

Turn Left at Orion

All Objects

Name	Constellation	Object Type	Magnitudes	Object Size/ Double Star Separation	Rating			For Best View:		Coordinates		notes	page	Season	additional description
					Dob	small	binocs	sky	magnification	Right Ascension	Declination				
M42	Orion	Diffuse Nebula	4	60' by 65'	5	5	5	any	low/medium	5 H 35.3 min.	-5° 25'	Orion Nebula - spectacular!	52	Jan.-Mar	a truly spectacular emission nebula surrounding the Trapezium
M43	Orion	Diffuse Nebula	9	15' by 20'	2	1	x	dark	low/medium	5 H 35.6 min.	-5° 16'	companion nebula to M42	52	Jan.-Mar	emission nebula, nestled up near M42
NGC 1981	Orion	Open Cluster	4.2	28'	2	1	x	dark	low	5 H 35.1 min.	-5° 25'	open cluster near M42	53	Jan.-Mar	open cluster near M42; poor with medium brightness range and strong central concentration
NGC 1980	Orion	Diffuse Nebula	7.9	14'	2	1	x	dark	low	5 H 35.4 min.	-4° 54'	nebula near M42	53	Jan.-Mar	open cluster near M42 containing some nice multiple stars
Struve 745	Orion	Double Star	8.5, 8.5	29"	1	1	x	steady	medium	5 H 34.7 min.	-6° 0'	double star near M42	54	Jan.-Mar	dimmer white-white pair, near Struve 747
Struve 747	Orion	Double Star	4.7, 5.5	36"	1	1	x	steady	medium	5 H 35 min.	-6° 0'	double star near M42	54	Jan.-Mar	wide white-white pair, near Iota Orionis
Iota Orionis	Orion	Double Star	2.9, 7.0, 9.7	11", 49"	1	1	x	steady	medium	5 H 35.4 min.	-5° 54'	double star near M42	54	Jan.-Mar	unequal triple: blue-white-white
Theta-1 Orionis, Trapezium	Orion	Multiple Star	5.1, 6.6, 6.6, 6.3, 11.1, 11.5	13", 17", 12", 5", 5"	5	4	x	steady	medium	5 H 35.3 min.	-5° 25'	Trapezium, sextuple star with M42	55	Jan.-Mar	at the core of M42; the two dimmer stars are challenging
Theta-2 Orionis	Orion	Double Star	5.2, 6.5	52"	1	1	x	steady	high	5 H 35.4 min.	-5° 26'	double star near M42	55	Jan.-Mar	very wide, bright white-white pair
BM Orionis	Orion	Variable Star	7.9-8.65; 6.47 days		1	1	x	any	high	5 H 35.3 min.	-5° 23'	eclipsing variable in the Trapezium	55	Jan.-Mar	most northerly of the Trapezium stars
V1016 Orionis	Orion	Variable Star	6.7-7.65; 65.43 days		1	1	x	any	medium	5 H 35.3 min.	-5° 23'	eclipsing variable in the Trapezium	55	Jan.-Mar	most westerly of the four bright Trapezium stars
Struve 761	Orion	Multiple Star	7.9, 8.4, 8.6	67", 8.7"	3	3	1	steady	high	5 H 38.6 min.	-2° 34'	triple star, with Sigma Orionis	56	Jan.-Mar	white-white-white triple (double plus one) in field with Sigma Orionis
Sigma Orionis	Orion	Multiple Star	3.7, 8.8, 6.6, 6.3	11", 13", 41"	3	3	1	steady	high	5 H 38.7 min.	-2° 36'	quadruple star, with Struve 761	56	Jan.-Mar	quadruple star; all white - in field with Struve 761
Beta Orionis, Rigel	Orion	Double Star	0.3, 6.8	9.3"	3	x	x	steady	high	5 H 14.5 min.	-8° 12'	one of the Orion Dob doubles	58	Jan.-Mar	a delightful Dob challenge due to the huge brightness difference
Eta Orionis	Orion	Double Star	3.6, 4.9	1.8"	3	x	x	steady	high	5 H 24.5 min.	-2° 24'	one of the Orion Dob doubles	58	Jan.-Mar	close yellow-blue pair
32 Orionis	Orion	Double Star	4.4, 5.7	1.2"	3	x	x	steady	high	5 H 30.8 min.	5° 57'	one of the Orion Dob doubles	58	Jan.-Mar	very close yellow-blue pair
Delta Orionis, Mintaka	Orion	Double Star	2.2, 6.8	53"	3	x	x	steady	high	5 H 32 min.	0° 20'	one of the Orion Dob doubles	58	Jan.-Mar	wide, unequal white-blue pair
Lambda Orionis, Meissa	Orion	Double Star	3.5, 5.4	4.1"	3	x	x	steady	high	5 H 35.1 min.	9° 56'	one of the Orion Dob doubles	58	Jan.-Mar	bright white-white pair
42 Orionis	Orion	Double Star	4.6, 7.5	1.1"	3	x	x	steady	high	5 H 35.4 min.	-4° 50'	one of the Orion Dob doubles	58	Jan.-Mar	very close and unequal white-white pair near M42 - very challenging
Zeta Orionis, Alnitak	Orion	Double Star	1.9, 3.7	2.5"	3	x	x	steady	high	5 H 40.8 min.	-1° 59'	one of the Orion Dob doubles	58	Jan.-Mar	close, blue-white pair
52 Orionis	Orion	Double Star	6.0, 6.0	1.1"	3	x	x	steady	high	5 H 48 min.	6° 27'	one of the Orion Dob doubles	58	Jan.-Mar	very close, equal white-white pair
Omicron-2 Eridani, Keid	Eridanus	Double Star	4.5, 10.2, 11.5	83", 7"	2	1	x	steady	high	4 H 15.3 min.	-7° 39'	Spock's 'Vulcan' & a white dwarf	60	Jan.-Mar	B-C pair is far from A: B is a white dwarf and C is a red dwarf, too dim to show color
NGC 1535	Eridanus	Planetary Nebula	9.6	0.8"	2	1	x	dark	high	4 H 14.3 min.	-12° 44'	planetary nebula in Eridanus	60	Jan.-Mar	small, blue planetary nebula
39 Eridani	Eridanus	Double Star	5.0, 8.5	6.3"	1	1	x	steady	high	4 H 14.4 min.	-10° 15'	double star near NGC 1535	60	Jan.-Mar	moderately challenging double
h 3752	Lepus	Double Star	5.4, 6.6	3.4"	1	1	x	steady	high	5 H 22.5 min.	-24° 46'	double star near M79	62	Jan.-Mar	
M79	Lepus	Globular Cluster	7.7	9'	2	1	x	dark	medium	5 H 24.2 min.	-24° 31'	globular in Lepus	62	Jan.-Mar	globular cluster; intermediate concentration
M45	Taurus	Open Cluster	1.6	120'	3	3	4	any	lowest	3 H 46.9 min.	24° 7'	the Pleiades (Seven Sisters)	64	Jan.-Mar	nebulousity near the stars is challenging to see
Struve 118	Taurus	Double Star	5.8, 6.7	4.4"	1	1	x	steady	high	5 H 29.3 min.	25° 9'	near M1	66	Jan.-Mar	yellow-white pair near M1
Struve 742	Taurus	Double Star	7.1, 7.5	4.1"	2	2	x	steady	high	5 H 36.4 min.	22° 0'	near M2	66	Jan.-Mar	dim yellow-blue pair just east of M1
M1	Taurus	Supernova Remnant	8.4	4' by 6'	3	1	x	dark	low	5 H 34.5 min.	22° 1'	the Crab Nebula	66	Jan.-Mar	remnant nebula from 1054 supernova
M38	Auriga	Open Cluster	6.4	15'	3	2	1	any	low	5 H 28.7 min.	35° 51'	with M36 & M37	68	Jan.-Mar	open cluster; moderately rich with medium brightness range and strong central concentration
M36	Auriga	Open Cluster	6	10'	3	2	1	any	low	5 H 35.3 min.	34° 9'	with M37 & M38	68	Jan.-Mar	open cluster; moderately rich with large brightness range and strong central concentration
M37	Auriga	Open Cluster	5.6	15'	3	2	1	any	low	5 H 52.3 min.	32° 34'	with M36 & M38	68	Jan.-Mar	open cluster; rich with small brightness range and strong central concentration
Omega Aurigae	Auriga	Double Star	5.0, 8.2	4.8"	2	1	x	steady	high	4 H 59.3 min.	37° 53'	double star near M36-37-38	70	Jan.-Mar	
14 Aurigae	Auriga	Double Star	5.9, 8.8	10", 14", 2"	2	1	x	steady	high	5 H 15.4 min.	32° 41'	multiple star near M36 & M38	70	Jan.-Mar	yellow-blue pair; the dimmer blue pair is a Dob challenge - the brighter has a dim companion
26 Aurigae	Auriga	Double Star	5.5, 8.4	12"	1	1	x	steady	high	5 H 38.6 min.	30° 30'	double star near M37	70	Jan.-Mar	yellow-blue pair; between El Nath and M37
NGC 1907	Auriga	Open Cluster	8.2	5'	1	x	x	any	low	5 H 28.1 min.	35° 19'	dim open cluster near M38	71	Jan.-Mar	open cluster; moderately rich with small brightness range and strong central concentration
LY Aurigae	Auriga	Variable	6.66-7.35; 4.00 days		1	1	1	any	any	5 H 29.7 min.	35° 23'	eclipsing variable star near M38	71	Jan.-Mar	
M35	Gemini	Open Cluster	5.1	25'	3	3	3	any	low	6 H 8.8 min.	24° 20'	great open cluster in Gemini	72	Jan.-Mar	wonderful open cluster; in a Dob look for NGC 2158 nearby
NGC 2158	Gemini	Open Cluster	8.6	5'	1	x	x	dark	low	6 H 7.4 min.	24° 05'	dim open cluster, in field with M35	73	Jan.-Mar	open cluster in field with M35; a pleasant, grainy counterpart to its great neighbor
Eta Geminorum, Propus	Gemini	Double Star	3.5, 6.2	1.7"	2	x	x	steady	high	6 H 14.9 min.	22° 30'	double star near M35	73	Jan.-Mar	Dob challenge double brighter star looks orange and dimmer looks colorful by contrast
15 Geminorum	Gemini	Double Star	6.6, 8.2	25"	2	2	x	any	low	6 H 27.8 min.	20° 47'	double star near M36	73	Jan.-Mar	wide, orange-blue pair
NGC 2129	Gemini	Open Cluster	6.7	6'	1	x	x	dark	low	6 H 1.1 min.	23° 19'	with M35	73	Jan.-Mar	open cluster; poor with large brightness range and strong central concentration
Alpha Geminorum, Castor	Gemini	Triple Star	1.9, 3.0, 9.8	4.8", 70"	3	2	x	steady	high	7 H 34.6 min.	31° 53'	bright multiple star, with NGC 2392	74	Jan.-Mar	very bright, close blue pair with a very dim, distant companion
NGC 2392	Gemini	Planetary Nebula	9.1	0.9"	3	2	x	dark	high	7 H 29.2 min.	20° 55'	'Clown Face' nebula, with Castor	74	Jan.-Mar	planetary nebula
Lambda Geminorum	Gemini	Double Star	3.6, 10.7	9.7"	1	x	x	steady	high	7 H 18.1 min.	16° 32'	double star near Castor & NGC 2392	75	Jan.-Mar	yellow-blue Dob double, challenging because of huge brightness difference
Delta Geminorum, Wasat	Gemini	Double Star	3.6, 8.2	5.6"	1	x	x	steady	high	7 H 20.1 min.	21° 59'	double star near Castor & NGC 2393	75	Jan.-Mar	Dob challenge due to unequal brightness; brighter star is white and dimmer star is orange
Struve 1083	Gemini	Double Star	7.3, 8.1	6.8"	2	1	x	steady	high	7 H 25.6 min.	20° 30'	double star near Castor & NGC 2394	75	Jan.-Mar	yellow-blue pair
Struve 1108	Gemini	Double Star	6.6, 8.2	11"	1	1	x	steady	high	7 H 32.8 min.	22° 53'	double star near Castor & NGC 2395	75	Jan.-Mar	yellow-blue pair
Kappa Geminorum	Gemini	Double Star	3.7, 8.2	7"	1	x	x	steady	high	7 H 77.4 min.	24° 24'	double star near Castor & NGC 2396	75	Jan.-Mar	challenging, unequal Dob double
NGC 2244	Monoceros	Open Cluster	4.8	24'	2	1	1	any	low	6 H 31.9 min.	4° 56'	inside the Rosette	76	Jan.-Mar	open cluster; poor with large brightness range and strong central concentration
Rosette	Monoceros	Diffuse Nebula	6	60' by 75' NW-SE	3	1	1	dark	low	6 H 30.3 min.	5° 3'	huge nebula surrounding NGC 2244	76	Jan.-Mar	lovely, huge nebula for dark night, with bright open cluster inside
Epsilon Monocerotis	Monoceros	Double Star	4.4, 6.4	12"	1	1	x	steady	high	6 H 23.8 min.	4° 36'	double star near the Rosette	77	Jan.-Mar	subtle colors
Beta Monocerotis	Monoceros	Triple Star	4.6, 5.0, 5.3	7.2", 2.9"	3	3	x	steady	high	6 H 28.8 min.	-7° 2'	bright triple star	78	Jan.-Mar	appealing white-blue-blue triple star; to get there you 'turn left at Orion'!!
NGC 2232	Monoceros	Open Cluster	4.2	45'	3	3	2	any	low	6 H 27.2 min.	-4° 45'	open cluster near Beta Monocerotis	78	Jan.-Mar	open cluster; poor with large brightness range
M50	Monoceros	Open Cluster	5.9	15'	2	2	1	any	low	7 H 2.9 min.	-8° 20'	colorful open cluster in Monoceros	80	Jan.-Mar	open cluster; moderately rich with large brightness range and strong central concentration
Alpha Canis Majoris, Sirius	Canis Major	Double Star	-1.4, 8.5	8.4"	1	x	x	very steady	highest	6 H 45.1 min.	-16° 43'	extreme Dob binary challenge	81	Jan.-Mar	brightest star in sky; exceptionally tough double for big Dob (second star lost deep in glare)
Mu Canis Majoris	Canis Major	Double Star	7.95, 3, 7.1	3"	2	x	x	very steady	highest	6 H 56.1 min.	-14° 3'	Dob binary challenge	81	Jan.-Mar	very tough Dob double; extreme brightness contrast, yellow-blue
Alpha Canis Minoris, Procyon	Canis Minor	Double Star	0.4, 10.8	4.7"	1	x	x	very steady	highest	7 H 39.3 min.	5° 13'	extreme Dob binary challenge	81	Jan.-Mar	very challenging, with high brightness contrast
M41	Canis Major	Open Cluster	4.5	35'	3	3	2	any	low	6 H 47 min.	-20° 45'	open cluster in Canis Major	82	Jan.-Mar	open cluster; moderately rich with large brightness range and strong central concentration
M47	Puppis	Open Cluster	4.4	25'	3	2	2	any	low	7 H 36.6 min.	-14° 29'	bright open cluster; with M46	84	Jan.-Mar	open cluster; loose and bright, with a dozen stars much brighter than the others
M46	Puppis	Open Cluster	6.1	20'	3	2	1	dark	low	7 H 41.8 min.	-14° 49'	open cluster; with M47	84	Jan.-Mar	open cluster; partly resolved haze of stars with planetary nebula NGC 2438 in front
NGC 2414	Puppis	Open Cluster	7.9	6'	1	x	x	dark	low	7 H 33.2 min.	-15° 27'	open cluster near M47	85	Jan.-Mar	open cluster; moderately rich with large brightness range and strong central concentration
NGC 2423	Puppis	Open Cluster	6.7	12'	1	1	x	dark	medium	7 H 37.1 min.	-13° 52'	open cluster in field with M47	85	Jan.-Mar	open cluster; moderately rich with medium brightness range
NGC 2438	Puppis	Planetary Nebula	10.8	1.2'	1	x	x	any	high	7 H 41.8 min.	-14° 44'	planetary in front of M46	85	Jan.-Mar	planetary nebula
Herschel 3945, Winter Albireo	Canis Major	Double Star	5.0, 5.8	26"	3	2	x	any	low	7 H 16.6 min.	-23° 19'	colorful double near NGC 2362	86	Jan.-Mar	lovely red-orange double
NGC 2362	Canis Major	Open Cluster	3.8	6'	3	2	1	any	medium	7 H 18.7 min.	-24° 57'	open cluster in Canis Major	86	Jan.-Mar	open cluster; poor with large brightness range and strong central concentration
Epsilon Canis Majoris, Adhar	Canis Major	Double Star	1.5, 7.5	7"	1	x	x	steady	highest	6 H 58.6 min.	-28° 58'	Dob binary challenge	87	Jan.-Mar	Dob challenge double
M93	Puppis	Open Cluster	6.2	10'	3	3	1	any	medium	7 H 44.5 min.	-23° 52'	open cluster in Puppis	88	Jan.-Mar	open cluster with small brightness range
k Puppis	Puppis	Double Star	4.4, 4.6	9.8"	2	2	x	steady	high	7 H 38.8 min.	-26° 48'	double star near M93	89	Jan.-Mar	cat's-eyes white-white pair
Zeta Cancri, Tegmine	Cancer	Double Star	5.3, 6.3	1.1"	2	3	x	steady	highest	8 H 12.2 min.	17° 39'	near M44 (the Beehive)	92	Apr.-Jun.	nice pair of yellow stars (a challenging triple in a Dob)
M44, Beehive	Cancer	Open Cluster	3.1	70'	1	3	4	any	lowest	8 H 40.3 min.	19° 41'	great open cluster in Cancer	92	Apr.-Jun.	visible naked eye and great in binoculars or finder, but too large for best view in telescopes
24 Cancri	Cancer	Double Star	6.9, 7.5	5.6"	1	x	x	steady	high	8 H 26.7 min.	24° 32'	near M44 (the Beehive)	93	Apr.-Jun.	Dob challenge double
M67	Cancer	Open Cluster	6.9	25'	3	3	2	any	low	8 H 51 min.	11° 49'	open cluster in Cancer	94	Apr.-Jun.	open cluster; moderately rich with medium brightness range and strong central concentration

VZ Cancr	Cancer	Variable Star	7.18-7.91; 4.28 hours		1	1	2	any	any	8 H 40.9 min.	9" 49'	variable star in Cancer	94	Apr.-Jun.	dynamic variable: compare with nearby 37 Cancr
Epsilon Hydrae	Hydrae	Double Star	3.5, 6.7	2.8"	2	x	x	steady	high	8 H 46.8 min.	6" 25'	double star near M67	95	Apr.-Jun.	Dob challenge double
Phi-2 Cancr	Cancer	Double Star	6.2, 6.2	5.2"	3	2	x	steady	high	8 H 26.8 min.	26" 56"	one of the Cancer-Leo doubles	96	Apr.-Jun.	equal white pair
Struve 1266	Cancer	Double Star	8.8, 10.0	24"	1	1	x	steady	high	8 H 44.4 min.	28" 27"	one of the Cancer-Leo doubles	96	Apr.-Jun.	dim, close white pair
Iota Cancr	Cancer	Double Star	4.1, 6.0	31"	2	2	x	steady	medium	8 H 46.7 min.	28" 46"	one of the Cancer-Leo doubles	96	Apr.-Jun.	wide yellow-blue pair
57 Cancr	Cancer	Triple Star	6.1, 6.4	1.5"	2	1	x	steady	low/highest	8 H 54.2 min.	30" 35"	one of the Cancer-Leo doubles	96	Apr.-Jun.	close, equal pair with a dimmer third companion
Kappa Leonis	Leo	Double Star	4.6, 9.7	2.4"	3	1	x	steady	highest	9 H 24.7 min.	26" 11"	one of the Cancer-Leo doubles	96	Apr.-Jun.	unequal, close Dob challenge
Gamma Leonis, Algieba	Leo	Double Star	2.4, 3.6	4.6"	3	3	x	steady	high	10 H 20 min.	19" 51"	best of the Cancer-Leo doubles	96	Apr.-Jun.	bright yellow-orange pair
53 Cancr	Cancer	Double Star, Exoplanets	6.2, 9.7	43"	3	3	x	steady	high	8 H 52.5 min.	28" 16"	one of the Cancer-Leo doubles	97	Apr.-Jun.	wide, unequal double near Iota Cancr
NGC 3242	Hydra	Planetary Nebula	7.7	1"	3	1	x	dark	high	10 H 24.8 min.	-18" 39"	planetary nebula 'Ghost of Jupiter'	98	Apr.-Jun.	planetary nebula
M65	Leo	Galaxy	9.2	2.9" by 9", N-S	3	2	x	dark	low	11 H 18.9 min.	13" 7"	one of the 'Leo trio' galaxies	100	Apr.-Jun.	spiral galaxy; the roundest of the Leo Trio (with M66 and NGC 3628)
M66	Leo	Galaxy	8.9	4" by 9", N-S	3	2	x	dark	low	11 H 20.2 min.	13" 1"	one of the 'Leo trio' galaxies	100	Apr.-Jun.	spiral galaxy; quite bright, oddly-shaped member of the Leo Trio (with M65 and NGC 3628)
NGC 3628	Leo	Galaxy	9.6	13.1" by 3.1", E-W	3	1	x	dark	low	11 H 20.3 min.	13" 37"	one of the 'Leo trio' galaxies	100	Apr.-Jun.	spiral galaxy; nifty, elongated member of the Leo Trio (with M65 and M66)
54 Leonis	Leo	Double Star	4.5, 6.3	6.6"	2	2	x	steady	high	10 H 55.6 min.	24" 45"	double star near the Leo trio	101	Apr.-Jun.	
NGC 3607	Leo	Galaxy	9.9	4"	2	1	x	dark	low	11 H 16.9 min.	18" 3"	galaxy near the Leo trio	101	Apr.-Jun.	elliptical galaxy, part of a nice little Dob trio (NGC 3607, 3608, 3632)
NGC 3608	Leo	Galaxy	10.7	2.8"	2	1	x	dark	low	11 H 17 min.	18" 9"	galaxy near the Leo trio	101	Apr.-Jun.	elliptical galaxy, part of a nice little Dob trio (NGC 3607, 3608, 3632)
NGC 3632	Leo	Galaxy	10.9	3" by 2", NW-SSE	2	1	x	dark	low	11 H 20.1 min.	18" 21"	galaxy near the Leo trio	101	Apr.-Jun.	spiral galaxy, part of a nice little Dob trio (NGC 3607, 3608, 3632)
M95	Leo	Galaxy	9.8	5" by 7", N-S	3	1	x	dark	low	10 H 44 min.	11" 42"	one of the bright Leo I galaxies	102	Apr.-Jun.	spiral galaxy; with M96 and M105, visible in small telescopes
M96	Leo	Galaxy	9.3	5" by 7", N-S	3	1	x	dark	low	10 H 46.8 min.	11" 49"	one of the bright Leo I galaxies	102	Apr.-Jun.	spiral galaxy; with M95 and M105, visible in small telescopes
M105	Leo	Galaxy	8.4	4" by 5", ENE-WSW	3	1	x	dark	low	10 H 47.8 min.	12" 35"	one of the bright Leo I galaxies	102	Apr.-Jun.	elliptical galaxy; with M95 and M96, visible in small telescopes
NGC 3384	Leo	Galaxy	9.9	5.4" by 2.7", NE-SE	2	x	x	dark	low	10 H 48.3 min.	12" 38"	in Leo I Galaxy Group	102	Apr.-Jun.	elliptical galaxy, quite bright and next to M105
NGC 3389	Leo	Galaxy	11.8	2.9" by 1.3", ESE-WSW	1	x	x	dark	low	10 H 48.5 min.	12" 32"	in Leo I Galaxy Group	102	Apr.-Jun.	dim spiral galaxy making a tight triangle with M105 and NGC 3384
NGC 3412	Leo	Galaxy	10.4	3.7" by 2.2", NNE-SSW	1	x	x	dark	low	10 H 50.9 min.	13" 25"	in Leo I Galaxy Group	102	Apr.-Jun.	spiral galaxy, off to the northeastern edge of the Leo I galaxy group
Gamma Virginis, Porrima	Virgo	Double Star	3.5, 3.5	1.3" (in 2010, increasing)	2	3	x	steady	high	12 H 41.7 min.	-1" 27"	bright, widening double in Virgo	104	Apr.-Jun.	bright equal yellow pair, separated by 1.9" in 2012, 2.6" in 2016, and 3.0" in 2020
Struve 1689	Virgo	Double Star	7.1, 9.1	30"	1	1	x	any	medium	12 H 55.5 min.	11" 30"	Virgo galaxy chart 1	105	Apr.-Jun.	wide, dim, unequal double en route from Vindematrix to the Virgo galaxies
NGC 4754	Virgo	Galaxy	10.5	4.4" by 2.4", NNE-SSW	1	x	x	dark	low	12 H 52.3 min.	11" 19"	Virgo galaxy chart 1	105	Apr.-Jun.	spiral galaxy; dim, near NGC 4762
NGC 4762	Virgo	Galaxy	10.1	8.7" by 1.7", NNE-SSW	2	1	x	dark	low	12 H 52.9 min.	11" 14"	Virgo galaxy chart 1	105	Apr.-Jun.	spiral galaxy; the first you encounter in the Virgo group as you start from Vindematrix
NGC 4469	Virgo	Galaxy	11.5	3.8" by 1.3", E-W	1	x	x	dark	low	12 H 29.5 min.	8" 45"	Virgo galaxy chart 2	106	Apr.-Jun.	dim spiral galaxy near M49
M49	Virgo	Galaxy	8.3	8" by 10", NNE-SSW	3	2	1	dark	low	12 H 29.8 min.	8" 0"	bright; Virgo galaxy chart 2	106	Apr.-Jun.	bright elliptical galaxy, away from the bulk of the Virgo group
NGC 4526	Virgo	Galaxy	9.6	7" by 2.5", ESE-WSW	1	x	x	dark	low	12 H 34 min.	7" 42"	Virgo galaxy chart 2	106	Apr.-Jun.	spiral galaxy near M49
NGC 4535	Virgo	Galaxy	9.8	7.1" by 5", N-S	1	x	x	dark	low	12 H 34.3 min.	8" 12"	Virgo galaxy chart 2	106	Apr.-Jun.	spiral galaxy near M49
M84	Virgo	Galaxy	9.2	5" by 6", NW-SE	3	1	1	dark	low	12 H 25.1 min.	12" 53"	bright; Virgo galaxy charts 4,5	107	Apr.-Jun.	bright elliptical galaxy anchoring the western end of Markarian's chain, next to M86
M86	Virgo	Galaxy	8.9	5" by 6", NW-SE	3	2	1	dark	low	12 H 26.2 min.	12" 57"	bright; Virgo galaxy charts 4,5	107	Apr.-Jun.	bright elliptical galaxy in Markarian's chain, next to M84
NGC 4435	Virgo	Galaxy	10.8	3" by 2.2", N-S	1	x	x	dark	low	12 H 27.7 min.	13" 5"	Virgo galaxy charts 4,5	107	Apr.-Jun.	dim, small elliptical galaxy in Markarian's chain, right next to NGC 4438
NGC 4438	Virgo	Galaxy	10	8.5" by 3", NNE-SSW	2	1	x	dark	low	12 H 27.8 min.	13" 0"	Virgo galaxy charts 4,5	107	Apr.-Jun.	elongated-looking spiral galaxy in Markarian's chain, near M86
NGC 4461	Virgo	Galaxy	11.1	3.4" by 1.4", N-S	1	x	x	dark	low	12 H 29 min.	13" 11"	Virgo galaxy chart 4	107	Apr.-Jun.	dim spiral galaxy in Markarian's chain
NGC 4473	Virgo	Galaxy	10.2	4.5" by 2.5", E-W	1	x	x	dark	low	12 H 29.8 min.	13" 26"	Virgo galaxy chart 4	107	Apr.-Jun.	dim elliptical galaxy in Markarian's chain
NGC 4477	Virgo	Galaxy	10.4	3.4"	1	x	x	dark	low	12 H 30 min.	13" 38"	Virgo galaxy chart 4	107	Apr.-Jun.	dim spiral galaxy at the northeastern end of Markarian's chain
M87	Virgo	Galaxy	8.6	6" by 8", N-S	3	2	1	dark	low	12 H 30.8 min.	12" 23"	Virgo galaxy chart 4	107	Apr.-Jun.	bright, prominent elliptical galaxy southeast of Markarian's chain
M88	Coma Berenices	Galaxy	9.4	3" by 6", NW-SE	2	1	1	dark	low	12 H 32 min.	14" 25"	Virgo galaxy chart 4	107	Apr.-Jun.	spiral galaxy
M91	Coma Berenices	Galaxy	10.1	4" by 5", NNE-SSW	2	1	x	dark	low	12 H 35.4 min.	14" 30"	Virgo galaxy chart 4	107	Apr.-Jun.	spiral galaxy
M89	Virgo	Galaxy	9.9	3" by 3.5"	2	1	1	dark	low	12 H 35.7 min.	12" 33"	Virgo galaxy charts 3,4	107	Apr.-Jun.	elliptical galaxy
M90	Virgo	Galaxy	9.4	4" by 9", NNE-SSW	2	1	x	dark	low	12 H 36.8 min.	13" 10"	Virgo galaxy charts 3,4	107	Apr.-Jun.	spiral galaxy
M58	Virgo	Galaxy	9.6	4" by 6", E-W	1	1	x	dark	low	12 H 37.7 min.	11" 49"	Virgo galaxy chart 3	107	Apr.-Jun.	spiral galaxy
M59	Virgo	Galaxy	9.7	3" by 5", N-S	1	1	x	dark	low	12 H 42 min.	11" 39"	Virgo galaxy chart 3	107	Apr.-Jun.	elliptical galaxy near M60
NGC 4638	Virgo	Galaxy	11.1	2.2" by 1.4", NW-SE	1	x	x	dark	low	12 H 42.8 min.	11" 27"	Virgo galaxy chart 3	107	Apr.-Jun.	dim elliptical galaxy near M59 and M60
M60	Virgo	Galaxy	8.8	6" by 7", ESE-WSW	2	1	1	dark	low	12 H 43.7 min.	11" 33"	bright; Virgo galaxy chart 3	107	Apr.-Jun.	bright elliptical galaxy
M98	Coma Berenices	Galaxy	7.9	2.8" by 9", NNE-SSW	1	x	x	dark	low	12 H 13.8 min.	14" 54"	Virgo galaxy chart 5	108	Apr.-Jun.	spiral galaxy
NGC 4216	Virgo	Galaxy	10.3	8.1" by 1.8", NNE-SSW	1	x	x	dark	low	12 H 15.9 min.	13" 9"	Virgo galaxy chart 5	108	Apr.-Jun.	spiral galaxy; not very bright, but a pretty little elongate oval
M99	Coma Berenices	Galaxy	7.9	4" by 5", NE-SE	1	x	x	dark	low	12 H 18.8 min.	14" 25"	Virgo galaxy chart 5	108	Apr.-Jun.	spiral galaxy
Struve 1685	Coma Berenices	Double Star	7.3, 7.8	16"	1	x	x	steady	high	12 H 52 min.	19" 10"	double star near M64	110	Apr.-Jun.	dim, equal double near M64
M53	Coma Berenices	Globular Cluster	7.7	13"	3	2	1	dark	low	13 H 12.9 min.	18" 10"	with M64	110	Apr.-Jun.	globular cluster; intermediate concentration
M64	Coma Berenices	Galaxy	8.5	#N/A	2	1	x	dark	low	12 H 56.8 min.	21" 31"	Black Eye Galaxy, with M53	110	Apr.-Jun.	spiral galaxy
Alpha CVn, Cor Caroli	Canes Venatici	Double Star	2.9, 5.5	19"	2	2	x	any	medium	12 H 56 min.	38" 19"	easy, colorful double star	112	Apr.-Jun.	easy, pretty blue-yellow pair
M94	Canes Venatici	Galaxy	8.1	12" by 14", ESE-WSW	3	1	x	dark	low	12 H 50.9 min.	41" 7"	small, bright galaxy	112	Apr.-Jun.	spiral galaxy
2 Canum Venaticorum	Canes Venatici	Double Star	5.9, 8.7	11"	2	1	x	any	medium	12 H 16.1 min.	40" 40"	with M94 and Cor Caroli	113	Apr.-Jun.	unequal blue-yellow pair
Struve 1702	Canes Venatici	Double Star	8.7, 9.4	35"	1	1	x	any	medium	12 H 58.5 min.	38" 17"	with M94 and Cor Caroli	113	Apr.-Jun.	dim, wide pair
M63	Canes Venatici	Galaxy	8.5	7" by 12", ESE-WSW	2	1	x	dark	low	13 H 15.8 min.	42" 2"	with M94 and Cor Caroli	113	Apr.-Jun.	spiral galaxy
Y CVn, La Superba	Canes Venatici	Carbon Star	4.86-5.88; 268 days		2	2	2	any	low	14 H 41.1 min.	13" 44"	carbon star near Cor Caroli	113	Apr.-Jun.	beautiful deep red in binoculars, finder, or any telescope
M3	Canes Venatici	Globular Cluster	6.6	18"	3	3	1	dark	medium	13 H 42.2 min.	28" 23"	bright globular cluster	114	Apr.-Jun.	bright and pretty globular cluster; intermediate concentration
Pi Bootis	Boötes	Double Star	4.9, 5.8	5.6"	2	2	x	steady	high	14 H 40.7 min.	16" 23"	one of the Boötes doubles	116	Apr.-Jun.	yellow-blue pair
Epsilon Bootis, Izar	Boötes	Double Star	2.6, 4.8	3.0"	3	3	x	steady	high	14 H 45 min.	27" 4"	best of the Boötes doubles	116	Apr.-Jun.	famous, pretty yellow-blue pair
Xi Bootis	Boötes	Double Star, Exoplanets	4.8, 7.0	6.4"	3	2	x	steady	high	14 H 51.4 min.	19" 6"	a Boötes double star, with planets	116	Apr.-Jun.	yellow star with nearby dimmer orange companion
Mu Bootis, Alkairoups	Boötes	Triple Star	7.94, 3, 7.1, 7.6	109", 2.2"	3	1	2	steady	high	15 H 24.5 min.	37" 23"	a triple star in Boötes	116	Apr.-Jun.	star with two much dimmer companions, one boringly distant, one challengingly close
Zeta Coronae Borealis	Corona Borealis	Double Star	5.0, 5.9	6.3"	2	2	x	steady	high	15 H 39.4 min.	36" 38"	one of the 'Boötes doubles'	116	Apr.-Jun.	nice double with a yellow primary and a blue-green secondary
M13	Hercules	Globular Cluster	5.8	20"	4	4	3	any	medium	16 H 41.7 min.	36" 27"	best globular in the northern sky	120	Jul.-Sep.	beautiful globular cluster with intermediate concentration - awesome Dob object
Sigma Coronae Borealis	Corona Borealis	Multiple Star	5.6, 6.5	7.1"	2	2	x	steady	high	16 H 14.7 min.	33" 51"	double star near M13	121	Jul.-Sep.	lovely double
Delta Herculis	Hercules	Double Star	3.1, 8.3	11"	1	x	x	steady	highest	17 H 15 min.	24" 50"	unequal double star in Hercules	121	Jul.-Sep.	challenging Dob double with a large brightness contrast
NGC 6207	Hercules	Galaxy	11.4	3' by 1.2", NNE-SSW	2	x	x	dark	medium	16 H 43.1 min.	36" 50"	dim galaxy very near M13	121	Jul.-Sep.	spiral galaxy; a Dob challenge close to M13
M92	Hercules	Globular Cluster	6.5	14"	3	3	1	dark	medium	17 H 17.1 min.	43" 9"	bright globular cluster	122	Jul.-Sep.	globular cluster; intermediate rich concentration
Rho Herculis	Hercules	Double Star	4.5, 5.4	4.0"	2	1	x	steady	highest	17 H 23.7 min.	37" 9"	double star in Hercules 'keystone'	123	Jul.-Sep.	pleasant Dob double
Alpha Herculis, Ras Algethi	Hercules	Double (& variable) Star	3.5, 5.4	4.9"	3	2	x	steady	high	17 H 14.6 min.	14" 23"	colorful double star	124	Jul.-Sep.	nice red-green pair
M5	Serpens	Globular Cluster	8.3	20"	3	3	1	dark	low	15 H 18.5 min.	2" 5"	bright globular cluster	124	Jul.-Sep.	impressive globular cluster; intermediate concentration
M12	Ophiucus	Globular Cluster	8.4	16"	3	2	1	dark	medium	16 H 47.2 min.	-1" 57"	globular cluster, near M10	126	Jul.-Sep.	globular cluster; looks a tad smaller, brighter and less easily resolved than its partner, M12
M10	Ophiucus	Globular Cluster	8.4	20"	3	2	1	dark	medium	16 H 57.1 min.	-4" 7"	globular cluster, near M12	126	Jul.-Sep.	globular cluster; looks a tad larger, dimmer and more easily resolved than its partner, M10
Epsilon Lyrae, Double-Double	Lyra	Quadruple Star	5.2, 6.1, 5.3, 5.4	208", 2.3", 2.3"	4	3	2	steady	high	18 H 44.4 min.	39" 38"	the great 'double-double'	128	Jul.-Sep.	maybe the niftiest multiple star in the sky - two widely-spaced close white pairs
Zeta Lyrae	Lyra	Double Star	4.3, 5.6	44"	1	1	1	steady	low	18 H 44.8 min.	37" 36"	wide double star	128	Jul.-Sep.	very wide double - easy but not terribly interesting
Struve 2470, D-D's double	Lyra	Double Star	7.0, 8.4	14"	2	2	x	steady	medium	19 H 8.8 min.	34" 46"	half of the 'double-double's double'	128	Jul.-Sep.	nice white pair, in the same field with the similar Struve 2474
Struve 2474, D-D's double	Lyra	Double Star	6.8, 7.9	16"	2	2	x	steady	medium	19 H 8.8 min.	34" 46"	half of the 'double-double's double'	128	Jul.-Sep.	nice yellow pair, in the same field with the similar Struve 2470

Struve 2725	Delphinus	Double Star	7.5, 8.2	6.0"	2	2	x	steady	high	20 H 46.2 min.	15° 54"	double star, near Gamma Delphini	128	Jul.-Sep.	dim white pair near Gamma Delphini
Gamma Delphini	Delphinus	Double Star	4.4, 5.0	9.1"	3	3	x	steady	high	20 H 46.7 min.	16° 8"	double star, near Struve 2725	128	Jul.-Sep.	very prett orange-lime colored pair, with the much dimmer pair Struve 2725 nearby
61 Cygni	Cygnus	Double Star	5.2, 6.1	31"	2	2	x	any	medium	21 H 6.6 min.	38° 42"	pretty, nearby double star	128	Jul.-Sep.	easy, wide orange pair; only 11.4 light years away
M57	Lyra	Planetary Nebula	8.8	1' by 1.7', NE-SE	4	3	x	dark	high	18 H 53.6 min.	33° 2"	Ring Nebula	130	Jul.-Sep.	the great Ring Nebula - a pretty little smoke ring even in small telescopes
Beta Lyrae	Lyra	Variable (& double) Star	3.3-4.3, 6.7	46"	1	1	1	any	low	18 H 50.1 min.	33° 22"	eclipsing variable (and wide double)	131	Jul.-Sep.	famous eclipsing variable star near M57
Otto Struve 525	Lyra	Triple Star	6.1, 9.1, 7.6	1.8", 45"	3	2	x	steady	high	18 H 54.9 min.	41° 36"	pretty double near M57	131	Jul.-Sep.	dim but pretty yellow-blue pair near M57; high X in a Db shows a dim third companion
Beta Cygni, Albireo	Cygnus	Double Star	3.2, 4.7	37"	4	4	x	any	medium	19 H 30.7 min.	27° 58"	colorful double star	132	Jul.-Sep.	maybe the finest colorful double star in the sky; a bright orange-blue pair
Epsilon Sagittae	Sagitta	Double Star	5.8, 8.4	87"	1	1	x	any	low	19 H 37.3 min.	16° 28"	wide double near M71	139	Jul.-Sep.	dim, with a very distant faint companion
HN 84	Sagitta	Double Star	6.4, 9.5	28"	1	1	x	any	low	19 H 39.4 min.	16° 34"	wide double near M71	139	Jul.-Sep.	dim, with a distant, very faint companion
M56	Lyra	Globular Cluster	8.4	8'	2	1	x	dark	medium	19 H 16.6 min.	30° 10'	globular between Albireo & M57	132	Jul.-Sep.	globular cluster; small and hazy, grainy in a Dob
M29	Cygnus	Open Cluster	6.6	10'	2	2	1	any	low	20 H 23.9 min.	38° 31'	open cluster in Cygnus Milky Way	133	Jul.-Sep.	open cluster; poor with large brightness range and strong central concentration
M39	Cygnus	Open Cluster	4.6	30'	1	2	2	any	low	21 H 32.2 min.	48° 26'	open cluster in Cygnus Milky Way	133	Jul.-Sep.	open cluster; poor with medium brightness range and strong central concentration
16 Cygni	Cygnus	Double Star, Exoplanets	6.0, 6.2	40"	1	2	x	any	low	19 H 41.8 min.	50° 31"	double near the blinking planetary	134	Jul.-Sep.	wide, equal pair of yellow stars
NGC 6826, Blinking Nebula	Cygnus	Planetary Nebula	8.8	0.6"	3	2	x	dark	high	19 H 44.8 min.	50° 31"	remarkable little planetary nebula	134	Jul.-Sep.	with direct vision, wonderful little planetary nebula fades, and central star appears
R Cygni	Cygnus	Variable Star	6.1-14.4; 426 days		1	1	x	any	low	19 H 36.8 min.	50° 12'	red variable star	135	Jul.-Sep.	red variable - ranging in brightness from easy to see in a finder to invisible in an 8" Dob
M27	Vulpecula	Planetary Nebula	7.4	6'	4	4	1	dark	medium	19 H 59.6 min.	22° 43"	the great Dumbbell Nebula	136	Jul.-Sep.	possibly the most beautiful planetary nebula in the sky - a ghostly bowtie/dumbbell
M71	Sagitta	Globular Cluster	8.4	7"	3	3	1	dark	medium	19 H 53.7 min.	18° 47'	globular cluster in Sagitta	138	Jul.-Sep.	a globular cluster; not particularly bright, but grainy-looking
Zeta Sagittae	Sagitta	Double Star	5.0, 9.0	8.1"	2	1	x	any	low	19 H 49 min.	19° 8"	double star near M71	139	Jul.-Sep.	unequal double
Theta Sagittae	Sagitta	Double Star	6.6, 8.9	12"	1	1	x	any	low	20 H 9.9 min.	20° 55"	double star in Sagitta	139	Jul.-Sep.	rather dim star with a dim companion in a crowded field
Brocchi's, Coathanger	Vulpecula	Open Cluster		80'	x	x	3	any	lowest	19 H 25.4 min.	20° 11'	binocular 'Coathanger' asterism	139	Jul.-Sep.	much too large for a telescope, but a pretty asterism in binoculars or finderscope
M11	Scutum	Open Cluster	8.4	11'	4	3	1	dark	medium	18 H 51.1 min.	-6° 16"	'Wild Ducks' open cluster in Scutum	140	Jul.-Sep.	open cluster; rich with medium brightness range and strong central concentration - wow!
Struve 2391	Scutum	Double Star	6.5, 9.6	38"	1	1	x	any	low	18 H 48.7 min.	-6° 2"	wide double near M11	141	Jul.-Sep.	unequal, wide double close to M11
15 Aquilae	Aquila	Double Star	5.5, 7.0	39"	2	2	x	any	low	19 H 5 min.	-4° 2"	wide double near M11	141	Jul.-Sep.	wide yellow-blue pair
M26	Scutum	Open Cluster	8	10'	2	1	1	dark	low	18 H 45.3 min.	-9° 23'	open cluster near M11	141	Jul.-Sep.	open cluster; moderately rich with small brightness range and strong central concentration
R Scuti	Scutum	Variable Star	4.2-8.6; 146 days		1	1	1	any	low	18 H 47.5 min.	-5° 43'	variable star near M11	141	Jul.-Sep.	variable star close to M11
V Aquilae	Aquila	Carbon Star			2	2	2	any	low	19 H 4.4 min.	-5° 41'	deep red 'carbon' variable star	141	Jul.-Sep.	lovely deep red variabe star
M16	Serpens	Open Cluster	6	8'	2	1	1	dark	low	18 H 18.8 min.	-13° 47'	open cluster near M17	142	Jul.-Sep.	open cluster
M18	Sagittarius	Open Cluster	6.9	7"	1	1	x	dark	low	18 H 19.9 min.	-17° 8"	open cluster near M17	142	Jul.-Sep.	open cluster
M17	Sagittarius	Diffuse Nebula	6	15' by 20'	4	3	2	dark	low	18 H 20.8 min.	-16° 11'	the Swan Nebula	142	Jul.-Sep.	beautiful nebula; the brightest parts look like a swan or a check mark, in a rich starfield
M23	Sagittarius	Open Cluster	5.5	25'	2	3	4	dark	low	17 H 56.9 min.	-19° 1'	open cluster near M25 in Sagittarius	144	Jul.-Sep.	open cluster; a Dob resolves graining haze into 50 stars
M25	Sagittarius	Open Cluster	4.6	25'	2	3	4	dark	low	18 H 31.7 min.	-19° 15'	open cluster near M23 in Sagittarius	144	Jul.-Sep.	open cluster; a wide sprinkling of stars, including Cepheid variable U Sagittarii
M24	Sagittarius	Open Cluster	4.6	90'	1	2	3	dark	low	18 H 18.4 min.	-18° 26'	open cluster near M23 & M25	145	Jul.-Sep.	huge star cloud, visible to naked eye but too large to see well in a telescope
U Sagittarii	Sagittarius	Cepheid Variable Star	5.8-7.16; 6 days and 18 hours		1	1	1	any	low	18 H 31.8 min.	-19° 22'	Cepheid variable star	145	Jul.-Sep.	Cepheid variable in M25; at maximum, clearly the brightest in the cluster - at minimum, not
NGC 6530	Sagittarius	Open Cluster	4.6	15'	2	2	1	any	medium	18 H 4.7 min.	-24° 20'	open cluster enmeshed in M8	146	Jul.-Sep.	pretty open cluster, enveloped by M8
M8	Sagittarius	Diffuse Nebula	7.7	30' by 45'	4	3	3	dark	medium	18 H 4.7 min.	-24° 23'	Lagoon Nebula, engulfing NGC 6530	146	Jul.-Sep.	awesome and intricate emission nebula, enveloping open cluster NGC 6530
M21	Sagittarius	Open Cluster	5.9	16'	2	1	x	any	medium	18 H 4.8 min.	-22° 30'	open cluster near M20	148	Jul.-Sep.	open cluster; moderately rich with large brightness range and strong central concentration
M20	Sagittarius	Diffuse Nebula	6.3	20'	3	2	2	dark	medium	18 H 1.9 min.	-23° 2"	the Trifid Nebula	148	Jul.-Sep.	Trifid Nebula; the 'trifid' (in 3 parts) reason for the name is clear only with larger apertures
HN40	Sagittarius	Triple Star	7.6, 10.4, 8.7	6.1", 11"	2	1	x	steady	high	18 H 2.3 min.	-23° 2"	multiple star inside M20	149	Jul.-Sep.	brightest star in M20; multiple: 2, 3, or 4 members depending on 'scope and conditions)
Xi Lupi	Lupus	Double Star	5.1, 5.6	10"	3	3	x	steady	high	15 H 56.9 min.	-33° 58"	double star in Lupus	150	Jul.-Sep.	blue-blue pair
Eta Lupi	Lupus	Triple Star	3.4, 7.5, 9.4	14", 116"	1	1	x	steady	high	16 H 0.1 min.	-38° 24"	double star in Lupus	150	Jul.-Sep.	unequal triple star; a much dimmer companion and a distant vasty dimmer companion
Xi Scorpii	Scorpius	Triple Star	5.2, 4.9, 7.3	0.9", 7.9"	3	1	x	steady	high	16 H 4.4 min.	-11° 22"	multiple star, next to Struve 1999	150	Jul.-Sep.	nice yellow-orange pair; the brighter is a close, tough Dob challenge; near Struve 1999
Struve 1999	Scorpius	Double Star	7.5, 8.1	12"	1	1	x	steady	high	16 H 4.5 min.	-11° 26"	double star, next to Xi Scorpii	150	Jul.-Sep.	dim yellow pair in same field as Xi Scorpii
Beta Scorpii, Graffias	Scorpius	Double Star	2.6, 4.5	12"	2	2	x	steady	high	16 H 5.4 min.	-19° 51"	bright, pretty double star in Scorpius	150	Jul.-Sep.	bright yellow-blue pair
Nu Scorpii	Scorpius	Double Star	4.4, 5.3, 6.6, 7.2	1.3", 41", 42"	2	1	x	steady	high	16 H 12 min.	-19° 28"	challenging double-double	150	Jul.-Sep.	nice, very wide pair of challenging dob doubles - one challenging, the other very challenging
Alpha Scorpii, Antares	Scorpius	Double Star	1.0, 5.4	2.6"	1	x	x	steady	high	16 H 29.4 min.	-26° 26"	difficult Dob challenge double	150	Jul.-Sep.	much dimmer companion; if visible in a big Dob it looks greenish against red Antares
24 Ophiuchi	Ophiucus	Double Star	6.3, 6.3	1.0"	1	x	x	steady	high	16 H 56.8 min.	-23° 9"	challenging Dob double star	150	Jul.-Sep.	extremely close, challenging equal blue pair
36 Ophiuchi	Ophiucus	Double Star	5.1, 5.1	4.9"	2	1	x	steady	high	17 H 15.4 min.	-26° 35"	double star in Ophiuchus	150	Jul.-Sep.	equal orange pair with somewhat dimmer companion far away
Omicron Ophiuchi	Ophiucus	Double Star	5.2, 6.6	10"	3	3	x	steady	high	17 H 18 min.	-24° 17"	pretty double star in Ophiuchus	150	Jul.-Sep.	orange-blue pair
M80	Scorpius	Globular Cluster	7.3	10'	2	1	x	dark	medium	16 H 17.1 min.	-22° 59'	globular near M4	152	Jul.-Sep.	globular cluster with dense central concentration; makes stark contrast with nearby M4
M4	Scorpius	Globular Cluster	4.6	35'	3	2	1	dark	medium	16 H 23.7 min.	-26° 31'	globular cluster near Antares	152	Jul.-Sep.	big, pretty globular cluster near Antares; easy to resolve into stars
M62	Oph.-Sco.	Globular Cluster	6.4	15'	3	2	1	dark	medium	16 H 54.3 min.	-30° 8"	globular in Ophiuchus, near M19	154	Jul.-Sep.	globular cluster; intermediate rich concentration; not far from M19
M19	Ophiucus	Globular Cluster	6.8	17'	3	2	1	dark	medium	17 H 2.6 min.	-26° 15'	globular in Ophiuchus, near M62	154	Jul.-Sep.	globular cluster; not far fom M62
RR Scorpii	Scorpius	Variable Star	5.0-12.4; 281 days		1	1	x	dark	medium	16 H 56.6 min.	-30° 35'	variable star near M62	155	Jul.-Sep.	red Mira-type variable, ranging from just short of naked-eye to too dim for a small 'scope
M6	Scorpius	Open Cluster	9.7	30'	2	3	3	dark	low	17 H 40.1 min.	-32° 13'	large, bright Scorpius open cluster	156	Jul.-Sep.	open cluster; poor with medium brightness range and strong central concentration
M7	Scorpius	Open Cluster	8.3	75'	2	3	4	dark	low	17 H 54 min.	-34° 49"	large, bright Scorpius open cluster	156	Jul.-Sep.	open cluster; rich with medium brightness range and strong central concentration
BM Scorpii	Scorpius	Variable Star	5.25-6.46		1	1	x	any	low	17 H 41.0 min.	-32° 13'	variable star in M6	157	Jul.-Sep.	bright orange variable star near eastern (trailing) edge of M6
HD 160202	Scorpius	Flare Star	6.7, except during rare flares		1	1	1	any	low	17 H 40.0 min.	-31° 12'	flare star	158	Jul.-Sep.	normally just one of the brighter stars in M6 - but be alert for a flare!
M28	Sagittarius	Globular Cluster	6.9	13'	2	2	1	dark	medium	18 H 24.6 min.	-24° 52'	globular cluster, near M22	158	Jul.-Sep.	globular cluster; intermediate rich concentration
M22	Sagittarius	Globular Cluster	5.2	30'	4	3	2	dark	medium	18 H 36.4 min.	-23° 56'	one of the best globulars in the sky	158	Jul.-Sep.	a truly wonderful and easily resolved globular cluster - among the top 4 in the sky
M54	Sagittarius	Globular Cluster	7.7	12'	2	1	x	dark	medium	18 H 55.2 min.	-30° 28'	globular cluster in Sagittarius	160	Jul.-Sep.	globular cluster; strong inner core of stars
M55	Sagittarius	Globular Cluster	6.3	19'	2	1	x	dark	medium	19 H 40.1 min.	-30° 56'	globular cluster in Sagittarius	160	Jul.-Sep.	globular cluster
Zeta Sagittarii, Ascella	Sagittarius	Double Star	3.3, 3.5	0.5"	1	x	x	steady	highest	19 H 2.6 min.	-29° 53"	extreme Dob challenge	160	Jul.-Sep.	even pair; too close to split, except (maybe) 2014-2018 in a big Dob under perfect conditions
M15	Pegasus	Globular Cluster	6.3	18'	3	3	1	dark	medium	21 H 30 min.	12° 10'	bright globular in Pegasus	164	Oct.-Dec.	globular cluster; intermediate rich concentration
51 Pegasi	Pegasus	Exoplanets	5.4		1	1	1	any	low	22 H 57.5 min.	20° 46'	the first exoplanet star	165	Oct.-Dec.	nothing much to see - but the first star known to have extrasolar planets
M2	Aquarius	Globular Cluster	6.8	16'	3	2	1	dark	medium	21 H 33.5 min.	0° 50'	bright globular in Aquarius	166	Oct.-Dec.	globular cluster; dense central concentration
NGC 7009	Aquarius	Planetary Nebula	8	0.5"	3	2	x	dark	high	21 H 4.2 min.	-11° 22"	'Saturn' planetary nebula, near M72	168	Oct.-Dec.	planetary nebula
M72	Aquarius	Globular Cluster	9.2	6'	2	1	1	dark	medium	20 H 53.5 min.	-12° 32'	globular in Aquarius, near NGC 7009	168	Oct.-Dec.	globular cluster
M30	Capricornus	Globular Cluster	6.9	12'	2	1	1	dark	medium	21 H 40.4 min.	-23° 11'	globular in Capricornus	170	Oct.-Dec.	globular cluster; intermediate concentration
NGC 7293	Aquarius	Planetary Nebula	7.3	17'	3	1	x	dark	medium	22 H 29.6 min.	-20° 50"	the large Helix planetary, in Aquarius	172	Oct.-Dec.	wonderful, huge planetary nebula (the Helix Nebula)
KV Aquarii	Aquarius	Double Star	7.1, 8.0	6.9"	1	1	x	steady	medium	22 H 25.7 min.	-20° 14"	double star near the Helix nebula	173	Oct.-Dec.	dim double star with a vary dim, very distant third compnion
NGC 288	Sculptor	Globular Cluster	8.1	13'	2	1	x	dark	medium	0 H 52.8 min.	-26° 35'	globular in Sculptor, near NGC 253	174	Oct.-Dec.	globular cluster; a lumpy, grainy, nearly uniform ball of light
NGC 247	Cetus	Galaxy	8.9	19.2' by 5.5', NNE-SSW	1	x	x	dark	medium	0 H 47.1 min.	-20° 46'	challenging galaxy in Cetus	174	Oct.-Dec.	spiral galaxy; less prominent than NGC 253
NGC 253	Sculptor	Galaxy	7.3	29' by 6.8', NE-SE	3	1	1	dark	medium	0 H 47.5 min.	-25° 17'	the 'Sculptor Galaxy'	174	Oct.-Dec.	spiral galaxy; an elongate slash of light
M110	Andromeda	Galaxy	8.4	11' by 19', N-S	2	1	x	dark	low	0 H 40.3 min.	41° 41'	companion galaxy to M31	176	Oct.-Dec.	elliptical galaxy; irregularly shaped dimmer companion to M31
M31	Andromeda	Galaxy	3.5	60' by 185', NE-SE	4	4	4	dark	low	0 H 42.7 min.	41° 16'	The Great Andromeda Galaxy	176	Oct.-Dec.	the great Andromeda spiral galaxy - an awesome sight in all telescopes
M32	Andromeda	Galaxy	8.1	6' by 8', N-S	2	2	1	dark	low	0 H 42.7 min.	40° 52'	bright companion galaxy to M31	176	Oct.-Dec.	elliptical galaxy; small, bright companion to M31
NGC 752	Andromeda	Open Cluster	5.7	75'	1	1	2	any	lowest	1 H 57.8 min.	37° 41'	large open cluster in Andromeda	178	Oct.-Dec.	open cluster; moderately rich with small brightness range and strong central concentration
M33	Triangulum	Galaxy	5.5	40' by 65', NNE-SSW	3	3	3	dark	low	1 H 33.9 min.	30° 39'	Triangulum Galaxy	178	Oct.-Dec.	great Triangulum spiral galaxy; invisible in beight skies, but delightful in dark skies
NGC 604	Triangulum	Nebula	12	1.9'	1	x	x	dark	medium	1 H 34.5 min.	30° 47"	star-forming region inside M33	179	Oct.-Dec.	star-forming region in one of the arms of the Triangulum Galaxy, M33

Gamma Arietis, Mesarthim	Aries	Double Star	4.5, 4.6	7.5"	3	3	x	steady	high	1 H 53.4 min.	19" 18"	'cats-eyes' double star in Aries	180	Oct.-Dec.	no color, but still a stunning pair of equal stars in any size telescope
56 Andromedae	Andromeda	Double Star	5.6, 6.1	201"	1	1	3	steady	high	1 H 56.2 min.	37" 15"	wide double star in Andromeda	180	Oct.-Dec.	super-wide pair near NGC 752; not physically associated, but one has a dim, true companion
Lambda Arietis	Aries	Double Star	4.8, 6.7	37"	2	2	x	steady	high	1 H 58 min.	23" 36"	double star in Aries	180	Oct.-Dec.	wide yellow-blue pair
Gamma Andromedae, Almac	Andromeda	Double Star	2.3, 5.0	9.8"	3	3	x	steady	high	2 H 3.9 min.	42" 20"	bright double star in Andromeda	180	Oct.-Dec.	pretty; very bright yellow star with bright blue companion
59 Andromedae	Andromeda	Double Star	6.1, 6.7	17"	1	1	2	steady	high	2 H 10.9 min.	39" 3"	double star in Andromeda	180	Oct.-Dec.	pair of blue stars
Iota Trianguli	Triangulum	Double Star	5.3, 6.7	3.7"	2	1	x	steady	high	2 H 12.4 min.	30" 18"	double star in Triangulum	180	Oct.-Dec.	close yellow-blue pair
1 Arietis	Aries	Double Star	6.3, 7.2	2.9"	1	x	x	steady	high	1 H 53.4 min.	22" 17"	double star in Aries	181	Oct.-Dec.	faint, close pair near Lambda Arietis
Upsilon Andromedae	Andromeda	Exoplanets	4.2		1	1	1	any	low	1 H 36.8 min.	41" 24"	exoplanet star	181	Oct.-Dec.	nearby, roughly sun-like star with interesting set of large planets, one in the habitable zone
M34	Perseus	Open Cluster	5.2	25'	2	2	1	any	low	2 H 42 min.	42" 47"	open cluster in Perseus	182	Oct.-Dec.	open cluster; moderately rich with large brightness range and strong central concentration
HJ 1123	Perseus	Double Star	8.4, 8.5	20"	1	1	x	steady	medium	2 H 41.9 min.	42" 47"	double star in M34	183	Oct.-Dec.	the most unequal of three nice doubles we list within M34
Otto Struve 44	Perseus	Double Star	8.3, 9.0	1.4"	1	x	x	steady	high	2 H 42.2 min.	42" 41"	Dob challenge double star in M34	183	Oct.-Dec.	the most challenging of three nice doubles we list within M35
HJ 2155	Perseus	Double Star	8.3, 10.3	17"	2	x	x	steady	medium	2 H 48.8 min.	42" 49"	double star in M34	183	Oct.-Dec.	the brightest, easiest, and most equal of three nice doubles we list within M36
Rho Persei	Perseus	Variable Star	3.3-4.0; 50 days		1	1	2	any	low	3 H 5.2 min.	38" 51"	variable star in Perseus	183	Oct.-Dec.	red giant variable star near Algol, ranging from equal to Kappa Persei to half as bright
Beta Persei, Algol	Perseus	Variable Star	2.12-3.39; 2 days, 20.8 hours		1	1	2	any	low	3 H 8.2 min.	40" 57"	Algol, famous eclipsing variable star	183	Oct.-Dec.	the 'demon star'; normally almost a match for Mirfak, in eclipse it's dimmer than Delta Persei
Eta Persei	Perseus	Double Star	3.8, 8.5	29"	1	1	x	any	medium	2 H 50.7 min.	55" 54"	double star near the Double Cluster	186	North	
NGC 869	Perseus	Open Cluster	5.3	18'	2	4	2	any	low	2 H 19.3 min.	57" 9"	western half of the Double Cluster	186	North	open cluster; with NGC 884, half of the double cluster - look for red member stars
NGC 884	Perseus	Open Cluster	6.1	18'	2	4	2	any	low	2 H 22.4 min.	57" 7"	eastern half of the Double Cluster	186	North	open cluster; with NGC 869, half of the double cluster
Struve 3053	Cassiopeia	Double Star	6.0, 7.3	15"	3	2	x	any	medium	0 H 2.6 min.	66" 6"	dim double star in Cassiopeia	188	North	orange-blue pair
Eta Cassiopeiae	Cassiopeia	Double Star	3.4, 7.4	13"	3	2	x	any	medium	0 H 49 min.	57" 49"	colorful double star in Cassiopeia	188	North	lovely yellow-red pair
Burnham 1	Cassiopeia	Double Star	8.6, 9.3, 8.9, 9.7	1.1", 3.7", 8.5"	3	1	x	any	high	0 H 52.8 min.	56" 38"	faint quadruple enmeshed in nebula	188	North	dim quadruple star (the 4th is a tough Dob challenge), all wrapped in the faint NGC 281
Struve 163	Cassiopeia	Double Star	6.8, 9.1, 10.7	34", 114"	2	1	x	any	low	1 H 51.2 min.	64" 51"	triple star in Cassiopeia	188	North	dim orange-blue double with a distant dimmer third companion
Iota Cassiopeiae	Cassiopeia	Double Star	4.6, 6.9, 9.1	2.9", 7.0"	3	1	x	steady	high	2 H 29 min.	67" 24"	triple star in Cassiopeia	188	North	a nice (all white) triple star
Sigma Cassiopeiae	Cassiopeia	Double Star	5.0, 7.2	3.2"	2	1	x	steady	high	23 H 59 min.	55" 45"	double star in Cassiopeia	188	North	nice, tightly spaced pair
RZ Cassiopeiae	Cassiopeia	Variable Star	6.18-7.21; 1 day, 4.7 hours		1	1	1	any	low	2 H 48.8 min.	69" 39"	dramatic eclipsing variable star	188	North	rapidly changing eclipsing variable
SU Cassiopeiae	Cassiopeia	Variable Star	5.7-6.18; 1 day, 22.8 hours		1	1	1	any	low	2 H 51.9 min.	68" 53"	Cepheid variable star	188	North	variable star near RZ Cassiopeiae
NGC 281	Cassiopeia	Nebula	7.4	32'	1	x	x	dark	lowest	0 H 52.8 min.	56" 36"	Pacman Nebula	189	North	faint 'Pacman Nebula', wrapped around the dim but nifty quadruple star Burnham 1
Rho Cassiopeiae	Cassiopeia	Supergiant	4.5		1	1	x	any	low	23 H 54.4 min.	57" 30"	supergiant star	190	North	
M52	Cassiopeia	Open Cluster	6.9	16'	3	3	1	any	low	23 H 24.2 min.	61" 36"	open cluster in Cassiopeia	191	North	lovely open cluster; rich with medium brightness range and strong central concentration
NGC 7789	Cassiopeia	Open Cluster	6.7	25'	3	3	1	any	low	23 H 57 min.	56" 43"	open cluster in Cassiopeia	191	North	enticing open cluster; rich with small brightness range; has something for every aperture
NGC 225	Cassiopeia	Open Cluster	7	15'	1	2	1	any	low	0 H 43.4 min.	61" 47"	open cluster in Cassiopeia	192	North	open cluster; poor with small brightness range and strong central concentration
NGC 129	Cassiopeia	Open Cluster	6.5	12'	1	1	1	any	low	0 H 29.8 min.	60" 14"	open cluster in Cassiopeia	193	North	open cluster; poor with medium brightness range
NGC 436	Cassiopeia	Open Cluster	8.8	5'	1	1	x	any	low	1 H 15.5 min.	58" 49"	open cluster in Cassiopeia	193	North	dim little open cluster; moderately rich with large brightness range
NGC 457	Cassiopeia	Open Cluster	6.4	20'	3	2	1	any	low	1 H 19 min.	58" 20"	open cluster in Cassiopeia	193	North	wonderful open cluster; rich with large brightness range
Struve 131	Cassiopeia	Double Star	7.3, 9.9	14"	1	1	x	any	high	1 H 33.2 min.	60" 41"	double star in M103	194	North	
M103	Cassiopeia	Open Cluster	8.4	6'	2	1	x	any	low	1 H 33.2 min.	60" 42"	open cluster in Cassiopeia	194	North	unimpressive open cluster; poor with medium brightness range
Struve 153	Cassiopeia	Double Star	9.4, 10.4	7.7"	1	1	x	any	high	1 H 46.6 min.	61" 16"	double star in NGC 663	195	North	
NGC 637	Cassiopeia	Open Cluster	8.2	3"	2	1	x	any	medium	1 H 41.8 min.	64" 2"	open cluster in Cassiopeia	195	North	dim little elongated open cluster; poor with large brightness range
NGC 654	Cassiopeia	Open Cluster	6.5	6'	1	1	x	any	medium	1 H 43.9 min.	61" 54"	open cluster in Cassiopeia	195	North	dim little open cluster near NGC 663
NGC 659	Cassiopeia	Open Cluster	7.9	6"	2	1	x	any	medium	1 H 44.2 min.	60" 43"	open cluster in Cassiopeia	195	North	dim little open cluster near NGC 664
NGC 663	Cassiopeia	Open Cluster	7.1	15'	3	3	1	any	medium	1 H 46 min.	61" 16"	open cluster in Cassiopeia	195	North	pretty little open cluster; moderately rich with medium brightness range
Struve 2816	Cepheus	Triple Star	5.7, 7.5, 7.5	12", 20"	1	1	x	any	high	21 H 39 min.	57" 29"	triple star, in field with Struve 2819	196	North	nice triple star in field with Struve 2819
Struve 2819	Cepheus	Double Star	7.4, 8.6	13"	2	2	x	any	high	21 H 40 min.	57" 35"	double star, in field with Struve 2816	196	North	nice double star in field with Struve 2816
Delta Cephei	Cepheus	Double Star	4.2, 6.1	41"	1	1	1	any	medium	22 H 29.2 min.	58" 25"	double/Cepheid' variable star	196	North	wide colorless double (brighter star is a Cepheid variable)
Mu Cephei, Garnet Star	Cepheus	Carbon	7.9		1	1	1	any	low	21 H 43.5 min.	58" 47"	red supergiant 'Garnet Star'	196	North	lovely red color
Struve 2815	Cepheus	Double Star	8.6, 10.0	0.9"	2	1	x	steady	high	21 H 37.7 min.	57" 34"	Dob triple near Struve 2816 & 2819	197	North	dim double (Dob challenge triple) very close to Struve 2816 and Struve 2819
NGC 6543	Draco	Planetary Nebula	8.1	0.3'	2	1	x	dark	high	17 H 58.6 min.	66" 38"	Cat's Eye' planetary nebula in Draco	198	North	planetary nebula with a distinctive electric-blue color
Psi Draconis	Draco	Double Star	4.6, 5.6	30"	1	1	x	any	low	17 H 41.9 min.	72" 8"	double star in Draco	199	North	wide, easy double near NGC 6543
M81	Ursa Major	Galaxy	7	11" by 20', NNE-SSW	3	2	1	dark	low	9 H 55.6 min.	69" 4"	Ursa Major galaxy in pair with M82	200	North	bright, oval spiral galaxy; makes nice pair with M82
M82	Ursa Major	Galaxy	8.6	4" by 11', ENE-WSW	3	2	1	dark	low	9 H 56.1 min.	69" 42"	Ursa Major galaxy in pair with M81	200	North	interesting, lumpy-looking edge-on spiral galaxy; makes nice pair with M81
NGC 2976	Ursa Major	Galaxy	10.1	5.9" by 2.7', NW-SE	1	x	x	dark	low	9 H 47.3 min.	67" 55"	dim galaxy near M81 & M82	201	North	dim spiral galaxy near M81 and M82
NGC 3077	Ursa Major	Galaxy	10	5'	2	x	x	dark	low	10 H 3.3 min.	68" 44"	dim galaxy near M81 & M83	201	North	dim spiral galaxy near M81 and M82
Alpha Ursae Minoris, Polaris	Ursa Minor	Double Star	2.1, 9.1	18"	1	1	x	steady	high	2 H 31.8 min.	89" 16"	Polaris - a wide, unequal double	202	North	easy but extremely unequal double
NGC 188	Cepheus	Open Cluster	8.1	15'	2	x	x	dark	low	0 H 47.5 min.	85" 15"	dim, ancient open cluster near Polaris	202	North	dim but nifty ancient open cluster; a challenging but enticing object for a dark night
M51	Canes Venatici	Galaxy	8.1	6" by 11', N-S	3	2	1	dark	medium	13 H 29.9 min.	47" 12"	Whirlpool Galaxy, M51	204	North	wonderful spiral galaxy, with spiral arms appearing in a Dob on a dark night
NGC 5195	Canes Venatici	Galaxy	9.6	5.9" by 4.6', E-W	2	1	x	dark	medium	13 H 30 min.	47" 16"	companion 'attached to' M51	204	North	dwarf galaxy 'attached to' the end of one of M51's arms - small but it appears quite bright
Zeta Ursae Majoris, Mizar	Ursa Major	Double Star	2.2, 3.9	14"	2	2	2	any	medium	13 H 23.9 min.	54" 56"	Mizar, a bright double - and Alcor	206	North	famous, easy, bright double star
Struve 1795	Ursa Major	Double Star	6.9, 9.8	8.0"	1	x	x	steady	high	13 H 59 min.	53" 6"	Dob double, near Mizar	206	North	dim Dob double
Kappa Bootis	Bootes	Double Star	4.4, 6.6	14"	2	1	x	any	medium	14 H 13.5 min.	52" 0"	double star, near Mizar	206	North	subtly colored, easy double star near M101
Iota Bootis	Bootes	Double Star	4.8, 7.4	39"	1	1	x	any	medium	14 H 16.2 min.	51" 22"	double star, near Mizar	206	North	wide and unimpressive double star near Iota Bootis
M101	Ursa Major	Galaxy	15'	3"	3	2	1	dark	medium	14 H 3.2 min.	54" 21"	Pinwheel galaxy	206	North	face-on spiral galaxy - on a dark night a Dob may show a hint of spiral arms
NGC 220	Tucana	Open Cluster	12.4	0.8'	1	x	x	dark	medium	0 H 40.5 min.	-73" 24"	open cluster in the SMC	210	South	open cluster
NGC 222	Tucana	Open Cluster	12.2	0.6'	1	x	x	dark	medium	0 H 40.7 min.	-73" 23"	open cluster in the SMC	210	South	open cluster
NGC 231	Tucana	Open Cluster	12.7	0.8'	1	x	x	dark	medium	0 H 41.1 min.	-73" 21"	open cluster in the SMC	210	South	open cluster
NGC 530	Tucana	Open Cluster	9.6	1.4'	2	1	x	dark	medium	0 H 56.3 min.	-72" 28"	open cluster in the SMC	210	South	open cluster
NGC 371	Tucana	Open Cluster	7'		3	2	1	dark	medium	1 H 3.4 min.	-72" 4"	open cluster in the SMC	210	South	open cluster and emission nebula
NGC 376	Tucana	Open Cluster	10.9	1'	1	x	x	dark	medium	1 H 3.9 min.	-72" 49"	open cluster in the SMC	210	South	open cluster
NGC 395	Tucana	Open Cluster	1'		2	1	x	dark	medium	1 H 5.1 min.	-72" 0"	open cluster in the SMC	210	South	open cluster and emission nebula
NGC 460	Tucana	Open Cluster	12.5	1'	2	x	x	dark	medium	1 H 14.6 min.	-73" 17"	open cluster in the SMC	210	South	open cluster and emission nebula
NGC 458	Tucana	Open Cluster	1.5'		2	x	x	dark	medium	1 H 14.9 min.	-71" 33"	open cluster in the SMC	210	South	open cluster
NGC 465	Tucana	Open Cluster	11.5	2'	1	x	x	dark	medium	1 H 15.7 min.	-73" 19"	open cluster in the SMC	210	South	open cluster
NGC 249	Tucana	Diffuse Nebula		1'	1	1	x	dark	medium	0 H 45.5 min.	-73" 5"	nebula in the SMC	210	South	emission nebula
NGC 261	Tucana	Diffuse Nebula	0.6'		1	1	x	dark	medium	0 H 46.5 min.	-73" 6"	nebula in the SMC	210	South	emission nebula
NGC 346	Tucana	Diffuse Nebula	10.3	3'	3	3	2	dark	medium	0 H 59.1 min.	-72" 11"	cluster and nebula in the SMC	210	South	nebula & open cluster
NGC 456	Tucana	Diffuse Nebula		1'	1	x	x	dark	medium	1 H 14.4 min.	-73" 17"	open cluster in the SMC	210	South	nebula & open cluster
NGC 265	Tucana	Open Cluster	12.2	1'	1	x	x	dark	medium	0 H 47.2 min.	-73" 29"	open cluster in the SMC	210	South	open cluster
NGC 419	Tucana	Globular Cluster	11.2	2.4'	1	x	x	dark	medium	1 H 8.3 min.	-72" 53"	globular cluster in the SMC	210	South	open cluster
Small Magellanic Cloud	Tucana	Galaxy	2.3	6.5" by 3.5"	4	4	3	dark	low	0 H 53 min.	-72" 50"	The SMC (Small Magellanic Cloud)	210	South	huge-looking dwarf galaxy companion to the Milky Way; very much worth exploring
NGC 104, 47 Tucanae	Tucana	Globular Cluster	4	50'	4	4	4	any	medium	0 H 24.1 min.	-62" 58"	2nd greatest globular in the sky	212	South	utterly awesome globular cluster; strong inner core of stars and well-resolved outer regions
NGC 362	Tucana	Globular Cluster	6.8	14'	3	3	2	any	medium	1 H 3.2 min.	-70" 51"	bright globular cluster	214	South	beautiful globular cluster, well resolved; bright inner core; don't ignore it because of 47 Tuc!

Beta Tucanae	Tucana	Double Star	4.3, 4.5	27"	2	3	2	any	low	0 H 31.5 min.	-62° 58'	double star with a 3rd, distant star	215	South	bright, wide, equal double with very distant naked-eye third component
Kappa Tucanae	Tucana	Double Star	5.0, 7.7, 7.8, 8.4	5.0", 319", 320"	3	2	1	steady	high	1 H 15.8 min.	-68° 53'	multiple star- 2 (in binocs), 4 (in Dob)	215	South	wide, naked-eye double; each componen is a noce challenge in its own way
NGC 1711	Mensa	Open Cluster	10.1	2.4'	2	1	x	dark	low	4 H 50.6 min.	-69° 59'	open cluster in the LMC	216	South	open cluster
NGC 1727	Dorado	Open Cluster	11.1	2.5'	1	x	x	dark	low	4 H 52.3 min.	-69° 21'	open cluster in the LMC	216	South	open cluster and emission nebula
NGC 1755	Dorado	Open Cluster	9.9	2.6'	1	1	x	dark	low	4 H 55.2 min.	-68° 12'	open cluster in the LMC	216	South	open cluster
NGC 1845	Mensa	Open Cluster	10.2	20'	1	1	x	dark	low	5 H 5.7 min.	-70° 35'	open cluster in the LMC	216	South	open cluster
NGC 1847	Dorado	Open Cluster	11.1	1'	1	x	x	dark	low	5 H 7.1 min.	-68° 58'	open cluster in the LMC	216	South	open cluster
NGC 1850	Dorado	Open Cluster	9	3.4'	2	1	1	dark	low	5 H 8.7 min.	-68° 46'	open cluster in the LMC	216	South	open cluster
NGC 1854	Dorado	Open Cluster	10.4	0.7	1	x	x	dark	low	5 H 9.3 min.	-68° 51'	open cluster in the LMC	216	South	globular cluster
NGC 1856	Dorado	Open Cluster	10.1	1.8'	1	1	x	dark	low	5 H 9.5 min.	-69° 8'	open cluster in the LMC	216	South	open cluster
NGC 1872	Dorado	Open Cluster	11	1'	1	x	x	dark	low	5 H 13.2 min.	-69° 19'	open cluster in the LMC	216	South	open cluster
NGC 1876	Dorado	Open Cluster	11.7	0.8	1	x	x	dark	low	5 H 13.3 min.	-69° 22'	open cluster in the LMC	216	South	open cluster and emission nebula
NGC 1877	Dorado	Open Cluster		3'	1	x	x	dark	low	5 H 13.6 min.	-69° 23'	open cluster in the LMC	216	South	open cluster and emission nebula
NGC 1901	Dorado	Open Cluster		30'	1	1	x	dark	low	5 H 18.2 min.	-68° 27'	open cluster in the LMC	216	South	open cluster
NGC 1910	Dorado	Open Cluster	11.2	8'	3	2	1	dark	low	5 H 18.6 min.	-69° 14'	open cluster in the LMC	216	South	open cluster and emission nebula
NGC 1962	Dorado	Open Cluster	11.5	0.5'	2	x	x	dark	low	5 H 26.3 min.	-68° 50'	open cluster in the LMC	216	South	open cluster
NGC 1967	Dorado	Open Cluster	10.8	0.4'	1	x	x	dark	low	5 H 26.7 min.	-69° 6'	open cluster in the LMC	216	South	open cluster
NGC 1968	Dorado	Open Cluster	9	1.1'	2	x	x	dark	low	5 H 27.4 min.	-67° 28'	open cluster in the LMC	216	South	open cluster and emission nebula
NGC 1986	Mensa	Open Cluster	11.1	0.7'	1	1	x	dark	low	5 H 27.6 min.	-69° 58'	open cluster in the LMC	216	South	open cluster
NGC 1984	Dorado	Open Cluster	10	0.3'	1	x	x	dark	low	5 H 27.7 min.	-69° 8'	open cluster in the LMC	216	South	open cluster and emission nebula
NGC 1983	Dorado	Open Cluster	9.9	0.5'	2	x	x	dark	low	5 H 27.8 min.	-67° 59'	open cluster in the LMC	216	South	open cluster and emission nebula
NGC 1974	Dorado	Open Cluster	9	1.7'	2	1	x	dark	low	5 H 28 min.	-67° 25'	open cluster in the LMC	216	South	open cluster and emission nebula
NGC 1994	Dorado	Open Cluster	9.8	0.6'	1	x	x	dark	low	5 H 28.4 min.	-69° 8'	open cluster in the LMC	216	South	open cluster
NGC 2001	Dorado	Open Cluster		1.7'	2	1	x	dark	low	5 H 29 min.	-68° 46'	open cluster in the LMC	216	South	open cluster
NGC 2009	Dorado	Open Cluster	11	0.8'	2	1	x	dark	low	5 H 31 min.	-69° 11'	open cluster in the LMC	216	South	open cluster
NGC 2015	Dorado	Open Cluster	0	5'	1	x	x	dark	low	5 H 32.1 min.	-69° 15'	open cluster in the LMC	216	South	open cluster
NGC 2031	Mensa	Open Cluster	10.8	3.4'	2	1	x	dark	low	5 H 33.7 min.	-70° 59'	open cluster in the LMC	216	South	open cluster
NGC 2033	Dorado	Open Cluster	11.6	0.5'	1	x	x	dark	low	5 H 34.5 min.	-69° 47'	open cluster in the LMC	216	South	open cluster
NGC 2044	Dorado	Open Cluster	10.6	2'	2	x	x	dark	low	5 H 36.1 min.	-69° 12'	open cluster in the LMC	216	South	open cluster
NGC 2042	Dorado	Open Cluster	9.6	9'	2	x	x	dark	low	5 H 36.2 min.	-68° 55'	open cluster in the LMC	216	South	open cluster
NGC 2055	Dorado	Open Cluster	8.4	0.6'	2	2	x	dark	low	5 H 37 min.	-69° 26'	open cluster in the LMC	216	South	open cluster
NGC 2100	Dorado	Open Cluster	9.6	2.8'	1	1	x	dark	low	5 H 42.1 min.	-69° 13'	open cluster in the LMC	216	South	open cluster
NGC 2098	Dorado	Open Cluster	10.7	1.6'	1	x	x	dark	low	5 H 42.5 min.	-68° 17'	open cluster in the LMC	216	South	open cluster
NGC 2122	Mensa	Open Cluster	10.4	4'	2	1	1	dark	low	5 H 48.9 min.	-70° 4'	open cluster in the LMC	216	South	open cluster and emission nebula
NGC 1743	Dorado	Diffuse Nebula		2'	1	x	x	dark	low	4 H 54.1 min.	-69° 12'	diffuse nebula in the LMC	216	South	emission nebula
NGC 1837	Mensa	Diffuse Nebula	10.6	1.3'	2	1	x	dark	low	5 H 4.9 min.	-70° 43'	diffuse nebula in the LMC	216	South	open cluster
NGC 1858	Diffuse Nebula		9.9	4'	1	x	x	dark	low	5 H 9.9 min.	-68° 54'	diffuse nebula in the LMC	216	South	open cluster and emission nebula
NGC 1874	Diffuse Nebula			1'	2	x	x	dark	low	5 H 13.2 min.	-69° 23'	diffuse nebula in the LMC	216	South	nebula & open cluster
NGC 1934	Dorado	Diffuse Nebula		4" by 2', E-W	1	x	x	dark	low	5 H 21.8 min.	-67° 58'	diffuse nebula in the LMC	216	South	emission nebula
NGC 1935	Dorado	Diffuse Nebula		0.5'	1	x	x	dark	low	5 H 21.9 min.	-67° 58'	diffuse nebula in the LMC	216	South	emission nebula
NGC 1936	Dorado	Diffuse Nebula		0.5'	2	x	x	dark	low	5 H 22.1 min.	-67° 59'	diffuse nebula in the LMC	216	South	emission nebula
NGC 1965	Diffuse Nebula			0.3'	2	1	x	dark	low	5 H 26.5 min.	-68° 48'	diffuse nebula in the LMC	216	South	nebula & open cluster
NGC 1955	Dorado	Diffuse Nebula	9	1.8'	1	1	x	dark	low	5 H 26.8 min.	-67° 30'	diffuse nebula in the LMC	216	South	open cluster and emission nebula
NGC 1966	Diffuse Nebula			13'	1	1	x	dark	low	5 H 26.8 min.	-68° 49'	diffuse nebula in the LMC	216	South	nebula & open cluster
NGC 2014	Dorado	Diffuse Nebula	9	1.8'	2	1	1	dark	low	5 H 33.4 min.	-67° 38'	diffuse nebula in the LMC	216	South	open cluster and emission nebula
NGC 2048	Dorado	Diffuse Nebula		0.5'	2	x	x	dark	low	5 H 35.2 min.	-69° 46'	diffuse nebula in the LMC	216	South	emission nebula
NGC 2032	Dorado	Diffuse Nebula		2'	2	1	1	dark	low	5 H 35.3 min.	-67° 35'	diffuse nebula in the LMC	216	South	emission nebula
NGC 2035	Dorado	Diffuse Nebula		3'	2	1	x	dark	low	5 H 35.5 min.	-67° 35'	diffuse nebula in the LMC	216	South	emission nebula
NGC 2060	Diffuse Nebula		9.6	2'	1	x	x	dark	low	5 H 37.9 min.	-69° 10'	diffuse nebula in the LMC	216	South	nebula
NGC 2070	Dorado	Diffuse Nebula		30" by 20"	4	4	4	dark	low	5 H 38.7 min.	-69° 6'	the Tarantuls, great LMC nebula	216	South	emission nebula
NGC 2074	Dorado	Diffuse Nebula		3'	3	2	1	dark	low	5 H 38.9 min.	-69° 29'	diffuse nebula in the LMC	216	South	emission nebula
NGC 2077	Dorado	Diffuse Nebula		1'	1	x	x	dark	low	5 H 39.6 min.	-69° 40'	diffuse nebula in the LMC	216	South	emission nebula
NGC 2079	Dorado	Diffuse Nebula		0.8'	2	2	x	dark	low	5 H 39.6 min.	-69° 47'	diffuse nebula in the LMC	216	South	emission nebula
NGC 2080	Dorado	Diffuse Nebula		1'	2	2	x	dark	low	5 H 39.7 min.	-69° 39'	diffuse nebula in the LMC	216	South	emission nebula
NGC 2081	Dorado	Diffuse Nebula		5'	2	1	x	dark	low	5 H 40.1 min.	-69° 24'	diffuse nebula in the LMC	216	South	open cluster and emission nebula
NGC 2086	Dorado	Diffuse Nebula		1'	1	1	x	dark	low	5 H 40.2 min.	-69° 40'	diffuse nebula in the LMC	216	South	emission nebula
NGC 2103	Mensa	Diffuse Nebula		2'	1	x	x	dark	low	5 H 41.7 min.	-71° 20'	diffuse nebula in the LMC	216	South	emission nebula
NGC 1786	Dorado	Globular Cluster	10.9	1.6'	1	x	x	dark	low	4 H 59.1 min.	-67° 45'	globular cluster in the LMC	216	South	globular cluster; dense central concentration
NGC 1835	Dorado	Globular Cluster	10.6	1.2'	1	x	x	dark	low	5 H 5.1 min.	-69° 24'	globular cluster in the LMC	216	South	open cluster
Large Magellanic Cloud	Dorado	Galaxy	0.2	10" by 8"	5	5	5	dark	low	5 H 20 min.	-69° 0'	The LMC (Large Magellanic Cloud)	216	South	the great celestial candy shop - a treat everywhere you look in it
Gamma Volantis	Volans	Double Star	3.8, 5.7	13"	2	2	x	steady	medium	7 H 8.7 min.	-70° 30'	easy double star in Volans	217	South	easy yellow-blue double
Zeta Volantis	Volans	Double Star	4.0, 9.8	17"	2	1	x	steady	high	7 H 41.8 min.	-72° 36'	double star in Volans	217	South	yellow star with dim orange companion - challenging in a small scope
Epsilon Volantis	Volans	Double Star	4.4, 8.0	6.1"	1	x	x	steady	high	8 H 7.9 min.	-68° 37'	Dob double star in Volans	217	South	challenging yellow-blue pair
Gamma Velorum	Vela	Quadruple Star	1.9, 4.2, 8.2, 9.1	41", 62", 94"	2	3	2	any	lowest	8 H 9.5 min.	-47° 21"	wide quadruple star	222	South	wide quadruple anchored by its bright primary star
NGC 2547	Vela	Open Cluster	4.7	25'	1	2	2	dark	lowest	8 H 10.7 min.	-49° 16'	large, sparse open cluster in Vela	222	South	open cluster; poor with medium brightness range and strong central concentration
I 2391	Vela	Open Cluster	2.6	60'	1	2	3	any	lowest	8 H 40 min.	-53° 3'	the large 'Omicron Velorum' Cluster	223	South	pleasant, loose open cluster; too sparse for a big telescope
NGC 2516	Carina	Open Cluster	3.8	22'	2	3	3	any	low	7 H 58.3 min.	-60° 52'	'The Southern Beehive' open cluster	224	South	open cluster; rich with large brightness range and strong central concentration
Rumker 8	Carina	Double Star	3.6, 5.3	3.7"	2	x	x	steady	high	8 H 15.3 min.	-62° 55'	Dob double near NGC 2516	225	South	yellow-orange pair; challenging due to brightness contrast
h 4128	Carina	Double Star	6.8, 7.5	1.1"	2	x	x	steady	highest	8 H 39.2 min.	-60° 19'	Dob challenge double near NGC 2516	225	South	tight, Dob-challenge equal pair
NGC 2808	Carina	Globular Cluster	6.2	14'	3	3	1	any	medium	9 H 12 min.	-64° 52'	interesting & pretty globular in Carina	226	South	delightful globular cluster; high concentration toward center
Upsilon Carinae	Carina	Double Star	3.0, 6.0	5.0"	2	1	x	steady	high	9 H 47.1 min.	-65° 4'	challenging double in Carina	227	South	yellow-yellow pair, challenging for small telescopes
NGC 3114	Carina	Open Cluster	4.2	35'	1	2	2	any	lowest	10 H 2.6 min.	-60° 7'	big, bright open cluster in rich field	227	South	open cluster; rich with large brightness range, near NGC 2808
ZZ (L) Carinae	Carina	Variable	3.3-4.2; 35.5 days		1	1	1	any	low	10 H 54.4 min.	-58° 47'	Cepheid variable star	227	South	
NGC 3293	Carina	Open Cluster	4.7	5'	3	3	3	any	medium	10 H 35.8 min.	-58° 13'	very bright open cluster, the 'Gem'	228	South	open cluster; rich with large brightness range and strong central concentration
IC 2602, Southern Pleiades	Carina	Open Cluster	1.6	100'	2	3	4	any	lowest	10 H 43.2 min.	-64° 24'	huge cluster, the 'Southern Pleiades'	228	South	very big, bright, loose open cluster; use lowest power (or finder scope)
NGC 3532	Carina	Open Cluster	3	50'	3	3	3	any	lowest	11 H 6.4 min.	-58° 40'	lovely, large 'Wishing Well' cluster	228	South	bright, loose open cluster; moderately rich with small brightness range - lovely in any scope
NGC 3766	Centaurus	Open Cluster	5.3	15'	3	3	2	any	low	11 H 36.1 min.	-61° 37'	bright 'Pearl' open cluster	228	South	tight, compact open cluster; small brightness range
NGC 3372	Carina	Diffuse Nebula	1	120'	4	4	4	any	low	10 H 45.1 min.	-59° 52'	the spectacular 'Keyhole' Nebula	228	South	large and astonishingly lovely, complex emission nebula - amazing
J Velorum	Vela	Triple Star	4.5, 7.2, 9.2	7.1", 36"	2	2	x	any	high	10 H 20.9 min.	-56° 3'	triple star near the Keyhole	229	South	triple star, with two dim companions (one close, one far)

h 4432	Musca	Double Star	5.4, 6.6	2.4"	2	1	x	steady	high	11 H 23 min.	-64° 57'	close double star	229	South	close blue-blue pair
Alpha Crucis, Acrux	Crux	Triple Star	1.3, 1.6, 4.8	4.0", 91"	3	3	2	steady	high	12 H 26.6 min.	-63° 6'	bright triple star in Crux	232	South	close, super-bright pair, with distant, bright third star
Gamma Crucis, Gacrux	Crux	Triple Star	1.8, 6.5, 9.7	125", 167"	1	1	1	steady	high	12 H 31.2 min.	-57° 7'	bright, wide triple star in Crux	232	South	too wide to be stand out particularly well in its field
Beta Muscae	Musca	Double Star	3.5, 4.0	1.0"	2	x	x	steady	highest	12 H 46.3 min.	-68° 6'	Dob challenge double in Musca	232	South	bright, tight, tough challenge double for Dobs
Mu Crucis	Crux	Double Star	7.93.9, 5.0	35"	1	2	x	steady	high	12 H 54.6 min.	-57° 11'	easy double in Crux	232	South	wide, easy pair
Dunlop 159	Centaurus	Double Star	5.0, 7.6	8.9"	2	2	x	steady	high	14 H 22.6 min.	-58° 28'	pretty double star in Centaurus	232	South	attractive yellow-blue pair; easy to find, making triangle with Alpha & Beta Centauri
Alpha Centauri	Centaurus	Double Star	0.1, 1.2	8.8"	3	3	x	steady	high	14 H 39.6 min.	-60° 50'	our (double) closest neighbor system	232	South	easy, super-bright yellow-orange pair; showcase double and our celestial neighbor
Alpha Circini	Circinus	Double Star	3.2, 8.5	15"	2	x	x	steady	high	14 H 42.5 min.	-64° 59'	colorful Dob challenge double	232	South	unequal white-red pair, not far from Alpha Centauri
NGC 5189	Musca	Planetary Nebula	9.5	2.3'	2	1	x	dark	high	13 H 33.7 min.	-65° 58"	interesting, 'spiral' planetary	234	South	interesting planetary nebula; high X in a Dob starts to show its odd, irregular shape
NGC 4372	Musca	Globular Cluster	7.2	5'	3	2	x	any	medium	12 H 25.8 min.	-72° 40'	pretty globular, paired with NGC 4833	234	South	globular cluster; a bit brighter and better resolved than its nearby companion NGC 4833
NGC 4833	Musca	Globular Cluster	8.4	14'	3	2	x	any	medium	12 H 59.6 min.	-70° 52'	pretty globular, paired with NGC 4372	234	South	globular cluster; makes a nice pair with NGC 4834
NGC 4755	Crux	Open Cluster	4.2	10'	3	3	3	any	medium	12 H 53.6 min.	-60° 20'	the 'Jewel Box' open cluster	236	South	open cluster; rich with large brightness range; pretty in any telescope
Coalsack	Crux	Dark nebula		7" by 4"	x	x	3	dark	lowest	12 H 50 min.	-63° 0'	the 'Coal Sack' dark nebula	237	South	not a telescope object, but quite an amazing 'hole in the sky' with naked eye on a dark night
NGC 5139	Centaurus	Globular Cluster	5.3	55'	4	4	4	any	medium	13 H 26.8 min.	-47° 29'	the greatest globular in the sky	238	South	utterly amazing globular cluster, outclassing all others; partially resolved even in binoculars!
NGC 4945	Centaurus	Galaxy	8.6	19.8" by 4", NE-SE	2	x	x	dark	medium	13 H 5.4 min.	-49° 28'	nice edge-on galaxy for large 'scopes	238	South	large spiral galaxy, with low surface brightness - but a lovely sight in a Dob on a dark night
Q Centauri	Centaurus	Double Star	5.2, 6.5	5.5"	2	1	x	steady	high	13 H 31.7 min.	-54° 17'	close double star in Centaurus	239	South	nice, close pair
N Centauri	Centaurus	Double Star	5.2, 7.5	18"	1	1	x	steady	medium	13 H 52 min.	-52° 35'	double star in Centaurus	239	South	easy double star
NGC 5286	Centaurus	Globular Cluster	7.4	11'	3	2	1	dark	medium	13 H 46.4 min.	-51° 22'	globular cluster in Centaurus	239	South	globular cluster; intermediate concentration
NGC 5128	Centaurus	Galaxy	6.6	25.7" by 20", NE-SE	3	2	1	dark	medium	13 H 25.5 min.	-43° 1'	the 'Hamburger' galaxy, Centaurus-A	239	South	spiral galaxy; large, with a diffuse dark band separating the 'hamburger buns'; a fun challenge
NGC 6752	Pavo	Globular Cluster	5.3	29'	3	3	1	any	medium	19 H 10.0 min.	-59° 59'	a delightful globular in Pavo	240	South	globular cluster; intermediate concentration and easy to start to resolve into stars
NGC 6744	Pavo	Galaxy	8.3	20.1" by 12.9", NNE-SSW	3	1	x	dark	medium	19 H 09.7 min.	-63° 51'	a nice face-on spiral galaxy in Pavo	241	South	pretty galaxy; resolving structure is a fun challenge
Xi Pavonis	Pavo	Double Star	4.4, 8.1	3.4"	1	x	x	steady	highest	18 H 29.9 min.	-57° 31'	Dob double star in Pavo	241	South	large brightness contrast, close Dob challenge double
HdO 290	Pavo	Double Star	5.8, 10.5	30"	1	x	x	steady	high	18 H 23.2 min.	-61° 30'	Dob double star in Pavo	241	South	wide separation double, but the very larg brightness contrast makes it a challenge