

The Night Sky Naturalist, by Bob Vickers

The Perseus I Galaxy Cluster

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This month I want to make the newsletter live up to its name by examining some truly faint fuzzies! Let's push the envelope a little and do some *really-deep* sky observing.

Located in the constellation Perseus, about 2 degrees east of Algol and slightly to the north, lies a challenging group of galaxies called Perseus I or Abell 426. The center of this group is between 230 and 300 million light years away from us. Only two of its brightest members, NGC 1275 and NGC 1270 are plotted on Chart 4 of Wil Tirion's *Sky Atlas 2000.0*, so to identify the dimmer members of this group use the A4 chart of the *Uranometria* atlas, or better yet, a photograph of the cluster ([available online](#)).

I first "discovered" the Perseus I cluster in 2003 when viewing the Astronomical League Caldwell Object list. The brightest member of the group, NGC 1275 (also called Perseus A) is listed as Caldwell 24 and is located at the group's very center. With an approximate visual magnitude of 11.9, it should be discernable with an 8 inch scope, or even a 6 inch under very dark skies. Hubble Space Telescope photographs show it as two galaxies in violent collision, but in my 12.5 inch it is just a dim, nearly circular glow becoming gradually, then suddenly, brighter toward the center. The nucleus is nearly stellar. Identified as a strong source of radio emission, it is also known as 3C84.

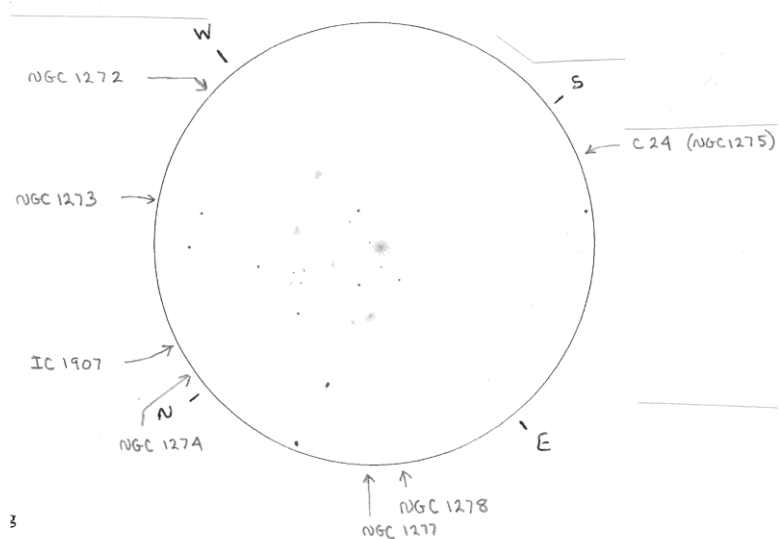
But C24 is just the tip of the Perseus I iceberg. The next three brightest galaxies are NGC 1272, NGC 1273, and NGC 1278. NGC 1272 is listed as the brightest of the three in all the references I looked in, but NGC 1278 seemed slightly brighter to me. Maybe it is a just a little more concentrated than the

others. These three galaxies form a nice little parallelogram with NGC 1275.

At 122x, my 12.5 inch scope showed three more dim galaxies in this 26 minute field of view, NGC 1277, NGC 1274, and IC 1907. IC 1907 is just visible with averted vision and appears as a dim star similar in brightness to three stars just to its south. A few other members of the Perseus cluster (including NGC 1270, NGC 1267 and NGC 1268) are located another 6 to 10 minutes west of this main group, just on the edge of the field of view. I'm not sure how many of these galaxies are visible in 8 to 10 inch scopes.

What I have described above is just the concentrated central part of Perseus I.

Uranometria 2000.0 shows 55 galaxies within a boundary of a little over 1.5 degrees



from the center, and I periodically return to the cluster to try to bag another faint fuzzy. But more recent professional surveys show a staggering 3800 galaxies within a 4 degree radius. Not all of these are true members of the cluster, however. Amateur astronomer Albert Highe has even compiled a list of 351 galaxies he has deemed to be part of the cluster. These galaxies are supposedly bright enough to see with larger aperture scopes under dark skies with excellent transparency. (This may have to be a future project if I can just convince my wife that I really *need* that 25" Obsession for research purposes!)

As awesome as Perseus I is, it is only a part of the much larger Pisces-Perseus supercluster of galaxies which may stretch for some 500 million light years. What started as a simple search for C24 has now evolved into an ongoing observing project which allows a glimpse into the large scale structure of the universe. What a great hobby this is!