Andromeda

Object Name	Type	Magnitude	Object Size	Object Distance	Right Ascention	Declination	Notes & Link to Photo / Log / Info
Messier 31	Spiral Galaxy	4.40	190.0' x 60.0'	2.53 Million LY	$00^h\ 42^m\ 44.3^s$	+41° 16′ 09″	The nearest galaxy to our own Milky Way
Messier 32	Dwarf Elliptical Galaxy	9.00	8'.7 x 6'.5	2.49 Million LY	$00^h\ 42^m\ 41.8^s$	+40° 51′ 55″	Small satellite galaxy of Messier 31
Messier 110	Dwarf Elliptical Galaxy	8.90	21'.9 x 11'.0	2.69 Million LY	$00^h\ 40^m\ 22.1^s$	+41° 41′ 07″	Medium satellite galaxy of Messier 31
NGC 404	Dwarf Lenticular Galaxy	11.20	3'.5 x 3'.5	10.0 Million LY	$01^h\ 09^m\ 27.0^s$	+35° 43′ 04″	Mirach's Ghost, 7 arc min from Mirach
NGC 752	Open Cluster	5.70	60'.0	1,300 LY	$01^h\ 57^m\ 80.0^s$	+37° 41′ 19″	Consists of over 90 stars
NGC 891	Unbarred Spiral Galaxy	10.80	13'.5 x 2'.5	27.3 Million LY	$02^h\ 22^m\ 33.4^s$	+42° 20′ 57″	Edge on faint galaxy
NGC 7640	Barred Spiral Galaxy	10.90	11'.0 x 2'.5	28.0 Million LY	$23^h\ 22^m\ 10.0^s$	+40° 51′ 10″	Very small faint barred spiral
NGC 7662	Planetary Nebulae	9.00	37".0	2,200 LY	$23^h\ 25^m\ 54.0^s$	+42° 32′ 06″	Turquoise disk with central star
Gamma	Quadruple Star	2.13 - 6.30	9.8"	355 LY	$02^h\ 03^m\ 09.0^s$	+42° 19′ 47″	Orange, Yellow, Blue, Blue Stars
VX	Carbon Star	7.80 - 9.30	1".0	-	$00^h\ 20^m\ 09.5^s$	+44° 44′ 06″	Orange Carbon Star (Variable 367 days)
Abell 262	Galaxy Cluster	13.7 - 15.5	100'.0	-	$01^h\ 52^m\ 39.6^s$	+36° 10' 19"	14 Galaxy Cluster

Auriga

Object Name	Type	Magnitude	Object Size	Object Distance	Right Ascention	Declination	Notes & Link to Photo / Log / Info
Messier 36	Open Cluster	6.00	10.0'	4,100 LY	$05^h\ 36^m\ 38.5^s$	+34° 08′ 40″	HOpen Cluster of about 60 starsH
Messier 37	Open Cluster	5.60	15.0'	4,400 LY	$05^h\ 52^m\ 40.0^s$	+32° 33′ 00″	Best Open Cluster in Auriga 500 stars
Messier 38	Open Cluster	7.40	21.0'	4,200 LY	$05^h\ 28^m\ 40.0^s$	+35° 50′ 00″	Very loose Open Cluster
NGC 1664	Open Cluster	7.20	18.0'	3,900 LY	$04^h\ 51^m\ 04.4^s$	+43° 42′ 00″	Kite Cluster - Better in 6 inch plus
NGC 1857	Open Cluster	7.00	5.0'	8,500 LY	$05^h\ 20^m\ 12.0^s$	+39° 21′ 00″	Bright red star at centre of cluster
NGC 1907	Open Cluster	8.20	6.0'	4,500 LY	$05^h\ 28^m\ 04.5^s$	+35° 19′ 30″	Open Cluster of about 30 stars
NGC 1931	Open Cluster	10.10	3.0'	4,600 LY	$05^h\ 31^m\ 24.8^s$	+34° 15′ 10″	Open Cluster in Nebulosity
NGC 2281	Open Cluster	5.40	15.0'	5,400 LY	$06^h\ 49^m\ 17.9^s$	+41° 04′ 00″	Small Open Cluster est 25 Stars
IC 405	Diffuse Nebula	5.96	30'.0 x 45'.0	12,200 LY	$05^h\ 16^m\ 12.0^s$	+34° 16′ 00″	Flaming Star Nebula
IC 410	Diffuse Nebula	6.00 est	23'.0 x 20'.0	12,000 LY	$05^h\ 22^m\ 36.0^s$	+33° 31′ 00″	Tadpole Nebula
IC 417	Diffuse Nebula	9.50 est	13.0'	2,400 LY	$05^h\ 28^m\ 06.0^s$	+34° 25′ 50″	Faint small Nebula
IC 2149	Planetary Nebula	11.20	8.0"	5,200 LY	$05^h\ 56^m\ 23.9^s$	+46° 06′ 07″	Very faint nebula - challenging to find

Bootes

Object Name	Type	Magnitude	Object Size	Object Distance	Right Ascention	Declination	Notes & Link to Photo / Log / Info
NGC 5248	Barred Spiral Galaxy	10.20	6.50' x 4.40'	56 Million LY	$13^h\ 37^m\ 31.9^s$	+08° 53′ 08″	Spiral arms visible 12inch plus
NGC 5466	Globular Cluster	10.00	5'.0 x 5'.0	51,800 LY	$14^h\ 05^m\ 30.0^s$	+28° 32′ 00″	Faint globular high mag required
NGC 5676	Spiral Galaxy	11.80	4'.0 x 1'.1	??	$14^h\ 32^m\ 46.8^s$	+49° 27′ 28″	Surface brightness spiral - 12inch req
NGC 5689	Spiral Galaxy	11.90	3'.7 x 1'.2	??	$14^h\ 35^m\ 29.7^s$	+48° 44′ 29″	Low surface brightness - 16inch req
Tau Bootis	Binary Star	3.53-10.03	0'.3	51.0 LY	$13^h\ 47^m\ 15.7^s$	+17° 27′ 25″	Off yellow major star & red tiny minor star
44 Bootis	Triple Star	4.83	0'.4	41.6 LY	$15^h\ 03^m\ 47.3^s$	+47° 39′ 14″	White/yellow/orange 380X to Split all 3
Epsilon Bootis	Binary Star	2.70-5.12	0'.2	210 LY	$14^h\ 44^m\ 59.2^s$	+27° 04′ 27″	Blue / Orange Binary 160X to split

Canes Venatici

Object Name	Type	Magnitude	Object Size	Object Distance	Right Ascention	Declination	Notes & Link to Photo / Log / Info
Messier 3	Globular Cluster	6.30	18.0' x 18'.0	33,900 LY	$13^h\ 42^m\ 11.2^s$	+28° 22′ 31″	Viewable in 4 inch 8 inch upwards best
Messier 51	Spiral Galaxy	8.10	11'.2 x 6'.9	23 Million LY	$13^h\ 29^m\ 52.7^s$	+47° 11′ 43″	Whirlpool Galaxy - nice in 4 inch APO
Messier 63	Spiral Galaxy	8.50	12'.6 x 7'.2	37 Million LY	$13^h\ 15^m\ 49.3^s$	+42° 01′ 45″	Sunflower Galaxy 6 inch recommended
Messier 94	Spiral Galaxy	8.10	14'.4 x 12'.1	16 Million LY	$12^h\ 50^m\ 53.1^s$	+41° 07′ 14″	4-6 inch upwards recommended
Messier 106	Spiral Galaxy	8.30	18'.6 x 7'.2	23.7 Million LY	$12^h\ 18^m\ 57.5^s$	+47° 18′ 14″	6 inch upwards recommended
NGC 4214	Irregular Galaxy	10.20	8'.4 x 6'.6	13 Million LY	$12^h\ 15^m\ 39.2^s$	+36° 19′ 37″	10 inch upwards recommended
NGC 4217	Edge on Galaxy	13.60	5'.0 x 1'.4	55 Million LY	$12^h\ 15^m\ 50.7^s$	+47° 05′ 30″	16 inch & high mag required
NGC 4244	Edge on Galaxy	10.70	1'.8 x 0'.6	6.5 Million LY	$12^h\ 17^m\ 32.7^s$	+37° 47′ 54″	16 inch upwards due to small size
NGC 4449	Irregular Galaxy	10.00	6'.2 x 4'.4	9.8 Million LY	$12^h\ 28^m\ 11.9^s$	+44° 05′ 40″	8 inch upwards recommended
NGC 4490	Irregular Galaxy	9.50	6'.4 x 3'.2	45 Million LY	$12^h\ 30^m\ 52.8^s$	+41° 36′ 57″	Cacoon Galaxy - 12 inch upwards
NGC 4631	Edge on Galaxy	9.80	15'.5 x 2'.7	22 Million LY	$12^h\ 42^m\ 08.0^s$	+32° 32′ 29″	Whale Galaxy - 8 inch upwards required
NGC 4656	Edge on Galaxy	11.00	13'.8 x 3'.3	23 Million LY	$12^h\ 43^m\ 57.7^s$	+32° 10′ 08″	Hockey Stick Galaxy 1 - 12 inch upwards
NGC 4657	Edge on Galaxy	11.00	13'.8 x 3'.3	23 Million LY	$12^h\ 43^m\ 57.7^s$	+32° 10′ 05″	Hockey Stick Galaxy 2 - 12 inch upwards
NGC 5005	Spiral Galaxy	10.60	5'.8 x 2'.8	70 Million LY	$13^h\ 10^m\ 56.2^s$	+37° 03′ 33″	12 inch upwards recommended
NGC 5033	Spiral Galaxy	10.80	10'.7 x 5'.0	70 Million LY	$13^h\ 13^m\ 27.5^s$	+36° 35′ 38″	12 inch upwards recommended
NGC 5371	Spiral Galaxy	11.30	4'.4 x 3'.5	??	$13^h\ 55^m\ 39.9^s$	+40° 27′ 42″	16 inch and high mag required
NGC 5394	Spiral Galaxy	13.60	1'.7 x 1'.0	184 Million LY	$13^h\ 58^m\ 33.8^s$	+37° 27′ 19″	16 inch upwards or photograph

NGC 5395	Spiral Galaxy	12.70	2'.7 x 1'.5	184 Million LY	$13^h\ 58^m\ 38.3^s$	+37° 25′ 32″	16 inch upwards or photograph

Cassiopeia

Object Name	Type	Magnitude	Object Size	Object Distance	Right Ascention	Declination	Notes & Link to Photo / Log / Info
Messier 52	Open Cluster	5.00	13'.0	5,000 LY	$23^h\ 24^m\ 20.0^s$	+61° 35′ 00″	Open Cluster 193 Stars
Messier 103	Open Cluster	7.40	6'.0	8,500 LY	$01^h\ 33^m\ 20.0^s$	+60° 42′ 00″	Open Cluster 40 Stars - small & dim
NGC 147	Spheroidal Galaxy	10.50	13'.2 x 7'.8	2.53 Million LY	$00^h\ 33^m\ 12.1^s$	+48° 30′ 32″	Reasonably bright - medium mag required
NGC 185	Dwarf Elliptical Galaxy	10.10	11'.7 x 10'.0	2.05 Million LY	$00^h\ 38^m\ 58.0^s$	+48° 20′ 15″	A small ball of light with nebulosity
NGC 281	HII Emission Nebula	9.47	35'.0	9,500 LY	$00^h\ 52^m\ 59.3^s$	+56° 37′ 19″	Medium aperture & dark skies required
NGC 457	Open Cluster	6.40	13'.0	9,000 LY	$01^h\ 19^m\ 10.0^s$	+58° 20′ 00″	Medium aperture & mag required
NGC 654	Open Cluster	6.50	6'.0	6,000 LY	$01^h\ 44^m\ 25.0^s$	+61° 54′ 54″	Bright tight Open Cluster
NGC 659	Open Cluster	7.90	5'.0	??	$01^h\ 44^m\ 48.2^s$	+60° 42′ 05″	Small dim Open Cluster
NGC 663	Open Cluster	7.10	11'.0	2,570 LY	$01^h\ 46^m\ 00.0^s$	+61° 15′ 00″	Medium aperture & mag required
NGC 7635	Planetary Nebula	6.70	15'.0 x 8'.0	11,300 LY	$23^h\ 24^m\ 40.0^s$	+61° 11′ 00″	Bubble Nebula - Medium aperture & mag
NGC 7788	Open Cluster	9.40	4'.0	??	$23^h\ 57^m\ 00.3^s$	+61° 26′ 11″	Double Cluster with NGC7790
NGC 7789	Open Cluster	6.70	16'.0	7,600 LY	$23^h\ 57^m\ 00.0^s$	+56° 44′ 00″	Small & dim with red stars
NGC 7790	Open Cluster	8.50	5'.0	??	$23^h\ 58^m\ 42.6^s$	+61° 14′ 41″	Double Cluster with NGC7788
IC 10	Irregular Galaxy	10.30	5'.0 x 4'.0	4,200 LY	$00^h\ 20^m\ 40.0^s$	+59° 18′ 00″	Small, dim nebulous & unusual in shape
IC 59/63	Reflection Nebula	??	10'.5	600 LY	$00^h\ 57^m\ 42.4^s$	+61° 04′ 59″	Large aperture needed
IC 1805	Diffuse Nebula	??	50'.0 x 44'.0	2,500 LY	$02^h\ 32^m\ 42.0^s$	+61° 27′ 00″	Nebulous area filter req
IC 1848	Diffuse Nebula	??	60'.0 x 30'.0	2,500 LY	$02^h\ 51^m\ 12.0^s$	+60° 26′ 00″	Large Nebulous region filter required
Maffei 1	Elliptical Galaxy	11.40	3'.36 x 1'.68	9.8 Million LY	$02^h\ 36^m\ 35.4^s$	+59° 39′ 19″	Large aperture required
Maffei 2	Spiral Galaxy	16.00	5'.82 x 1'.57	9.8 Million LY	$02^h\ 41^m\ 55.1^s$	+59° 36′ 15″	Photograph unless very large aperture

Cepheus

Object Name	Type	Magnitude	Object Size	Object Distance	Right Ascention	Declination	Notes & Link to Photo / Log / Info
NGC 40	Planetary Nebula	11.40	38".0 x 35".0	3,500 LY	$00^h\ 13^m\ 01.0^s$	+72° 31′ 19″	Bow Tie Nebula - Small but interesting
NGC 188	Open Cluster	8.10	15'.0	5,000 LY	$00^h\ 45^m\ 50.0^s$	+85° 20′ 00″	120 Star tight Open Cluster
NGC 2276	Spiral Galaxy	11.40	2'.6 x 2'.5	100 Million LY	$07^h\ 27^m\ 10.2^s$	+85° 45′ 19″	Small tight Spriral - Next to NGC 2300
NGC 2300	Irregular Galaxy	10.80	3'.1 x 2'.6	90 Million LY	$07^h\ 32^m\ 19.7^s$	+85° 42′ 33″	Likes a ball of light next to NGC 2276

NGC 6939	Open Cluster	7.80	8'.0	??	$20^h\ 31^m\ 04.0^s$	+60° 38′ 00″	Open Cluster next to NGC 6946
NGC 6946	Spiral Galaxy	9.60	11'.5 x 9'.8	18 Million LY	$20^h\ 34^m\ 50.0^s$	+60° 09′ 00″	Spiral next to Open Cluster 6939
NGC 6951	Spiral Galaxy	11.80	3'.90	??	$20^h\ 37^m\ 14.0^s$	+66° 06′ 21″	Small & dim high aperture & mag req
NGC 7023	Reflection Nebula	7.10	18'.0	1,300 LY	$21^h\ 00^m\ 05.0^s$	+68° 10′ 00″	Very interesting must view & image
NGC 7139	Planetary Nebula	13.00	22".2	4,300 LY	$21^h\ 46^m\ 08.4^s$	+63° 47′ 30″	8 inch aperture required
NGC 7354	Planetary Nebula	12.50	20".0	6,800 LY	$22^h\ 40^m\ 19.9^s$	+61° 17′ 08″	Very small & dim 8 inch aperture plus
NGC 7510	Open Cluster	7.90	7'.0	9,900 LY	$23^h\ 11^m\ 00.0^s$	+60° 34′ 00″	Small but bright Open Cluster
NGC 7538	Emission Nebula	??	8'.0 x 7'.0	7,000 LY	$23^h\ 13^m\ 30.0^s$	+61° 31′ 00″	Large aperture & filter required
NGC 7822	Emission Nebula	??	20'.0 x 90'.0	??	$00^h\ 02^m\ 09.3^s$	+65° 25′ 12″	Medium size Nebulous Area - Filter req
IC 1396	Emission Nebula	3.50	49'.0	1,500 LY	$21^h\ 39^m\ 10.0^s$	+57° 30′ 00″	Medium aperture required filter useful
IC 1470	Reflection Nebula	??	15'.0	??	$23^h\ 05^m\ 10.4^s$	+60° 14′ 36″	Small & dim in my 16inch dob
Sh2-129	Diffused Nebula	??	60'.0	1,300 LY	$21^h\ 15^m\ 10.0^s$	+60° 00′ 00″	Filter and medium aperture required
Sh2-140	Emission Nebula	??	??	2,700 LY	$22^h\ 19^m\ 10.0^s$	+63° 17′ 00″	Nebulous bubble & chain of Stars

Coma Berenices

Object Name	Type	Magnitude	Object Size	Object Distance	Right Ascention	Declination	Notes & Link to Photo / Log / Info
Messier 53	Globular Cluster	8.33	13.0' x 13'.0	58,000 LY	$13^h\ 12^m\ 55.3^s$	+18° 10′ 09″	Viewable in 4 inch 8 inch upwards best
Messier 64	Spiral Galaxy	9.40	10'.0 x 5'.4	17 Million LY	$12^h\ 56^m\ 43.7^s$	+21° 40′ 58″	Blackeye Galaxy - nice in 6 inch upwards
Messier 85	Lenticular Galaxy	10.00	7'.1 x 5'.5	60 Million LY	$12^h\ 25^m\ 24.0^s$	+18° 11′ 28″	8 inch upwards recommended
Messier 88	Spiral Galaxy	10.40	6'.9 x 3'.7	47 Million LY	$12^h\ 31^m\ 59.2^s$	+14° 25′ 14″	8 inch upwards recommended
Messier 91	Barred Spiral Galaxy	11.00	5'.4 x 4'.3	63 Million LY	$12^h\ 35^m\ 26.4^s$	+14° 29′ 47″	10 inch upwards recommended
Messier 98	Spiral Galaxy	11.00	9'.8 x 2'.8	60 Million LY	$12^h\ 13^m\ 48.3^s$	+14° 54′ 01″	10 inch upwards recommended
Messier 99	Spiral Galaxy	10.40	5'.4 x 4'.7	60 Million LY	$12^h\ 18^m\ 49.6^s$	+14° 24′ 59″	8 inch upwards recommended
Messier 100	Spiral Galaxy	10.10	7′.4 × 6′.3	52.5 Million LY	$12^h\ 22^m\ 54.9^s$	+15° 49′ 21″	8 inch upwards recommended
NGC 4147	Globular Cluster	10.30	4'.0 x 4'.0	57,000 LY	$12^h\ 10^m\ 06.2^s$	+18° 32′ 31″	8 inch upwards recommended
NGC 4414	Spiral Galaxy	11.0	3'.6 x 2'.3	62 Million LY	$12^h\ 26^m\ 27.0^s$	+31° 13′ 29″	12 inch upwards required
NGC 4450	Spiral Galaxy	10.90	5'.2 x 3'.9	??	$12^h\ 28^m\ 29.6^s$	+17° 05′ 06″	12 inch upwards required
NGC 4494	Elliptical Galaxy	9.90	4'.4 x 4'.1	32 Million LY	$12^h\ 31^m\ 24.0^s$	+25° 46′ 29″	8 inch upwards recommended
NGC 4559	Spiral Galaxy	10.20	10'.8 x 4'.4	45 Million LY	$12^h\ 35^m\ 57.3^s$	+27° 57′ 53″	10 inch upwards recommended

NGC 4565	Edge on Spiral Galaxy	10.20	15'.8 x 2'.1	53 Million LY	$12^h\ 36^m\ 20.6^s$	+25° 59′ 20″	10 inch upwards recommended
NGC 4725	Spiral Galaxy	9.80	10'.8 x 7'.6	49 Million LY	$12^h\ 50^m\ 26.7^s$	+25° 30′ 01″	Fairly bright 8 inch upwards
Abell 1656	Galaxy Cluster	11.00	??	4000 Million LY	$13^h\ 00^m\ 29.0^s$	+27° 58′ 00″	16 inch required or photograph
Mel 111	Open Cluster	2.70	275'.0	260 LY	$12^h\ 25^m\ 17.0^s$	+25° 58′ 15″	30 Stars wide open cluster

Cygnus

Object Name	Type	Magnitude	Object Size	Object Distance	Right Ascention	Declination	Notes & Link to Photo / Log / Info
Messier 29	Open Cluster	6.60	10'.0	4,000 LY	$20^h\ 23^m\ 56.0^s$	+38° 31'.40"	Estimated 50 Stars
Messier 39	Open Cluster	4.60	32'.0	800 LY	$21^h\ 32^m\ 02.0^s$	+48° 26'.00"	About 30 Stars
NGC 6826	Planetary Nebula	8.90	2'.3	2,200 LY	$19^h\ 44^m\ 08.0^s$	+50° 31'.00"	Blinking Planetary Nebula seems to blink
NGC 6871	Open Cluster	5.20	20'.0	1,574 LY	$20^h\ 05^m\ 59.0^s$	+35° 46'.36"	Poorly defined 12 Star Open Cluster
NGC 6888	Emission Nebula	9.00	18'.0 x 12'.0	5,000 LY	$20^h\ 12^m\ 07.0^s$	+38° 21'.00"	Crescent Nebula
NGC 6910	Open Cluster	7.40	8'.0	13,200 LY	$20^h\ 23^m\ 10.0^s$	+40° 47'.00"	Y shaped cluster 20 or so stars
NGC 6946	Spiral Galaxy	9.60	11'.5 x 9'.8	18 Million LY	$20^h\ 34^m\ 50.0^s$	+60° 09'.00"	Fireworks Galaxy - small & distant spiral
NGC 6960	Supernova Remnant	7.00	70'.0 x 6'.0	2,000 LY	$20^h\ 45^m\ 30.0^s$	+30° 42'.00"	Veil Nebula (witches broom section)
NGC 6979	Supernova Remnant	5.10	230'.0 x 160'.0	2,600 LY	$20^h\ 51^m\ 00.0^s$	+30° 40'.00"	Pickerings Triangle
NGC 7000	Diffuse Nebula	4.00	120'.0 x 40'.0	1,600 LY	$20^h\ 58^m\ 80.0^s$	+44° 20'.00"	North American Nebula
NGC 7026	Planetary Nebula	12.70	21".0	4,500 LY	$21^h\ 04^m\ 34.7^s$	+47° 39'.13"	Cheeseburger Nebula - Dark central area
IC 5070	Diffuse Nebula	8.00	60'.0 x 50'.0	1,800 LY	$20^h\ 58^m\ 08.0^s$	+44° 21'.00"	Pelican Nebula
Alpha Cygni	Star	1.25	0.1'	3,200 LY	$21^h\ 41^m\ 25.9^s$	+45° 16'.49"	Deneb (Blue Supergiant)
Beta Cygni	Binary Star	3.05-5.10	0.1'	380 LY	$19^h\ 30^m\ 00.0^s$	+27° 58'.00"	Binary - Orange & Blue Binary
61 Cygni	Binary Star	5.21-6.03	0.1'	11.36 LY	$21^h\ 06^m\ 53.9^s$	+38° 44'.31"	Bessels Star (Pair of orange stars)

Lyra

Object Name	Type	Magnitude	Object Size	Object Distance	Right Ascention	Declination	Notes & Link to Photo / Log / Info
Messier 56	Globular Cluster	8.30	8'.8 x 8'.0	32,900 LY	$19^h\ 16^m\ 35.5^s$	+30° 11′ 04″	Viewable in 4 inch 8 inch upwards best
Messier 57	Planetary Nebula	9.00	230" x 230"	2,300 LY	$18^h\ 53^m\ 35.0^s$	+33° 01′ 45″	Ring Nebula - central star visible in 8 inch
NGC 6765	Planetary Nebula	12.90	38".0	??	$19^h\ 11^m\ 08.2^s$	+30° 33′ 02″	16 inch upwards & high mag
NGC 6791	Open Cluster	9.50	16'.0 x 16'.0	19,000 LY	$19^h\ 20^m\ 51.0^s$	+37° 46′ 18″	6 inch upwards recommended
Beta	Trinary Star	3.52 - 7.20	10".0	900 LY	$18^h\ 50^m\ 04.8^s$	+33° 21′ 46″	Blue & White Double (Sheliak)

Epsilon	Multiple Star	1.18 - 6.20	15".0	??	$18^h\ 44^m\ 18.5^s$	+39° 40' 13"	Double Double - split with 4 inch APO

Monoceros

Object Name	Type	Magnitude	Object Size	Object Distance	Right Ascention	Declination	Notes & Link to Photo / Log / Info
Messier 50	Open Cluster	5.90	16'.0	3,200 LY	$07^h\ 03^m\ 20.0^s$	-08° 20′ 00″	100 Star loose Open Cluster
NGC 2170	Reflection Nebula	??	2'.0	2,400 LY	$06^h\ 07^m\ 30.0^s$	-06° 24′ 00″	Dim & small big aperture & high mag req
NGC 2182	Reflection Nebula	9.90	3'.0 x 2'.0	??	$06^h\ 09^m\ 30.0^s$	-06° 20′ 00″	12inches plus required - dim & distant
NGC 2185	Reflection Nebula	??	3'.0	??	$06^h\ 11^m\ 05.9^s$	-06° 13′ 00″	Small & Dim 12inch upwards required
NGC 2237	Emission Nebula	??	80'.0 x 60'.0	5,500 LY	$06^h\ 31^m\ 40.0^s$	+05° 04′ 00″	Rosetta Nebula - Nebula filter required
NGC 2244	Open Cluster	4.80	24'.0	5,200 LY	$06^h\ 31^m\ 50.0^s$	+04° 56′ 00″	Open Cluster central of Rosetta Nebula
NGC 2261	Reflection Nebula	11.00	2'.0	650 LY	$06^h\ 39^m\ 12.0^s$	+08° 43′ 59″	Hubbles Variable - Looks like a comet
NGC 2264	Reflection Nebula	3.90	20'.0	2,600 LY	$06^h\ 41^m\ 01.0^s$	+09° 53′ 00″	Cone Nebula - Nebula Filter helps
NGC 2301	Open Cluster	5.80	12'.0	2,470 LY	$06^h\ 51^m\ 48.0^s$	+00° 28′ 00″	80 Star Open Cluster - seeable in finder
NGC 2353	Open Cluster	7.10	20'.0	??	$07^h\ 14^m\ 35.9^s$	-10° 18′ 00″	60 or so stars - a dimmer Open Cluster
IC 2177	Diffuse Nebula	??	120'.0 x 40'.0	1,820 LY	$07^h\ 05^m\ 06.0^s$	-10° 42′ 00″	Seagull Nebula - Nebula Filter Required
V 838	Variable Star & Nova	6.75-15.74	??	20,000 LY	$07^h\ 04^m\ 05.0^s$	-03° 50′ 50″	An imaging challenge - Long exposure req

Orion

Object Name	Type	Magnitude	Object Size	Object Distance	Right Ascention	Declination	Notes & Link to Photo / Log / Info
Messier 42	Diffuse Nebula	3.00	65'.0 x 60'.0	1,270 LY	$05^h\ 35^m\ 17.3^s$	-05° 23′ 28″	The Nearest star forming region
Messier 43	HII Reflection Nebula	9.00	20'.0 x 15'.0	1,600 LY	$05^h\ 35^m\ 60.0^s$	-05° 16′ 00"	M43 - Smaller Nebula next to M42
Messier 78	Reflection Nebula	8.30	8'.0 x 6'.0	1,600 LY	$05^h\ 46^m\ 70.0^s$	+00° 03′ 00"	M78 - Appears Dark - Difficult to image
NGC 1662	Open Cluster	6.40	12'.0 x 12'.0	1,350 LY	$04^h\ 48^m\ 44.2^s$	+10° 57' 15"	About 30 Stars in this Open Cluster
NGC 1973	Reflection Nebula	7.00	40'.0 x 25'.0	1,500 LY	$05^h\ 35^m\ 15.4^s$	-04° 48' 23"	Running Man Nebula - NE of Orion
NGC 1981	Open Cluster	4.20	28'.0	1,600 LY	$05^h\ 35^m\ 25.3^s$	-04° 25' 16"	About 50 Stars in this Open Cluster
NGC 2022	Planetary Nebula	12.80	28".0	10,400 LY	$05^h\ 42^m\ 06.2^s$	+09° 05′ 10″	Violet Planetary Nebula - Central Star
NGC 2024	Emission Nebula	6.00	30'.0 x 30'.0	1,500 LY	$05^h\ 41^m\ 54.0^s$	+01° 51′ 00"	Flame Nebula - Next to Alnitak
NGC 2071	Reflection Nebula	8.00	7'.0 x 5'.0	1,300 LY	$05^h\ 47^m\ 23.5^s$	+00° 17' 49"	Small Reflection Nebula next to M78
Alpha	Star	0.58	1'.0	430 LY	$05^h\ 55^m\ 10.3^s$	+07° 24′ 25″	Betelgeuse - 9th Brightest Star (orange)
Beta	Binary Star	0.12 - 8.44	1'.0	800 LY	$05h\ 14^m\ 32.3^s$	−08° 12' 06"	Rigel - Brightest Star in Orion

Zeta	Binary Star	1.70 - 4.00	1'.0	800 LY	$05^h\ 40^m\ 45.5^s$	−01° 56′ 34″	Alnitak - (blue)
Trapezium	Tight Open Cluster	4.00	4'.0	1,600 LY	$05^h\ 35^m\ 40.0^s$	−05° 27′ 00"	8 Stars (6 splittable) within Heart of Orion
Barnard 33	Dark Nebula	14.00 est	8'.0 x 6'.0	1,600 LY	$05^h\ 40^m\ 59.0^s$	−02° 27′ 30"	Barnard 33 - Horsehead Nebula
IC 2118	Reflection Nebula	12.00 est	160'.0 x 60'.0	1,000 LY	$05^h\ 02^m\ 00.0^s$	-07° 54′ 00"	Witches Head Nebula - Next to Rigel
Sh 2-276	Emission Nebula	12.00 est	600'.0 x 30'.0	1,600 LY	$05^h\ 31^m\ 00.0^s$	-04° 54′ 00"	Barnards Loop - Around Orion's Sword

Pegasus

Object Name	Type	Magnitude	Object Size	Object Distance	Right Ascention	Declination	Notes & Link to Photo / Log / Info
Messier 15	Globular Cluster	6.20	18.0'	30,600 LY	$21^h\ 29^m\ 58.3^s$	+12° 10′ 00″	Very bright central core (core collapse)
NGC 7177	Spiral Galaxy	11.44	3'.1 x 2'.0	??	$22^h\ 00^m\ 41.2^s$	+17° 44′ 16″	Short Arm Spiral req 12inch or more
NGC 7217	Unbarred Spiral Galaxy	11.00	3'.9 x 3'.2	50.0 Million LY	$22^h\ 07^m\ 52.4^s$	+31° 21′ 33″	Requires 12inch or more for any detail
NGC 7331	Spiral Galaxy	10.40	10'.5 x 3'.7	43.0 Million LY	$22^h\ 37^m\ 04.1^s$	+34° 24′ 56″	Spiral and Arm structure revealed >8inch
NGC 7332	Spiral Galaxy	11.20	4'.1 x 1'.1	63.0 Million LY	$22^h\ 37^m\ 24.5^s$	+23° 47′ 54″	Small & Faint spiral req > 12 inches
NGC 7339	Edge on Galaxy	12.50	3'.0 x 0'.7	??	$22^h\ 37^m\ 47.5^s$	+23° 47′ 11″	Faint edge on Galaxy req > 12 inches
NGC 7479	Barred Spiral Galaxy	11.60	4'.1 x 3'.1	105 Million LY	$23^h\ 04^m\ 56.6^s$	+12° 19′ 22″	Very faint Barred Spiral Galaxy >12 inch
NGC 7619	Elliptical Galaxy	11.30	2'.5 x 2'.3	??	$23^h\ 20^m\ 12.0^s$	+08° 12′ 00″	Reasonably bright but small >8inches req
NGC 7626	Lenticular Galaxy	11.50	2'.6 x 2'.3	??	$23^h\ 20^m\ 42.6^s$	+08° 13′ 00″	Very small & faint 16inch req
NGC 7814	Edge on Spiral Galaxy	11.60	5'.5 x 2'.3	40.0 Million LY	$00^h\ 03^m\ 14.9^s$	+16° 08′ 44″	Nice target >8inch - Must Photograph
Steph Quint	Galaxy Cluster	14.1 - 16.7	9'.2 x 8'.9	39-340 Mill LY	$22^h\ 35^m\ 57.5^s$	+33° 57′ 36″	NGC 7317, 7318a, 7318b, 7319, 7320c

Perseus

Object Name	Type	Magnitude	Object Size	Object Distance	Right Ascention	Declination	Notes & Link to Photo / Log / Info
Messier 34	Open Cluster	5.20	25'.0	1,400 LY	$02^h\ 42^m\ 37.3^s$	+42° 47′ 50″	100 Star Open Cluster
Messier 76	Planetary Nebula	10.10	2'.7 x 1'.8	3,400 LY	$01^h\ 42^m\ 04.0^s$	+51° 34′ 00″	Tiny dim Planetary Nebula 8inch plus req
NGC 869	Open Cluster	4.30	30'.0	7,100 LY	$02^h\ 19^m\ 10.0^s$	+57° 09′ 00″	Slightly more Open Cluster of the Double
NGC 884	Open Cluster	4.40	30'.0	7,400 LY	$02^h\ 22^m\ 00.0^s$	+57° 08′ 00″	More compact Open Cluster of the Double
NGC 1023	Spiral Galaxy	10.65	8'.7 x 2'.3	20.6 Million LY	$02^h\ 40^m\ 24.1^s$	+39° 03′ 40″	12 Inch or more required
NGC 1058	Spiral Galaxy	11.20	2'.5 x 2'.5	23.0 Million LY	$02^h\ 43^m\ 30.0^s$	+37° 20' 00"	Face on Spiral 12 inch or more required
NGC 1245	Open Cluster	8.40	10'.0	7,500 LY	$03^h\ 14^m\ 07.0^s$	+47° 15' 00"	Tight Open Cluster with Red Stars
NGC 1260	Spiral Galaxy	14.30	1'.1 x 0'.5	240 Million LY	$03^h\ 17^m\ 27.2^s$	+41° 24′ 10″	16 inch upwards required

NGC 1333	Reflection Nebula	5.60	6'.0 x 3'.0	1,000 LY	$03^h\ 29^m\ 02.0^s$	+31° 20' 00"	Harder to find than magnitude suggests
NGC 1342	Open Cluster	6.70	14'.0	1,790 LY	$03^h\ 31^m\ 06.0^s$	+37° 20' 00"	40 Stars in tight Open Cluster
NGC 1491	Emission Nebula	9.99	6'.0 x 9'.0	11,000 LY	$04^h\ 03^m\ 21.0^s$	+51° 18' 50"	Small Emission HII Region
NGC 1499	Emission Nebula	10.00	145'.0 x 40'.0	1,000 LY	$04^h\ 03^m\ 18.0^s$	+36° 25′ 10"	California Nebula - Its Huge!
NGC 1513	Open Cluster	8.40	9'.0	1,320 LY	$04^h\ 09^m\ 57.0^s$	+49° 30′ 50	Small tight Open Cluster
NGC 1528	Open Cluster	6.40	23'.0	2,530 LY	$04^h\ 14^m\ 11.0^s$	+51° 01′ 50"	Small Open Cluster
NGC 1545	Open Cluster	6.20	18'.0	2,610 LY	04h 20m 56.0^s	+50° 15' 10"	40 Star Open Cluster
IC 351	Planetary Nebula	12.40	7".0	14,700 LY	03h 47m 50.0^s	+35° 03' 00"	Tiny Planetary Nebula central star Mag 15
IC 1805	Emission Nebula	6.50	60'.0 x 60'.0	7,500 LY	$02^h\ 32^m\ 35.5^s$	+61° 29′ 00"	Heart Nebula - HII Region & Open Cluster
IC 2003	Planetary Nebula	12.60	8".0	11,700 LY	$03^h\ 56^m\ 22.0^s$	+33° 52′ 30"	Tiny Planetary Nebula central star Mag 14

Taurus

Object Name	Type	Magnitude	Object Size	Object Distance	Right Ascention	Declination	Notes & Link to Photo / Log / Info
Messier 1	Supernova Remnant	8.40	6'.0 x 4'.0	2.53 Million LY	$05^h\ 34^m\ 31.9^s$	+22° 00′ 52″	The Crab Nebula - Filaments Visible
Messier 45	Open Cluster	1.60	110.0'	440 LY	$03^h\ 47^m\ 24.0^s$	+24° 07′ 00″	Pleiades - Nebulous Open Cluster
NGC 1514	Planetary Nebula	10.80	120".0 x 90".0	4,300 LY	$04^h\ 09^m\ 12.0^s$	+30° 47′ 00″	Faint small blueish planetary nebula
NGC 1587	Dwarf Elliptical Galaxy	11.70	1'.7 x 1'.5	??	$04^h\ 30^m\ 39.9^s$	+00° 39′ 42″	High Magnification Required
NGC 1589	Spiral Galaxy	11.70	3'.2 x 1'.0	??	$04^h\ 30^m\ 45.4^s$	+00° 51′ 48″	Very faint high magnification required
NGC 1642	Spiral Galaxy	12.80	1'.7 x 1'.2	??	$04^h\ 42^m\ 54.9^s$	+00° 37′ 08″	Tiny faint face on Spiral Galaxy
NGC 1647	Open Cluster	6.40	45'.0	3,600 LY	$04^h\ 46^m\ 00.0^s$	+19° 04′ 00″	200 Star Loose Open Cluster
NGC 1746	Open Cluster	6.10	42'.0	4,600 LY	$05^h\ 03^m\ 00.0^s$	+23° 49′ 00″	Tight Open Cluster
NGC 1807	Open Cluster	7.00	17'.0	??	$05^h\ 10^m\ 42.0^s$	+16° 32′ 00″	Next to NGC 1807-Poorer Double Cluster
NGC 1817	Open Cluster	7.00	17'.0	??	$05^h\ 12^m\ 05.9^s$	+16° 42′ 00″	Next to NGC 1817-Poorer Double Cluster
Barnard 7	Dark Nebula	??	96'.7	??	$04^h\ 18^m\ 22.8^s$	+27° 38' 08"	16 inches or photograph required
Caldwell 41	Open Cluster	0.50	330'.0	151 LY	$04^h\ 27^m\ 00.0^s$	+15° 52' 00"	Hyades 100 Stars including Aldebaran
Alpha	Star	0.85	2".0	65 LY	$04^h\ 35^m\ 55.2^s$	+16° 30' 33"	Aldebaran - Bright Flame Orange Star
Beta	Star	1.65	2".0	131 LY	05h 26m 17.5^s	+28° 36' 27"	El Nath - Bright Pale Grey Star

Ursa Major

Object Name	Type	Magnitude	Object Size	Object Distance	Right Ascention	Declination	Notes & Link to Photo / Log / Info

Messier 81	Spiral Galaxy	6.90	24'.9 x 11'.5	11.8 Million LY	$09^h\ 55^m\ 33.2^s$	+69° 03′ 55″	Bodes Galaxy - Spiral big sweeping arms
Messier 82	Irregular Galaxy	9.30	11'.2 x 4'.3	11.5 Million LY	$09^h\ 55^m\ 52.2^s$	+69° 40′ 47″	Cigar Galaxy - detail at medium mag
Messier 97	Planetary Nebula	9.90	3'.4 x 3'.3	2,600 LY	$11^h\ 14^m\ 80.0^s$	+55° 01′ 00″	Owl like eyes revealed at medium mag
Messier 101	Face On Spiral Galaxy	8.30	28'.8 x 26'.9	27.0 Million LY	$14^h\ 03^m\ 12.6^s$	+54° 20′ 57″	Pinwheel Galaxy - Detail at medium mag
Messier 102	Lenticular Galaxy	10.70	4'.7 x 1'.9	50.0 Million LY	$15^h\ 06^m\ 29.5^s$	+55° 45′ 48″	Spindle Galaxy - Pencil thin & Nebulosity
Messier 108	Side On Spiral	10.70	8'.7 x 2'.2	14.1 Million LY	$11^h\ 11^m\ 31.0^s$	+55° 40′ 27″	Detail revealed - averted vision high mag
Messier 109	Barred Spiral Galaxy	10.60	7'.6 x 4'.7	41.0 Million LY	$11^h\ 57^m\ 36.0^s$	+53° 22′ 28″	Structure revealed with aperture & mag
NGC 2681	Spiral Galaxy	11.09	4'.0 x 4'.0	56.0 Million LY	$08^h\ 55^m\ 60.0^s$	+51° 19′ 00″	Small but fairly bright especially the core
NGC 2841	Spiral Galaxy	10.10	8'.1 x 3'.5	34.0 Million LY	$09^h\ 22^m\ 02.6^s$	+50° 58′ 35″	Lovely crisp fairly bright spiral - nice!
NGC 2976	Spiral Galaxy	10.80	5'.9 x 2'.7	11.6 Million LY	$09^h\ 47^m\ 15.4^s$	+67° 54′ 59″	Nice with large aperture high mag
NGC 3077	Elliptical Galaxy	10.60	5'.4 x 4'.5	12.8 Million LY	$10^h\ 03^m\ 19.1^s$	+68° 44′ 02″	Nebulosity under large aperture high mag
NGC 3184	Spiral Galaxy	9.60	6'.9 x 6'.8	25.0 Million LY	$10^h\ 18^m\ 17.0^s$	+41° 25' 27"	Dim - Large aperture required & high mag
NGC 3718	Barred Spiral Galaxy	14.40	0'.9 x 0'.3	??	$11^h\ 39^m\ 29.7^s$	+26° 18' 35"	Dim - 16 inches plus required - To image
NGC 3729	Spiral Galaxy	11.60	8'.0 x 6'.0	42.0 Million LY	$11^h\ 32^m\ 56.0^s$	+53° 01' 55"	S shaped spiral arms & dust lane
NGC 3953	Barred Spiral Galaxy	10.80	6'.9 x 3'.5	46.0 Million LY	$11^h\ 53^m\ 48.9^s$	+52° 19′ 36″	Small spiral large aperture required
NGC 5322	Elliptical Galaxy	10.00	5'.6 x 3'.4	??	$13^h\ 49^m\ 15.2^s$	+60° 11′ 25″	See ball of light & dust lane with 16inch
NGC 5474	Peculiar Dwarf Galaxy	11.30	4'.8 x 4'.3	22.0 Million LY	$14^h\ 05^m\ 01.6^s$	+53° 39′ 44″	Dim nebulosity visible with 16inch
NGC 5585	Barred Spiral Galaxy	11.20	6'.1 x 3'.8	??	$14^h\ 19^m\ 48.0^s$	+56° 43′ 45″	Very dim dust lane just visible 16inches
IC 758	Barred Spiral Galaxy	13.00	2'.0 x 2'.0	??	$12^h\ 04^m\ 12.1^s$	+62° 30′ 20″	Very faint & small 16inch req
IC 2574	Irregular Galaxy	10.60	12'.3 x 5'.9	11.7 Million LY	$10^h\ 28^m\ 40.0^s$	+68° 25′ 00″	Quite bright with 16inches some detail

Ursa Minor

Object Name	Type	Magnitude	Object Size	Object Distance	Right Ascention	Declination	Notes & Link to Photo / Log / Info
NGC 3172	Spiral Galaxy	13.60	1'.0 x 0'.7	??	$11^h\ 47^m\ 15.1^s$	+89° 05′ 34″	A Challenge for a 12inch Telescope
NGC 5034	Spiral Galaxy	14.10	1'.0 x 0'.8	??	$13^h\ 12^m\ 19.1^s$	+70° 38′ 58″	14 inch minimum required - still faint.
NGC 5144	Peculiar Galaxy	13.20	1'.3 x 0'.8	??	$13^h\ 22^m\ 54.2^s$	+70° 30′ 51″	Very dim galaxy req 16inches
NGC 5939	Spiral Galaxy	13.70	0'.9 x 0'.5	??	$15^h\ 24^m\ 46.1^s$	+68° 43′ 50″	14 inch & upwards req - high mag
NGC 6068	Spiral Galaxy	13.00	1'.0 x 0'.7	??	$15^h\ 55^m\ 16.3^s$	+78° 59′ 00″	12 inch and upwards - medium mag
NGC 6217	Spiral Galaxy	11.98	3'.0 x 2'.5	23 Million LY	$16^h\ 32^m\ 29.2^s$	+78° 11′ 22″	Visible in 10 inch - reasonably bright

NGC 6324	Spiral Galaxy	13.00	1'.0 x 0'.6	??	$17^{h}\ 05^{m}\ 25.3^{s}$	+75° 24′ 25″	12 inch and upwards - medium mag
Alpha	Binary Star	1.97 / 9.00	0.3"	431 LY	$02^{h}\ 31^{m}\ 48.7^{s}$	+89° 15′ 51″	Polaris - Double split with 4 inch APO