

MONTHLY OBSERVER'S CHALLENGE

Las Vegas Astronomical Society

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&

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DECEMBER 2017

NGC-925 Barred Spiral Galaxy In Triangulum

“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-925 Barred Spiral Galaxy In Triangulum

NGC-925 is a barred spiral galaxy discovered by William Herschel on 13 September, 1784. He gave it the designation H-177-3. It lies about 30 million light-years away in the constellation Triangulum and shines at a deceptively bright mag. 10.7. However, the surface brightness is around mag. 14.7 which makes this object not as easy to spot as one might think.

It has a central bar structure with loose spiral arms, but no surrounding ring structure. The galaxy is at an angle and isn't quite face-on.

It's a member of the NGC-1023 galaxy group which is a gravitationally-bound group of galaxies.

There's also a cloud of neutral hydrogen attached to the galaxy by a streamer and is about ten million solar masses in size. Nobody is certain if this object is a satellite dwarf galaxy, a tidal remnant or just a primordial cloud. This object is a challenge for any scope, and most likely, you'll spot the more concentrated core with smaller instruments.

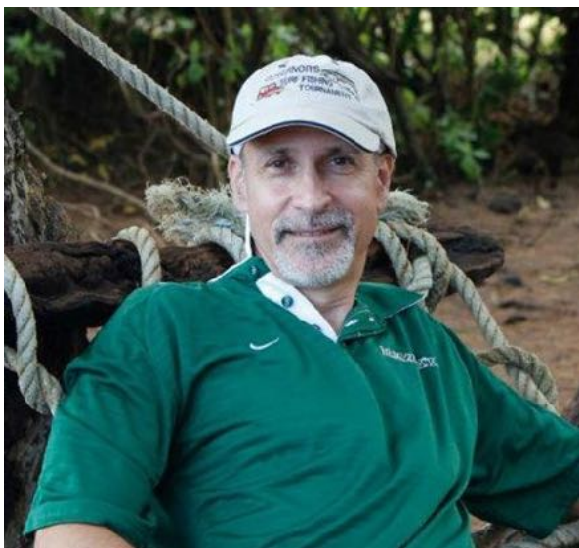
Observations/Drawings/Photos



Gary Bruno: LVAS Member from Las Vegas, Nevada

I observed NGC-925 from the east side of my house, which allows for a good view on a clear night. I used a 14-inch Schmidt-Cassegrain telescope at 190X.

It was faint, but I was able to detect spiral arms with extreme difficulty. NGC-925 isn't to be confused with a second galaxy NGC-890, in relative close proximity.



Dr. James Dire: LVAS Friend From Hawaii

NGC-925 is a mag. 10, barred-spiral galaxy in the constellation Triangulum. The galaxy is the second brightest in the constellation after M33. It's often overlooked due the size and brightness of M33. It lies 2° east of mag. 4 Gamma Trianguli (9 Trianguli). The three stars 7, 8, and 9 Trianguli form the wide triple star at one of the Triangle's corners.

The galaxy is roughly 10 X 6 arcminutes in size, is 21 million light-years away, and is part of the NGC-1023 group of galaxies. The galaxy has a bright elongated bar with a bright core. One major spiral arm originates at each end of the bar, each wrapping around the galaxy. The halo is diffuse and tenuous.

My image was taken with a 102mm (4-inch) f/7.9 refractor with a 0.8X focal reducer/field flattener. The exposure was two hours using an SBIG ST-2000XCM CCD camera. North is up and east to the left. The exposure captures how the galaxy looks through a 14-inch Dobsonian telescope.

The brightest star in the image is AE Trianguli. AE is a mag. 7 pulsating variable star that varies in brightness by about 0.1-0.2 mags.



David Eicher: LVAS Friend and Editor – *Astronomy Magazine* From Wisconsin

NGC-925....a large, faint Sb-type spiral. This galaxy measures 9.4' X 4.0' and is steeply inclined to our line-of-sight, which keeps its surface brightness fairly high. A 4-inch scope shows it as an elliptical, ghostly patch of milky light. A 10-incher shows some mottling about the nucleus, but doesn't reveal much more detail. Reflectors in the 16-inch to 20-inch range show some dusty structure surrounding the galaxy's hub, and a large outer envelope of even, faint light representing millions of unresolved stars. *The Universe from Your Backyard – A Guide to Deep-Sky Objects* from *Astronomy Magazine* by David J. Eicher.



Chris Elledge: LVAS Friend from Massachusetts

On December 16th, 2017, @9:00pm, EST, I used a 10-inch f/5 reflector to observe NGC-925 from the ATMoB Clubhouse. Sky conditions were: Bortle Scale 6: NELM 5.0: Transparency good: Seeing poor.

I located NGC-925 by pointing the telescope at Gamma Trianguli. Delta and 7 Trianguli form an obtuse triangle with Gamma that points east toward a right triangle of mag. 7 stars. Following the leg of the triangle pointing further east, I saw a mag. 8 star (HD 15127) along with a pair of mag. 11 stars that together looked like a mini-Triangulum. NGC 925 was 0.4° to the south of HD 15127.

At 51X, I couldn't detect any part of the galaxy. I stepped up to 127X to see if some extra magnification could dim the background enough to detect it. I saw a small light patch near where the galaxy core would be. I added a Barlow to bring the magnification to 254X. There was an elongated light spot in the view between a mag. 11 star (TYC 2327-0191-1) and a mag. 12 star (GSC 2327-0405). The elongation was along the east-west axis of the view. It spanned a large portion of the 0.28° FOV, so I estimated the long axis spanned 10 arc-minutes and the narrow axis spanned 5 arc-minutes.



Sue French: LVAS Friend and Author from New York

I observed NGC-925 with a variety of scopes and magnifications.

105mm (4.1-inch) f/5.8 refractor.

47X: A faint oval just north of a mag. 11 star.

10-inch f/6 Newtonian reflector.

43X: Shares the field of view with little NGC-890. NGC-925 is large with lower surface brightness than its companion.

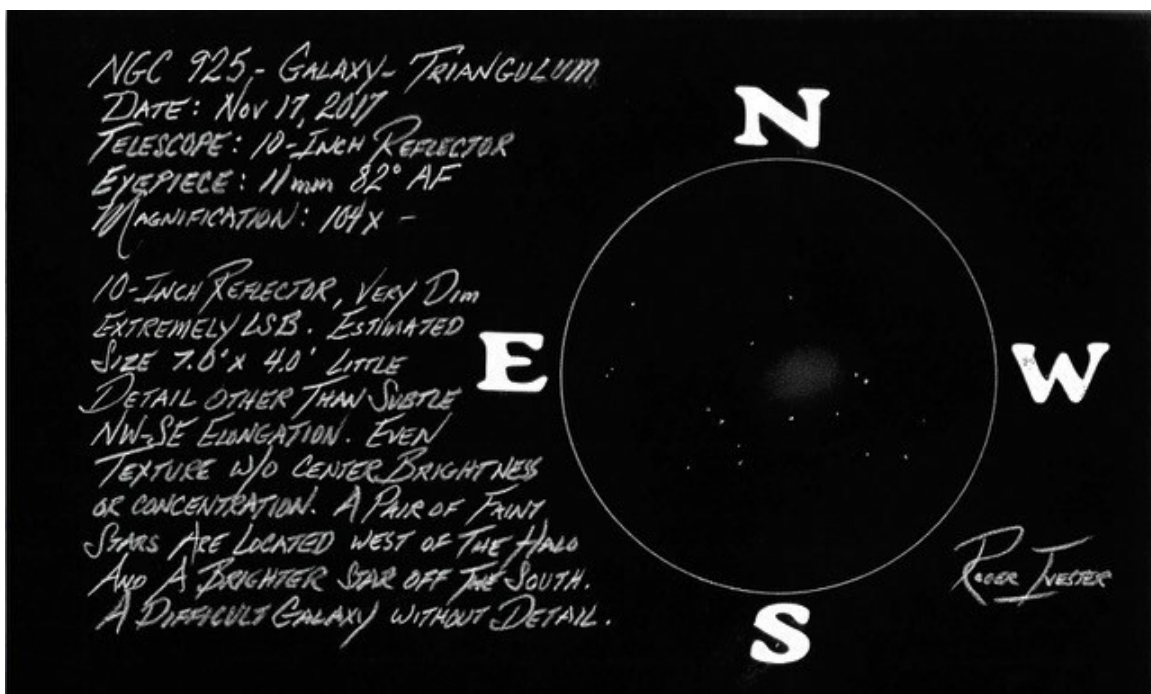
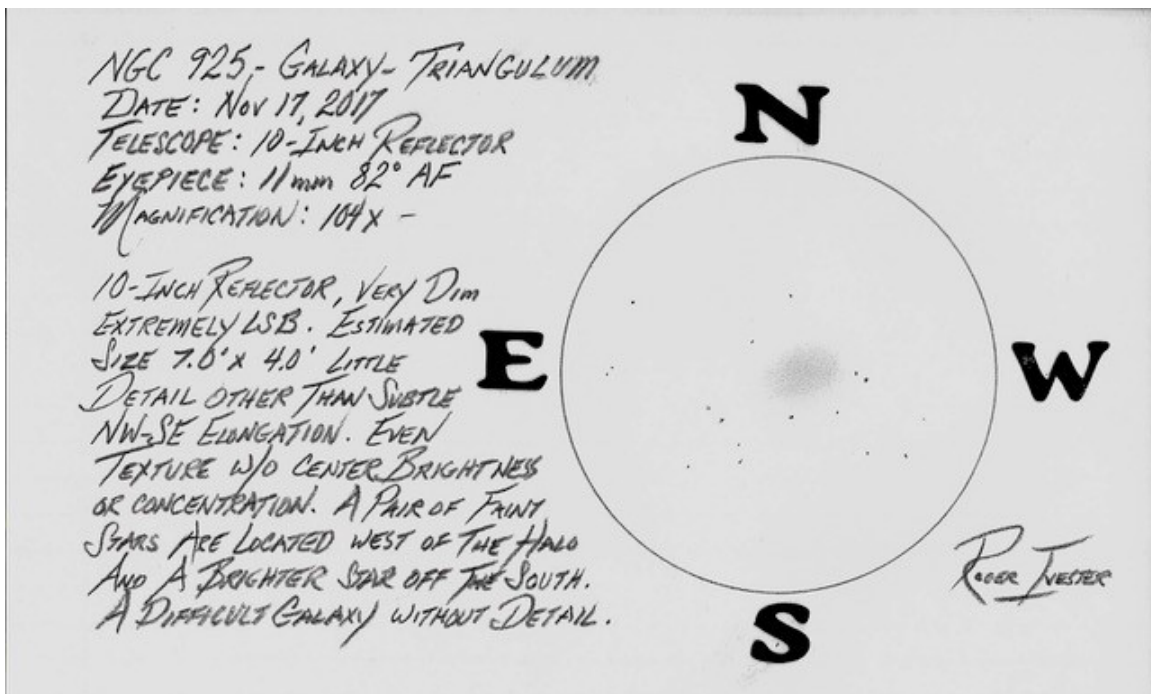
115X: Very interesting. Quite mottled and shows two superimposed stars — one north of center and one south. A third star of similar brightness, 46" northwest of the first, sits just outside the edge. The galaxy measures at least 5' X 3', east-southeast to west northwest.



Roger Ivester: LVAS Member from North Carolina

In my 10-inch reflector, NGC-925 was very dim, with extreme low surface brightness. When using a magnification of 104X, it was fairly large, estimating the size at $\sim 7.0' \times 4.0'$, with very little detail, other than a subtle NW-SE elongation. Even texture without center brightness or any concentration. A pair of faint stars were located west of the halo, and a brighter star off to the south. A difficult galaxy for sure.

In reviewing my notes from November 1993, using the same telescope and location, a 10-inch reflector @ 95X, this galaxy had a very low surface-brightness, no center brightness, and was mostly round without detail. Not an easy object.





Mike McCabe: LVAS Friend from Massachusetts

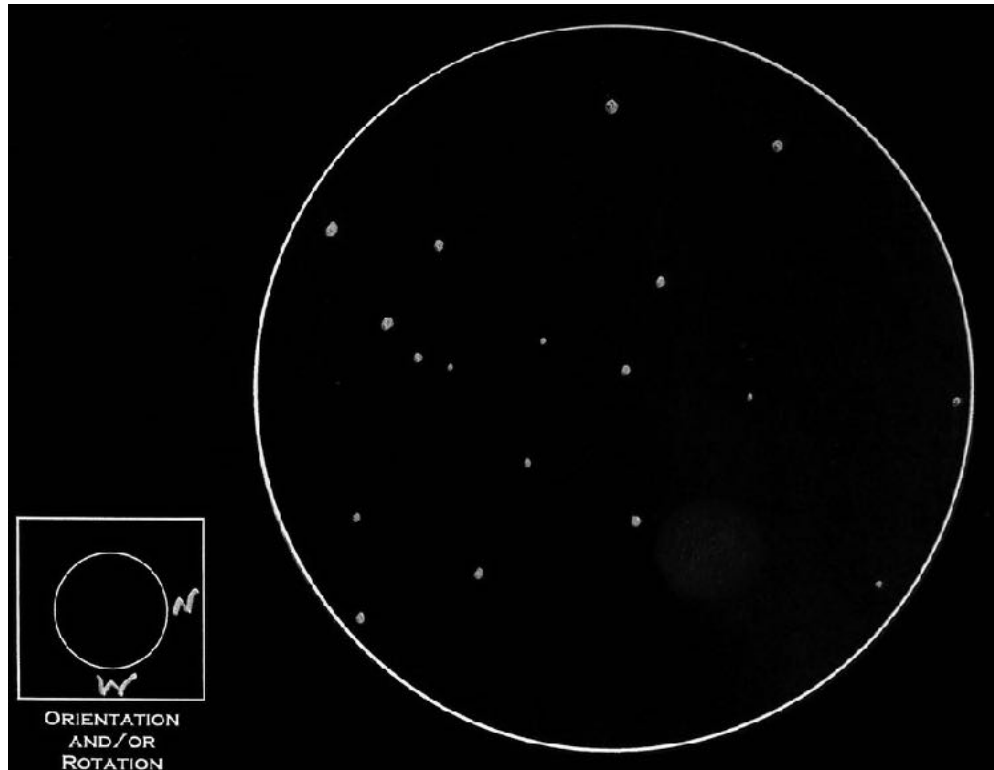
For the LVAS December Observer's Challenge, I attempted to observe NGC-925 several times. I viewed it with two different telescopes, including 8-inch and 12.5-inch Newtonian reflectors.

All of my observations were similar – a very dim, fleeting apparition that never showed me any shape or structure. It didn't seem to matter whether I was using the 8-inch or the 12.5-inch, as with either instrument, the view was hurt by the poor sky transparency, light pollution, or perhaps both.

My frustration with not being able to see this galaxy very well led me to research the experience of other observers. I found several threads on viewing NGC-925 on the Cloudy Nights forum. I read accounts of people seeing it in 4-inch instruments, claims of spiral structure being seen in 10-inch instruments, and generally a host of accounts that made me question whether or not I was going blind.

Of course, I'm not going blind – my sky stinks – with a capital "S". It's apparent that NGC-925 is best observed from a dark sky site, the likes of which are typically less accessible for me during the winter. I'll go back to this object someday, when my schedule allows me the freedom to travel to dark places at the appropriate time to view it.

I did the best I could with my drawing to convey how the galaxy was in the eyepiece, but I'm not sure I got there. However, I did find that if I stood back about fifteen feet from the computer, the live eyepiece experience was reasonably replicated. Just keep backing up until you can't see the faint smudge anymore and there you have it. That's NGC-925 from my driveway.





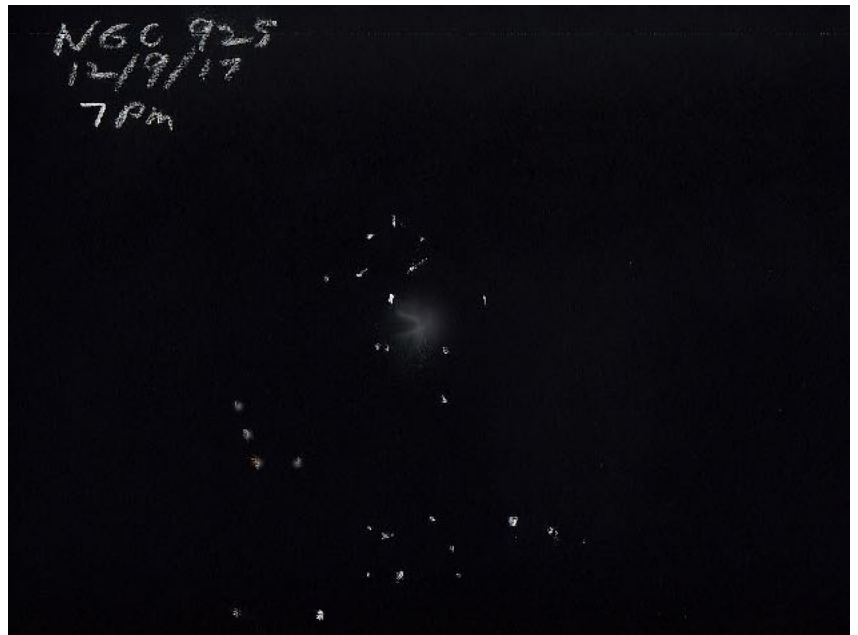
Mario Motta: LVAS Friend from Massachusetts

Done with a 32-inch reflector.



John Lourdes Pierce: LVAS Member from Las Vegas, Nevada

On December 9, 2017, while joining a few others under the dark skies in the hills alongside Lake Mead, I was able to observe spiral galaxy NGC-925. At the time of the observation, the galaxy was positioned about 45° above the eastern horizon. It was dim, but noticeable among some faint stars. Using a 10-inch reflector at 90X, I wasn't able to make out any detail except a hazy area that showed some shape.



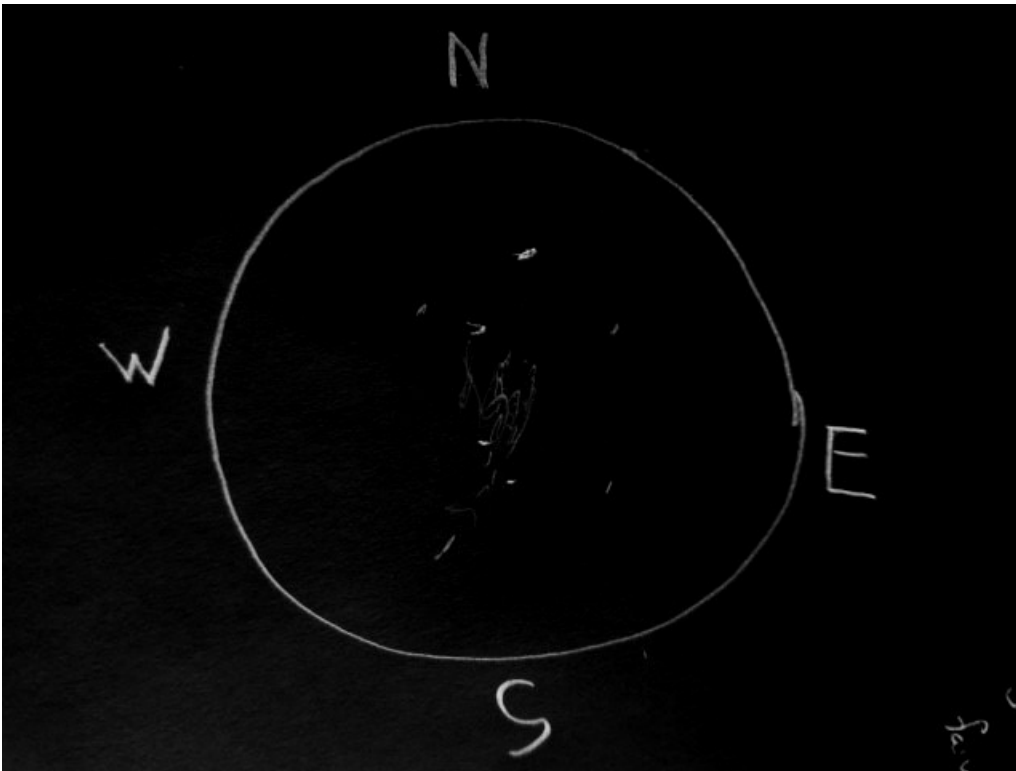
It was still an interesting object to observe, seeing that it was about 30 million light-years away. I was successful in making a sketch at the time of the observation.



Craig Sandler: LVAS Friend from Massachusetts

I observed NGC-925 on December 10, 2017 under a frosty sky in Tallahassee – temp. 33°F, which is far from unheard of in the Panhandle in December! I used an 8-inch SCT at 100X. The sky was clear, NELM was 6 and seeing poor.

I expected to see the small bright core of the most common descriptions, but found nothing of the kind. Instead, the object was the very definition of “nebulous,” right at the periphery of vision (for an old guy.) Patient viewing changed it from a wisp to a complex, diffuse entity.



Fred Rayworth: LVAS Member and AL Coordinator from Las Vegas, Nevada

I've only observed NGC-925 twice, once back in 2006 with my home-built 16-inch f/6.4 and once most recently for the Observer's Challenge with my commercial 16-inch f/4.5.

On November 18, 2006, I observed the galaxy from the 21 mile marker of the North Shore Road at Lake Meade Recreation Area, Nevada at a pull-off spot where a few of us set up. It was a preview to our eventual discovery of the “undisclosed location,” a few miles further up the road.



At 2,500 feet, it was clear, cool and calm and pretty much stayed that way the whole time we were there. We had to put up with oncoming cars because we were close to the road, but outside of that, it wasn't a bad night.

Using my 16-inch f/6.4 at 82X, I observed the galaxy and it was just an extremely faint haze with some foreground stars. I wasn't too elaborate with my notes and because of the low magnification, I didn't see much other detail, though I may have detected a slight hint of the bar.

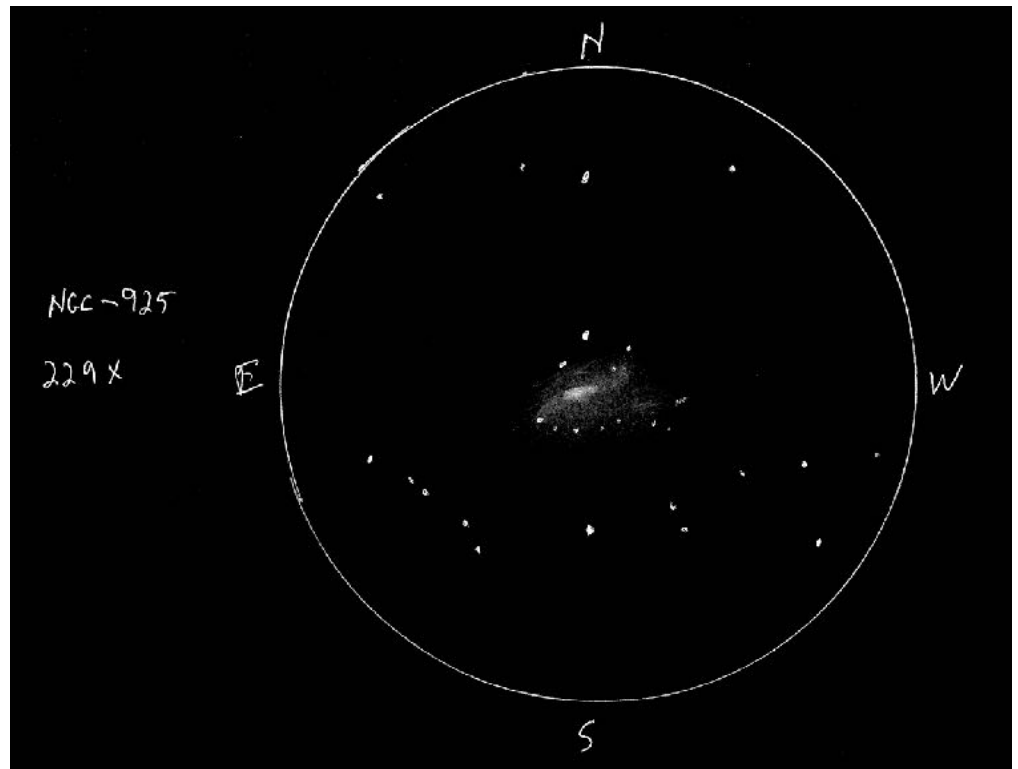
For the Challenge, I got a much more detailed observation from just up the road at the "undisclosed location," over a decade later, with my commercial 16-inch f/4.5.

At 2,100 feet, it was clear and cold, getting colder. The sky was pretty transparent, though there was some nebulae around the brighter stars. There was no breeze at first, but later in the evening, a few annoying gusts picked up. It was downright chilly enough that my green laser pointer didn't work. In many ways, the sky was pristine and it was a very productive night.

I started with 102X and NGC-925 was a medium-small oval glow with a faint bar, a hint of spiral arms and a good speckling of foreground stars. It had a slightly concentrated core. It didn't take magnification well at first, and was best at 102X. However, I persisted with 229X and eked out more detail, even though that magnification washed it out as well. One issue I have is that for some reason, that particular eyepiece's optical configuration gives me floaters. I think I've found a cure for that by getting a replacement EP of a different design for Christmas. Time will tell. My higher magnification EPs of different design don't cause the same problem so I figure it's that EP itself and not the magnification.

In any regard, ignoring the floaters and waiting for them to calm down, I was finally able to eke out some more details between blurs, which was also the atmosphere (by the way), and noticed a few more things. There was an extremely faint clump to the southwest that seemed associated with the haze. It took averted vision to see it and I wasn't sure if it was the end of a spiral arm or something separate. I was glad to see that because maybe I actually saw something real. When I was researching the object for the head piece of this Challenge, I saw the possible dwarf galaxy or detached nebulosity thing. It was a clump of something, maybe stars, maybe something else associated with it.

Even though the best view was still 102X, I did the drawing with the view at 229X and it's a composite of both magnifications. Look to the bottom right of the object and you'll see that little streak. That's not an error, though it's not quite what I saw either. I'm not THAT good of an artist! Oh, and blob/streak also a bit too bright.



Jay and Liz Thompson: LVAS members from Henderson, Nevada



From our backyard at the edge of Henderson, NV with a 16-inch SCT, NGC-925 was a large, glowing region with a brighter core at 203X. At 271X, it took up the center part of the field and it was hard to tell exactly how big it was because the contrast with the sky was pretty low. We couldn't see much detail in town.

I observed it from two dark-sky locations: Meadview, AZ, and from the Lake Mead Recreational Area (LMRA) in

Nevada. I used a 17-inch Newtonian reflector at both locations. From Meadview, it appeared as an elongated streak at 227X. I couldn't discern any spiral arms.

From the LMRA, I saw it at 95X as an elongated glow. At 227X, the central bar was apparent. While a distinct glow surrounded the bar, I couldn't differentiate the spiral arms from the rest of the galaxy.