

Celestial Objects for Observation

The Brightest Stars

Rank	Star Name	Bayer Name	Visual Mag.	Abs. Mag.	Dist.	Spectral Type	Lum.	Mass	Diam.	RA*	Dec*
					(ly)		(Sol)	(Sol)	(Sol)	(hr_min)	(deg)
1	Sirius	Alp CMa	-1.44	1.45	8.6	A1V	25	2	1.7	06h 45m	-16.7°
2	Canopus	Alp Car	-0.62	-5.53	310	F0Ib	13600	8.5	65	06h 24m	-52.7°
3	Rigel Kent.	Alp Cen	-0.28c	4.34	4.4	G2V+K1V	1.5	1.1	1.2	14h 40m	-60.8°
4	Arcturus	Alp Boo	-0.05v	-0.31	36.7	K2III	170	1.1	26	14h 16m	+19.2°
5	Vega	Alp Lyr	0.03v	0.58	25.3	A0V	37	2.1	2.3	18h 37m	+38.8°
6	Capella	Alp Aur	0.08v	-0.48	42.2	G5III+G0II	79	2.7	12	05h 17m	+46.0°
7	Rigel	Bet Ori	0.18v	-6.69	770	B8Ia	66000	17	78	05h 15m	-8.2°
8	Procyon	Alp CMi	0.4	2.68	11.4	F5IV-V	7.7	1.5	2	07h 39m	+5.2°
9	Betelgeuse	Alp Ori	0.45v	-5.14	430	M2Ib	105000	18	936	05h 55m	+7.4°
10	Achernar	Alp Eri	0.45v	-2.77	144	B3V	3300	8-Jun	10	01h 38m	-57.2°
11	Hadar	Bet Cen	0.61v	-5.42	525	B1III	16000	10.7	8	14h 04m	-60.4°
12	Altair	Alp Aql	0.76v	2.2	16.8	A7V	10.6	1.8	1.8	19h 51m	+8.9°
13	Acrux	Alp Cru	0.77c	-4.19	320	B0.5IV+B1V	25000	14	?	12h 27m	-63.1°
14	Aldebaran	Alp Tau	0.87	-0.63	65.1	K5III	425	1.7	44.2	04h 36m	+16.5°
15	Spica	Alp Vir	0.98v	-3.55	260	B1V+B2V	13400	11	7.8	13h 25m	-11.2°
16	Antares	Alp Sco	1.06v	-5.28	605	M1Ib+B4V	65000	15.5	800	16h 29m	-26.4°
17	Pollux	Bet Gem	1.16	1.09	33.7	K0III	32	1.9	8	07h 45m	+28.0°
18	Fomalhaut	Alp PsA	1.17	1.74	25.1	A3V	17.7	2.1	1.8	22h 58m	-29.6°
19	Deneb	Alp Cyg	1.25v	-8.73	3200	A2Ia	54000	20	110	20h 41m	+45.3°
20	Mimosa	Bet Cru	1.25v	-3.92	350	B0.5III	34000	14	8	12h 48m	-59.7°
21	Regulus	Alp Leo	1.36	-0.52	77.5	B7V	150	3.5	3.2	10h 08m	+12.0°
22	Adhara	Eps CMa	1.5	-4.1	430	B2II	20000	10	?	06h 59m	-29.0°
23	Castor	Alp Gem	1.58c	0.59	51.5	A1V+A2V	30/14	2.2/1.7	2.3/1.6	07h 35m	+31.9°
24	Gacrux	Gam Cru	1.59v	-0.56	87.9	M3.5III	1500	3	113	12h 31m	-57.1°
25	Shaula	Lam Sco	1.62v	-5.05	700	B2IV	?	10.4	6.2	17h 34m	-37.1°
26	Bellatrix	Gam Ori	1.64	-2.72	240	B2III	21500	8	5.7	05h 25m	+6.3°
27	Elnath	Bet Tau	1.65	-1.37	131	B7III	70	4.5	5.5	05h 26m	+28.6°
28	Miaplacidus	Bet Car	1.67	-0.99	111	A2III	210	3	5.7	09h 13m	-69.7°
29	Alnilam	Eps Ori	1.69v	-6.38	1300	B0Ia	375000	40	26	05h 36m	-1.2°
30	Alnair	Alp Gru	1.73	-0.73	101	B7IV	380	4	3.6	22h 08m	-47.0°
31	Alnitak	Zet Ori	1.74c	-5.26	820	O9.5Ib+B0I	100000	28	20	05h 41m	-1.9°
32	Regor	Gam Vel	1.75v	-5.31	840	WC8+O9Ib	100000	30	13	08h 10m	-47.3°
33	Alioth	Eps UMa	1.76v	-0.21	80.9	A0IV	108	3	3.7	12h 54m	+56.0°
34	Kaus Aust.	Eps Sgr	1.79	-1.44	145	B9.5III	375	5	7	18h 24m	-34.4°
35	Mirfak	Alp Per	1.79	-4.5	590	F5Ib	5400	11	56	03h 24m	+49.9°
36	Dubhe	Alp UMa	1.81	-1.08	124	K0III+F0V	300	4	30	11h 04m	+61.8°
37	Wezen	Del CMa	1.83	-6.87	1800	F8Ia	50000	17	200	07h 08m	-26.4°
38	Alkaid	Eta UMa	1.85	-0.6	101	B3V	700	6	1.8	13h 48m	+49.3°
39	Sargas	The Sco	1.86c	-2.75	270	F1II	960	3.7	20	17h 37m	-43.0°
40	Avior	Eps Car	1.86v	-4.58	630	K3II+B2V	6/11 K	4.6/16	153/6	08h 23m	-59.5°
41	Menkalinan	Bet Aur	1.90v	-0.1	82.1	A2IV	48	2.4	2.8	06h 00m	+44.9°
42	Atria	Alp TrA	1.91	-3.62	415	K2Ib-II	5500	7	?	16h 49m	-69.0°
43	Koo She	Del Vel	1.93	-0.01	79.7	A0V	?	?	?	08h 45m	-54.7°
44	Alhena	Gam_Gem	1.93	-0.6	105	A0IV	160	2.8	4.4	06h 38m	+16.4°
45	Peacock	Alp Pav	1.94	-1.81	180	B0.5V+B2V	2100	5	4.4	20h 26m	-56.7°
46	Polaris	Alp UMi	1.97v	-3.64	430	F7Ib-II	2200	7.5	30	02h 32m	+89.3°
47	Mirzam	Bet CMa	1.98v	-3.95	500	B1III	19000	?	?	06h 23m	-18.0°
48	Alphard	Alp Hya	1.99	-1.69	180	K3II	?	3	50.5	09h 28m	-8.7°
49	Algieba	Gam Leo	2.01	-0.92	126	K0III+G7II	320/50	1.23	32	10h 20m	+19.8°
50	Hamal	Alp Ari	2.01	0.48	65.9	K2III	90	2	15	02h 07m	+23.5°

<http://astropixels.com/stars/brightstars.html>

*RA/DEC J2000

Double and Multiple Stars

Star	J2000		Magnitudes		Sep.	P.A.	Color diff.	Optimum mag.	Notes ^[1]
	R.A.	DEC.							
η Cas	0h 49.1m	+57° 49'	3.5	7.2	12.9"	317°	2	58x	Yellow/Purple
36 And	0h 55.0m	+23° 38'	5.5	5.9	1.0"	315°	1	750x	
ψ Psc	1h 05.7m	+21° 28'	5.3	5.6	29.8"	159°	0	25x	
ζ Psc	1h 13.7m	+7° 35'	5.2	6.4	23.2"	63°	1	32x	pale Yellow/pale lilac
χ Ceti	1h 49.6m	-10° 41'	4.7	6.7	184.0"	250°	1	4x	
ι Ari	1h 50.1m	+22° 17'	5.8	6.6	2.8"	165°	3	268x	
γ Ari	1h 53.5m	+19° 18'	3.9	3.9	7.7"	360°	0	97x	Matched White
56 And	1h 56.2m	+37° 15'	5.7	5.9	199.5"	298°	0	4x	
λ Ari	1h 57.9m	+23° 36'	4.8	6.7	37.8"	47°	1	20x	
α Psc	2h 02.0m	+2° 46'	3.8	4.9	1.8"	271°	0	417x	Tight
γ And (Almach)	2h 03.9m	+42° 20'	2.1	4.8	9.8"	64°	4	77x	Orange/Blue-blue star is double
ι Cas	2h 29.1m	+67° 24'	4.5	6.9	2.5"	230°	0	300x	tight triple
ε Ari	2h 59.2m	+21° 20'	4.6	5	1.4"	209°	0	536x	
11-12 Cam	5h 06.1m	+58° 58'	5.2	6.1	178.7"	9°	4	4x	
β Ori (Rigel)	5h 14.5m	-8° 12'	0.1	6.8	9.1"	203°	0	82x	
22 Ori	5h 21.8m	-0° 23'	4.7	5.7	242.0"	225°	0	3x	
η Ori	5h 24.5m	-2° 24'	3.4	4.7	1.7"	77°	0	441x	both white, close
32 Ori	5h 30.8m	+5° 57'	4.2	5.6	1.1"	46°	0	682x	
δ Ori (Mintaka)	5h 32.0m	-0° 18'	2.2	6.8	53.2"	0°	1	14x	
λ Ori	5h 35.1m	+9° 56'	3.6	5.4	4.3"	44°	0	174x	Yellow/Purple
Σ747	5h 35.0m	-6° 00'	4.8	5.7	35.8"	224°	0	21x	
θ Ori (Trapezium)	5h 35.3m	-5° 23'	5	7.9	9.0"	32°	0	83x	
			5	5.1	12.9"	132°	0	58x	
			5	6.7	21.4"	96°	0	35x	
42-45 Ori	5h 35.4m	-4° 50'	4.6	5.2	252.0"	100°	2	3x	
ι Ori	5h 35.4m	-5° 54'	2.9	7	10.9"	142°	0	69x	
σ Ori	5h 38.7m	-2° 36'	3.7	8.8	11.4"	238°	0	66x	
			3.7	6.7	13.0"	84°	0	58x	
			3.7	6.3	41.6"	61°	0	18x	
ζ Ori (Alnitak)	5h 40.8m	-1° 57'	1.7	3.9	2.3"	165°	0	326x	Blue/White+3rd star
γ Lep	5h 44.5m	-22° 27'	3.6	6.3	97.0"	350°	1	8x	pale yellow and garnet, easy
52 Ori	5h 48.0m	+6° 27'	5.3	5.3	1.2"	218°	0	625x	
β Mon	6h 28.8m	-7° 02'	4.7	5.2	7.2"	133°	0	104x	beautiful triple
			5.2	6.2	2.9"	108°	0	259x	
12 Lyn	6h 46.2m	+59° 27'	5.4	6	1.7"	68°	0	441x	Triple
			5.4	7.3	8.9"	310°	0	84x	
μ CMa	6h 56.1m	-14° 03'	5	7	2.8"	343°	2	268x	
145 CMa	7h 16.6m	-23° 19'	4.8	6	26.8"	52°	2	28x	
ν Pup	7h 18.3m	-36° 44'	4.7	5.1	240.0"	98°	0	3x	
19 Lyn	7h 22.9m	+55° 17'	5.8	6.9	14.8"	315°	0	51x	
η Pup	7h 34.3m	-23° 28'	5.1	5.1	9.8"	117°	0	77x	
α Gem (Castor)	7h 34.6m	+31° 53'	1.6	2.6	3.9"	64°	0	192x	
k2 Pup	7h 38.8m	-26° 48'	3.8	4	9.9"	318°	0	76x	
ζ Cnc	8h 12.2m	+17° 39'	5.6	6	0.9"	80°	0	833x	close triple, all yellow
			5.6	6.3	6.4"	77°	0	117x	
φ2 Cnc	8h 26.8m	+26° 56'	6.4	6.4	5.0"	217°	0	150x	
ι Cnc	8h 46.7m	+28° 46'	4	6.6	30.6"	307°	2	25x	
57 Cnc	8h 54.2m	+30° 35'	5.4	5.6	1.5"	312°	0	500x	
38 Lyn	9h 18.8m	+36° 48'	3.8	6.2	2.6"	227°	2	288x	subtle colors
ζ Aqr	22h 28.8m	-0° 01'	3.7	3.9	2.1"	190°	0	357x	close white
δ Cep	22h 29.2m	+58° 25'	4.1	6.3	40.9"	191°	3	18x	

Reference: <http://www.skyandtelescope.com/observing/celestial-objects-to-watch/pretty-double-stars-for-everyone/>

[1] The Edmund Sky Guide, Terence Dickinson and Sam Brown, 1977

Double and Multiple Stars- (continued)

Star	J2000		Magnitudes	Sep.	P.A.	Color Diff.	Optimum mag.	Notes ^[1]
	R.A.	DEC.						
38 Lyn	9h 18.8m	+36° 48'	3.9 6.4	2.7"	227°	2	278x	subtle colors
γ Leo (Algieba)	10h 20.0m	+19° 50'	2.3 3.5	4.5"	122°	0	167x	dazzling golden duo
54 Leo	10h 55.6m	+24° 45'	4.3 6.3	6.6"	112°	0	114x	greenish white and blue
ξ UMa	11h 18.2m	+31° 32'	4.3 4.8	1.7"	273°	0	441x	white binary, 60 yr period
N Hya	11h 32.3m	-29° 16'	5.6 5.8	9.4"	210°	0	80x	
24 Com	12h 35.1m	+18° 23'	5 6.6	20.6"	270°	4	36x	orange and blue-green
γ Vir (Porrima)	12h 41.7m	-1° 27'	3.5 3.5	1.7"	265°	0	441x	gorgeous white pair
35 Cam	12h 49.2m	+83° 25'	5.3 5.8	21.5"	329°	0	35x	
α CVn (Cor Caroli)	12h 56.0m	+38° 19'	2.9 5.6	18.8"	230°	1	40x	easy in small scopes
ζ Uma (Mizar)	13h 23.9m	+54° 56'	2.3 3.9	14.4"	153°	0	52x	Alcor 12' distant
π Boo	14h 40.7m	+16° 25'	4.9 5.8	5.6"	110°	0	134x	both white
ε Boo	14h 45.0m	+27° 04'	2.5 4.9	2.6"	341°	3	288x	gold and blue
39 Boo	14h 49.7m	+48° 43'	6.2 6.8	2.7"	46°	0	278x	
α Lib	14h 50.8m	-16° 01'	2.8 5.2	230.7"	314°	1	3x	binocular pair
δ Ser	15h 34.8m	+10° 32'	4.2 5.2	4.1"	174°	0	183x	both white
ζ CrB	15h 39.4m	+36° 38'	5 6	6.1"	305°	0	123x	easy
ξ Lup	15h 56.9m	-33° 58'	5.1 5.6	10.3"	49°	0	73x	
β Sco (Acraab)	16h 05.4m	-19° 48'	2.6 4.9	13.6"	20°	0	55x	
κ Her (Marfik)	16h 08.1m	+17° 03'	5 6.2	27.1"	12°	0	28x	
ν Sco	16h 12.0m	-19° 27'	4.4 5.4	1.3"	2°	0	577x	double-double with pairs 42' apart
	16h 12.0m	-19° 27'	6.7 7.8	2.4"	54°	0	313x	
σ CrB	16h 14.7m	+33° 52'	5.6 6.6	6.9"	237°	0	109x	
ρ Oph	16h 25.6m	-23° 27'	5 5.7	2.9"	339°	0	259x	
λ Oph	16h 30.9m	+1° 59'	4.2 5.2	1.5"	29°	0	500x	
17-16 Dra	16h 36.2m	+52° 55'	5 5.5	88.9"	193°	0	8x	easy triple
17 Dra	16h 36.2m	+52° 56'	5.4 6.4	3.2"	106°	0	234x	
μ Dra	17h 05.3m	+54° 28'	5.7 5.7	2.2"	20°	0	341x	
α Her (Rasalgethi)	17h 14.6m	+14° 23'	3.5 5.4	4.8"	105°	2	156x	orange and blue-green
36 Oph	17h 15.4m	-26° 36'	5.1 5.1	4.7"	148°	0	160x	
ρ Her	17h 23.7m	+37° 09'	4.5 5.5	4.2"	317°	0	179x	pretty white pair
ν Dra	17h 32.2m	+55° 11'	4.9 4.9	61.7"	311°	0	12x	lovely white duo seen in binoculars
ψ Dra	17h 42.0m	+72° 09'	4.6 5.8	30.1"	16°	0	25x	yellow and lilac
41 Dra	18h 00.3m	+80° 00'	5.7 6	19.3"	233°	0	39x	
95 Her	18h 01.5m	+21° 36'	5 5.2	6.3"	256°	2	119x	
τ Oph	18h 03.1m	-8° 11'	5.2 5.9	1.7"	282°	0	441x	
70 Oph	18h 05.5m	+2° 30'	4.2 6	3.6"	149°	0	208x	yellow and red, period 88 years
100 Her	18h 07.9m	+26° 06'	5.9 5.9	14.3"	183°	0	52x	
ε1 Lyr	18h 44.4m	+39° 40'	5 6.1	2.7"	348°	0	278x	famous double-double
ε2 Lyr	18h 44.4m	+39° 37'	5.2 5.5	2.5"	82°	0	300x	famous double-double
ζ Lyr	18h 44.8m	+37° 36'	4.3 5.7	41.3"	154°	1	18x	topaz and pale green
STT 525 Lyr	18h 54.9m	+33° 59'	6 7.5	45.8"	350°	2	16x	
θ Ser	18h 56.2m	+4° 12'	4.6 5	22.6"	103°	0	33x	both yellow-white - easy
γ CrA	19h 06.4m	-37° 04'	4.9 5.1	1.3"	62°	0	577x	
β Cyg (Albireo)	19h 30.8m	+27° 58'	3.1 5.1	34.4"	54°	4	22x	Orange and blue
16 Cyg	19h 41.8m	+50° 32'	6 6.2	39.5"	133°	0	19x	
57 Aql	19h 54.6m	-8° 14'	5.7 6.5	35.6"	170°	0	21x	contrasting subtle tints
ο Cyg	20h 13.6m	+46° 44'	3.8 7	105.8"	174°	4	7x	wide triple-orange, blue and white
	20h 13.6m	+46° 44'	3.8 4.8	338"	323°	4	2x	
β Cap	20h 21.0m	-14° 47'	3.1 6.1	205.2"	267°	1	4x	
ρ Cap	20h 28.9m	-17° 49'	4.8 6.6	256.2"	150°	2	3x	
γ Del	20h 46.7m	+16° 07'	4.3 5.1	9.3"	266°	2	81x	yellow and green
12 Aqr	21h 04.1m	-5° 49'	5.8 7.3	2.5"	197°	3	300x	
61 Cyg	21h 06.9m	+38° 45'	5.2 6	30.8"	150°	0	24x	orange binary
μ Cyg	21h 44.1m	+28° 45'	4.7 6.1	1.9"	307°	0	395x	close
ζ Aqr	22h 28.8m	-0° 01'	4.3 4.5	1.9"	187°	0	395x	close white pair
δ Cep	22h 29.2m	+58° 25'	3.5 6.3	40.9"	191°	3	18x	orange and blue

Reference: <http://www.skyandtelescope.com/observing/celestial-objects-to-watch/more-pretty-double-stars/>

[1] The Edmund Sky Guide, Terence Dickinson and Sam Brown, 1977

Open Clusters

Messier	NGC	Constell	RA (h m)	DEC (d m)	Dia. (m)	Number of Stars	Ap. Mag	Distance (Parsec)	Notes
103	581	Cas	01 33.2	+60 42	6	25	7.4	2600	arrow shape with mag 8 star at tip
	752	And	01 57.8	+37 41	50	60	5.7	400	Rich group of large and small stars
	869	Per	02 19.0	+57 09	30	200	4.3	2200	h Perseus. West member of famous double cluster
	884	Per	02 22.4	+57 07	30	150	4.4	2300	Chi Perseus is east about 0.5 deg, red star near center
34	1039	Per	02 42.0	+42 47	35	60	5.2	440	9th mag and fainter stars
		Tau	04 27.0	+15 52	330	>>100	0.5	47	Hyades Cluster, added by author
	1502	Cam	04 7.5	+62 20	20	45	6.9	821	Small but bright
	1528	Per	04 15.4	+51 14	24	40	6.4	800	bright very rich considerable compressed
	1746	Tau	05 03.8	+23 46	40	20	6.1		bright but scattered stars
38	1912	Aur	05 28.7	+35 50	21	100	6.4	1320	Nice cluster in a rich field
36	1960	Aur	05 36.1	+34 08	12	60	6	1270	small group of Mag 9 to 11 stars
37	2099	Aur	05 52.4	+32 33	24	150	5.6	1350	best of the three auriga clusters...orange star near center
	2129	Gem	06 01.0	+23 18	7	40	6.7	2000	stars 8 to 14 magnitude
35	2168	Gem	06 08.9	+24 20	28	200	5.1	870	stars 9 to 16 magnitude
	2244	Mon	06 32.4	+04 52	24	100	4.8	1700	cluster with nebulosity around yellow mag 6
	2264	Mon	06 41.1	+09 53	20	40	3.9	750	cluster with nebulosity
41	2287	CMa	06 47.0	-20 44	38	80	4.5	700	a loose bright cluster with red star at center
	2281	Aur	06 49.3	+41 04	15	30	5.4	500	a loose group of bright stars
	2301	Mon	06 51.8	+00 28	12	80	6	750	large and small stars
	2353	Mon	07 14.6	-10 18	20	30	7.1	1100	includes a mag 6 star
	2362	CMa	07 18.8	-24 57	8	60	4.1	1550	around mag 4
47	2422	Pup	07 36.6	-14 30	30	50	4.2	490	several big stars scattered
	2439	Pup	07 40.8	-31 41	10	30	6.9	3855	stars 12 to 14 mag
46	2437	Pup	07 41.8	-14 49	27	500	6.1	1700	rich and uniform but faint stars, small planetary at north edge
93	2447	Pup	07 44.6	-23 52	22	80	6	1100	mag 8 to 13 stars in rich field
48	2548	Hya	08 13.8	-05 48	54	80	5.8	610	Loose group of 9 10 13 mag stars
44	2632	Cnc	08 40.1	+19 59	95	50	3.1	160	50 brightest stars mags 6.5 to 9
67	2682	Cnc	08 50.4	+11 49	30	200	6.9	800	Mag 10 and fainter stars
	6124	Sco	16 25.6	-40 40	29	100	5.8	490	stars 9 to 11 mag
	6322	Sco	17 18.5	-42 57	10	30	6	1200	at south end of the scorpion
	6383	Sco	17 34.8	-32 34	5	40	5.5	1380	all big stars, 1 deg west of m6
6	6405	Sco	17 40.1	-32 13	15	80	4.2	600	a jewel box of diamonds mags 7 to 11 with a bright ruby
7	6475	SCo	17 53.9	-34 49	80	80	3.3	240	naked-eye object with many bright stars mags 7 to 10
23	6494	Sgr	17 56.8	-19 01	27	150	5.5	660	stars mag 10 and fainter
8	6530	Sgr	18 04.8	-24 20	15	50-100	4.6	1600	bright diffuse nebula with cluster and stars throughout
21	6531	Sgr	18 04.6	-22 30	13	70	5.9	1300	stars 9 to 12 magnitude
16	6611	SerCd	18 18.8	-13 47	7	>20	6	2500	Hot blue an dwhite stars frm a glowing nebulosity
17	6618	Sgr	18 20.8	-16 11	11	40	6	1500	Omega Nebula, cluster with nebular, visible in any telescope
	6633	Oph	18 27.7	+06 34	27	30	4.6	320	many bright stars , very loose
11	6705	Scu	18 51.1	-06 16	14	2900	6.3	1900	tight cluster of mag 9 and fainter stars, a real sparkler
52	7654	Cas	23 24.2	+61 35	13	100	6.9	1600	mags 9 to 13 stars with a mag 8 ruby near edge

Reference: The Edmund Sky Guide, Terence Dickinson and Sam Brown, 1977

RA & DEC were updated to J2000 coordinates from ref [10]. All remaining data updated from ref [10]

Globular Clusters

Messier	NGC	Constell.	RA* (h m)	DEC* (d m)	MAG	SIZE	Dist (LY)	REMARKS
2	7089	Aqr	21 34	-00 49	6.5	13'	37,000	Stellar beehive – a starburst in larger scopes.
3	5272	Cvn	13 42	+28 23	6.4	16'	35,000	Spring's Globular. First bright GC of season – radiant starball!
30	7099	Cap	21 40	-23 11	7.5	11'	40,000	Pale-white starry globe nicely contrasted with 8th-mag. star.
	5139	Cen	13 27	-47 29	3.6	36'	17,000	Omega Centauri Cluster. Colossal stellar beehive containing more than a million suns – an amazing spectacle in any size scope!
53	5024	Com	13 13	+18 10	7.7	13'	65,000	A dim ball of minute stars. Needs aperture to really enjoy.
13	6205	Her	16 42	+36 28	5.9	17'	24,000	Hercules Cluster. A magnificent stellar beehive! Fuzz-ball as seen in binoculars, resolved to its glittering core in 6-inch glass.
92	6341	Her	17 17	+43 09	6.5	11'	26,000	Overshadowed Globular. Eclipsed by M13. Intense core.
	6229	Her	16 47	+47 32	9.4	4'	90,000	“Sea-green in starry triangle.” Long mistaken for a PN.
68	4590	Hya	12 40	-26 45	8.2	12'	45,000	Neglected due to low DEC – needs dark, steady night.
79	1904	Lep	05 24	-24 33	8	9'	50,000	Winter's Lone Globular. Small & faintish but unique.
	2419	Lyn	07 38	+38 53	10.4	4'	300,000	Intergalactic Wanderer. Dim, small & amazingly remote
56	6779	Lyr	19 17	+30 11	8.2	7'	45,000	A dim but sparkling stellar beehive in rich MW field.
10	6254	Oph	16 57	-04 06	6.6	15'	18,000	Big starry ball & near-twin of M12, just 3 degrees apart.
12	6218	Oph	16 47	-01 57	6.8	15'	18,000	Along with M10, the best of the many GCs in OPH.
14	6402	Oph	17 38	-03 15	7.6	12'	33,000	Noticeably fainter but richer cluster than M10 & M12.
19	6273	Oph	17 03	-26 16	7.2	14'	30,000	Oblate Globular. Most oval GC known (from its rapid spin).
62	6266	Oph	17 01	-30 07	6.6	14'	20,000	With M10, brightest GC in OPH. A near-twin of M19.
15	7078	Peg	21 30	+12 10	6.4	12'	34,000	Rich, compact starball with intense core.
71	6838	Sge	19 54	+18 47	8.3	7'	13,000	Remote-looking but pretty, misty glow in rich MW field.
22	6656	Sgr	18 36	-23 54	5.1	24'	10,000	M13 Rival. Big, bright magnificent stellar beehive, resolved to center even in small glasses! Stars look ruddy in larger scopes.
55	6809	Sgr	19 40	-30 58	7	19'	16,000	Large, loosely compressed orb. Needs dark, steady night.
4	6121	Sco	16 24	-26 32	5.9	26'	7,000	Big softly-shining globular swarm, resolvable in the smallest of scopes. Noticeably elongated vertically. Lovely sight! Near Antares.
80	6093	Sco	16 17	-22 59	7.2	9'	27,000	Herschel's Delight. Tiny, densely-packed glittering starball.
5	5904	Ser	15 19	+02 05	5.8	17'	25,000	M13 Rival. Magnificent stellar beehive – a starry blizzard!

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Planetary Nebulae

Messier	NGC	Constell.	RA* (h m)	DEC* (d m)	MAG	SIZE	Dist (LY)	REMARKS
	7662	And	23 26	+42 33	8.5	32"x28"	5,600	Blue Snowball. Small but striking soft-blue cosmic egg.
	7009	Aqr	21 04	-11 22	8.3	25"x17"	3,000	Saturn Nebula. Striking bright, bluish-green ellipsoid.
	40	Cep	00 13	+72 32	10.2	60"x40"	3,000	Dull reddish-grey disk with central star.
	4361	Crv	12 24	-18 48	10.3	80"	2,600	Large, round dimly glowing nebulous disk.
	6826	Cyg	19 45	+50 31	8.9	27"	3,300	Blinking Planetary. Pale blue disk with obvious 10th-mag. central star. Alternating between direct & averted vision makes it blink!
	7027	Cyg	21 07	+42 14	9	18"x11"	3,000	Stephan's/Webb's Proto-Planetary. Small, blue & intense!
	6543	Dra	17 59	+66 38	8.8	22"x16"	3,500	Cat's Eye/Snail Nebula. Bright blue-green egg with 10th-mag. nuclear sun. One of the finest of its class & always above horizon!
	1535	Eri	04 14	-12 44	9.4	20"x17"		Lassell's Most Extraordinary Object. Blue-green "celestial jellyfish."
	1360	For	03 33	-25 51	9.4	6'x4'	980	Bright egg-shaped overlooked jewel.
	2392	Gem	07 29	+20 55	8.3	20"	3,000	Eskimo/Clown Face Nebula. Vivid blue disk with 10th-mag. central sun looking like a hazy star at low power.
	6210	Her	16 44	+23 49	9.3	20"x16"	3,600	Small featureless blue disk - needs magnification to enjoy.
	3242	Hya	10 25	-18 38	8.6	40"x35"	3,300	Jupiter's Ghost. Superb bright planetary with pale-blue disk as big in apparent size as Jupiter. Also known as the Eye & CBS Neb.
57	6720	Lyr	18 54	+33 02	8.8	80"x60"	1,400	Ring Nebula. Finest & best-known planetary in the sky. A celestial smoke ring - superb sight! Central hole visible in small glass.
	6572	Oph	18 12	+06 51	9	15"x12"	1,900	Small but intense blue disk like NGC 6210 in HER.
76	650/651	Per	01 42	+51 34	11.5	140"x70"	4,000	Little Dumbbell/Barbell/Cork/Butterfly Nebula. Faintish, pearly-white miniature of the Dumbbell Nebula in VUL.
	2440	Pup	07 42	-18 13	10.5	16"	3,500	Tiny, bluish-white disk - a celestial opal.
	6818	Sgr	19 44	-14 09	9.9	22"x15"	5,000	Little Gem Nebula. Small, bluish-green cosmic egg.
	6302	Sco	17 14	-37 06	9.7	2'x1'	1,900	Bug Nebula. Strange, unusual-looking bi-polar nebula.
	1514	Tau	04 09	+30 47	10.9	2'		A 9th-mag. star-nucleus surrounded by a faint circular nebulosity. "A most singular phenomenon!" exclaimed Sir William Herschel.
97	3587	Uma	11 15	+55 01	11.2	180"	10,000	Rosse's Owl Nebula. Large pale nebula with two subtle dark areas or "eyes" making it faintly bi-central. The cigar-shaped 10th-mag. spiral M108 is in the same wide field 48' NW - a true celestial "odd couple"!
	3132	Vel	10 08	-40 26	8.2	84"x52"	2,000	Eight-Burst Planetary. One of brightest in sky - white ellipse with 9th-magnitude central sun & hints of multiple rings!
27	6853	Vul	20 00	+22 43	7.6	8'x5'	1,200	Dumbbell Nebula. Next to the Ring Nebula, the finest & best-known object of its class! Like a big puffy celestial pillow serenely floating among the star stream of the MW, where it looks three-dimensionally suspended in space - a truly wondrous spectacle!

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Galaxies

Messier	NGC	Constell.	RA (h m)	DEC (d m)	MAG	SIZE	Dist (LY)	Type ^[1]	REMARKS
31/32/110		And	00 43	+41 16	3.5/8.2/8.0	178'x63'/8'x6'/17'x10'	2,400,000	SAb (s) / E2 / E5 pec	Andromeda Galaxy & companions – magnificent! Nucleus, disk, dust lanes, spiral arms all visible. Also a binocular wonder!
	891	And	02 23	+42 42	10	11'x2'	13,000,000	SAb? (cd)	Often-pictured but dim edge-on galaxy with dust lane.
	2403	Cam	07 37	+65 36	8.4	18'x11'	12,000,000	SABcd (s)	One of the brightest galaxies & finest spirals in sky.
	51	5195	Cvn	13 30	+47 12	8.4/9.6	11'x8'/5'x4'	SABc / I0 pec	Rosette's Whirlpool Galaxy. Big, beautiful face-on spiral with interacting dwarf galaxy
	63	Cvn	13 16	+42 02	8.6	12'x8'	35,000,000	SABc (rs)	Sunflower Galaxy. Like some vast celestial flower.
	94	Cvn	12 51	+41 07	8.2	11'x9'	22,000,000	SAab (r)	Small, bright tightly-wound spiral.
	106	Cvn	12 19	+47 18	8.3	18'x8'	33,000,000	SABbc (s)	Big, bright & bold spiral for small glasses.
	4631	Cvn	12 42	+32 32	9.3	15'x3'	39,000,000	SBd (s)	Humpback Whale Galaxy. Large edge-on spiral.
	5128	Cen	13 26	-43 01	7	18'x14'	22,500,000	S0 pec	Black Belt Galaxy. Large globe split by dark dust lane.
	77	Cet	02 43	-00 01	8.8	7'x6'	82,000,000	SAB (rs)	Intense star-like core surrounded by circular haze.
	64	Com	12 57	+21 41	8.5	9'x5'	25,000,000	SAab (rs)	Blackeye Galaxy. Superb bright spiral with dark "eye". "Like a colossal pendant abalone pearl in rayless void!"
	88	Com	12 32	+14 25	9.5	7'x4'	40,000,000	SAB (rs)	Like a miniature Andromeda Galaxy. Stellar nucleus.
	99	Com	12 19	+14 25	9.8	5'x5'	50,000,000	SAC (s)	Pinwheel Nebula. Wonderful face-on spiral.
	4565	Com	12 36	+25 59	9.6	16'x3'	20,000,000	SAB? (s)	Ghostly edge-on spiral with dark equatorial dust lane.
	4038/4039	Crv	12 02	-18 52	10.7	3'x2'	90,000,000	SBm (s) / SAm (s)	Antennae/Ring-Tail Galaxy. Colliding pair of galaxies! Peculiar field of view – wondrous sight!
	5907	Dra	15 16	+56 19	10.4	12'x2'	35,000,000	SAC (s)	Splinter Galaxy. Long, narrow & dim edge-on spiral.
	1316	For	03 23	-37 12	8.8	7'x6'	55,000,000	SAB (s) pec	Fornax A. Luminous leader of Fornax Galaxy Cluster.
	1365	For	03 34	-36 08	9.5	10'x6'	10'x6'	SBb (s)	One of the finest barred-spirals in the sky.
	83	Hya	13 37	-29 52	8	11'x10'	10,000,000	SABc (s)	Big, bold face-on spiral – one of brightest in the sky.
	65/66/3628	3628	Leo	11 19	+13 05	9.3/9.0/9.5	10'x3'/8'x4'/15'x4'	SABa (rs) / SABb (s) / Sb pec	Leo Triplet. A trio of bright spirals lying within the same wide field of view – wondrous sight!
	95/96/105	Leo	10 44	+11 42	9.7/9.2/9.3	7'x5'/7'x5'/4'x4'	30,000,000	SBb (r) / SBab (rs) / E1	Another trio of spirals sharing same field of view!
	2903	Leo	09 32	+21 30	8.9	13'x7'	30,000,000	SABbc (rs)	One of best galaxies missed by Messier – easily spied.
	2683	Lyn	08 53	+33 25	9.7	9'x2'	9'x2'	SAB (rs)	Bright, nearly edge-on spiral – cigar shaped. Distance uncertain.
	7331	Peg	22 37	+34 25	9.5	11'x4'	50,000,000	SAB (s)	Big bright, nearly edge-on spiral.
	24	Sgr	18 18	-18 25	4.5	120'x60'	16,000	-----	Small Sagittarius Star Cloud. Magnificent MW starcloud for sweeping with binoculars & wide-field telescopes. Overpowering!
	55	Scl	00 15	-39 11	7.9	32'x6'	7,000,000	SBm (s)	Huge, mottled edge-on star-city over ½ degree long.
	253	Scl	00 48	-25 17	7.1	25'x7'	7,500,000	SABc (s)	Sculptor Galaxy. Big, bright & beautiful! Cigar-shaped – like a smaller Andromeda Galaxy – a wondrous sight!
	Milky Way	Sct	18 40	-06 00	---	720'x540'	---	-----	Scutum Star Cloud/Gem of the Milky Way. "Downtown Milky Way!" An amazing binocular & RFT starry wonderland! Sense 3-D "depth"!!
	3115	Sex	10 05	-07 43	9.2	8'x3'	21,000,000	S0	Spindle Galaxy. Elongated glow with bright center – typical elliptical galaxy shape but with pointy ends. Edge-on
	33	Tri	01 34	+30 39	5.7	62'x39'	3,600,000	SACd (s)	Pinwheel/Triangulum Galaxy. Big pale, face-on spiral with delicate arms & patches of nebulosity. A dark-night wonder!
	81/82	Uma	09 56	+69 04	6.9/8.4	26'x14'/11'x5'	7,000,000	SAab (s) / I0	Bode's Nebulae. Finest galaxy pair in sky! M81 is a bright oblong spiral with vivid nucleus, M82 is a long, narrow curved ray crossed by dark rifts. Splendid sight – both floating serenely ½ deg. apart.
	101	Uma	14 03	+54 21	7.7	27'x26'	15,000,000	SABcd (rs)	Pinwheel Galaxy. Large, pale circular glow – a vast face-on spiral displaying much subtle detail on dark nights.
	84/86/87	Vir	12 25	+12 53	9.3/9.2/8.6	5'x4'/7'x6'/7'x7'	70,000,000	E1 / E3 / E0-1 pec	Coma-Virgo Galaxy Cluster. Three bright specimens (all giant elliptical galaxies) of the famed "Realm of the Nebulae." Here, hundreds of star-cities can be seen in small scopes – often several in the same eyepiece field – & more than 10,000 have been photographed!
	49	Vir	12 30	+08 00	8.4	9'x7'	65,000,000	E2	Another bright elliptical positioned between two stars.
	59/60	Vir	12 42	+11 39	9.8/8.8	5'x3'/7'x6'	5'x3'/7'x6'	E5 / E2	Nice elliptical galaxy pair lying in same field 25' apart.
	61	Vir	12 22	+04 28	9.7	6'x6'	6'x6'	SABbc (rs)	One of the many spirals in the C-V Cluster – face-on with two arms.
	104	Vir	12 40	-11 37	8.3	9'x4'	28,000,000	SAa (s)	Sombrero Galaxy. One of brightest & most spectacular edge-on spirals in the sky! Bulbous glow with dark equatorial band.
	4762	Vir	12 53	+11 14	10.2	9'x2'	9'x2'	SB0 (r)?	The Kite. Thin edge-on like paper kite – dim galaxy NGC 4754 nearby.
	3C273	Vir	12 29	+02 03	12.8	---	1,900,000,000	-----	First Quasar. Also brightest & closest – visible in 4- to 6-inch glass as a dim bluish star despite its vast distance

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[1] Type from NASA/IPAC Extragalactic Database: <http://ned.ipac.caltech.edu/>
 SA - Spiral SB - Barred Spiral E - Elliptical (E0 - Roundest to E7 - Flattest)
 a - Tightly Wound Arms, Prominent Central Bulges
 c - Loosely Coiled Systems
 b - Between Sa and Sc
 d - diffuse and broken arms made of individual clusters and nebulae, luminous glow of the very weak central bulb;
 SAB - Intermediate spiral galaxy that is in between a barred spiral galaxy and an unbarred spiral galaxy
 S0 - Lenticular galaxy is a type of galaxy intermediate between an elliptical (E) and a spiral galaxy (SA).
 According to their dust content, three classes of lenticular galaxies are introduced: S0-, S0+, S0+
 (r) Ring surrounds the central bulb
 (rs) A pseudo-ring surrounds the bulb.
 (s) No ring
 pec - (peculiar) designates a galaxy of abnormal form. A d before the sequence indicates that it is a dwarf galaxy

References

- [10] Hirshfeld, Alan and Sinnott, Roger W., Sky Catalogue 2000.0, Volume 2, Double Stars, Variable Stars and Nonstellar Objects, Sky Publishing Corp. and Cambridge University Press, Cambridge, Mass, 1985.