

Stargazing Targets, October, 2025

Ashton Observatory



Targets – west to east	Angular size	Distance	True Dia (Sep)	Mag
M10/M12, globular clusters	20/16 min	14/16 kly	84/73 ly	6.6/6.1
M17 Omega Nebula	46 min	4.2 kly	57 ly	6.0
M16 Eagle Nebula	35 min	5.7 kly	58 ly	6.4
M11 Wild Duck open cluster	32 min	6.1 kly	57 ly	5.8
M22 globular cluster	32 min	10 kly	97 ly	5.2
Alcor & Mizar double-double stars	-	86 ly	(27 AU)	4.0 & 2.2/3.9
M51 spiral galaxy (Whirlpool)	11 min	28 Mly	91 kly	8.4
M101 spiral gal (Pinwheel)	29 min	23 Mly	189 kly	7.9
M13 globular cluster (Hercules)	20 min	23 kly	135 ly	5.8
M92 globular cluster	14 min	27 kly	110 ly	6.4
Rasalgethi (Alpha Her) dbl star	-	360 ly	(516 AU)	3.4 & 5.3
M57 Ring planetary nebula	1.4 min	1400 ly	0.6 ly	8.8
M27 Dumbbell nebula	8 min	1700 ly	4 ly	7.1
Epsilon Lyrae (Double Double)	-	162 ly	(162/156 AU)	5/6. & 5/5
Albireo double star	-	400 ly	(4240 AU)	3.1 & 5.1
Collinder 399 open cl (Coathanger)	89 min	4.2 kly	109 ly	3.6
M15 globular cluster	18 min	34 kly	178 ly	6.3
M2 globular cluster	16 min	38 kly	175 ly	6.6
NGC 7009 planetary n. (Saturn)	0.5 min	3.3 kly	0.5 ly	7.8
NGC 7293 planetary n. (Helix)	15 min	900 ly	3.8 ly	7.6
Saturn planet 6	19.2 sec	8.6 AU	9.4xEarth	0.8
Neptune, planet 8	2.4 sec	29 AU	3.9xE	7.8
NGC 7662, planetary n. (blue snowball)	0.5 min	4.5 ly	0.7 ly	8.3
M31 spiral gal (Andromeda)	189 min	2.5 Mly	142 kly	3.4
M33 spiral galaxy (Triangulum)	69 min	2.9 Mly	57 ly	5.7
Almach (Gamma And) tpl star	-	390 ly	(1130 AU)	2.2, 4.8, 6.5
Mesarthim (5 Ari) dbl star	-	164 ly	372 AU	3.9, 4.6
M34 open cluster	35 min	1600 ly	17 ly	5.2
M52 open cluster	15 min	4.6 kly	20 ly	6.9
NGC 7789 Caroline's Rose	25 min	5.9 kly	43 ly	6.7
NGC 457 Owl Cluster	20 min	7.9 kly	46 ly	6.4
NGC 869/884 Double Cluster	18/18 min	6.8/9.6 kly	36/51 ly	5.3/6.1
M45 open cluster (Pleiades)	120 min	430 ly	15 ly	1.5
NGC 6946 spiral galaxy (Fireworks)	11 min	19 Mly	65 kly	8.8
Uranus, planet 7	3.8 sec	18.1 AU	4.0xEarth	5.6
Moon: full = Oct. 6; new = Oct. 21	32.0 min	240,000 mi	2,160 mi	-12.4max

Notes: Most data from SkySafari Pro7 smartphone application, 2024.

Angular size=as viewed from Earth; Distance=distance from Earth; Dia=overall true size; (Sep)=distance between double stars;

Mag=apparent visual magnitude from Earth.

min=arcminute; sec=arcsecond; ly=light year (~5.9 trillion miles); kly=ly x1000; Mly=ly x1,000,000.

AU=astronomical unit, 1AU=the average distance from Earth to Sun (≈93,000,000 mi). Oort Cloud ≈3.75 ly dia.

Constellations/stars rise approx. 4 minutes earlier/day. The planets move differently per orbit. Moon about 45 minutes later/night.

Milky Way ≈100x1 kly; total stars ≈100-400 billion. MW rotates Solar System ≈483,000 mph. The MW thru space ≈1,300,000 mph.