MONTHLY OBSERVER'S CHALLENGE

Las Vegas Astronomical Society

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&

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M24 Star Cloud In Sagittarius

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.

M24 Star Cloud In Sagittarius

Messier 24 is also known as the Sagittarius Star Cloud. It was discovered by Charles Messier in 1764. It's a very large object, some six-hundred light-years across. It takes an extremely wide field and low power to take in the entire object. For larger telescopes, it's rather hard to define because it encompasses so much in such a spread out area. The actual cluster, or cloud, consists of several thousand stars, though at low power, one might count twenty to fifty brighter components. The dense open cluster NGC-6603 is often mistaken for M24, when in fact, it's one of a half-dozen components buried within the object, which includes two open clusters, a diffuse nebula, and three dark nebulae. There's also a very tiny planetary nebula that's a big challenge for larger instruments and requires high magnification to eke it out from the background stars.

The cluster, M24 itself, is easy for any size instrument, though it's much better to see in smaller and wider-field instruments. With a mag. of around 4.6, it's visible to the naked eye on a good, dark evening.

Observations/Drawings/Photos

Gary Ahlers: Observer from Nevada

M24, the Small Sagittarius Star Cloud, is a massive concentration of stars embedded in HII nebulosity. Located in the constellation Sagittarius, it's on the Sagittarius-Carina arm of the Milky Way Galaxy (next inner spiral arm) and is observed through a gap in the galaxy's dust lanes. It occupies a region of approx. 1.5° in diameter and spans 300,000 light years. It's an unusual Messier object in that it's not a small, well defined deep space object. It's also home to a large number of individual DSOs, many of them dark nebulae.

This cloud is so large, I decided to image it in three phases. First is a small open star cluster about 5 arc-min in diameter, NGC-6603. It's located within the cloud and notorious for being mistaken as M24. Note the high nebulosity surrounding the cluster.

Second up is a 3X5° FOV image of the Star Cloud. Note the dust lanes and several high opacity dark nebulae.

I find context is very important in understanding comparative sizes, so finally, a 12° mosaic of the Sagittarius Star Cloud and environs including the Omega Nebula.

Keith Caceres: Observer from Nevada

I observed M24 on the evening of August 26, 2017 during our event at Red Rock Canyon Visitor Center west of Las Vegas, Nevada. It's also known as the Sagittarius Star Cloud. It's a pseudo-cluster of thousands of stars from and around the Sagittarius arm of our Milky Way galaxy, looking toward the galaxy's center as viewed from Earth. The star cloud is seen through an opening in dust clouds that's about 600 light-years wide and from 10,000 to 16,000 light-years deep.

The field of my cropped photo is filled with dense pockets of stars of every type, color, and age. Alongside the many dense pockets are lanes cutting between them of few or no stars, creating various swirling patterns. The center of my photo shows a dense open star cluster of about 30 stars known as NGC-6603, which is often misidentified as M24. Plate solving my photo indicates its field of view is 61X57.6 arcminutes with an image scale of 1 arcsecond/pixel.

Equipment: 8-inch SCT, f/6.3 focal reducer, Canon 70D, Celestron Advanced VX mount.

Exposure: 45 seconds, ISO 4000, f/6.3.

Craig Sandler: Observer from Massachusetts

I'm having a tremendously good time with this object! Objects, really. M24 was easy and interesting and NGC-6603 was a real puzzler and a source of great attraction and intrigue for me. The cloud itself was a cloud, incredible and pretty. It's the inner areas I've spent part of every session on these days. I've never had a big problem with what I think of as the Wedge-the thin triangle in the NW that runs SE, comprising-let's call it-25 stars. If skies are dark, the clump in the SE-almost out of the Cloud-shows itself plainly enough to me. However, the only time I've had M24 in my sights in an area dark enough to be sure I could see NGC-6603, on the Gulf coast, I wasn't sure what I was looking for (it was supposed to be cloudy and I got lucky, but hadn't prepped for NGC-6603 by reading the way I ought to have done). So, I cannot say I've observed a GC-looking spot near the center, and haven't had really dark skies since. So...

Next month I'm going up to The Forks in Maine because as far as I can tell, it's the darkest spot in N.E. I should have enough Sag. time after sunset to get a very good look. I expect success! I'll keep you all posted! Glenn (Chaple) got me started on this NGC-6603 hunt, btw, and I'm glad he did.

In the same vein: I observed NGC-5981, NGC-5982 and NGC-5985 last night in a spot where they were juuuuuuuust visible, but without realizing they were the Draco Triplet! I'm REALLY looking forward to that.

Chris Elledge: Observer from Massachusetts

On August 16th, 2017 @9:30pm, EDT, I used a 10-inch f/5 reflector to observe M24 from the ATMoB Clubhouse. Sky conditions were: Bortle Scale: 6. NELM: 4.5. Transparency: Poor. Seeing: Average.

M24 was a very easy find, even without the Milky Way being naked eye visible in the Southern sky. I just placed my red dot above the top of the Sagittarius teapot and to the side of the 3 brightest stars on the South side of Ophiuchus. I looked through my 35mm (36X, 1.9° FOV) eyepiece and was surprised to see a rich field of bright stars through the view. A little bit of looking around confirmed that I was looking right in the middle of the Sagittarius Star Cloud.

I picked a large triangle of stars in the brightest area to center the view. The stars in the triangle were about mag. 6 to 7 and separated by about 10' with a point to the S, NW, & NE. The S star (HR6848) was a double star with a dimmer companion to the NE. 12' to the SW of the S star was a slightly dimmer obtuse triangle of mag. 7 to 9 stars about 5' across with points to the SW, E, & N. The SW star (HD167863) appeared to have two faint stars nearby to the N. The brighter of the 2 companions was about 1 arc minute away and mag. 9. The fainter and closer companion I was uncertain of. I didn't see it when I checked again at higher power (127X). To the NW of these triangles was another bright mag. 6 star (HR6841).

Many other bright stars filled the view with these triangles centered. The west side of the view was filled with them. The background sky in this area was also significantly brighter than the sky to the E of them. Scanning the area with averted vision, lots of dimmer stars appeared scattered throughout the region. I estimated more than 50 mag. 9 and brighter stars.

I centered the field where NGC-6603 should've been near the NW star in the brightest triangle and switched to my 10mm (127X) eyepiece. Unfortunately, I wasn't really able to

determine where the cluster was with all the other faint stars in the area. I think it was blending in with all the other stars in the field. Perhaps darker skies would've made it more obvious. The wide field of view of the 35mm eyepiece definitely provided the best view of M24.

James Mullaney: Observer from Delaware

Small Sagittarius Star Cloud: "A rich and extensive Milky Way star field, of 2.2º X 1.3º extent! Contains open cluster NGC-6603, a beautiful and compact cluster in the NE corner of M24. The most stunning dark nebula in small telescopes…floats in front of the bright, rich star cloud. M24 itself is truly a region of indescribable richness."

James Mullaney *Celestial Harvest* Dover (Paraphrased)

David Eicher: Editor – *Astronomy Magazine* and Observer From Wisconsin

The star cloud M24, also known as the Small Sagittarius Star Cloud. It's a dense patch of Milky Way, detached from its surroundings by lanes of dark nebulae. The cloud shines at mag. 4.5, and measures 120'X40' across. Its entire area fits into a binocular field, making for a spectacular sight. Telescopes don't show the whole cloud, but several telescopic objects lie within and around this piece of the Milky Way Galaxy.

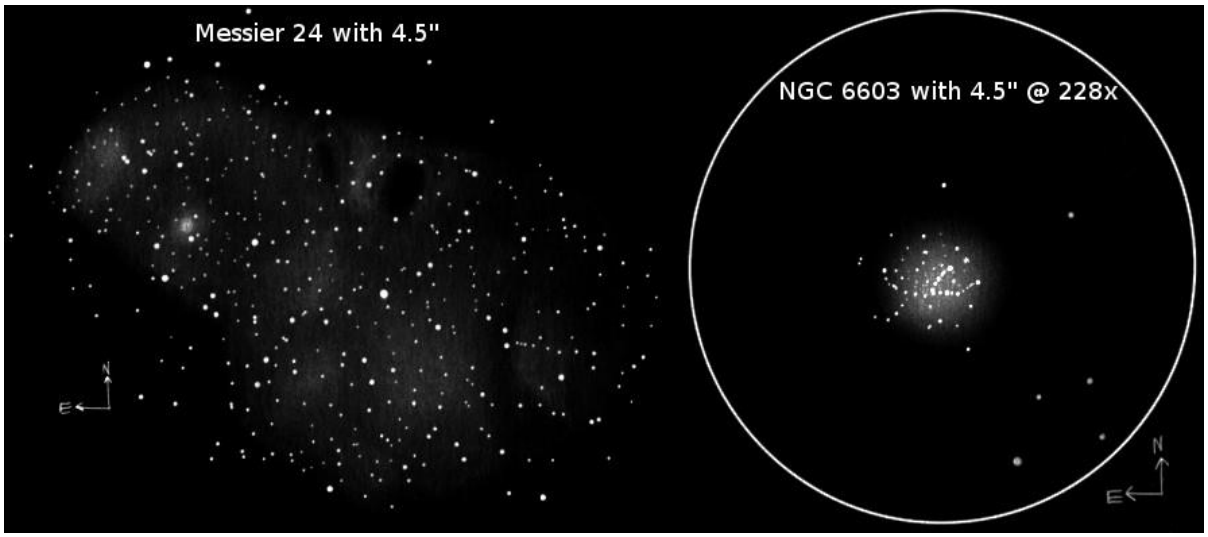
The open cluster NGC-6603, which appears as a condensation in the rich background of M24, measures 4' across and contains 50 stars of mag. 14 and fainter, giving it a total mag. of 11.4. Telescopes operating at high power show this misty spot as being slightly nebulous, giving the impression of an unresolved globular. The object looks similar to NGC-2158 in Gemini, the little cluster sitting beside M35. Also within the cloud is the bright, tiny planetary nebula NGC 6567, which glows at magnitude 11.5 and measures 11"X7" in diameter. It's rather difficult to locate among the richness of the stellar background, but medium powers reveal the nebula's fuzziness. Seeing 6567's mag. 15 central star is a difficult task even for large telescope owners: it is easily overpowered by the nebulosity. Another object immersed in M24 is the dark nebula Barnard 92, which measures 15' across and lies on the starcloud's northwest edge. On good dark nights, it's visible as an obvious "hole" in the glittery backdrop of stars.

David J. Eicher *The Universe from Your Backyard A guide to Deep-Sky Objects* from Astronomy Magazine (paraphrased)

Jaakko Saloranta: Observer from Finland

With good transparency, M24 is visible to the naked eye even from Finland although it remains fairly low in the southern sky. With a pair of binoculars the view was simply gorgeous with more stars visible that I could count. The last time I tried to sketch it was back in 2011 from the Anza-Borrego Desert using my 4.5-inch travel telescope. Due to the objects' enormous size, I had to combine several fields of view for a single sketch and it caused several issues. I wrote that the drawing was a "failed sketch and more like an impression of the object rather than an accurate sketch. There's just too much of everything visible." With a telescope, the simple star count in M24 under dark skies was staggering to say the least. I could make out several brighter patches within the star cloud as well as the dark nebulae Barnard 93 and 92 without a problem. The most striking feature of it was the box-shaped appearance of M24.

Open cluster NGC-6603 was also visible within M24 and I described it: "A fairly faint, beautiful, rich open cluster slightly concentrated toward the middle. Several chains of stars visible within the cluster. Well resolved with averted vision. ~50* stars mags. 13-15. Size 4'."


Messier 24 with 4.5"
N
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NGC 6603 with 4.5" @ 228x
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Richard Nugent: Observer from Massachusetts

I observed M24 several times from Framingham, MA, where light pollution from the town's LED streetlights rules. On the best nights, my NELM is about 4.8 and the Milky Way is just barely discernible through Cygnus and Scutum. I've never seen M24 as a star cloud from Framingham. To see it, dark skies are a must.

Having said that, this is a delightful object to study. I've always found it a bit of a challenge to zero-in on it, but here's a tip that'll make it easy to find. From the top of the teapot (lambda Sgr), move 4.5° north and a little west to mu Sgr. In the finder, you'll see two mag. 5 stars, 14/15 Sgr. A line through those stars followed 3.3° northward will lead you to the glittering star cloud.

For my observations, I used my 10-inch and 20-inch reflectors. Both are f/5. For low power views, I use each telescope in its richest-field configuration. Every telescope has such a setup: it's the lowest magnification you can use provided the eyepiece gives an exit pupil appropriate for the observer. I use a 21mm eyepiece which has a 100° apparent field of view. In both telescopes, this eyepiece has an exit pupil of 4.2mm. Not bad for a kid my age! In the 10-inch, it gives a magnification of 60X with a true field of 1.67°. The 20-inch gives 120X and a 0.83° true field.

The star fields in M24 were quite beautiful. The especially wide field of the 10-inch view was filled with stars! The eastern end of the star cloud had a nice double star. The components were B-type stars of mag. 7.6 and 6.8. North of this pair was the ruddy, K5 star SAO 161294/HD 167976. When I nudged the scope a tiny bit northward, I could see the glow of NGC-6603. At low powers, this cluster was not visible in the 10-inch. Higher powers showed the elusive glow a little better. Dark skies would certainly help with this object. In the 20-inch, the cluster was visible at all magnifications. A 16mm (158X) showed a distinct bar of light

running across the cluster's center. The images at *DSO-browser.com* show this as a line of stars across the face of the cluster. At 525X, I could see two of the stars but could not resolve those remaining. Toward the western extent of M24, there were some very nice streams of stars. They were faint and I couldn't see them in the 10-inch. The 20-inch showed them nicely! If you have the aperture to comfortably show mag. 11 and 12 stars, you should check them out! I didn't observe the planetary nebula NGC-6567.

Mike McCabe: Observer from Massachusetts

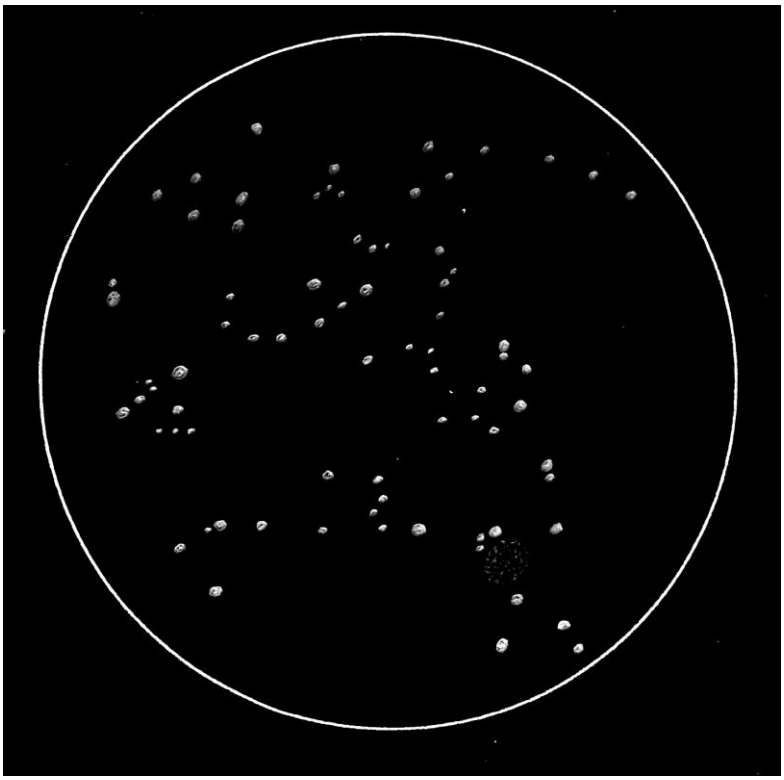
Let me start the report by saying this: August was a terrible month in my area for deep sky observing. I don't think we had even one night of decent transparency. I observed M24 for the challenge on what I believe were the two best nights of the month. The first I'd call poor, and the second was just terrible. Hopefully September is better.

Having seen M24 a few times from dark locations, I think it's fair to say that I was disappointed with the view I experienced while observing it from my driveway for this month's challenge. Gone was the "sugar-grain" backdrop of the thousands of unresolved stars that lay beyond the brighter foreground stars. Instead, what I got was the all-too-common dull grey background that the sky around my area often offers up. M24 can be a fantastic object, but under these conditions, it was just "okay."

Yes, there were a lot of stars. This cluster can't help but show a lot of stars, even under bad conditions. When the object you're observing lays just a few degrees north of the galactic center and is smack-dab in the heart of the Milky Way, there are going to be lots of stars. However, when the atmosphere you're looking through is rife with moisture and scattered light, it can really take the punch out of even an amazing object like M24.

I probably spent the better part of an hour jotting down the stars I could see, and although I could make out NGC-6603, the much dimmer star cloud embedded in M24, I don't think my observations went much deeper than mag. 10.5-ish on all the other stars in the field of view. That right there speaks volumes about the sky conditions, especially when you consider that I was using an 8-inch reflector to conduct my observations. We weren't getting anywhere near the limiting mag. of an 8-inch scope on the nights I was observing with it.

Alas, it *is* M24, and given the chance under a dark sky, I'll be back, because once you've experienced a backdrop of a thousand stars in your field of view while observing an object, you never forget it. Those stars are out there just waiting for me to see them, and see them I will, some time down the road.



Sue French: Observer from New York

On moonless nights away from the glow of outdoor lighting, the misty fall of the Milky Way tumbles down to the horizon through Sagittarius. Its gossamer glow is fashioned from remote swarms of innumerable stars, and the silvery splendor of their intermingled light shows us the plane of the disk-shaped, spiral galaxy we live in. The Sagittarius Milky Way is interlaced with dark rifts. For the most part, the stars that lie along this section of the Milky Way, as well as the dark clouds that decorate it, lie within the Sagittarius Arm of our galaxy. This is the next spiral arm inward from ours, and it blocks the view beyond. Within the dark rift, however, a gap allows us to peer deeper into the galaxy. The stars that shine through this hole make up Messier 24, the Small Sagittarius Star Cloud.

Messier 24 is sometimes called Delle Caustiche, a name attributed to the 19th-century, Italian astronomer Angelo Secchi. However, Secchi made it clear in his 1877 book *Le Stelle* that he was only describing a small part of M24. He writes of a little cloud, less than half the Moon's apparent diameter, made up of a multitude of separate groups of tiny stars. Two of these groups are charted as seen through a 9.6-inch telescope. The first is labeled "Gruppo delle Caustiche" (Group of Caustics), because its diminutive stars are arrayed in arcs that resemble caustic curves. Secchi calls the second group, close to south of the first, a circular collection of beautiful starlets arranged in several rays diverging from its brightest star. Its chart is labeled "Gruppo a raggera" (Sunburst Group). He refers to yet another section, next to the Sunburst, as a magnificent system of crossed arcs, the middle strewn with faint stars too numerous to count.

Indeed, one can't help but point a telescope anywhere within the 2°X1° oblong of Messier 24 without being struck by the richness and variety of the star fields. Through my 130mm (5-inch) refractor with a wide-angle eyepiece at 23X, M24 spans most of the field of view. Its best-known features are the dark nebulae Barnard 92 and Barnard 93, seen in

projection against the cloud like dusky eyes in a fuzzy face. B92 is a nearly north-south ink spot covering about 13½'X8'. B93 is an 8'X3' band with a less pronounced extension bending southward from its southwestern end. This eye seems to be winking. Collinder 469 is a little knot of stars just a few arcminutes off the extension's end. A very long and distinctive line of faint stars sweeps east-northeast to west-southwest across M24. The star chain skims north of B92 and B93, and it has a northward bump between them.

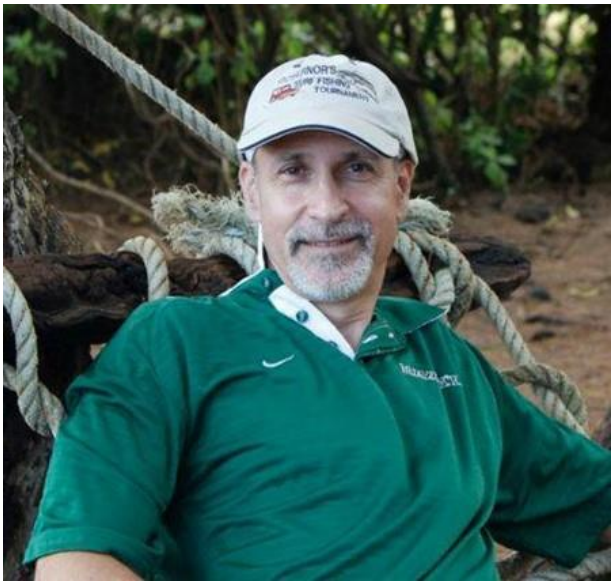
The open cluster NGC-6603 is a nicely obvious patch of haze flecked with a few superimposed stars. It's perched near a red-orange star, which is the middle star in the northern arm of a 20' V of mag. 7-8 stars. The middle star in the V's southern arm is the double SHJ 264 (Sh 264). Its whitish components are well separated, with the mag. 7.6 companion 17" northeast of its mag. 6.9 primary. The pair's designation tells us that it's the 264th entry in James South's and John Herschel's multiple star catalog of 1824.

Although I can't fit all of M24 in the field of view at 63X, it's amazing how much more obvious and intricate the dark nebulae are at this magnification. A fairly conspicuous thread runs east-northeast from B93, leading to a large area of patchy darkness that contains Barnard 307. Much dark nebulosity spreads west from B92, and a long, forked patch (Barnard 304) reaches southwest. Collinder 469 and NGC-6603 share a field of view. Cr 469 shows six stars that form a capital A pointing northeast, while pretty NGC-6603 is a granular patch of mist. At 117X, Cr-469 displays 11 stars in a group whose longest dimension is about 3¼′. A bit larger, but much more crowded, NGC-6603 is sprinkled with many faint to very faint stars over haze. It sports a prominent southeast-northwest band of stars that cuts across the cluster's center.

You might think that M24 would be a terrible place to look for a petite planetary nebula, but I was surprised to find NGC-6567 reasonably easy to spot through my 130mm (5-inch) scope. At 37X, it appears bluish and minuscule, but most definitely not stellar. A magnification of 117X reveals a tiny blue-grey disk that's fairly bright. A dim star sits just off the nebula's eastern side. At 205X, it seems to have a brighter center. Through my 10-inch reflector at 115X, NGC-6567 presents a strikingly blue-green disk that I judge to be about 9" across.

NGC-6603 is wonderfully transformed by the 10-inch scope. At 213X, it's a beautiful cluster of myriad diamond-dust stars, with little unresolved haze remaining.

Dr. James Dire: Observer From Hawaii



It's not clear why Charles Messier put the Small Sagittarius Star Cloud in his catalog if all he was interested in was recording objects he did not want to mistake with comets. This 1.5° wide patch in the Milky Way can be seen with the unaided eye and definitely doesn't look like a comet. However afterward, he put the Pleiades in the catalog as well. So, his motivation must have been broader.

M24 lies approximately 3° west of the splendid naked-eye galactic star cluster M25. It also lies 2° south-southwest of M17, the Omega (or Swan) Nebula.

The cluster lies in a Milky Way region rich with star clusters, dark nebulae, colorful stars and even a faint planetary nebula. The most conspicuous star cluster in the M24 region is mag 11 NGC-6603, which is a pleasant sight in any telescope six-inches or larger.

My image of M24 was taken with a 70mm (2 ¾-inch) f/6 apochromatic refractor with a 0.8X focal reducer/field flattener. The exposure was 30 minutes.

Gus Johnson: Observer from Maryland

In September, 1984, I used a 6-inch reflector @ 148X to observe M24. It was a hazy cloud, very large, with many faint stars visible with averted vision.

In September, 1992 I used an 8-inch reflector @ 58X. I easily spotted NGC-6603, and a prominent line of stars visible across the central region.

I used a 4.25-inch reflector @ 42X in August 1998. NGC-6603 was a faint glow encapsulated in the haze of M24.

Finally, in June 1979 I again used the 8-inch reflector @ 58X. M24 was a glorious and very large detached section of the Milky Way. A wide field telescope using low power is best suited for this object.

Joseph Rothchild: Observer from Massachusetts

I observed M24 from Cape Cod on August 16, 2017 under dark, but slightly hazy skies.

M24 was easily visible with the naked eye as a detached portion of the Milky Way. I saw it best with 14X70 binoculars. It was well defined as an oval patch of uniform faint stars.

With a 10-inch reflector, there was a uniform field of both bright and dim stars. I was unable to locate NGC-6603 after multiple attempts. Scanning across M24, M18 appeared to be a condensation within the larger star cloud, although it was clearly separated from M24 when viewed with the binoculars.

Jay and Liz Thompson: LVAS members and observers from Nevada

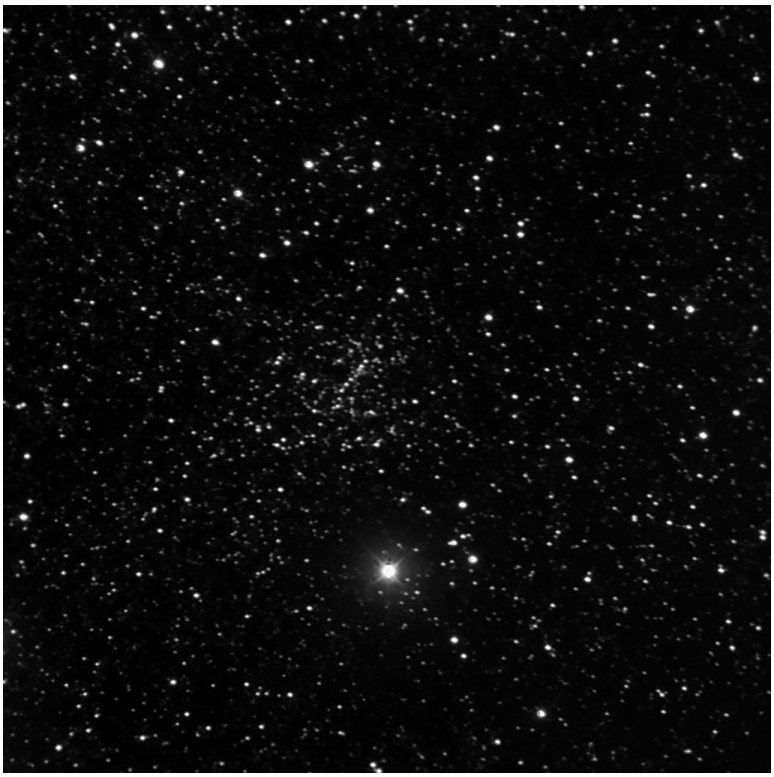
We observed M24 from the somewhat light-polluted skies of Rexburg, ID on August 22, 2017 after viewing the total solar eclipse the day before. From a campground overlooking a lake to the south, the Milky Way was indistinctly visible with the naked eye. We saw M24 using a vintage pair of 10X50 binoculars with a 7° true field of view, star hopping from M8. M24 was a distinct, oblong glow with four brighter stars of roughly equal brightness against a background of fainter stars.

Two nights later from the much darker skies from the Fillmore, UT KOA campground, M24 was noticeably larger in 7X35 binoculars than when seen through the 10X50s from Rexburg. Five embedded stars were evident, as were many close-by M-objects.

The next night we viewed M24 from the Fillmore campground with a 60mm (2.4-inch) spotting scope. At its lowest magnification of 15X (4mm exit pupil), individual stars were more distinct but the extent of the glow was less apparent (fainter) than with 7X35 binoculars. This is consistent with the expectation that for individual stars, the larger aperture will show them as brighter, but for extended objects the view with the 4mm exit pupil will be fainter than that with a 5mm exit pupil of the 7X35 binoculars.

Mario Motta: Observer from Massachusetts

Done with a 32-inch reflector. Here's the center of M24 including the NGC-6603 area. I can't get a several degrees field of view with my 32 inch! For wide field I am afraid you need someone else this time.



Roger Ivester: LVAS Observer from North Carolina

Messier 24 is a rich detached section of the Sagittarius Milky Way, best observed with binoculars. M24 is also known as the little star cloud with a size of 2ºX1º, which makes it a bit large for most telescopes.

It was my plan this year to use a small 3-inch rich-field telescope with a 4º FOV to finally attempt that pencil sketch which I've wanted for the longest time. Unfortunately, the weather in North Carolina has been rainy and cloudy for most of the year to-date. I've had very limited time outside this year, so that wide-field pencil sketch of M24 and all of the integrated sights and features will have to wait for another year.

In the northeast section of the star cloud lies a faint and small open cluster, NGC-6603. Using a 3.5-inch Maksutov-Cassegrain telescope at 52X, I found it difficult to locate, but this was due in-part to the light glow in my southern sky. I couldn't resolve this cluster, which appeared only as a faint, mostly round glow.

Over the years, many amateurs have confused NGC-6603 as being M24.

Fred Rayworth: LVAS AL Coordinator and Observer from Nevada

Though I've observed this complex area before, for the Challenge, I observed it anew on August 19, 2017 from my usual dark sky site at Lake Mead at an elevation of 2,100 feet.

It was clear, with a slight breeze. We observed a high, thin haze at sunset. This invisible band didn't show until the sun went down, then it was highlighted across the sky. As it turned out, it was a kind of bright night, though still dark enough for open clusters, though star colors and such were washed out. It didn't affect my observation of M24.

Using my 16-inch f/4.5 at 61X, I noted the following:

The star cloud was a huge, sparse cluster full of surprises, all or most of which I caught in separate entries in my notes, compiled here. This was a relatively thick area of the Sagittarius star cloud and looked more like that than an actual cluster all its own. Even at 61X with a wide field, it was indistinct and blended in, giving no particular shape to distinguish it from the surrounding area.

Of course, M24 didn't look anything like what you see in any of the images above! In my 16-inch, I could only fit about half the cluster, even in my 30mm 82° field EP at 61X. What I worked on was the most interesting part, the north half, with Collinder cluster, CR-469 in the approximate center.

The view at 61X was quite impressive. A massive mix of many mag. stars, I never noticed color, which was also an issue with next month's planetary. Right as the sun set, John, my observing buddy and I noticed that high thin band going across the entire sky which I noted in the conditions above. The sky also seemed a bit bright which would've been disastrous for Herschels, of which I only found one, by the way. I stuck to open clusters the entire evening.

I'm sure that high haze had an effect on color because neither he nor I saw any except I saw a bit on Saturn earlier in the evening.

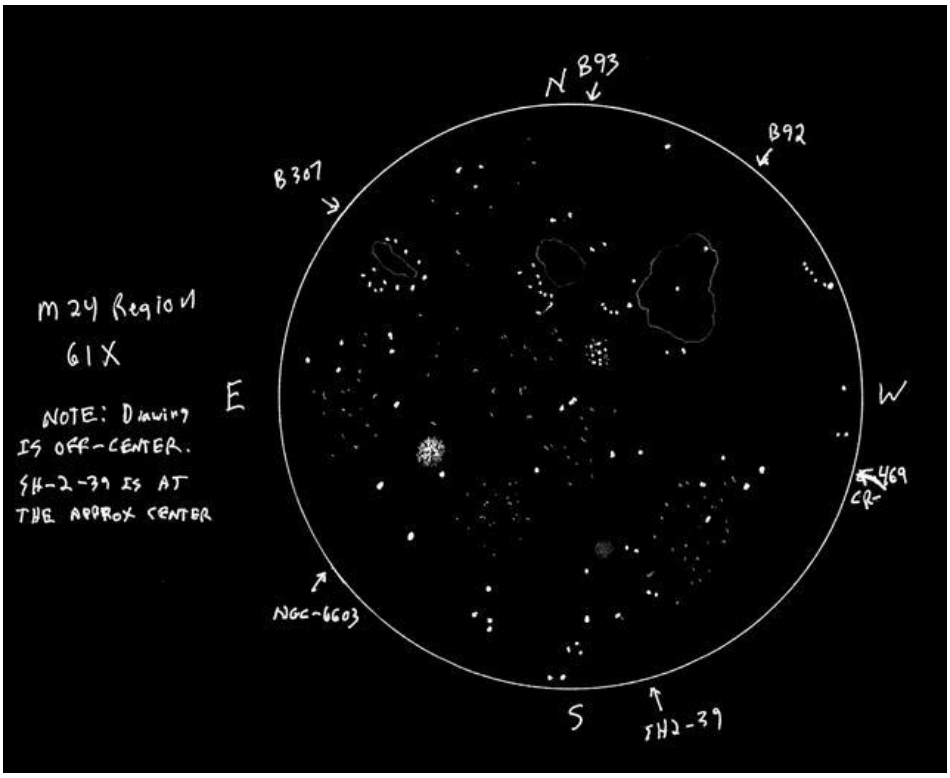
The thick star field, which is what M24 really is, was quite rich with the clump of CR-469 right in the center, sandwiched just off center between two distinct patches of dark, blank sky, B92 the larger patch and B93, a slightly smaller one. A little further along in the line was another distinct rectangular area that sort of curved, almost like a boomerang, B307. Now, the far more distinct "cluster within the cluster" was NGC-6603, which was a soft milky glow in my scope. It was quite impressive. My image in Megastar shows it as just a blotchy mix of a few stars, but live, without Memorex, it was a LOT different! I could not begin to count all the stars in that milky haze. Finally, on the other side of the field there was the little fuzzy patch, SH2-39, a bright nebula that was just a mere blotch mixed in with the stars.

Overall, if you have enough aperture, there's quite a bit to see in M24, though to tell the truth, M24 itself probably takes a small scope with a very wide field to really appreciate. I found it nothing more than a thickening in the Sagittarius Milky Way.

In the drawing, rather than try to center the eyepiece on the actual cluster, I centered it on the busiest part, which included all the objects of interest, excluding the tiny planetary NGC-6567, which I failed to find. As it is, it wouldn't have fit into the field of view and also include the rest of the objects, so since I never saw it, no big loss.

The actual center of the cluster, according to the borders drawn per Megastar is on the diffuse nebula SH2-39, which in the drawing is in the southern part of the field. I messed up the notation on the drawing and it may appear from the wording that the nebula is in the center of the drawing! Not!

As for the dark nebulae, the "B" objects, I outlined them rather than try to draw them dark somehow. I just went for simplicity rather than fancy artwork since I'm barely above chicken scratches as it is.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SH-2-39 IS AT
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