MONTHLY OBSERVER'S CHALLENGE

Las Vegas Astronomical Society

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OCTOBER 2015

NGC-7128 – (CR-440) – Open Cluster In Cygnus

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-7128 – (CR-440) – Open Cluster In Cygnus

NGC-7128 is an open cluster, first noticed by William Herschel on October 14, 1787. He gave it the designation H-040-7. It was later updated to NGC-7128 and then added to the Collinder catalog as CR-440. It shines at a moderate mag. 9.7, or therabouts, depending on the source data. It consists of around 70 stars of widely ranging mags. It lies about 7,500 light-years away. The age of the cluster is estimated at around 10 million years.

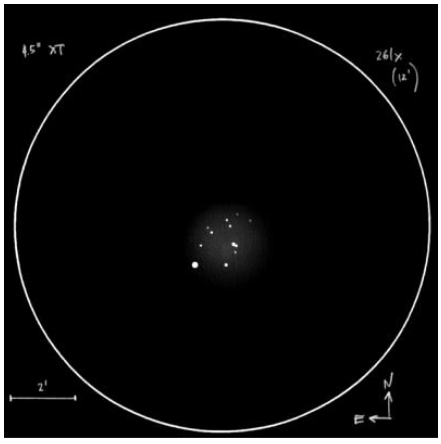
It makes for a challenging object because it's a mere clump buried in a rich sea of stars. However, once you find it, it can reward you with the wide variety of stars and even some different colors if your scope is large enough.

Observations/Drawings/Photos

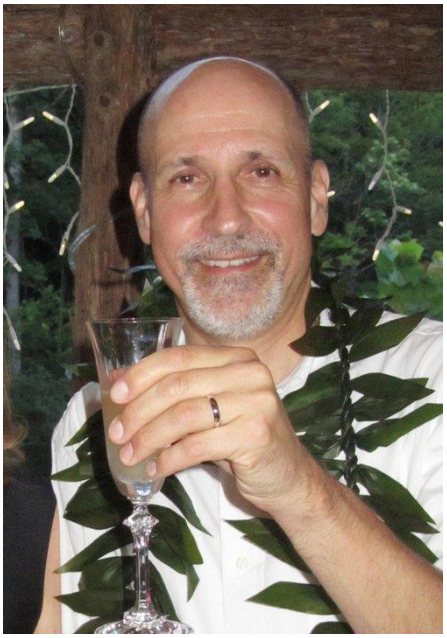
Jaakko Saloranta: Observer from Finland

I observed NGC-7128 with a 4.5-inch reflector @ 261X. It was a small, 2.5' cluster of ~10 stars, mags. 11-13. It was easily visible @ 38X (66') as a small glow NW of a mag. 10 star. Sky conditions and weather were: 20°F, humidity 84% with the Aurora Borealis in the northern sky. I got an SQM-L reading of 20.05 aimed at the object, while the naked-eye limiting mag. was around 6.

Here's a shot of the aurora borealis: http://www.kolumbus.fi/jaakko.saloranta/IMG_2808.JPG. The aurora can be a real pest and, thank God, I don't live close to the Arctic Circle, where these things appear nearly every night.



James Dire: Observer from Hawaii



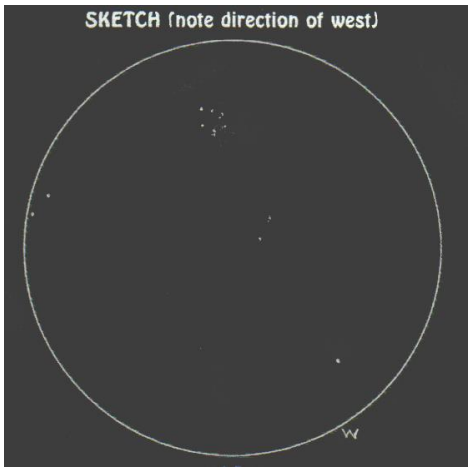
NGC-7128 is a tiny star cluster located in the northeast corner of the constellation Cygnus. The cluster is 13° northeast of Alpha Cygni (Deneb) and is located on the north edge of the Milky Way glow. It's 2.5° due north of mag. 4.7 Aselfafage (Pi1 Cygni). The object will be a faint blur in 50 mm finders or binoculars.

The cluster is small, around 4 arc minutes in diameter. It's located 7,500 light years away with an integrated mag. of 9.7. A dozen stars can be resolved that are brighter than mag. 12 with large enough instruments. There are several brighter foreground stars that appear to be cluster members, but they're not. The brightest is a mag. 9.4 orange star, followed by a mag. 11 yellow star. In my 6-inch f/6 Newtonian, I could resolve the three foreground stars, but the cluster stars just appeared as a faint nebulous, background glow.

My image of NGC-7128 was taken with a 10-inch, f/6 Newtonian with a SBIG ST-2000XCM CCD camera. The exposure was 30 minutes. North is up and east is to the left. The field of view on the image is 22 by 16.5 arc minutes. The brightest star in the image is SAO33681, shining at mag. 7.9. The faintest stars are mag. 17.

Glenn Chaple: Observer from Massachusetts

I observed NGC-7128 on October 10, 2015 from the ATM B Clubhouse in Westford, MA. The seeing was III on the Antoniadi scale, the LM was 5. Using a 10-inch f/5 reflector at 208X, I found the small cluster by star-hopping to it. It was oval in shape, much like the Circlet of Pisces.



Rob Lambert: Observer from Nevada (LVAS President)

I observed NGC-7128 while participating in the Annual Fall LVAS Cathedral Gorge Star Party and Campout. The included photo closely represents what one would see at the eyepiece of a 10-inch reflector at approximately 60X magnification. West is toward the bottom right corner of the photo, where the brightest star in the photo (HIP 107211) is located. The non-descript cluster appears as a circlet of stars that somewhat looks like a pentagon with the brightest star of the cluster being located on the eastern end. The stars on the southern side are significantly dimmer than those on the northern side.

The photo was captured with a Mallincam VSS+ videocamera through my 5-inch Apochromatic refractor having a focal length of 952mm. The camera is the equivalent of an 8mm eyepiece. With a 0.5 focal reducer in the optical path, the calculation for magnification is: FLT / FLE X FR factor where FLT = focal length of the telescope = 952mm, FLE = focal length of the eyepiece = 8mm, and FR = focal reduction, therefore, 952mm / 8mm X 0.5 = 59.5X. The exposure time was 10 seconds with the camera set at Sense Up 128 and automatic gain control at Max. As others have noted, NGC-7128 isn't much to write home about, but all of our challenge objects contribute to improving our observing skills.

Gus Johnson: Observer from Maryland

From *Universe Today*

Back in 1979, amateur astronomer Gus Johnson visually discovered a supernova (designated SN 1979C) about 50 million light years from Earth, when a star about 20 times more massive than our Sun collapsed. Since then, astronomers have been keeping an eye on SN 1979C, located in galaxy M100. X-ray emissions from the object have led astronomers to believe that the SN remnant has become a black hole. If so, it would be the youngest black hole known to exist in our nearby cosmic neighborhood and would provide astronomers the unprecedented opportunity to watch this type of object develop from infancy.

I observed NGC-7128 years ago in a 10-inch reflector @80X. I saw a small, nebulous patch with one brighter mag. 9 star off the SE edge, with a pentagonal shape.

Jay Thompson: Observer from Nevada

I’ve viewed NGC-7128 a couple times in the past year with a 17-inch telescope.

From Meadview, AZ on December 23, 2014, it appeared as a small, sparse group of stars at 125X.

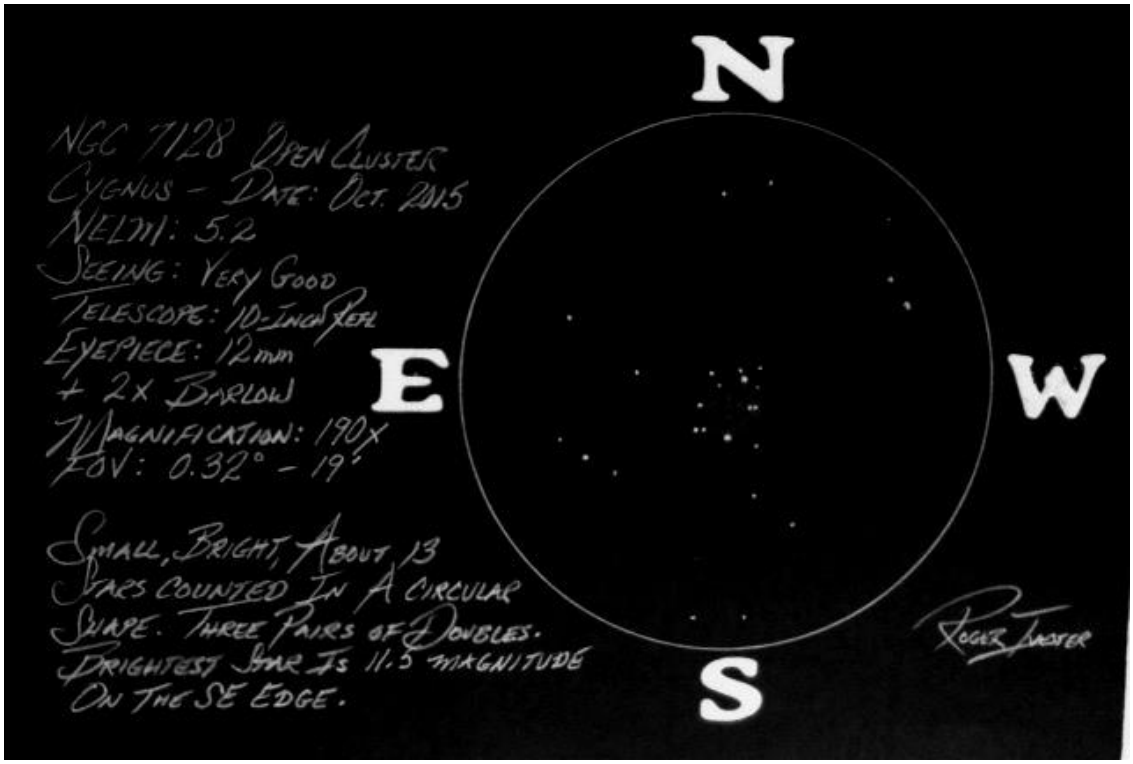
On September 10, 2015 at Cathedral Gorge State Park in Nevada, I noted that the cluster looked like a small ring of stars at 95X. At 227X, I saw a couple of fainter stars in the ring but it's really small, compressed, and forgettable. Not one to be added to my "must see" list.

Roger Ivester: Observer from North Carolina

I observed NGC-7128 in October, 2015 with a 10-inch Newtonian reflector at 190X (12mm EP + 2X Barlow, FOV 0.32° - 19 arc minutes). The sky conditions were very good with a NELM of 5.2.

It was easy to locate and see at low magnification, appearing as a small concentrated round hazy spot, with several bright stars on the outer edges. When I increased the magnification to 190X, I could count about 13 stars encircling a hazy central region of fainter stars. At the higher magnification the cluster became octagonal in shape. I counted three pairs of doubles in the outer ring. The brightest star was mag. 11 on the SSE tip. The cluster was much smaller than I remembered when I observed it last on September 27, 1993, using the same telescope and from the same site.

The late North Carolina amateur, Tom Lorenzin said: "It was small, compressed and memorable! The brighter members make a small pentagon."


NGC 7128 Open Cluster
Cygnus - Date: Oct. 2015
NELM: 5.2
Seeing: Very Good
Telescope: 10-inch Refl
Eyepiece: 12mm
+ 2x Barlow
Magnification: 190x
FOV: 0.32° - 19'
Small, Bright, About 13
Stars Counted In A Circular
Shape. Three Pairs of Doubles.
Brightest Star Is 11.5 Magnitude
On The SE Edge.
N
E
W
S
Roger Lanser

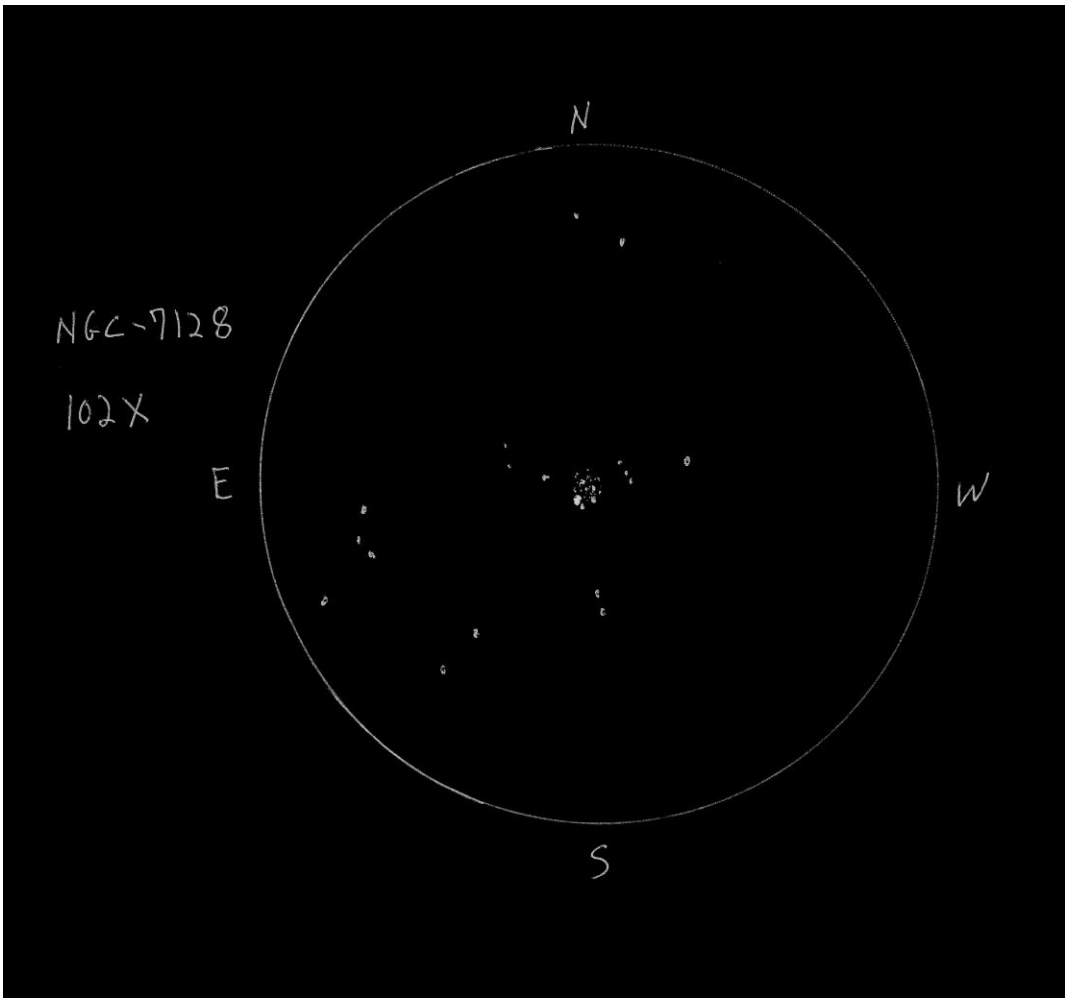
Fred Rayworth: Observer from Nevada

I first observed NGC-7128 on October 4, 1997 from the Okie-Tex star party at Lake Murray in Oklahoma. At an altitude of 872 feet, it was cool and clear with a slight breeze. Using my home-built 16-inch f/6.4 and a 32mm EP at 82X, I saw a ring of stars. It was very small and stood out against a darker background.

My next observation was for this Observer's Challenge and I did it from Cathedral Gorge State Park in east-central Nevada on September 11, 2015. At 4,800 feet, the sky was very transparent, especially near the zenith. However, seeing was terrible as proven by viewing Saturn which was closer to the horizon. That didn't matter while looking up high and at extended objects.

Using my 16-inch f/4.5 Dobsonian at 102X, I saw a distinct clump of stars, many with even mags. mixed in with a few that were wildly uneven in mag. The colors were mostly bluish-white except for a hint of orange in one or two members. This cluster was hard to pick out of the rich field of background stars, but once I did, it was quite distinct. I never noticed the pentagon shape others have mentioned. Maybe because of my aperture, too many background stars blended in and washed out the distinct shape. My earlier observation and seeing the ring shape came closer to that pentagon shape but that was a different time, less skill and less magnification.

Another observer with a smaller scope never was sure he'd found it because it did not contrast quite as well. After seeing it in his scope (a 10-inch), it looked completely different from mine. After seeing images and drawings for this report, I was convinced it was an exact match for the cluster. Over a month after the fact, I called him and let him know so he could update his notes.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NGC-7128
102X
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