

Globular Clusters Photographed with the University of Toronto's  
24-inch reflector at the Las Campanas Observatory of the Carnegie  
Institution of Washington in Chile (1971-1991)

NGC 288 .... 2	NGC 6093 ... 39	NGC 6535 ... 63
NGC 362 .... 3	NGC 6121 ... 40	NGC 6539 ... 64
NGC 1261 .... 5	NGC 6171 ... 41	NGC 6544 ... 65
NGC 1851 .... 6	NGC 6218 ... 47	NGC 6569 ... 66
NGC 1904 .... 7	NGC 6235 ... 48	NGC 6626 ... 67
NGC 2298 .... 8	NGC 6254 ... 49	NGC 6638 ... 69
NGC 2808 .... 9	NGC 6273 ... 50	NGC 6642 ... 70
NGC 4372 ... 11	NGC 6284 ... 51	NGC 6652 ... 71
NGC 4590 ... 12	NGC 6287 ... 53	NGC 6656*... 72
NGC 4833 ... 16	NGC 6293 ... 54	NGC 6712 ... 73
Omega Cen .. 17	NGC 6333 ... 55	NGC 6717 ... 74
NGC 5286 ... 24	NGC 6342 ... 56	NGC 6864 ... 75
NGC 5634 ... 25	NGC 6356 ... 57	NGC 6981 ... 76
NGC 5694 ... 26	NGC 6362 ... 58	NGC 7089 ... 77
IC 4499* ... 27	NGC 6401 ... 60	NGC 7099 ... 78
NGC 5897 ... 29	NGC 6402 ... 61	NGC 7492 ... 79
NGC 5904 ... 32	IC 1276 ... 62	

For each observation, the following information is listed:  
plate number, date, Greenwich Mean Time of the beginning  
and end of the exposure (or GMT at mid-exposure and exposure  
time in minutes), and Julian date at the time of mid-exposure.

\*Some of the plates of IC 4499 (numbers 1020-1073 on page 27) and  
some of the NGC 6656 plates (numbers 1406-1457 on page 72) were  
obtained with the Swope 40-inch reflector on Las Campanas.  
These plates have all been returned to the Carnegie Observatories  
in Pasadena, California.

1972

875	Aug. 30/31	7 15	7 35	41560.809
899	Sept. 1/2	7 30	7 50	62.819
919	" 9/10	7 45	8 05	70.830
865	Aug. 16/17	7 23	7 53	46.818

1973

986	Jan. 2/3	1 24	1 44	41685.565
993	" 3/4	1 05	1 25	86.552
1006	" 4/5	1 12	1 32	87.556
1015	" 5/6	1 09	1 29	88.555
1017	" 7/8	1 15	1 35	90.559
1019	" 8/9	1 14	1 34	91.558
1032	" 9/10	1 12	1 32	92.557
1047	" 11/12	1 47	2 07	94.581
1055	" 12/13	1 30	1 50	41695.569
1068	" 13/14	1 31	1 51	96.570
1077	" 14/15	1 56	2 16	97.588
1085	" 16/17	1 22	1 42	99.564
1093	" 18/19	1 06	1 26	41701.553

1973				1975					
980	Jan. 1/2	3 50	4 10	41684.667	2367	Jan. 22/23	4 17	4 32	.687
987	" 2/3	2 05	2 25	85.594	2372	" 24/25	0 46	1 06	38.539
994	" 3/4	1 34	1 54	86.572	2373	" "	1 19	1 39	.562
1007	" 4/5	1 42	2 02	87.578	2374	" "	1 42	2 02	.578
1016	" 5/6	1 37	1 52	88.573	2375	" "	2 20	2 40	.604
1018	" 7/8	2 20	2 40	90.604	2376	" "	2 43	3 03	.620
1020	" 8/9	1 41	2 01	91.577	2377	" "	3 06	3 26	.636
1033	" 9/10	1 40	2 00	92.576	2378	" "	4 09	4 29	.680
1041	" 10/11	2 37	2 57	93.616	2379	" "	4 35	4 55	.698
1048	" 11/12	2 15	2 35	94.601	2380	" "	5 02	5 22	.717
1056	" 12/13	2 00	2 20	95.590	2384	" 25/26	0 57	1 17	39.547
1069	" 13/14	1 59	2 19	96.590	2395	" "	1 22	1 42	.564
1078	" 14/15	2 46	3 06	97.622					
1086	" 16/17	2 05	2 25	99.594	2386	" 25/26	1 56	20	42439.581
1094	" 18/19	1 42	2 02	41701.578	2387	" "	2 56	20	.623
1680	Nov. 29/30	1 47	2 07	42046.581	2388	" "	3 21	20	.640
1681	" 29/30	2 12	2 32	46.599	2389	" "	3 44	20	.656
	1974				2390	" "	4 29	20	.687
1687	Jan. 23/24	2 09	2 29	42071.597	2391	" "	4 52	20	.703
1688	" 23/24	3 42	4 02	.661	3392	" "	5 21	20	.723
1690	" 24/25	1 19	1 39	72.562	2398	Feb. 3/4	1 21	30	47.556
1691	" 24/25	2 12	2 32	.599	2399	" "	1 49	20	.576
1692	" 24/25	3 11	3 31	.640	2400	" "	2 15	20	.594
1697	" 25/26	1 42	2 02	73.578	2401	" "	3 20	20	.639
1698	" 25/26	2 08	2 28	.596	2402	" "	3 44	20	.656
1699	" 25/26	2 54	3 14	.628	2403	" "	4 07	20	.672
1705	" 26/27	2 03	2 23	74.592	2404	" "	5 14	30	42447.718
1706	" 26/27	2 26	2 46	.608	2408	" 4/5	1 00	20	48.542
1707	" 26/27	2 54	3 14	.628	2409	" "	1 23	20	.558
1714	" 28/29	0 09	0 29	42076.555	2410	" "	1 48	20	.575
1715	" 28/29	0 41	1 01	.577	2411	" "	2 38	20	.610
1716	" 28/29	2 10	2 30	.597	2412	" "	3 01	20	.626
1717	" 28/29	2 43	3 03	.620	2413	" "	3 25	20	.642
1722	" 29/30	1 20	1 40	77.563	2414	" "	4 34	20	.690
1723	" 29/30	1 57	2 17	.588	2420	" 5/6	0 55	20	49.538
1724	" 29/30	2 38	2 58	.617	2421	" "	1 18	20	.554
1725	" 31/Feb	1 05	1 16	79.546	2422	" "	1 44	20	.572
1726	" "	1 24	1 44	.565	2423	" "	2 26	20	.601
1727	" "	1 49	2 09	.583	2424	" "	2 50	20	.618
1728	" "	2 25	2 45	.608	2425	" "	3 16	20	.636
1729	" "	2 48	3 08	.624	2426	" "	4 24	20	.683
1734	Feb. 1/2	1 25	1 45	80.566		1977			
1738	" 1/2	2 08	2 28	.596	3278		5 08	20	3349.714
1739	" 1/2	2 36	2 56	.615	2385		01 48	20	50.575
1749	" 2/3	1 02	1 22	81.550	3292		02 49	24	52.617
1750	" 2/3	2 36	2 56	.615					
1751	" 2/3	1 44	2 04	.579					
1764	" 4/5	1 16	1 36	83.560	3391	Mar. 10/11	01 05	20	578.545
1965	" "	1 45	2 05	42083.580	3403	" 11/12	01 25	20	79.559
1766	" "	2 13	2 33	.599	3421	" 14/15	01 02	20	82.543
	1975								
2356	Jan. 20/21	1 46	2 06	42434.581					
2358	" "	2 10	2 35	.599					
2364	" 22/23			36.592					
2365	" "			.611					
2366	" "			.629					

Plate	Year/Date	Mean GMT	Exp	J.D.	Plate	Year/Date	MidUT	Exp	J.D.
<u>1981</u>									
4578	June 06	0734	20	44761.815	5076	Feb.28/Mar.1	0140	20	45029.569
4579	"	0757	20	.831	5077	"	0240	20	.611
4580	"	0836	20	.858	5090	Mar. 01/02	0041	20	30.528
4581	"	0859	20	.874	5091	"	0140	20	.569
4582	"	0926.50	20	.893	5092	"	0240	20	.611
4583	"	0949	20	.909	5104	02/03	0043	20	31.530
4584	07	0635	26	62.774	5105	"	0140	20	.569
4585	"	0701	20	.792	5106	"	0240	20	.611
4586	"	0725.50	20	.809					
4587	"	0758	20	.832					
4588	"	0820	20	.847					
4589	"	0842	20	.863					
4590	"	0912.50	20	.883					
4591	"	0934.50	20	.899					
4592	"	0956	20	.914					
4593	07/08	0627	26	63.769					
4594	"	0735	20	.816					
4595	"	0840	20	.861					
4596	"	0955	20	.913					
4597	08/09	0628	26	64.769					
4598	"	0734	22	.815					
4599	"	0840	20	.861					
4600	"	0952	20	.911					
4603	09/10	0638.50	24	65.777					
4604	"	0807	20	.838					
4605	"	0952	20	.911					
4606	12/13	0630	20	68.771					
4607	"	0805	24	.836					
4608	"	1003.50	24	.919					
4609	13/14	0627	24	69.769					
4610	"	0732	20	.814					
4611	"	0843	20	.863					
4612	"	0955	20	.913					
4615	14/15	0849	20	70.867					
4616	"	0925	20	.892					
4617	"	1000	20	.917					
4827	26/27	0728	24	82.811					
4911	July 09/10	0711.50	20	95.799					
4912	"	0759.50	20	.833					
4913	"	0857.50	20	.873					
4914	"	0952	20	.911					
<u>1982</u>									
5048	Feb. 26/27	0051	20	45027.535					
5049	"	0140	20	.569					
5050	"	0230	20	.604					
5062	27/28	0040	20	28.528					
5063	"	0140	20	.569					
5064	"	0240	20	.611					

Plate	Year/Date	Mid UT	Exp	Hel. J.D.	Plate	Year/Date	GMT	Exp	J.D.
					1980				
282	Dec. 13/14	0101	35	2441299.5433	4334	Nov. 02/03	0731	30	44546.813
297	14/15	0111	35	41300.5499	4341	03/04	0523	32	47.724
308	15/16	0112	35	41301.5508	4346	05/06	0652	30	49.786
321	16/17	0101	35	41302.5432	4364	09/10	0805	30	53.837
333V	17/18	0115	51	41303.5532	4372	10/11	0800	31	54.833
344	18/19	0102	35	41304.5438	4374	11/12	0712	34	55.800
352	19/20	0107	35	41305.5469	4376	"	0820	30	.847
					4388	13/14	0426	40	57.685
					4391	"	0619	30	.763
937	Nov. 03/04	0824	30	41625.852	4393	"	0738	34	.818
940	04/05	0703	35	41626.796	4395	27/28	0204	40	71.586
941V	"	0747	40	41626.826	4403	"	0709	40	.798
945	05/06	0438	35	41627.694	4405	28/29	0340	40	72.653
946	"	0518	35	41627.722	4408	"	0527.50	40	.727
					4410	"	0646	40	.782
					4414	Dec. 12/13	0432	40	86.689
					4417	"	0622	42	.765
					1974				
2305	Dec. 06/07	0237	35	42388.6103					
2306	"	0422	35	42388.6932					
2308	09/10	0350	35	42391.6604					
2310	10/11	0100	35	392.5424					
2311	"	0144	32	.5729					
2312	"	0223	35	.6000					
2313	"	0333	35	.6486					
2314	"	0412	35	.6757					
2315	"	0451	35	.7028					
2316	"	0530	35	.7299					
2317	"	0608	35	.7563					
2320	11/12	0057	35	393.5403					
2321	"	0136	35	.5674					
2322	"	0214	35	.5938					
2323	"	0253	35	.6208					
2324	"	0351	35	.6611					
2325	"	0432	35	.6895					
2326	"	0511	35	.7167					
2327	"	0550	35	.7438					
2334	12/13	0322	35	394.6410					
2335	"	0403	38	.6695					
2336	"	0456	35	.7063					
2337	"	0535	35	.7333					
2341	13/14	0100	35	395.5423					
2342	"	0138	35	.5687					
2343V	"	0240	60	.6117					
2344	"	0332	35	.6478					
2345V	"	0423	60	.6832					
2346	"	0513	34	.7180					
2347	"	0550	34	.7437					
2351	14/15	0057	35	396.5402					
2352	"	0136	35	.5673					
2353V	"	0229	60	.6041					
2354	"	0319	35	.6388					

Demers & Wehlau: Las Campanas 24"

Plate	Year/Date	GMT		JD	Plate	Year/Date	Mean GMT	Exp	JD
1972									
876	Aug. 30/31	8 40	9 10	41560.872	4335	Nov. 02/03	0815	38	44546.844
920	Sept 9/10	8 30	9 00	70.865	4348	05/06	0757	34	49.831
1973									
981	Jan. 1/2	4 26	4 56	41684.695	4353	06/07	0813	30	50.842
988	" 2/3	5 32	6 02	85.741	4373	10/11	0832	21	54.856
995	" 3/4	2 30	3 00	86.615	4375	11/12	0747	24	55.824
1008	" 4/5	2 14	2 44	87.603	4389	13/14	0508	30	57.714
1021	" 8/9	2 20	2 50	91.608	4392	"	0654	30	.788
1034	" 9/10	2 06	2 36	92.598	4394	"	0815	30	.844
1042	" 10/11	3 08	3 38	93.641	4398	27/28	0346	30	71.657
1049	" 11/12	2 45	3 15	94.625	4401	"	0520	30	.722
1057	" 12/13	2 55	3 25	95.632	4404	"	0750	34	.826
1070	" 13/14	2 47	3 17	96.626	4406	28/29	0420	30	72.681
1079	" 14/15	3 12	3 42	97.644	4409	"	0606.50	30	.754
1087	" 16/17	2 40	3 10	99.622	4411	"	0735	30	.816
1095	" 18/19	2 12	2 42	41701.602	4415	Dec. 12/13	0511	30	86.716
1974									
1700	Jan. 25/26	3 53	4 23	42073.672	4418	"	0703	30	.794
1703	" "	6 23	6 53	.776	4420	"	0803	32	.835
1709	" 26/27	4 36	5 06	74.702	1982				
1718	" 28/29	3 32	4 02	76.658	5358	July 18/19	0917		45169.887
1730	Jan 31/ Feb 1	4 20	4 50	79.691	5426	Sept. 13	0723		225.808
1732	" "	5 43	6 13	.749	1983				
1741	Feb. 1/2	4 16	4 46	80.688	5598	May 10/11	2334		465.482
1752	" 2/3	3 14	3 44	81.645	5692	July 29	1002		544.918
1754	" "	5 48	6 18	.710	1985				
1759	" 3/4	5 20	5 55	82.734	5837	Apr. 26/27	0004		46182.503
1768	" 4/5	4 19	4 49	83.690	5850	27/28	2346		83.490
1807	Mar. 3/4	0 51	1 21	110.546					
1809	" "	2 23	2 53	.610					
Mid-UT Exp Hel. JD									
2318	Dec. 10/11	0706	35	2442392.799					
2319	" "	0745	35	.826					
2328	" 11/12	0642	35	93.782					
2329	" "	0723	35	.311					
2330	" "	0802	35	.838					
2338	" 12/13	0632	35	94.775					
2339	" "	0711	35	.802					
2340	" "	0747	35	.827					
2348	" 13/14	0642	34	95.782					
2349	" "	0723	34	.811					
2350	1975 "	0800	34	.836					
2432	Mar. 05/06	0203	40	477.585					
2433	" "	0256	35	.622					
2438	" 06/07	0032	35	78.521					
2439	" "	0108	35	.546					
2440	" "	0155	35	.579					
2441	" "	0232	35	.605					
2460	" 08/09	0030	35	480.520					
2461	" "	0108	35	.547					
2462	" "	0145	35	.572					
2463	" "	0224	35	.599					
2475	" 09/10	0026	35	81.517					
2476	" "	0101	35	.541					
2477	" "	0138	35	.567					
*2506V	" 11/12	0048	90	483.532					

1972

877	Aug. 30/31	9 25	9 55	41560.903
921	Sept 9/10	9 30	9 50	70.903

1973

982	Jan. 1/2	5 08	5 38	41684.724
996	" 3/4	3 11	3 41	86.643
1009	" 4/5	3 07	3 37	87.640
1022	" 8/9	3 00	3 30	91.635
1035	" 9/10	3 47	4 17	92.668
1043	" 10/11	3 47	4 17	93.668
1050	" 11/12	3 35	4 05	94.660
1058	" 12/13	3 45	4 15	95.667
1071	" 13/14	3 50	4 20	96.670
1080	" 14/15	4 09	4 39	97.683
1088	" 16/17	3 18	3 48	99.648
1096	" 18/19	3 03	3 33	701.638

1973

983	Jan.	1/2	6 24	6 54	41684.777
989	"	2/3	6 15	6 45	85.771
997	"	3/4	3 52	4 22	86.672
1010	"	4/5	3 46	4 16	87.667
1023	"	8/9	3 40	4 10	91.663
1036	"	9/10	4 30	5 00	92.698
1044	"	10/11	4 50	5 20	93.712
1051	"	11/12	4 35	5 05	94.701
1059	"	12/13	4 22	4 52	95.692
1072	"	13/14	4 33	5 03	96.700
1081	"	14/15	4 55	5 25	97.715
1089	"	16/17	4 34	5 04	99.700
1097	"	18/19	4 09	4 39	41701.683

1974

1689	Jan.	23/24	4 40	5 10	42071.705
1693	"	24/25	4 16	4 46	72.688
1694	"	"	5 58	6 28	.759
1695	"	"	6 49	7 19	.794
1696	"	"	7 36	8 24	.833
1702	"	25/26	5 43	6 13	73.749
1703	"	26/27	3 57	4 27	74.675
1710	"	"	6 13	6 43	.769
1719	"	28/29	5 04	5 34	76.722
1731	Jan31/Feb1		5 00	5 30	42079.719
1740	Feb.	1/2	3 32	4 02	80.658
1743	"	"	6 14	6 44	.770
1753	"	2/3	3 57	4 31	81.677
1758	"	3/4	4 33	5 08	82.701
1760	"	"	6 07	6 42	82.767
1767	"	4/5	3 12	4 02	83.651
1769	"	"	4 58	5 33	.719
1801	Mar.	2/3	01 05	1 50	109.561
1808	"	3/4	1 31	2 06	110.576
1810	"	"	3 12	3 47	.646

1974

Mid UT

exp

3379	Mar.	8/9	1 17	35	43576.553
3383	"	9/10	3 37	35	77.651
3392	"	10/11	1 42	35	78.571
3404	"	11/12	2 13	35	79.592
3413	"	12/13	1 56	35	80.581
3422	"	14/15	1 41	35	82.570
3431	"	15/16	1 41	35	83.570
3439	"	16/17	1 27	35	84.560
3447	"	17/18	0 59	35	85.541



1973				1978						
984	Jan.	1/2	7 11	741	41684.810	3353	Jan. 25/26	8 48	15	43534.867
990	"	2/3	7 02	7 32	85.803	3354	" 26/27	2 11	15	35.591
998	"	3/4	5 40	6 00	86.743	3355	"	2 43	15	.613
1011	"	4/5	4 35	4 55	87.698	3356	"	3 58	15	.665
1024	"	8/9	4 32	4 52	91.696	3357	"	4 23	15	.683
1037	"	9/10	5 22	5 42	92.731	3358	"	4 51	15	.702
1045	"	10/11	5 33	5 53	93.738	3359	"	7 24	15	.808
1052	"	11/12	5 17	5 37	94.727	3360	"	7 54	15	.829
1060	"	12/13	5 08	5 28	95.721	3361	"	8 25	15	.851
1073	"	13/14	5 15	5 35	96.726	3362	Mar. 6/7	1 03	15	43574.544
1082	"	14/15	5 40	6 00	97.743	3364	"	3 19	15	.638
1090	"	16/17	5 15	5 35	99.726	3365	"	4 20	15	.681
1098	"	18/19	4 48	5 08	40701.707	3366	"	5 42	15	.738
						3367	"	6 59	15	.791
						3368	"	7 59	15	.833
1742	Feb.	1/2	5 34	5 54	42080.739	3369	"	9 02	15	.876
1770	"	4/5	6 07	6 27	83.762	3370	" 7/8	1 15	15	75.552
1802	Mar.	2/3	2 14	2 34	109.600	3371	"	2 05	15	.587
1867	"	22/23	1 08	1 28	129.554	3372	"	2 55	15	.622
1885	"	23/24	1 09	1 29	130.555	3373	"	3 45	15	.656
1886	"	"	1 43	2 03	.578	3374	"	4 35	15	.691
1898	"	24/25	0 55	1 15	131.545	3375	"	6 05	15	.753
1911	"	26/27	0 45	1 05	133.538	3376	"	7 05	15	.795
1923	"	27/28	0 58	1 18	134.547	3377	"	8 05	15	.837
1927	"	"	2 44	3 04	.621	3378	"	9 05	15	.878
1936	"	28/29	0 43	1 03	135.537	3384	" 9/10	4 21	20	77.681
1940	"	"	2 27	2 47	.609	3393	" 10/11	2 21	20	78.598
1952	"	29/30	1 11	1 31	136.556	3405	" 11/12	3 05	20	79.628
						3414	" 12/13	2 32	20	80.606
						3432	" 15/16	2 17	20	83.595
						3440	" 16/17	2 34	20	84.607
2359	Jan.	20/21	4 30	20	434.688	3448	" 17/18	1 47	20	85.574
2360	"	"	4 53	20	.703	3458	May 2/3	0 59½	15	631.541
2361	"	"	5 16	20	.719	3472	" 3/4	2 07	18	32.588
2368	"	22/23	5 09	20	36.715	3485	" 4/5	0 20	14	33.514
2369	"	"	5 32	20	.731	3501	" 5/6	23 48	14	34.492
2381	"	24/25	6 10	20	38.757	3515	" 6/7	23 47	14	43635.491
2382	"	"	6 33	20	.773	3521	" 7/8	23 45	14	36.490
2393	"	25/26	6 13	20	39.759	3534	" 8/9	23 40	14	37.486
2394	"	"	6 45	9	.781	3546	" 9/10	23 44	14	38.489
2395	"	26/27	5 34	20	40.732	3558	" 10/11	23 44	14	39.489
2396	"	"	6 30	20	.771	3567	" 12/13	23 50	14	41.493
2405	Feb.	3/4	6 01	20	47.751	3592	" 15/16	23 52	14	44.494
2415	"	4/5	5 03	20	48.710	3608	" 30/31	2 30	20	59.604
2427	"	5/6	5 09	20	49.715	3617	May 31/June 1	2 59	20	60.623
2588	May	3/4	0 07	18	536.505	3624	June 1/2	0 51	20	61.535
2602	"	4/5	0 00	20	37.500	3632	" 2/3	23 48	20	62.492
						3640	" 3/4	23 55	20	63.497
						3653	" 29/30	0 01	20	89.501
						3667	July 1/2	0 09	20	91.506
							1979			
						3900	May 22/23	1 49	20	4016.576
						3935	" 25/26	23 57	20	19.498
						4027	June 2/3	0 44	20	27.531
							1980			
						4162	May 5/6	1 06	36	44365.546
						4169	" 6/7	0 47	30	66.538

1980				
4182	May 7/8	0 10	30	44367.507
4195	10/11	23 50	30	70.493
4209	11/12	23 52	30	71.494
1981				
4470	May 26/27	0 33	20	44751.523
4489	27/28	0 20	20	52.514
1983				
5573	May 6/7	0 10	30	45461.507
1985				
5830	Apr. 25/26	3 06:30	20	46181.629
5831(V)		3 48	30	.658
5838	Apr 26/27	0 41	20	82.528
5839(V)		1 19	30	.555
5841		2 41	20	.612
5843		3 48	20	.658
5851	Apr 27/28	0 22	20	83.515
5854		2 50	20	.618
5865	28/29	3 33	21	84.648
5874	29/30	0 14	20	85.510
5877		3 00	20	.625
5885	May 14/15	0 07	20	46200.505

1973

985	Jan.	1/2	8 06	8 36	41684.848
999	"	3/4	6 10	6 40	86.767
1012	"	4/5	5 30	6 00	87.740
1025	"	8/9	5 46	6 16	91.751
1038	"	9/10	6 00	6 30	92.760
1046	"	10/11	6 00	6 33	93.762
1053	"	11/12	6 54	7 24	94.798
1061	"	12/13	5 59	6 19	95.756
1074	"	13/14	6 16	6 46	96.772
1083	"	14/15	7 03	7 33	97.804
1091	"	16/17	6 54	7 24	99.798
1099	"	18/19	6 05	6 35	41701.764
1174	Feb.	14/15	6 50	7 20	28.795
1185	"	15/16	7 01	7 31	29.803

1974

1803	Mar.	2/3	2 52	3 22	42109.630
1755	Feb.	2/3	5 52	6 22	42081.755

1975

2437	Mar.	5/6	6 14	6 29	42477.766
2442	Mar.	6/7	3 18	3 48	78.649
2453	Mar.	7/8	5 02	5 32	79.721
2466	Mar.	8/9	4 29	4 59	80.698
2478	Mar.	9/10	2 25	2 55	81.612
2507	Mar.	11/12	1 48	2 18	83.586
2523	Mar.	12/13	2 22	2 52	84.610
2534	Mar.	13/14	2 58	3 30	85.644

1972

406	May	10/11	23 41	23 51	41448.490
424	"	11/12	23 27	23 37	49.481
446	"	12/13	23 32	23 42	50.484
467	"	13/14	0 05	0 15	51.507
485	"	14/15	23 40	23 50	52.490
507	"	15/16	23 52	0 02	53.498
528	"	16/17	0 07	0 17	54.508
549	"	17/18	23 39	23 49	55.489
649					
659					

1973

1157	Feb.	13/14	3 35	3 50	41727.654
1170	"	14/15	4 45	5 00	28.703
1182	"	15/16	5 08	5 23	29.719

1974

1756	Feb.	2/3	6 27	6 57	42081.779
1804	Mar.	2/3	4 27	4 57	109.696

1978 mean GMT exp

3387	Mar.	9/10	6 22	30	43577.765
3396		10/11	6 00	30	78.750
3408		11/12	6 24	30	79.767
3417		12/13	4 23	30	80.683
3424		14/15	2 58	30	82.624
3434		15/16	3 39	30	83.652
3443		16/17	4 35	30	84.691
3450		17/18	2 58	30	85.624

1986

6076	May	1/2	0 54	30	46552.538
6088		2/3	2 28	30	53.603
6089	"	"	3 08	36	.631
6091	"	"	4 43	40	.697
6097		4/5	1 08	36	55.547
6099	"	"	3 24	36	.642
6101	"	"	5 20	30	.722
6102	"	"	6 44	40	.781
6107		5/6	23 40	40	56.486
6109	"	"	1 58	30	.582
6110	"	"	3 05	20	.628
6111	"	"	4 07	30	.672
6113	"	"	5 37	38	.734
6115	"	"	6.58	40	.790
6118		6/7	0 05	40	57.503
6120	"	"	1 17	30	.553
6121	"	"	2 11	20	.591
6123	"	"	4 39	30	.694
6124	"	"	5 49	40	.742
6126	"	"	7 16	40	.803
6129		7/8	0 00	40	58.500
6131	"	"	1 06	30	.546
6132	"	"	2 23.5	31	.600
6134	"	"	4 07	30	.672
6135	"	"	5 20	36	.722
6137	"	"	7 30	40	.813
6140		8/9	0 16	42X	59.511
6145	"	"	5 28	36	.728

1986

6151	May	9/10	0 46	44	46560.532
6156	"	"	4 45	36	.698
6161		10/11	0 20	38	61.514
6166	"	"	4 00	36	.667
6174		11/12	0 32	30X	62.522
6176	"	"	4 00	36	.667

1987

6347	May	23/24	4 26	30	939.685
6356		26/27	1 38	30	42.568
6358	"	"	2 47	30	.617
6359	"	"	3 52	30	.661
6360	"	"	4 52	30	.703
6365		27/28	1 39	30X	43.569
6367	"	"	2 59	26X	.624
6368		29/30	0 04	30	45.503
6370	"	"	1 05	30	.545
6374	"	"	4 31	40	.688
6380		30/31	23 53	36	46.495
6382	"	"	0 59	30	.541
6386	"	"	4 10	40	.674
6394	May31/	Jun1	2 32	60	47.606
6418	July20/	21	1 28	40	997.561
6419	"	"	2 10	40	.590
6422		22/23	1 25	40	999.559
6423	"	"	2 12	30 45	.592
6424	Nov30/	Dec1	8 07	45	47130.838
6425	Dec	1/2	8 02	45	31.835
6426		2/3	8 07	45	32.838

NGC 4590

Las Campanas Observations (1987-1991)

	1987	mid UT	exp	mid JD
6424	<del>Nov 30/Dec 1</del>	<del>8 07</del>	45	<del>47130.838</del>
6425	<del>Dec 1/2</del>	<del>8 02</del>	45	<del>31.835</del>
6426	<del>Dec 2/3</del>	<del>8 07</del>	45	<del>32.838</del>

*listed on previous page*

1988

6427	Jan 28/29	8 22	45	47189.849
6428	Jan 29/30	8 22	45	90.849
6429	Jan 30/31	8 22	45	91.849
6430	Jan 31/Feb 1	8 22	45	92.849
6434	May 7/8	3 01	30	47289.626
6436		3 58	28	.665
6437		5 05	40	.713
6444	May 9/10	0 03	30	91.502
6446		0 59.5	15	.541
6447		3 05	30	.629
6449		4 33	40	.690
6450	May 11/12	0 47	30	93.533
6452		1 44	20	.572
6456	May 12/13	4 20	30	94.681
6463	May 15/16	0 21	20	97.515
6465		1 05.5	5	.546
6466		1 41	20	.570
6469		4 16	30	.678
6478	May 16/17	0 15	20	98.510
6480		1 08	20	.547
6484		4 25	32	.684

1989

6502	Jan 15/16	6 11	40	47542.758
6503		7 30	30	.813
6504		8 21	20	.848
6506	Jan 16/17	5 10	40	43.715
6507		6 20	30	.764
6508		7 15	25	.802
6509		8 10	20	.840
6510	Feb 14/15	4 55	40	72.705
6511		6 00	30	.750
6518	Apr 9/10	1 49	35	47626.576
6519		3 25	20	.642
6520		4 24	20	.683
6521		5 25	20	.726
6522		6 29	25	.770
6523		7 35	35	.816
6525	Apr 10/11	0 34	35	27.524
6526		0 45	25	.574
6527		2 41	20	.612
6528		3 41	20	.653
6529		4 39	20	.694
6531		7 00	30	.792
6535	Apr 11/12	5 53	20	47628.745

NGC 4590 cont'd

6536		7 00	30	.792
6537		8 20	40	.847
6539	Jun 1/2	0 29	25	47679.520
6540		3 32	38	.647
6541		4 18	45	.679
6542		5 01	50	.715
6544	Jun 2/3	0 27	25	80.519
6545		1 40	25	.569
6546		3 20	38	.639
6549	Jun 3/4	1 04	25	81.544
6550		2 25	25	.600
6551		4 14	45	.676
6553	Jun 28/29	23 50	28	47706.493
6554		1 01	30	.542
6555		2 14	40	.593
6557	Jun 29/30	0 28	30	07.519
6558		1 26	30	.560
6560	Jul 1/2	0 36	30	09.525
6561		1 48	35	.575
6563	Jul 4/5	0 25	30	12.517
6564		1 32	30	.564

1990

6583	Apr 23/24	4 37	30	48005.692
6585		5 50	40	.743
6586	Apr 25/26	23 54	36	07.496
6588		1 22	30	.557
6589		2 21	30	.598
6591		3 58	26	.665
6592		5 03	30	.710
6594		6 07	30	.755
6595		7 08	40	.797
6596		7 55	40	.830
6598	Apr 26/27	0 19	30	08.513
6600		1 24	30	.558
6604		5 26	30	.726
6608		7 57	40	.831
6612	Apr 27/28	0 07	40	09.505
6614		1 35	22	.566
6618		5 44	30	.739
6620	Apr 28/29	23 53	36	10.495
6622		1 08	30	.547
6626		4 55	30	.705
6630		7 25	40	.809
6633	Apr 29/30	23 58	32	11.499
6635		1 01	30	.542
6639		4 59.5	33	.708
6646	Apr30/May1	23 50	26	12.493
6648		0 57	26	.540
6652		4 31	30	.688
6661	May 1/2	23 51	30	13.494
6663		0 58	32	.540

NGC 4590 cont'd

6667		4 18	24	.679
	1991			
6676	May 15/16	1 35	40	48392.566
6677		2 30	40	.604
6678		3 15	40	.635
6679		4 45	40	.698
6680		5 30	40	.729
6681		6 15	40	.760
6686	May 16/17	23 55	40	93.497
6687		0 38	36	.526
6688		1 21	30	.556
6689		2 15	30	.594
6690		2 51.5	27	.619
6691		3 28	36	.644
6692		4 32	40	.689
6693		5 26	52	.726
6694		6 15	40	.760
6699	May 17/18	23 54	36	94.490
6700		0 27	36	.519
6701		1 07	30	.547
6702		2 02	30	.584
6703		2 42	40	.613
6704		3 28	40	.644
6705		5 04	40	.711
6706		5 58	40	.749
6711	May 18/19	0 10	40	95.507
6712		1 01	44	.542
6713		2 07	40	.588
6714		3 31	42	.647
6715		4 20	44	.681
6716		5 23	46	.724
6718	May 19/20	1 15	40	96.552
6719		2 02	40	.585
6720		3 00	40	.625

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Plate	Year/Date	Mid-UT	Exp	Hel. J.D.-
	<u>1975</u>			
2434	Mar. 05/06	0412	30	2442477.676
2435	"	0454	30	.705
2436	"	0530	30	.730
2444	06/07	0446	25	78.700
2446	"	0555	25	.748
2447	"	0631	25	.773
2448	"	0700	25	.793
2449	"	0733	25	.816
2450	"	0803	25	.836
2464	08/09	0317	28	80.638
2465	"	0347	28	.659
2467	"	0503	28	.711
2479	09/10	0314	28	81.635
2480	"	0344	28	.656
2481	"	0417	28	.679
2490	10/11	0208	18	82.590
2491	10/11	0235	28	.609
2492	"	0305	28	.629
2493	"	0335	28	.650
2494	"	0404	28	.670
2495	"	0434	28	.691
2496	"	0504	28	.712
2497	"	0535	28	.734
2498	"	0606	28	.755
2499	"	0639	28	.778
2500	"	0718	33	.806
2501	"	0800	33	.835
2502	"	0836	33	.860
2503	"	0911	28	.884
2508	11/12	0238	30	83.610
2509	"	0314	32	.636
2510	"	0349	32	.660
2524	12/13	0315	30	84.636
2525	"	0351	30	.661
2526	"	0422	30	.683
2533	13/14	0235	34	85.609
2535	"	0354	30	.663
2536	"	0428	30	.687

		Mean UT	Exp	J.D.
	<u>1978</u>			
3397	Mar. 10/11	0653	30	43578.787
3409	11/12	0705	30	79.795



1971

268  
269  
278  
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330  
331  
332  
369  
376

1972

283B	May	8/9	5 35	5 38	41446.734
390B	"	9/10	1 10	1 13	47.550
395B	"	"	3 35	3 38	.650
407B	"	10/11	0 01	0 04	48.502
409V	"	"	0 08	0 11	.507
422V	"	11/12	23 09	23 12	49.465
423B	"	"	23 16	23 19	.470
427B	"	"	1 25	1 28	.560
428V	"	"	1 33	1 36	.566
444V	"	12/13	23 13	23 16	50.468
445B	"	"	23 21	23 24	.474
465V	"	13/14	23 45	23 48	51.491
466B	"	"	23 52	23 55	.495
483V	"	14/15	23 24	23 27	41452.476
484B	"	"	23 30	23 33	.480
505V	"	15/16	23 30	23 33	53.480
506B	"	"	23 38	23 41	.486
526V	"	16/17	23 51	23 54	54.495
527B	"	"	23 58	0 01	.500
547V	"	17/18	23 24	23 27	55.476
548B	"	"	23 30	23 33	.480
568V	"	18/19	23 01	23 04	56.459
569B	"	"	23 08	23 11	.465
603V	"	20/21	4 08	4 11	58.673
604B	"	"	4 14	4 17	.677
675V	July	4/5	23 29	23 32	41503.480
676B	"	"	23 37	23 40	.485
690V	"	6/7	1 09	1 13	05.549
691B	"	"	1 20	1 24	.557
705V	"	7/8	0 25	0 30	06.519
706B	"	"	0 35	0 40	.526

1973

1000	Jan.	3/4	6 51	6 54	41686.786
1001	"	"	6 57	7 00	.790
1002	"	"	7 11	7 14	.800
1003	"	"	7 16	7 19	.803
1027	"	8/9	7 05	7 08	91.796
1028	"	"	7 13	7 16	.802
1029	"	"	7 26	7 29	.810
1030	"	"	7 34	7 37	.816
1062	"	12/13	6 38	6 41	95.778
1063	"	"	6 44	6 47	.782
1064	"	"	6 57	7 00	.791
1065	"	"	7 04	7 07	.795
1100	"	18/19	6 43	6 46	701.781
1101	"	"	6 49	6 52	.785
1102	"	"	7 04	7 07	.795
1103	"	"	7 11	7 14	.800
1158	Feb.	13/14	3 59	4 09	41727.669
1159	"	"	4 58	5 08	.710
1161	"	"	5 59	6 09	.753
1163	"	"	7 09	7 19	.801
1166	"	"	8 19	8 29	.850
1169	"	14/15	4 29	4 39	28.690
1172	"	"	5 54	6 04	.749
1173	"	"	6 27	6 37	.772
1175	"	"	7 33	7 43	.818
1178	"	"	8 41	8 51	.865
1181	"	15/16	4 50	5 00	29.705
1184	"	"	6 19	6 29	.767
1186	"	"	7 40	7 50	.823
1400	June	8/9	23 49	23 59	41842.495
1401	"	"	0 00	0 03	.501
1402	"	"	0 10	0 20	.510
1403	"	"	0 22	0 25	.516
1436	"	10/11	23 30	23 40	44.483
1437	"	"	23 42	23 45	.488
1438	"	"	23 54	0 04	.499
1439	"	"	0 05	0 08	.505
1451	"	22/23	0 40	0 50	56.531
1452	"	"	0 53	0 56	.538
1453	"	"	1 02	1 12	.547
1454	"	"	1 30	1 33	.563
1462	"	26/27	23 43	23 46	60.489
1463	"	"	23 52	0 02	60.498
1464	"	"	0 08	0 13	.507
1468	"	"	2 23	2 33	.603
1479	"	27/28	0 13	0 18	61.510
1480	"	"	0 32	0 42	.526
1481	"	"	0 45	0 48	.532
1485	"	"	2 38	2 48	.613
1494	"	28/29	23 19	23 29	62.475
1495	"	"	23 31	23 34	.481
1496	"	"	23 38	23 43	.486
1500	"	"	1 56	2 06	.584

1973					1974				
1510	Jun 29/30	23 15	23 18	63.469	1868	Mar22/23	1 57	2 09	29.585
1511	" "	23 20	23 30	.476	1869	" "	2 13	2 17	.594
1512	" "	23 35	23 40	.484	1870	" "	2 39	2 55	42129.616
1528	Ju30/Jul.1	23 34	23 37	64.483	1871	" "	3 00	3 06	.627
1529	" "	23 39	23 49	.489	1872	" "	3 12	3 24	.638
1530	" "	23 54	23 59	.498	1887	" 23/24	2 41	2 51	30.615
1538	July 1/2	23 21	23 24	65.474	1888	" "	3 11	3 17	.635
1539	" "	23 26	23 36	.480	1889	" "	3 23	3 27	.642
1540	" "	23 41	23 46	.488	1924	" 27/28	1 45	1 55	34.576
1551	" 2/3	23 33	23 36	41866.482	1925	" "	1 59	2 03	.584
1552	" "	23 49	23 59	.496	1926	" "	2 19	2 25	.599
1553	" "	0 03	0 08	.503	1937	" 28/29	1 17	1 29	35.558
1564	" 3/4	23 35	23 38	67.484	1938	" "	1 39	1 43	.570
1565	" "	23 40	23 50	.490	1939	" "	1 59	2 05	.585
1573	" 4/5	23 18	23 21	68.472	1941	" "	3 02	3 12	.630
1574	" "	23 24	23 34	.478	1953	" 29/30	1 45	1 49	36.574
1575	" "	23 39	23 44	.487	1954	" "	1 56	2 08	.585
1586	" 9/10	23 34	23 37	73.483	1955	" "	2 28	2 34	.605
1587	" "	23 39	23 49	.489	1969	Apr 1/2	1 23	1 35	39.562
1588	" "	23 57	0 02	.500	1970	" "	1 39	1 43	.570
1597	" 10/11	23 23	23 26	74.475	1971	" "	2 06	2 12	.590
1598	" "	23 28	23 38	.481	1980	" 2/3	1 48	2 00	40.579
1599	" "	23 42	23 47	.489	1981	" "	2 04	2 08	42140.588
1609	" 11/12	23 27	23 30	75.478	1982	" "	2 14	2 20	.595
1610	" "	23 32	23 42	.484	2144	Jun27/28	23 42	23 46	226.489
1611	" "	23 47	23 52	.493	2145	" "	0 53	1 05	.541
	1974				2146	" "	0 41	0 49	.531
1711	Jan.26/27	7 11	7 21	42074.803	2158	" 28/29	23 11	23 14	27.467
1735	" 31/Fe.1	8 03	8 06	79.836	2159	" "	23 18	23 24	.473
1746	Feb. 1/2	8 21	8 24	80.849	2160	" "	23 27	23 37	.481
1747	" "	8 30	8 35	.856		1975	meanGMT	exp	
1763	" 3/4	8 21	8 26	42082.850	2555	May 1/2B	0 16½	3	42534.511
1771	" 4/5	6 41	6 51	83.782	2556	" " B	0 27	10	.519
1817	Mar.18/19	1 52	2 04	125.582	2557	" " V	0 40	6	.528
1818	" "	2 57	3 00	.624	2559	" " B	1 58	10	.582
1819	" "	3 21	3 39	.646	2565	" " B	6 29	10	.770
1824	" 19/20	1 47	2 01	126.579	2567	" " B	7 48	10	.825
1825	" "	2 08	2 12	.590	2570	" 2/3B	23 28	4	35.478
1826	" "	2 23	2 41	.606	2571	" " B	23 39	10	.485
1827	" "	3 02	3 08	.628	2572	" " V	23 52	6	.494
1828	" "	3 15	3 29	.640	2574	" " B	1 52	10	42535.578
1829	" "	4 43	4 57	.701	2577	" " B	3 45	10	.656
1838	" 20/21	1 46	2 00	127.578	2581	" " B	6 26	10	.768
1839	" "	2 04	2 08	.588	2586	" 3/4B	23 33	4	36.481
1840	" "	2 25	2 41	42127.606	2587	" " B	23 43	8	.488
1841	" "	2 49	2 55	.619	2590	" " B	1 43	8	.572
1842	" "	3 02	3 14	.631	2595	" " B	5 06	8	.713
1843	" "	3 28	3 38	.648	2603	" 4/5B	0 27	8	37.519
1844	" "	4 27	4 37	.689	2604	" " B	0 37	4	.526
1846	" "	5 32	5 42	.734	2617	" 5/6B	23 57	4	38.498
1851	" 21/22	1 36	1 48	28.571	2618	" " B	0 09	8	.506
1852	" "	1 52	2 04	.582	2633	" 6/7B	23 32	4	39.481
1853	" "	2 05	2 21	.592	2634	" " B	23 42	8	.488
1854	" "	3 35	3 47	.653	2646	" 8/9B	23 38	4	42541.485
1855	" "	3 49	3 53	.660	2647	" " B	23 48	8	.492

1975				meanGMT	exp	1978				
						Mid UT	exp			
2672	May	10/11	B23 53	8	43.495	3381 Mar 8/9	2 43	8	43576.613	
2680	"	11/12	B23 35	8	44.483	3385 9/10	4 46	8	77.699	
2685	"	12/13	B23 30	8	45.479	3388 19/10	7 57	8	.831	
2688	"	13/14	B23 28	8	46.478	3394 10/11	4 11	8	78.674	
1974						3402	"	9 36	8	.900
2177	Jun	23/30	B23 14	3	42228.	3406 11/12	3 28	8	79.644	
2178	"	"	V23 21	6	.	3415 12/13	2 56	8	80.622	
2179	"	"	B23 25	12	.	3423 14/15	2 13	8	82.592	
2192	Ju30/Jul	1B23 31	3	29.	3429	"	8 39	8	.860	
2193	"	"	V23 37	6	.	3433 15/16	2 39	8	83.610	
2194	"	"	B23 48	10	.	3437	"	7 15	8	.802
1975						3441 16/17	3 09	8	84.631	
2748	Jun	25/26	B23 31	8	42589.480	3446	"	9 41	8	.903
2750	"	"	B 0 19	8	42589.513	3449 17/18	2 13	8	85.592	
2765	"	26/27	B 0 05	8	90.503	3459 May 2/3	1 24	8	631.558	
2768	"	"	B 1 13	8	.512	3473 3/4	2 40	8	32.611	
2781	"	27/28	B23 04	8	91.461	3476	"	4 21	8	.681
2784	"	"	B 0 18	8	.512	3479	"	6 37	8	.776
2787	"	"	B 1 23	8	.560	3481	"	7 48	8	.825
2790	"	"	B 2 38	8	.610	3486 4/5	0 43	8	33.530	
2803	"	28/29	B23 10	8	92.465	3489	"	2 56	8	.622
2822	"	29/30	B23 08	8	93.461	3492	"	4 28	8	.686
2838	Ju30/Jul	1B23 14	8	94.465	3495	"	6 28	8	.769	
1976						3497	"	7 31	8	.813
2882	May	24/25	23 46	6	923.490	3502 5/6	0 14	8	34.510	
2883	"	"	0 39	6	.527	3505	"	2 09	8	.590
2884	"	"	1 54	8	.579	3522 7/8	0 14	8	36.510	
2916	Jun	6/7	23 38	10	36.485	3535 8/9	0 03	8	37.502	
2920	"	"	2 09	10	.590	3547 9/10	0 06	8	38.504	
2923	"	"	4 03	10	.669	3559 10/11	0 09	8	39.506	
1977						3568 12/13	0 15	8	41.510	
3107	May	9/10	0 15	8	43273.510	3570	"	1 57	8	.581
3116	"	10/11	23 51	10	74.494	3583 14/15	2 57	8	43.623	
3119	"	10/11	2 08	8	.589	3593 15/16	0 26	10	44.518	
3131	"	11/12	23 53	8	75.495	3596	"	2 23	8	.599
3134	"	"	1 50	8	75.576	3599	"	4 41	8	.695
3146	"	12/13	23 41	8	76.487	3602	"	7 17	10	.803
3149	"	"	1 40	8	76.574	3646 Jun 24/25	2 40	8	84.611	
3159	"	13/14	23 43	8	77.488	3648	"	3 36	8	.650
3162	"	"	1 42	8	77.571	3651	"	5 07	12	.713
3170	"	14/15	23 52	8	78.494	3654 29/30	0 24	8	89.516	
3173	"	"	1 53	8	.578	3657	"	1 58	8	.582
3181	"	15/16	0 03	8	79.502	3661	"	5 05	12	.713
3184	"	"	2 15	8	.594	3668 Jul 1/2	0 30	8	91.520	
3192	"	16/17	0 06	8	80.504	3675 2/3	0 33	12	92.523	
3196	"	"	2 48	8	.617	3678	"	2.50	10	.618
3203	"	17/18	23 54	8	81.496	3696 4/5	1 28	8	94.561	
3212	"	19/20	23 39	8	83.485	3698	"	1 59	8	.583
3225	"	20/21	23 55	8	84.497	3711 5/6	0 21	11	95.515	
3227	"	"	0 46	8	43284.532	3718 8/9	0 22	8	98.515	
3228	"	"	1 26	8	.560	3728 9/10	23 50	8	99.493	
3239	"	21/22	0 19	8	85.513	3731	"	1 01	8	.542
3241	"	"	1 15	8	.522	3734	"	2 14	10	.593
3251	"	22/23	2 28	8	86.603	3737	"	3 34	12	.649
3254	"	"	3 56	8	86.664					

## w Centauri

1979									
3901	May 22/23	2 13	8	44016.592	4239	May 16/17	7 08	10	44376.
3959	27/28	0 46	8	21.532	4243	17/18	0 09	8	77.506
3960	"	1 03	12 (V)	.544	4245	"	1 04	8	.544
3962	"	2 46	8	.615	4246	"	1 58	8	.582
3963	"	3 00V	10	.625	4248	"	3 04	8	.628
3965	"	4 50	8	.701	4249	"	4 08	8	.672
3966	"	5 04V	10	.711	4251	"	4 55	8	.705
3971	28/29	0 02	8	22.501	4253	"	5 52	8	.744
3972	"	0.20	8	.514	4254	"	7 03	8	.794
3973	"	0 36	8	.525	4255	"	7 19	8	.805
3974	"	1 14V	12	.551	4258	18/19	1 19	10	78.555
3975	"	1 33V	12	.565	4259	"	3 29	8	.645
3976	"	1 54V	12	.579	4260	"	5 01	8	.709
3978	"	4 40	8	.694	4262	"	6 11	8	.758
3979	"	4 59V	12	.708					
3985	29/30	0 29V	12	23.520	4463	1981 May 25/26	3 26	8	44750.643
3986	"	0 52V	12	.536	4468	"	3 47	8	.658
3987	"	1 15V	12	.552	4469	26/27	0 12	8	51.508
3996	May 30/31	0 17	8	24.512	4473	"	2 20	8	.597
3997	"	0 33	8	.523	4476	"	3 53	8	.662
3998	"	0 47	8	.533	4481	"	5 45	8	.740
3999	"	1 24V	12	.558	4487	27/28	23 55	8	52.497
4008	May31/Jun1	23 50	8	25.493	4491	"	2 11	8	.591
4010	"	2 57	8	.623	4494	"	3 44	8	.656
4017	Jun 1/2	0 36	8	26.525	4497	"	5 32	8	.731
4019	"	1 31	8	.563	4502	28/29	23 45	8	53.490
4020	"	2 18	8	.596	4505	"	1 33	8	.565
4026	2/3	0 09	8	27.506	4508	"	3 05	8	.628
4028	"	1 12	8	.550	4511	"	4 25	8	.684
4030	"	2 54	8	.621	4518	29/30	23 44	8	54.489
4038	3/4	0 06	8	28.504	4521	"	1 27	8	.560
4040	"	1 37	8	.567	4524	"	2 54	8	.621
4042	"	2 52	8	.619	4527	30/31	23 48	8	55.492
4048	Jun30/Jul1	1 59	8	55.583	4529	"	0 33	8	.523
4049	"	3 51	8	.660	4531	"	2 17	8	.595
4053	July 1/2	0 11	8	56.508	4540	May31/Jun1	2 06	8	56.588
4056	"	2 26	10	.601	4543	"	3 56	8	.664
4058	"	5 10	15	.715	4546	June 1/2	23 55	8	57.497
4062	2/3	1 19	8	57.555	4548	"	0 50	8	.535
4065	"	4 09	12	.673	4549	2/3	23 42	8	58.488
	1980				4552	"	1 23	8	.558
4163	May 5/6	1 57	8	44365.581	4556	"	4 13	8	.676
4168	6/7	0 18	8	66.513	4560	3/4	23 44	8	59.489
4171	"	2 34	8	.607	4563	"	1 27	8	.560
4196	10/11	0 40	8	70.528	4566	"	2 56	8	.622
4210	11/12	0 40	8	71.528					
4213	"	2 58	8	.724	5052	1982 Feb 26/27	3 36	8	45027.650
4222	12/13	1 01	8	72.542	5053	"	4 24	8	.683
4229	16/17	0 35	8	76.	5054	"	5 24	8	.725
4231	"	1 50	8		5056	"	6 24	8	.767
4232	"	2 32	8		5058	"	7 24	8	.808
4234	"	3 45	10		5066	27/28	3 34	8	28.649
4235	"	4 48	8		5067	"	4 34	8	.690
4237	"	5 56	8		5068	"	5 34	8	.732

1982				1985			
5070	Feb 27/28	6 34 8	45028.774	5752	May 28/29	0 26 8	45849.518
5072	"	7 34 8	.815	5761	May 29/30	0 31 8	50.522
5078	Feb 28/Mar 1	3 34 8	29.649	5772	30/31	23 52 8	51.494
5079	"	4 34 8	.690	5784	Jun 26/27	23 26 8	78.476
5081	"	5 36 8	.733	5787	"	1 44 18	.572
5083	"	6 41 8	.778	5788	27/28	23 26 8	79.476
5085	"	7 34 8	.815	5791	"	1 08 8	.547
5087	"	8 34 8	.857	5794	"	2 45 10	.615
5093	Mar 1/2	3 34 8	30.649	5797	"	4 37 15	.692
5094	"	4 34 8	.690	5802	28/29	23 41 8	80.487
5096	"	5 34 8	.732	5805	"	1 22 8	.557
5098	"	6 34 8	.774	5808	"	2 52 8	.619
5100	"	7 38 8	.818	5811	"	4 47 16	.699
5102	"	8 48 8	.867	5816	29/30	23 41 8	81.487
5107	2/3	3 35 8	31.649	5819	"	1 19 8	.555
5108	"	4 34 8	.690	5822	"	2 54 8	.621
5110	"	5 35 8	.733	5825	"	4 29 13	.687
5120	29/30	2 59 9	58.624	1985			
5130	Mar 30/31	0 21 9	59.514	5840	Apr 26/27	2 18 8	46182.596
5131	"	1 14 9	.551	5842	"	3 08 8	.631
5132	"	2 19 9	.597	5852	27/28	0 48 8	83.533
5158	Apr 1/2	0 26 10	61.518	5855	"	3 21 8	.640
5159	"	1 17 9	.553	5863	28/29	0 49 8	84.534
5160	"	2 16 9	.594	5866	"	3 47 9	.658
5176	23/24	23 42 8	83.488	5875	29/30	0 46 8	85.532
5177	"	0 35 8	.524	5875	"	3 33 8	.648
5192	24/25	0 07 9	84.504	5886	May 14/15	1 08 8	46200.547
5193	"	1 08 8	.547	5905	16/17	5 40 8	02.736
5210	25/26	0 33 9	85.522	5911	17/18	23 50 8	03.493
5222	27/28	1 08 8	87.547	5914	"	2 27 8	.602
5223	"	2 20 8	.597	5919	"	5 14 8	.718
1983				5923	19/20	0 11 10	05.508
5576	May 7/8	0 13 8	45462.509	5926	"	2 35:30 9	.608
5581	8/9	0 06 8	63.504	5930	"	6 32 8	.681
5582	"	1 05 10	.545	5935	20/21	23 52 8	06.494
5583	"	2 05 10	.587	5942	"	6 24 8	.767
5590	9/10	0 44 8	64.531	5947	21/22	1 04:30 9	07.545
5592	"	2 04 8	.586	5950	"	3 05 10	.628
5599	10/11	0 39 10	65.527	5958	22/23	0 03 8	08.502
5609	11/12	0 32 8	66.522	5961	"	2 52:30 10	.620
5621	12/13	0 08 8	67.506	5968	23/24	0 04 8	09.503
5633	13/14	0 08 8	68.505	5971	"	2 22 8	.599
5639	15/16	0 40 8	70.528	1986			
1984				6077	May 1/2	1 24 8	552.558
5702	Mar 26/27	6 31 8	45786.772	6081	"	5 03 8	.710
5704	"	8 14 8	.843	6084	"	7 44 8	.822
5708	27/28	3 16 8	87.636	6087	2/3	1 56 10	53.581
5712	"	8 26 8	.851	6090	"	4.06 10	.671
5717	28/29	5 04 8	88.711	6096	4/5	0 28 14	55.519
5720	"	8 00 8	.833	6104	"	7 48 8	.825
5727	29/30	5 33 8	89.731	6112	5/6	4 38 8	56.693
5733	Apr 30/May 1	6 28 8	45821.769	6119	6/7	0 42 8	57.529
5737	May 1/2	2 09 8	22.590	6130	7/8	0 36 8	58.525
5740	"	5 46 8	.740	6141	8/9	1 59 16	59.583
5745	2/3	1 36 8	23.567	6146	"	6 31 8	.772
5749	"	6 27 8	.769	6152	9/10	1 38 10	60.568

1986				
6155	May 9/10	3.44	8	46560.656
6162	10/11	0 55	8	61.538
6165	"	3.06	8	.629
6169	"	7 13	10	.801
6173	11/12	23 55	16	62.497
6175	"	1 51	14	.535
6177	"	4 41	8	.695
1987				
6349	May 23/24	5 04	8	939.711
6350	"	5 58	8	.749
6352	25/26	5 40	10	41.736
6355	"	7 52	10	.828
6357	26/27	2 08	8	42.588
6366	27/28	2 29	12	43.603
6369	29/30	0 39	8	45.527
6371	"	1 52	8	.578
6375	"	5 03	8	.710
6381	30/31	0 25	10	46.517
6383	"	1 52	8	.578
6387	"	4 44	8	.697
6395	May31/Jun1	3 23	16	47.641

Omega Centauri (NGC 5139)  
Las Campanas Observations (1988-1991)

	1988	mid UT		mid JD
6435	May 7/8	3 29	8	47289.645
6438		5 38.5	3	.735
6439		6 08	8	.756
6445	May 9/10	0 32	8	91.522
6448		3 54	8	.663
6451	May 11/12	1 18	8	93.554
6455		4 01	8	.667
6457	May 12/13	4 47	8	94.699
6460		6 28	8	.769
6464	May 15/16	0 44	8	97.531
6470		4 45	8	.698
6479	May 16/17	0 38	8	98.526
6481		1 51	8	.577
	1990			
6584	Apr 23/24	5 16	8	48005.719
6587	25/26	0 34	8	07.524
6593		5 33	8	.731
6599	26/27	0 49	8	08.534
6605		5 59	8	.749
6609		8 32	8	.856
6613	27/28	0 45	8	09.531
6617		4 45	8	.698
6621	28/29	0 35	8	10.524
6625		3 33	8	.648
6627		5 26	8	.726
6634	29/30	0 30	8	11.521
6638		3 31	8	.647
6640		5 30	8	.729
6647	Apr30/May1	0 30	8	12.521
6651		3 19	8	.638
6653		5 03	8	.710
6662	May 1/2	0 23	8	13.516
6666		3 17	8	.637
6668		4 46	8	.699
6671		6 33	8	.773
	1991			
6682	May 15/16	7 18	8	48392.804
6695	May 16/17	7 21	8	93.806
6707	May 17/18	6 38	8	94.776

1973

991	Jan	2/3	7 47	8 07	41685.831
1013	"	4/5	6 10	6 30	87.764
1026	"	8/9	6 27	6 47	91.776
1039	"	9/10	6 40	7 00	92.785
1075	"	13/14	7 11	7 31	96.806

1974

1744	Feb	1/2	6 55	7 15	42080.795
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1973

992	Jan	2/3	8 15	8 35	41685.851
1031	"	8/9	7 52	8 22	41691.838
1067	"	12/13	8 18	8 43	95.854
1104	"	18/19	7 24	7 44	41701.816
1407	Jun	8/9	1 45	2 15	842.583
1422	"	9/10	3 35	4 05	43.660

1974

1704	Jan	25/26	7 37	8 07	42073.828
1712	"	26/27	7 34	8 04	74.826
1713	"	"	8 09	8 39	.850
1720	"	28/29	7 28	7 58	76.822
1721	"	"	8 03	8 33	.846
1734	Ja31/Fe.1		7 26	7 56	79.820
1736	"	"	8 20	8 50	.858
1745	Feb	1/2	7 31	8 01	42080.824
1748	"	"	8 45	9 15	.875
1757	"	2/3	7 20	8 00	81.819
1761	"	3/4	8 27	9 07	82.866
1762	"	"	8 39	9 09	
1772	"	4/5	7 12	7 52	83.814
1805	Mar	2/3	4 59	5 39	109.722
1806	"	"	5 49	6 29	.756
1811	"	3/4	6 08	6 53	110.772
1812	"	"	7 00	7 45	.808
1820	"	18/19	4 27	5 07	25.699
1822	"	"	8 25	9 25	.872
1848	"	20/21	7 25	8 25	27.830
2110	Jun	21/22	1 01	2 01	.563
2111	"	"	2 26	3 06	42220.615
2114	"	"	4 02	4 42	.682
2122	"	22/23	23 02	23 42	21.474
2123	"	"	23 45	0 25	.503
2124	"	"	2 47	3 27	.630
2125	"	"	0 48	2 18	.565
2126	"	"	3 38	4 18	.665
2137	"	25/26	0 23	1 03	24.530

1975

meanGMT

exp

2362	Jan	20/21	6 57	40	42434.790
2363	"	"	7 44	40	.822
2370	"	22/23	7 16	40	36.803
2371	"	"	8 26	40	.851
2383	"	24/25	7 42	60	38.821
2397	"	26/27	7 19	55	40.805
2406	Feb	3/4	6 50	50	47.785
2407	"	"	8 55	45	.844
2416	"	4/5	5 56	50	48.747
2417	"	"	7 04	45	42448.794
2418	"	"	7 57	50	.831
2419	"	"	8 51	45	.869
2428	"	5/6	5 57	45	49.748
2429	"	"	7 05	45	.795
2430	"	"	7 56	45	.831
2431	"	"		approx.	.861

1973

1054	Jan.	11/12	7 40	8 10	41694.830
1076	"	13/14	7 43	8 13	96.832
1004	"	3/4	7 36	8 06	86.827
1014	"	4/5	7 36	8 06	87.827
1160	Feb.	13/14	5 22	5 52	727.734
1171	"	14/15	5 10	5 40	28.726
1183	"	15/16	5 35	6 05	29.743

1972				1975					
391	May	9/10	1 40 2 10	41447.580	1047	Mar 18/19V	5 21 6 21	42490.744	
408	"	10/11	0 39 1 14	48.536	1048	" " B	6 31 7 15	.787	
415	"	"	4 21 4 51	.692	1050	" " V	8 45 9 45	.885	
425	"	11/12	0 14 0 55	49.524	1051	" 19/20V	0 20 1 20	91.535	
433	"	"	3 39 4 19	.666	1052	" " B	1 30 2 14	.578	
447	"	12/13	0 15 0 55	50.524	1053	" " V	2 30 3 30	.625	
468	"	13/14	0 26 0 46	51.525	1054	" " B	3 44 4 28	.671	
486	"	14/15	0 02 0 22	52.508	1056	" " B	6 21 7 05	.780	
508	"	15/16	0 39 1 09	53.537	1057	" " V	7 25 8 25	.830	
					1058	" " B	8 45 9 29	.880	
1005	Jan	3/4	8 17 8 37	41686.852	1059	" 20/21B	0 00 0 44	92.515	
1040	"	9/10	7 20 7 50	92.816	1060	" " V	0 56 1 56	.560	
1066	"	12/13	7 40 8 10	95.830	1061	" " B	2 30 3 14	.619	
1092	"	16/17	7 52 8 22	41699.838	1062	" " V	3 30 4 30	.667	
1455	June	24/25	0 20 2 20	858.556	1063	" " B	4 56 5 40	.721	
					1064	" " V	5 54 6 54	.767	
1821	Mar	18/19	6 36 7 36	42125.796	1065	" " B	7 56 8 40	.846	
1890	"	23/24	4 34 5 34	30.711	1066	" " V	8 55 9 47	.890	
1899	"	24/25	2 02 3 02	31.606	1067	" 21/22	23 57 0 57	42493.519	
1900	"	"	3 16 4 16	.657	1068	" " "	1 07 2 07	.567	
1901	"	"	4 36 5 36	.713	1069	" " "	2 16 3 16	.615	
1902	"	"	5 55 6 55	.767	1070	" " "	3 25 4 25	.663	
1903	"	"	7 11 8 11	.820	1071	" " "	4 51 5 51	.723	
1904	"	"	8 38 9 38	.881	1072	" " "	6 28 7 28	.790	
1905	"	25/26	1 39 2 39	32.590	1073	" " "	8 04 9 04	.857	
1906	"	"	3 09 4 09	.652					
1907	"	"	4 23 5 23	.703					
1908	"	"	6 11 7 11	42132.778					
1909	"	"	7 30 8 30	.833					
1910	"	"	8 43 9 43	.884	5698	1984	Mid-UT	Exp	J.D.
1912	"	26/27	2 05 3 05	33.608	5699	Mar. 13	0645	60	45772.781
1020	"	14/15B	1 49 2 19	42486.586	5700	26/27	0200	60	86.583
1021	"	" V	2 38 3 22	.625	5701	"	0310	60	.632
1023	"	" V	4 33 5 33	.710	5703	"	0422	60	.682
1024	"	" B	5 58 6 42	.764	5705	"	0726	60	.810
1025	"	" V	7 58 8 58	.853	5706	"	0921	60	.890
1026	"	" B	9 12 9 48	.896	5707	27/28	0110	60	87.549
1027	"	15/16B	0 30 1 14	87.536	5709	"	0227	60	.602
1028	"	" V	1 34 2 34	.663	5710	"	0444	60	.697
1029	"	" B	3 08 3 52	.646	5711	"	0554	60	.746
1030	"	" V	4 08 5 08	.693	5713	"	0705	60	.795
1031	"	" B	5 28 6 12	.743	5714	"	0912	60	.883
1032	"	" V	6 25 7 05	.781	5715	28/29	0118	60	88.554
1033	"	" B	7 17 8 01	.819	5716	"	0228	60	.603
1034	"	" V	8 15 9 15	42487.865	5718	"	0341	60	.653
1035	"	16/17B	0 03 0 47	88.517	5719	"	0550	60	.743
1036	"	" V	0 59 1 59	.562	5721	"	0659	60	.791
1037	"	" B	2 12 2 56	.607	5722	"	0842	60	.863
1038	"	" V	3 08 4 08	.651	5723	"	0937	45	.901
1039	"	" B	4 31 5 15	.703	5724	29/30	0045	60	89.531
1040	"	" V	5 39 6 39	.756	5725	"	0158	60	.582
1041	"	" B	7 01 7 36	.805	5726	"	0309	60	.631
1042	"	18/19B	0 15 0 59	90.526	5728	"	0445	60	.698
1043	"	" V	1 08 2 08	.575	5729	"	0616	48	.761
1044	"	" B	2 16 3 00	.610	5730	Apr. 30/May 1	0142	60	45821.571
1045	"	" V	3 13 4 13	.655	5731	"	0258	60	.624
1046	"	" B	4 25 5 09	.699	5732	"	0405	60	.670
					5734	"	0535	60	.733
					5735	"	0722	60	.807
						"	0900	60	.875

Plate	Year/Date	Mid-UT	Exp	J.D.					
1984					1986				
5736	May 01/02	0116	60	45822.553	6277	July 26/27	0:45	30	46638.531
5738	"	0305	60	.628	6278	"	1 45	30	.573
5739	"	0447	60	.699	6279	"	2.45	30	.615
5741	"	0639	60	.777	6280	"	3 45	30	.656
5742	"	0809	60	.840	6281	27/28	0 02	14	39.501
5743	"	0916	60	.886	6282	30/31	23 46	30	42.490
5744	02/03	0040	60	23.528	6283	"	0 45	30	.531
5746	"	0234	60	.607	6284	"	1 45	30	.573
5747	"	0422	60	.682	6285	"	2 48	35	.617
5748	"	0530	60	.729	6286	"	3 48	35	.658
5750	"	0748	60	.825	6287	"	4 50	40	.701
5751	03/04	0058	39	24.540	6288	"	5 50	40	.743
5762	29/30	0128	60	50.561	6289	"	7 20	40	.806
5778	30/31	0436	60	51.692	6290	"	8 23	45	.849
					6291	Jul30/Aug1	0 06	30	43.504
					6292	"	1 00	30	.542
					6293	"	2 00	30	.583
					6294	"	3 00	30	.625
					6295	"	4 00	30	.667
					6296	"	5 03	35	.710
					6297	"	6 03	35	.752
					6298	"	7 03	35	.794
					6299	"	8 05	40	.837
					6300	"	9 08	45	.881
1985									
5853	Apr. 27/28	0154	60	46183.579					
5857	"	0536	60	.733					
5864	28/29	0210	60	84.590					
5867	"	0431	60	.688					
5870	"	0657	11	.790					
5876	29/30	0144	60	85.572					
5879x	"	0447	45	.699					
5882	"	0752	45	.828					
5883	"	0909	45	.881					
5887	May 14/15	0212	60	46200.592					
5888	"	0357	60	.665					
5890	"	0604	60	.753					
5894	15/16	0052	60	201.536					
5896	"	0248	60	.617					
5897	"	0419	60	.680					
5902	"	0828	60	.853					
5904	16/17	0450	60	02.701					
5912	17/18	0037	60	03.526					
5929	19/20	0510	60	05.715					
5938	20/21	0237	58	06.609					
5941	"	0535	60	.733					
5944	"	0814	60	.843					
5946	21/22	0012	60	07.508					
5954	"	0555	60	.747					
5956	"	0816	60	.844					
5965	22/23	0557	60	08.748					
5974	23/24	0505	60	09.712					
5976	23/24	0643	60	.780					
5977	"	0814	60	.843					
1986									
6078	May 1/2	2 10	60	46552.590					
6108	5/6	1 00	60	56.542					
6122	6/7	3 08	60	57.631					
6136	7/8	6 30	60	58.771					
6157	9/10	6 40 30	61	60.778					
6167	10/11	5 37	60	61.734					

1972

384	May	8/9	6	14	6	24	41446.763
392	"	9/10	2	30	2	40	47.608
449	"	12/13	1	27	1	42	50.566
456	"	"	4	56	5	11	.710
470	"	13/14	1	18	1	33	51.559
488	"	14/15	0	56	1	11	52.544
510	"	15/16	1	49	2	04	53.581
530	"	16/17	1	08	1	23	54.552
537	"	"	4	29	4	44	.692
550	"	17/18	0	03	0	13	55.506
554	"	"	1	37	1	52	.572
578	"	18/19	1	43	1	58	56.577
618							

1978 mean UT exp

3382	Mar	8/9	3	14	15	43576.635
3386	"	9/10	5	28	30	77.728
3389	"	"	8	38	33	.860
3395	"	10/11	5	00	30	78.708
3401	"	"	9	11	30	.883
3407	"	11/12	3	55	30	79.663
3412	"	"	9	00	30	.875
3416	"	12/13	3	39	30	80.652
3425	"	14/15	3	38	30	82.651
3430	"	"	9	08	30	.881
3435	"	15/16	4	47	30	83.699
3438	"	"	7	42	30	.821
3445	"	16/17	6	30	30	84.771
3451	"	17/18	3	40	30	85.653
3455	"	"	8	54	30	.871
3606	May	30/31	0	55	30	43659.538
3611	"	"	5	00	30	.708
3613	"	"	7	27	30	.810
3615	May	31/June 1	1	18	30	60.554
3620	"	"	6	11	30	.758
3622	"	"	8	37	30	.859
3625	Jun	1/2	1	28	30	61.561
3630	"	"	8	30	30	.854
3633	"	2/3	0	35	40	62.524
3638	"	"	8	12	50	.842
3641	"	3/4	0	38	40	63.526

1979

4046	Jun	30/Jul 1	0	28	36	44055.519
4050	"	"	4	22½	41	.682
4052	"	"	6	33½	41	.778
4054	Jul	1/2	0	41	36	56.528
4057	"	"	2	57	30	.623
4059	"	"	5	57½	45	.748
4063	"	2/3	1	58½	47	57.582
4066	"	"	4	49	46	.701

1980

4264	Jul	5/6	6	00	60	44426.750
4268	"	6/7	1	29	40	27.562
4272	"	"	4	56	46	.706
4274	"	7/8	23	51	40	28.494
4277	"	"	2	28	40	.603
4280	"	"	4	52	50	.703
4286	"	8/9	23	48	40	29.492

1980

4289	Jul	8/9	2	00	40	44429.583
4292	"	"	4	16	40	.678
4294	"	"	6	01	40	.751
4295	"	"	7	08	60	.797
4298	"	10/11	23	30	40	31.479
4301	"	"	1	56	40	.581
4304	"	"	4	04	44	.669
4311	"	11/12	23	38	40	32.485
4314	"	"	1	57	42	.581

1975

2454	B	Mar.	7/8	6	57	40	2442479.758
2455	B	"	"	6	57	40	79.792
2456	B	"	"	7	38	40	.820
2457	B	"	"	8	28	40	.855
2468	B	"	8/9	5	56	40	80.749
2469	B	"	"	6	39	40	.779
2470	B	"	"	7	20	40	.808
2471	B	"	"	8	00	40	.835
2472	B	"	"	8	41	40	.864
2482	B	"	9/10	5	05	41	81.714
2483	B	"	"	5	48	40	.735
2484	B	"	"	6	23	23	.768
2485	B	"	"	7	06	40	.798
2486	B	"	"	7	48	40	.819
2487	B	"	"	8	40	40	.863
2511	B	"	11/12	4	42	41	83.698
2512	B	"	"	5	30	40	.731
2513	B	"	"	6	15	40	.762
2514	B	"	"	7	03	40	.796
2515	B	"	"	7	48		.819
2516	B	"	"	8	32	40	.858
2517	B	"	"	9	09		.883
2527	B	"	12/13	5	21	40	84.726
2528	B	"	"	6	06	40	.757
2529	B	"	"	6	52	40	.789
2530	B	"	"	7	22	15	.810
2537	B	"	13/14	5	23	40	85.727
2538	B	"	"	6	08	40	.759
2539	B	"	"	7	02	40	.796
2540	B	"	"	7	45	40	.826
2541	B	"	"	8	27	40	.855

1986

6232	July	2/3	23	44	13	6614.489
6233	"	"	0	06	12	.504
6234	"	"	0	36	12	.525
6235	"	"	1	06	12	.546
6236	"	"	1	36	12	.567
6237	"	"	2	06	12	.588
6238	"	"	2	39	12	.610
6239	"	"	3	06	12	.629
6240	"	"	3	36	12	.643
6241	"	"	4	06	13	.671
6242	"	"	4	36	13	.692
6243	"	"	5	06	13	.713
6344	"	"	5	40	14	.736
6245	"	"	6	07	14	.755
6246	"	"	6	33	14	.793

1986

6247	July	3/4	0 06 12	46615.504
6248	"	"	0 36 12	.525
6249	"	"	1 06 12	.546
6250	"	"	1 36 12	.567
6251	"	"	2 06 12	.588
6252	"	"	2 36 12	.608
6253	"	"	3 08 12	.631
6254	"	"	3 36 12	.650
6255	"	"	4 06 12	.671
6256	"	"	4 36 13	.692
6257	"	"	5 06 13	.713
6258	"	"	5 36 13	.733
6259	"	"	6 16 14	.761
6260	"	"	6 31 14	.772

NGC 5897

Las Campanas Observations

	1988	mid UT	mid JD
6432	May 4/5	3 37 30	47286.651
6433		5 27 30	.727

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1972

393	May	9/10	2 54	3 04	41447.624	1531JU30/Jul 1	0 22	0 42	41864.522
396	"	"	3 51	4 01	.664	1532 " "	0 46	1 01	.537
400	"	"	6 27	6 37	.772	1541Jul 1/2	0 08	0 28	65.513
412	"	10/11	2 53	3 03	48.624	1542 " "	0 33	0 48	.528
416	"	"	5 39	5 49	.739	1554 " 2/3	0 25	0 45	66.524
426	"	11/12	1 06	1 16	49.549	1555 " "	0 48	1 03	.539
431	"	"	2 34	2 44	.611	1567 " 3/4	0 19	0 39	67.520
434	"	"	4 34	4 44	.694	1568 " "	0 44	0 59	.536
448	"	12/13	1 08	1 18	50.551	1576 " 4/5	0 06	0 26	68.511
455	"	"	4 23	4 33	.686	1577 " "	0 30	0 45	.526
469	"	13/14	0 58	1 08	51.544	1974			
487	"	14/15	0 35	0 45	52.528	1830Mar19/20	5 24	5 36	42126.729
497	"	"	5 41	5 51	.740	1831 " "	6 04	6 16	.757
509	"	15/16	1 21	1 31	41453.560	1833 " "	7 14	7 28	42126.806
529	"	16/17	0 51	1 01	54.539	1834 " "	7 37	7 55	.824
551	"	17/18	0 21	0 31	55.518	1835 " "	8 35	8 47	.862
577	"	18/19	0 57	1 07	56.543	1836 " "	9 17	9 29	.891
584	"	"	4 45	4 55	.701	1837 " "	9 36	9 48	.904
605	"	20/21	4 30	4 40	58.691	1845 "20/21	4 57	5 09	27.710
		1973				1847 " "	5 56	6 10	.752
1162	Feb	13/14	6 42	6 57	727.784	1849 " "	9 20	9 34	.894
1176	"	14/15	7 55	8 10	28.835	1850 " "	9 36	9 47	.905
1187	"	15/16	8 07	8 22	29.843	1856 "21/22	4 23	4 35	28.687
1404	Jun	8/9	0 45	1 00	842.536	1857 " "	5 00	5 16	.714
1423	"	9/10	4 10	4 25	43.679	1858 " "	5 39	5 51	.740
1440	"	10/11	0 25	0 40	44.523	1859 " "	5 59	6 15	.755
1456	"	24/25	3 40	3 55	58.658	1860 " "	6 35	6 47	42128.778
1458	"	"	5 49	6 09	41858.749	1861 " "	6 52	7 08	.792
1465	"	26/27	0 53	1 08	60.542	1862 " "	7 15	7 27	.806
1466	"	"	1 19	1 31	.559	1863 " "	8 12	8 28	.847
1469	"	"	2 47	3 02	.621	1864 " "	8 36	8 48	.863
1470	"	"	3 08	3 26	.637	1865 " "	8 56	9 12	.878
1472	"	"	4 31	4 46	.694	1866 " "	9 30	9 42	.900
1473	"	"	4 52	5 07	.708	1873 "22/23	4 12	4 24	29.679
1477	"	27/28	23 23	23 38	61.479	1874 " "	4 31	4 43	.692
1478	"	"	23 47	0 02	.496	1875 " "	5 08	5 20	.718
1483	"	"	1 52	2 07	.583	1876 " "	5 46	5 58	.744
1484	"	"	2 14	2 26	.597	1877 " "	6 10	6 22	.761
1487	"	"	3 48	4 00	.663	1878 " "	6 32	6 44	.776
1488	"	"	4 05	4 20	.675	1879 " "	7 04	7 16	42129.799
1490	"	"	5 15	5 30	.724	1880 " "	7 55	8 07	.834
1497	"	28/29	0 06	0 21	62.509	1881 " "	8 16	8 28	.849
1498	"	"	0 33	0 48	.528	1882 " "	8 46	9 02	.871
1501	"	"	2 14	2 29	.598	1883 " "	9 08	9 20	.885
1502	"	"	2 33	2 53	.613	1884 " "	9 31	9 43	.901
1504	"	"	3 52	4 07	.666	1892 "23/24	6 51	7 05	30.790
1505	"	"	4 13	4 31	.682	1913 "26/27	3 45	4 03	33.663
1507	"	"	5 41	5 59	.743	1914 " "	4 33	4 47	.694
1513	June	29/30	23 59	0 19	41863.506	1917 " "	6 11	6 23	.762
1514	"	"	0 24	0 39	.522	1919 " "	7 06	7 18	.800
1516	"	"	1 42	2 02	.578	1928 "27/28	3 52	4 10	34.667
1517	"	"	2 09	2 24	.595	1930 " "	5 33	5 45	.735
1519	"	"	3 26	3 46	.650	1932 " "	6 40	6 52	.782
1520	"	"	3 50	4 05	.665	1934 " "	7 33	7 45	.819
1522	"	"	4 55	5 15	.712	1942 "28/29	3 46	4 04	35.663
1523	"	"	5 18	5 33	.726	1944 " "	5 16	5 28	.724



1974				1976				
1946	Mar 28/29	6 31	6 43	42135.776	2897 Jun 4/5	2 50	12	934.618
1950	" "	9 26	9 36	.897	2899 " "	4 00	12	.667
1956	" 29/30	3 34	3 50	42136.654	2901 " 5/6	23 33	12	35.481
1957	" "	3 57	4 15	.671	2903 " "	0 43	12	.530
1958	" "	4 46	5 00	.703	2905 " "	2 01.5	12	.584
1959	" "	5 12	5 30	.723	2907 " "	3 40	12	.653
1960	" "	5 44	5 56	.743	2909 " "	4 40	12	.694
1961	" "	6 52	7 04	.790	2911 " "	5 58	12	.749
1962	" "	7 12	7 28	.806	2912 " "	6 49	12	.784
1963	" "	7 46	7 58	.828	2915 Jun 6/7	23 16	10	42936.469
1964	" "	8 23	8 39	.855	2918 " "	1 08.5	10	.548
1965	" "	8 49	9 01	.872	2921 " "	2 52.5	10	.619
1966	" "	9 18	9 34	.893	2924 " "	4 50.5	10	.701
1967	" "	9 47	9 59	.912	2926 " "	5 59	10	.749
1975				1977				
2554	Apr 30/	4 16	4 30	42533.683	3108 May 9/10	1 00	14	43273.542
2558	May 1/2	1 22	1 36	34.562	3110 " "	2 30	12	.640
2560	" "	2 17	2 31	34.600	3112 " "	4 55	12	.705
2562	" "	3 59	4 11	34.670	3114 " "	6 50	12	.785
2564	" "	5 59	6 11	34.753	3117 "10/11	0 39	16	74.527
2566	" "	6 51	7 03	42534.790	3120 " "	2 33	14	.606
2568	" "	8 07	8 19	34.842	3122 " "	4 11	12	.674
2569	" "	8 46	8 58	34.869	3124 " "	5 41	12	43274.737
2573	" 2/3	0 57	1 11	35.544	3126 " "	7 19	14	.805
2576	" "	3 12	3 24	35.638	3128 " "	8 41	16	.862
2578	" "	4 08	4 20	35.676	3132 "11/12	0 24	14	75.517
2580	" "	5 51	5 03	35.748	3135 " "	2 19	12	.597
2582	" "	7 23	7 35	35.812	3137 " "	3 54	10	43275.663
2584	" "	8 34	8 48	35.862	3139 " "	5 13	10	.717
2589	" 3/4	1 02	1 20	36.549	3141 " "	6 58	10	.790
2592	" "	3 02	3 16	36.631	3144 " "	9 01	14	.875
2594	" "	4 14	4 28	36.681	3147 "12/13	0 13	14	76.509
2596	" "	5 47	6 01	36.746	3150 " "	2 22	12	.599
2598	" "	7 18	7 32	42536.809	3155 " "	7 41	10	.820
2600	" "	8 39	8 57	36.867	3157 " "	8 51	14	.869
2620	" 5/6	1 26	1 44	38.566	3160 "13/14	0 18	14	77.513
2635	" 6/7	0 56	1 16	39.546	3163 " "	2 06	12	.588
2749	Jun 25/26	23 55	14	89.497	3171 "14/15	0 20	14	78.514
		meanGMT	exp		3174 " "	2 22	12	.599
2751	" "	2 17	14	.595	3182 "15/16	0 36	14	79.525
2766	" 26/27	0 23	14	90.516	3185 " "	2 46	12	43279.615
2769	" "	1 32	14	.564	3193 "16/17	0 39	14	80.527
2782	" 27/28	23 34	14	91.482	3204 "17/18	0 22	14	81.515
2785	" "	0 37	14	.526	3213 "19/20	0 04	14	83.503
2788	" "	1 41	14	.570	3226 "20/21	0 21	14	84.515
2791	" "	2 59	14	.624	3240 "21/22	0 42	14	85.529
2804	" 28/29	23 31	14	92.480	3252 "22/23	2 48	12	86.617
2323	Jun 29/30	B23 34	14	42593.482				
2839	Ju30/Jul 1	B23 34	14	94.482	3460 May 2/ 3	1 49.50	14	631.576
		1976			3463 " "	3 22	12	.640
2885	May 24/25	2 39	10	923.610	3465 " "	5 05	12	.712
2886	" "	2 57	10	.623	3467 " "	7 02	12	.793
2892	Jun 4/5	23 47	12	34.491	3469 " "	8.05	12	.837
2894	" "	1 02	22	.543	3471 " "	9 26	14	.893
2895	" "	1 44	12	.572				

## LAS CAMPANAS

NGC 5904

		mid-UT	exp	JD		UT	exp	JD
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1978

3474	May	3/ 4	3 02	14	43632.626	3920	May	23/24	8 00	16	4017.833
3477	"	"	4 45	12	.698	3923	"	"	0 34	18	18.524
3480	"	"	7 03	12	.794	3925	"	24/25	1 43	16	.572
3483	"	"	8 48	14	.867	3927	"	"	3 21	12	.640
3487	"	4/ 5	1 13	14	33.551	3929	"	"	5 20	12	.722
3490	"	"	3 17	12	.637	3932	"	"	7 58	18	.832
3493	"	"	4 49	12	.701	3936	"	25/26	0 47	18	19.533
3496	"	"	6 51	12	.785	3938	"	"	2 40	16	.611
3499	"	"	8 44	14	.864	3941	"	"	5 04	16	.711
3503	"	5/ 6	0 42	14	34.529	3943	"	"	6 09	16	.756
3506	"	"	2 34	12	.607	3945	"	"	7 45	18	.823
3523	"	7/ 8	0 38	14	36.526	3947	"	26/27	0 34	18	20.524
3536	"	8/ 9	0 39	14	37.527	3949	"	"	1 53	16	.578
3548	"	9/10	0 41	14	38.528	3951	"	"	3 38	14	.651
3560	"	10/11	0 38	14	39.526	3953	"	"	5 40	16	.736
3566	"	11/12	2 17	12	40.595	3956	"	"	7 34	18	.815
3569	"	12/13	0 52	18	41.536	4018	June	1/ 2	1 08	16	26.547
3572	"	"	3 01	12	.626						
3577	"	"	8 26	14	.851						
3580	"	13/14	6 49	22	42.784	4164	May	5/ 6	2 24	16	44365.600
3581	"	"	8 18	22	.849	4166	"	"	4 21	16	.681
3584	"	14/15	3 30	16	43.646	4170	"	6/ 7	1 45	20	66.573
3587	"	"	6 34	14	.774	4172	"	"	3 05	20	.628
3589	"	"	8 06	16	.838	4174	"	"	5 34	12	.732
3594	"	15/16	0 52	16	44.536	4177	"	"	7 21	14	.806
3597	"	"	2 46	12	.615	4179	"	"	8 26	20	.851
3600	"	"	5 03	12	.710	4183	"	7/ 8	1 09	20	67.548
3604	"	"	8 24	16	.850	4184	"	"	2 07	18	.588
3647	June	24/25	3 03	12	84.627	4186	"	"	3 20	16	.639
3649	"	"	3 55	14	.663	4187	"	"	4 15	16	.677
3655	"	29/30	0 42	12	89.529	4189	"	"	5 25	14	.726
3658	"	"	2 15	12	.594	4190	"	"	6 20	14	.764
3662	"	"	5 44	16	.739	4192	"	"	7 33	16	.815
3669	July	1/ 2	0 47	12	91.533	4193	"	"	8 30	20	.854
3676	"	2/ 3	0 58	16	92.540	4197	"	10/11	1 09	20	70.548
3679	"	"	3 07	12	.630	4198	"	"	2 14	18	.593
3688	"	3/ 4	4 26	16	93.685	4200	"	"	3 29	16	.645
3697	"	4/ 5	1 44	12	94.572	4201	"	"	4 20	14	.681
3702	"	4/ 5	3 49	12	.659	4202	"	"	5 12	14	.717
3705	"	"	5 29	16	.728	4204	"	"	6 46	18	.782
3719	"	8/ 9	0 38	12	98.526	4207	"	"	8 53	20	.870
3729	"	9/10	0 11	12	99.508	4211	"	11/12	1 17	20	71.553
3732	"	"	1 24	12	.588	4214	"	"	3 42	16	.654
3735	"	"	2 41	14	.612	4217	"	"	6 18	16	.763
3738	"	"	4 03	14	.669	4219	"	"	7 59	20	.833

1979

1980

1979

3902	May	22/23	2 49	12	4016.617	4223	"	12/13	1 40	18	72.569
3911	"	23/24	1 19	16	17.555	4230	"	16/17	1 21	20	76.556
3913	"	"	2 50	14	.618	4244	"	17/18	0 38	18	77.526
3916	"	"	5 12	12	.717	4250	"	"	4 32	14	.689
3918	"	"	6 33	14	.773						

## LAS CAMPANAS

1981				1982					
	meanUT	exp	JD		mid-UT	exp	JD		
4464	May 25/26	3 49	12	44750.659	5122	Mar. 29/30	4 37	14	45058.692
4467	" "	5 08.50	15	.714	5124	" "	6 19	13	.763
4471	26/27	0 05	12	51.503	5126	" "	6 58	12	.790
4474	" "	2 39	11	.610	5128	" "	8 36	13	.858
4477	" "	4 11	10	.674	5134	30/31	3 23	16	59.640
4482	" "	6 05	16	.753	5136	" "	4 33	13	.689
4488	27/28	0 47	12	52.533	5138	" "	5 42	13	.738
4492	" "	2 31	10	.605	5140	" "	7 10	13	.798
4495	" "	4 03	10	.669	5142	" "	8 33	13	.856
4498	" "	5 51	16	.744	5143	" "	9 23	13	.890
4503	28/29	0 07	16	53.505	5146	Mar.31/Apr1	4 30	14	60.688
4506	" "	1 52	12	.578	5148	" "	5 32	13	.730
4509	" "	3 22	10	.640	5150	" "	6 28	12	.769
4512	" "	4 45	12	.698	5152	" "	7 34	12	.815
4514	" "	6 17	16	.762	5154	" "	8 28	12	.853
4519	29/30	0 09	16	54.501	5156	" "	9 17	13	.886
4522	" "	1 46	12	.574	5161	Apr. 1/ 2	3 12	17	61.633
4525	" "	3 10	10	.632	5162	" "	4 10	14	.673
4528	30/31	0 17	18	55.512	5164	" "	5 15	13	.719
4532	" "	2 37	12	.609	5166	" "	6 17	12	.762
4535	" "	4 50	12	.701	5168	" "	7 22	12	.807
4541	May 31/June1	2 24	12	56.600	5170	" "	8 07	12	.838
4544	" "	4 16	14	.678	5178	23/24	1 41	20	83.570
4547	June 1/ 2	0 20	16	57.514	5180	" "	2 55	16	.622
4550	2/ 3	0 03	16	58.502	5182	" "	3 57	14	.665
4553	" "	1 44	12	.572	5184	" "	5 38	12	.735
4557	2/ 3	4 32	12	.689	5186	" "	6 34	12	.773
4561	3/ 4	0 05	16	59.503	5188	" "	7 44	14	.822
4564	" "	1 52	12	.578	5190	" "	8 46	16	.865
4568	" "	4 08	12	.672	5194	24/25	1 35	15	84.566
					5196	" "	2 35	13	.607
					5198	" "	3 39	13	.651
5055	Feb. 26/27	5 54	18	45027.746	5200	" "	4 46	12	.699
5057	" "	6 44	16	.781	5202	" "	5 33	12	.731
5059	" "	7 42	14	.821	5204	" "	6 40	12	.778
5061	" "	9 37	12	.901	5206	" "	7 45	13	.823
5069	27/28	5 54	18	28.746	5208	" "	8 36	13	.858
5071	" "	6 53	16	.787	5211	25/26	3 46	13	85.656
5073	" "	7 52	14	.828	5214	" "	5 02	12	.710
5075	" "	9 29	12	.895	5216	" "	6 50	12	.785
5082	Feb.28/Mar1	5 57	18	29.748	5218	" "	7 59	13	.833
5084	" "	7 01	16	.792	5220	" "	9 10	14	.882
5086	" "	7 51	14	.827	5224	27/28	3 42	12	87.654
5088	" "	8 58	12	.874	5226	" "	5 46	12	.740
5089	" "	9 09	4 (baked)	.881	5228	" "	8 30	13	.854
5097	Mar. 1/ 2	6 04	18	30.753	5226	May 26/27	0 18	15	116.513
5099	" "	6 54	16	.788	5268	" "	1 13	13	.551
5101	" "	7 57	14	.831	5270	" "	3 14	12	.635
5103	" "	9 12	12	.883	5274	28/29	6 38	12	18.776
5111	2/ 3	6 04	18	31.753	5276	" "	7 47	15	.824
5112	2/ 3	7 17	16	.803	5280	29/30	0 14	14	19.509
5113	" "	8 03	14	.835	5282	" "	1 05	13	.544
5115	" "	9 37	12	.901	5284	" "	3 02	12	.626

## LAS CAMPANAS

mid-UT exp JD

1982

Year	Month	Day	mid-UT	exp	JD
1982	May	29/30	4 13	12	45119.676
	"	"	6 05	13	.753
	"	"	7 08	12	.797
		30/31	3 43	12	20.655
	"	"	5 06	13	.712
	"	"	6 12	13	.758
	July	12/13	23 25	12	163.476
	"	"	0 38	12	.526
	"	"	1 42	12	.571
	"	"	2 44	12	.614
	"	"	3 49	14	.659
		13/14	0 32	12	64.522
	"	"	2 58	13	.624

1983

Year	Month	Day	mid-UT	exp	JD
1983	May	6/ 7	1 22	20	45461.557
	"	7/ 8	0 45	20	62.531
	"	9/10	1 21	22	64.556
	"	10/11	1 07	20	65.547
	"	11/12	0 54	18	66.538
	"	"	3 47	14	.658
	"	"	6 13	12	.759
	"	"	8 12	16	.842
		12/13	0 37	20	67.526
	"	"	3 31	14	.647
	"	"	7 05	20	.795
		13/14	0 36	20	68.525
	"	"	2 40	31	.611
	"	"	5 24	20	.725
		15/16	1 05	20	70.545
	"	"	2 46	16	.615
	"	"	3 57	14	.665
	"	"	5 54	14	.746
	"	"	7 14	16	.801
	"	"	8 43	20	.863

1984

Year	Month	Day	mid-UT	exp	JD
1984	May	29/30	2 47	12	45850.616
	"	"	4 20	12	.681
	"	"	5 59	15	.749
	"	"	7 12	24	.800
		30/31	0 28	15	51.519
	"	"	2 10	12	.590
	"	"	3 11	12	.633
	"	"	5 32	14	.731
	"	"	7 00	20	.792
	"	"	8 09	24	.840
	June	26/27	23 56	12	78.497
		27/28	23 50	12	79.493
	"	"	1 27	12	.560
	"	"	3 17	15	.637
	"	"	5 20	24	.722

1984

Year	Month	Day	mid-UT	exp	JD
1984	June	28/29	0 04	12	45880.503
	"	"	1 45	12	.573
	"	"	3 16	13	.636
	"	"	5 10	24	.721
		29/30	0 05	12	81.503
	"	"	1 41	12	.570
	"	"	3 14	12	.635
	"	"	4 57	24	.706

1985

Year	Month	Day	mid-UT	exp	JD
1985	Apr.	25/26	4 47	20	46181.699
		26/27	4 24	21	82.683
	May	15/16	1 47	20	46201.574
	"	"	5 55	16	.747
	"	"	7 22	20	.807
	"	16/17	4 00	12	02.667
	"	"	6 45	18	.781
	"	17/18	1 39	18	03.569
	"	"	3 36	14	.650
	"	"	6 18	18	.763
		19/20	0 49	26	05.534
	"	"	2 58	16	.624
	"	"	6 56	18	.789
		20/21	0 18	24	06.513
	"	"	3 33	14	.648
	"	"	6 52	20	.786
		21/22	1 29	18	07.562
	"	"	3 31	14	.647
	"	"	7 10	20	.799
		22/23	0 31	30	08.522
	"	"	3 24	18	.642
	"	"	6 52	20	.786
		23/24	0 30	24	09.521
	"	"	2 48	16	.617

1986

Year	Month	Day	mid-UT	exp	JD
1986	May	1/2	3 41	18	46552.653
	"	"	7 17	14	.803
		2/3	5 44	16	53.739
		4/5	4 07	16	55.672
	"	"	7 25	16	.809
	"	"	8 58	24	.874
		5/6	6 16	16	56.761
	"	"	8 12	16	.842
		6/7	6 34	18	57.774
	"	"	8 50	20	.868
		7/8	3 00	20	58.625
	"	"	8 52	24	.869
		8/9	2 29	24	59.603
	"	"	4 26	16	.685
	"	"	7 57	20	.831
		9/10	2 02	20	60.585
	"	"	7 48	20	.825
		10/11	1 25	24	61.559
	"	"	6 40	18	.778
	"	"	8 09	20	.840
		11/12	5 14	14	62.718
	"	"	7 03	20	.794

1987					
6353	May	25/26	6 24	24	46941.767
6361		26/27	5 24	18	42.725
6363		"	7 06	20	.796
6372		29/30	2 26	16	45.601
6376		"	5 30	20	.729
6384		30/31	2 16	16	46.594
6388		"	5 09	20	.715
6390		"	6 44	24	.781
6391		"	7 22	30	.807
6396	May31/	Jun1	3 55	24	47.663

NGC 5904

Las Campanas Observations (1988-1991)

	1988	mid UT	mid JD	
6440	May 7/8	7 19	20	47289.804
6442		8 28	24	.853
6453	May 11/12	2 36	16	93.608
6458	May 12/13	5 10	16	94.715
6461		6 57	20	.790
6467	May 15/16	2 18	20	97.596
6471		5 09	18	.715
6473		6 37	20	.776
6475		8 16	24	.844
6482	May 16/17	2 14	18	98.593
6485		5 27	24	.727
	1990			
6590	Apr 25/26	2 59	20	48007.624
6601	Apr 26/27	2 25	20	08.601
6606		6 22	16	.765
6610		9 11	20	.883
6615	Apr 27/28	2 48	20	09.517
6619		6 20	20	.764
6623	Apr 28/29	2 06	24	10.588
6628		5 52	14	.744
6631		8 06	20	.838
6636	Apr 29/30	2 09	21	11.590
6641		5 52	14	.744
6643		7 19	18	.805
6645		8 42	20	.863
6649	Apr30/May1	2 02	20	12.585
6654		5 34	14	.732
6656		6 57	16	.790
6658		8 34	20	.857
6664	May 1/2	2 10	20	13.590
6669		5 08	14	.714
6672		6 58	16	.790
6674		8 29	20	.853
	1991			
6683	May 15/16	7 57	24	48392.831
6696	May 16/17	7 52	24	93.828
6708	May 17/18	7 36	24	94.817

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1972				GMT	1978					
385	May	8/9	6 46	6 56	41446.785	3426	Mar	14/15	4 14 10	43582.676
410		10/11	1 37	1 47	48.571	3436		15/16	5 19 10	83.722
413		"	3 15	3 25	.639	3444		16/17	5 02 10	84.710
430		11/12	2 13	2 23	49.596	3452		17/18	4 10 10	85.674
472		13/14	2 25	2 35	51.604	1980				
490		14/15	2 22	2 32	52.602	4263	Jul	5/6	1 06 10	44426.546
500		"	7 36	7 46	.820	4269		6/7	2 09 12	27.590
512		15/16	2 37	2 47	53.613	4276		7/8	1 27 7	28.560
532		16/17	2 09	2 19	54.593	4282		"	6 42 12	.779
553		17/18	1 19	1 29	55.558	4288		8/9	1 19 8	29.555
579		18/19	2 05	2 15	56.590	4300		10/11	1 17 10	31.553
585		"	5 05	5 15	.715	4307		"	6 00 10	.750
590		"	7 24	7 34	.812	4313		11/12	1 08 8	32.547
595		"	9 40	9 50	.906	1982				
607		20/21	5 29	5 39	58.732	5267	May	26/27	0 45 13	5116.531
619						5281		29/30	0 35 13	19.524
637b						5295		30/31	4 01 10	20.667
650						5344	Jul	18/19	0 22 10	69.515
678	Jul	4/5	0 23	0 33	41503.519	5346		"	1 04 10	.544
684		"	5 17	5 27	.724	5348		"	2 09 10	.590
695		6/7	3 02	3 14	05.631	5350		"	3 03 10	.627
708		7/8	1 29	1 43	06.567	5352		"	4 02 11	.668
737		9/10	2 43	2 53	08.617	5354		"	5 06 12	.713
881	Aug31/Sep1		1 15	1 25	61.556	5360		19/20	1 49 10	70.576
900	Sep	2/3	23 35	23 45	63.986	5362		"	2 44 13	.614
929		11/12	0 10	0 20	72.510	5364		"	3 45 11	.653
1973						5366		"	4 45 11	.697
1164	Feb	13/14	7 25	7 40	41727.815	5375		21/22	4 43 13	72.696
1177		14/15	8 17	8 32	28.850	1983				
1189		15/16	8 50	9 05	29.874	5653	Jun	15/16	23 50 10	501.493
1974						5657		"	3 06 10	.629
2133	Jun	23/24	4 50	5 00	42222.705	5659		"	4 12 10	.675
2147		27/28	1 30	1 45	26.567	5661		"	4 59 10	.708
2163		28/29	1 16	1 26	27.556	5667		16/17	2 05 10	02.587
2181		29/30	0 36	0 46	28.	5669		"	3 05 10	.628
2195	Jun30/Jul1		1 41	1 51	29.	5673		"	5 05 10	.712
1975						5675		"	6 22 10	.765
2752	Jun	25/26	2 45	10	42589.615	5680		18/19	1 03 10	04.544
2754		"	3 36	10	.650	5684		19/20	2 05 10	05.587
2767		26/27	0 43	10	90.530	5687		"	4 39 10	.694
2770		"	1 50	10	.576	1986				
2783		27/28	23 48	10	91.492	6262	July	4/5	0 03 6	6616.502
2786		"	1 59	10	.583	6263		"	0 36 12(V)	.525
2789		"	1 59	10	.583	6264		"	1 03 6	.544
2797		"	3 21	10	.640	6265		"	1 36 12(V)	.567
2805		28/29	23 55	10	92.497	6266		"	2 03 6	.585
2824		29/30	23 58	10	93.499	6267		"	2 36 12(V)	.608
2840	Jun30/Jul1		23 55	10	94.497	6268		"	3 03 6	.627
1978						6269		"	3 39 12(V)	.652
3390	Mar.	9/10	9 10	10	43577.882	6270		"	4 03 6	.669
3398		10/11	7 25	10	78.809	6271		"	4 36 13	.692
3410		11/12	7 53	10	79.828	6272		"	5 03 7	.710
3418		12/13	4 51	10	80.702	6273		"	5 37 14(V)	.734
						6274		"	6 05 7	.753
						6275		"	6 37 15(V)	.776
						6276		"	7 04 8	.794

	1973	GMT		
1405	June 8/9	1 08	1 18	41842.551
1406	"	1 30	1 40	.566
1424	9/10	4 35	4 45	43.694
1425	"	4 50	5 00	.705
1441	10/11	0 47	0 57	44.536
1442	"	1 05	1 15	.549
1459	24/25	6 23	6 35	58.770
1460	"	6 45	6 55	.785



LAS CAMPANAS

NGC 6171

		GMT		JD
<u>1972</u>				
386	May	08/09	07:34 07:44	41446.819
394		09/10	03:17 03:27	47.640
397		"	04:08 04:18	.676
401		"	07:10 07:20	.802
405		"	09:50 10:00	.913
411		10/11	02:04 02:14	48.590
414		"	03:35 03:45	.653
417		"	05:51 06:01	.747
419		"	07:46 08:07	.831
429		11/12	01:51 02:01	49.581
432		"	03:11 03:21	.636
435		"	05:21 05:31	.726
450		12/13	02:03 02:13	50.589
457		"	05:22 05:37	.729
471		13/14	01:59 02:14	51.588
489		14/15	01:57 02:12	52.586
499		"	07:10 07:25	.804
511		15/16	02:15 02:30	53.599
531		16/17	01:47 02:02	54.580
552		17/18	00:40 00:55	55.533
580		18/19	02:24 02:39	56.605
586		"	05:23 05:38	.729
606		20/21	05:05 05:20	58.717
782	July	13/14	03:53 04:08	512.667
804		17/18	00:07 00:27	16.512

<u>1973</u>				
1165	Feb.	13/14	07:50 08:05	41727.832
1179		14/15	09:00 09:15	728.880
1188		15/16	08:28 08:43	29.858
1408	June	08/09	23:49 23:59	842.609
1426		09/10	05:07 05:22	43.719
1443		10/11	01:21 01:36	44.561
1467		26/27	01:45 02:00	60.578
1471		"	04:05 04:20	.675
1474		"	05:56 06:11	.752
1482		27/28	01:03 01:19	61.549
1486		27/28	03:22 03:37	.645
1489		"	04:51 05:06	.707
1499		28/29	01:12 01:30	62.556
1503		"	03:19 03:37	.644
1506		"	05:13 05:31	.724
1515		29/30	00:47 01:07	63.540
1518		"	02:36 02:56	.615
1521		"	04:21 04:41	.688
1524		"	05:50 06:05	.748

<u>1974</u>				
1823	Mar.	18/19	09:49 09:59	42125.913
1832		19/20	06:32 06:48	26.778
1891		23/24	06:19 06:39	30.770
1893		"	07:17 07:37	.810

		GMT		JD
<u>1974</u>				
1894	Mar.	23/24	07:56 08:16	42130.838
1895		"	08:20 08:40	.854
1896		"	09:04 09:22	.884
1897		"	09:27 09:43	.899
1915		26/27	05:03 05:23	33.717
1916		"	05:32 05:52	.738
1918		"	06:35 06:55	.781
1920		"	07:57 08:17	.838
1922		"	09:20 09:40	.896
1929		27/28	04:41 05:01	34.702
1931		"	05:56 06:16	.754
1933		"	07:02 07:22	.800
1935		"	08:30 08:50	.861
1943		28/29	04:39 04:59	35.701
1945		"	05:56 06:16	.754
1947		"	07:09 07:29	.805
1949		"	09:02 09:18	.882
1951		"	09:49 09:59	.913

		GMT	exp	
		(mean)	(min)	
<u>1975</u>				
2561	May	01/02	0335	20 42534.649
2563		"	0438	20 .693
2575		02/03	0222	20 35.599
2579		"	0506	18 .713
2583		"	0756	18 .831
2585		"	0919	18 .888
2591		03/04	0226	20 36.601
2593		"	0349	18 .659
2597		"	0628	18 .769
2599		"	0757	18 .831
2601		"	0919	22 .888
2605		04/05	0245	22 37.615
2607		04/05	0405	18 .670
2609		"	0524	18 .725
2611		"	0702	18 .793
2613		"	0805	18 .837
2615		"	0912	20 .883
2621		05/06	0221	22 38.598
2623		"	0354	18 .663
2625		"	0513	18 .717
2627		"	0627	18 .769
2629		"	0811	18 .841
2631		"	0914	20 .885
2636		06/07	0217	22 39.595
2753	June	25/26	0306	18 89.628
2755		"	0356	18 .664
2771		26/27	0231	18 590.605
2774		"	0406	18 .671
2793		27/28	0359	18 91.666
2806		28/29	0038	18 92.526

		GMT (mean)	exp (min)	JD
1975				
2810	June 28/29	0325	18	42592.642
2814	"	0515	18	.719
2825	29/30	0039	18	93.527
2841	June30/July1	0031	18	94.522
1976				
2887	May 24/25	0345	18	42923.656
2893	June 04/05	0020	22	34.514
2896	"	0215	20	.594
2898	"	0332	20	.647
2900	"	0429	20	.687
2902	05/06	0002	22	35.501
2904	"	0128	22	.561
2906	"	0248	22	.617
2908	"	0409	22	.673
2910	"	0527	22	.727
2914	"	0748	22	.825
2917	06/07	0010	20	36.507
2919	"	0137	20	.567
2922	"	0322	20	.640
2925	"	0527	24	.727
1977				
3109	May 09/10	0141	20	43273.570
3111	"	0300	16	.625
3113	"	0540	16	.736
3115	"	0716	16	.803
3118	10/11	0112	24	74.550
3121	"	0305	20	.628
3123	"	0438	16	.693
3125	"	0651	16	.785
3127	"	0747	16	.824
3129	"	0913	24	.884
		mid UT		
3130	"	0943	24	.905
3133	11/12	0059	24	75.541
3136	"	0252	20	.619
3138	"	0419	16	.680
3140	"	0618	16	.763
3142	"	0726	16	.810
3143	"	0830	20	.854
3145	"	0932	24	.897
3148	12/13	0052	24	76.536
3151	"	0255	20	.622
3156	"	0808	16	.839
3158	"	0933	24	.898
3161	13/14	0051	24	77.535
3172	14/15	0054	24	78.537
3183	15/16	0109	24	79.548
3194	16/17	0115	24	80.552
3205	17/18	0106	24	81.546
3214	19/20	0034	24	83.524

		mid UT	exp	JD
1978				
3462	May 02/03	0246	24	43631.615
3464	"	0426	20	.685
3466	"	0535	20	.733
3468	"	0732	20	.814
3470	"	0854	22	.871
3475	03/04	0351	26	32.660
3478	"	0610	22	.757
3482	"	0820	22	.847
3484	"	0935	24	.899
3488	04/05	0206	26	33.588
3491	"	0403	22	.669
3494	"	0541	20	.737
3498	"	0757	22	.831
3500	"	0918	24	.888
3504	05/06	0139	26	34.569
3524	07/08	0136	30	36.567
3537	08/09	0137	28	37.567
3549	09/10	0130	30	38.563
3561	10/11	0134	30	39.565
3571	12/13	0230	28	41.604
3573	"	0407	24	.672
3579	13/14	0608	30	42.756
3582	"	0901	30	.876
3585	14/15	0405	30	43.670
3588	"	0710	30	.799
3590	"	0842	28	.863
3595	15/16	0152	30	44.578
3598	"	0343	28	.655
3603	"	0753	26	.828
3605	"	0908	26	.881
3650	June 24/25	0436	22	84.692
3652	"	0649	30	.784
3656	29/30	0131	30	89.563
3660	"	0437	30	.692
3663	"	0637	40	.762
3677	July 02/03	0129	30	92.562
3684	"	0624	40	.767
3689	03/04	0500	30	93.708
3699	04/05	0241	20	94.612
3706	"	0600	30	.750
3730	09/10	0037	30	99.526
3733	"	0148	30	.568
1979				
3903	May 22/23	0427	24	44016.685
3912	23/24	0153	30	17.578
3914	"	0321	26	.640
3917	"	0540	26	.736
3919	"	0721	26	.806
3921	"	0838	30	.860
3924	24/25	0107	30	18.547
3926	"	0252	26	.619
3928	"	0352	26	.661

		U.T.	exp	JD
1979				
3930	May 24/25	0600?	15?	44018.750?
3931	"	0709	30	.798
3934	"	0902	34	.876
3937	25/26	0106	34	19.553
3939	"	0323	28	.641
3942	"	0538	26	.735
3944	"	0704	30	.794
3946	"	0826	34	.851
3948	26/27	0113	34	20.551
3950	"	0306	30	.629
3952	"	0421	26	.681
3954	"	0615	28	.760
3957	"	0807	30	.840
3961	27/28	0142	30	21.571
3981	28/29	0650	36	22.785
3992	29/30	0726	26	23.810
4006	30/31.	0841	30	24.862
4012	May 31/June 1	0458	26	25.707
4021	June 01/02	0306	26	26.629
4029	02/03	0215	28	27.594
4039	03/04	0100	30	28.542

		U.T.	exp	JD
1980				
4165	May 05/06	0342	34	365.654
4173	06/07	0342	34	366.654
4175	"	0604	26	.753
4178	"	0751	30	.827
4180	"	0915	36	.885
4185	07/08	0243	36	67.613
4191	07/08	0658	30	.790
4194	"	0913	36	.884
4199	10/11	0251	36	70.619
4203	"	0546	30	.740
4205	"	0719	30	.805
4208	"	0930	36	.896
4212	11/12	0215	36	71.594
4215	"	0452	30	.703
4218	"	0710	30	.799
4220	"	0838	34	.860
4224	12/13	0222	36	72.599
4233	16/17	0303	30	76.
4236	"	0512	30	.
4247	17/18	0232	30	77.606

		U.T.	exp	JD
1981				
4465	May 25/26	0413	20	44750.676
4466	"	0538	24	.735
4472	26/27	0151	30	51.577
4475	26/27	0326.50	25	.643
4480	"	0520	20	.722
4483	"	0648.50	25	.784
4485	"	0831	30	.855

		U.T.	exp	JD
1981				
4490	May 27/28	0142	30	44752.571
4493	"	0315.50	25	.636
4496	"	0408	20	.672
4499	"	0636.50	25	.775
4501	"	0800.50	25	.834
4504	28/29	0043	36	53.530
4507	"	0218.50	25	.596
4510	"	0344	20	.656
4516	"	0747.50	31	.792
4520	29/30	0041	32	54.528
4523	"	0216	26	.594
4526	"	0331	20	.647
4530	30/31	0133	36	55.565
4533	"	0325	25	.642
4536	"	0549	26	.742
4542	May 31/June 1	0257	30	56.623
4545	"	0448.50	25	.700
4551	June 02/03	0038	36	58.526
4554	"	0221	30	.598
4558	"	0513.50	25	.718
4562	03/04	0042	36	59.529
4565	"	0217.50	25	.595
4569	"	0452.50	25	.703

		U.T.	exp	JD
1982				
5123	Mar. 29/30	0530	20	45058.729
5125	"	0646	19	.782
5129	"	0959	12	.916
5135	30/31	0354	24	59.663
5139	"	0607	20	.755
5147	Mar. 31/Apr. 1	0500	22	60.708
5149	"	0554	20	.746
5151	"	0651	19	.785
5153	"	0756	18	.831
5155	"	0853	18	.870
5157	"	0936	18	.900
5163	Apr. 01/02	0437	22	61.692
5165	"	0537	20	.734
5167	"	0637	19	.776
5169	"	0743	18	.822
5171	"	0829	18	.853
5179	23/24	0215	36	83.594
5181	"	0324	27	.641
5183	"	0421	23	.681
5185	"	0558	18	.749
5189	"	0805	18	.837
5191	"	0911	24	.883
5195	24/25	0204	27	84.585
5197	"	0257	21	.623
5199	"	0401	19	.667
5201	"	0507	19	.713
5203	"	0553	18	.745
5205	"	0659	18	.791
5207	"	0805	18	.837
5209	"	0857	19	.873

U.T. exp JD

U.T. exp JD

1983

1985

	U.T.	exp	JD	
5611	May 11/12	0130	36	45466.563
5614	"	0420	24	.681
5617	"	0641	18	.778
5620	"	0845	30	.865
5623	12/13	0120	40	67.556
5626	"	0404	32	.669
5630	"	0805	30	.837
5632	"	0948	40	.908
5635	13/14	0130	50	68.563
5637	"	0340	60	.653
5641	15/16	0148	40	70.575
5643	"	0324	30	.642
5646	"	0451	30	.702
5648	"	0644	24	.781
5650	"	0750	30	.826
5652	"	0924	40	.892

	U.T.	exp	JD	
5858	Apr. 27/28	0636	24	46183.775
5861	"	0956	24	.914
5869	28/29	0615	24	84.760
5871	"	0825	29	.851
5872	"	0905	30	.878
5873	"	0940	30	.903
5881	29/30	0628	24	85.769
5884	"	1006	20	.921
5891	May 14/15	0731	30	200.813
5900	15/16	0650	28	01.785
5908	16/17	0719	30	02.805
5909	"	0820	36	.847
5915	17/18	0256	30	03.622
5918	"	0442	30	.696
5921	"	0653	30	.787
5922	"	0735	40	.816
5925	19/20	0140	44	05.569
5928	"	0349	30	.659
5933	"	0813	38	.842
5937	20/21	0100	36	06.542
5945	"	0921	40	.890
5949	21/22	0225	30	07.601
5952	"	0419	22	.680
5957	"	0918	36	.888
5960	22/23	0131	42	08.563
5963	"	0357	30	.665
5970	23/24	0112	36	09.550
5973	"	0320	30	.639

1984

1986

	U.T.	exp	JD	
5764	May 29/30	0340	25	45850.653
5766	"	0456	20	.706
5768	"	0634	22	.774
5770	"	0818	36	.846
5771	"	0901	36	.875
5774	30/31	0106	24	51.546
5776	"	0239	20	.610
5780	"	0557?	11?	.748
5782	"	0735	24	.816
5786	June 26/27	0043	20	78.530
5790	27/28	0041	18?	79.528
5793	"	0221	18	.598
5796	"	0407	20	.672
5799	"	0628	31	.769
5804	28/29	0036	19	80.525
5807	"	0211	18	.591
5810	"	0345	19	.656
5813	"	0602	30	.751
5814	"	0700	36	.792
5818	29/30	0032	18	81.522
5821	"	0211	18	.591
5824	"	0339	18	.652
5827	"	0536	24	.733
5828	"	0652	36	.786

	U.T.	exp	JD	
6080	May 1/2	4 14	30	46552.676
6082	"	6 44	20	.781
6085	"	8 41	30	.862
6093	2/3	6 45	30	53.781
6094	"	7 28	40	.811
6095	"	8 17	44	.845
6098	4/5	2 05	40	55.587
6106	"	9 47	36	.908
6117	5/6	8 55	30	56.872
6128	6/7	9 24	32	57.892
6139	7/8	9 29	32	58.895
6143	8/9	3 52	24	59.661
6147	"	7 16	30	.803
6149	"	8 57	30	.873
6150	"	9 46	30	.907
6154	9/10	3 08	36	60.631
6159	"	8 25	30	.851
6160	"	9 24	36	.892
6164	10/11	2 32	36	61.606
6171	"	8 55	30	.872
6172	"	9 32	30	.897
6179	11/12	6 14	30	62.760
6181	"	7 45	40	.823

1987

6351	May 23/24	6 43	34	46939.780
6354	25/26	7 13	40	41.801
6362	26/27	6 30	30	42.771

6373	May 29/30	3 00	30	46945.625
6377	"	6 33	40	.773
6378	"	7 57	40	.831
6379	"	9 03	44	.876
6385	30/31	2 48	32	46.617
6389	"	6 07	34	.755
6392	"	8 40	40	.861
6393	"	9 24	40	.892
6397	May31/Jun1	5 19	40	47.722

NGC 6171

Las Campanas Observations (1988-1991)

	1988	mid UT	exp	mid JD
6441	May 7/8	7 51	30	47289.827
6454	May 11/12	3 11	30	93.633
6459	May 12/13	6 00	30	94.750
6462		8 06	36	.838
6468	May 15/16	2 59	30	97.624
6472		5 58	26	.749
6474		7 13	30	.801
6476		8 56	36	.872
6483	May 16/17	2 54	34	98.621
6486		6 07	30	.755
6488		7 38	40	.818
6489		8 33	50	.856
	1990			
6597	Apr 25/26	8 54	30	48007.871
6607	Apr 26/27	7 09	24	08.798
6611		9 43	30	.905
6616	Apr 27/28	4 07	30	09.672
6624	Apr 28/29	3 03	30	10.627
6629		6 42	20	.779
6632		9 01	30	.876
6637	Apr 29/30	3 01	30	11.626
6642		6 48	24	.783
6644		7 54	30	.829
6650	Apr30/May1	2 46	36	12.615
6655		6 28	20	.769
6657		7 38	24	.818
6659		9 10	30	.882
6660		9 43	30	.905
6665	May 1/2	2 48	30	13.617
6670		6 02	26	.751
6673		7 53	30	.828
6675		9 04	30	.878
	1991			
6684	May 15/16	8 42	36	48392.863
6685		9 36	36	.900
6697	May 16/17	8 35	30	93.858
6698		9 27	36	.894
6709	May 17/18	8 21	40	94.848
6710		9 09	40	.881
6717	May 18/19	6 44	44	95.781

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1985					
5833	Apr.	24/25	5:54	4	46181.746
5845		26/27	4 51	4	82.702
5856		27/28	4 23	4	83.683
5868		28/29	5 30	4	84.729
5880		29/30	6 02	4	85.751
5889	May	14/15	5 04	4	46200.711
5898		15/16	5 34	4	01.732
5906		16/17	6 25	4	02.767
5917		17/18	4 16	6	03.678
5932		19/20	7 42	4	05.821
5940		20/21	4 07	4	06.672
5953		21/22	4 42	4	07.696
5964		22/23	4 48	4	08.700
5975		23/24	5 54	4	09.746

1972  
398 May 9/10 4 31 5 01 41447.699  
473 13/14 2 45 3 05 51.622  
491 14/15 2 40 3 00 52.618



		1979	mean UT			
3915	May	23/24	3	50	6	44017.660
3933		24/25	8	28	6	18.853
3940		25/26	3	50	6	19.660
3955		26/27	6	44	6	20.781
3969		27/28	8	26	6	21.851
3983		28/29	8	35	6	22.858
3994		29/30	9	04	6	23.878
4003		30/31	5	40	6	24.736
4015	May	31/Jun1	8	33	6	25.856
4024	June	1/2	6	37	6	26.776
4034		2/3	7	08	6	27.797
4041		3/4	2	28	6	28.603
1980						
4167	May	5/6	4	45	6	65.698
4176		6/7	6	35	6	44366.774
4188		7/8	4	37	6	67.692
4206		10/11	7	46	6	70.824
4216		11/12	5	19	4	71.722
4225		12/13	3	33	4	72.648
4238		16/17	6	46	4	76.
4252		17/18	5	31	4	77.730
4261		18/19	5	40	4	78.736
4271	Jul	6/7	4	20	4	427.681
4279		7/8	4	03	4	28.669
4291		8/9	3	29	4	29.645
4303		10/11	3	23	4	31.641
4316		11/12	3	25	4	32.642
1983						
5654	Jun	15/16	0	07	5	45501.505
5671		16/17	4	02	4	02.668
5686		19/20	4	18	4	05.679



1972					1975					
388	May	8/9	9 02	9 17	41446.882	2757	June	25/26	4 52 20	42589.703
438		11/12	7 00	7 15	49.797	2760		"	6 34 20	.774
452		12/13	2 46	3 01	50.620	2773		26/27	3 19 20	90.638
459		"	6 33	6 48	.778	2776		"	5 21 20	.723
475		13/14	4 04	4 19	51.675	2795		27/28	4 47 20	91.699
493		14/15	3 37	3 52	52.656	2808		28/29	1 44 20	92.572
502		"	8 59	9 14	.879	2812		"	4 22 20	.682
516		15/16	4 48	5 03	53.705	2816		"	6 08 20	.756
521		"	7 41	7 56	.825	2827		29/30	1 28 20	93.561
535		16/17	3 33	3 43	54.651	2842	Jun30/Jul1	1 19 20		94.555
540		"	6 07	6 22	.760					
545		"	9 20	9 35	.894	3152	May	12/13	4 01 30	43276.667
557		"	3 39	3 54	55.657	3206		17/18	2 33 30	81.606
564		17/18	7 48	8 03	55.830	3209		"	5 14 30	.718
582		18/19	3 20	3 35	56.644	3211		"	6 33 30	.793
588		"	6 15	6 30	.766	3216		19/20	2 18 30	83.596
592		"	8 00	8 15	.838	3218		"	4 06 30	.671
597		19/20	8 40	8 55	57.866	3220		"	5 25 30	.726
679	July	4/5	0 47	1 07	503.540	3222		"	7 43 30	.822
685		"	5 44	6 04	.746	3224		"	9 38 30	.901
693		6/7	2 09	2 27	05.596	3229		20/21	2 13 30	84.592
700		"	7 02	7 19	.799	3231		"	3 59 30	.666
709		7/8	1 59	2 19	06.590	3233		"	5 18 30	.721
714		"	6 18	6 38	.769	3235		"	7 26 30	.810
721		8/9	1 07	1 22	07.552	3237		"	9 10 30	.882
724		"	2 39	2 54	.615	3243		21/22	3 03 30	85.627
734		9/10	0 45	1 05	08.538	3245		"	4 54 30	.704
741		"	6 05	6 25	.760	3247		"	6 19 30	.763
742		"	6 32	6 52	.779	3249		"	8 34 30	.857
749		10/11	1 25	1 45	09.566					
760		11/12	3 22	3 42	10.647	3507	May	5/6	3 34 38	634.649
764		"	5 36	5 56	.740	3509		"	5 07 30	.713
771		12/13	4 52	5 12	11.710	3511		"	7 16 30	.803
779		13/14	1 58	2 18	12.589	3513		"	9 06 30	.879
793		14/15	6 06	6 26	13.761	3516		6/7	5 37 40	35.734
801		16/17	2 40	3 00	15.618	3518		"	7 57 40	.831
805		17/18	0 39	1 03	16.535	3520		"	9 36 40	.900
869	Aug	30/31	1 55	2 15	60.587	3526		7/8	3 13 40	36.634
882	Aug31/Sep1	1 35	1 55		61.573	3528		"	5 16 30	.719
888	Sep	1/2	0 00	0 20	62.507	3530		"	7 12 30	.800
893	"	"	2 35	2 55	.615	3532		"	9 14 28	.885
904		2/3	2 15	2 35	63.601	3538		8/9	2 32 40	37.606
909		7/8	2 50	3 10	68.625	3540		"	4 49 30	.701
914		9/10	2 25	2 45	70.608	3542		"	6 26 30	.768
933		11/12	2 00	2 20	72.590	3544		"	8 30 30	.854
						3551		9/10	3 02 36	38.626
1410	June	8/9	3 40	4 00	842.660	3562		10/11	2 20 40	39.597
1428		9/10	5 47	6 07	43.748	3609		30/31	3 30 35	59.646
						3618	May31/Jun1	3 36 35		60.650
2112	June	21/22	3 14	3 44	42220.645	3628	June	1/2	6 52 35	61.786
2113		"	3 45	3 50	.658	3636		2/3	6 20 35	62.764
2135		23/24	5 50	6 10	22.750	3664		29/30	7 00 35	89.792
2149		27/28	2 40	3 05	26.622	3672	July	1/2	3 08 60	691.631
2166		28/29	3 00	3 20	27.632	3673		"	4 24 60	.683
2183		29/30	1 23	1 43	.28.	3685		2/3	7 10 40	92.799
2198	Jun30/Jul1	3 36	3 56		29.	3690		3/4	6 01 40	93.751

1978  
3709 July 4/5 7 52 40 43694.828  
3714 5/6 2 41 40 95.612  
3720 8/9 1 24 30 98.558  
3721 " 2 49 60 .617  
3722 " 3 59 60 .666  
3723 " 5 13 60 .717  
3736 9/10 3 07 30 99.630

1979  
3904 May 22/23 5 15 30 4016.719  
4036 June 2/3 8 59 30 27.874

NGC 6287

		1972	GMT						
439	May	11/12	7 26	7 41	41449.815	5225	Apr 27/28	4 17	44 45087.678
453		12/13	3 35	3 50	50.655	5227	"	6 18	41 .762
460		"	7 04	7 19	.799	5229	"	9 03	41 .877
476		13/14	4 30	4 45	51.693	5269	May 26/27	1 57	50 116.581
494		14/15	3 59	4 14	52.671	5271	"	3 48	42 .658
503		"	9 21	9 36	.894	5275	28/29	7 10	40 18.799
514		15/16	3 52	4 07	53.666	5277	"	8 20	42 .847
519		"	6 42	6 57	.784	5279	"	10 20	30 .931
558		17/18	4 09	4 24	55.678	5283	29/30	1 42	50 19.571
563		"	7 25	7 40	.814	5285	"	3 34	42 .649
725	Jul	8/9	3 23	3 43	41507.648	5287	"	4 44	41 .697
736		9/10	2 12	2 32	08.599	5289	"	6 35	40 .774
752		10/11	5 53	6 13	09.762	5291	"	7 37	37 .817
761		11/12	3 50	4 10	10.667	5293	"	8 50	42 .868
765		"	6 06	6 26	.761	5296	30/31	4 35	41 20.690
772		12/13	5 20	5 40	11.729	5298	"	5 40	40 .736
780		13/14	2 53	3 13	12.627	5300	"	8 40	41 .861
784		"	5 50	6 10	.750	5328	Jul 12/13	0 02	43 63.501
792		14/15	4 58	5 18	13.672	5330	"	1 10	41 .549
800		16/17	1 41	2 01	15.577	5332	"	2 12	40 .592
809		17/18	3 19	3 39	16.645	5334	"	3 14	40 .635
880	Aug31/Sep1		0 35	0 55	61.531	5336	"	4 20	40 .681
889	Sep	1/2	0 30	0 50	62.528	5340	13/14	2 16	50 64.594
901		2/3	23 50	0 10	63.500	5342	"	3 50	40 .660
907		7/8	1 05	1 35	68.556		1983		
922		10/11	2 50	3 10	71.625	5628	May 12/13	5 58	40 67.749
931		11/12	1 05	1 25	72.552				
1973									
1411	Jun	8/9	4 07	4 27	842.678				
1429		9/10	6 20	6 40	43.771				
1974									
2139	Jun	25/26	4 24	5 04	42224.697				
2151		27/28	5 30	6 05	26.742				
2167		28/29	3 36	4 06	27.660				
2184		29/30	1 56	2 26	28.				
1975 exp.									
2758	Jun	25/26	5 24	24	42589.725				
2779		26/27	6 21	24	90.765				
2796		27/28	5 42	24	91.738				
2817		28/29	6 50	24	92.785				
2828		29/30	2 27	24	93.602				
2830		"	3 47	24	.658				
2832		"	6 03	24	.752				
2844	Jun30/Jul1		1 58	24	94.582				
2847		"	3 48	24	.658				
1982									
5060	Feb	26/27	8 38	55	45027.859				
5118									
5127	Mar	29/30	7 53	40	58.828				
5213	Apr	25/26	4 21	45	85.681				
5215		"	5 36	42	.733				
5217		"	7 21	40	.806				
5219		"	8 31	40	.855				
5221		"	9 42	41	.903				



1979				1983			
3905	May 22/23	5 59 30	44016.749	5612	May 11/12	2 43 50	45466.613
3964	27/28	3 40 36	21.673	5615		5 17 30	.720
3967		5 39 30	.735	5618		7 35 30	.816
3968		7 47 30	.824	5624	12/13	2 35 50	67.608
3970		9 00 40	.875	5627		5 07 30	.713
3977	28/29	3 46 40	22.657	5631		9 01 36	.876
3980		6 04 30	.753	1984			
3982		7 44 36	.822	5753	May 28/29	1 28 40	45849.561
3984		9 15 40	.885	5754(V)		2 59 60	.624
3988	29/30	2 56 50	23.622	5755		4 52 40	.703
3989		4 16 36	.678	5756		5 50 40	.743
3990		5 09 40	.715	5757		6 30 40	.771
3991		6 41 36	.778	5758		8 05 40	.837
3993		8 21 36	.848	5759		8 55 40	.872
3995		9 38 40	.901	5760		9 45 40	.906
4000	30/31	2 20 46	24.597	5800	Jun 27/28	7 22 41	79.807
4001		3 14 40	.635	5815(V)	28/29	8 09 60	80.840
4002		5 07 36	.713	5829	29/30	8 08 40	81.839
4004		6 32 30	.772	1985			
4005		7 42 30	.821	5834	Apr 25/26	6 33 40	46181.773
4007		9 26 40	.893	5835(V)		7 39 50	.819
1980				5846	26/27	5 53 40	82.745
4227	May 12/13	5 16 40	372.719	5847(V)		6 58 50	.790
1981				5934	May 19/20	9 09 44	46205.881
4534	May 30/31	4 14 40	755.676				
4559	Jun 2/3	5 45 18	8.740				
4570	3/4	5 33 40	9.731				
4572	"	7 40 40	.819				
1983							
5575	May 6/7	2 20 40	45461.597				
5578	7/8	3 10 40	62.632				
5579	"	4 28 50	.686				
5580		5 19 38	.722				
5584	8/9	3 33 50	63.648				
5585		4 50 40	.701				
5586		5 38 40	.735				
5587		6 55 40	.788				
5588		8 18 40	.846				
5589		9 20 40	.889				
5593	9/10	3 14 38	64.635				
5594		7 20 40	.806				
5595		8 05 40	.837				
5596		9 08 40	.881				
5597		9 55 40	.913				
5601	10/11	2 15 50	65.594				
5602		3 15 40	.635				
5603		4 00 40	.667				
5604		5 10 40	.715				
5605		5 55 40	.747				
5606		7 30 50	.813				
5607		8 50 40	.868				
5608		9 50 40	.910				

	1972	GMT		
399	May 9/10	5 26	5 54	41447.736
478	13/14	5 42	6 02	51.744



1972				1975								
436	May	11/12	5 42	6 12	41449.748	2846	Jun30/Jul1	2 57	30	42594.623		
479		13/14	6 16	6 36	51.768	1976						
496		14/15	5 11	5 31	52.723	2890	May 24/25	6 15	30	923.760		
501		"	8 29	8 49	.860	1977						
513		15/16	3 24	3 44	53.649	3208	May 17/18	3 59	30	3281.666		
518		"	5 35	5 55	.740	3253	22/23	3 18	30	86.638		
523		"	8 43	9 03	.870	1978						
533		16/17	2 25	2 45	54.608	3399	Mar 10/11	7 52	30	578.828		
538		"	4 53	5 13	.710	3411	11/12	8 22	30	79.849		
543		"	8 35	8 55	.865	3563	May 10/11	3 13	30	639.634		
555		17/18	2 02	2 22	55.591	3591	14/15	9 21	30	43.890		
560		"	5 35	5 55	.740	3610	30/31	4 15	30	59.677		
594		18/19	9 11	9 31	56.890	3619	May31/Jun1	4 19	30	60.680		
1971				3629				Jun 1/2	7 52	30	61.828	
159					3637				2/3	7 03	30	62.794
1972				3645				3/4	8 09	40	.840	
686	Jul	4/5	6 18	6 38	41503.769	3715	Jul 5/6	5 12	30	95.717		
698		6/7	5 57	6 17	05.755	3739	9/10	4 32	30	99.689		
719		8/9	0 17	0 37	07.519	1979						
751		10/11	5 10	5 30	09.722	3907	May 22/23	7 37	30	4016.817		
758		11/12	2 08	2 38	10.599							
767		12/13	2 42	3 02	11.723							
777		13/14	0 28	0 58	12.530							
783		"	4 43	5 13	.707							
786		"	6 49	7 19	.794							
790		14/15	3 41	4 03	13.662							
798		16/17	0 28	0 58	15.530							
806		17/18	1 10	1 40	16.559							
883	Aug31/Sep1	2 30	3 00	41561.615								
891	Sept	1/2	1 35	2 05	62.576							
903		2/3	0 55	1 25	63.549							
910		7/8	3 20	3 50	68.649							
934		11/12	2 40	3 10	72.622							
1973												
1413	Jun	8/9	5 15	5 45	842.729							
1431		9/10	7 18	7 48	.808							
1974												
2153	Jun	27/28	6 54	9 24	42226.798							
2169		28/29	4 41	5 11	27.705							
1975												
2638	May	6/7	3 26	4 06	42539.657							
2640		"	5 03	5 37	.722							
2642		"	6 40	7 14	.790							
2644		"	8 12	8 46	.853							
2645		"	9 13	9 53	.898							
1974												
2186	Jun	29/30	3 02	3 32	42228.							
1975												
2777	Jun	26/27	7 30	30	42590.813							
2798		27/28	6 53	30	.787							
2819		28/29	8 04	30	92.836							
2829		29/30	3 06	31	93.629							
2831		"	4 45	30	.698							
2833		"	6 39	30	.777							
2835		"	8 05	30	.837							

1973					
1414	June	8/9	6 40	7 10 B	41.842.788
1432		9/10	8 00	8 30 B	43.844
1457		24/25	4 22	5 02 B	58.696
1475		26/27	6 37	7 17 B	60.790
1491		27/28	6 09	6 49 V	61.770
1492		"	7 12	7 47 B	.812
1509		28/29	7 52	8 32 B	62.842
1525		29/30	7 09	7 49 B	63.812
1526		"	8 01	8 41 B	.848
1533	Jun30/Jul	1	5 16	5 56 B	64.733
1534		"	6 23	7 03 B	.780
1535		"	7 15	7 55 B	.816
1536		"	8 07	8 47 B	.852
1537		"	8 53	9 33 B	.884
1543	Jul	1/2	1 17	1 57 B	65.567
1544		"	2 26	3 06 B	.615
1545		"	3 19	3 59 B	.652
1546		"	4 09	4 49 B	.687
1547		"	5 46	6 26 B	.754
1548		"	6 34	7 14 B	.788
1549		"	7 31	8 08 B	.826
1550		"	8 20	9 00 B	.861
1556	Jul	2/3	1 15	1 55 B	66.566
1561		"	6 55	7 35 B	.802
1562		"	7 40	8 20 B	.833
1563		"	8 41	9 21 B	.876
1569	Jul	3/4	1 13	1 53 B	67.565
1583		4/5	6 17	6 57 B	68.776
1584		"	7 06	7 46 B	.810
1585		"	8 13	8 53 B	.856
1589		9/10	0 20	1 20 V	73.535
1590		"	2 48	3 28 B	.631
1591		"	3 59	4 49 V	.683
1592		"	5 08	5 58 V	.731
1593		"	6 04	6 54 V	.770
1594		"	7 27	8 17 V	.828
1595		"	8 40	9 25 V	.876
1600		10/11	0 08	0 53 V	74.521
1601		"	1 12	1 57 V	.566
1602		"	2 02	2 47 V	.600
1603		"	3 54	4 39 V	.678
1604		"	4 43	5 28 V	.712
1605		"	5 36	6 21 V	.749
1606		"	6 51	7 36 V	.801
1607		"	8 06	8 51 V	.853
1612		11/12	0 22	1 07 V	75.531
1613		"	1 36	2 21 V	.582
1614		"	2 32	3 17 V	.621
1615		"	5 03	5 48 V	.726
1616		"	5 57	6 42 V	.763
1617		"	6 51	7 36 V	.801
1974					
1921	Mar	26/27	8 42	9 02 B	421.33.869
1948		28/29	7 50	8 20 V	35.837

1974					
1972	Apr	1/2	3 18	3 48 V	421.39.648
1973		"	4 05	4 35 V	.681
1974		"	5 06	5 36 B	.723
1975		"	5 53	6 23 B	.756
1976		"	6 43	7 13 B	.790
1977		"	7 28	7 58 B	.822
1978		"	8 41	9 11 B	.872
1979		"	9 20	9 50 B	.899
1983		2/3	3 07	3 27 B	40.637
1984		"	3 32	3 52 B	.654
1985		"	4 06	4 26 B	.678
1986		"	4 59	5 19 B	.715
1987		"	5 30	6 00 V	.740
1988		"	6 16	6 36 B	.768
1989		"	7 17	7 37 B	.810
1990		"	7 52	8 22 V	.838
1991		"	8 36	8 56 B	.865
1992		"	9 33	9 53 B	.905
1993		3/4	3 21	3 51 V	41.650
1994		"	4 04	4 24 B	.676
1995		"	4 35	5 05 V	.701
1996		"	6 24	6 44 B	.774
1997		"	6 52	7 22 V	.797
1998		"	7 46	8 06 B	.831
1999		"	8 20	8 50 V	.858
2000		"	9 01	9 31 V	.886
2161	Jun	28/29	0 00	0 30 V	227.510
2162		"	0 33	1 03 B	.533
2180		29/30	0 07	30 V	42228.
2196	Jun30/Jul	1	2 18	24 B	29.
1975					
2619	May	5/6	0 42	20 B	42538.529
2648		8/9	0 24	20 B	41.517
2649		"	1 10	30 V	.549
2650		"	1 56	20 B	.581
2651		"	2 43	30 V	.613
2652		"	3 39	30 B	.652
2653		"	4 13	30 V	.676
2654		"	4 45	20 B	.698
2655		"	6 13	30 V	.759
2656		"	6 50	20 B	.785
2657		"	7 25	30 V	.809
2658		"	8 45	20 B	.865
2659		"	9 20	30 V	.889
2660		9/10	0 35	20 B	42.524
2661		"	1 08	30 V	.547
2662		"	1 47	20 B	.574
2663		"	3 01	30 V	.626
2664		"	4 23	20 B	.683
2665		"	4 58	30 V	.707
2666		"	6 38	20 B	.776
2667		"	7 09	30 V	.798
2668		"	7 41	20 B	.820
2669		"	8 50	24 V	.868

1975

2670	May 9/10	9 06	9 20	B	42542.884
2671	"	9 25	9 49	V	.901
2673	10/11	3 39	3 59	B	43.659
2674	"	4 12	4 42	V	.685
2675	"	5 58	6 18	B	.756
2676	"	6 24	6 54	V	.777
2677	"	8 36	18	B	.858
2678	"	9 01	24	V	.876
2679	"	9 27	16	B	.894
2681	11/12	0 07	20	B	44.505
2682	"	0 44	30	V	.531
2683	"	1 52	20	B	.578
2684	"	2 23	30	V	.599
2686	"	0 28	20	B	45.519
2687	13/14	0 07	30	V	46.505
2689	"	0 38	20	B	.526
2690	"	1 52	30	V	.578
2691	"	2 25	20	B	.601
2692	"	2 55	30	V	.622
2693	"	4 43	16	B	.697
2694	"	5 10	24	V	.715
2695	"	5 35	16	B	.733
2696	"	6 43	24	V	.780
2697	"	7 08	16	B	.797
2698	"	7 33	24	V	.815
2699	"	8 38	16	B	.860
2700	"	9 07	24	V	.880
2701	"	9 38	16	B	.901

	1972	GMT			
389	May	8/9	9 45	10 00	41446.911
402		9/10	7 45	8 16	47.833
480		13/14	7 31	7 51	51.820
735	Jul	9/10	1 38	2 02	508.576



1972  
524 May 15/16 9 15 9 50 41453.894

1972  
403 May 9/10 8 33 8 53 41447.863  
1971  
160

		1972		
420	May 10/11	8 20	9 07	41448.864
481	May 13/14	8 42.	9 02	51.869



	1972	GMT	
599	May 19/20	9 34 9 54	41457.906
729	Jul 8/9	7 46 8 16	507.834

NGC 6569

		1985				
5892	May	14/15	8	38	60	46200.860
5910		16/17	9	18	60	202.888

NGC 6626

Las Campanas Observations (1987-1989)

	1987	mid UT	exp	mid JD
<del>6364</del>	<del>May 26/27</del>	<del>7 47</del>	<del>40</del>	<del>46942.824</del>
	1988	mid UT	exp	mid JD
6431	May 3/4	8 06.5	45	47285.838
6443	May 7/8	9 30	30	89.896
6477	May 15/16	9 38	30	97.901
	1989			
6524	Apr 9/10	9 17	40	47626.887
6532	Apr 10/11	8 58	40	27.874
6538	Apr 11/12	9 15	40	28.885
6543	June 1/2	6 20	40	79.765
6547	June 2/3	4 48	40	80.700
6548		5 41	40	.737
6552	June 3/4	6 54	40	81.775
6556	June 28/29	3 50	45	47706.660
6559	June 29/30	4 06	40	07.671
6562	July 1/2	4 38	40	09.693

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*listed on previous page*

1972				1983				
2130	June 22/23	7 37	7 57	42221.824	5663	June 15/16	6 39 18	45501.777
2141	" 26/27	6 48	7 13	25.792	5664	" "	7 39 18	.819
2154	" 27/28	7 41	8 01	26.827	5665	" "	8 44 18	.864
2174	" 28/29	5 59	6 19	27.756	5666	16/17	1 25 20	02.559
2187	" 29/30	3 38	3 58	28.	5668	" "	2 24 18	.600
2200	Jun30/Ju11	5 15	5 35	29.	5670	" "	3 24 18	.642
1975				1983				
2762	June 25/26	7 37	20	42589.817	5672	" "	4 19 18	.680
2763	" "	8 16	20	.844	5674	" "	5 19 12	.722
2780	" 26/27	8 19	18	90.847	5676	" "	6 39 18	.777
2799	" 27/28	7 43	20	91.822	5677	" "	7 24 18	.808
2801	" "	8 29	20	.853	5678	" "	8 24 18	.850
2820	" 28/29	8 46	20	92.865	5679	18/19	0 04 20	04.528
2836	" 29/30	8 42	20	93.863	5683	19/20	1 40 20	05.569
2849	Jun30/Ju11	4 46	20	94.699	5685	" "	3 59 18	.666
2851	" "	5 51	20	.744	5688	" "	4 59 18	.708
1980				1985				
4221	May 11/12	9 21	8	44371.890	5836	Apr. 25/26	9 02 40	46181.876
4241	" 16/17	8 52	8	76.	5848	" 26/27	8 15 40	82.844
4266	July 5/6	8 11	8	426.841	5849(V)	" "	9 20 60	.889
4283	" 7/8	7 14	8	28.801	5859	27/28	7 56 40	83.831
4285	" "	8 30	14	.854	5860(V)	" "	8 59 60	.874
4296	" 8/9	7 54	8	29.829	5893	May 14/15	9 37 40	46200.901
4306	" 10/11	5 34	8	31.732	5967	22/23	8 08 40	08.839
4310	" "	8 30	12	.854	+ others at UWO			
4317	" 11/12	3 51	8	32.660	1986			
1982				6086	May 1/2	9 31 50	46552.897	
5278	May 28/29	9 50	20	45118.910	6206½	June 17/18	9 00 30(V)	599.875
5292	" 29/20	8 15	18	19.844	6207	June 18/19	3 02½ 25(V)	600.627
5301	" 30/31	8 13	18	20.842	6208	" "	4 02½ 25(V)	.668
5338	July 12/13	6 46	20	63.782	6209	" "	4 31 12	.688
5343	" 18/19	23 53	20	69.495	6210	" "	5 02½ 25(V)	.710
5345	" "	0 45	19	.531	6211	" "	6 02½ 25(V)	.752
5347	" "	1 51	19	.576	6212	" "	7 02½ 25(V)	.793
5349	" "	2 45	18	.615	6213	" "	8 42½ 15	.863
5351	" "	3 44	18	.656	6214	July 1/2	0 08 25(V)	613.506
5353	" "	4 47	18	.699	6215	" "	0 37 25(V)	.526
5355	" "	7 06	20	.796	6216	" "	1 08 15	.547
5359	July 19/20	1 31	18	70.563	6217	" "	1 45 23(V)	.573
5361	" "	2 25	18	.601	6218	" "	2 11 23(V)	.591
5363	" "	3 27	18	.644	6219	" "	2 38½ 13	.610
5365	" "	4 27	18	.685	6220	" "	3 33 22(V)	.648
5367	" "	5 28	19	.727	6221	" "	3 58 22(V)	.665
5368	" "	7 11	21	.799	6222	" "	4 25 12	.684
5374	" 21/22	4 13	18	72.676	6223	" "	5 17 22(V)	.720
5376	" "	6 32	20	.772	6224	" "	5 41 22(V)	.737
5377	" "	7 34	23	.815	6225	" "	6 08 12	.756
1983				6226	" "	6 52 23(V)	.786	
5655	June 15/16	1 40	20	501.569	6227	" "	7 19 23(V)	.805
5656	" "	2 57	18	.623	6228	" "	7 47 13	.826
5658	" "	3 54	18	.663	6229	" "	8 34 25(V)	.857
5660	" "	4 39	18	.694	6230	" "	9 01 25(V)	.876
5662	" "	5 34	12	.732	6231	" "	9 27 15	.894
				1987				
					6364	May 26/27	7 47 40	942.824

1972					
567	May	17/18	9:29	9 49	41455.902
682	Jul	4/5	3 51	4 11	41503.667
687		"	8 30	8 50	.861
697		6/7	4 15	4 35	05.684
702		"	8 20	8 40	.854
711		7/8	3 30	3 50	06.653
717		"	8 15	8 35	.851
744		9/10	8 04	8 24	08.843
755		10/11	8 00	8 20	09.840
885	Aug31/Sep1		4 10	4 30	61.681
912	Sep	8/9	3 40	4 00	69.660
924		10/11	4 30	4 50	71.694
1971					
176					
1973					
1434	Jun	9/10	9 18	9 38	41843.894
1974					
2142	Jun	26/27	7 25	8 15	42225.826
2173		28/29	6 29	6 59	27.781
2188		29/30	4 05	4 35	28.

1972  
870 Aug 30/31 4 30 4 50 41560.694  
916 Sep 9/10 3 20 3 40 70.646

1972

871	Aug. 30/31	5 00	5 20	41560.715
917	Sept 9/10	4 20	4 40	70.688

	1971	mid-LHA	exp	
75	Sept. 13/14	0h 40	40	41208.520
	1974	GMT		
2120	June 21/22	8 54 9 06	42220.875	
2136	23/24	6 22 6 42	22.772	
2156	27/28	8 57 9 09	26.877	
2172	28/29	7 16 7 28	27.807	
2189	29/30	4 46 4 58	28.703	
2203	Jun30/Jul 1	5 45 5 57	29.744	
	1975			
2764	June 25/26	8 42 12	42589.863	
2800	27/28	8 07 12	91.838	
2802	"	8 53 12	.870	
2809	28/29	2 58 12	92.624	
2813	"	4 52 12	.703	
2821	"	9 33 12	.898	
2837	29/30	9 15 12	93.885	
2852	Jun30/Jul1	6 17 12	94.762	
2854	"	7 17 12	.803	

Las Campanas 40-inch			
1976	B	GMT	JD
1405	May 28/29	3 33 8	42927.648
1407	"	4 48 5 7	.700
1409	"	6 37 6	.776
1412	29/30	2 29 8	28.603
1414	"	3 28 6	.644
1416	"	4 56 6	.706
1418	"	6 35 6	.774
1420	"	8 03 6	.835
1422	"	9 42 6	.904
1423	30/31	1 55 8	29.580
1425	"	3 08 6	.631
1428	"	5 13 6	.717
1431	"	7 56 6	.831
1433	"	9 22 6	.890
1436	May31/Jun1	2 51 6	30.619
1438	"	3 31 6	.647
1440	"	5 03 6	.710
1442	"	6 28 6	.769
1444	"	7 55 6	.830
1446	"	9 21 6	.890
1447	June 1/2	1 31 8	31.563
1449	"	2 50 6	.618
1451	"	4 61 5 7	.709
1453	"	6 35 6	.774
1455	"	7 55 6	.830
1457	"	9 01 6	.875

Las Campanas 40-inch

1976			
1406	May 28/29	4 02 10	42927.668
1408	"	5 15 10	.719
1410	"	7 12 10	.800
1411	29/30	2 00 10	28.583
1413	"	3 00 8	.625
1415	"	4 29 8	.687
1417	"	5 34 8	.732
1419	"	7 39 8	.819
1421	"	9 08 8	.881
1424	30/31	2 14 8	29.593
1426	"	3 25 8	.642
1427	"	4 54 8	.704
1429	"	5 53 8	.745
1430	"	6 46 8	.782
1432	"	8 18 8	.846
1434	"	9 43 8	.905
1435	May31/Jun1	1 41 8	30.570
1437	"	3 10 8	.632
1439	"	4 46 8	.699
1441	"	6 11 8	.758
1443	"	7 38 8	.818
1445	"	8 59 8	.875
1448	June 1/2	1 56 8	31.581
1450	"	3 36 8	.650
1452	"	5 23 8	.724
1454	"	6 49 8	.784
1456	"	8 12 8	.842
1458	"	9 39 8	.902



NGC 6712

1974				1978					
2119	June	21/22	8 09 8 49	42220.853	4011	May31/Jun1	4 08 50	44025.672	
2143		26/27	8 20 8 47	25.856	4013	"	5 52 40	.744	
2175		28/29	7 31 8 11	27.827	4014	"	7 47 40	.824	
2190		29/30	8 53 9 33	28.	4016	"	9 12 40	.883	
1977				1978					
3154	May	12/13	6 12 40	43276.758	4022	June	1/2	3 57 44	26.665
3164		13/14	3 41 60	77.653	4023	"	5 47 40	.741	
3165		"	5 26 40	.726	4025	"	7 20 40	.806	
3166		"	6 13 40	.759	4031	2/3	3 35 40	27.649	
3167		"	6 59 40	.790	4032	"	5 24 40	.725	
3168		"	8 56 40	.872	4033	"	6 12 40	.758	
3169		"	9 40 40	.903	4035	"	8 05 40	.837	
3176		14/15	4 00 60	78.667	4037	"	9 41 40	.903	
3177		"	5 49 40	.742	4043	3/4	3 37 40	28.651	
3178		"	7 19 40	.805	4044	"	5 35 40	.733	
3179		"	8 29 40	.853	4045	"	6 52 40	.786	
3180		"	9 46 38	.907	1980				
3186		15/16	4 01 80	79.667	4228	May	12/13	6 46 40	372.782
3187		"	5 48 40	.742	4240		16/17	7 54 40	76.
3188		"	6 47 40	.783	4242		"	9 28 40	.
3189		"	7 54 40	.829	4256		17/18	8 26 40	77.851
3190		"	9 14 38	.885	4257		"	9 11 40	.883
3191		"	9 51 30	.910	4267	July	5/6	9 16 52	426.886
3197		16/17	3 51 60	80.660	4284		7/8	7 51 50	28.827
3198		"	5 23 60	.724	4297		8/9	8 34 50	29.857
3199		"	6 16 40	.761	4309	June	10/11	7 44 50	44431.822
3200		"	7 04 40	.794	4318		11/12	4 26 50	32.685
3201		"	8 56 40	.872	1981				
3202		"	9 42 40	.904	4484	May	26/27	7 43 40	751.822
1978				4486		"	9 26 40	.893	
3552	May	9/10	4 38 60	638.693	4500		27/28	7 21 40	2.806
3553		"	5 34 40	.732	4513		28/29	5 24 40	3.725
3554		"	6 22 40	.765	4515		"	7 03 40	.794
3555		"	7 38 40	.818	4517		"	8 45 40	.865
3556		"	8 50 40	.868	4537		30/31	6 34 40	5.774
3557		"	9 37 40	.901	4539		"	8 30 40	.854
3564		10/11	4 25 50	39.684	4555	June	2/3	3 31 50	8.647
3565		"	5 06 <sup>1</sup> / <sub>2</sub> 13	.713	4567		3/4	3 29 40	9.645
3574		12/13	4 51 40	41.702	4571		"	6 21 40	.765
3575		"	5 45 50	.740	4573		"	8 30 40	.854
3576		"	7 20 60	.806					
3578		"	9 17 60	.887					
3601		15/16	5 50 40	44.743					
3666	June	29/30	8 31 50	89.855					
3674	July	1/2	6 31 40	91.772					
3686		2/3	8 00 40	92.833					
3692		3/4	7 29 40	93.812					
3708		4/5	7 06 40	94.796					
3710		"	8 38 40	.860					
3717		5/6	6 29 40	95.770					
3725		8/9	7 08 40	98.825					
1979									
3909	May	22/23	9 24 40	4016.892					
3922		23/24	9 34 40	17.899					
3958		26/27	9 00 40	20.875					

1972  
442 May 11/12 9 05 9 35 41449.889  
727 Jul 8/9 4 24 4 49 507.692  
745 9/10 8 54 9 14 08.878

1972										
404	May	9/10	9 11	9 36	41447.891	911	Sept 8/9	2 55	3 35	41569.635
418		10/11	7 00	7 30	48.802	913	"	4 40	5 20	.708
421		"	9 22	9 52	.901	918	9/10	4 45	5 25	70.712
441		11/12	8 22	8 52	49.859	925	10/11	5 00	5 40	71.722
443		"	9 41	10 01	.911	935	11/12	3 20	4 00	72.653
462		12/13	8 31	8 51	50.862		1973			
463		"	8 55	9 15	.878	1461	Jun 24/25	8 25	9 25	858.872
464		"	9 18	9 38	.894	1476	26/27	7 45	8 45	60.844
482		13/14	9 19	9 39	51.895	1493	27/28	8 13	9 13	61.863
498		14/15	6 22	6 42	52.773	1527	29/30	8 58	9 48	63.891
504		"	9 46	10 06	.914		1974			
525		15/16	9 53	10 13	53.919	2157	Jun 27/28	9 14	10 14	42226.906
542		16/17	7 07	7 27	54.803	2121	21/22	9 09	10 09	20.902
546		"	9 47	10 07	.915	2176	28/29	8 25	9 25	27.
562		17/18	6 38	6 58	55.783	2191	29/30	9 55	10 52	28.
627	Jun					2201	Jun30/Jul1	9 39	10 39	29.
634							1976		exp	
646						2891	May 24/25	8 24	60	923.850
656										
668										
681	Jul	4/5	3 21	3 41	41503.647					
688		"	9 00	9 20	.882					
689		"	10 08	10 28	.929					
696		6/7	3 45	4 05	05.663					
703		6/7	8 48	9 08	.874					
704		"	9 55	10 15						
712		7/8	4 05	4 30	41506.679					
716		"	7 23	7 48	.816					
718		"	8 41	9 06	.871					
726		8/9	3 53	4 13	07.669					
730		"	8 25	8 55	.861					
731		"	9 42	10 02	.915					
738		9/10	3 50	4 20	08.670					
743		"	7 04	7 34	.805					
746		"	9 23	9 53	.901					
750		10/11	4 05	4 35	09.681					
754		"	7 13	7 43	.811					
756		"	9 12	9 42	.894					
766		11/12	7 33	8 13	10.828					
768		12/13	3 22	3 52	11.651					
774		"	7 32	8 02	.824					
776		"	9 36	10 16	.914					
787		13/14	7 51	8 31	12.841					
788		"	10 34	10 42	.943					
795		14/15	7 03	7 43	13.808					
797		"	9 43	10 23	.919					
803		16/17	4 00	4 40	15.681					
810		17/18	3 49	4 29	16.673					
867	Aug.	30/31	0 40	1 20	60.542					
872		"	5 30	6 00	.740					
884	Aug31/	Sep1	3 20	4 00	61.653					
886		"	5 55	6 35	.760					
895	Sept	1/2	4 00	4 40	62.681					
897		"	5 20	6 00	.736					

1973  
1421 June 8/9 9 40 10 00 41842.910  
1435 9/10 9 45 10 05 43.913

1971

10  
16  
71

1972

673	July	3/4	6 30	6 40	41502.774
674		"	6 57	7 07	.793

1972					
873	Aug	30/31	6 20	6 35	41560.769
896	Sep	1/2	4 55	5 10	62.710
926		10/11	5 55	6 10	71.752

	1972	GMT		
874	Aug 30/31	6 45	7 05	41560.788
898	Sept.1/2	6 55	7 15	62.795
927	Sept10/11	2 20	2 40	71.604