

The Eldorado Star Party

Binocular Observing Club Programs

Purpose and Rules

Welcome to the ESP Binocular Club! The main purpose of these observing programs is to give you an opportunity to observe through binoculars some of the showpiece objects of the fall season under the pristine skies of Southwest Texas. All six binocular observing programs offered during previous Eldorado Star Parties are still available.

The rules are simple; just observe the required number of objects for each program while you are at the Eldorado Star Party to receive a club badge for that particular program. Descriptions and instructions for each available program are given below. Observing lists for the six programs are also included.

Observing Programs

***Binocular Banquet* (ESP 2004)**

“Binocular Banquet” is an easy program consisting of 15 objects. There are 25 objects on the list, but you need only observe any 15 of your choice. This program was originally offered at ESP 2004. Thanks to John Waggoner for putting this program together for us.

***Binocular Asterisms* (ESP 2011)**

In response to many requests for “something different”, this program offers the opportunity to chase down some lovely asterisms. The list for this program contains twenty-five objects, all observable with binoculars of modest size. While the location of the center of each object is specified, some imagination on your part will be required in order to “see” the figure suggested. Most will pop out easily, but others may be elusive. If you get stumped, you can always consult the “cheat sheets” available on the ESP website at <http://eldoradostarparty.org/espobserve2011.pdf>. You will have to observe any 15 of your choice to receive a badge. Thanks to Blackie Bolduc for putting this program together for us.

***Clouds I Have Known* (ESP 2012)**

This binocular program is a list consisting of 25 nebulae, all observable with binoculars of modest size. You have to observe any 15 of your choice to qualify for a badge. Cheat Sheets are available on the web at <http://eldoradostarparty.org/espobserve2012cheat.pdf>. Thanks to Blackie Bolduc for putting this program together for us.

***Great Balls of Fire* (ESP 2013)**

This binocular program is a list of 24 objects called “Great Balls of Fire”. All of the objects on this list are globular clusters and should be observable from the Eldorado Star Party with a good pair of binoculars. You need to observe only 15 out of the 24 objects to qualify for the Binocular Observing Club badge. Cheat sheets for finding these objects are available on the ESP website at <http://eldoradostarparty.org/espobserve2013cheat.pdf>.

Mining the Milky Way (ESP 2014)

The binocular club program, “Mining the Milky Way,” consists of 24 objects. All of the objects in the list for this program are located in the band of the Milky Way and should be observable from the Eldorado Star Party with a good pair of binoculars. You need to observe only 20 out of the 24 objects to qualify for the badge. Cheat sheets for finding these objects are available on the ESP website http://eldoradostarparty.org/espobserve2014cheat_mining.pdf.

Binormous (ESP 2015)

The binocular club program, “Binormous,” consists of 25 objects. All of the objects on the list are large and require a field of view of 1 degree or greater to observe them. Because of their apparent size, these objects are best shown in binoculars which can take in a much larger area of the sky than most telescopes. You need to observe only 21 out of the 25 objects with binoculars to qualify for the club badge.

Club Badges

Any size binocular can be used to complete the binocular observing programs. Again, all observations must be made at the Eldorado Star Party in order to qualify for an ESP observing badge. To receive your badge, please turn in your observations to Bill Flanagan any time during ESP. I will try to be available on the observing field as well as in the Lodge prior to the meals and talks. If you finish the list on the last night of ESP, or I am not available to give you your badge, just mail a copy of your observations to me at 815 Azalea, Houston, TX 77018, and I will see that you get your badge.

Good Luck and Good Observing!

Binocular Banquet

Object	Type	R.A.	Dec	Con	Size	Mag	Date	Time
M13	Glob	16 42	+36 28	Her	17'	5.7		
M92	Glob	17 17	+43 08	Her	11'	6.4		
Cr399 (Coathanger)	OCI	19 25	+20 11	Vul	60'	3.6		
M27	PIN	20 00	+22 43	Vul	6'	7.3		
M31	Gal	00 43	+41 16	And	178'	4.5		
M15	Glob	21 30	+12 10	Peg	12'	6.0		
M39	OCI	21 32	+48 26	Cyg	31'	4.6		
M2	Glob	21 34	-00 49	Aqr	13'	6.4		
M30	Glob	21 40	-23 11	Cap	11'	7.3		
NGC7789	OCI	23 57	+56 44	Cas	15'	6.7		
NGC457	OCI	01 19	+58 20	Cas	13'	6.4		
M103	OCI	01 33	+60 42	Cas	6'	7.0		
M33	Gal	01 34	+30 39	Tri	67'	5.7		
NGC663	OCI	01 46	+61 15	Cas	16'	7.1		
NGC869	OCI	02 19	+57 09	Per	29'	5.3		
NGC884	OCI	02 22	+57 07	Per	29'	6.1		
M34	OCI	02 42	+42 47	Per	35'	6.0		
M45	OCI	03 47	+24 07	Tau	110'	1.4		
Mel 25 (Hyades)	OCI	04 27	+16 00	Tau	330'	0.5		
M38	OCI	05 29	+35 50	Aur	21'	7.0		
M36	OCI	05 36	+34 08	Aur	12'	6.5		
M37	OCI	05 52	+32 33	Aur	24'	6.0		
M35	OCI	06 09	+24 20	Gem	28'	5.5		
M42	DfN	05 35	-05 23	Ori	85'	5.0		
M41	OCI	06 47	-20 44	Cma	38'	4.5		

Binocular Asterisms – 1 of 2

#	Name	R.A.	Dec	Size	Con	Notes	Date/time observed
1	Home Plate	00h 07.5'	+40° 35'	44'x31'	And	5 stars of mag.6-7 in shape of a pentagon.	
2	Queen's Kite	01h 00'	+58° 30'	220'x160'	Cas	Rough pentagon of stars including Chi Cassiopae	
3	Golf Putter	01h 52'	+37° 30'	20'x95'	And	Line of stars for the clubhead; NGC752 is the ball.	
4	Diamond Ring	02h 32'	+89° 00'	45'	UMi	AKA the engagement ring with Polaris the diamond.	
5	Chi 1-2-3	03h 27'	-35° 00'	30'x30'	For	An arrowhead shaped group 1° W of galaxy NGC1365.	
6	Kemble's Kite	03h 28'	+72° 00'	90'x30'	Cas	Diamond shape kite with tail.	
7	Kemble's Cascade	04h 00'	+63° 00'	150'	Cam	Chain of stars (the waterfall) that ends in open cluster NGC1502 the pool.	
8	Davis' Dog	04h 22'	+21° 25'	200x90'	Tau	Includes 5th mag. stars 50, 53, 65, 67, and 72 Tauri.	
9	Flying Minnow	05h 19'	+33° 40'	75'	Aur	Includes 16, 18, and 19 Aurigae; SE of Flaming Star Nebula.	
10	Smiley Face	05h 28'	+35° 00'	90'x30'	Aur	SW of M35; AKA Cheshire Cat.	
11	Lamda-Lamda	05h 36'	+10° 00'	60'	Ori	Lamda Orionis + Collinder 69, in shape of Greek letter Lamda.	

Binocular Asterisms – 2 of 2

#	Name	R.A.	Dec	Size	Con	Notes	Date/time observed
12	Spermatozoon	05h 43'	+21° 35'	30'	Tau	Row of stars 35' E of Zeta Tauri, wi/brightest at tip.	
13	Zig Zag	16h 18'	+13° 00'	100'x15'	Her	Wiggly line of 8th & 9th mag. stars.	
14	Mini-Coathanger	16h 29'	+80° 15'	15'	UMi	Fainter copy of original in Vulpecula.	
15	Backwards 5	16h 37'	+31° 05'	20'	Her	Pattern of 7-10.6 mag. stars.	
16	Little Queen	18h 35'	+72° 25'	10'x20'	Dra	Little Cassiopeia; AKA Kemble 2.	
17	Button Hook	18h 43'	-06° 50'	120'x120'	Sct	Letter J or fishhook shape.	
18	Coathanger	19h 25'	+20° 04'	90'x60'	Vul	AKA Collinder 39 or Brocchi's Cluster.	
19	Red-Necked Emu	20h 13'	+36° 30'	45'	Cyg	Takes imagination to see a large flightless bird.	
20	Theta Delphini	20h 38'	+13° 10'	60'x30'	Del	Spray of faint stars cut out from Delphinus, including 55 Delphini.	
21	Little Orion	20h 56'	+43° 34'	60'x25'	Cyg	With 7 stars, looks like like original.	
22	Dolphin's Diamonds	21h 07'	+16° 20'	15'	Del	Aka The Toadstool; W of NGC7025.	
23	Horseshoe	21h 08'	+47° 14'	25'	Cyg	Stars of 10-11 mag.	
24	Lucky 7	23h 03'	+59° 30'	70'x125'	Cas	Includes 1 & 2 Cassiopeiae	
25	Airplane	23h 20'	+62° 20'	60'	Cas	8 stars of 7-8 mag. located 40 arcminutes W of M52.3	

Binocular – Clouds I Have Known

ID	Name/Type of Neb	RA	Dec	Size arc min	Mag	Con	Date/Time Observed
B78	Pipe Neb	17h 33'	-26° 00'	200x140	6.3	Oph	
M20	Trifid Neb	18h 02'	-23° 02'	29	6.3	Sgr	
M8	Lagoon Neb	18h 04'	-24° 23'	90	5.0	Sgr	
M16	Eagle Neb	18h 18'	-13° 46'	35	6.5	Ser	
M17	Omega Neb	18h 20'	-16° 10'	11	7.0	Sgr	
M27	Dumbbell Neb	20h 00'	+22° 43'	8	7.5	Vul	
B145	<i>dark</i>	20h 03'	+37° 40'	45		Cyg	
NGC6960	West Veil Neb	20h 46'	+30° 36'	70		Cyg	
IC5070	Pelican Neb	20h 51'	+44° 21'	60x50		Cyg	
NGC6992	East Veil Neb	20h 56'	+31° 45'	60		Cyg	
NGC7000	North America Neb	20h 59'	+44° 31'	120		Cyg	
NGC7009	Saturn Neb	21h 04'	-11° 22'	2	8.5	Aqr	
IC1396	Elephant Trunk Neb	21h 39'	+57° 29'	170	3.5	Cep	
B168	<i>dark</i>	21h 53'	+47° 16'	10		Cyg	
NGC7293	Helix Neb	22h 30'	-20° 50'	13		Aqr	
NGC246	Skull Neb	00h 47'	-11° 52'	4	8.0	Cet	
IC1848	Soul Neb	02h 51'	+60° 26'	60x30		Cas	
NGC1333	<i>emission</i>	03h 29'	+31° 25'	9		Per	
NGC1535	Cleopatra's Eye Neb	04h 14'	-12° 44'	1x1	9.6	Eri	
IC2118	Witch Head Neb	05h 05'	-07° 15'	180x60		Eri	
M1	Crab Neb	05h 34'	+22° 01'	6x4	8.4	Tau	
NGC1973	Running Man Neb	05h 35'	-04° 44'	40x25		Ori	
M42	Great Orion Neb	05h 35'	-05° 23'	65x60	4.0	Ori	
NGC1999	<i>dark+bright</i>	05h37'	-06° 43'	16x12		Ori	
NGC2174	Monkey Head Neb	06h 09'	+20° 30'	40	6.8	Ori	

Great Balls of Fire (in my Binoculars)

Primary ID	Alternate ID	Type	Con	RA 2000	Dec 2000	Mag	Size	Date	Time
M 13	Keystone Cluster	Glob	Her	16h41m41s	+36°27'36"	5.8	20.0'		
NGC 6229		Glob	Her	16h46m59s	+47°31'42"	9.4	4.5'		
M 12	NGC 6218	Glob	Oph	16h47m14s	-01°56'48"	6.1	16.0'		
M 10	NGC 6254	Glob	Oph	16h57m09s	-04°06'00"	6.6	20.0'		
M 92	NGC 6341	Glob	Her	17h17m07s	+43°08'12"	6.5	14.0'		
M 14	NGC 6402	Glob	Oph	17h37m36s	-03°14'48"	7.6	11.0'		
NGC 6535		Glob	Ser	18h03m51s	-00°17'48"	9.3	3.4'		
NGC 6544		Glob	Sgr	18h07m20s	-24°59'54"	7.5	9.2'		
M 28	NGC 6626	Glob	Sgr	18h24m33s	-24°52'12"	6.9	13.8'		
M 22	NGC 6656	Glob	Sgr	18h36m24s	-23°54'12"	5.2	32.0'		
NGC 6712		Glob	Sct	18h53m04s	-08°42'18"	8.1	9.8'		
NGC 6717	Palomar 9	Glob	Sgr	18h55m06s	-22°42'06"	8.4	5.4'		
M 54	NGC 6715	Glob	Sgr	18h55m03s	-30°28'42"	7.7	12.0'		
M 56	NGC 6779	Glob	Lyr	19h16m36s	+30°11'06"	8.4	8.8'		
M 55	NGC 6809	Glob	Sgr	19h40m00s	-30°57'42"	6.3	19.0'		
M 71	NGC 6838	Glob	Sge	19h53m46s	+18°46'42"	8.4	7.2'		
M 75	NGC 6864	Glob	Sgr	20h06m05s	-21°55'18"	8.6	6.8'		
NGC 6934		Glob	Del	20h34m11s	+07°24'18"	8.9	7.1'		
M 72	NGC 6981	Glob	Aqr	20h53m28s	-12°32'12"	9.2	6.6'		
M 15	NGC 7078	Glob	Peg	21h29m58s	+12°10'00"	6.3	18.0'		
M 2	NGC 7089	Glob	Aqr	21h33m27s	-00°49'24"	6.6	16.0'		
M 30	NGC 7099	Glob	Cap	21h40m22s	-23°10'42"	6.9	12.0'		
M 79	NGC 1904	Glob	Lep	05h24m11s	-24°31'30"	7.7	9.6'		
NGC 2419	Intergalactic Wanderer	Glob	Lyn	07h38m08s	+38°52'54"	10.3	4.6'		

Mining the Milky Way

Primary ID	Alternate ID	Type	Con	RA 2000	Dec 2000	Mag	Size	Date	Time
Swan Nebula	M 17	Neb	Sgr	18h20m48s	-16°11'00"	6.0	11.0'		
M 25	IC 4725	Open	Sgr	18h31m47s	-19°07'00"	6.2	29.0'		
M 22	NGC 6656	Glob	Sgr	18h36m24s	-23°54'12"	5.2	32.0'		
IC 4756	Collinder 386	Open	Ser	18h39m00s	+05°27'00"	5.4	39.0'		
M 26	NGC 6694	Open	Sct	18h45m18s	-09°23'00"	9.0	7.0'		
B 111		Dark	Sct	18h50m00s	-05°00'00"		120.0'		
Wild Duck Cluster	M 11	Open	Sct	18h51m05s	-06°16'12"	6.1	32.0'		
B 119a		Dark	Sct	18h54m39s	-05°10'00"		30.0'		
Collinder 399	OCL 113	Open	Vul	19h25m24s	+20°11'00"	4.8	89.0'		
Albireo	β Cyg	DStar	Cyg	19h30m43s	+27°57'35"	3.1			
Barnard's E	B 143	Dark	Aql	19h40m42s	+10°57'00"		30.0'		
M 71	NGC 6838	Glob	Sge	19h53m46s	+18°46'42"	8.4	4.0'		
M 29	NGC 6913	Open	Cyg	20h23m57s	+38°30'30"	7.5	10.0'		
Veil Nebula (East)	NGC 6992	Neb	Cyg	20h56m24s	+31°43'00"	7.0	60.0'		
North American Neb.	NGC 7000	Neb	Cyg	20h58m30s	+44°22'28"	4.0	120.0'		
M 39	NGC 7092	Open	Cyg	21h31m48s	+48°26'00"	5.3	29.0'		
NGC 7243	Collinder 448	Open	Lac	22h15m08s	+49°53'54"	6.7	29.0'		
M 52	NGC 7654	Open	Cas	23h24m48s	+61°35'36"	8.2	15.0'		
NGC 7686	Collinder 456	Open	And	23h30m07s	+49°08'00"	5.6	14.0'		
NGC 7789	OCL 269	Open	Cas	23h57m24s	+56°42'30"	7.5	25.0'		
NGC 103	Collinder 1	Open	Cas	00h25m16s	+61°19'24"	5.8	4.0'		
M 103	NGC 581	Open	Cas	01h33m23s	+60°39'00"	6.9	5.0'		
NGC 663	Collinder 20	Open	Cas	01h46m09s	+61°14'06"	6.4	14.0'		
Double Cluster	Caldwell 14	Open	Per	02h20m00s	+57°08'00"	4.3	60.0'		

Binormous

Primary ID	Alternate ID	Type	Con	RA 2000	Dec 2000	Mag	Size	Date	Time
IC 4665	Collinder 349	Open	Oph	17h46m18s	+05°43'00"	5.3	70'		
B 111		Dark	Sct	18h50m00s	-05°00'00"	Opa 6	120'		
Collinder 399	OCL 113	Open	Vul	19h25m24s	+20°11'00"	4.8	89'		
Barnard's E	B 142/143	Dark	Aql	19h40m25s	+10°46'00"	Opa 6	66' x 45'		
Northern Coalsack		Dark	Cyg	20h40m00s	+41°00'00"	Opa 1	8.0°		
Veil Complex		Neb	Cyg	20h51m20s	+31°05'23"	7.0	3.2°		
North American Neb	NGC 7000	Neb	Cyg	20h58m30s	+44°22'28"	4.0	120'		
Lucky 7		AST	Cas	23h03m00s	+59°30'00"	5.0	2.1°		
Andromeda Galaxy	M 31	Gal	And	00h42m44s	+41°16'07"	4.3	2.6° x 1.1°		
Pinwheel Galaxy	M 33	Gal	Tri	01h33m50s	+30°39'36"	6.4	62'x 36'		
Muscle Man Cluster	Stock 2	Open	Cas	02h14m43s	+59°29'06"	4.4	60'		
Double Cluster		Open	Per	02h20m00s	+57°08'00"	4.3	60'		
Collinder 39	Melotte 20	Open	Per	03h24m19s	+49°51'42"	2.3	5.0°		
Kemble's Kite		AST	Cas	03h28m00s	+72°00'00"	6.0	90'		
Pleiades	M 45	Open	Tau	03h47m00s	+24°07'00"	1.5	120'		
Kemble's Cascade		AST	Cam	04h00m00s	+63°00'00"	6.0	2.5°		
California Nebula	NGC 1499	Neb	Per	04h03m12s	+36°22'00"	5.0	120' x 41'		
Davis' Dog		AST	Tau	04h22m30s	+21°25'00"	5.0	3.5° x 1.5°		
Hyades	Collinder 50	Open	Tau	04h26m54s	+15°52'00"	0.8	5.5°		
Smiley Face		AST	Aur	05h27m00s	+35°00'00"	6.0	100'		
Orion's Sword		Neb	Ori	05h35m05s	-05°07'42"	3.0	120' x 50'		
Collinder 69	OCL 479	Open	Ori	05h35m06s	+09°56'00"	2.8	70'		
Orion's Belt	Collinder 70	Open	Ori	05h35m30s	-01°06'00"	0.6	2.3°		
Rosette	NGC 2237	Neb	Mon	06h32m02s	+04°59'10"	5.5	70' x 60'		
Beehive	M 44	Open	Cnc	08h40m24s	+19°40'00"	3.9	70'		