

Herschel 400 Observing List

Evening of 2012 Mar 23 at Karoo Starparty

Sunset 18:38, Twilight ends 19:53, Twilight begins 05:12, Sunrise 06:26, Moon rise 07:57, Moon set 18:52
 Completely dark from 19:53 to 05:12. New Moon. All times local (GMT+2).

Listing All Classes visible above the perfect horizon and in complete darkness after 19:53 and before 05:12.

Cls	Primary ID	Alternate ID	Con	Mag	Size	Distance	RA 2000	Dec 2000	Begin	Optimum	End	S.A.	Ur. 2	PSA	Difficulty	Optimum EP
PNe	NGC 7009	Saturn Nebula	Aqr	8.3	28"	3200 ly	21h04m10.9s	-11°21'48"	03:48	05:16	05:39	16	123	77	obvious	Plössl 10mm
Open	NGC 6755	Collinder 397	Aql	8.6	14.0'	4600 ly	19h07m49.0s	+04°16'00"	04:04	05:12	05:28	16	105	65	difficult	Ultima 42mm
Open	NGC 6756	OCL 99	Aql	10.6	4.0'	4900 ly	19h08m42.0s	+04°42'18"	04:04	05:12	05:30	16	105	65	difficult	Celestron Plössl 32mm
PNe	NGC 6781	PN G041.8-02.9	Aql	11.8	1.9'	2500 ly	19h18m28.1s	+06°32'19"	04:27	05:13	05:27	16	85	65	challenging	E-Lux 2" 40mm 2.0x
Open	NGC 1931	Collinder 68	Aur	10.1	5.0'	10000 ly	05h31m25.0s	+34°14'42"	19:35	19:47	20:20	5	59	12	challenging	E-Lux 2" 40mm
Open	NGC 1907	Collinder 66	Aur	10.2	7.0'	5100 ly	05h28m05.0s	+35°19'30"	19:29	19:47	20:50	5	59	12	very challenging	Ultima 42mm
Open	NGC 1857	Collinder 61	Aur	8.4	10.0'	6200 ly	05h20m06.0s	+39°20'36"	19:32	19:45	20:12	5	59	12	difficult	Ultima 42mm
Open	NGC 2281	Collinder 116	Aur	7.2	25.0'	1800 ly	06h48m17.0s	+41°04'42"	19:35	19:51	20:47	5	41	23	difficult	Ultima 42mm
Open	NGC 1664	Collinder 56	Aur	7.2	9.0'	3900 ly	04h51m06.0s	+43°40'30"	19:27	19:39	19:59	5	42	12	detectable	Ultima 42mm
Open	NGC 2126	Collinder 78	Aur	10.2	5.0'	4200 ly	06h02m32.0s	+49°52'00"	19:23	19:41	20:23	5	41	23	not visible	E-Lux 2" 40mm
Gal	NGC 5248	MCG 2-35-15	Boo	10.9	4.8'x 3.0'		13h37m32.4s	+08°53'06"	22:56	01:57	04:58	14	90	44	detectable	Plössl 25mm
Glob	NGC 5466		Boo	9.2	9.0'	52000 ly	14h05m27.0s	+28°32'06"	01:36	02:24	03:12	7	70	44	challenging	Ultima 42mm
Gal	NGC 5557	MCG 6-31-93	Boo	11.9	2.3'x 1.3'	150.0 Mly	14h18m25.6s	+36°29'39"	00:42	02:37	04:32	7	52	42	difficult	Plössl 10mm
Gal	NGC 5689	MCG 8-27-4	Boo	12.7	3.6'x 0.9'		14h35m29.7s	+48°44'29"	01:08	02:54	04:40	7	36	42	not visible	Plössl 10mm
Gal	NGC 5676	MCG 8-26-43	Boo	11.9	3.7'x 1.7'		14h32m46.9s	+49°27'28"	01:09	02:52	04:32	7	36	42	very challenging	Celestron Plössl 15mm
Gal	NGC 2775	MCG 1-24-5	Cnc	11.1	4.4'x 3.5'		09h10m20.1s	+07°02'17"	19:35	21:30	00:29	12	93	35	detectable	E-Lux 2" 26mm
Gal	NGC 4656	MCG 5-30-66	CVn	9.7	8.5'x 1.1'		12h43m57.6s	+32°10'13"	22:30	01:03	03:36	7	53	43	detectable	Plössl 10mm
Gal	NGC 4631	Whale Galaxy	CVn	9.5	13.2'x 2.4'		12h42m07.7s	+32°32'34"	22:44	01:02	03:18	7	53	43	detectable	E-Lux 2" 26mm 2.0x
Gal	NGC 5273	MCG 6-30-72	CVn	12.5	2.5'x 1.8'		13h42m08.4s	+35°39'15"	00:30	02:01	03:32	7	53	42	challenging	Celestron Plössl 15mm
Gal	NGC 4214	MCG 6-27-42	CVn	10.2	7.8'x 6.3'	13.0 Mly	12h15m39.1s	+36°19'41"	22:43	00:35	02:26	7	54	43	difficult	Ultima 42mm
Gal	NGC 5033	MCG 6-29-62	CVn	10.7	9.5'x 4.3'		13h13m27.5s	+36°35'37"	00:03	01:32	03:01	7	53	43	challenging	Celestron Plössl 32mm
Gal	NGC 5005	MCG 6-29-52	CVn	10.5	5.4'x 2.0'		13h10m56.3s	+37°03'30"	23:27	01:30	03:33	7	53	43	detectable	Celestron Plössl 32mm 2.0x
Gal	NGC 4151	MCG 7-25-44	CVn	11.3	3.7'x 2.9'		12h10m32.7s	+39°24'21"	22:51	00:29	02:08	7	54	43	difficult	Plössl 25mm
Gal	NGC 4618	Arp 23	CVn	11.3	4.0'x 2.8'		12h41m32.7s	+41°09'04"	23:32	01:01	02:30	7	37	43	difficult	Plössl 25mm
Gal	NGC 4490	Cocoon Galaxy	CVn	9.8	6.3'x 2.0'		12h30m36.4s	+41°38'37"	22:53	00:50	02:45	7	37	43	detectable	Celestron Plössl 32mm 2.0x
Gal	NGC 4485	Arp 269	CVn	12.3	2.1'x 1.5'		12h30m31.2s	+41°41'59"	23:26	00:49	02:14	7	37	43	challenging	Plössl 25mm 2.0x
Gal	NGC 4143	MCG 7-25-36	CVn	11.8	2.8'x 1.7'		12h09m36.1s	+42°32'03"	23:03	00:29	01:54	7	37	43	difficult	Celestron Plössl 15mm
Gal	NGC 4111	MCG 7-25-26	CVn	11.7	2.0'x 0.6'		12h07m03.2s	+43°03'55"	22:44	00:27	02:09	7	37	43	detectable	Plössl 10mm
Gal	NGC 4449	MCG 7-26-9	CVn	9.5	5.2'x 3.3'	13.0 Mly	12h28m10.9s	+44°05'33"	22:56	00:47	02:39	7	37	43	detectable	E-Lux 2" 26mm
Gal	NGC 4800	MCG 8-24-4	CVn	12.3	1.7'x 1.2'		12h54m37.8s	+46°31'52"	00:03	01:14	02:24	7	37	43	challenging	Plössl 10mm
Gal	NGC 4346	MCG 8-23-16	CVn	12.1	3.2'x 1.1'		12h23m28.0s	+46°59'38"	22:47	00:43	02:38	7	37	43	very challenging	Plössl 10mm
Gal	NGC 5195	Arp 85	CVn	10.5	5.6'x 4.5'		13h29m59.6s	+47°15'58"	00:40	01:48	02:57	7	37	43	challenging	E-Lux 2" 40mm
Gal	NGC 4258	M 106	CVn	9.1	16.6'x 6.3'	30.0 Mly	12h18m57.6s	+47°18'13"	23:29	00:38	01:48	7	37	43	challenging	Ultima 42mm
Open	NGC 2354	Collinder 131	CMa	8.9	18.0'	13000 ly	07h14m10.0s	-25°41'24"	19:35	20:00	22:25	19	154	27	difficult	Ultima 42mm
Open	NGC 2362	Collinder 136	CMa	3.8	5.0'	4500 ly	07h18m41.0s	-24°57'18"	19:21	20:01	00:11	19	154	27	obvious	E-Lux 2" 40mm

Cls	Primary ID	Alternate ID	Con	Mag	Size	Distance	RA 2000	Dec 2000	Begin	Optimum	End	S.A.	Ur. 2	PSA	Difficulty	Optimum EP
Open	NGC 2204	Collinder 88	CMa	9.3	10.0'	8600 ly	06h15m33.0s	-18°39'54"	19:34	19:56	22:02	19	154	27	detectable	Ultima 42mm
Open	NGC 2360	Collinder 134	CMa	9.1	13.0'	6200 ly	07h17m43.0s	-15°38'30"	19:34	20:01	22:38	12	135	27	difficult	Ultima 42mm
Gal	NGC 908	MCG -4-6-35	Cet	10.8	6.2'x 2.8'	8.1 Mly	02h23m04.6s	-21°14'02"	19:38	19:48	20:11	18	157	6	difficult	Ultima 42mm 2.0x
Gal	NGC 247	MCG -4-3-5	Cet	9.7	20.0'x 5.0'		00h47m08.6s	-20°45'38"	19:21	19:33	19:47	18	158	7	not visible	E-Lux 2" 26mm
Gal	NGC 720	MCG -2-5-68	Cet	11.1	4.7'x 2.5'		01h53m00.5s	-13°44'19"	19:37	19:43	19:54	10	139	6	challenging	E-Lux 2" 40mm 2.0x
Gal	NGC 1052	MCG -1-7-34	Cet	11.4	2.9'x 2.0'		02h41m04.7s	-08°15'18"	19:36	19:47	20:10	10	139	6	difficult	Celestron Plössl 32mm 2.0x
Gal	NGC 615	MCG -1-5-8	Cet	12.4	3.0'x 1.1'		01h35m05.7s	-07°20'25"	19:29	19:39	19:51	10	140	6	not visible	Plössl 10mm
Gal	NGC 596	MCG -1-5-5	Cet	11.8	2.5'x 1.8'		01h32m51.9s	-07°01'54"	19:27	19:38	19:52	10	140	6	not visible	Celestron Plössl 15mm
Gal	NGC 584	MCG -1-4-60	Cet	11.3	6.2'x 2.4'		01h31m20.8s	-06°52'06"	19:26	19:37	19:51	10	140	6	not visible	E-Lux 2" 40mm 2.0x
Gal	NGC 1022	MCG -1-7-25	Cet	12.1	2.6'x 1.9'		02h38m32.7s	-06°40'39"	19:38	19:47	20:01	10	139	6	challenging	Celestron Plössl 15mm
Gal	NGC 779	MCG -1-6-16	Cet	11.9	1.5'x 0.6'		01h59m42.5s	-05°57'52"	19:34	19:42	19:53	10	139	6	difficult	Plössl 10mm
Gal	NGC 936	MCG 0-7-17	Cet	11.2	4.5'x 3.4'		02h27m37.5s	-01°09'20"	19:37	19:44	19:54	10	119	6	challenging	E-Lux 2" 26mm
Gal	NGC 1055	MCG 0-7-81	Cet	11.4	6.2'x 2.9'		02h41m45.2s	+00°26'32"	19:31	19:45	20:14	10	119	4	very challenging	Plössl 25mm
Gal	NGC 4473	MCG 2-32-93	Com	11.1	4.1'x 2.4'		12h29m48.9s	+13°25'46"	21:59	00:49	03:39	13	91	45	detectable	E-Lux 2" 40mm 2.0x
Gal	NGC 4477	MCG 2-32-97	Com	11.3	3.9'x 3.5'		12h30m02.2s	+13°38'11"	22:05	00:49	03:33	14	91	45	detectable	E-Lux 2" 26mm
Gal	NGC 4689	MCG 2-33-22	Com	11.6	3.9'x 3.1'	70.0 Mly	12h47m45.7s	+13°45'44"	22:32	01:07	03:42	14	90	45	detectable	Plössl 25mm
Gal	NGC 4459	MCG 2-32-83	Com	11.4	4.6'x 3.7'		12h29m00.0s	+13°58'43"	22:15	00:48	03:21	13	91	45	difficult	Celestron Plössl 32mm
Gal	NGC 4548	M 91	Com	10.9	5.4'x 4.6'		12h35m26.4s	+14°29'47"	22:13	00:55	03:37	14	91	45	detectable	E-Lux 2" 40mm
Gal	NGC 4419	MCG 3-32-38	Com	12.0	3.5'x 1.2'		12h26m56.6s	+15°02'49"	22:09	00:46	03:23	13	91	45	difficult	Plössl 10mm
Gal	NGC 4350	MCG 3-32-23	Com	11.9	2.8'x 1.1'		12h23m57.7s	+16°41'33"	22:08	00:43	03:18	13	91	45	detectable	Plössl 10mm
Gal	NGC 4450	MCG 3-32-48	Com	10.8	5.6'x 4.4'	85000 ly	12h28m29.6s	+17°05'06"	22:15	00:48	03:21	13	91	45	detectable	E-Lux 2" 40mm
Gal	NGC 4394	MCG 3-32-35	Com	11.6	3.6'x 3.5'		12h25m55.6s	+18°12'50"	22:20	00:45	03:12	13	72	45	difficult	E-Lux 2" 26mm
Gal	NGC 4293	MCG 3-32-6	Com	11.1	6.0'x 4.1'		12h21m12.8s	+18°22'57"	22:17	00:41	03:04	13	72	45	difficult	Celestron Plössl 32mm
Glob	NGC 4147		Com	10.4	4.4'		12h10m06.0s	+18°32'30"	22:20	00:29	02:39	7	72	45	difficult	Ultima 42mm
Gal	NGC 4725	MCG 4-30-22	Com	9.9	9.5'x 6.6'		12h50m26.6s	+25°30'03"	23:38	01:09	02:40	7	71	45	detectable	Ultima 42mm
Gal	NGC 4494	MCG 4-30-2	Com	10.7	4.4'x 4.2'		12h31m24.0s	+25°46'30"	23:22	00:51	02:18	7	72	45	detectable	Celestron Plössl 32mm
Gal	NGC 4565	MCG 4-30-6	Com	10.1	14.5'x 2.3'	12h36m20.8s	+25°59'15"	23:30	00:55	02:21	7	72	45	difficult	E-Lux 2" 26mm 2.0x	
Gal	NGC 4559	MCG 5-30-30	Com	10.3	10.0'x 4.3'	12h35m57.7s	+27°57'35"	23:56	00:55	01:54	7	72	45	difficult	Celestron Plössl 32mm	
Gal	NGC 4251	MCG 5-29-50	Com	11.6	2.8'x 1.5'	12h18m08.3s	+28°10'31"	23:42	00:37	01:32	7	72	45	detectable	Plössl 25mm 2.0x	
Gal	NGC 4448	MCG 5-29-89	Com	12.0	1.8'x 1.1'	12h28m15.2s	+28°37'16"	00:01	00:47	01:33	7	72	45	detectable	Plössl 10mm	
Gal	NGC 4278	MCG 5-29-62	Com	11.0	3.3'x 3.1'	12h20m06.9s	+29°16'53"	00:12	00:39	01:08	7	72	45	detectable	Plössl 25mm	
Gal	NGC 4245	MCG 5-29-49	Com	12.3	2.7'x 1.8'	12h17m36.8s	+29°36'29"	00:26	00:37	00:47	7	54	45	difficult	Celestron Plössl 15mm	
Gal	NGC 4274	MCG 5-29-60	Com	11.3	5.0'x 2.1'	12h19m50.5s	+29°36'51"	00:29	00:39	00:49	7	54	45	difficult	Ultima 2" LX 17 mm	
Gal	NGC 4314	MCG 5-29-75	Com	11.4	3.8'x 3.6'	12h22m32.3s	+29°53'42"	22:38	00:41	02:46	7	54	45	difficult	Celestron Plössl 32mm	
Gal	NGC 4150	MCG 5-29-29	Com	12.5	2.1'x 1.4'	12h10m33.7s	+30°24'05"	22:33	00:30	02:27	7	54	43	difficult	Plössl 25mm 2.0x	
Gal	NGC 4414	MCG 5-29-85	Com	11.0	2.8'x 1.6'	12h26m27.1s	+31°13'22"	22:13	00:46	03:17	7	54	43	detectable	Plössl 25mm 2.0x	
Gal	NGC 4203	MCG 6-27-40	Com	11.7	3.4'x 1.7'	12h15m04.9s	+33°11'54"	22:36	00:35	02:32	7	54	43	difficult	E-Lux 2" 26mm 2.0x	
Gal	NGC 4027	Arp 22	Crv	11.6	3.4'x 2.5'	11h59m30.1s	-19°15'55"	20:42	00:19	03:56	20	150	36	detectable	E-Lux 2" 40mm 2.0x	
Gal	NGC 4038	The Antennae	Crv	10.9	4.4'x 2.7'	12h01m52.9s	-18°52'03"	20:32	00:21	04:11	21	150	47	detectable	Ultima 42mm 2.0x	
PNe	NGC 4361	PN G294.1+43.6	Crv	10.9	1.3'	3100 ly	12h24m30.8s	-18°47'06"	20:45	00:44	04:43	21	150	47	detectable	Celestron Plössl 15mm
Gal	NGC 3962	MCG -2-30-40	Crt	11.6	3.7'x 2.8'		11h54m40.1s	-13°58'30"	20:52	00:14	03:35	13	131	36	detectable	Plössl 25mm
Open	NGC 6834	Collinder 407	Cyg	9.7	5.0'	6700 ly	19h52m12.0s	+29°24'30"	04:54	05:19	05:31	8	66	64	difficult	E-Lux 2" 40mm
Open	NGC 6910	Collinder 420	Cyg	7.3	10.0'	3700 ly	20h23m12.0s	+40°46'42"	05:22	05:30	05:38	9	32	62	difficult	Ultima 42mm
Open	NGC 6866	Collinder 412	Cyg	9.1	14.0'	4700 ly	20h03m55.0s	+44°09'30"	05:09	05:31	05:43	9	32	62	not visible	Ultima 42mm
PNe	NGC 6826	Blinking Planetary	Cyg	8.8	27"	3600 ly	19h44m48.2s	+50°31'30"	05:21	05:33	05:43	8	33	62	detectable	Celestron Plössl 9mm

Cls	Primary ID	Alternate ID	Con	Mag	Size	Distance	RA 2000	Dec 2000	Begin	Optimum	End	S.A.	Ur. 2	PSA	Difficulty	Optimum EP
Glob	NGC 6934		Del	8.9	7.1'	62000 ly	20h34m11.0s	+07°24'18"	04:44	05:17	05:29	16	84	64	difficult	Ultima 42mm
Glob	NGC 7006		Del	10.6	3.6'	160000 ly	21h01m29.0s	+16°11'18"	04:49	05:20	05:36	16	83	75	very challenging	E-Lux 2" 40mm
PNe	NGC 6905	He 2-466	Del	12.0	44"	4700 ly	20h22m22.9s	+20°06'17"	04:54	05:19	05:31	9	66	64	difficult	Plössl 10mm
Gal	NGC 5866	M 102	Dra	10.7	6.3'x 2.8'	47.0 Mly	15h06m29.6s	+55°45'48"	02:11	03:25	04:39	2	22	53	not visible	Ultima 42mm 2.0x
Gal	NGC 5907	Splinter Galaxy	Dra	11.1	11.0'x 1.4'		15h15m53.7s	+56°19'44"	02:24	03:34	04:45	2	22	53	not visible	E-Lux 2" 40mm 2.0x
Gal	NGC 5982	MCG 10-22-29	Dra	12.0	3.1'x 2.0'		15h38m39.8s	+59°21'21"	03:11	03:57	04:43	2	22	53	not visible	Celestron Plössl 32mm 2.0x
Gal	NGC 1407	MCG -3-10-30	Eri	10.7	5.5'x 5.0'		03h40m11.9s	-18°34'49"	19:35	19:51	20:22	18	156	17	detectable	E-Lux 2" 40mm
PNe	NGC 1535	Cleopatra's Eye	Eri	9.4	20"	5800 ly	04h14m15.8s	-12°44'22"	19:26	19:51	20:44	11	137	17	obvious	Celestron Plössl 15mm 2.0x
Gal	NGC 1084	MCG -1-8-7	Eri	11.2	3.1'x 2.0'		02h45m59.9s	-07°34'43"	19:35	19:47	20:13	10	139	6	detectable	Celestron Plössl 32mm 2.0x
Open	NGC 2395	Collinder 144	Gem	9.4	14.0'	1700 ly	07h27m12.0s	+13°36'30"	19:39	20:02	21:41	12	95	25	challenging	Ultima 42mm
Open	NGC 2355	Collinder 133	Gem	9.7	7.0'	7200 ly	07h16m59.0s	+13°45'00"	19:34	20:00	22:14	12	95	25	detectable	Ultima 42mm
Open	NGC 2304	Collinder 120	Gem	10.0	3.0'	13000 ly	06h55m11.0s	+17°59'18"	19:32	19:57	21:43	12	76	25	detectable	Ultima 42mm 2.0x
PNe	NGC 2392	Eskimo Nebula	Gem	8.6	47"	3400 ly	07h29m10.8s	+20°54'42"	19:25	20:02	21:59	5	75	25	obvious	Plössl 10mm
Open	NGC 2420	Collinder 154	Gem	10.0	5.0'	10000 ly	07h38m23.0s	+21°34'24"	19:34	20:05	22:02	5	75	24	detectable	E-Lux 2" 40mm
Open	NGC 2129	Collinder 77	Gem	7.0	5.0'	4900 ly	06h01m07.0s	+23°19'20"	19:26	19:52	20:13	5	76	25	obvious	E-Lux 2" 40mm
Open	NGC 2158	Collinder 81	Gem	12.1	5.0'	17000 ly	06h07m25.0s	+24°05'48"	19:29	19:52	20:12	5	76	25	not visible	E-Lux 2" 40mm
Open	NGC 2266	Collinder 113	Gem	9.5	5.0'	11000 ly	06h43m19.0s	+26°58'12"	19:33	19:54	20:18	5	76	25	detectable	E-Lux 2" 40mm
PNe	NGC 2371	Gemini Nebula	Gem	11.2	1.2'	4400 ly	07h25m34.7s	+29°29'26"	19:32	20:00	20:02	5	75	25	detectable	Plössl 25mm 2.0x
Gal	NGC 6207	MCG 6-37-7	Her	11.9	2.9'x 1.3'		16h43m03.8s	+36°49'57"	03:14	04:58	05:29	8	50	52	difficult	Plössl 10mm
Glob	NGC 6229		Her	9.4	4.5'	91000 ly	16h46m59.0s	+47°31'42"	03:58	05:03	05:28	8	35	52	challenging	Ultima 42mm
Gal	NGC 3621	MCG -5-27-8	Hya	10.1	10.5'x 4.5'		11h18m16.3s	-32°48'43"	19:46	23:38	03:33	20	169	38	detectable	E-Lux 2" 40mm
Glob	NGC 5694		Hya	10.2	4.3'	100000 ly	14h39m36.0s	-26°32'18"	23:31	02:58	05:27	21	148	46	detectable	Ultima 42mm
PNe	NGC 3242	Ghost of Jupiter	Hya	8.6	40"	2800 ly	10h24m46.1s	-18°38'32"	19:26	22:44	03:06	20	151	37	obvious	Plössl 10mm
Gal	NGC 2811	MCG -3-24-3	Hya	12.3	2.8'x 1.0'		09h16m11.1s	-16°18'46"	19:33	21:36	01:01	12	133	37	detectable	Plössl 10mm
Open	NGC 2548	M 48	Hya	5.5	30.0'	2500 ly	08h13m43.0s	-05°45'00"	19:31	20:34	00:25	12	134	26	easy	Celestron Plössl 32mm 2.0x
Gal	NGC 3521	MCG 0-28-30	Leo	9.9	9.5'x 4.6'		11h05m48.8s	-00°02'06"	20:04	23:25	02:47	13	112	36	detectable	E-Lux 2" 40mm
Gal	NGC 3640	MCG 1-29-33	Leo	11.3	4.4'x 3.8'		11h21m06.9s	+03°14'06"	20:43	23:41	02:38	13	112	34	detectable	Celestron Plössl 32mm
Gal	NGC 3810	MCG 2-30-10	Leo	11.3	3.6'x 2.5'		11h40m58.8s	+11°28'18"	21:05	00:00	02:55	13	91	34	detectable	E-Lux 2" 40mm 2.0x
Gal	NGC 3379	M 105	Leo	10.2	5.0'x 4.6'	45.0 Mly	10h47m49.6s	+12°34'54"	20:14	23:07	02:01	13	92	34	detectable	E-Lux 2" 40mm
Gal	NGC 3384	MCG 2-28-12	Leo	10.9	5.4'x 3.2'		10h48m16.9s	+12°37'43"	20:18	23:08	01:57	13	92	34	detectable	Plössl 25mm
Gal	NGC 3593	MCG 2-29-14	Leo	11.8	4.9'x 1.9'		11h14m37.0s	+12°49'05"	21:08	23:34	02:01	13	92	34	difficult	Celestron Plössl 15mm
Gal	NGC 3412	MCG 2-28-16	Leo	11.5	3.7'x 2.0'		10h50m53.3s	+13°24'44"	20:21	23:10	02:00	13	92	34	detectable	Celestron Plössl 32mm 2.0x
Gal	NGC 3628	Arp 317	Leo	10.0	12.3'x 3.3'		11h20m16.9s	+13°35'28"	20:52	23:40	02:26	13	92	34	detectable	E-Lux 2" 26mm
Gal	NGC 3489	MCG 2-28-39	Leo	11.1	3.5'x 2.1'		11h00m18.6s	+13°54'05"	20:32	23:20	02:08	13	92	34	detectable	Ultima 2" LX 17 mm
Gal	NGC 3377	MCG 2-28-9	Leo	11.1	3.9'x 2.0'		10h47m42.4s	+13°59'08"	20:19	23:07	01:55	13	92	34	detectable	Celestron Plössl 32mm 2.0x
Gal	NGC 3655	MCG 3-29-39	Leo	12.3	1.5'x 1.0'		11h22m54.7s	+16°35'22"	21:08	23:42	02:17	13	92	34	detectable	Plössl 10mm
Gal	NGC 3686	MCG 3-29-51	Leo	12.0	2.9'x 2.2'		11h27m44.0s	+17°13'27"	21:16	23:47	02:19	13	91	34	difficult	Ultima 2" LX 17 mm
Gal	NGC 3607	MCG 3-29-20	Leo	10.9	4.6'x 4.0'		11h16m54.5s	+18°03'11"	21:09	23:36	02:03	13	73	34	detectable	Celestron Plössl 32mm
Gal	NGC 3608	MCG 3-29-22	Leo	11.6	3.0'x 2.2'		11h16m59.0s	+18°08'55"	21:09	23:36	02:03	13	73	34	detectable	Ultima 2" LX 17 mm
Gal	NGC 3626	MCG 3-29-32	Leo	11.8	3.0'x 2.0'		11h20m03.8s	+18°21'24"	21:14	23:40	02:05	13	72	34	detectable	Celestron Plössl 32mm 2.0x
Gal	NGC 3227	Arp 94	Leo	11.5	4.1'x 2.1'		10h23m30.6s	+19°51'54"	20:27	22:43	00:59	6	73	35	detectable	Ultima 2" LX 17 mm
Gal	NGC 3226	Arp 94	Leo	12.3	3.0'x 2.2'		10h23m27.0s	+19°53'54"	20:31	22:43	00:55	6	73	35	difficult	Ultima 2" LX 17 mm
Gal	NGC 2903		Leo	10.0	11.5'x 4.2'		09h32m09.7s	+21°30'03"	19:47	21:52	23:56	6	74	35	detectable	Celestron Plössl 32mm
Gal	NGC 3190	Arp 316	Leo	11.9	3.6'x 1.3'		10h18m05.3s	+21°49'58"	20:34	22:37	00:40	6	73	35	difficult	Plössl 10mm
Gal	NGC 3193	Arp 316	Leo	12.0	2.5'x 2.3'		10h18m24.9s	+21°53'38"	20:35	22:38	00:40	6	73	35	detectable	E-Lux 2" 40mm 2.0x

Cls	Primary ID	Alternate ID	Con	Mag	Size	Distance	RA 2000	Dec 2000	Begin	Optimum	End	S.A.	Ur. 2	PSA	Difficulty	Optimum EP
Gal	NGC 3912	MCG 5-28-37	Leo	13.2	1.5'x 0.7'		11h50m04.5s	+26°28'45"	22:49	00:09	01:29	6	72	34	difficult	Plössl 10mm
Gal	NGC 3900	MCG 5-28-34	Leo	12.3	2.7'x 1.3'		11h49m09.4s	+27°01'19"	22:54	00:08	01:22	6	72	34	difficult	Plössl 25mm 2.0x
Gal	NGC 2964	Markarian 404	Leo	12.1	2.5'x 1.6'		09h42m54.3s	+31°50'50"	20:02	22:02	00:03	6	56	33	difficult	Plössl 25mm 2.0x
Gal	NGC 3344	MCG 4-25-46	LMi	10.5	6.6'x 6.3'		10h43m31.2s	+24°55'20"	21:25	23:03	00:40	6	73	34	detectable	Ultima 42mm
Gal	NGC 3504	MCG 5-26-39	LMi	11.6	2.6'x 2.3'		11h03m11.2s	+27°58'21"	22:24	23:23	00:22	6	73	34	detectable	E-Lux 2" 40mm 2.0x
Gal	NGC 3414	Arp 162	LMi	12.0	2.9'x 1.7'		10h51m16.3s	+27°58'30"	22:12	23:11	00:10	6	73	34	difficult	Celestron Plössl 15mm
Gal	NGC 3245	MCG 5-25-13	LMi	11.7	3.3'x 2.0'		10h27m18.4s	+28°30'27"	21:57	22:47	23:36	6	73	35	difficult	Celestron Plössl 32mm 2.0x
Gal	NGC 3277	MCG 5-25-22	LMi	12.5	2.1'x 1.6'		10h32m55.5s	+28°30'42"	22:03	22:52	23:42	6	73	34	difficult	E-Lux 2" 26mm 2.0x
Gal	NGC 3486	MCG 5-26-32	LMi	11.1	6.0'x 4.3'		11h00m23.9s	+28°58'29"	22:41	23:20	23:58	6	73	34	difficult	Celestron Plössl 32mm
Gal	NGC 3395	Arp 270	LMi	12.4	1.6'x 0.9'		10h49m50.1s	+32°58'59"	21:01	23:09	01:17	6	55	32	detectable	Plössl 10mm
Gal	NGC 2859	MCG 6-21-30	LMi	11.8	3.8'x 3.3'		09h24m18.5s	+34°30'48"	20:09	21:44	23:19	6	56	33	challenging	E-Lux 2" 26mm
Gal	NGC 3432	Arp 206	LMi	11.6	6.8'x 1.6'		10h52m30.9s	+36°37'09"	21:52	23:11	00:31	6	55	32	challenging	Ultima 2" LX 17 mm 2.0x
Gal	NGC 3294	MCG 6-23-21	LMi	12.1	3.2'x 1.7'		10h36m16.3s	+37°19'28"	21:25	22:56	00:28	6	55	32	challenging	E-Lux 2" 26mm 2.0x
Gal	NGC 1964	MCG -4-14-3	Lep	11.5	5.2'x 2.2'		05h33m21.5s	-21°56'49"	19:34	19:54	21:42	19	155	16	detectable	Ultima 2" LX 17 mm
Glob	NGC 5897		Lib	8.4	11.0'	46000 ly	15h17m24.0s	-21°00'36"	00:07	03:36	05:31	21	148	57	detectable	Ultima 42mm
Gal	NGC 2683	MCG 6-20-11	Lyn	10.0	8.7'x 2.5'		08h52m41.2s	+33°25'16"	19:36	21:13	23:25	6	56	22	detectable	E-Lux 2" 32mm 2.0x
Glob	NGC 2419	Intergalactic Wande	Lyn	10.3	4.6'	200000 ly	07h38m08.0s	+38°52'54"	19:38	20:03	21:12	5	57	22	challenging	Ultima 42mm
Gal	NGC 2782	Arp 215	Lyn	12.3	3.4'x 2.4'		09h14m05.2s	+40°06'47"	19:33	21:34	23:54	6	56	33	very challenging	E-Lux 2" 40mm 2.0x
Open	NGC 2506	Collinder 170	Mon	8.9	12.0'	11000 ly	08h00m01.0s	-10°46'12"	19:34	20:20	23:29	12	134	26	detectable	Ultima 42mm
Open	NGC 2343	Collinder 128	Mon	7.5	5.0'	3400 ly	07h08m06.0s	-10°37'00"	19:27	19:59	23:32	12	135	27	obvious	E-Lux 2" 40mm
Open	NGC 2353	Collinder 130	Mon	5.2	18.0'	3600 ly	07h14m30.0s	-10°16'00"	19:28	20:00	23:39	12	135	27	obvious	Ultima 42mm
Open	NGC 2335	Collinder 127	Mon	9.3	6.0'	4600 ly	07h06m49.0s	-10°01'42"	19:32	19:59	23:07	12	135	27	detectable	Ultima 42mm
Open	NGC 2215	Collinder 90	Mon	8.6	7.0'	4200 ly	06h20m49.0s	-07°17'00"	19:30	19:55	22:36	11	136	27	easy	Ultima 42mm
Neb	NGC 2185	LBN 997	Mon		4.5'x 2.0'		06h11m00.0s	-06°14'00"	19:29	19:55	22:26	11	136	27	very challenging	Ultima 42mm
Open	NGC 2232	Collinder 93	Mon	4.2	53.0'	1200 ly	06h27m15.0s	-04°45'30"	19:30	19:56	22:38	11	116	27	easy	Celestron Plössl 15mm
Open	NGC 2311	Collinder 123	Mon	9.6	6.0'	7500 ly	06h57m47.0s	-04°36'42"	19:33	19:58	22:42	12	115	27	detectable	Ultima 42mm
Open	NGC 2286	Collinder 117	Mon	8.3	14.0'	8500 ly	06h47m40.0s	-03°08'54"	19:34	19:57	22:24	12	115	27	detectable	Ultima 42mm
Open	NGC 2301	Collinder 119	Mon	6.3	14.0'	2800 ly	06h51m45.0s	+00°27'36"	19:29	19:58	22:48	12	115	25	easy	Ultima 42mm
Open	NGC 2324	Collinder 125	Mon	7.9	10.6'	12000 ly	07h04m07.0s	+01°02'42"	19:31	19:58	22:59	12	115	25	easy	Ultima 42mm
Open	NGC 2244	Collinder 99	Mon	5.2	29.0'	4700 ly	06h31m55.0s	+04°56'30"	19:30	19:55	22:15	12	116	25	easy	Celestron Plössl 32mm 2.0x
Open	NGC 2251	Collinder 101	Mon	8.8	10.0'	4300 ly	06h34m38.0s	+08°22'00"	19:34	19:56	21:58	12	96	25	detectable	Ultima 42mm
Open	NGC 2264	Collinder 112	Mon	4.1	39.0'	2200 ly	06h40m58.0s	+09°53'42"	19:29	19:56	22:06	12	95	25	obvious	Celestron Plössl 32mm 2.0x
Glob	NGC 6304		Oph	8.3	8.0'	20000 ly	17h14m32.0s	-29°27'42"	01:26	05:04	05:35	22	146	56	detectable	Ultima 42mm
Glob	NGC 6316		Oph	8.1	5.4'	100000 ly	17h16m37.0s	-28°08'24"	01:00	05:05	05:36	22	146	56	easy	Ultima 42mm
Glob	NGC 6293		Oph	8.3	8.2'	39000 ly	17h10m10.0s	-26°34'54"	01:28	05:04	05:35	22	146	56	detectable	Ultima 42mm
Glob	NGC 6355		Oph	8.6	4.2'		17h23m58.0s	-26°21'12"	01:12	05:05	05:36	22	146	56	easy	Ultima 42mm
Glob	NGC 6284		Oph	8.9	6.2'	55000 ly	17h04m29.0s	-24°45'54"	01:28	05:03	05:34	22	146	56	detectable	Ultima 42mm
Glob	NGC 6401		Oph	7.4	4.8'		17h38m37.0s	-23°54'36"	01:25	05:07	05:38	22	146	56	easy	Ultima 42mm
PNe	NGC 6369	Little Ghost Nebula	Oph	11.0	30"	2800 ly	17h29m20.4s	-23°45'34"	01:17	05:06	05:37	22	146	56	easy	Plössl 10mm
Glob	NGC 6287		Oph	9.3	4.8'	33000 ly	17h05m09.0s	-22°42'30"	01:30	05:03	05:34	22	146	56	detectable	Ultima 42mm
Glob	NGC 6235		Oph	8.9	5.0'	52000 ly	16h53m25.0s	-22°10'36"	01:07	05:01	05:35	22	146	56	detectable	Ultima 42mm
Glob	NGC 6342		Oph	9.5	4.4'	130000 ly	17h21m10.0s	-19°35'12"	01:50	05:06	05:33	22	146	56	detectable	Ultima 42mm
Glob	NGC 6356		Oph	8.2	10.0'	36000 ly	17h23m35.0s	-17°48'48"	02:01	05:06	05:33	15	146	56	detectable	Ultima 42mm
Glob	NGC 6171	M 107	Oph	7.8	13.0'	26000 ly	16h32m32.0s	-13°03'12"	01:21	04:50	05:32	15	127	56	detectable	Ultima 42mm
Glob	NGC 6517		Oph	10.1	4.0'	160000 ly	18h01m51.0s	-08°57'30"	02:57	05:09	05:30	15	126	67	detectable	E-Lux 2" 40mm

Cls	Primary ID	Alternate ID	Con	Mag	Size	Distance	RA 2000	Dec 2000	Begin	Optimum	End	S.A.	Ur. 2	PSA	Difficulty	Optimum EP
Glob	NGC 6426		Oph	10.9	4.2'	68000 ly	17h44m54.0s	+03°10'12"	03:41	05:08	05:28	15	106	54	challenging	Ultima 42mm
Open	NGC 6633	Collinder 380	Oph	5.6	20.0'	1200 ly	18h27m15.0s	+06°30'30"	03:28	05:11	05:34	15	86	65	easy	Ultima 42mm
Neb	NGC 1999	LBN 979	Ori		2.0'		05h36m24.0s	-06°43'00"	19:39	19:53	20:41	11	136	16	challenging	Ultima 42mm
Open	NGC 1980	Collinder 72	Ori	2.5	20.0'	1600 ly	05h35m24.0s	-05°54'54"	19:24	19:53	21:49	11	136	16	obvious	Ultima 42mm
Neb	NGC 1788	LBN 916	Ori		10.0'x 6.0'		05h06m54.0s	-03°20'00"	19:38	19:52	20:38	11	117	16	challenging	Ultima 42mm
Neb	NGC 2024	Flame Nebula	Ori		20.0'		05h41m42.0s	-01°51'00"	19:37	19:53	20:54	11	116	16	challenging	Ultima 42mm
Open	NGC 2186	Collinder 85	Ori	9.2	5.0'	4700 ly	06h12m07.0s	+05°27'30"	19:31	19:55	21:54	11	116	25	detectable	E-Lux 2" 40mm
PNe	NGC 2022	PN G196.6-10.9	Ori	11.7	28"	8100 ly	05h42m06.2s	+09°05'11"	19:31	19:52	21:10	11	96	14	detectable	Plössl 10mm
Open	NGC 2194	Collinder 87	Ori	10.0	9.0'	12000 ly	06h13m45.0s	+12°48'24"	19:38	19:54	20:57	11	96	25	challenging	Ultima 42mm
Open	NGC 2169	37 Cluster	Ori	7.0	5.0'	3400 ly	06h08m24.0s	+13°57'54"	19:26	19:54	21:17	11	96	25	obvious	E-Lux 2" 40mm
Open	NGC 1342	Collinder 40	Per	7.2	15.0'	2200 ly	03h31m38.0s	+37°22'36"	19:19	19:31	19:49	4	60	13	very challenging	Ultima 42mm
Open	NGC 1545	Collinder 49	Per	4.6	18.0'	2300 ly	04h20m57.0s	+50°15'12"	19:20	19:27	19:34	5	42	13	challenging	Ultima 42mm
Open	NGC 2567	Collinder 180	Pup	8.4	7.0'	5500 ly	08h18m32.0s	-30°38'24"	19:29	20:38	01:09	20	171	28	easy	Ultima 42mm
Open	NGC 2489	Collinder 169	Pup	9.3	6.0'	13000 ly	07h56m15.0s	-30°03'48"	19:30	20:18	00:24	19	171	28	detectable	Ultima 42mm
Open	NGC 2571	Collinder 181	Pup	7.4	8.0'	4400 ly	08h18m56.0s	-29°45'00"	19:28	20:39	01:21	20	171	26	easy	Ultima 42mm
Open	NGC 2527	Collinder 174	Pup	8.3	10.0'	2000 ly	08h04m58.0s	-28°08'48"	19:30	20:25	00:33	20	153	26	detectable	Ultima 42mm
Open	NGC 2482	Collinder 166	Pup	8.8	10.0'	4400 ly	07h55m12.0s	-24°15'30"	19:32	20:16	00:00	19	153	26	detectable	Ultima 42mm
Open	NGC 2421	Collinder 151	Pup	9.0	6.0'	7200 ly	07h36m13.0s	-20°36'42"	19:29	20:06	00:01	19	153	26	detectable	Ultima 42mm
Open	NGC 2509	Collinder 171	Pup	9.3	6.0'		08h00m48.0s	-19°03'06"	19:30	20:22	00:13	20	153	26	detectable	Ultima 42mm
PNe	NGC 2440	PN G234.8+02.4	Pup	11.5	54"	3700 ly	07h41m55.4s	-18°12'31"	19:29	20:08	00:01	12	153	26	detectable	Plössl 10mm
Open	NGC 2479	Collinder 167	Pup	9.6	10.0'	5400 ly	07h55m06.0s	-17°42'36"	19:34	20:16	23:13	12	153	26	difficult	Ultima 42mm
PNe	NGC 2438	PN G231.8+04.1	Pup	11.0	1.1'	3700 ly	07h41m51.4s	-14°43'55"	19:29	20:08	00:03	12	135	26	detectable	Plössl 25mm 2.0x
Open	NGC 2422	M 47	Pup	4.3	25.0'	1600 ly	07h36m35.0s	-14°29'00"	19:27	20:05	00:10	12	135	26	obvious	Ultima 42mm
Open	NGC 2423	Collinder 153	Pup	7.0	12.0'	2500 ly	07h37m06.0s	-13°52'18"	19:28	20:06	00:09	12	135	26	easy	Ultima 42mm
Open	NGC 2539	Collinder 176	Pup	8.0	9.0'	4400 ly	08h10m37.0s	-12°49'06"	19:29	20:30	00:31	12	134	26	easy	Ultima 42mm
Open	NGC 2627	Collinder 188	Pyx	8.4	8.0'	6500 ly	08h37m15.0s	-29°57'18"	19:30	20:57	01:18	20	171	26	easy	Ultima 42mm
Gal	NGC 2613	MCG -4-21-3	Pyx	11.1	7.4'x 1.7'		08h33m22.5s	-22°58'24"	19:33	20:53	00:27	20	153	26	detectable	Celestron Plössl 32mm 2.0x
Glob	NGC 6569		Sgr	8.4	6.4'	96000 ly	18h13m38.0s	-31°49'36"	02:04	05:09	05:34	22	163	69	detectable	Ultima 42mm
Glob	NGC 6624		Sgr	7.6	8.8'	42000 ly	18h23m40.0s	-30°21'30"	02:08	05:09	05:35	22	163	69	easy	Ultima 42mm
Glob	NGC 6528		Sgr	9.6	5.0'	140000 ly	18h04m49.0s	-30°03'24"	02:28	05:08	05:32	22	163	69	detectable	Ultima 42mm
Glob	NGC 6522		Sgr	9.9	9.4'	39000 ly	18h03m35.0s	-30°02'06"	03:43	05:08	05:26	22	163	69	challenging	Ultima 42mm
Open	NGC 6520	Collinder 361	Sgr	7.6	5.0'	5100 ly	18h03m24.0s	-27°53'18"	01:43	05:08	05:38	22	145	67	obvious	E-Lux 2" 40mm
Open	NGC 6540	Collinder 364	Sgr	14.6	48"		18h06m21.0s	-27°47'39"	01:47	05:09	05:36	22	145	67	not visible	Plössl 10mm
Glob	NGC 6553		Sgr	8.3	9.2'	87000 ly	18h09m17.0s	-25°54'30"	02:26	05:09	05:32	22	145	67	detectable	Ultima 42mm
Glob	NGC 6638		Sgr	9.2	7.3'	49000 ly	18h30m56.0s	-25°29'48"	03:03	05:09	05:31	22	145	67	detectable	Ultima 42mm
Glob	NGC 6544		Sgr	7.5	9.2'	16000 ly	18h07m20.0s	-24°59'54"	02:02	05:09	05:34	22	145	67	easy	Ultima 42mm
Glob	NGC 6642		Sgr	8.9	5.8'		18h31m54.0s	-23°28'30"	02:41	05:10	05:33	22	145	67	detectable	Ultima 42mm
PNe	NGC 6629	He 2-399	Sgr	10.5	16"	6800 ly	18h25m42.4s	-23°12'11"	02:15	05:10	05:41	22	145	67	obvious	Plössl 6mm
Open	NGC 6514	M 20	Sgr	5.2	28.0'	2700 ly	18h02m42.0s	-22°58'18"	01:51	05:09	05:36	22	145	67	easy	Celestron Plössl 32mm 2.0x
Open	NGC 6583	Collinder 370	Sgr	10.0	5.0'		18h15m49.0s	-22°08'12"	02:44	05:09	05:33	22	145	67	detectable	E-Lux 2" 40mm
Open	NGC 6568	Collinder 369	Sgr	8.6	12.0'	2500 ly	18h12m44.0s	-21°36'18"	02:46	05:09	05:31	22	145	67	detectable	Ultima 42mm
Glob	NGC 6440		Sgr	9.3	4.4'	13000 ly	17h48m53.0s	-20°21'36"	02:07	05:08	05:33	22	146	56	detectable	Ultima 42mm
PNe	NGC 6445	He 2-290	Sgr	13.0	35"	4200 ly	17h49m15.1s	-20°00'34"	02:43	05:08	05:32	22	146	56	difficult	Plössl 10mm
Open	NGC 6645	Collinder 383	Sgr	8.5	14.0'		18h32m37.0s	-16°53'00"	03:13	05:10	05:32	16	126	67	detectable	Ultima 42mm
PNe	NGC 6818	Little Gem	Sgr	10.0	22"	7300 ly	19h43m57.8s	-14°09'12"	03:50	05:13	05:39	16	125	66	obvious	Celestron Plössl 15mm 2.0x

Cls	Primary ID	Alternate ID	Con	Mag	Size	Distance	RA 2000	Dec 2000	Begin	Optimum	End	S.A.	Ur. 2	PSA	Difficulty	Optimum EP
Open	NGC 6451	Tom Thumb Cluster	Sco	8.2	7.0'	6800 ly	17h50m41.0s	-30°12'36"	01:29	05:08	05:37	22	164	58	easy	Ultima 42mm
Glob	NGC 6144		Sco	9.0	7.4'	33000 ly	16h27m14.0s	-26°01'18"	01:07	04:45	05:33	22	147	57	detectable	Ultima 42mm
Gal	NGC 613	MCG -5-4-44	ScI	10.7	5.5'x 4.4'		01h34m18.6s	-29°25'03"	19:35	19:46	20:01	18	158	6	challenging	E-Lux 2" 40mm
Glob	NGC 288		ScI	8.1	13.0'	39000 ly	00h52m45.0s	-26°35'00"	19:26	19:38	19:54	18	158	7	not visible	Ultima 42mm
Gal	NGC 253	Sculptor Galaxy	ScI	7.9	28.2'x 5.5'	13.0 Mly	00h47m33.1s	-25°17'20"	19:30	19:37	19:43	18	158	7	challenging	Ultima 42mm
Glob	NGC 6712		Sct	8.1	9.8'	23000 ly	18h53m04.0s	-08°42'18"	03:19	05:11	05:31	16	125	67	detectable	Ultima 42mm
Open	NGC 6664	Collinder 385	Sct	8.5	12.0'	3800 ly	18h36m37.0s	-07°48'48"	03:17	05:10	05:32	16	125	67	detectable	Ultima 42mm
Gal	NGC 6118	MCG 0-42-2	Ser	12.4	4.5'x 1.8'		16h21m48.5s	-02°17'02"	02:16	04:40	05:28	15	107	57	challenging	Celestron Plössl 15mm
Gal	NGC 3115	Spindle Galaxy	Sex	10.0	7.6'x 3.5'		10h05m14.0s	-07°43'07"	19:35	22:25	02:05	13	133	37	detectable	E-Lux 2" 26mm
Gal	NGC 2974	MCG 0-25-8	Sex	11.8	3.5'x 2.4'		09h42m33.2s	-03°41'59"	19:36	22:02	01:08	13	113	37	detectable	E-Lux 2" 40mm 2.0x
Gal	NGC 3166	MCG 1-26-24	Sex	11.5	3.7'x 2.1'		10h13m45.7s	+03°25'29"	19:41	22:33	01:39	13	112	35	detectable	Ultima 2" LX 17 mm
Gal	NGC 3169	MCG 1-26-26	Sex	11.3	4.2'x 2.5'		10h14m14.8s	+03°27'59"	19:42	22:33	01:38	13	112	35	detectable	E-Lux 2" 40mm 2.0x
Open	NGC 1817	Collinder 60	Tau	7.8	16.0'	6400 ly	05h12m15.0s	+16°41'24"	19:33	19:51	20:07	11	97	14	detectable	Ultima 42mm
Open	NGC 1647	Collinder 54	Tau	6.2	40.0'	1800 ly	04h45m55.0s	+19°06'54"	19:35	19:49	20:33	5	77	14	detectable	Celestron Plössl 32mm
Gal	NGC 2742	MCG 10-13-57	UMa	12.1	2.9'x 1.5'		09h07m33.5s	+60°28'46"	20:54	21:27	22:00	2	25	31	not visible	Plössl 25mm 2.0x
Gal	NGC 2768	MCG 10-13-65	UMa	10.8	6.2'x 2.6'		09h11m37.5s	+60°02'14"	20:53	21:31	22:10	2	25	31	not visible	Ultima 42mm 2.0x
Gal	NGC 3945	MCG 10-17-96	UMa	11.7	5.9'x 3.5'		11h53m13.7s	+60°40'32"	-	-	-	2	24	31	not visible	E-Lux 2" 26mm
Gal	NGC 5322	MCG 10-20-35	UMa	11.0	5.6'x 3.5'		13h49m15.2s	+60°11'25"	01:32	02:08	02:45	2	23	41	not visible	E-Lux 2" 26mm
Gal	NGC 3813	MCG 6-26-19	UMa	12.3	2.0'x 1.0'		11h41m18.6s	+36°32'48"	22:11	00:00	01:50	6	54	32	difficult	Plössl 10mm
Gal	NGC 3941	MCG 6-26-51	UMa	11.3	3.5'x 2.3'		11h52m55.3s	+36°59'11"	22:20	00:12	02:05	6	54	32	difficult	E-Lux 2" 40mm 2.0x
Gal	NGC 3665	MCG 7-24-3	UMa	11.8	3.8'x 2.9'		11h24m43.7s	+38°45'46"	22:23	23:44	01:06	6	54	32	challenging	Plössl 25mm
Gal	NGC 3184	MCG 7-21-37	UMa	10.4	7.2'x 7.1'		10h18m17.0s	+41°25'28"	21:13	22:38	00:03	6	39	33	challenging	Ultima 42mm
Gal	NGC 3675	MCG 7-24-4	UMa	11.0	5.9'x 3.2'		11h26m08.2s	+43°35'11"	22:33	23:45	00:57	6	38	32	challenging	E-Lux 2" 26mm
Gal	NGC 3938	MCG 7-25-1	UMa	10.9	4.4'x 4.3'		11h52m49.2s	+44°07'17"	22:52	00:12	01:32	6	38	32	difficult	Celestron Plössl 32mm
Gal	NGC 4051	MCG 8-22-59	UMa	10.8	5.1'x 4.2'		12h03m09.7s	+44°31'53"	23:06	00:22	01:38	7	37	43	challenging	Celestron Plössl 32mm
Gal	NGC 3198	MCG 8-19-20	UMa	10.9	7.6'x 2.3'		10h19m55.0s	+45°32'59"	21:40	22:39	23:38	6	39	33	challenging	E-Lux 2" 32mm 2.0x
Gal	NGC 3726	MCG 8-21-51	UMa	10.7	5.2'x 3.5'		11h33m21.2s	+47°01'45"	22:46	23:53	01:00	6	38	32	challenging	E-Lux 2" 26mm
Gal	NGC 3877	MCG 8-22-2	UMa	11.8	5.0'x 1.1'		11h46m07.8s	+47°29'41"	22:14	00:05	01:57	6	38	32	very challenging	Plössl 10mm
Gal	NGC 3949	MCG 8-22-29	UMa	11.4	2.3'x 1.4'		11h53m41.9s	+47°51'28"	22:55	00:13	01:31	6	38	32	difficult	Plössl 25mm 2.0x
Gal	NGC 3893	MCG 8-22-7	UMa	10.8	3.1'x 1.6'		11h48m38.4s	+48°42'34"	22:52	00:08	01:26	6	38	32	difficult	E-Lux 2" 26mm 2.0x
Gal	NGC 4085	MCG 9-20-86	UMa	12.3	2.4'x 0.6'		12h05m22.7s	+50°21'10"	22:48	00:24	02:01	7	37	43	very challenging	Plössl 10mm
Gal	NGC 4088	Arp 18	UMa	11.3	5.8'x 2.2'		12h05m33.7s	+50°32'22"	22:50	00:25	01:59	7	37	43	very challenging	Ultima 2" LX 17 mm
Gal	NGC 4026	MCG 9-20-52	UMa	11.7	4.7'x 0.9'		11h59m25.2s	+50°57'42"	22:46	00:18	01:51	6	38	32	very challenging	Plössl 10mm
Gal	NGC 2841	MCG 9-16-5	UMa	10.0	7.8'x 3.7'		09h22m02.5s	+50°58'35"	20:52	21:42	22:32	6	39	33	challenging	Celestron Plössl 32mm
Gal	NGC 2681	MCG 9-15-41	UMa	11.2	3.6'		08h53m32.6s	+51°18'47"	19:45	21:14	22:45	6	39	22	very challenging	Celestron Plössl 32mm
Gal	NGC 3953	MCG 9-20-26	UMa	10.5	6.6'x 3.4'		11h53m49.1s	+52°19'36"	22:48	00:13	01:37	2	24	32	very challenging	E-Lux 2" 26mm
Gal	NGC 4102	MCG 9-20-94	UMa	12.1	3.0'x 1.7'		12h06m23.7s	+52°42'38"	23:04	00:26	01:48	2	24	43	not visible	Celestron Plössl 15mm
Gal	NGC 3729	MCG 9-19-117	UMa	11.7	2.9'x 2.0'		11h33m49.5s	+53°07'29"	22:33	23:53	01:13	2	24	32	not visible	Celestron Plössl 32mm 2.0x
Gal	NGC 3631	Arp 27	UMa	10.7	4.1'x 3.5'		11h21m02.4s	+53°10'08"	22:21	23:40	01:02	2	24	32	very challenging	E-Lux 2" 26mm
Gal	NGC 3992	M 109	UMa	10.5	7.4'x 4.9'	64.0 Mly	11h57m35.9s	+53°22'28"	22:55	00:16	01:40	2	24	32	not visible	E-Lux 2" 40mm
Gal	NGC 3310	Arp 217	UMa	11.2	2.2'x 2.1'		10h38m45.9s	+53°30'12"	22:24	22:58	23:33	2	25	32	very challenging	Ultima 2" LX 17 mm
Gal	NGC 5474	MCG 9-23-32	UMa	11.5	2.8'x 2.0'		14h05m01.6s	+53°39'44"	01:02	02:24	03:45	2	23	42	very challenging	Celestron Plössl 32mm 2.0x
Gal	NGC 5473	MCG 9-23-31	UMa	12.4	2.0'x 1.5'		14h04m43.4s	+54°53'37"	01:02	02:23	03:45	2	23	42	not visible	Plössl 25mm 2.0x
Gal	NGC 3982	MCG 9-20-36	UMa	11.8	2.0'x 1.8'		11h56m28.3s	+55°07'29"	22:56	00:16	01:36	2	24	32	not visible	Celestron Plössl 15mm
Gal	NGC 3998	MCG 9-20-46	UMa	11.4	2.8'x 2.2'		11h57m56.2s	+55°27'13"	23:00	00:17	01:35	2	24	32	not visible	Ultima 2" LX 17 mm

Cls	Primary ID	Alternate ID	Con	Mag	Size	Distance	RA 2000	Dec 2000	Begin	Optimum	End	S.A.	Ur. 2	PSA	Difficulty	Optimum EP
Gal	NGC 3556	M 108	UMa	10.7	5.4'x 1.9'	53.0 Mly	11h11m31.0s	+55°40'26"	22:15	23:31	00:47	2	24	32	not visible	Celestron Plössl 15mm
Gal	NGC 3079	MCG 9-17-10	UMa	11.4	7.8'x 1.3'		10h01m58.5s	+55°40'50"	21:06	22:22	23:38	2	25	33	not visible	Plössl 10mm
Gal	NGC 3898	MCG 9-19-204	UMa	11.3	3.4'x 2.0'		11h49m15.2s	+56°05'01"	22:56	00:09	01:21	2	24	32	not visible	Celestron Plössl 32mm 2.0x
Gal	NGC 5631	MCG 10-21-2	UMa	12.5	2.0'		14h26m33.3s	+56°34'58"	01:37	02:45	03:54	2	23	42	not visible	Celestron Plössl 32mm 2.0x
Gal	NGC 3619	MCG 10-16-115	UMa	12.5	3.5'x 2.8'		11h19m21.1s	+57°45'32"	22:40	23:39	00:38	2	24	32	not visible	Plössl 25mm
Gal	NGC 3613	MCG 10-16-109	UMa	11.7	3.5'x 1.8'	11h18m36.1s	+58°00'00"	22:41	23:38	00:35	2	24	32	not visible	Celestron Plössl 15mm	
Gal	NGC 3610	MCG 10-16-107	UMa	11.6	2.7'x 2.6'	11h18m25.3s	+58°47'11"	22:46	23:38	00:28	2	24	32	not visible	Ultima 42mm 2.0x	
Gal	NGC 2950	MCG 10-14-32	UMa	11.9	2.9'x 1.8'	09h42m35.1s	+58°51'05"	21:12	22:02	22:52	2	25	33	not visible	Celestron Plössl 15mm	
Gal	NGC 5054	MCG -3-34-39	Vir	11.6	4.7'x 3.0'	13h16m58.2s	-16°38'01"	22:24	01:36	04:48	14	130	47	detectable	Plössl 25mm	
Gal	NGC 4856	MCG -2-33-78	Vir	11.4	4.2'x 1.7'	12h59m21.3s	-15°02'32"	21:42	01:18	04:55	14	130	47	detectable	Celestron Plössl 15mm	
Gal	NGC 4594	M 104	Vir	9.1	9.1'x 5.6'	60.0 Mly	12h39m59.3s	-11°37'22"	20:57	00:59	05:02	14	130	47	easy	Ultima 42mm
Gal	NGC 4781	MCG -2-33-49	Vir	11.4	3.4'x 1.4'		12h54m23.6s	-10°32'11"	21:31	01:13	04:55	14	130	47	detectable	Plössl 25mm 2.0x
Gal	NGC 4699	MCG -1-33-13	Vir	10.4	4.0'x 3.0'		12h49m02.2s	-08°39'52"	21:17	01:08	05:00	14	130	47	easy	Plössl 25mm
Gal	NGC 4958	MCG -1-33-84	Vir	11.5	4.5'x 1.1'		13h05m48.7s	-08°01'12"	22:00	01:25	04:50	14	130	47	detectable	Plössl 10mm
Gal	NGC 4995	MCG -1-34-7	Vir	11.9	2.5'x 1.6'		13h09m40.9s	-07°49'56"	21:59	01:28	04:57	14	130	47	detectable	E-Lux 2" 26mm 2.0x
Glob	NGC 5634		Vir	9.5	5.5'	75000 ly	14h29m37.0s	-05°58'36"	23:34	02:48	05:27	14	129	46	detectable	Ultima 42mm
Gal	NGC 4697	MCG -1-33-10	Vir	10.1	5.8'x 3.6'		12h48m36.0s	-05°48'03"	21:24	01:08	04:52	14	130	47	detectable	Celestron Plössl 32mm
Gal	NGC 4546	MCG -1-32-27	Vir	11.3	3.2'x 1.9'		12h35m29.5s	-03°47'35"	21:22	00:55	04:26	14	111	47	detectable	Celestron Plössl 15mm
Gal	NGC 4753	MCG 0-33-16	Vir	10.9	5.9'x 2.8'		12h52m22.1s	-01°11'59"	22:01	01:11	04:23	14	110	47	detectable	Ultima 42mm 2.0x
Gal	NGC 4030	MCG 0-31-16	Vir	11.2	3.6'x 2.8'		12h00m23.4s	-01°06'03"	21:00	00:20	03:39	13	111	47	detectable	Ultima 42mm 2.0x
Gal	NGC 4666	Superwind Galaxy	Vir	11.5	4.6'x 1.5'	12h45m08.6s	-00°27'43"	21:54	01:05	04:13	14	110	47	detectable	Plössl 25mm 2.0x	
Gal	NGC 4179	MCG 0-31-38	Vir	11.8	4.3'x 1.1'	12h12m52.1s	+01°17'59"	21:31	00:32	03:33	13	111	45	detectable	Plössl 10mm	
Gal	NGC 4845	MCG 0-33-25	Vir	12.1	5.4'x 1.2'	12h58m01.2s	+01°34'33"	22:46	01:17	03:48	14	110	45	challenging	Plössl 10mm	
Gal	NGC 5846	MCG 0-38-25	Vir	11.1	3.7'x 3.5'	15h06m29.3s	+01°36'20"	00:11	03:25	05:30	14	108	55	detectable	E-Lux 2" 26mm	
Gal	NGC 5746	MCG 0-38-5	Vir	11.4	6.8'x 1.1'	14h44m56.0s	+01°57'17"	00:08	03:03	05:27	14	109	44	difficult	Plössl 10mm	
Gal	NGC 4643	MCG 0-33-5	Vir	11.6	3.2'x 2.6'	12h43m20.2s	+01°58'39"	21:55	01:02	04:09	14	110	45	detectable	Ultima 42mm 2.0x	
Gal	NGC 4536	MCG 0-32-23	Vir	11.1	7.2'x 3.0'	12h34m26.8s	+02°11'20"	22:06	00:54	03:41	14	111	45	difficult	Plössl 25mm	
Gal	NGC 4900	MCG 1-33-35	Vir	11.9	2.1'x 2.0'	13h00m39.2s	+02°30'03"	22:04	01:20	04:36	14	110	45	detectable	Celestron Plössl 32mm 2.0x	
Gal	NGC 4527	MCG 1-32-101	Vir	11.5	6.0'x 1.9'	12h34m08.6s	+02°39'09"	22:05	00:53	03:41	14	111	45	difficult	Celestron Plössl 15mm	
Gal	NGC 4636	MCG 1-32-137	Vir	10.4	7.2'x 5.6'	12h42m49.9s	+02°41'16"	21:55	01:02	04:08	14	110	45	detectable	Ultima 42mm	
Gal	NGC 4624	MCG 1-33-5	Vir	11.5	4.3'	12h45m05.9s	+03°03'20"	22:16	01:04	03:54	14	110	45	detectable	Celestron Plössl 32mm	
Gal	NGC 5576	MCG 1-37-7	Vir	11.8	2.8'x 1.9'	14h21m03.7s	+03°16'16"	23:32	02:40	05:26	14	109	44	detectable	Celestron Plössl 15mm	
Gal	NGC 5566	Arp 286	Vir	11.4	5.8'x 2.0'	14h20m20.0s	+03°56'01"	23:48	02:39	05:21	14	109	44	detectable	Celestron Plössl 32mm 2.0x	
Gal	NGC 4303	M 61	Vir	10.2	6.3'x 5.8'	70.0 Mly	12h21m55.0s	+04°28'29"	21:25	00:41	03:57	13	111	45	detectable	Ultima 42mm
Gal	NGC 5364	MCG 1-36-3	Vir	11.1	4.9'x 2.6'		13h56m11.9s	+05°00'54"	23:12	02:15	05:14	14	109	44	detectable	Ultima 42mm 2.0x
Gal	NGC 5363	MCG 1-36-2	Vir	11.1	4.4'x 2.9'		13h56m07.2s	+05°15'17"	23:10	02:15	05:16	14	109	44	detectable	Plössl 25mm
Gal	NGC 4273	MCG 1-32-8	Vir	12.3	2.0'x 1.5'		12h19m55.9s	+05°20'39"	21:34	00:39	03:44	13	111	45	detectable	Plössl 25mm 2.0x
Gal	NGC 4281	MCG 1-32-12	Vir	12.3	3.1'x 1.7'		12h20m21.6s	+05°23'12"	21:59	00:40	03:20	13	111	45	difficult	E-Lux 2" 26mm 2.0x
Gal	NGC 4261	MCG 1-31-52	Vir	11.4	4.2'x 3.4'	12h19m23.3s	+05°49'33"	21:47	00:38	03:32	13	91	45	detectable	E-Lux 2" 26mm	
Gal	NGC 4570	MCG 1-32-114	Vir	11.7	3.8'x 0.9'	12h36m53.5s	+07°14'46"	21:55	00:56	03:57	14	90	45	detectable	Plössl 10mm	
Gal	NGC 4365	MCG 1-32-48	Vir	10.5	6.2'x 4.6'	12h24m28.3s	+07°19'03"	21:39	00:43	03:48	13	91	45	detectable	E-Lux 2" 40mm	
Gal	NGC 4526	MCG 1-32-100	Vir	10.6	7.9'x 2.9'	12h34m03.0s	+07°41'57"	21:57	00:53	03:48	14	91	45	detectable	Plössl 25mm	
Gal	NGC 4535	Lost Galaxy	Vir	10.5	7.2'x 6.3'	12h34m20.3s	+08°11'52"	22:02	00:53	03:45	14	91	45	detectable	Ultima 42mm	
Gal	NGC 4698	MCG 2-33-24	Vir	11.6	3.8'x 2.0'	12h48m23.0s	+08°29'14"	22:14	01:07	04:01	14	90	45	detectable	Celestron Plössl 32mm 2.0x	
Gal	NGC 4442	MCG 2-32-68	Vir	11.4	4.8'x 2.1'	12h28m03.9s	+09°48'13"	21:58	00:47	03:37	13	91	45	detectable	Ultima 2" LX 17 mm	

Cls	Primary ID	Alternate ID	Con	Mag	Size	Distance	RA 2000	Dec 2000	Begin	Optimum	End	S.A.	Ur. 2	PSA	Difficulty	Optimum EP
Gal	NGC 4596	MCG 2-32-170	Vir	11.4	4.0'x 3.3'		12h39m56.1s	+10°10'32"	22:11	00:59	03:47	14	90	45	detectable	E-Lux 2" 26mm
Gal	NGC 4429	MCG 2-32-61	Vir	11.0	5.6'x 2.5'		12h27m26.6s	+11°06'27"	21:57	00:46	03:36	13	91	45	detectable	E-Lux 2" 40mm 2.0x
Gal	NGC 4660	MCG 2-33-6	Vir	12.1	2.1'x 1.6'		12h44m32.0s	+11°11'26"	22:07	01:04	04:01	14	90	45	detectable	Plössl 25mm 2.0x
Gal	NGC 4762	MCG 2-33-33	Vir	11.1	8.5'x 3.2'		12h52m55.9s	+11°13'50"	22:48	01:12	03:35	14	90	45	difficult	E-Lux 2" 26mm
Gal	NGC 4754	MCG 2-33-30	Vir	11.5	4.4'x 2.3'		12h52m17.5s	+11°18'50"	22:29	01:11	03:54	14	90	45	detectable	E-Lux 2" 40mm 2.0x
Gal	NGC 4371	MCG 2-32-33	Vir	11.8	3.9'x 1.9'		12h24m55.4s	+11°42'15"	22:04	00:44	03:25	13	91	45	difficult	Celestron Plössl 15mm
Gal	NGC 4550	MCG 2-32-147	Vir	12.5	3.2'x 0.7'		12h35m30.6s	+12°13'15"	22:28	00:55	03:20	14	91	45	difficult	Plössl 10mm
Gal	NGC 4478	MCG 2-32-99	Vir	12.2	1.7'x 1.4'		12h30m17.5s	+12°19'40"	21:54	00:49	03:45	14	91	45	detectable	Plössl 25mm 2.0x
Gal	NGC 4438	Arp 120	Vir	10.9	8.9'x 5.1'		12h27m45.9s	+13°00'32"	22:27	00:47	03:07	13	91	45	difficult	Ultima 42mm
Gal	NGC 4435	Arp 120	Vir	11.5	3.0'x 2.0'		12h27m40.5s	+13°04'45"	21:56	00:47	03:39	13	91	45	detectable	Celestron Plössl 32mm 2.0x
Gal	NGC 4654		Vir	11.5	4.0'x 2.5'		12h43m56.6s	+13°07'35"	22:21	01:03	03:44	14	90	45	detectable	E-Lux 2" 40mm 2.0x
Gal	NGC 4216	MCG 2-31-72	Vir	11.0	7.9'x 1.9'		12h15m54.3s	+13°09'00"	21:57	00:36	03:12	13	91	45	difficult	Celestron Plössl 15mm
Gal	NGC 4866	MCG 2-33-45	Vir	12.0	6.0'x 1.0'		12h59m27.0s	+14°10'14"	23:10	01:18	03:28	14	90	45	challenging	Plössl 10mm
Open	NGC 6802	Collinder 400	Vul	11.7	5.0'	3700 ly	19h30m35.0s	+20°15'42"	04:01	05:16	05:35	8	66	64	not visible	E-Lux 2" 40mm
Open	NGC 6830	Collinder 406	Vul	8.9	5.0'	5300 ly	19h50m59.0s	+23°06'00"	04:31	05:17	05:33	8	66	64	detectable	E-Lux 2" 40mm
Open	NGC 6823	Collinder 405	Vul	7.1	6.0'	10000 ly	19h43m09.0s	+23°18'00"	04:10	05:17	05:36	8	66	64	easy	Ultima 42mm
Open	NGC 6885	Collinder 417	Vul	5.7	20.0'	1900 ly	20h12m01.0s	+26°28'42"	04:42	05:20	05:34	9	66	64	easy	Ultima 42mm
Open	NGC 6882		Vul		5.0'		20h11m47.0s	+26°48'42"	04:40	05:20	05:36	9	66	64	unknown	E-Lux 2" 40mm
Open	NGC 6940	Collinder 424	Vul	7.2	25.0'	2500 ly	20h34m26.0s	+28°17'00"	05:12	05:22	05:29	9	66	64	challenging	Ultima 42mm

Symbol Key:

Open	Open Cluster	Doub	Double or Multiple Star	Con	Constellation
Glob	Globular Cluster	Bin	Binary Star (with orbit)	MSS	Major Solar System Object
PNe	Planetary Nebula	Var	Variable Star	Com	Comet
Neb	Diffuse Nebula	DVar	Double & Variable	MP	Minor Planet
Gal	Galaxy	BVar	Binary & Variable		
GalCl	Galaxy Cluster				
Dark	Dark Nebula				
QSO	Quasar				

Observation status: Y = observed, N = not observed, R = re-observe

Quality of opportunity (Q): A = optimum, B = near optimum, F = far from optimum