MONTHLY OBSERVER'S CHALLENGE

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Report #120

NGC 2175 Emission Nebula In Orion

"Sharing Observations and Bringing Amateur Astronomers Together"

Introduction

The purpose of the Observer's Challenge is to encourage the pursuit of visual observing. It's open to everyone that's interested, and if you're able to contribute notes, and/or drawings, we'll be happy to include them in our monthly summary. We also accept digital imaging. Visual astronomy depends on what's seen through the eyepiece. Not only does it satisfy an innate curiosity, but it allows the visual observer to discover the beauty and the wonderment of the night sky. Before photography, all observations depended on what the astronomer saw in the eyepiece, and how they recorded their observations. This was done through notes and drawings, and that's the tradition we're stressing in the Observers Challenge. We're not excluding those with an interest in astrophotography, either. Your images and notes are just as welcome. The hope is that you'll read through these reports and become inspired to take more time at the eyepiece, study each object, and look for those subtle details that you might never have noticed before.

NGC 2175 Emission Nebula In Orion

NGC 2175 is also known as the Monkey Head Nebula. It's located in the far northern arm of the constellation of Orion and is associated with the star cluster, also known as NGC 2175 (or thereabouts). It lies approximately 6,400 light-years away.

There's plenty of confusion on the exact identification of both the nebula and surrounding cluster(s). The main nebula *is* actually NGC 2175, while the cluster, as defined in sources such as MegaStar, is a nearby northeast clump called NGC 2175.1. However, per research by Sue French, that nearby cluster is actually Pismis 27. On the other hand, the cluster embedded within and around the nebulosity, and supposedly associated with it, according to Per Collinder, is Collinder 84, though you won't likely find it on most star maps. Another feature that's hard to find on most maps is a clump within the nebulosity, bright nebula Sh2-252E. This

little clump is fairly easy to spot within the nebulosity. On the other hand, NGC 2174, which some sources, including MegaStar, define as the main nebula, is actually a clump in the north-northwestern edge of NGC 2175.

Confused yet?

Whatever the case, this complex area is fun to look at and best seen with a UHC filter, though it can be spotted with an OIII, and no filter as well.

Observations/Drawings/Photos

Dr. Harold Corwin: Observer from New York

NGC 2175 is a very large, roughly circular emission nebula which also includes NGC 2174 and IC 2159, and a star cluster which has inherited the NGC number, though there is no mention of it in the discovery notes. The nebula is centered on SAO 078049, though the brightest knot (which Bigourdan took for N2175 - hence, the "corrected" RA in the IC2 notes) is about three arcminutes to the west-northwest. Auwers's note makes it clear that NGC 2175 is much more than just the knot: he gives dimensions of 25 arcminutes by 8 arcminutes, and specifically adopts the position of Lalande 11668 = SAO 078049 as that for the object. I have followed his lead.

Note that Archinal and Hynes in *Star Clusters* call out another smaller cluster as "NGC 2175.1." This is a small group of about a dozen stars at 06 10 53, +20 36.6 (J2000), no more than five arcminutes across. They correctly point out that this has nothing to do with the NGC object — the nebula — and suggest deprecating the NGC number often attached to this group.

I agree, so have not put this object in the main table, but do note that Collinder 84 is associated with the nebula. Archinal and Hynes have some doubts that this is a real cluster, but Brian Skiff has it centered on the same star that Auwers chose. Archinal suggests reserving the NGC number strictly for the nebula, but if the stars are associated with it, I see no reason not to adopt the NGC number for Collinder 84 as well. We (observers over the centuries) have done this with, for example, M17 = NGC 6618 and M42 = NGC 1976 with little or no confusion, so doing the same here should not be a problem — as long as "NGC 2175.1" is indeed dropped.

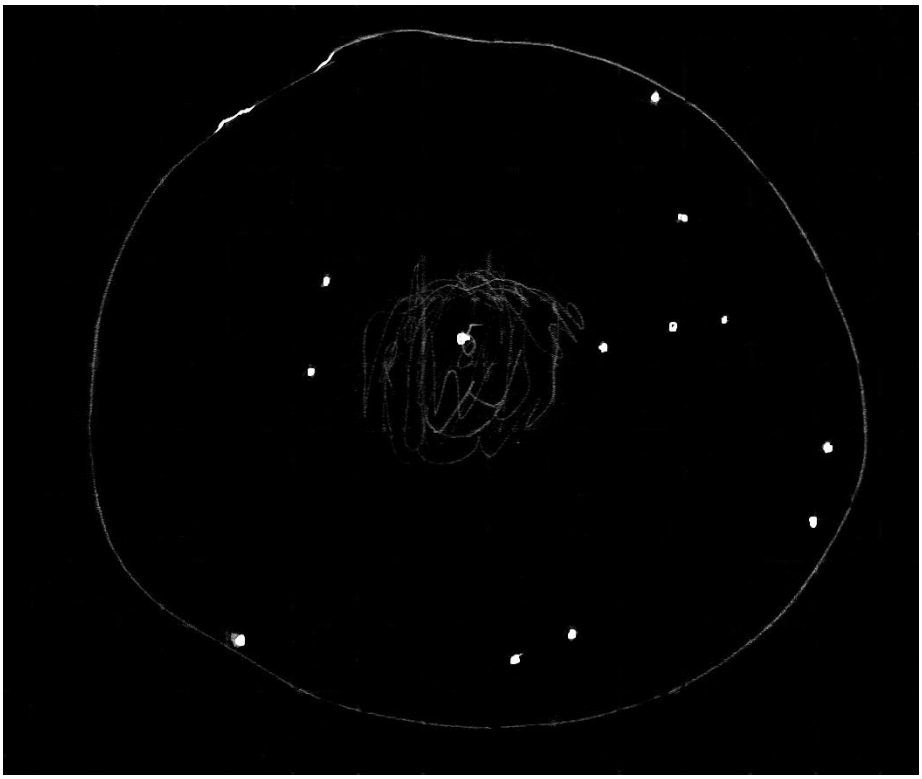
Joseph Dechene: Observer from New Hampshire

NOTE: We'd like to welcome new participant Joseph Dechene from New Hampshire. Welcome Joseph!

Here's my February Challenge sketch for NGC 2175. This is through a 6-inch telescope I made for my daughter Kristin. I used a 14mm eyepiece and an OIII filter. It was a challenge, especially where I live in Nashua NH, pop 88,000. The sketch was strictly at the eyepiece, with no touching up afterward (not sure how common or allowed it is to improve sketches after). I'm open to ideas on how to improve my visual artwork.

I've also included some photos of NGC 2175 taken on a telescope mount that I recently built. One is with a 280mm lens at f5.6, in a stack of two. This was to test a new lens mount. I chose IC 443 and NGC 2175 as it crossed the meridian, and tried to force the mount to "flip" to test for play or flexure.

The other is NGC 2175 through the main 6-inch scope at 571mm focal length (f/3.7) using the same equatorial mount.



David Blanchette: Observer from Nevada

North is up and west is to the right. I used an 8-inch Newtonian Astrograph, Canon Rebel T7i, 50×60s, ISO 6,400, UHC-S filter, Deep-Sky Stacker.

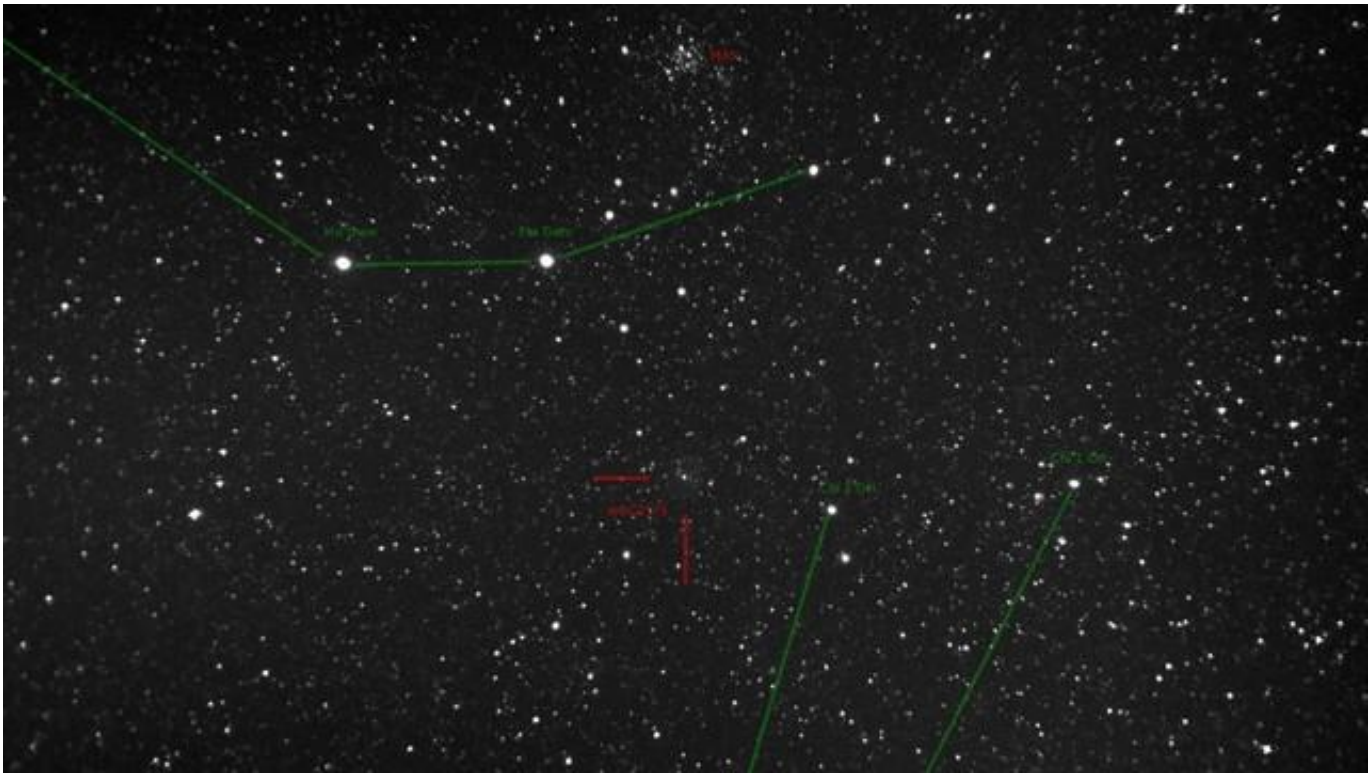
Corey Mooney: Observer from Massachusetts

On February 2, 2019, I brought my EAA equipment with me on a snowmobiling trip to Sherman, Maine (Bortle 2). I set it up outside the motel door and operated it remotely (-5°F that night). The parking lot had poorly aimed and unshielded floodlights at the far ends, but fortunately, I had my extra-long shroud with me.

My setup consisted of: an RT224 camera in a 114mm (4.5-inch) f/4 Newtonian piggybacked to a RT290 mono camera with a 25mm C-mount lens as an E-finder. This was mounted on an equatorial mount with OnStep control and a mini-PC running SharpCap.

I like to use the second camera with a wide field lens as an E-finder. With GOTO and plate solving, it's not really needed, but it's still fun to use the live feed to star hop the remote system from the warmth of the motel room.

This is the annotated 12.6°×7.1° field of view surrounding NGC 2175. In this short 1-2 second exposure, the nebulosity was detectable. Note: This camera is unfiltered and sensitive to IR, so star brightness may differ visually.



Once I confirmed and centered the nebula, I switched to the main scope's camera and started live stacking.

Here are 40 live-stacked shots with 8-second exposures at max gain totaling 320 seconds integration time.

My 0.61°×0.46° field of view is a little too tight for this object, so I explored around it using a couple short live stacks until I settled on a framing that I liked.

The first thing I noticed was the diffuse faint red glow brightening to the right (W), and ending abruptly on a silhouetted lumpy wall of dark dust/gas. With the color camera, the two smaller yellowish emission nebulae areas really stood out. The tighter and brighter emission nebula toward the center had a dust lane cutting across its northern half. I wondered if it provided enough contrast to be detected visually in a larger scope.

A couple days after getting back from the trip, I set up in my driveway (February 5, 2019, Maynard, MA) with my monochrome RT290 camera in the main scope.

Here are 68 live stacked 8-second exposures at max gain totaling 536 seconds integration time.

With my local light pollution, it took a lot longer to get enough data to allow me to aggressively stretch the histogram in order to separate the nebula from the sky glow.

I really like the look of monochrome.

I wanted to follow up with a UHC filter on the mono camera to help cut through the light pollution, and to see how drastically it would attenuate the emission nebula areas, but the weather didn’t cooperate.

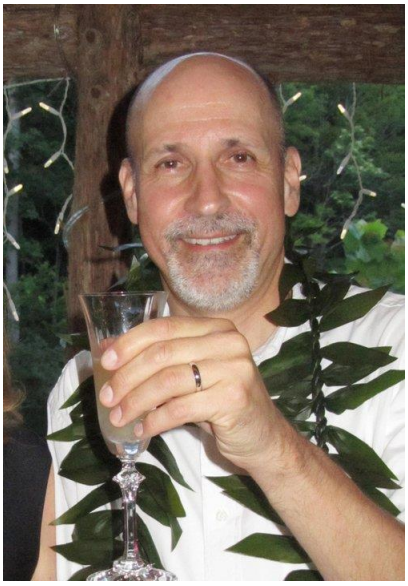
Derek Lowe: Observer from Massachusetts

As it turned out, I only observed this one once this month, but here's what I have (18-inch Dobsonian). I would've liked to have gone back to the wider field!

The bright star in the middle of the field (HD42088) definitely showed as embedded in substantial nebulosity. Some of this was clear even at 69× with no filter, and at 437× (5mm EP) with no filter, the star lit up a whole region of nearby gas. However, so were the other stars in the field at that power, especially the Mag. 11 star to its NE, which Cartes du Ciel told me was UCAC4-553-022951. I saw that in Sue French's photo that the star was particularly embedded, so I was glad to have noted this before looking over the photograph! In general, the whole field makes you think that there's something wrong with your focus. None of the stars will resolve into something other than somewhat fuzzy.

With an Ultra-block filter, the view didn't really improve - in fact, to my eye, the contrast with the nebulosity was better unfiltered. Trying the OIII filter with a lower magnification (69×), though, it showed what seemed to be a lot more background nebulosity, which I wasn't expecting. A wider region around the HD star was now nebulous, whereas the Ultra-block didn't bring that out as much, for some reason.

James Dire: Observer from Illinois

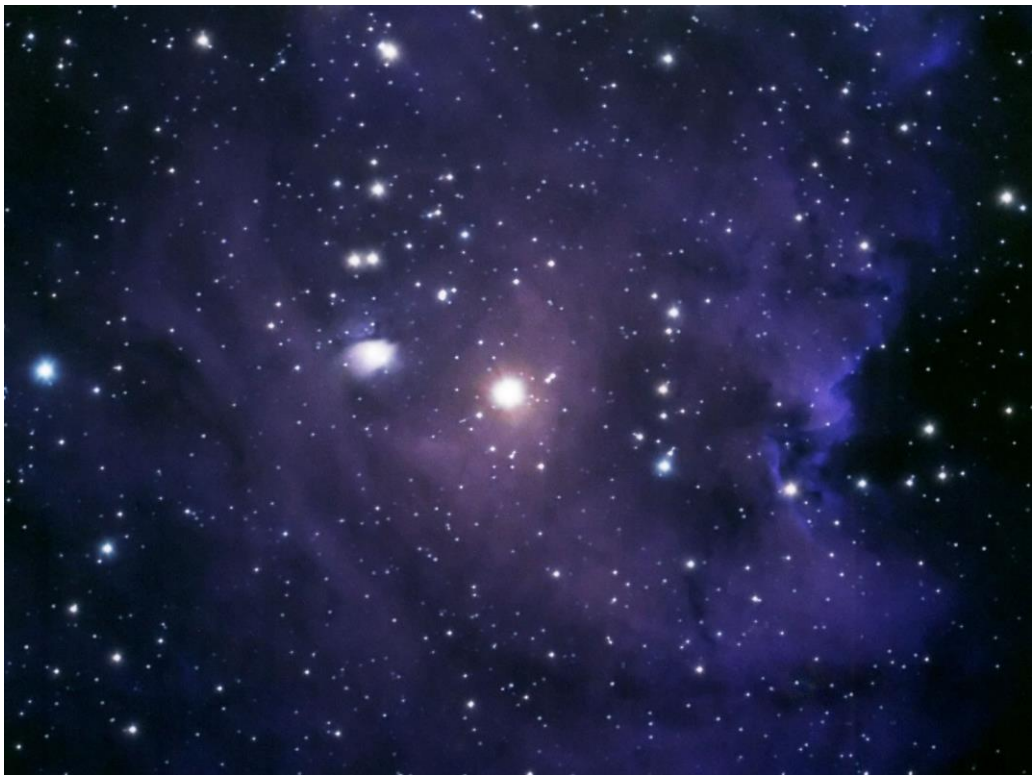


NGC 2175 is an open cluster in the constellation Orion, located on the border of Orion and Gemini. The cluster is located 2.3° south-southwest of the mag. 3 star Propus (Eta Geminorum). The cluster is wide and sparse, spanning 22 arcminutes. Its integrated mag. is 6.8. The cluster is located 6,700 light-years away. It was discovered by the Italian astronomer Giovanni Batista Hodierna sometime before 1654. It was independently discovered by Karl Christian Bruhns at the Berlin observatory in 1857.

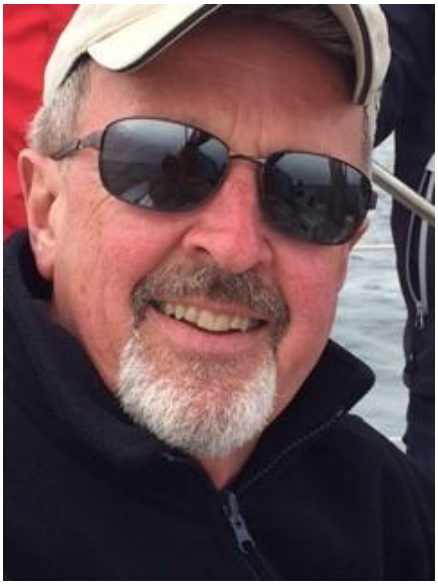
NGC 2175 is associated with NGC2174, the Monkey Head Nebula, a large HII region spanning 40×30 arcminutes. The Monkey Head Nebula is sometimes co-listed as NGC 2175, along with the cluster. The stars in the cluster are thought to have formed out of the gases in the nebula.

I viewed NGC 2175 from Kauai this month using a 6-inch apochromatic refractor. The star cluster was obvious, but the nebula was not. The nebula made itself apparent as a faint background glow around the stars that was barely brighter than the dark regions between the stars outside of the nebula.

I imaged NGC 2175 with a 10-inch f/6.9 Newtonian using an SBIG ST-2000XCM CCD camera. The exposure was 2 hours. The image is centered on the cluster, which is near the center of the nebula. The image spans 24×18 arcminutes, taking in less than half of the Monkey Head Nebula. The brightest star in the image is SAO78049 which shines at mag. 7.9. Although SAO78049 is the brightest star visually within the nebula, it's a foreground object to NGC 2175.



John Bishop: Observer from Massachusetts



On February 26, 2019, I observed emission nebula NGC 2174 from the ATMoB Clubhouse in Westford, MA. I used an 8.25-inch reflector at 48× (unfiltered) and 80× (UHC and OIII filters).

The sky was clear. Seeing was fair. Transparency was good early in the evening, but an intermittent thin haze moved in as the night went on. Air temperature at 6:00 pm was 19°F, dropping to 12°F by 11:30 pm. The Moon was at last quarter, setting long before sunset. There was some snow cover.

Using the finder, I located the object by scanning the NE corner of Orion at 48×, unfiltered. The nebula was not visible, except there was a slight glow around a bright field star. Confirming identification was a distinctive line of three stars to the north of the nebula. Faint stars were scattered around the central star.

At 80× and using a UHC filter, the nebula was visible as a broad, faint glow with an irregular shape. I could see a string of faint stars winding around within the nebulosity. My eye tried to see a pattern in this string, but I couldn't. It just looped around in an interesting way. There were darker areas in the nebulosity that may be the lanes others have observed.

At 80× with an OIII filter, the image was much darker, and the object harder to see, although the dark areas in the nebulosity may have been better defined than with the UHC. With the OIII's darker image, however, I experienced interference from light reflected off the snow cover. Unless I cupped my gloved hand around the 1.25-inch eyepiece and my eye, the light reflected off the snow in the field just overpowered the image. I've never used an observing hood, but I would've that night. The snow cover reflection may also have played off the incoming haze, detracting from transparency.

The UHC filter gave the most pleasing view that night.

Kenneth Drake: Observer from Texas

Last night, as I was watching the sub-tropical jet slide to the SE, I got encouraged to set up the 13-incher. I had started a drawing of NGC 2175 on February 24, 2019, but clouds moved in. I walked out to nearly pristine skies just after 10pm.

The labels in MegaStar have had me confused on this emission nebula for several months. Looking at Wiki, I see that it was discovered by a distant relative on my dad's side (Giovanni Batista Hodierna). It's described as an open cluster (aka OCL 476 or Cr 84) and encompassed by the emission nebula Sharpless 2-252. In my drawing, it's the center bright */neb. aka NGC 2175.9, Parsamyan 7 all enclosing a mag. 8 *. The large fuzz above it is NGC 2174, while the full complex is 2175. With some help from Sue French, who has observed it on numerous occasions, I'm fairly sure I at least have the right field of view. It's a complex area with a large number of cataloged objects.

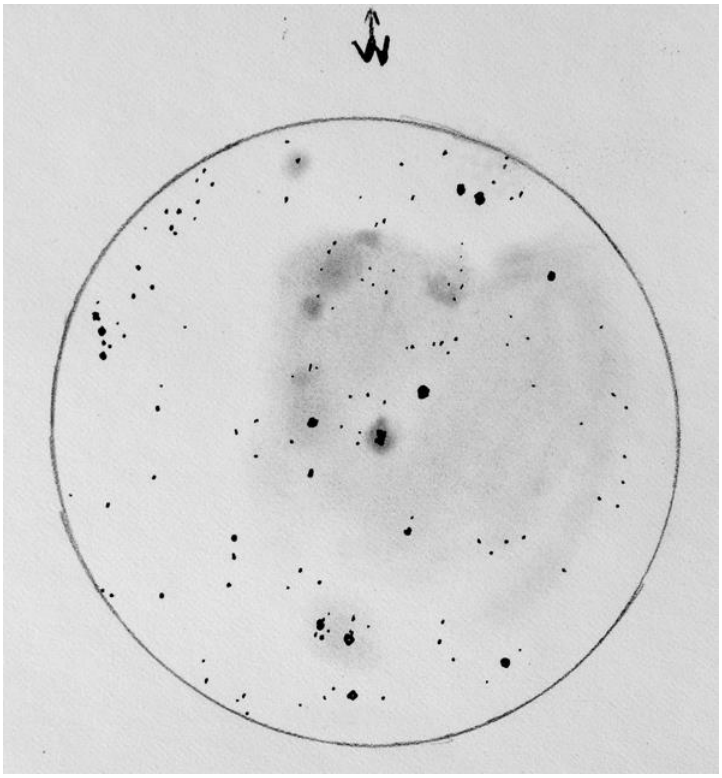
I had begun the star field back on February 24, 2019 and last night, got to fill in some of the brighter patches of nebulosity. Between 11 & 12PM, I bundled up to protect from the 25°F chill. I did all I was going to do. This morning, patchy cirrus moved back into my sky.

In the 13-inch Dob (I have to get this thing driven!), it was fairly easy find, 1/3 of the way from Chi2 Orionis to Eta Geminorum and 1/2° SE of the line (see the finder field). A 11×70 finder showed it as a faint, soft, glow elongated NW-SE.

My attached drawing was made using 21mm EP (71×), 13mm EP (115×), & 10.4mm EP (144×). The complex was visible as a large soft glow in the 11× finder. How none of the Herschels caught this, I don't know. An OIII filter did a swell job of enhancing the patches of nebulosity within the complex.

The small faint knot at the west edge of my drawing appears to be Simeis 147. At the bottom (east) is a faint, large glow encompassing 10 *s. Sue calls it Pismis 27. Other names indicate Cederblad 67c, Pismis 1, NGC 2174S, NGC 2175.1

Are you confused yet? What size binoculars will see it?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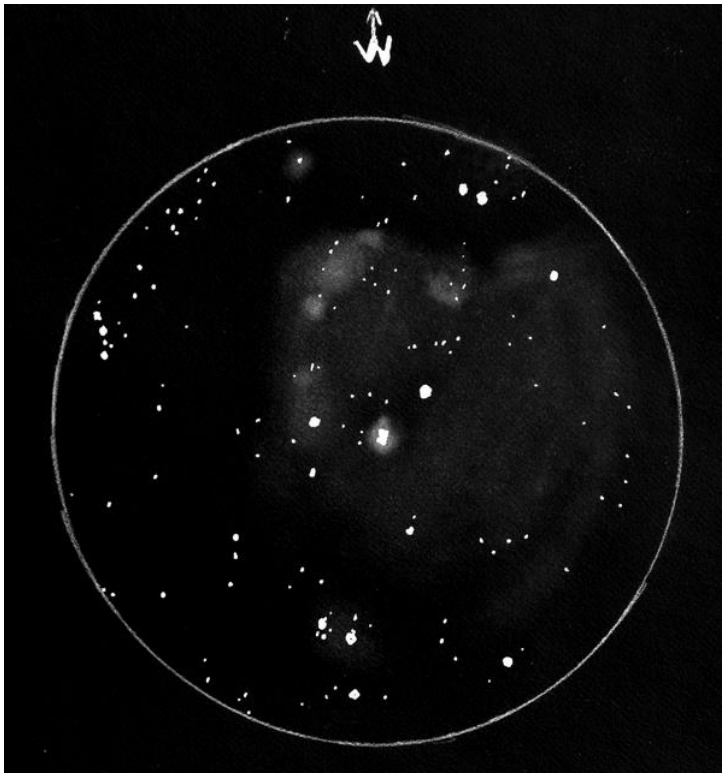
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Doug Paul: Observer from Massachusetts

Given how bad the recent observing weather has been here in the NE, I'm glad I managed to get NGC 2175, the Monkey Head Nebula in December, 2018 as part of a (cold) all-nighter. Visibility was fairly good for this highly light-polluted suburban location - the NELM was ~4.5 with no snow on the ground.

Technical info: Canon 80D, 400mm f/2.8 lens (aperture 142mm), ISO 800, 31 subs × 30 sec = 15.5 min, 1/4 scale crop, north up. Standard processing: (lights, darks, flats, registration, stacking, and stretching). Daylight white-balance.

Sue French: Observer from New York

On March 1, 1991, @ 9:00 PM EST, I used a 10-inch f/6 homemade Newtonian, 32mm EP + OIII filter to observe NGC 2175. Seeing: fair. Transparency: good. There was an Aurora.

It was a large, faint, mottled nebula containing a mag. 7.6 star in a rich field of fainter stars. About 1/2° in diameter.

On February 12, 1996 at the Winter Star Party, 11:00 PM EST, 105mm (4.1-inch) AP Traveler prototype, 13mm EP. Seeing: fair. Transparency: good.

It was a very nice nebula about 20 arcminutes in diameter. Obvious without filter, but better with a narrowband filter and even better with an O III filter. Mag. 7.6 star near center plus about a dozen faint stars superimposed. Slight mottling to nebula with hints of some dark lanes.

On March 1, 1996, 9:35 PM EST, 10-inch f/6 homemade Newtonian, 35mm EP, O III filter. Seeing: fair. Transparency: good.

A large, round glow through the O III filter, about 23 arcminutes across. Despite the outlines in *Uranometria*, the nebula looks pretty much centered on the mag. 7.6 star embedded within. The nebula brightens gradually toward the center. The view is similar with a UHC filter, but not quite as contrasty. Without a filter, the nebula is subtle. It has a dusting of faint stars across it.

December 23, 2016, 12:40 AM EST, my great-nephew's 8-inch reflector in North Carolina.

Visible in 9×50 finder with a mag. 7.6 star embedded near center.

22mm EP: Large, easy to see. The star near the center is in a star chain that has a prominent hump to the east. Subtle dark nebulae thread the glow. Many superimposed stars. The nebula shows nicely when adding a UHC filter. Somewhat irregular in shape. The Sh2-252E nebulous knot doesn't show particularly well, but it has a superimposed star near its center, too. O III filter makes the nebula seem quite bright to a diameter of 22 arcminutes.

9mm EP: The unrelated cluster Pismis 27 (sometimes called NGC 2175.1) shows 6 fairly bright stars in a SSE-NNW bunch, plus a half-dozen faint stars. Overall the group spans about 4.2 arcminutes.

January 30, 2017, 8:40 PM EST, 10-inch f/5.8 homemade Newtonian. Seeing and Transparency: fair. Snow cover. 14°F. Breezy.

2175 is visible through the 9×50 finder as a distinct sizable glow around a star.

22mm EP: The nebula is subtle. Pismis 27 shows 9 stars. Adding a UHC filter shows a beautiful, large nebula threaded with dark lanes. The northern border is particularly irregular. The nebulosity covers about 25 arcminutes. There's a very small, brighter patch (Sh2-252E) 3.2 arcminutes ENE of the star. The bright patch contains a star and has a pair of matched (mag. = 10.6, 10.7) stars 2.1 arcminutes north. There may be a touch of nebulosity in Pismis 27.

22mm EP + O III filter: Also makes the nebula stand out well, but I prefer the UHC, which shows off the lines and chains of stars meandering across the nebula.

13mm EP: Pismis 27 shows 15 stars in about a 4½×3 arcminute group running approximately north-south. Includes the close double J1922.

My first mention of NGC 2175 in my *S&T* column, which was then called *Small-Scope Sampler*, in the February 2004 issue:

Another nice nebula, NGC 2175, sits 1.4º east-northeast of Chi^2 (χ^2) Orionis. In my little refractor at 47×, I find the nebula obvious without a filter. However, a narrowband filter betters the view and an OIII filter helps even more. An 8th-magnitude star is visible near the center, and a dozen faint stars are superimposed. The nebula is slightly mottled and shows hints of dark lanes.

NGC 2175 is sometimes plotted as an open cluster in star atlases while the designation NGC 2174 is given to the nebula. Neither is correct. NGC 2175 was discovered sometime in the mid-1800s by the German astronomer Carl Christian Bruhns and first reported by Arthur Auwers who described it as an 8th-magnitude star within a large nebula.

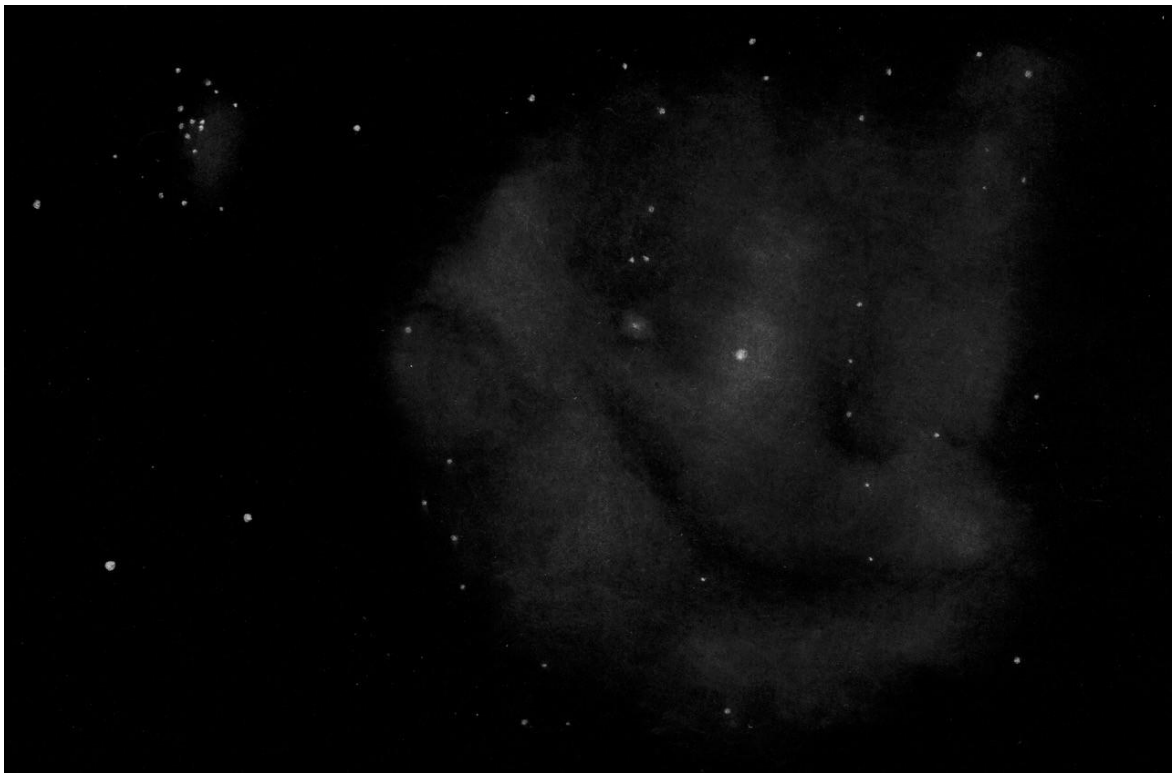
NGC 2174 is actually a bright knot of nebulosity in the northern edge of NGC 2175. It was discovered at Marseille Observatory by Édouard Stephan, widely recognized for the group of galaxies that bears his name - Stephan's Quintet. Folks with larger scopes might like to hunt

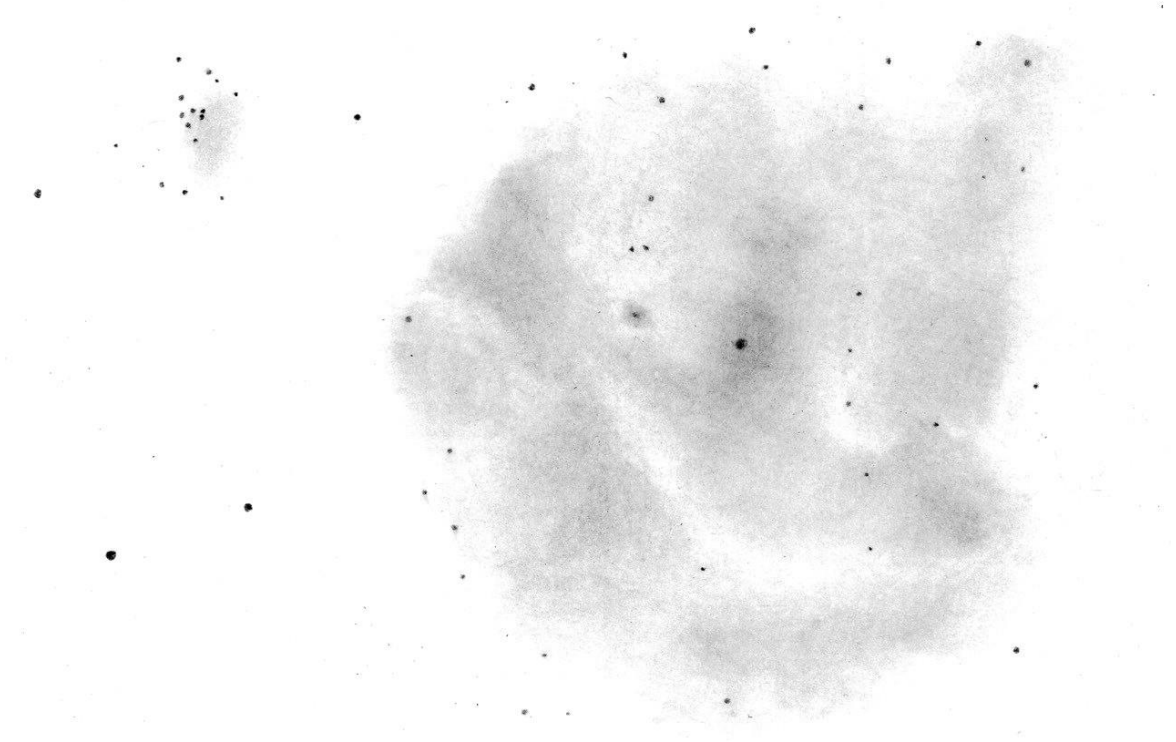
for NGC 2174 and for the even brighter knot Sh 2-252 E, respectively located 11' north-northwest and 3.3' east-northeast of the 8th-magnitude star.

The existence of an open cluster within the nebula seems debatable. It was the Swedish astronomer Per Collinder who first noted a cluster here and mistakenly equated it with NGC 2175. The cluster's proper designation should then be Collinder 84, but there doesn't appear to be an obvious concentration of stars within the nebula. Collinder 84 is supposed to consist of the clumps of stars loosely scattered across most of NGC 2175. Does it look like a cluster to you?

For the Observer's Challenge:

On March 8, 2019, I finally had a good night to sketch NGC 2175 and friends. I took out my homemade, 10-inch Newtonian and easily swept up the nebula in its 9×50 finder. Through the telescope at 43×, the sheer size of NGC 2175 makes it readily visible despite its low surface brightness. It even shows some brightness variations. Five stars are visible in the open cluster Pismis 27, located off the nebula's northeastern edge. At 68×, NGC 2175 is beautifully spangled with stars when viewed without a filter, and a bright star pins its heart. The nebula is greatly enhanced with an O III filter, while a UHC filter shows less contrast but more stars. Pismis 27 also shows a touch of haze. My sketch of the nebula was made with the filters at 68×, and it mainly includes the stars that were still noticeable with them. It was quite easy to see the nebulous knot Sh2-252 E, which sports a star of its own and rests 3.2 arcminutes east-northeast of NGC 2175's central star. I was unable to see NGC 2174, the nebulous knot perched on NGC 2175's north-northwestern edge. To sketch the stars of Pismis 27, I viewed it without a filter at 166×.





Joseph Rothchild: Observer from Massachusetts

I finally had a clear (although cold and windy) night at the ATMOB clubhouse in Westford to observe NGC 2175. Hand warmers were quite helpful. There was some haze. I had previously been unsuccessful from my home in suburban Newton, Mass. I have not seen this object in the past.

I brought a 6-inch f/5 reflector, hoping to better frame this relatively large nebula. I star-hopped from Mu Geminorum (and M35) and easily found the field. I was able to locate the nebula using a 22mm EP with an NBP filter at 34×. The nebula was half-moon shaped and mottled. It was quite dim, and seen better scanning across the field. It was also more visible at higher power using a 14mm eyepiece at 53×. There was a bright star overlying the nebula and a small linear grouping of 3 stars nearby.

Overall, the nebula was faint but definitely seen in fair skies.

Chris Elledge: Observer from Massachusetts

On January 26, 2019, @9:50pm EST, I used a 10-inch f/5 reflector to observe NGC 2175 from the ATMoB Clubhouse. Sky conditions were: Bortle Scale 6. NELM 5.0. Transparency good. Seeing good.

I found NGC 2175 by starting at Propus in Gemini and heading south to the mag. 5 star 68 Orionis. Placing 68 Orionis on the SE edge of the 1.9˚ FOV (35mm, 36×), it centered the NGC2175 cluster nicely in the field. The mag. 7 central star HD42088 was bounded by two parallel lines of stars. The longer line to the center star's east was made of 9 mag. 10 to 13 stars. The shorter line to the star's west was made of 5 mag. 11 to 13 stars. The longer eastern line was shifted toward the north. There was no visible nebulosity until I added a UHC filter. The nebula was slightly mottled with the greatest concentration around the brighter stars in the middle of the cluster. The nebulosity seemed to spread across a little less than a degree.

At 51× (25mm, 1.4˚FOV), the nebulosity was visible as a light patch, but adding the UHC had a big impact, and the fluctuations in brightness across the nebula were visible. There were several darker spots near the center mag. 7 star, and some of the brightest areas of the nebula were within the two parallel lines mentioned earlier. The nebula appeared to stretch further to the east from the center of the cluster than the other directions.

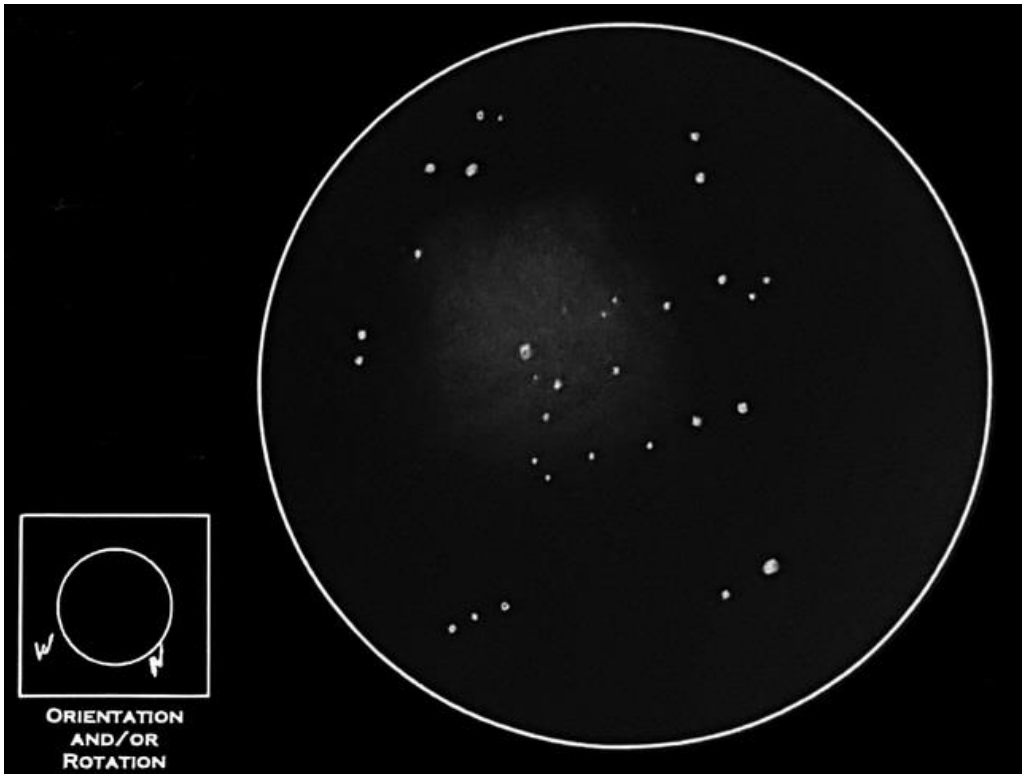
Mike McCabe: Observer from Massachusetts

NGC 2175, also commonly referred to as the 'Monkey Head Nebula', is an open cluster associated with nebulosity and is located in the upper reaches of the constellation Orion. The nebulosity associated with 2175 had eluded me visually until these attempts for The Observer's Challenge. The application of appropriate filters was the key. Also, as far as the cluster aspect is concerned, it's unclear where the cluster begins and where it ends in the eyepiece view. Still, it's a pleasant enough observation, and much more satisfying once the nebulosity is discerned.

On the evening of January 9, 2019, I looked at it with my 4-inch f/11 achromatic refractor. I used a 30mm/72°APOV eyepiece and a UHC filter. I found the nebulosity to be very dim and irregular, and visible with averted vision only in this small telescope.

I went back to 2175 again on January11, 2019 with my 10-inch f/5 Newtonian reflector. I used a 30mm/82°APOV eyepiece equipped with a UHC filter and a 25mm/60°APOV eyepiece equipped with an OIII filter. The view was better overall with the UHC filter, and I saw the nebulosity as dim, irregular, and concentrated primarily around and to the south of a mag. 8 star near the center of the cluster.

Returning to the area on the February 21, 2019, I again used the 10-inch Newtonian scope and again tried both the OIII and UHC filters, with similar results to the January 11th observation. While the nebulosity was enhanced slightly more with the OIII filter, the brighter overall view with the UHC filter made for a more pleasing observation.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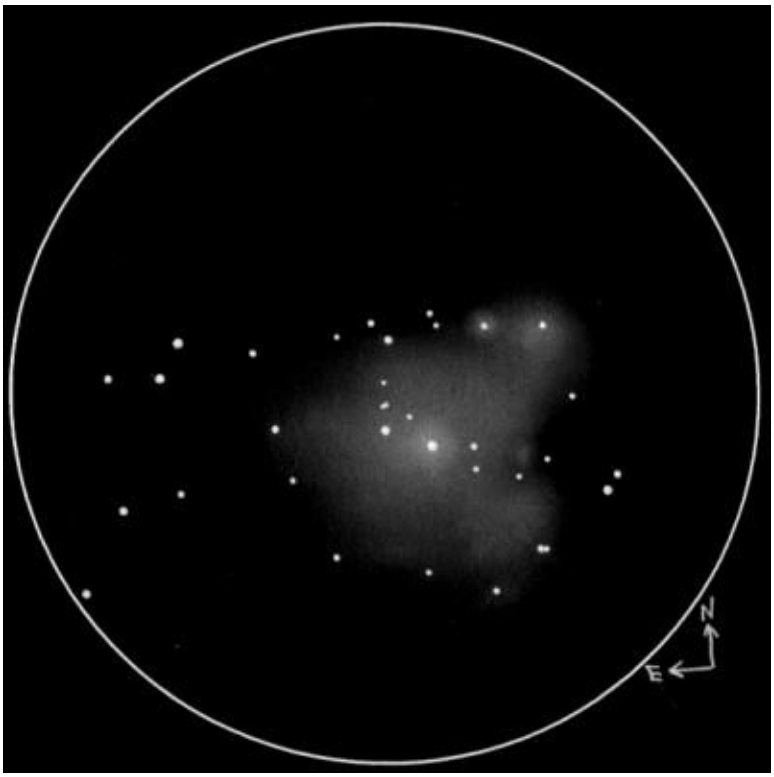
ORIENTATION
AND/OR
ROTATION

Jaakko Saloranta: Observer from Finland

NGC 2175 is a fine nebula located in the sword of Orion. The original description of NGC 2175 by German astronomer Carl Bruhns from 1857 notes an "8th magnitude star with nebulosity." There is no mention of a cluster which is still sometimes seen associated with the NGC 2175 designation.

Although visible fairly well, even with a simple 3-inch refractor, a larger telescope brings out more detail and shape. With an 8-inch telescope and UHC filter @ 60×, the nebulosity was round/irregular with a fairly well defined western edge. Total size was roughly 20'×15' with the filter. Two brightenings in the nebula were visible in the NW edge. The one surrounding mag. 10.7 star HD 252325 was NGC 2174. There was a small 2' concentration of 10 stars @ 06 10 54 +20 36 28 with some emission nebula visible in the background in photographs.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Richard Nugent: Observer from Massachusetts

Challenging emission nebulae are not friendly to observers in eastern Massachusetts and NGC 2175 is no exception. Observing from my home in Framingham (NELM 4.8 on a typical night) using a 10-inch scope with a variety of magnifications, the object showed up as a faint, barely discernible glow surrounding the mag. 7.6 star HD 42088. To know you're on the correct star, look 23′ north to see a linear trio of mag. 9.7-10 stars. Using my 20-inch scope helped to see more of the nebulosity, but I couldn't make out any detail. Despite the fact that this is an emission nebula, a UHC filter enhanced the contrast and made the object a bit easier to see. I found that eyepieces giving exit pupils of 2-3mm gave the best views.

I also got a glimpse of the nebulosity through Joseph Rothchild's scope at the Westford observing site of the Amateur Telescope Makers of Boston (NELM 5.2-5.3). Again, the object was exceedingly faint and difficult. The nebulosity was most prominent around the star HD 42088, a foreground object superimposed on the open cluster Collinder 84.

Mario Motta: Observer from Massachusetts

This is just a small section of NGC 2175 (my field of view is 17×17 arc minutes with my 32-inch scope.

This is a composition using narrow band filters Ha, S2, O3, all total about 4 hours imaging.

The image is the western end in what I think is an interesting section.

I took the eastern side as well, but clouds ruined my S2 subs... so, I'll soon try a mosaic of the east and west of the middle of this monkey head in Ha, and maybe will try false color and

add O3 data, and will send that when done. That mosaic will then include NGC 2175 the star cluster.

There was a learning curve to do mosaic well in Pixinsight, but here's my effort.

This is a composite of east and western end of the monkey.

This one only includes Ha and O3 data, as S2 could not be incorporated in the composite due to eastern end getting clouds at that time.

So, it came out okay, I think.

Compared to the earlier western end only image, that one had all three colors included, the composite is missing the added yellow highlights from S2,

This image about 5 -6 hours total sub time to get. Strl 1001E camera (field of view 17×17 arcminutes per sub, the combo spans about 30 arcminutes. Taken with my 32-inch f/6, 4800mm FL, over several nights work.

Jay Thompson: Observer from Nevada

I observed NGC 2174 and 2175 from the dark skies of Meadview, AZ.

With the 17-inch, I noted NGC 2174 to have some bright pieces of nebulosity visible at 125× and 227×. The associated cluster NGC 2175 was best seen with at 63× because it was fairly big and splashy.

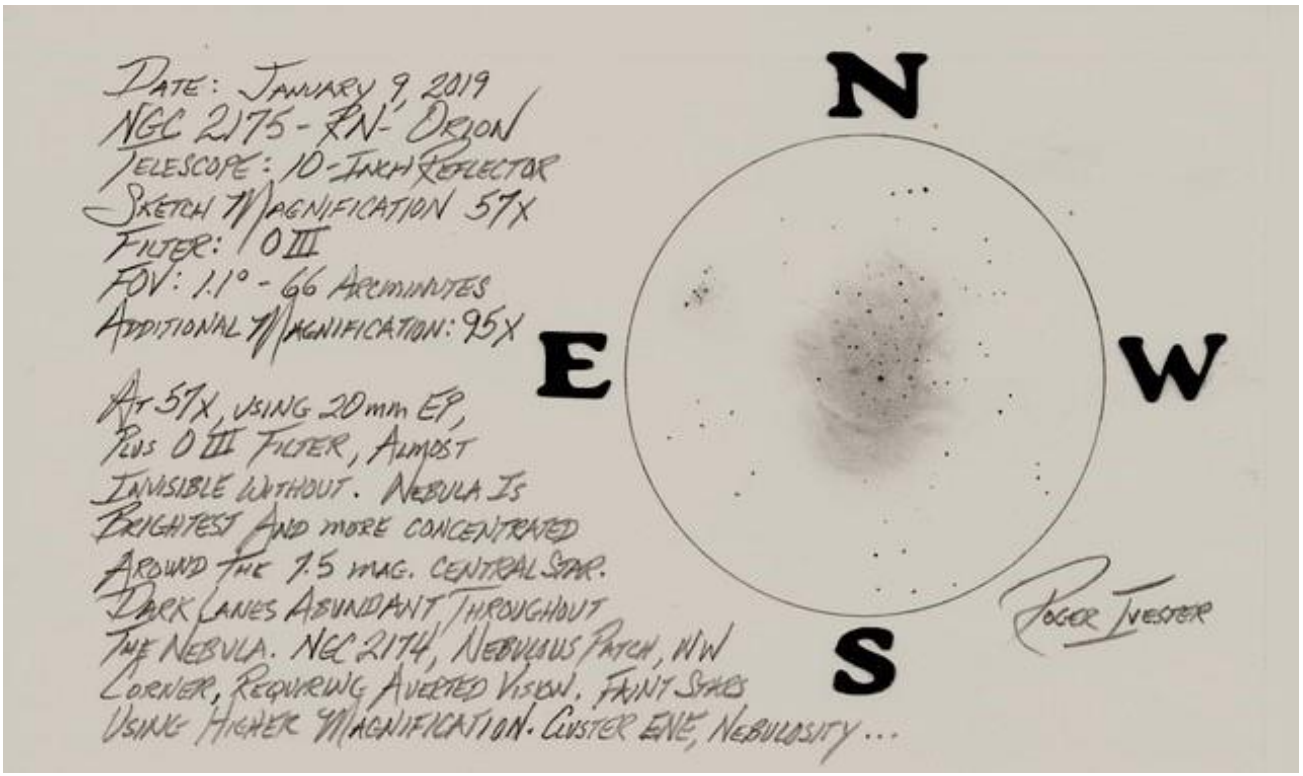
With the LVAS 24-inch at 116×, NGC 2174 was a very large glow taking up most of the field of view at 116×, with an eyepiece that has a 100° apparent field of view. NGC 2175 took up about roughly half of the field of view, appearing large and fairly sparse.

Roger Ivester: Observer from North Carolina

On January 9, 2019, I observed NGC 2175 with a 10-inch f/4.5 Newtonian reflector. Conditions were excellent with a NELM of 5.2.

Elapsed time for this object: Three hours. Sketch magnification: 57×. Filter: O III. Field of view: 1.1º – 66 arcminutes. Additional magnification, without filter: 95×.

At 57×, using a 20mm eyepiece plus O III, the nebula was very easy to locate and see, however, almost invisible without the filter. The nebula was brightest and more concentrated around the central mag. 7.5 star. Dark lanes were abundant throughout the nebula, especially looping around the south edge. With averted vision, I could see a nebulous patch on the NW corner, however, it wasn't constant. A small cluster of stars to the ENE of NGC 2175, had the appearance of having nebulosity. When removing the O III filter, and increasing the magnification to 95×, and with averted vision, many faint stars began to appear within the nebula as shown in my sketch.


Date: January 9, 2019
NGC 2175 - RN - Orion
Telescope: 10-Inch Reflector
Sketch Magnification 57x
Filter: O III
FOV: 1.1° - 66 Arcminutes
Additional Magnification: 95x
At 57x, using 20mm EP, Plus O III Filter, Almost Invisible without. Nebula is Brightest and more concentrated around the 7.5 mag. central star. Dark lanes abundant throughout the Nebula. NGC 2174, Nebulous patch, NW corner, requiring averted vision. Faint stars using higher magnification. Cluster ENE, Nebulosity...
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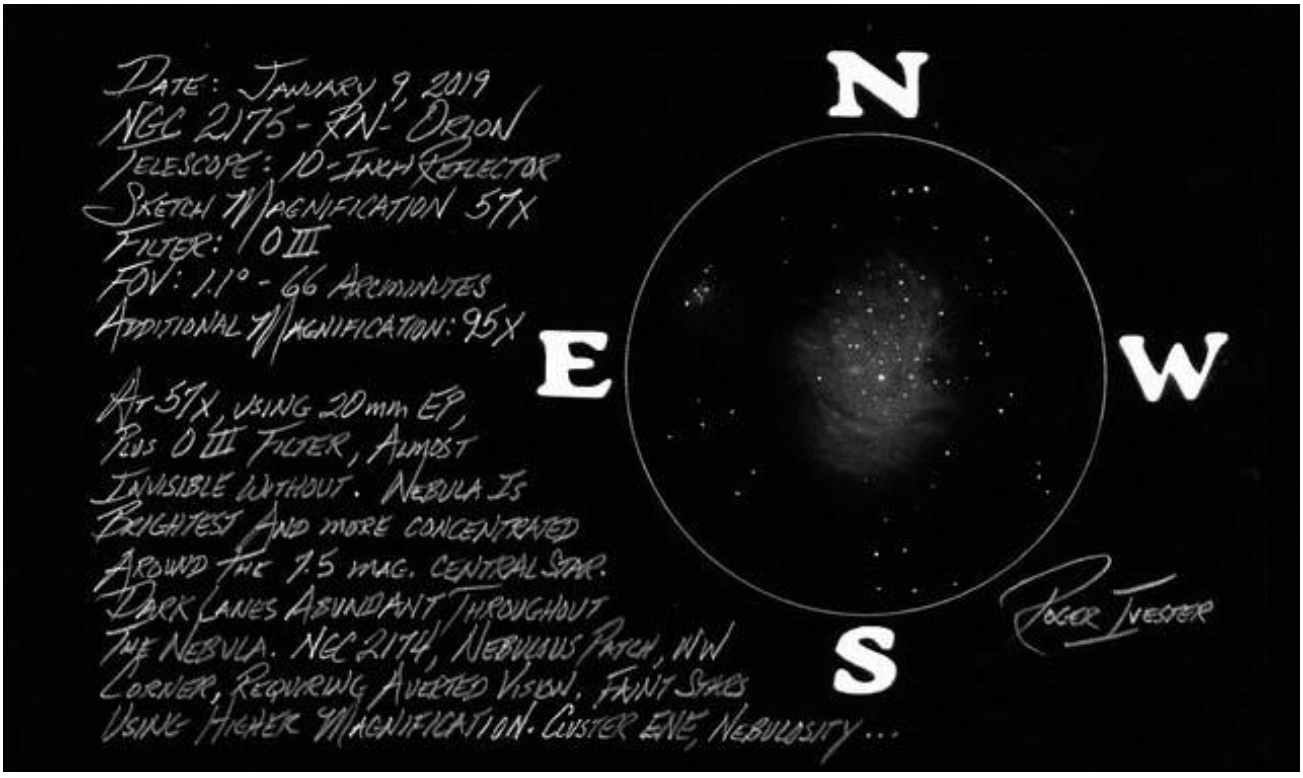
Roger Ivester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Fred Rayworth: LVAS AL Coordinator and Observer from Nevada

I wasn't able to observe NGC-2174/75 for the current Challenge, so I had to rely on an old observation from 2011. My sketch and notes are derived from that, plus updated info supplied by Sue French, especially when it comes to how it was marked by MegaStar, my go-to database source.

I observed the NGC-2174/54 nebula/cluster complex on October 23, 2011, from Furnace Creek Ranch in Death Valley. At an elevation of -190 feet, the weather was very nice. I got there early, and was able to align properly. It was cool, calm and clear. Like the night before, the sky seemed a bit bright, but it got better around midnight.

Using my 16-inch f/4.5 at 102×, my initial notes said it was an almost round patch of nebulosity, only visible in an O-III. A dim star in the center seemed to be lighting it up, but I think it was coincidental. The stars also seemed to be a loose conglomeration within the nebula, which according to Sue French, is Collinder 84, though if not for my 16-inch scope, I would hardly call the stars within the border of the nebula a cluster. They looked more like just background or foreground stars. Sue's note that what others have called Collinder's cluster was more toward the Pismis object, I couldn't see at all. By looking at the object, then looking with averted vision, it sort of looked like a cluster embedded within the nebula, at least with a large scope. However, this was more going from memory than anything recent. A fresh view would be the only way to confirm that impression.

Off to the eastern side was NGC 2175.1 (according to MegaStar) but it was also known as Pismis 27. That little clump, at first, just looked like a "little clump." If I hadn't known it was an object, I might've ignored it. I never noticed the small nebula Sh2-252 E, though I might've been looking right at it. Maybe next time.

Another unusual feature was that line of stars to the north of the complex, somehow reminding me of the belt stars of Orion. Just one of those things.