

The Night Sky Naturalist, by Bob Vickers

Exploring North America

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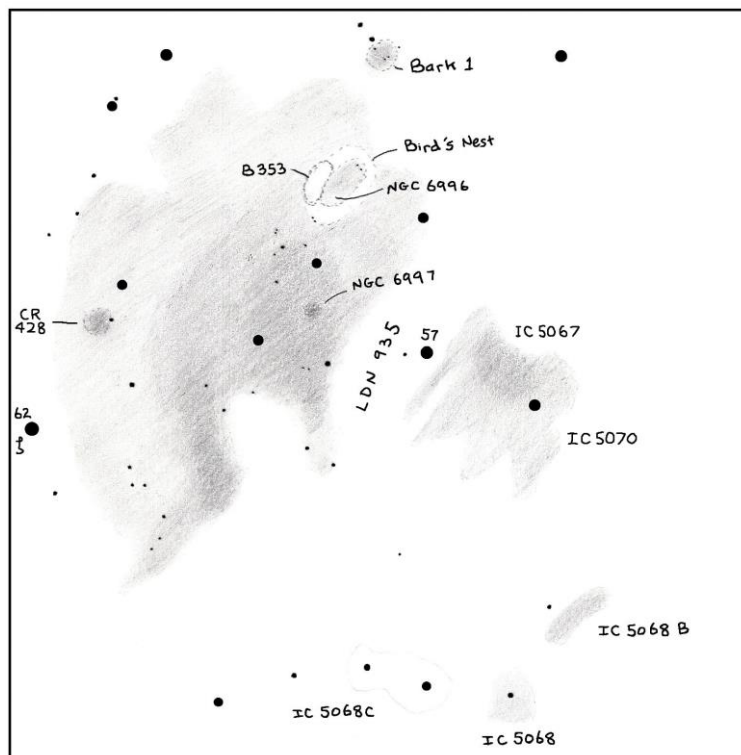
In the realm of astronomical faint fuzzies, bigger doesn't always mean easier to see. There are many astronomical objects in the sky whose angular size is very large but their surface brightness is just too low for us to see well with our unaided eyes. The North America Nebula (NGC 7000 or Caldwell 20) is a prime example. However, it *can* be made out under very dark skies, *if* you know exactly where to look and what to look for. (Looking through a UHC or OIII filter may help.)

Located about 3 degrees northeast of Deneb in the constellation Cygnus, the North America Nebula is full of wispy detail, open clusters, and dark zones just begging to be explored. So, let's mount our own Lewis and Clark Expedition and see what natural wonders we can find.

The North America Nebula, including the nearby but fainter Pelican Nebula (IC 5070) and some even smaller and dimmer clouds to the SW, is part of a single huge emission nebula separated into parts by an intervening dark absorption cloud LDN 935. It covers an area of the sky about ten times the size of the full moon, so this is definitely a low power/wide field object. In fact, to see the entire complex, binoculars are the tool of choice. Even with my 7x35 birding binoculars I could see the brighter parts of both the North America and the Pelican Nebulae reasonably well.

The discovery of this nebula is attributed to William Herschel, who, on October, 24 1786, noted a "faint, extremely large, diffuse nebulosity." Max Wolf was the first to photograph the nebula, on December 12, 1890, bringing out detail that showed its uncanny resemblance to the shape of the North American continent—hence the name. Distance estimates range from 910 to 3300 light years, which make the actual size of the nebula anywhere from 30 to over 100 light years across.

Through the telescope the nebula is best viewed with a UHC or OIII filter and with as low a power and as wide a field



as possible. Even so, you will probably have to view one part at a time. The areas around "Mexico," the "Gulf of Mexico," and the "Eastern Seaboard" are the brightest, so start your explorations there. The western and northern edges are much less defined and are sometimes difficult to follow. The Pelican Nebula (which must correspond to the lost continent of Atlantis!) is also a bit difficult to make out, particularly along the southern and eastern edges. (It also looks more like an elephant to me than a pelican!)

Within the North America part of the nebula there are three fairly obvious open clusters, NGC 6997, Collinder 428 and NGC 6996. NGC 6996 is surrounded by a curious structure called the Bird's Nest, a darker ring with dark nebula Barnard 353 making up the western side of the nest. Less than a degree to the NW of the Bird's Nest lies another faint open cluster called Barkhatova 1.

For a real challenge try locating the three small emission nebulae to the SW, IC 5068, IC 5068B and IC 5068C. Through my 12.5 inch Dobsonian, I could only discern IC 5068 and IC 5068B (barely). I could not see IC 5068C. Maybe some of you folks out there with larger apertures or access to darker skies can bag this one.