MONTHLY OBSERVER'S CHALLENGE

Compiled by:

Roger Ivester, North Carolina

&

Sue French, New York

March 2020

Report #134

NGC 2859 Galaxy in Leo Minor

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 who's interested, and if you're able to contribute notes, and/or drawings, we'll be happy to include them in our monthly summary. 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 astronomers 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 Observer's Challenge. And for folks with an interest in astrophotography, your digital 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 2859

NGC 2859 is a double-barred galaxy with an external ring that may be the remains of spiral arms that slowly detached themselves from the galaxy's interior. Easier to observe, the central region is mostly spanned by a SSE to NNW bar with arcs capping each end, thus giving it a somewhat dumbbell-like appearance. NGC 2859 also hosts a small nuclear bar, nearly perpendicular to the first. The most current measurement places this galaxy at a distance of 93 ± 7 million light-years.

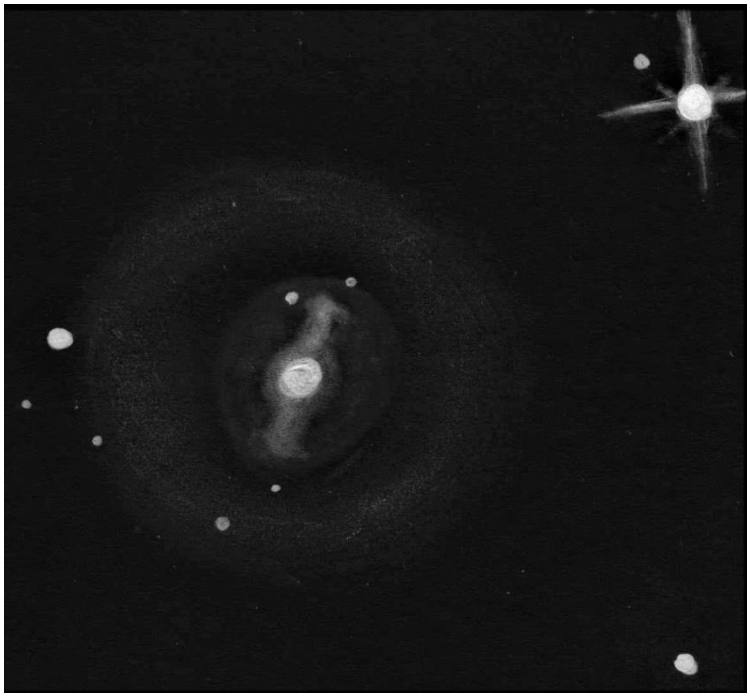
William Herschel discovered NGC 2859 in 1786. His journal entry reads, "Very bright, much brighter in the middle, round, the brightness confined to a small place; the chevelure extending to about 3′ diameter."

Dale Holt: Observer from England, 30 miles north of London

Dale introduces himself:

I use a 505mm f/3.74 Newtonian on a fork mount and an old analogue Watec 120N+ deep sky video camera with custom cooling. The camera is B&W and delivers its image in near real time, typically 15 sec exposure to a CRT monitor in my observatory office where I sketch from the screen. Most commonly I used graphite pencil on sketch paper although sometimes I use white on black hard pastels where the object is nebulous. Post drawing I scan the image and invert using paint. Limiting magnitude of my set up is around 19-20th mag.

I have given many talks over the past 15+ years in the UK on the amazing benefits of video astronomy, it allowing successful observing in light polluted environments and also the relative increase in the punching power of your scope.



Uwe Glahn: Observer from Germany

Telescope: 27-inch f /4.2 Newtonian Reflector

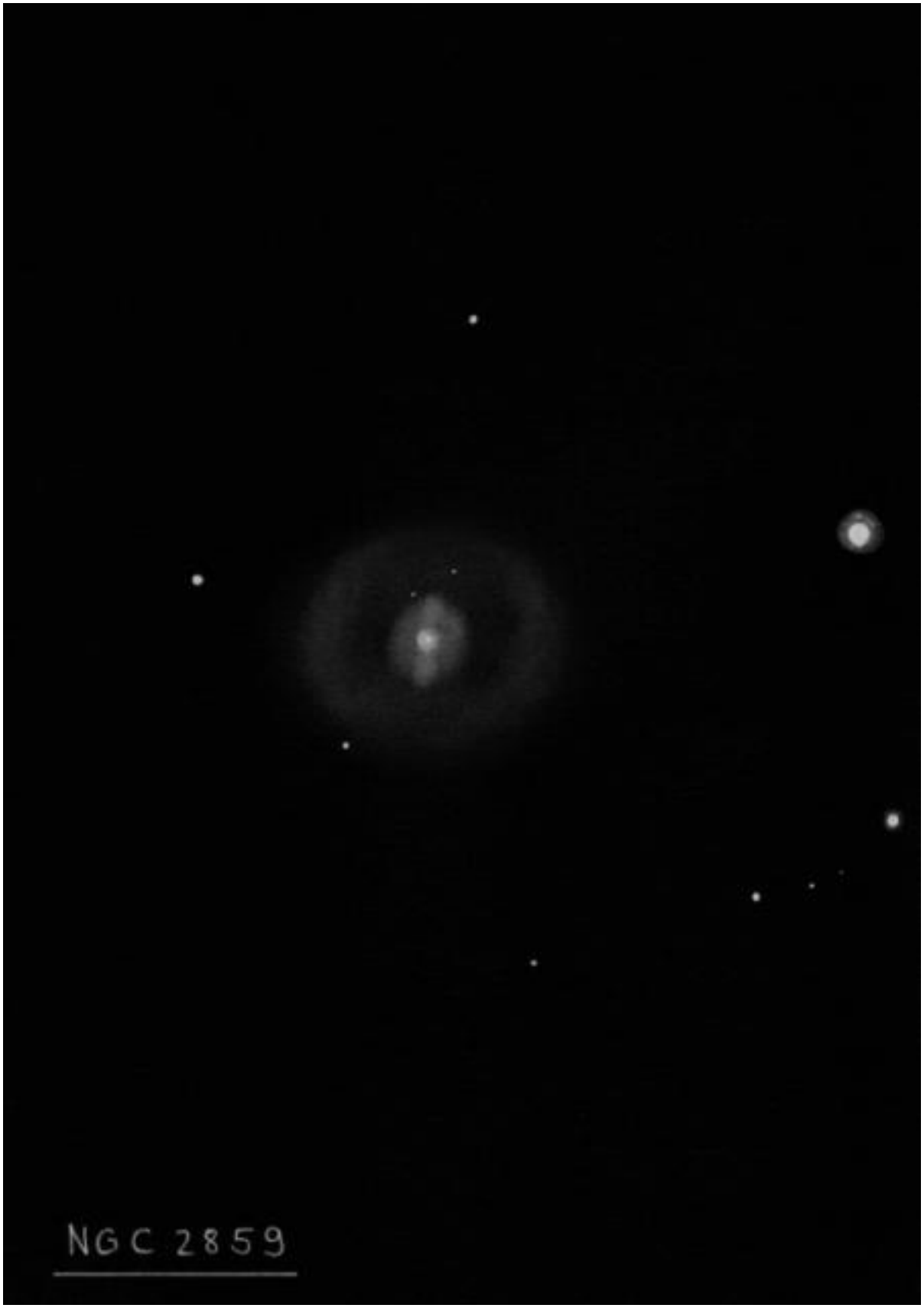
Magnification: 172x and 293x

NELM 6.5 +

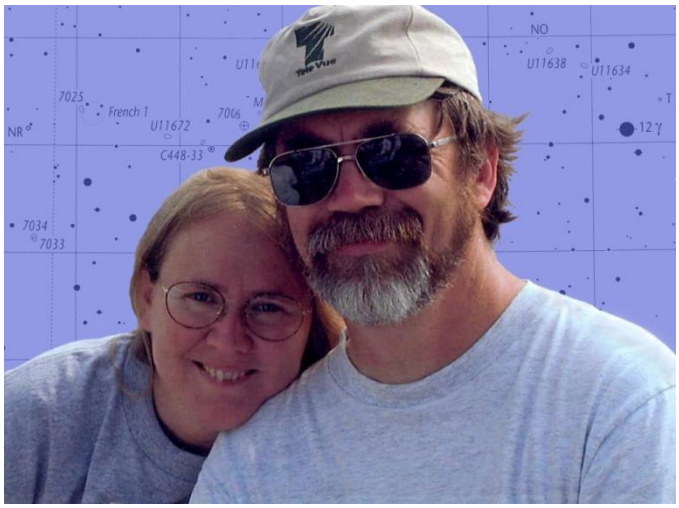
Seeing: IV

Location: Rossfeld

Pencil sketch as following:


NGC 2859

Sue French: Observer from New York



254/1494mm (10-inch f/5.8) Newtonian. Seeing: below average. Transparency: good.

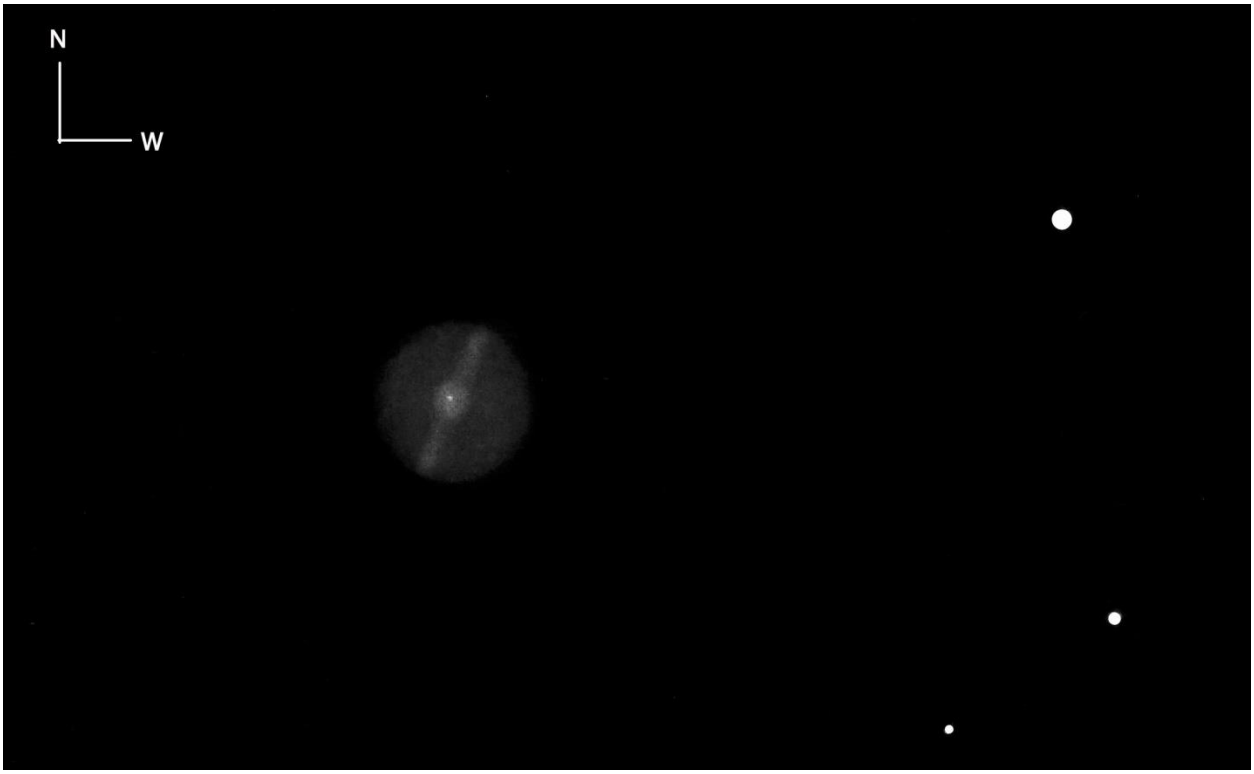
I logged this galaxy a couple times in the past, in 1983 and 2003. My only sketch of the galaxy was made for this Observer's Challenge on 3-21-20.

At 43×, NGC 2859 was a faint, roundish glow near a yellow-orange, 7th-magnitude star. It was an easy star-hop 41 arcminutes E×N from orange Alpha (α) Lyncis.

A magnification of 115× showed a tiny, very bright nucleus; a small, bright core; and a faint halo.

The sketch was made from the view at 299×. To me, the core plus its bar looked somewhat like a spiral galaxy seen edge-on. This structure was enwrapped in a fainter halo spanning about 1½ arcminutes. There was no sign of the galaxy's outer ring.

Alan and I took a look at C/2019 Y4 (ATLAS) after I was done. It was a large, pretty bright, diffuse glow — maybe a little brighter in the center.


N
W

Michael Brown: Observer from Massachusetts

I photographed NGC 2859 on March 17, 2020. The photo through my 8-inch SCT at f/6.3 had a total exposure of 16.5 minutes (33 images, each with 30-second exposure). Given my modest astrophotography capabilities, the photo is imperfect and not spectacular. Nevertheless, I am excited to have recorded an image of a galaxy that is over 80 million light-years distant and quite dim (magnitude 12.1 according to my Burnham's Celestial Handbook). Furthermore, several of the major features are visible, if only faintly in some cases. This includes the bright core, the bar, the halo of stars that appears like a bubble around the bar and core, and finally, very faintly, the outer ring of stars (it's definitely there!).

On the night I took the images, I could see the galaxy visually, but did not spend much time on direct viewing. I returned for more detailed visual observation on March 21.

I found NGC 2859 easy to spot, forming a triangle with two stars in the same field, with the galaxy at a corner with an obtuse angle. The galaxy appeared small with a stellar-like core. There was clearly a hint of an extended halo or "nebulosity" surrounding the core. I could not see the bar or the outer ring.

North is to the left, and west is up:

Joseph Rothchild: Observer from Massachusetts

I observed galaxy NGC 2859 twice from dark skies in Cape Cod. It was easy to locate with my 10-inch reflector near alpha Lyncis and 2 stars HD 80966 and HD 81057. It was small faint, round, and with a stellar core. There was no visible structure other than the core.

I observed it the same night as Comet Atlas C/2019 Y4. NGC 2859 had a similar appearance to the comet, but the galaxy was fainter and much smaller.

Derek Lowe: Observer from Massachusetts

I have a report on the March object for you - we had a couple of clear nights, so I made sure to get out with the 18-inch Obsession. The local police came by the field that I set up in, and agreed with me that you can't get much more socially distanced, and wished me a good evening.

So NGC 2859. I had logged this several years ago with my 11-inch Dob, and at the time noted that it was easily visible and appeared perfectly round like an unfocused star. I noted a concentrated core and coma, but no particular structure. This time around, I could see that the core took up some angular diameter of its own, and that the coma around it extended out further than was first apparent. This took a number of averted-vision passes - direct vision still gave just a fuzzball. I certainly didn't see any darkness separating the coma from the core, since the outermost part was quite faint. What looked like the entire core in a quicker observation back with the 11-inch turned out to be a brighter point in a round brightness of its own. Spending more time on that core itself, I could just barely make out the bar as a sort of brighter vertical streak the exact size of the "inner coma". This wasn't easy to pick out, but every few tries it came into view. A good example of an object that has a lot to see, once you know that it's worth spending the time to dig them out!

Richard Nugent: Observer from Massachusetts

NGC 2859 is a nearly 11th-magnitude galaxy in Leo Minor. The galaxy is relatively easy to find. I moved just 2/3 of a degree East of Alpha Lyncis to a pair of orange, 7th magnitude stars, HD 80966 and HD 81057.

This galaxy lies just six arcminutes, a little south of East from HD 80966. NGC 2859 is fairly small, being 3 × 3 arcminutes and has a surface brightness of 14.0.

I observed this month's object from Framingham, MA (NELM is typically magnitude 4.8) using my 10- and 20-inch reflectors. Also, from the ATMoB site in Westford, MA (NELM overhead is around magnitude 5.1) using the club's 25-inch telescope.

The 10-inch scope showed the galaxy at medium and high magnifications. At low power (50×) the galaxy was very difficult. With the higher magnifications, it appeared as a small, round, diffuse glow that was brighter in the middle. I couldn't see any structure in the galaxy nor the outer ring, as seen in images.

The 20- and 25-inch scopes showed the galaxy better and of course brighter, but I still could not see any of the details visible in images.

All-in-all this is an easy galaxy to find and observe. While not particularly an impressive galaxy, you may still want to put on your yearly, March observing list.

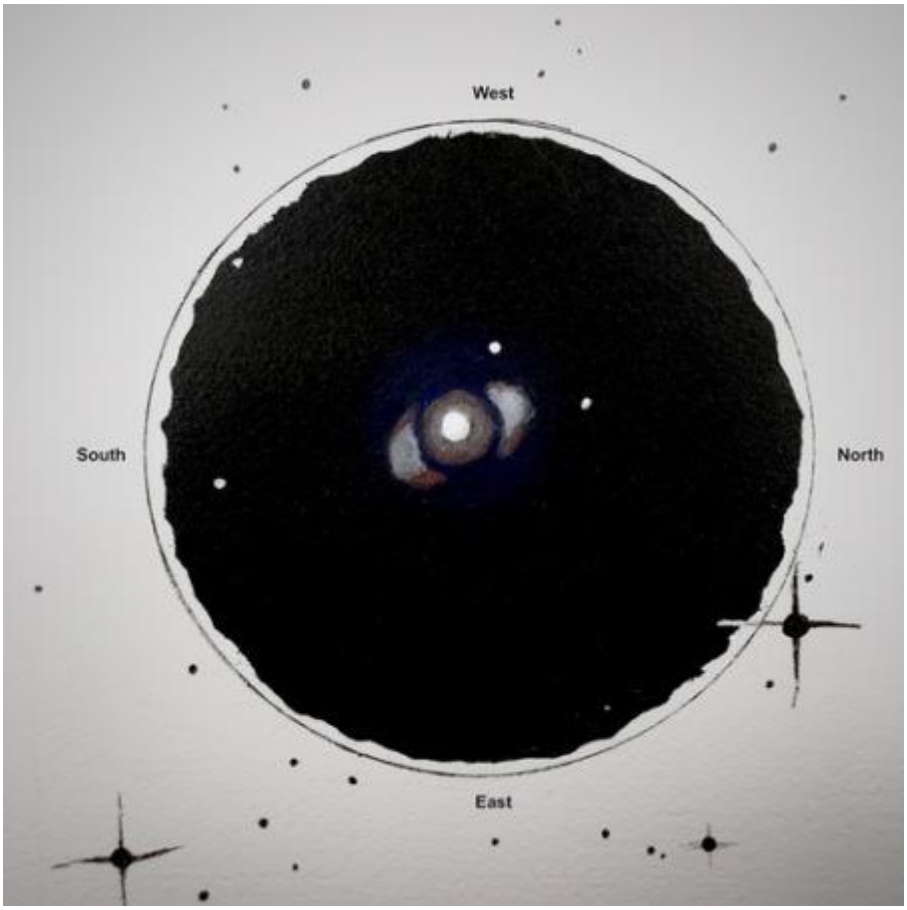
Gary Shaw: Observer from Massachusetts

Well my humble scope and I were both challenged by NGC 2859. We expected to see the galactic center as a blur – perhaps with highlights at opposing ends indicating the ansae brightening. But instead, we saw a stronger brightening at the ends than expected and saw no 'bar' to speak of. When I zoomed way in on the image, I could barely make out a faint bar shape crossing the "gaps" seen between the galactic center and the brightened NW and SE ends of the bar.

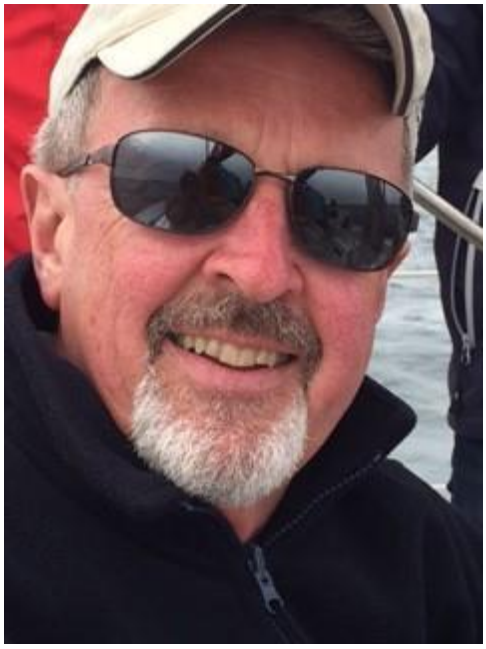
Since capturing the attached image, I've had "first light" with a 200mm f/4 Newtonian and will give ole NGC 2859 another try.

I've attached a wide field view and a little watercolor sketch which needs more work than the original observation did. I'm still in awe of everyone's lovely pencil/charcoal sketches but I'm determined that by the end of 2020, I'll have found a way to better capture the subtlety of these incredible objects in watercolor.

I look forward to the April object.


West
South
North
East

John Bishop: Observer from Massachusetts



Here is a summary of my efforts to see galaxy NGC 2859….

This month was a good news-bad news experience. The good news was that two clear nights would emerge for observing during the new moon period. The bad news was that, for entirely different reasons, I didn't see NGC 2859 on either night.

On 3/21/20, I attempted to observe NGC 2859 from the ATMoB Clubhouse in Westford, MA. The sky was clear; transparency and seeing were decent. Instead of using my usual 8.25 inch reflector, but for a change of pace I decided to observe with my 5-inch f/8.1 apochromatic refractor. It has a big heavy mount and tripod. Perhaps you can guess why I don't take it out much anymore.

Well, I got a reminder that aperture matters. As hard as I tried, I could not see NGC 2859 through the 5-inch at any magnification…34×, 57×, 83×, and 138×.

I understood the object to be somewhat stellar in appearance, but I could not tease out nebulosity around any of the objects in the field. The apo's optics are sharp, but that wasn't enough. The reported surface brightness (Luginbuhl) is beyond the magnitude limit of the 5-inch. However, the visual brightness is listed as mag. 10.7, so I thought I should be able to see it. Frustrating!

In consolation, I did see Comet PanSTARRS. It was faint and nebulous. It looked like a classic Messier object. To locate the comet, I used a very interesting triple star, Iota Cassiopeia, as a reference point. One of the components is much dimmer and smaller than the others. At least the apo refractor had no trouble separating the trio.

Slightly mortified by my failure to locate NGC 2859, I made plans to go to the Clubhouse on 3/27/20 with my 8.25-inch reflector and find the object. It was a clear, steady night. Ideal, except more terrestrial concerns intervened.

MIT, which owns the ATMoB Clubhouse, issued a directive prohibiting use of the Clubhouse and observing field until further notice, due to concerns over the coronavirus epidemic. Especially frustrating, because at the moment I do not have another deep-sky observing site.

This object may get away until next year.

Mike McCabe: Observer from Massachusetts

On Saturday evening, March 21st, 2020 I was able to view NGC 2859, a barred lenticular galaxy located 83 million light-years away in the constellation Leo Minor. The conditions on this evening were quite good for these parts, with the air temperature hovering around 30ºF, the transparency being at least 3/5, and the seeing around 2/5. I used a 10″ f/5 Newtonian telescope on a dob-style mount for this observation.

Finding the galaxy was a very straightforward process, as it fit into the 42× low power view with the naked-eye bright star Alpha Lyncis. The galaxy was clearly non-stellar at low power with a very bright core, but the nebulosity was not very evident.

Boosting up the magnification to 104× brought out a lot more nebulosity around the core, and that's where I stopped to make my sketch. The galaxy itself was small and unremarkable, and I wasn't able to get any sense of the orientation of it with regards to any elongation or direction of the bar.

Additionally, the star field took on an attractive aspect in the sense that it distinctly resembled an oversized version of Messier 29, the 'cooling tower' cluster in the constellation Cygnus.

OBSERVATION LOG - OBJECT: NGC2859

DATE 3-21-20 /z TIME 21:30 EDT/z EDT LOCAL OBSERVING LOCATION 42°N 71°W

SCOPE/APERTURE 10" FS NEWTONIAN

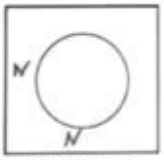
EYEPIECE 12MM MAGNIFICATION 104X

FILTER X SEEING 2/5 TRANSPARENCY 3/5

TEMP 30°f BARO PRES. X WIND CALM

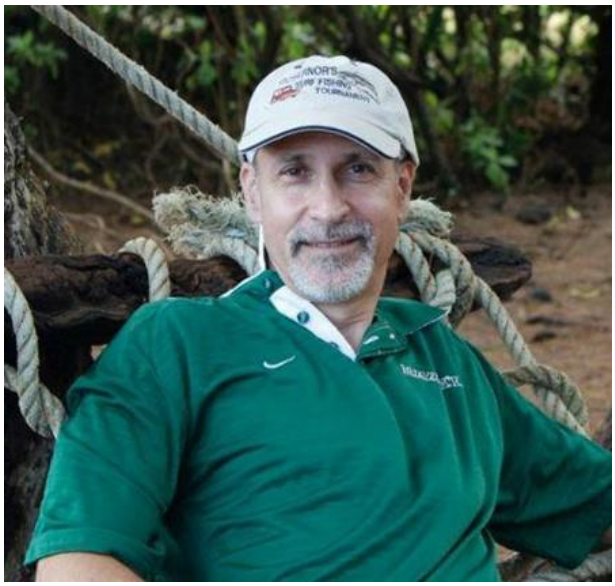
COMMENTS:

VERY SMALL, BRIGHT CORE, FAINT NEBULOSITY, NO DISCERNABLE (R) ORIENTATION.



ORIENTATION AND/OR ROTATION

James Dire: Observer from Illinois



NGC 2859 is a rare barred lenticular galaxy located on the southwest edge of the constellation Leo Minor. The closest bright star is Alpha Lyncis. The galaxy can be found 40 arcminutes east and 7 arcminutes north of this 3rd magnitude star. The galaxy shines at magnitude 10.89 and is face-on measuring 4.6 × 4.1 arcminutes in size.

Barred lenticular galaxies like NGC 2859 are disk galaxies with no spiral arms. The bars in these types of galaxies tend to be brighter at their edges. The bar in NGC 2859 is close to being due north-south as it is tilted only a few degrees to the west on the north side and east on the south side. The galaxy also has a very faint detached ring beyond the disk containing the bar. The galaxy's core is quite bright compared to the rest of the galaxy. The bar should be visible in 10 to 12-inch telescopes. The faint outer ring is beyond amateur telescopes visually and not counted in the quoted angular size of the galaxy.

I only managed to get one two-hour exposure of NGC 2859 this month due to an unusually cloudy winter here in Central Illinois. The image was taken with an 8-inch f/8 Ritchey–Chrétien Cassegrain (with an 0.8× focal reducer/field flattener yielding f/6.4) with a SBIG ST-2000XCM CCD camera. I stretched the pixels containing the galaxy's outer, detached ring, more than the rest of the image to make it more apparent. The bright star to the right of the galaxy is magnitude 7.2 SAO 61446. The other bright star, near the bottom of the image, is SAO 61457 shining at magnitude 7.7.

The yellow arrows show three very small faint galaxies captured in the same field of view as NGC 2859. The one near the top is PGC 26663, a magnitude 15.6 galaxy. To its right is magnitude 16.6 PGC 3529815. The third faint galaxy is PGC 2048993, which is magnitude 17.6. This third galaxy appears to be an edge on spiral galaxy which appears brighter than the other two because its light is concentrated on a much smaller area.

Chris Elledge: Observer from Massachusetts

On February 22nd @9:58pm EST, I used a 10-inch f/5 refractor to observe NGC 2859 from the ATMoB Clubhouse. Sky conditions were: Bortle Scale 6; NELM 5.0; Transparency: Average; Seeing: Average.

Finding NGC 2859 is simple due to the close proximity to mag. 3 Alpha Lyncis. Placing this bright star on the Western edge of view of my 1.9˚ FoV (35mm 36x) centers the galaxy along with an arc of stars forming a cup with an Eastward opening. Three mag. 7 and 8 stars (HD 81057, HD 80966, & HD 81006) plus several fainter stars form the cup. NGC 2859 lies just to the ESE of the center bright star of the cup (HD 80966) by 6 arc-minutes. The galaxy is visible with averted vision and appears slightly more diffuse than a faint star would.

At 115× (11mm 0.71˚FoV) the core of NGC 2859 is just barely visible with direct vision. I can stare directly at it, and it appears as a point of light surrounded by a glow. With averted vision I can see a decent sized patch of light that is mostly circular.

At 270× (4.7mm 0.3˚FoV) it is no longer possible to see with direct vision. The core is easily visible with averted vision, and the circular diffuse glow appears to be a couple of arc-minutes across**.**

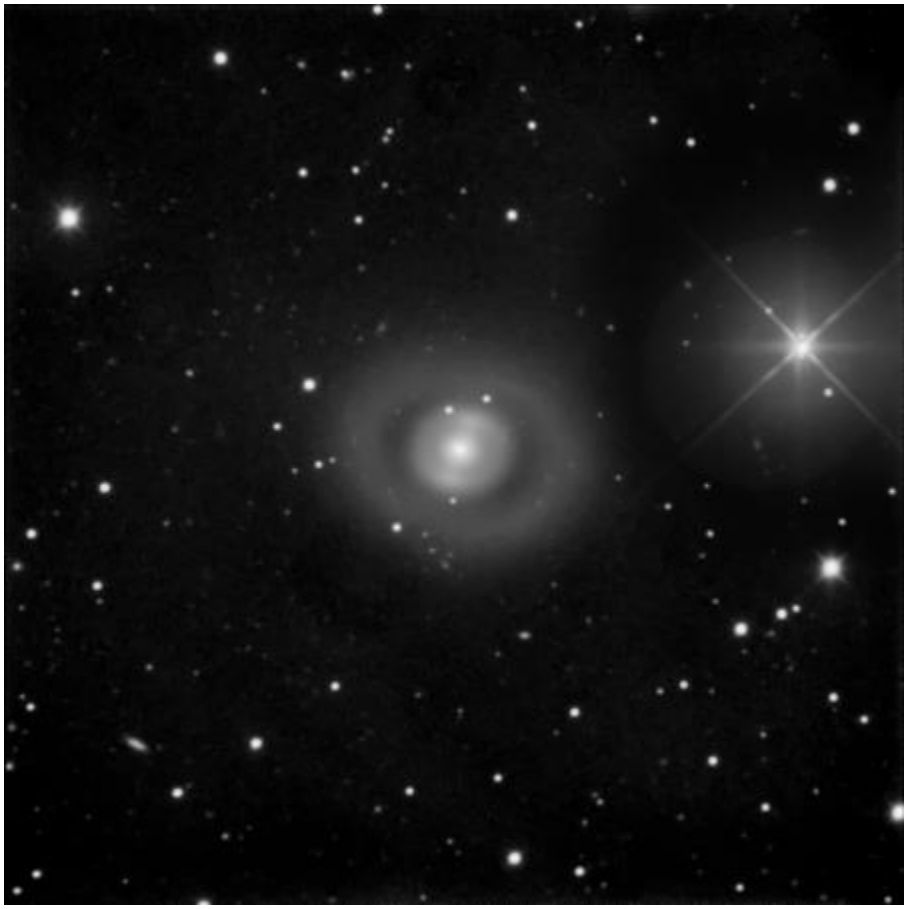
Mario Motta: Observer from Massachusetts

A very interesting galaxy!

Imaged with my 32-inch, total 1 hour imaging time, SBIG 1001E camera.

This galaxy has a “ansae” type bar (which gets brighter at the tips of the bar) and an inner ring, no defined spiral structure, and a detached outer ring. 83 million light-years away, Leo Minor.

Fascinating object, you choose these objects very well, enjoy getting them.

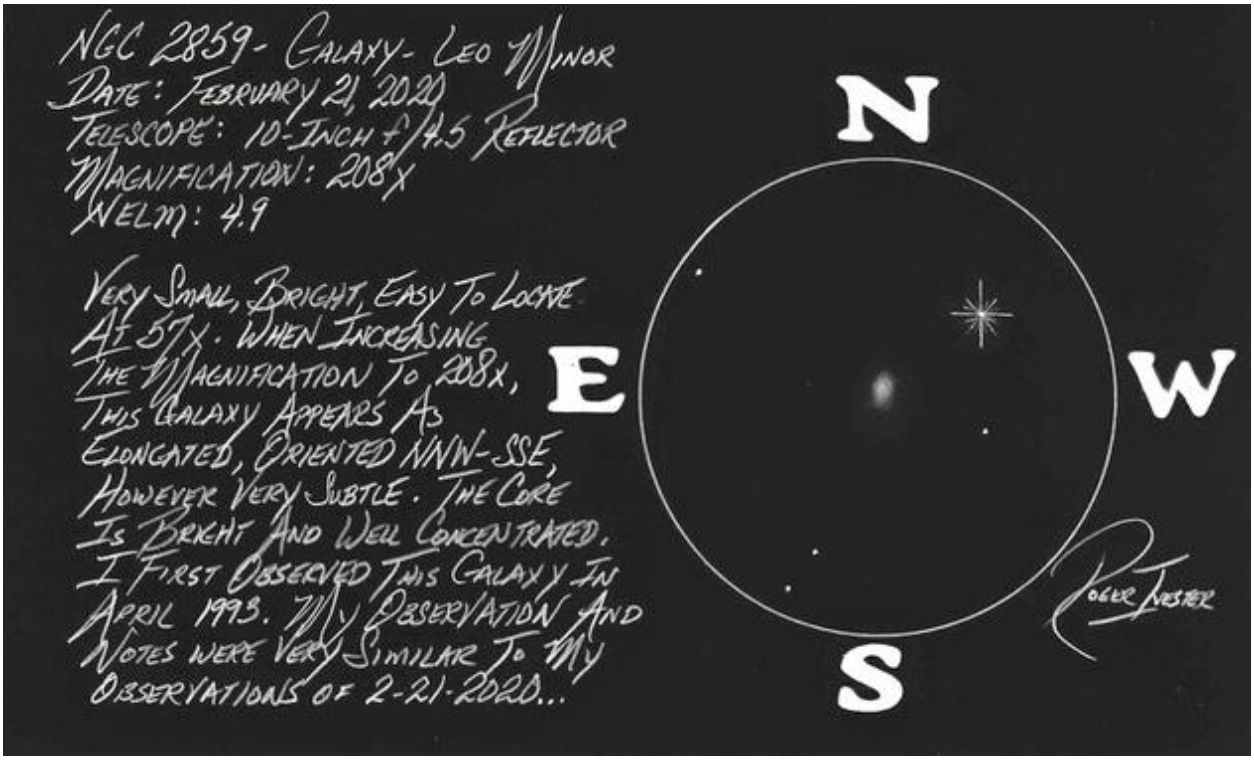


Roger Ivester: Observer from North Carolina

Date: February 21, 2020
Telescope: 10-inch f/4.5 reflector
Magnification: 208x – FOV: 0.45º
NELM: 4.9

Very small, fairly bright, easy to locate and see at 57×. When increasing the magnification to 208×, this galaxy is elongated, oriented NNW-SSE, however very subtle. The core is much brighter than the outer round halo, which I could not see.

Pencil sketch: 5 × 8 blank note card with inverted colors.



The following is the complete listing of all Observer's Challenge reports to-date.

https://rogerivester.com/category/observers-challenge-reports-complete/