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

August 2010

NGC-188 (Caldwell 1) Open Cluster

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-188 (Caldwell 1) Open Cluster

Discovered by William Herschel in 1825, NGC-188 is an open cluster in Cepheus. It lies far above the plane of the galaxy and is one of the oldest known. Approximately 5,000 light years away, it presents a unique challenge because initially, it is a rather sparse cluster. With a large enough telescope, more stars can be detected if not directly seen within it. It consists of about 130 stars ranging from mag. 12 to 17, thus giving it the impression of a haze in the background in larger scopes. With the wildly varying star magnitudes, it will likely look different in each size aperture. Collectively, the cluster is around mag. 8, but that is deceptive. With the few stars directly visible, it is easy to pass over, especially with smaller apertures. This cluster will present the observer with a distinct challenge just to pick it out from the background.

Observations/Drawings/Photos

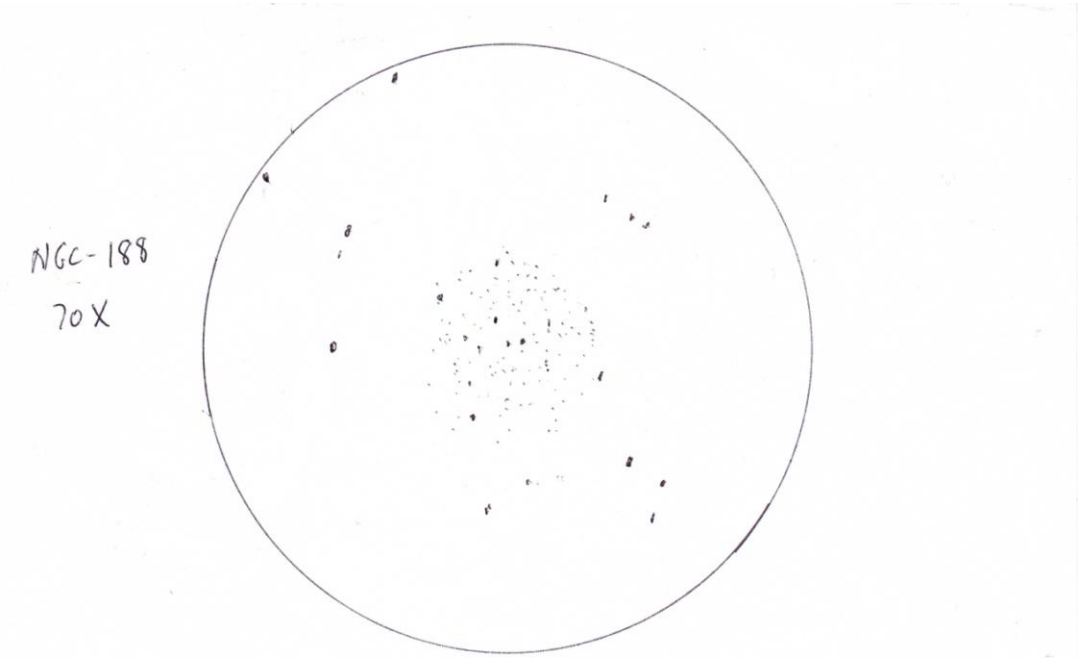
Roger Ivester: Observer from North Carolina

NGC-188 is an open cluster with a visual mag. of 8.1, but appears much fainter. From many observations and attempts over the years, it has proved to be difficult when using my 10-inch reflector. This object requires a dark sky and good seeing to be able to fully appreciate and resolve some of the faint stars. My observations were made from my moderately light-polluted backyard located in Boiling Springs, North Carolina. The 10-inch from this location presented a faint, large and irregular hazy spot with some resolution of the fainter members. There were several brighter field stars that were easily seen scattered in and around the cluster, and a magnification of 50X seemed to work the best.

NGC 188 – 12-Oct-96
Open Cluster - Cepheus
Telescope: 10-Inch Reflector
Magnification: 57X
Fairly Difficult, Faint,
Sprinkling of Stars, But
Extremely Difficult To
Resolve 12-13M Stars.
Several Brighter Stars In
And Around The Cluster.
Excellent Conditions Are Required.
Observer: R. Ivester; Conditions: Good; Boiling Springs, N.C.

Fred Rayworth: Observer from Nevada

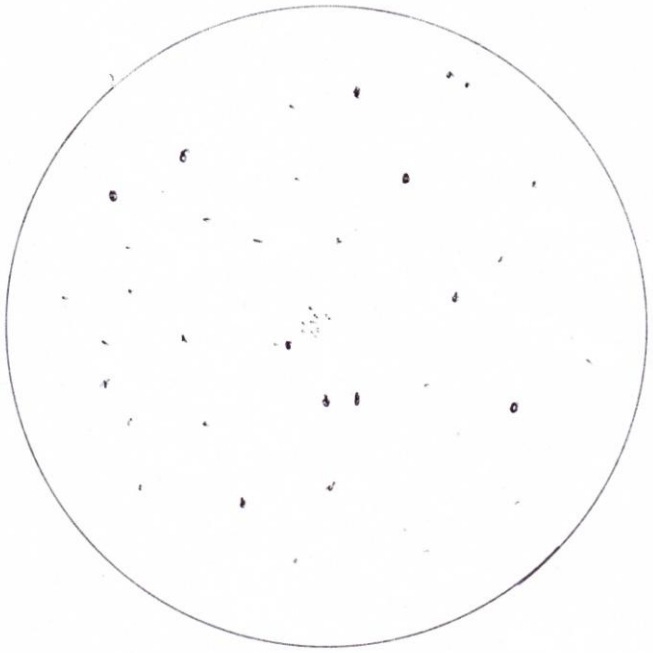
I've never viewed this cluster before so it was a treat to look for it. I was at Redstone Picnic Area at Lake Mead and the weather was calm and hot. Every once in a while a mild breeze would go through, but it wasn't enough to discourage observing, even high in the sky. The cluster took a moment to find because it was vague clump of about 30 uneven magnitude stars of variable magnitudes that almost blended in with the background. At 70X and 108X, it showed a faint background glow hinting at more stars just out of reach.



229X washed out the background glow completely and replaced it with a bunch of faint stars.

NGC-188

229 X



Rob Lambert: Observer from Nevada

Locating NGC-188 wasn't as much of a challenge as I thought it might be. In fact, I had previously observed this object back in December 2009. The difficulty came in trying to orient my image with images in various reference books. I just couldn't seem to get them oriented to match the reference images. There are a number of brighter stars in the image that I don't believe are members of NGC-188. I think the actual cluster is made up of the mag. 12 to 15 stars in the center of the image. Various references refer to NGC-188 as being the oldest open cluster, at an age of approximately 9 billion years. This places it near the age of younger globular clusters. In fact, looking at only the mag. 12 to 15 stars, it takes on the appearance of a less dense globular or a more tightly packed open cluster. I plan to return to this cluster again in September and hope to be able to orient the image so I can amend my notes with a better description.

Gus Johnson: Observer from Maryland

NOTE: *We once again welcome Gus Johnson from Swanton Maryland. An amateur for many years, he was the* ***visual discoverer*** *of a supernova in galaxy M-100, in April, 1979. We would like to thank him for being a contributor to the Challenge and look forward to his participation in the future.*

In October of 1986, I observed a dim hint of it in my 10 X 40 finder. It was clearer with an apparent sprinkling of stars when using a 4 ¼-inch reflector at 38X. A 2-inch f/12 refractor at 25X showed a very dim glow. Some nice double star pairs nearby.

I noted that in Deep-Sky Wonders by Walter Scott Houston, WSN wrote that it was very dim in his 4-inch Clark, making me wonder if I really did see it with the 10 X 40. When Houston lived in Kansas, and on a night allowing the unaided eyes to see mag. 7.5, he used 86X with his 10-inch reflector and saw several dozen stars in the cluster.

Buddy L. Barbee: Observer from North Carolina

This observation was made Thursday, May 6, 2010 while I was at the Mt. Airy Granite Overlook, on the Blue Ridge Parkway near mile post 203. I was using my 10-inch Dob with a 15mm eyepiece for a magnification of 80X. The night was a little above average in seeing and transparency, with low winds and humidity. The temperature was a mild 65°F.

This open cluster is an easy star hop from Polaris. It is also a very difficult object to see with any light pollution. There are several mag. 10 foreground field stars in front of and near the cluster that can be seen even with severe light pollution. It was because of these foreground stars that I knew that I was looking in the correct location for this cluster on my three previous attempts to see it. The cluster is primarily composed of mag. 14 and 15 stars, which is why I couldn't see it with light pollution. From the Granite Overlook I finally had a view with very little light pollution. Using a 24mm eyepiece at a magnification of 50X, this cluster was a small dim gray patch with some mag. 10 field stars visible. With my 10mm eyepiece at a magnification of 120X, this faint cluster was rather large and loose, filling almost half of the 30 arc minute field-of-view. I think that this cluster looks best through the 15mm eyepiece at a magnification of 80X. It appeared to be about 10 arc minutes in diameter with an awful lot of faint mag. 14 to 15 stars visible. There was also an apparent void of stars near the center. I think that it is much easier to find than it is to observe or see well.

DEEP SKY OBSERVATION FORM

CONSTELLATION : Cepheus

OBJECT: NGC 188

Day & Date: Friday, May 7, 2010
Time (local): 12:30 AM EDT
Time (UT): 04:30 Fri., May 7, 2010
Observer: BLB
Location: Mt Airy Granite Overlook on the Blue Ridge Parkway

Seeing (1-5): 3/5
Transparency (1-7): 4/7
Limiting Magnitude: 5.5+
Temp: 60°F Wind: 5 to 10 mph
Humidity: 50%

INSTRUMENT
Telescope: 10" Dob
Aperture: 254mm
Focal Length/Ratio:
Eyepiece: 15mm
Magnification: 80X
Field of view: 00°51'
Filter: None

OBJECT
RA: 00 hr. 47 min. 30 sec.
Dec: +85 d. 14 min. 29 sec
Type: open cluster
Listed Magnitude: 8.1
Listed Size: 13'
Altitude of Object: 35°

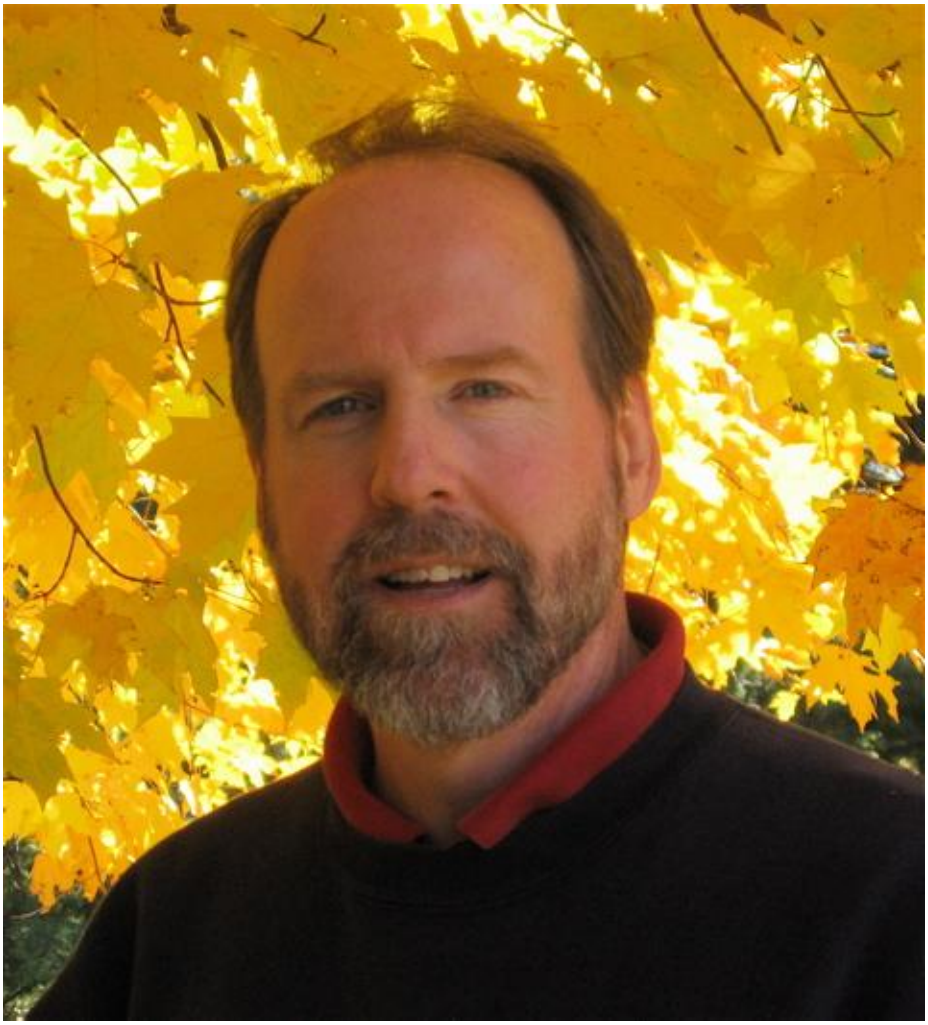
NOTES

The location of this cluster is easy to locate in my 8x50 finder; w/24mm EP @ 50X this is a small dim patch with a few of the members visible on a gray background; w/10mm EP @ 120X this is a loose cluster that fills ~~appx~~ half the FOV; this cluster looks best with the 15mm EP @ 80X, it appears to be about 10 min in diameter, many many faint stars with an apparent void in the center

Tony Labude: Observer from Oklahoma

I went with a small group of friends including Pete Craig, visiting from the Sacramento Valley Astronomical Society, to a fairly dark site on the August 7, 2010. We had high thin clouds and high humidity. This amplified the light glow, especially to the north, and kept me from recognizing NGC-0188. I went out again to a different site on the 10th and 11th but I was too close to Lawton-Ft Sill to the north to even try for the cluster. As a side note, I did observe a lot of very nice Perseid meteors.

John Goss: Observer from Virginia



NOTE: *We welcome new contributor John Goss to our Observer's Challenge. A little about him: Although John Goss earned his degrees in ceramic engineering, amateur astronomy has been a lifelong pursuit. His first lunar observations occurred at age 6 and he has been hooked ever since! Recently, his planetary and deep sky observations earned him the title of Master Observer from the Astronomical League.*

John has extended his organizational skills to astronomy clubs at the local, state, regional, and national levels---serving as President of the Roanoke Valley Astronomical Society, Astronomy Day Coordinator for seven years running, Chair for the 2001 and 2010 conventions of the Virginia Association of Astronomical Societies (VAAS), and Chair of the Mid East Region of the Astronomical League (MERAL). He is currently serving as vice president of the Astronomical League, the world's largest federation of amateur astronomers.

In addition to his many lectures and demonstrations to various astronomy clubs and civic groups, John has given presentations at the Astronomical League National Convention, the annual meeting of the IDA, the Mason Dixon Star Party, the Almost Heaven Star Party, the Black Forest Star Party, Southern Star, and conventions of the Virginia Association of Astronomical Societies. He has conducted telescope workshops and instructs "Stargazing for the

Curious Skywatcher" through Dabney S. Lancaster Community College. John has contributed numerous articles for the Astronomical League's "Reflector" magazine, and the newsletter of the Roanoke Valley Astronomical Society. He also writes a monthly astronomy column for the Roanoke Times.

Attached is my drawing of NGC-188 made with my 10-inch SCT.

With the full aperture, I was able to see the cluster with its many faint stars. It gave the impression of dimly glowing stardust. When I placed a 3-inch off-axis cutout over the front of the SCT, I couldn't see any of the cluster's dim stars, just three sections each of dim, dim, and dim glows. If I didn't know better, I wouldn't have known that there was a real cluster there. The stars that were visible were crisper, but much fainter than the view with the full 10-inch aperture.