

One Good Target

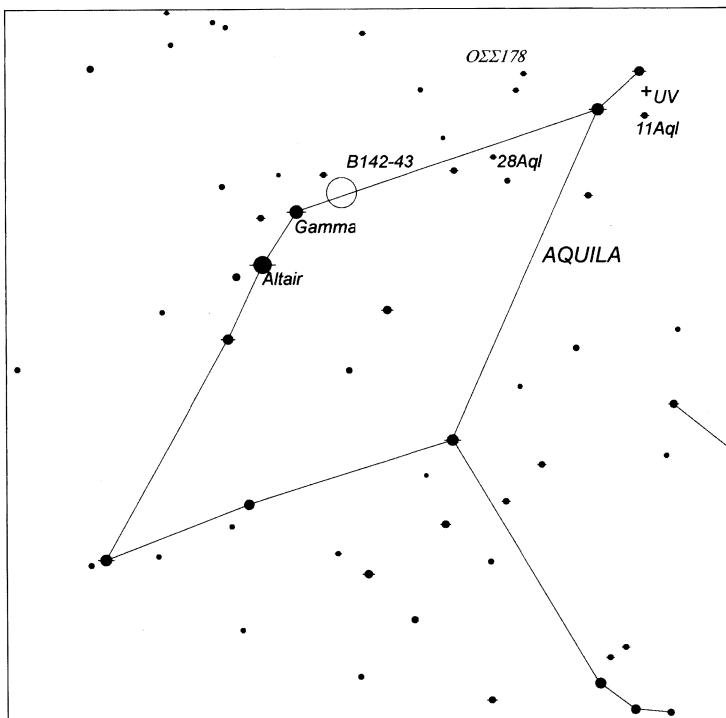
With Some Other Sights Worth Seeing
While You're in the Neighborhood

August

A Dark Nebula in Aquila (Barnard's E)

with side trips to a couple binocular doubles,
a pretty yellow and blue pair, and an easy-to-find carbon star

Composer Claude Debussy once said that "music is the space between the notes." Visual astronomy's version of that truth is found in dark nebulas, a class of DSO that many amateurs never bother to pursue, perhaps because of the paradoxical fact that you need a good dark sky to see them at their best. That's certainly true of this month's principal target, a pair of dark nebulas in Aquila formally known as **Barnard 142 and 143**, but more often referred to as the **Double Dark Nebula**, the **Triple Cave Nebula**, or simply as **Barnard's E**. To get the best view of it, you'll need a sky that's at least dark enough to see the Milky Way, since that's the backdrop against which these starless swaths are displayed. Its "E" form is a full degree tall and a half degree wide, so you'll also need either binoculars or a wide-field eyepiece to provide a 3° to 5° field where the nebula's dark form can be seen against the brighter background sky.



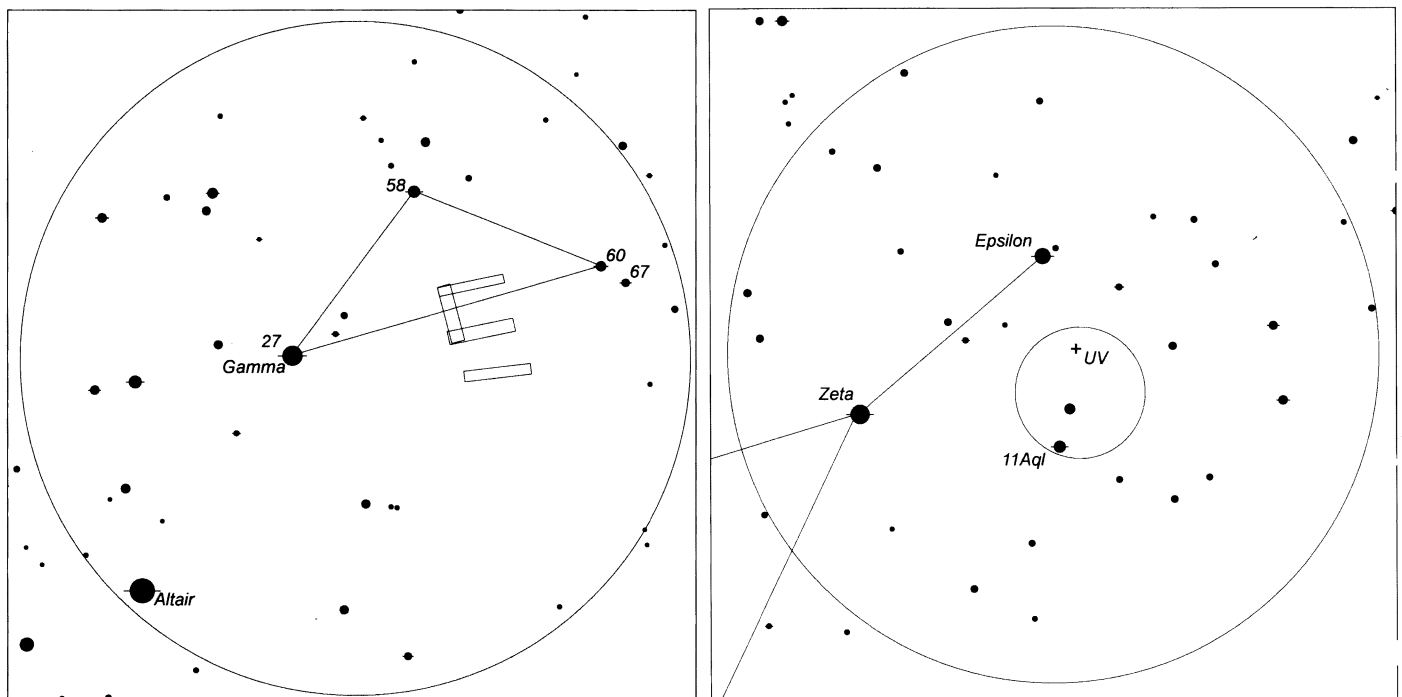
This month's targets, showing stars to mag 5.8

The easiest way to locate the E is to imagine a right triangle extending west from mag 2.7 orange giant Tarazed (Gamma [γ] Aquilae), conveniently positioned just NW of brilliant mag 0.8 Altair (Alpha [α] Aquilae), which forms the southern point of the Summer Triangle. As shown in the chart on the next page, the E is formed by two separate clouds of dust and gas: the northern one, B143, forms a half-degree wide "C" shape with its prongs pointing west, while the bottom of the E is B142, a long distorted horizontal oval a half degree south of B143. The triangle's hypotenuse passes through the center of the "C" shaped nebula, just beyond the midpoint of its length.

Dark nebulas are classified on a scale of opacity developed by Beverly Lynds, who published a catalog of dark nebulas in 1962 based on her review of photographic plates produced as

part of the Palomar Sky Survey. Although the combination of B142-143 is classed as Lynds 6, the darkest grade, the C-shaped portion is significantly darker than the lower arm, and is therefore a little easier to spot.

While you've got your binoculars handy, scan the area between Gamma and The Eagle's NW wingtip for a 2° wide right triangle of mag 5 stars. You're after **28 Aquilae**, the star at the triangle's right angle as shown in the area diagram above: it's a yellow + lilac blue pair, mag 5.5 and 9.0, separated by just 60 arcseconds, so you'll want to either mount your binoculars on a tripod or take other steps to hold them as steady as possible, since any shaking will make it impossible to split the pair. If you can't split them in binoculars, try a telescope at very low power, 10x to 25x. Now scan north from that triangle to find a pair of mag 5½ stars, and home in on the more northerly one. That's **0ΣΣ178**, from the Supplement to Otto Struve's 1843 catalog of double stars observed at Pulkovo Observatory outside St. Petersburg. It's similar to 28 Aql in magnitude (5.7 + 7.8) and color, but has a somewhat more generous separation of 90 arcseconds, which makes it a little easier to resolve in binoculars.



***Finder scope views (5° fields): Barnard's E (left); UV Aql (right, with 1° insert)
North at top, stars to mag 8, selected magnitudes noted, decimals omitted***

While you're in the neighborhood, take a look at **11 Aquilae**, a pretty yellow and blue telescopic pair sheltering under Zeta (ζ) and Epsilon (ε) Aquilae, the two stars that form the NW tip of Aquila's wing. Its mag 5.2 primary and 8.7 secondary are separated by 17 arcseconds – wide enough to make it a relatively easy split at 50x or more. After admiring 11 Aql, look a little farther north to find a carbon star, **UV Aquilae**, whose brightness ranges from mag 8.0 to 9.6 over a period of 386 days. It's an easy catch: just step from 11 Aql to a mag 5.9 star directly north of it, and 1½ steps farther to UV Aql. Like all carbon stars, it's at its reddest when it's least bright and therefore hardest to find – one of the many times in visual astronomy when the reward you receive is directly proportional to the effort you put into the hunt. It's a good rule to remember, and a fitting place to wrap up our evening's adventures along The Eagle's wing.

Rick Gering / August 2024