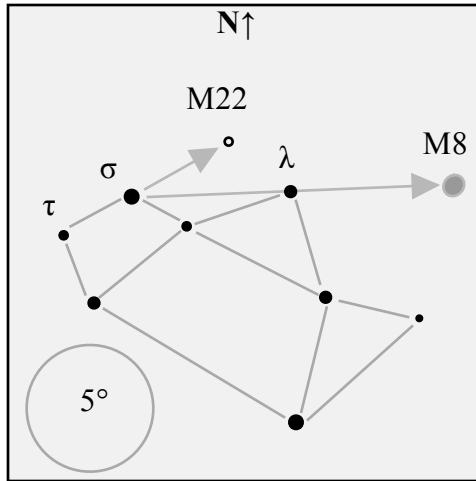
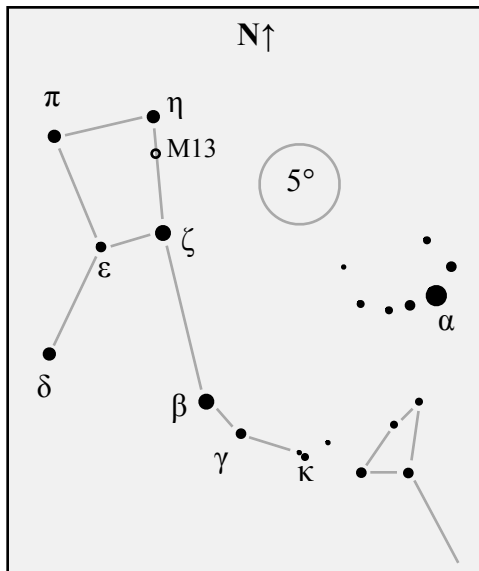


M8 – the Lagoon Nebula
 Form a line from Nunki (in the *teapot's* handle) to λ SGR (the top of the *teapot's* lid) and extend it past λ an equal distance (about 6°) to the west. The Lagoon Nebula will appear as a linear feature in the finder, and in the eyepiece as an open cluster with some nebulosity nearby. See also M22.



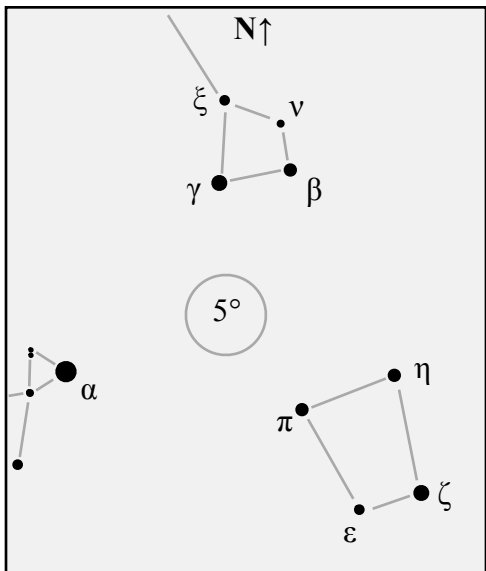
M22 – a globular cluster
 This globular cluster lies on the line formed by the outer stars in the *teapot's* handle (τ and σ SGR); extend the line to the northwest, about 1.5 handle lengths beyond σ . Alternatively, look just to the northeast of λ SGR. M22 may appear as a fuzzy object in the finder. See also M8.

M13 – a globular cluster
 Locate the *keystone* in Hercules and center the finder on the star at the northwest corner of this quadrilateral (η); M13 is 1/3 of the way down this western side. Move the scope to the south while watching η drift out of the finder field; as it nears the edge, a fuzzy globular cluster should appear from the other side of the finder field.



κ HER **28" 5.3 6.8**
yellow, yellow

Begin at β HER, to the southwest of the keystone. From there drop down (southwest) 3° to the fainter γ HER, and from there, down another 4° to the still fainter κ HER, which will be the brightest star in a small, narrow, horizontal triangle of stars. See also M13.

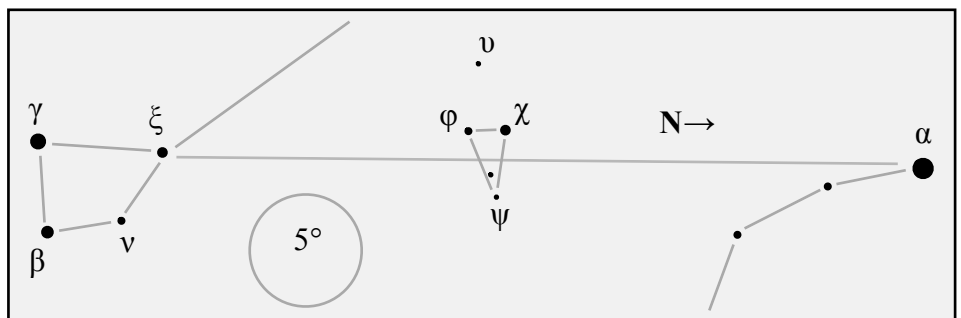


v DRA **62" 4.9 4.9**
 white, white

Find the head of Draco – a quadrilateral northwest of Vega and northeast of the keystone. v (the headlights) is the star across the quadrilateral from Eltanin, the brightest star in Draco's head.

ψ DRA **30.3" 4.9 6.1**
 yellow, yellow

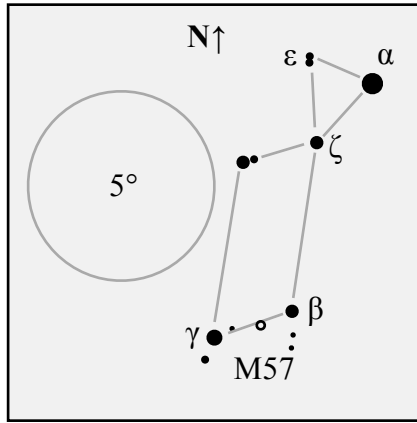
Locate a wedge of cheese about halfway between Polaris and the head of Draco. The wedge fills the finder field and points downward (westward); ψ is the point of the wedge. See also v DRA.



ζ LYR 43" 4.3 5.8

topaz, green

Locate Vega in Lyra. Move the scope such that the finder field includes the roughly equilateral triangle comprised of Vega (the really bright star), ε LYR (which will appear as a binary in the finder), and ζ LYR – the northwest corner of the parallelogram. Then center on ζ. See also M57.



M57 – the Ring Nebula

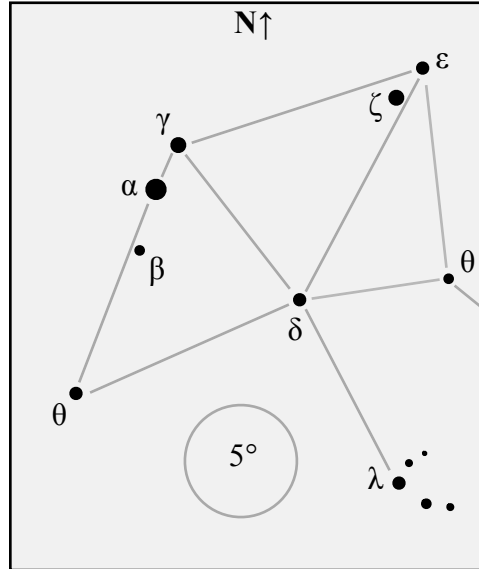
– a planetary nebula

Locate the parallelogram in Lyra, south of Vega. Center the south end of the parallelogram in the finder, with end stars β and γ; a fainter star between them is closer to γ. Aim the finder crosshairs at a point along this side that is 40% of the way from β to γ; the Ring Nebula will appear as a small, faint donut in the eyepiece. See also ζ LYR.

θ SER 22.6" 4.5 5.4

yellow, yellow

This binary is easily located west of δ AQL (the first bright star down the Milky Way from Altair) and south of ε AQL (the western wingtip of the eagle). These three stars form a right triangle, with θ SER at the right angle. A characteristic arc of stars will be seen in the eyepiece. See also 15 AQL.



15 AQL 38" 5.5 7.2

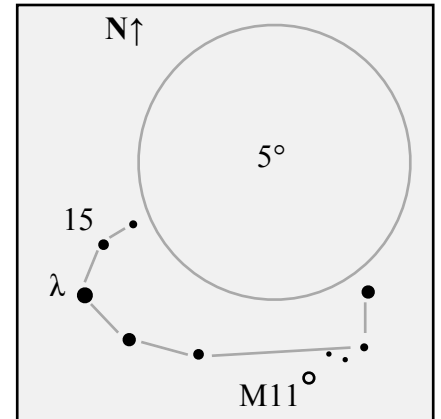
white, lilac

Point at λ AQL (the second bright star down the Milky Way from Altair); this is the brightest star in the *fishhook*, an asterism in Aquila and Scutum. The two stars northwest of λ form the point of the hook; 15 AQL is the one between λ and the point. See also M11.

M11 – the Wild Duck cluster

Point at λ AQL at the tip of the eagle's tail (the second bright star down the Milky Way from Altair); this is the brightest star in the *fishhook*, an asterism in Aquila and Scutum. The two stars northwest of λ form the point of the hook, and the shank extends westward from λ into Scutum.

Follow the shank westward to M11, which lies just south of the shank; it will be visible in the finder as a fuzzy object near the west end of the shank. See also 15 AQL.

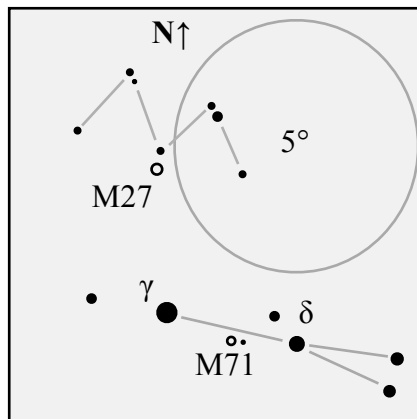


M27 – the Dumbbell Nebula

– a planetary nebula

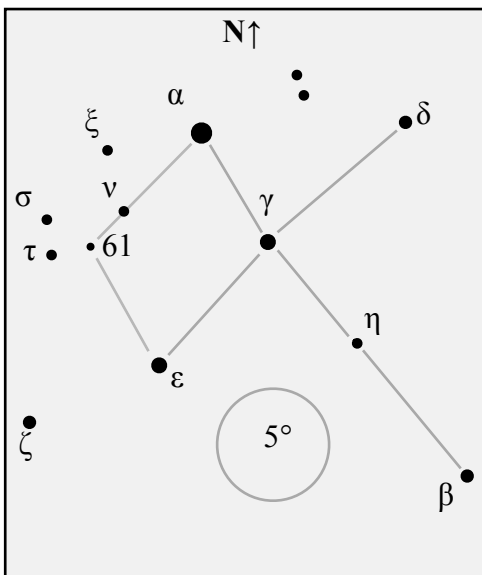
M27 is about 3° due north of the tip star (γ) in Sagitta. The finder target to look for is an 'M', which will just fit into the finder. This 'M' is notable because its two northern points are formed by *pairs* of stars (not binaries, just distinct pairs). M27 is located just south of the middle of the three southern points of the 'M'.

The 'M' can also be found by forming a line from Albireo to Delphinus; it will lie about 40% of the way from the former to the latter. See also M71.



M71 – a globular cluster

This globular cluster lies in Sagitta, about 10° due north of Altair. M71 is about halfway between the tip star (γ) and the middle star (δ) of Sagitta, the arrow, both of which will fit in the finder field. Although M71 does not show up well in the finder, it is right next to a small cluster of stars that does; in the eyepiece this cluster will take the shape of a 'λ', which is more visible than M71 itself. See also M27.



61 CYG 28" 5.2 6.0

orange, red

This star forms a 6° x 8° parallelogram with the brighter Deneb, ε, and γ CYG, in the northeast quadrant of the northern cross. See also β CYG.

β CYG 35" 3.1 5.1

yellow, blue

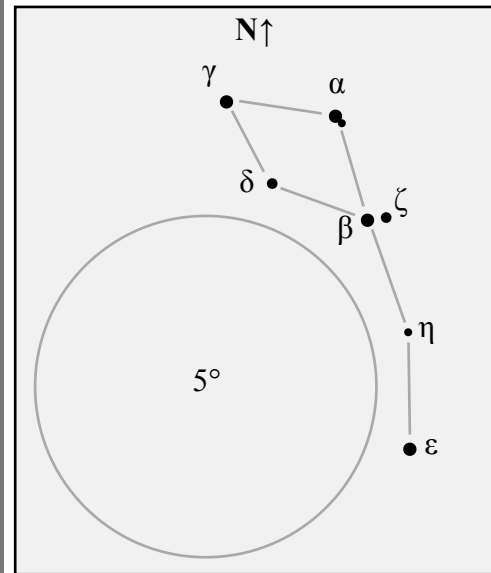
This is Albireo, the bright eye of Cygnus the swan, at the bottom of the Northern Cross. See also 61 CYG.

γ DEL 10.4" 4.5 5.5

3

yellow, green

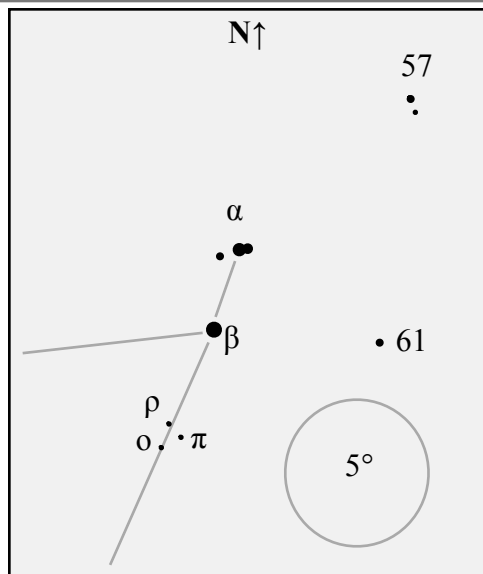
This binary is the nose of the dolphin – the easternmost star in the diamond-shaped head.



57 AQL 36" 5.8 6.5

white, white

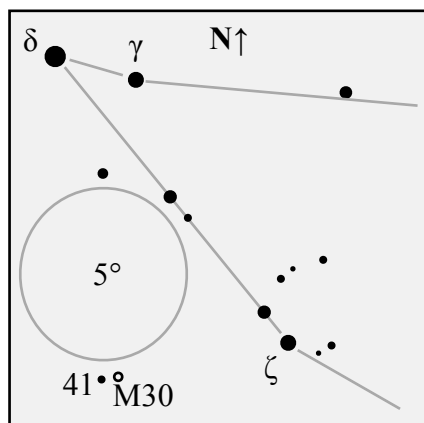
Begin by locating Dabih, the lower star in the horns of Capricornus. About 6° to the west is 61 SGR, and about 7° north of this is an isolated pair of stars. The brighter (and northern) of these is 57 AQL. See also o CAP.



o CAP 21.9" 6.1 6.6

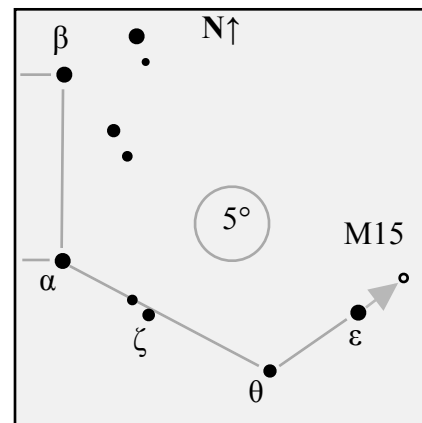
white, blue

Begin by locating Dabih, the lower star in the horns of Capricornus. About 3° southeast of Dabih is a small triangle of stars, and the southernmost of these three is o CAP. See also 57 AQL.



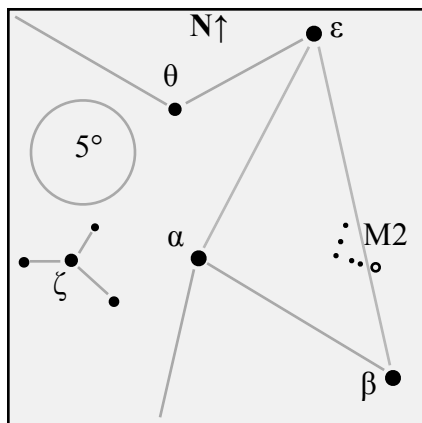
M30 – a globular cluster

From δ CAP, slide southwest about 7° to find a 'C' of stars that fits in the finder. Set the crosshairs on the southern edge of the 'C' and swing two 'C' diameters to the left (east) to locate an isolated star, 41 CAP. M30 is just to the right (west) of it.



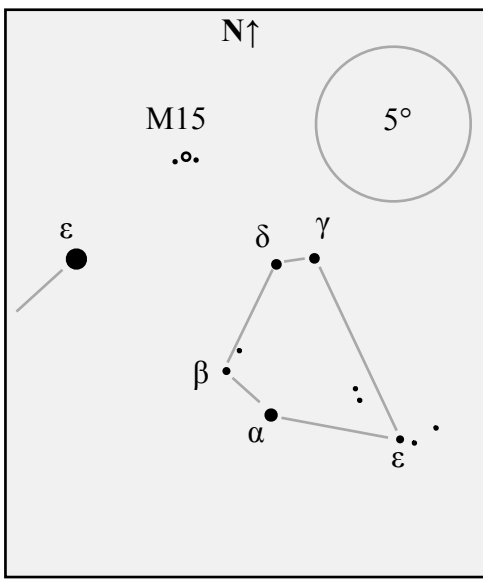
M15 – a globular cluster

Follow the blade of the *hockey stick* from θ PEG to Enif and half a blade beyond. A group of 3 stars will be seen in the finder, one of which is the globular cluster. See also ε EQU.



M2 – a globular cluster

Form a large right triangle with Sadalmelik, Sadalsud, and Enif. M2 lies on the Sadalsud-Enif hypotenuse, due west of Sadalmelik. The finder will show faint stars forming an 'L' (or two adjacent sides of a square); the globular cluster is at the end of the lower side, but it is not obvious in the finder.



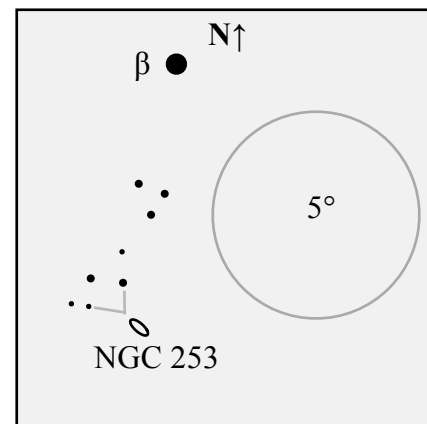
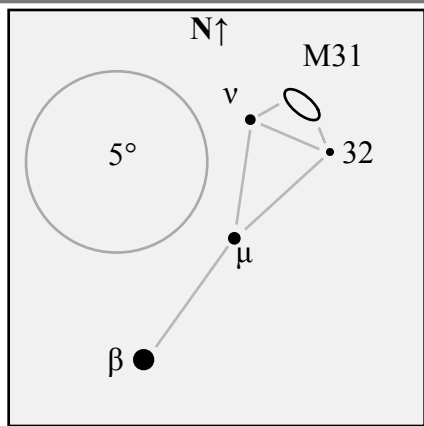
ε EQU 11" 5.7 7.1

yellow, blue

Begin at Enif (ε PEG) and move southwest to 4th magnitude Kitalpha. From there, move about 4° west-southwest to 5th magnitude ε (aka 1 EQU) – the only star of that brightness in the vicinity. It will appear in the finder as the brightest star in a small obtuse triangle. See also M15.

M31 – the Andromeda Galaxy

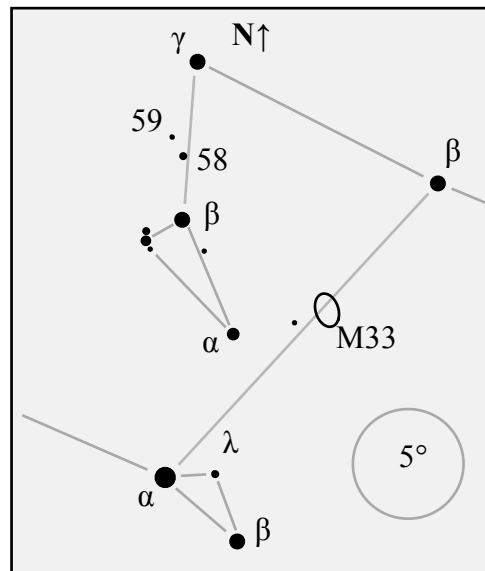
Find β AND, the first bright star east of Alpheratz (in the Great Square); β is the tip of the tail of a kite. Using the finder, raise the scope (northwest) about 4° to find a fainter star (μ), which is the bottom corner of the kite. Again using the finder, raise the scope about 3° (northwest) to find the crossbar of the kite formed by ν and 32 AND. Finally, raise the scope a degree or two to the top of the kite, which is the Andromeda Galaxy. Also in the field may be M32 and M110 – elliptical satellites of M31.



59 AND 16.7" 6.1 6.7

yellow, blue

There are two stars on the line between γ AND and β TRI; 59 AND is the fainter and more northern of these two. See also λ ARI and M33.



λ ARI 37.4" 4.8 7.4

yellow, blue

This binary lies about 2° above the Hamal-Sheratan line and almost halfway between these two stars. See also 59 AND and M33.

ψ¹ PSC 30" 5.6 5.8

blue, blue

About 10° west of Sheratan is the fainter χ PSC, and just west of this star is a diagonal of three even fainter stars; ψ¹ PSC is the northernmost of these three. See also ζ PSC and λ ARI.

M33 – the Triangulum Galaxy

M33 is located 40% of the way from β AND to α ARI, about 4° west-northwest of α TRI. Center on α TRI and locate a fainter star to the WNW at the edge of the finder field. Move beyond this star, 2/3 of this distance along the same line. M33 is visible in the eyepiece as a broad smudge of light in a rhombus of stars. The eastern corner of the rhombus is a tiny Scorpius head: ∴.

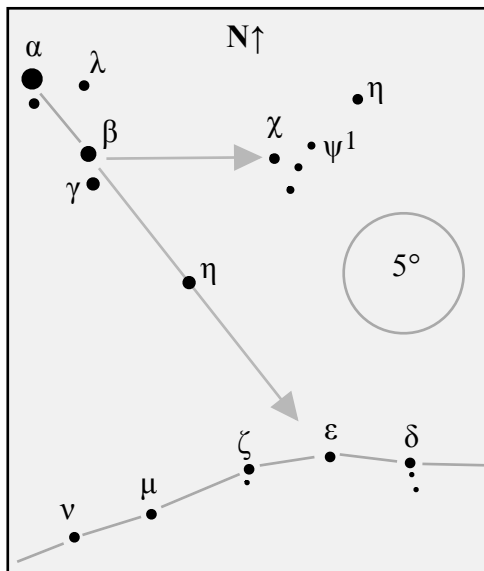
See also 59 AND and λ ARI.

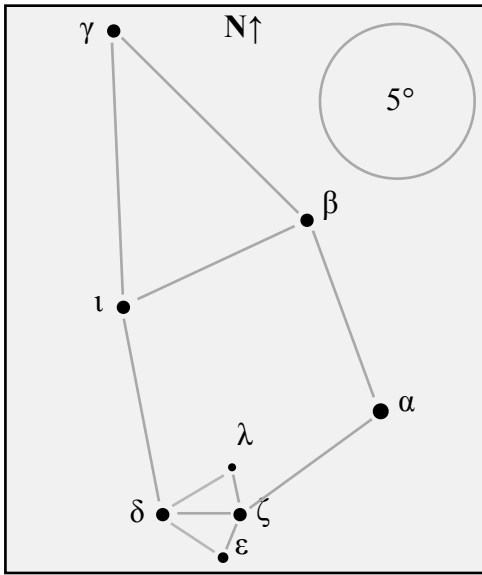
ζ PSC 23.6" 5.6 6.5

white, yellow

Hamal, Sheratan, and η PSC point southwest to ε PSC, the middle star of an east-west arc of three stars. ζ PSC is at the left end of this arc, about 3° east of ε.

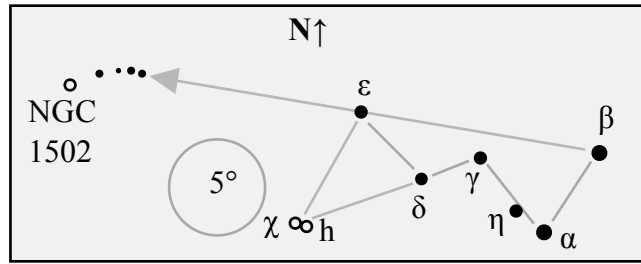
See also ψ¹ PSC and λ ARI.





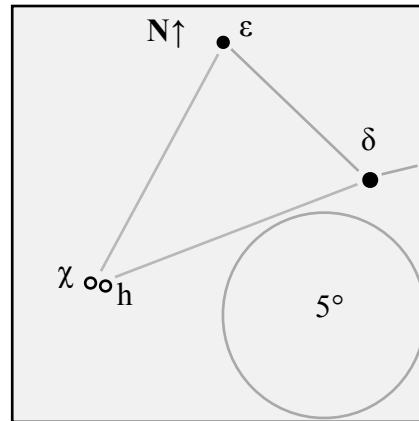
NGC 1502 – the Golden Harp Cluster

Locate Cassiopeia and draw a line segment between the two outer points of the 'W' (β and ϵ). Extend this line eastward into Camelopardalis an equal distance, to a small arc of four stars visible in the finder (Kemble's Cascade); follow this small arc eastward into the next finder field to NGC 1502 – a small open cluster. See also h & χ .



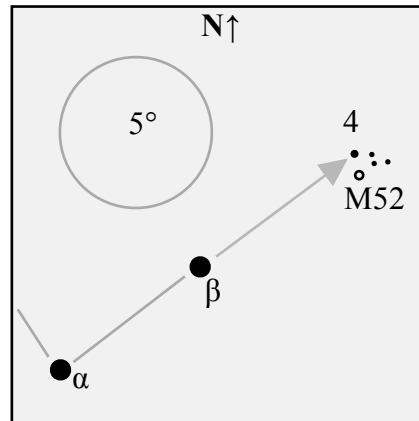
δ CEP 41" 3.5-4.4 6.3
gold, blue

Find the corner of the house of Cepheus that is most distant from Polaris. In this corner is an arc of three stars – λ , ζ , and ϵ – that forms an umbrella, with δ CEP at the hook in the handle of the umbrella.



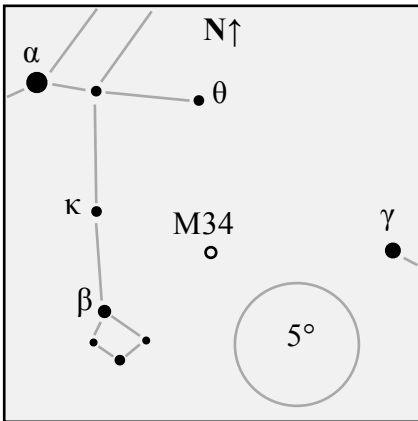
h & χ – the Double Cluster

Use the eastern segment of the Cassiopeia 'W' (δ - ϵ) as the base of a dunce hat (an isosceles triangle) that points down (southeast) into Perseus. The height of the dunce hat is about 1.5 times the base, and the double cluster lies at this tip. Fuzzy patches in the finder become two bright open clusters that fill the eyepiece field. See also NGC 1502.



M52 – an open cluster

Use the western segment of the Cassiopeia 'W' (α - β) to form a line running to the northwest. About 1.2 lengths beyond β is a narrow diamond needle shape, with the brightest of its four stars (4 CAS) at the eastern tip of the diamond. The small open cluster M52 is just south of this star.



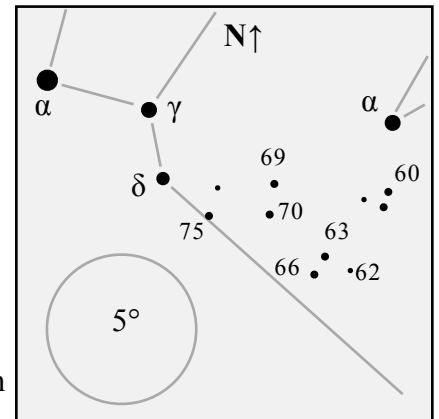
M34 – an open cluster

M34 is about 5° above (west-northwest of) Alrisha in the northeast sky, and about 7° east of Alamak in AND. A fuzzy patch in the finder becomes a large open cluster in the eyepiece.

66 CET 16.3" 5.7 7.7
yellow, blue

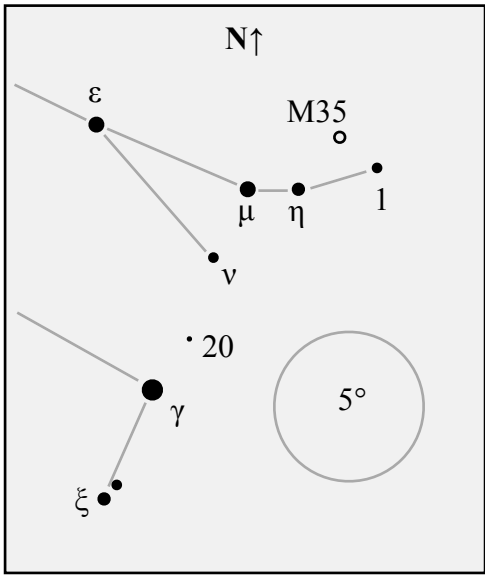
Using the finder, look about 3° south of Alrisha for a small triangle of stars containing 60 CET; about 3° southeast of this group is another triangle of the same size. The brightest and southernmost star in this triangle is 66 CET.

Or start with the Menkar- γ - δ triangle. About 2° west of δ is a fainter parallelogram (with 69, 70, and 75), and 3° southwest of 70 is the 62-63-66 triangle.



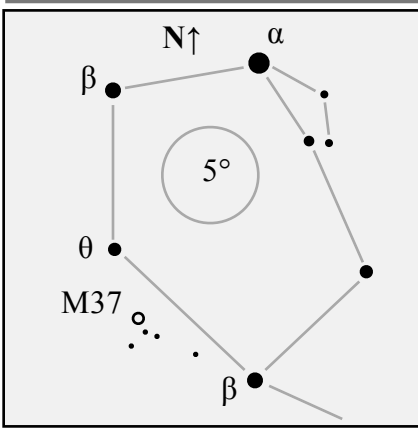
M35 – an open cluster

Gemini rises in the northeast oriented roughly parallel to the horizon, with the three stars of its upper (western) foot (μ , η , and 1 GEM) leading the way. M35 lies in this foot, just above η and just to the left of 1 GEM. See also 20 GEM.



20 GEM 20" 6.3 6.9
yellow, white

This star is located along the line joining Gemini's ankle stars, about 25% of the way from γ GEM (the southeastern ankle) to μ GEM (the northwestern ankle). See also M35.

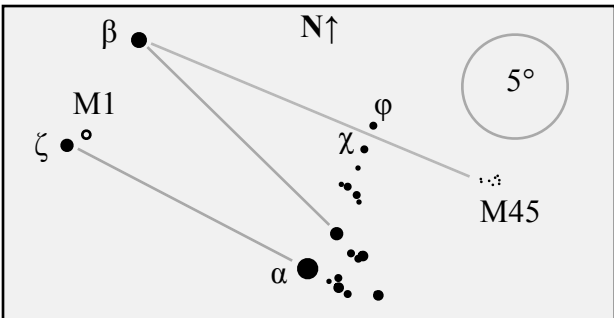
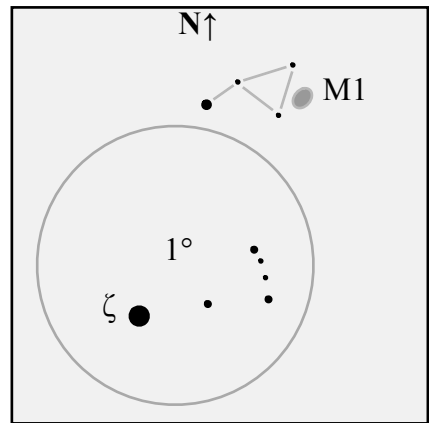


M37 – an open cluster

As Auriga rises in the northeast, its lower side (θ AUR - β TAU) is roughly parallel to the horizon. About halfway along this side and 2° below it is a 'T' shape, and the upper left corner of the 'T' is the open cluster. (Do not be confused by M36 and M38, open clusters that lie *inside* the Auriga polygon.)

χ TAU 19.4" 5.5 7.6
blue, yellow

This binary is about 40% of the way from the Pleiades to El Nath, and just south of this line. Look for a line of three stars that points to a small arc of brighter stars just north of the Hyades. χ is the middle star of the three. See also M1.



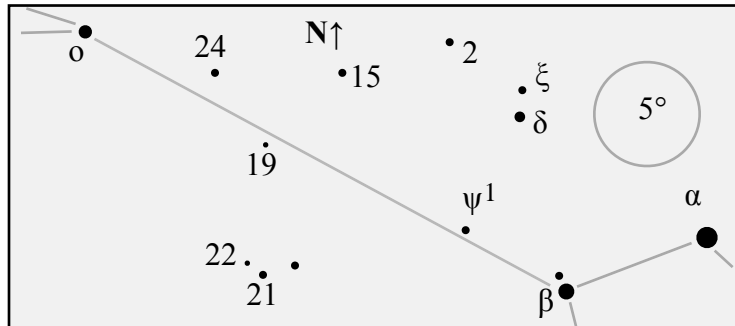
M1 – the Crab Nebula – a supernova remnant

Locate ζ TAU – the lower (eastern) horn tip; center it in the finder and then move to the eyepiece. The Crab lies above this star in the northeastern sky, but it is not easy to see. As the scope is raised along a line above ζ , watch for a small fan-shaped arc of stars to the right of the line, then a brighter star to the left of the line. From this star, an equilateral triangle hangs back across the line.

M1 will be a faint fuzzy patch just beyond this triangle, positioned as the clapper on the bell formed by the triangle. See also χ TAU.

19 LYN 14.8" 5.5 8.5
yellow, blue

This is found in a very empty area of sky, about 40% of the way from \omicron UMA (the Great Bear's nose) to Menkalinan in Auriga. The eyepiece field shows a 7th magnitude star just north of 19.



M42 – the Orion Nebula

– an emission nebula
The sword of Orion hangs to the south from the three belt stars. M42 is the bright fuzzy patch in the sword – an easy object.

