MONTHLY OBSERVER'S CHALLENGE

Las Vegas Astronomical Society

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&

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February 2013

Melotte-71 (Collinder-155) – Open Cluster in Puppis

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.

Melotte-71 (Collinder-155) – Open Cluster in Puppis

Melotte 71, also known as Collinder 155 is a small but fairly dense open cluster in northeastern Puppis. It shines at a relatively bright mag. 7.1 and stands out against a starry background. The cluster is known to contain at least 16 confirmed red giants, though 24 are seen in the immediate area by photographic study. It has been studied extensively for its red giant content though more data on the subject is hard to come by.

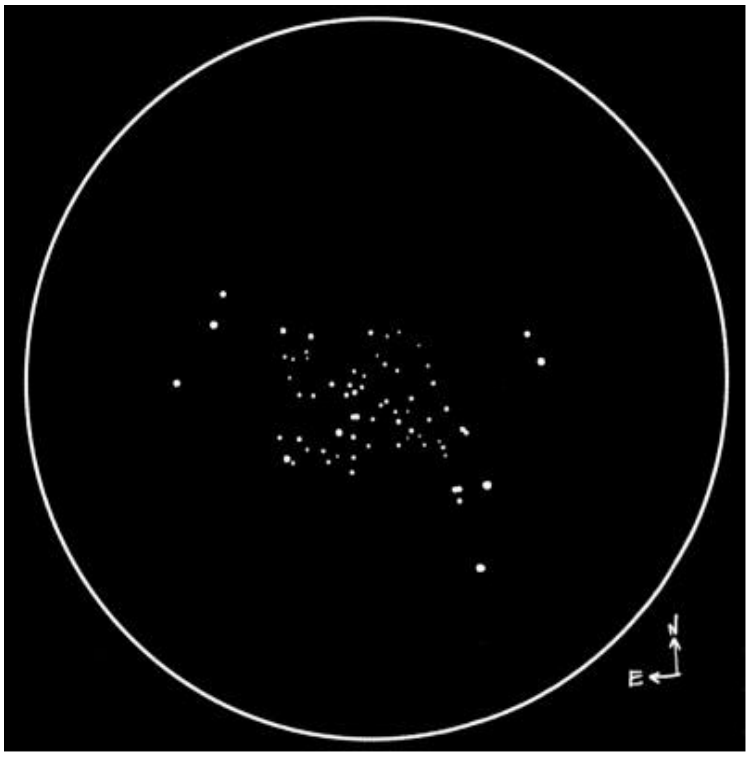
The cluster is a beautiful object, often overlooked by amateurs. This is a great challenge object and a nice surprise for even modest telescopes.

Observations/Drawings/Photos

Jaakko Saloranta: Observer from Finland

Melotte 71 was discovered by Philibert Jacques Melotte (1880 – 1961) from the Franklin-Adams chart plates. Melotte's work was published in 1915 containing 245 star clusters including famous objects such as Melotte 111 – the Coma Berenices cluster. Per Collinder used the plates in 1931 and added the object as number 155 in his catalog. Prior to Collinder's discovery, it was also independently discovered by Wilk in 1928. This is where the nickname – Wilk's cluster [in Puppis] – comes from. In total, the cluster contains ~340 stars brighter than magnitude 18.

My last obsevation of Melotte 71 was made back in February, 2011 under mediocre skies: the NELM was 6.0 and the SQM-L reading near zenith was 19.90. My description of Melotte 71 using an 8-inch Dobsonian @ 190X was as follows: "Faint but fairly rich, beautiful cluster of 50* mags. 11-14 with a background glow visible at low magnifications. A handful of stars mags. 10- 12 visible but mostly along the edges. Most of the stars mag. 14 and fainter. Stars in the cluster seem to be flowing toward the NW. Size 5'. There is another great open cluster – Melotte 72 – 1.4° to the NNE."


N
E

Jay and Liz Thompson: Observers from Nevada

We observed Melotte 71 from our back yard in Henderson, NV on January 18, 2013 with a 14-inch f/11 SCT. A first quarter moon was high in the western sky. With a 40mm eyepiece (98X), Mel-71 appeared as a condensed cluster north of an acute isosceles triangle. With a 14mm eyepiece (279X), it was resolved into dozens of faint stars.

On March 1, 2013, we observed Mel-71 under excellent skies at Redstone Picnic Area Lake Mead National Recreation Area with a 10-inch SCT. The cluster was resolved at magnifications of 53X, 80X, and 160X. At 160X, the westernmost star of the acute isosceles triangle (three foreground stars?) near the cluster was yellower/redder than the other two stars of the triangle. No colors were seen in the (fainter) cluster stars proper.

Gus Johnson: Observer from Maryland.

April 1991: Telescope: 80 mm (3-inch) refractor at medium magnification presented Melotte 71 as a small dim patch with a few brighter stars being noted. Could also see with 20 X 60 binoculars, but very dim.

Roger Ivester: Observer from North Carolina

On February 28, 2013, from my backyard in Boiling Springs, North Carolina, both seeing and transparency were good with NELM at 4.8. The temperature was 30º with a calm wind. I used a 10-inch f/4.5 reflector

The first and most notable feature of Melotte 71 was a triangle of three brighter stars pointing south. The western star of the triangle had a subtle reddish tint at 104X. The eastern star of the triangle at 208X shared a faint companion. When using the higher magnification, many of the faint members of the cluster began to appear, but intermittently and not constant. At low power, the three brighter triangle stars stood out well, but the primary NNE section of the cluster appeared as little more than a nebulous patch. At 208X, the many faint members of this cluster glistened and sparkled when using averted vision, creating the illusion of tiny pulsating lights.

Melotte 71 - Collinder 155
Open Cluster - Puppis
Date: February 28th 2013
Location: Boiling Springs, NC
Conditions: Fair 30° Wind: Calm
Seeing & Transparency: Fair
Telescope: 10-Inch F/4.5 Reflector
Magnification: 208x
Eyepiece: 11mm + 2x Barlow

At Low Power, Most Notable Feature, A Triangle Of Three Stars With The Apex At The South End. The Western-most Star of The Triangle Is A Subtle Red In Color. The Eastern-most Star Is A Double. The Greatest Concentration of Stars Is In The N-E, with many Faint Stars That Are Unresolvable, Appearing As A Faint Haze

Roger Ivester

Debbie Ivester: Observer from North Carolina

On February 28, 2013, from my backyard in Boiling Springs, North Carolina, both seeing and transparency were good. The temperature was COLD! 30º with an icy wind. I used a 10-inch f/4.5 reflector at 208X.

When I first gazed at Melotte 71, I could see a triangle of three brighter stars pretty easily. The main cluster, which was the concentrated area of faint stars to the north of the triangle, appeared as a faint haze. After careful observing, a few of the brighter members appeared, scattered about. The cold wind was causing my eyes to water, which gave me difficulty in my attempt to observe this object. I could not see the color in the brighter star that Roger discussed seeing. It's was really hard for me to be outside when the temperature was below freezing, especially with an icy wind hitting me in the face. I could hardly wait to get back in the warm house!

Fred Rayworth: Observer from Nevada

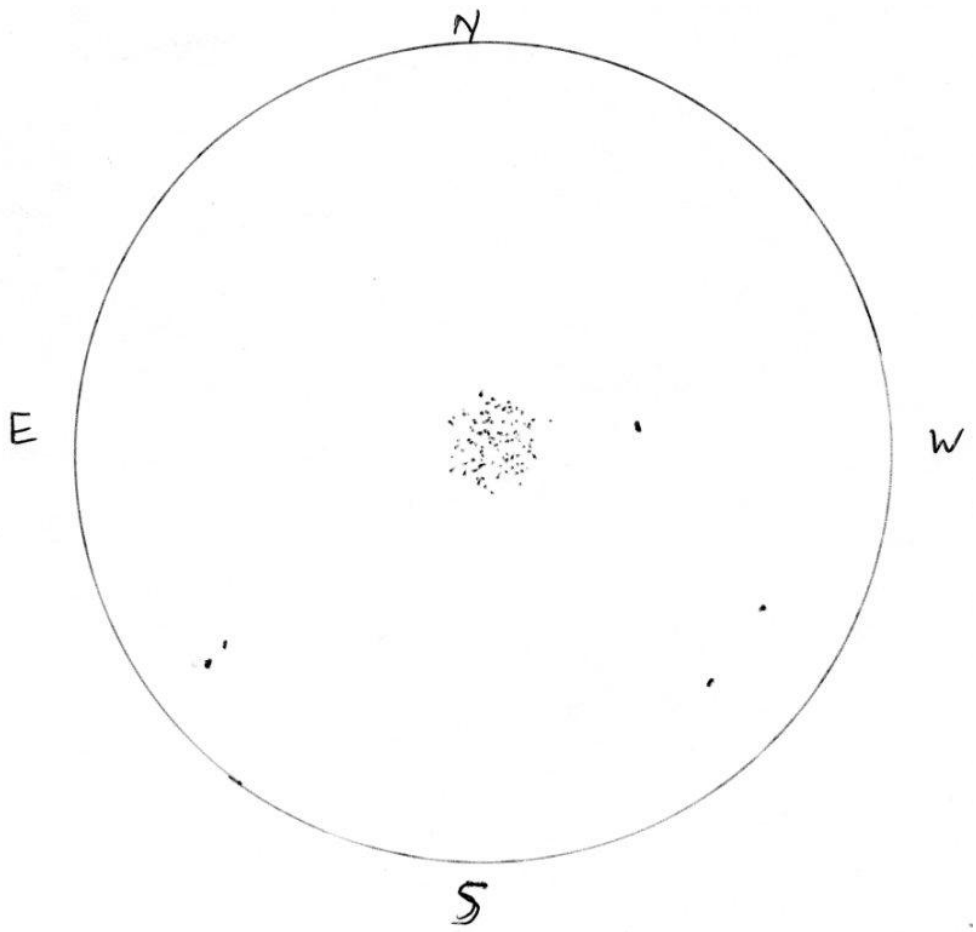
It was a pleasant surprise to spot Melotte 71 for the first time. Approximately halfway between M-46/47 and Alpha Monocerotis, it's a bit off the beaten path. Still, I'm surprised neither Messier nor Herschel spotted it before. Going into it blind, I had no idea what I was going to find.

On February 9, 2013, from Furnace Creek in Death Valley, at -192 feet below sea level, I set up my 16-inch f/4.5 Dobsonian on the airport tarmac at our dark sky site. I need to note now that this site and the Death Valley park have been officially designated as a Dark Sky Site and that would help explain why I've always been able to see the flame nebula unfiltered and even caught glimpses of the Horsehead, unfiltered, despite looking through such a thick atmosphere.

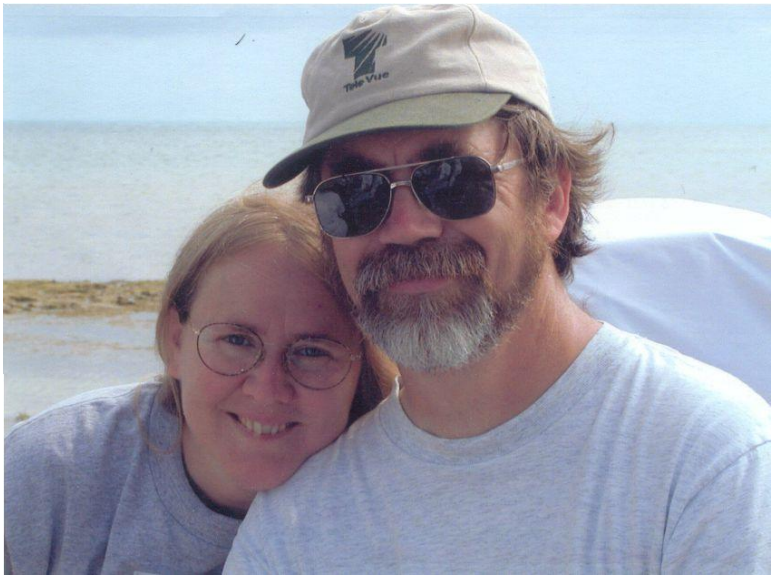
I digress. Friday, we were clouded out and I barely spotted a few bright *tourist* objects through holes in the clouds. As for this one, there was no chance because the cloud banks were pretty solid in that part of the sky. However, Saturday, the skies opened up. Despite a thick haze which prevented seeing even the crudest detail of the nearby mountains, things seemed to shift and clear out the later the evening progressed. We had a huge crowd as the public converged on us and by the time I got to this object, it was 9:55 PM and a bit of a breeze had picked up, making my eyes water.

Since I had no idea there might be a specific color to look for, I went for an overall impression, as my notes show: "Wow! Nice rich little open cluster against a fairly rich star background. It stood out at quick glance almost like a globular. I counted what seemed to be 100 stars, but not actually because I gave up. It seemed quite dense." To continue with that impression, a sweep over it revealed a dense spot, mostly gray-white. Since starting the challenge, I've trained my eyes to look, at least superficially for colors, but maybe because of the breeze and my eye watering, and maybe because of the haze that might've still been present, I never noticed any colors within the cluster. Of course, I never ventured beyond it to the nearby stars which probably displayed some red in that bright one just at the edge, which others here have noticed. In fact, I didn't even have it in my drawing. Oh well. I tried for the object again last night, March 16, 2013 but once again, clouds prevented it so I'll just have to go with what I saw at Death Valley. It's still a great cluster that I plan to revisit.

CR-155
MEL-71
102 X



Sue French: Observer from New York



On February 20, 2012, at 11:13 PM, EST at the Winter Star Party, seeing was fair and transparency good. I used a 130mm/819mm (5-inch, f/6.3) apochromat refractor to view Melotte 71.

This is one of my favorite clusters for sheer prettiness. At 23X, it was a highly granular haze with brighter points at the SE/E and W/N edges. It spanned about 9' and shared the field of view with NGC-2423. There was a skinny isosceles triangle of mag. 9 and 10 stars just south of the western side. The triangle pointed S/W. At 117X, it was wonderfully resolved into many fairly faint to very faint stars. The eastern star in the base of the isosceles triangle was a pair, and the star at the SE/E edge of the cluster was also double. At 164X, it was easier to count the stars, which numbered about 50.