

MONTHLY OBSERVER'S CHALLENGE

Las Vegas Astronomical Society

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&

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APRIL 2014

Introduction

The purpose of the observer's challenge is to encourage the pursuit of visual observing. It is open to everyone that is interested, and if you are able to contribute notes, drawings, or photographs, we will be happy to include them in our monthly summary. Observing is not only a pleasure, but an art. With the main focus of amateur astronomy on astrophotography, many times people tend to forget how it was in the days before cameras, clock drives, and GOTO. Astronomy depended on what was seen through the eyepiece. Not only did it satisfy an innate curiosity, but it allowed the first astronomers 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 is the tradition we are stressing in the observers challenge. By combining our visual observations with our drawings, and sometimes, astrophotography (from those with the equipment and talent to do so), we get a unique understanding of what it is like to look through an eyepiece, and to see what is really there. The hope is that you will read through these notes and become inspired to take more time at the eyepiece studying each object, and looking for those subtle details that you might never have noticed before. Each new discovery increases one's appreciation of the skies above us. It is our firm belief that careful observing can improve your visual acuity to a much higher level that just might allow you to add inches to your telescope. Please consider this at your next observing session, as you can learn to make details jump out. It is also a thrill to point out details a new observer wouldn't even know to look for in that very faint galaxy, star cluster, nebula, or planet.

NGC-3893/3896 – Galaxy Pair In Ursa Major

NGC-3893/3896 is a galaxy pair in Ursa Major that makes for an excellent challenge. NGC-3893 is a type Sc spiral galaxy about 55 million light-years away, and is 93,000 light-years across. It shines at a mag. 11.2. Next to it lies its companion, NGC-3896, which is a lenticular galaxy and approximately 49,200 light-years away. It shines at a much dimmer mag. 13.9 and is about 19,000 light-years across. Astronomers have detected a very faint bridge of gas streaming between them. Both galaxies were discovered by William Herschel and each have the numbers H-738-2 (3893) and H-739-2 (3896).

Companion galaxy NGC-3896 is both faint and small. An 8-inch might be considered the minimum aperture required to see this one. However, at least the brighter NGC-3893 should be fairly easy for scopes as small as 60mm (2.4-inch) on a good dark night.

Observations/Drawings/Photos (Contributors listed in alphabetical Order)

Gary Bruno: LVAS Member from Las Vegas, Nevada



We'd like to welcome our newest participant, Gary Bruno, a member of the Las Vegas Astronomical Society.

At 12:10 AM on April 8, 2014, I observed NGC-3893 & NGC-3896. The only view was north from my front drive. Fortunately, my neighbor had their porch lights out (Tuesdays thru Friday they're out) and with no street lights, it's pretty dark. I used my 10-inch reverse binoculars with a 30mm eyepiece. This gave me a much better view than with the 19mm, since with the 30mm, I was able to fit them in the same field of view and compare them. They both look similar. For some reason, when I referred to my Sky Atlas, I found the listing for NGC-3893, but not NGC-3896. Thru my eyepiece, one was at about mag. 9 and the other at mag. 10.

Editor's note: Gary indeed observed the wrong galaxy pair. However, he gave it the effort, and in a part of the sky crowded with many galaxies, we're giving him credit for trying. That's why we're including his observation. Both Roger and I have done the same thing. It goes with the territory.

Roger Ivester: LVAS Member from North Carolina



I wanted to share an article concerning an observation I made on April 20, 1993. It's a testament that documenting and taking good notes is indeed a good thing!

During some recent cloudy weather, while reviewing past logbook entries, I discovered that I had not followed up on an object viewed on 20 April, 1993. The main object was NGC-3893, a mag. 11 galaxy in Ursa Major. While making my sketch of this excellent galaxy, I noticed a smaller, very faint object, SE and very close. I noted this in my logbook as one to look up later. It was almost ten months later, while browsing through the logbook, that I remembered to follow up on this observation.

I checked *Burnham's Celestial Handbook*, Tom Lorenzen's *1000+*, and the *Tirion Sky Atlas 2000.0*, only to find that none of these sources listed a companion galaxy. I then went to the *NGC 2000.0 Catalog* by Roger Sinnott, and found the companion listed as NGC-3896, a 14th magnitude galaxy. I was elated to find out this was a faint galaxy. It should also be noted that my observation was made from my back deck, with several unshielded streetlights nearby.

If I had not sketched NGC-3893, it's possible that I would have missed NGC-3896. If I had not logged the mysterious companion, I probably would never have checked any reference material on a future date. So, the moral of this story is: Keep a logbook, sketch your observations, and periodically review your notes. You never know what you might find.

I was very excited about going back to NGC-3893 and NGC-3896 after twenty one years, and surprised that they appeared exactly as I remembered them. It's truly amazing how the brain can remember a faint galaxy pair after all this time.

Using a 10-inch Newtonian reflector, I could easily see NGC-3893 at 57X, appearing as a faint oval, oriented NNW-SSE. When I increased the magnification to 200X, the halo became enlarged and I saw a faint stellar nucleus. I also spotted a mag. 13 star on the NW tip.

The faint companion galaxy, NGC-3896, at mag. 14.0 was very difficult, especially when observed from my moderately light polluted backyard. Using 200X and averted vision, it appeared mostly round with low surface brightness. I noted little to no detail. With patience and careful viewing, I saw two very faint stars on the NW tip.



Gus Johnson: LVAS Friend from Maryland



NGC-3893 was an easily seen oval and a bit over 1° NNE of yellow-orange Chi UMa. In an 8-inch at 65X, there was a hint of a dim star off the NW tip which I estimated at mag. 13.5-14. I also noted a very dim galaxy at mag. 14.0 ESE of brighter galaxy NGC-3893.

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



I never got a chance to observe this galaxy pair during the months prior to the challenge, though I did manage to see the brighter of the two, NGC 3893 twice, after cutting through some serious light pollution. However, I didn't count either of those as serious observations. Instead I had to dig into my past for what I had from back in the day with my home-built scope.

The first observation was on April 29, 1998 from my back yard in Tipton, Oklahoma. Being in a small town, my biggest issue was my next door neighbor's security lamp in his back yard. He was nice enough to park a large semi trailer in front of it to block my view which helped tremendously. With that in place, I had nice, dark skies to the east and north. At an altitude of 1,300 feet, and humidity always at least 40% or higher, Tipton wasn't the ideal observing site, especially being on the edge of tornado alley. However, I still managed to get some decent observations with the Barney Scope. It was dubbed that by members of the Oklahoma City Astronomical Society because of the purple color my wife had me paint it, just to be different! It sure was.

On that night, the conditions weren't ideal, typical for the area. Almost dead calm. Clear, 1/4 moon waxing. Low haze only apparent in bright lights. A plane flew over earlier and the haze really glared. Didn't seem to affect seeing though, especially straight up.

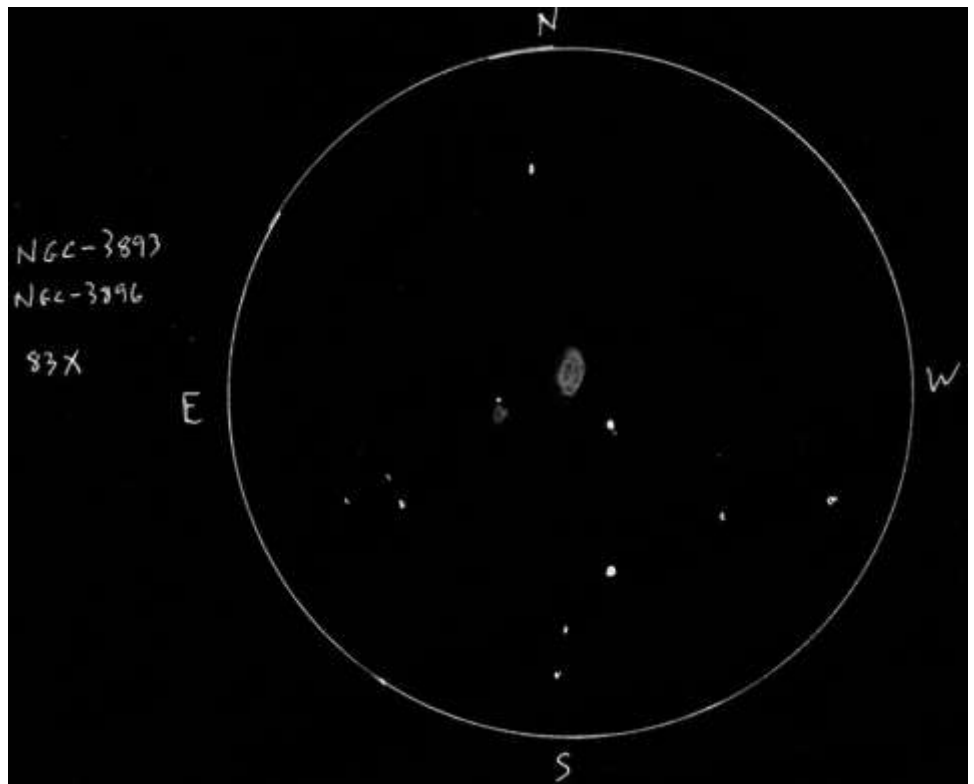
NGC-3893 was faint and round with a bright or relatively bright star at one edge. Seemed to have a companion or an attachment (NGC-3896). With the less than ideal conditions, there almost seemed to be a bridge between the two galaxies (which it turns out there might actually be, but it's only coincidental I caught this illusion because it can't be seen visually).

NGC-3896 was an extremely faint stellar fuzz. Very tiny and seemed to be a companion of NGC-3893.

On August 11, 2007, I got another look from Sawmill Trailhead up on Lee Canyon Road near Las Vegas. At 7,400 feet, this was a more ideal setting, yet I never saw the companion galaxy, NGC-3896. It was cool and calm. Sky was clear, but looked like a lot of humidity, so conditions weren't ideal.

All I saw was NGC-3893 and it was a faint round ball. Nothing else. All observations were made with the same scope, same eyepiece at a magnification of 83X.

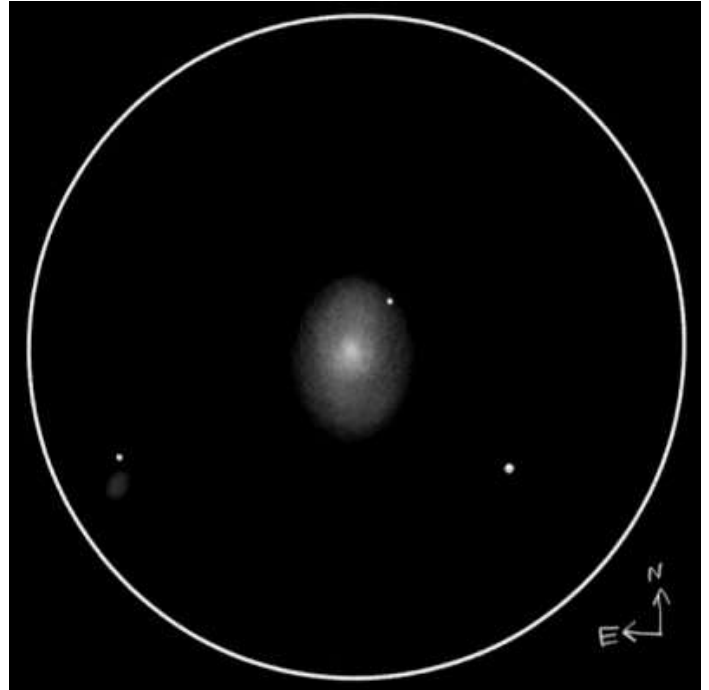
The drawing below is from the earlier one in Tipton and is based on my notes and the scribble in my logbook.



Jaakko Saloranta: LVAS Friend from Finland



Back in March, the galaxy duo was visible in a good, high (77°) spot in the sky. Using high magnification (304Xx) with a 4.5-inch reflector, I described the view as follows: Fairly bright, N-S elongated galaxy with a brighter nucleus. Faint mag. 13 star touched the halo in NW. NGC-3896 appeared as a tiny, fairly faint and slightly SE-NW elongated galaxy just south of a mag. 13 star. Observing conditions were average: NELM around 6.0 with SQM-L readings of 20.20 near the object. Temperatures still dropped well below zero Celsius on the night of 26 March.



Jay Thompson: LVAS Member from Henderson, Nevada



On January 3, 2014, I observed NGC-3893 with a 17.5-inch f/4.5 Newtonian and 5-inch f/10 SCT from Meadview, AZ.

NGC-3893 was easy to find and evident with the 17-inch at 63X. At 125X and 227X, I could see both galaxies with direct vision. I saw an embedded star in NGC-3893 away from NGC-3896. NGC-3906 is also near, but appeared very faint.

In the 5-inch at 50X and 69X, I could see only NGC-3893.

While in the area, I viewed NGC-3877 with both telescopes. Through the 17-inch at 125X, NGC-3877 was bright and elongated and near Chi UMa. I could see it at 63X.

With the 5-inch and 18mm at 69X, plus an observing hood and placing Chi UMa outside the FOV, I could pick out NGC-3877 as an elongated streak.