5310	16.0000	16.0000	16.2615	16.0674	0.2615	0.0674	0.2701	0	0	0	10	0	0
364.7340	16.0000	16.0000	16.6182	15.8558	0.6182	-0.1442	0.6348	0	0	0	16	0	0
368.7190	16.0000	16.0000	15.8949	15.7003	-0.1051	-0.2997	0.3176	0	0	11	0	0	0
372.7340	16.0000	16.0000	16.4210	15.8610	0.4210	-0.1390	0.4433	0	0	0	9	0	0
376.3590	16.0000	16.0000	16.2048	15.6979	0.2048	-0.3021	0.3650	0	0	0	0	0	0
380.3440	16.0000	16.0000	16.3526	15.8223	0.3526	-0.1777	0.3948	0	0	0	7	0	0
384.4220	16.0000	16.0000	16.4449	15.2825	0.4449	-0.7175	0.8442	7	0	5	0	0	0
388.2030	16.0000	16.0000	16.3246	16.0114	0.3246	0.0114	0.3248	0	0	0	10	0	0
392.2190	16.0000	16.0000	15.9537	15.5595	-0.0463	-0.4405	0.4429	0	0	13	0	0	0
396.0780	16.0000	16.0000	16.3732	15.7959	0.3732	-0.2041	0.4253	0	0	0	7	0	0
399.8910	16.0000	16.0000	16.1519	15.7438	0.1519	-0.2562	0.2978	0	0	0	0	0	0
403.7500	16.0000	16.0000	16.6657	15.3159	0.6657	-0.6841	0.9546	7	0	0	0	0	0
407.5470	16.0000	16.0000	16.2562	15.6225	0.2562	-0.3775	0.4562	0	0	0	0	0	0
411.2810	16.0000	16.0000	16.5316	15.4130	0.5316	-0.5870	0.7919	6	0	0	0	0	0
415.0780	16.0000	16.0000	16.4974	15.8789	0.4974	-0.1211	0.5119	0	0	0	12	0	0
419.2030	16.0000	16.0000	15.8898	15.2194	-0.1102	-0.7806	0.7884	0	0	23	0	0	0
423.1090	16.0000	16.0000	16.4716	15.6539	0.4716	-0.3461	0.5849	0	0	0	6	0	0
426.9840	16.0000	16.0000	16.3097	15.7845	0.3097	-0.2155	0.3773	0	0	0	0	0	0
430.9060	16.0000	16.0000	16.6442	15.7217	0.6442	-0.2783	0.7017	0	0	0	13	0	0
434.7500	16.0000	16.0000	16.2736	15.3198	0.2736	-0.6802	0.7332	5	0	0	9	0	0
438.7500	16.0000	16.0000	16.5410	15.7661	0.5410	-0.2339	0.5894	0	0	0	11	0	0
442.6250	16.0000	16.0000	16.7628	15.1699	0.7628	-0.8301	1.1274	9	0	0	0	0	0
446.6250	16.0000	16.0000	16.0793	15.5469	0.0793	-0.4531	0.4600	0	0	9	0	0	0
450.5780	16.0000	16.0000	17.1313	15.3678	1.1313	-0.6322	1.2959	9	0	0	19	0	0
454.4840	16.0000	16.0000	16.4843	14.9875	0.4843	-1.0125	1.1224	9	0	11	0	0	0
458.2660	16.0000	16.0000	16.5349	15.7524	0.5349	-0.2476	0.5894	0	0	0	10	0	0
462.1410	16.0000	16.0000	16.4223	15.1519	0.4223	-0.8481	0.9474	7	0	9	0	0	0
466.1560	16.0000	16.0000	16.2607	15.9816	0.2607	-0.0184	0.2614	0	0	0	7	0	0
469.9220	16.0000	16.0000	16.4474	15.7067	0.4474	-0.2933	0.5349	0	0	0	7	0	0
473.9690	16.0000	16.0000	15.9832	15.5715	-0.0168	-0.4285	0.4288	0	0	11	0	0	0
478.2660	16.0000	16.0000	16.6864	15.7493	0.6864	-0.2507	0.7308	5	0	0	15	0	0
482.2500	16.0000	16.0000	16.0129	15.5153	0.0129	-0.4847	0.4849	0	0	12	0	0	0
485.9370	16.0000	16.0000	16.2960	15.7809	0.2960	-0.2191	0.3683	0	0	0	0	0	0
489.7340	16.0000	16.0000	16.5342	15.6924	0.5342	-0.3076	0.6165	0	0	0	9	0	0