MONTHLY OBSERVER'S CHALLENGE

Las Vegas Astronomical Society

Compiled by:

Roger Ivester, Boiling Springs, North Carolina

&

Fred Rayworth, Las Vegas, Nevada

With special assistance from:

Rob Lambert, Las Vegas, Nevada

April 2013

NGC-2672/2673 Galaxy Pair in Cancer

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.

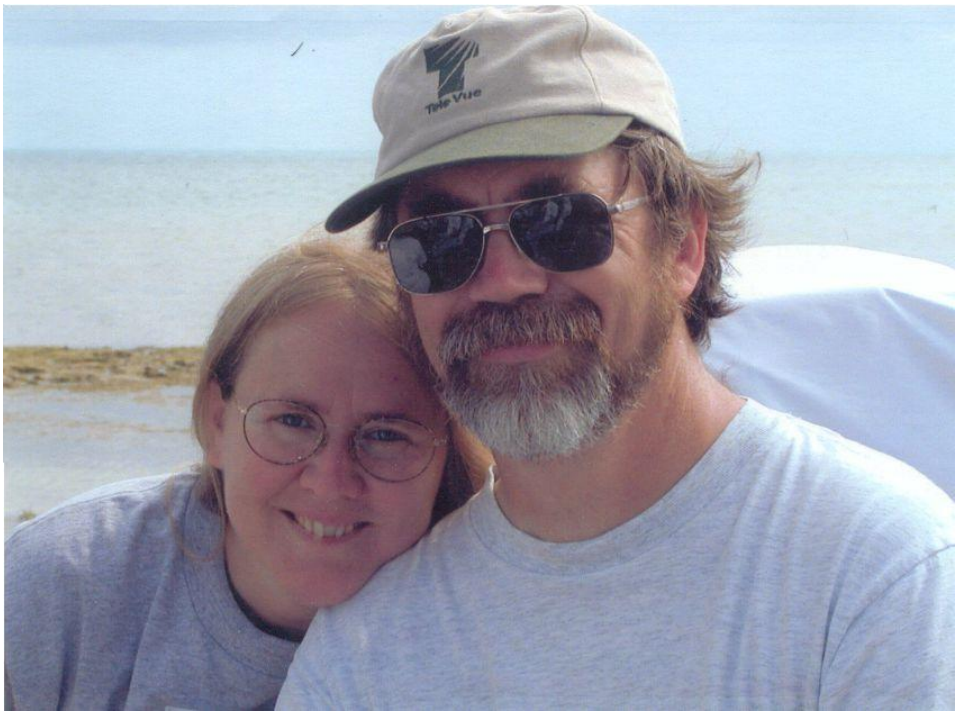
NGC-2672/2673 Galaxy Pair in Cancer

The galaxy pair NGC-2672 and NGC-2673 is also called ARP 167 and lies in the constellation of Cancer. This highly unusual pair interact gravitationally. They have counter-tails that are caused by that gravitational interaction. This feature is extremely hard to see, even in photos, and is almost impossible to see in amateur images.

NGC-2672 shines at a mag. 12.7 while it's much dimmer companion, NGC-2673 comes in at mag. 14.1. The challenge comes in at separating the pair and high magnification is the key. Around 150-200X should do it and the more aperture the better, though those with sharp eyes and as small as 8-inch scopes or even smaller have been able to split them.

Observations/Drawings/Photos

Sue French: Observer from New York



On February 7, 2008 at the Winter Star Party at 1:50 A.M. EST, I used a 105/610mm (4-inch f/6) APO refractor.

At 47X it was a small fuzzy spot making a triangle with mag. 11 stars 6.9' west and 4.9' southwest. At 122X, it was a hazy patch elongated east-west. At 174X, it grew brighter toward a west-of-center core. I saw eastern extension in NGC-2673.

On April 19, 2003 at 10:15 P.M. EDT I used a 10-inch f/6 Newtonian and 218X. The sky conditions were fair.

NGC-2672 was easy, roundish with a faint stellar nucleus, fairly small. NGC-2673 was a little bump on the following edge that made NGC-2672 look sort of oval. Now and then, a couple of extremely faint stars popped out close to the galaxies.

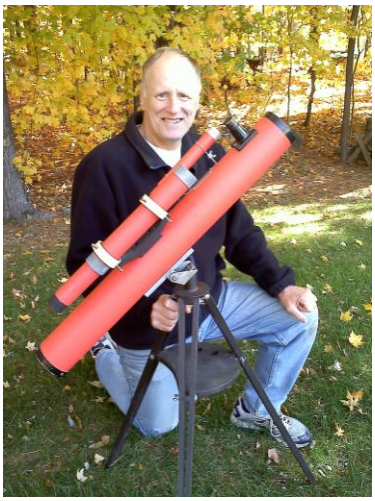
On April 26, 1997 at 9:30 P.M. EDT I used a 14.5-inch f/6 Newtonian and magnifications of 170X, 201X and 246X. Sky conditions were fair.

I saw a small ($\leq$ 1'), slightly oval galaxy with a large, bright central area and a bright, nearly stellar nucleus. It was followed to the east by a much smaller, fainter, round galaxy with a tiny brighter core.

Gus Johnson: Observer from Maryland

In 1983, I observed it with a 6-inch reflector at 59X. NGC-2672 appeared very dim, and slightly elongated. I couldn't see the companion galaxy NGC-2673.

Glenn Chaple: Observer from Massachusetts



This is strictly big scope stuff, except perhaps at a truly dark-sky location. On March 30, 2013, under skies with a limiting magnitude of 5, I was able to glimpse NGC-2672 through fellow ATMoB member Steve Clougherty's 18-inch Dob. It was directly visible as a faint, roundish blob. Steve and I looked at length for NGC-2673, and agreed that something very faint seemed to be visible to the east of NGC-2672. I later referred to Kepple and Sanner's *Night Sky Observer's Guide*, which states that NGC-2673 lies ESE of NGC-2672, so it seems that we bagged it.

Jim Gianoulakis: Observer from Nevada

This month's challenge is galaxy pair NGC-2672 and NGC-2673. These objects are located in the constellation of Cancer and are interacting galaxies. The galaxies are classified as elliptical and are mags. 14.08 and 13 respectively. What struck me as much about the image as the beauty of the two galaxies was the sheer number of other galaxies that were visible. I annotated one image with many galaxies up to mag. 19 but there are many more (see list below). See if you can find others.

About the photo. Because I was interested in capturing as many galaxies as I could, I exposed the sub frames that make up this photo for 30 minutes. This is much longer than what I normally expose sub frames for. The photo is a stack of 15 X 30 minute subframes stacked with CCSTACK and processed and annotated with PhotoShop.

Object Name & Magnitude

NGC-2677 15.6

PGC-1572838 17.34

NGC-2672 11.60

NGC-2673 13

PGC-1577004 17.36

PGC-4178363 18.61

PGC-1579626 17.39

PGC-213537 17.26

PGC-3734286 18.68

PGC-1578226 17.11

PGC-3734209 16.71

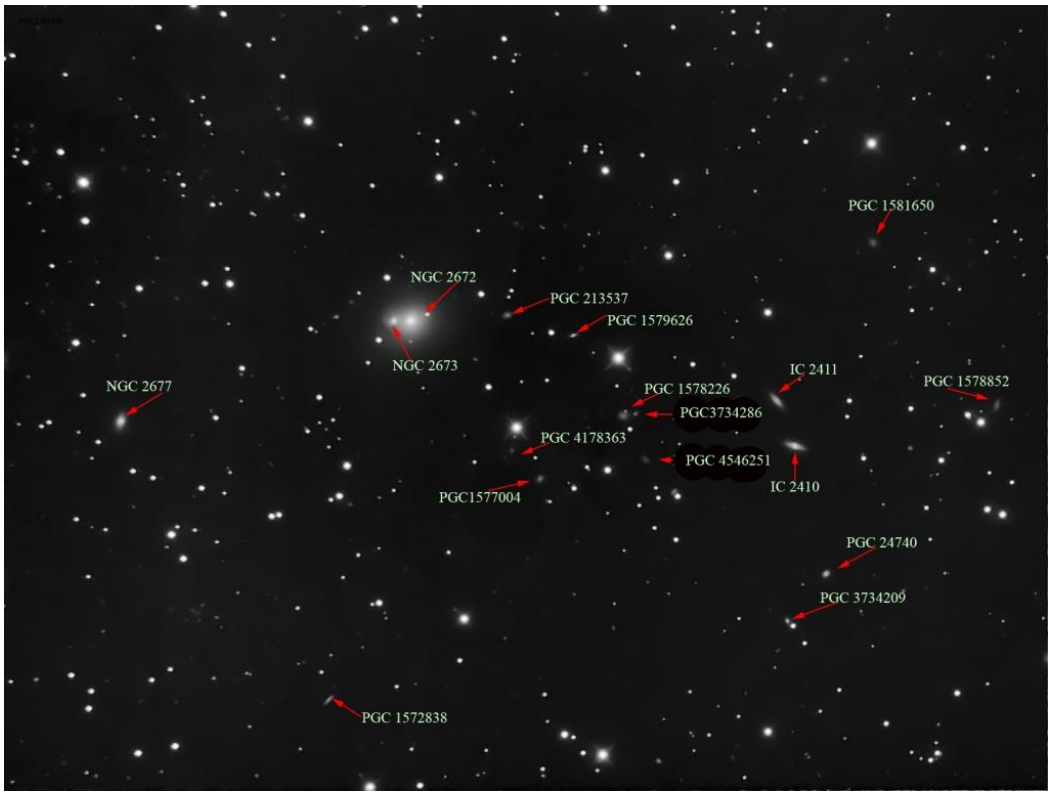
PGC-24740 16.04

IC-2410 14

IC-2411 14.70

PGC-1578852 17.46

PGC-4546251 18.10


PGC 1581650
NGC 2672
PGC 213537
PGC 1579626
NGC 2673
NGC 2677
IC 2411
PGC 1578226
PGC 1578852
PGC3734286
PGC 4178363
PGC 4546251
IC 2410
PGC1577004
PGC 24740
PGC 3734209
PGC 1572838

Jay and Liz Thompson: Observers from Nevada

We observed NGC-2672/3 from our back yard in Henderson, NV on April 1, 2013 with a 14-inch f/11 SCT. At 98X, NGC-2672 appeared as a subtle glow. We couldn't see NGC-2673 separately, even at 279X. Viewing NGC-2672 did increase our appreciation of nearby M-44 and M-67, which were much easier to see.

On April 12, 2013, Jay saw both galaxies distinctly using Fred Rayworth's 16-inch at Redstone. He also was able to see both galaxies with his 10-inch f/4 Newtonian. Averted vision helped make the dimmer galaxy stand out with the 10-inch but was not necessary with the 16-inch.

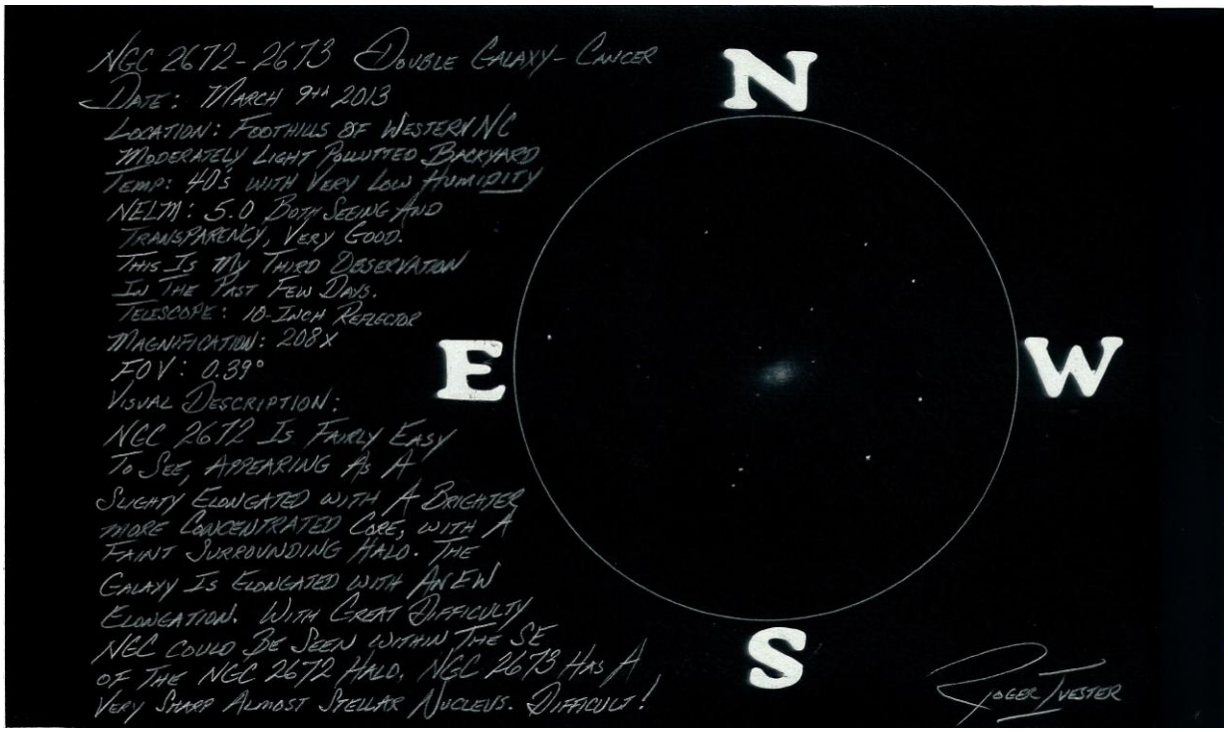
Following the success at Redstone, on April 27, 2013, Jay attempted to see the galaxy pair from his back yard in Henderson with the 14-inch. At 279X, the glow from NGC-2672 was apparent. After reducing ambient light by draping a dark shroud around his head, NGC-2673 stood out distinctly as a fainter glow following NGC-2672.

On May 11, 2013 we viewed NGC-2672/3 from Cathedral Gorge State Park using our 17.5-inch f/4.5 reflector. At 227X, we easily saw both galaxies.

Roger Ivester: Observer from North Carolina

I spent three nights in my moderately light polluted backyard, attempting to observe galaxies NGC-2672-3, culminating with the best night, March 9, 2013. On the first night, brighter galaxy NGC-2672 was fairly easy, using a 10-inch reflector, at 104X. However, I couldn't see the fainter galaxy NGC-2673. Both seeing and transparency were only fair, with a NELM of about 4.8, or maybe slightly less. When I increased the magnification to 208X, NGC-2672 showed faint with a brighter concentrated core, and a faint elongated halo, oriented EW. I spent another night and at least a couple more hours, and still couldn't see NGC-2673.

On the third night, seeing and transparency were superb. After careful observing, using the 10-inch, and again at a magnification of 208X, NGC-2673 came into view. I could see a nucleus, appearing almost stellar inside the halo of NGC-2672 when using averted vision. The following sketch was made using a No. 2 pencil, and a blank 5 X 8 note card, with the colors being averted using a scanner.


NGC 2672-2673 Double Galaxy- Cancer
Date: March 9th 2013
Location: Foothills of Western NC
Moderately Light Polluted Backyard
Temp: 40's with Very Low Humidity
NELM: 5.0 Both Seeing And
Transparency, Very Good.
This Is My Third Observation
In The Past Few Days.
Telescope: 10-Inch Reflector
Magnification: 208x
FOV: 0.39°
Visual Description:
NGC 2672 Is Fairly Easy
To See, Appearing As A
Slighty Elongated With A Brighter
More Concentrated Core, With A
Faint Surrounding Halo. The
Galaxy Is Elongated With An EW
Elongation. With Great Difficulty
NGC Could Be Seen Within The SE
Of The NGC 2672 Halo. NGC 2673 Has A
Very Sharp Almost Stellar Nucleus. Difficult!
N
E
W
S
Roger Ivester

Debbie Ivester: Observer from North Carolina

On March 9, 2013, I used a 10-inch reflector at a magnification of 208X. NGC-2672 appeared as a very faint hazy spot. Roger encouraged me to look carefully for the fainter companion galaxy, NGC-2673, just to the east. After what seemed to be the longest time, I gave up in my attempt to see the fainter galaxy. However, NGC-2672 was pretty easy, with a brighter middle and a faint mostly round halo.

Fred Rayworth: Observer from Nevada

I originally observed the main galaxy on January 17, 2009 from my regular dark sky location at Redstone Picnic Area on the north shore of Lake Mead. It was a dark night that started calm but an icy breeze picked up later on which made viewing uncomfortable. I nailed this object around that time, just before giving up for the evening.

Using a magnification of 70X, I just saw a very small medium-bright oval. I never ventured for a higher magnification and most likely didn't even know the companion galaxy was there, probably because my star chart for the evening was filtered down below that mag. range.

Older and wiser, I came into the next observation with the foreknowledge and a more detailed chart! I also had much better oculars to choose from.

On April 12, 2013, I broke my rules and drove out to Redstone on a Friday night, after waking up at 4 A.M. and working a long day. I had time to rush home, grab a bite and load the scope, check the Clear Sky Clock, and make sure at least one warm body would be there with me. I was happy it turned out to be one of our Challenge contributors, Jay Thompson. Though we've technically been at the same events together as in Cathedral Gorge, we've never actually observed together. It was a real treat.

As it turned out, we gambled on the evening and won because the next night turned out terrible. That being said, I had my doubts as I loaded the truck and saw high thin clouds working their way in from the northwest. Turned out they did give us intermittent troubles but not enough to affect the cool and mostly calm evening with fair seeing and poor to fair transparency. It still turned out to be a killer night.

NGC-2672 was a small messy oval haze with slight mottling around edges at 102X. Once I changed to 220X, it became round and the companion, NGC-2673 stood next to it, plain as day (more on it later). Now it was a round haze with a stellar core. Not quite a face-on, it looked more elliptical (which it actually is). There was separation between the pair but some haze that made it seem like the two were connected.

As for NGC-2673, could only see this companion to NGC-2672 at 220X. At 102X, it blended in as part of the other galaxy and made the elliptical look like a fat oval. This galaxy was a tiny dim oval that was partially drowned out in the halo of the much larger companion. It had a stellar core.

My drawing shows them more separated than they actually appeared. There was more fuzz blending them together but my pen couldn't make the fuzz look right so I left it this way. That dot just off the edge between them was a star that was not part of the core of either galaxy, or didn't seem to be part of either one.