

## **The Observer's Challenge Objects**

Submitted by Larry McHenry, Pittsburgh, PA, USA. <http://stellar-journeys.org>

October: **M 2** – Globular Cluster - Aquarius;  $\text{mag}_v = 6.3$ ; RA: 21h 34m 43s Dec:  $-00^\circ 42' 43''$

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The Milky-Way globular star cluster – M2, located in the constellation of Aquarius “the Water Bearer” is about 55,000 light years distant, about 150 light-years in diameter, and estimated 12.5 billion years old.

This object was first discovered by French astronomer Jean-Dominique Maraldi in 1746.

The second entry in his ‘not a comet’ list, M2 was independently rediscovered/observed by Charles Messier on the night of September 11th, 1760 at his Paris observatory located on a tower at the Hôtel de Cluny.

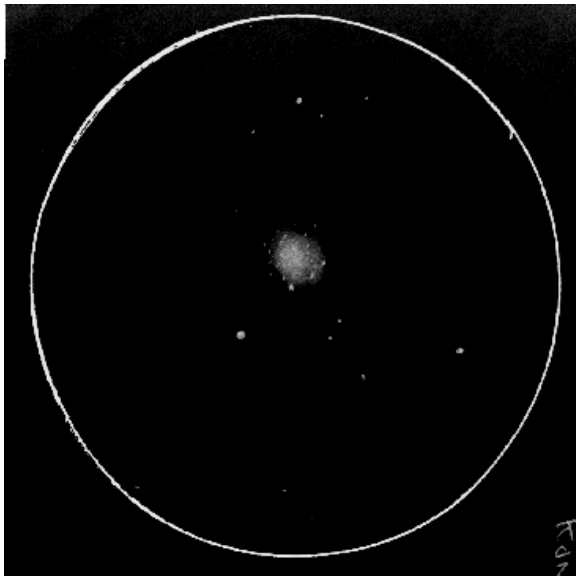
Messier described the cluster as “*Nebula without star, centre brilliant, surrounded by a circular light resembling the nucleus of a comet*”.

### **Visual Sketch:**

10/12/1988 from suburban backyard in Louisville, Ky.

Visually, the cluster has a compact bright off-center core. Bright star near edge. Similar in view to M15.

Using a 8" f4.5 Dob Reflector (Coulter red-tube) 8mm Konig eyepiece (143x).



### **EAA Observation:**

09/19/2022, from Cherry Springs State Park in Pennsylvania, at the BFSP.

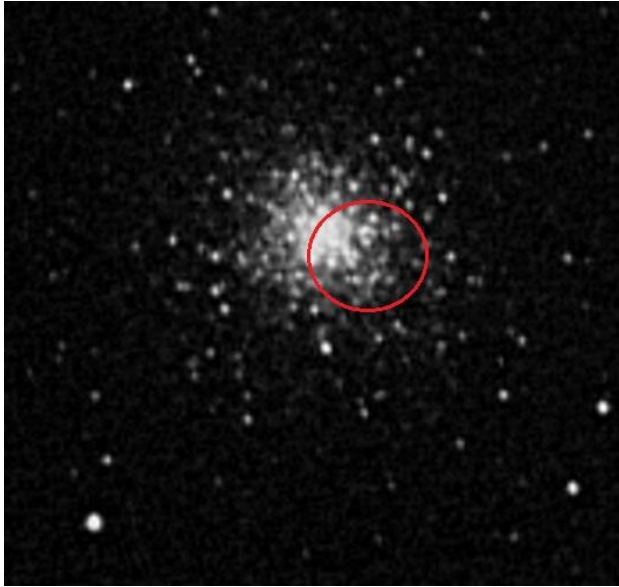
Using an 8" SCT optical tube @ f6.3 on a GEM mount, with a CMOS color camera and broadband filter, 5-second guided exposure, live-stacked for 5 minutes.

### **The M2 Dark Lane:**

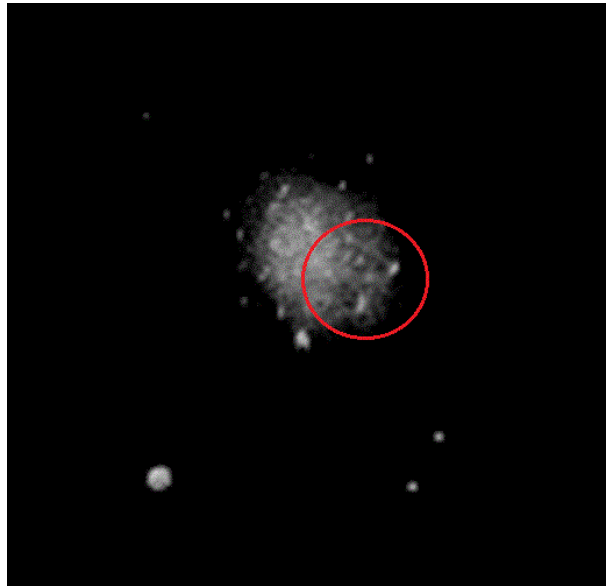
A number of visual observers using 10" or larger telescopes under dark skies and good observing conditions have reported seeing a ‘dark lane’ in the north-east edge of the cluster. After reviewing an older analog-video capture from 2011 (8" SCT f6.3, and a single 30 second exposure), and zooming/cropping the above visual sketch, I believe I may have unknowingly observed the suspected dark lane. (See below).

I then went back and reexamined the more recent EAA observation and though less noticeable, was also able to identify the area. I believe that the deeper ‘stacked’ EAA image, which brings out more cluster stars, along with background noise reduction preprocessing, tends to suppress the dark lane in modern images.

Cropped and zoomed short-exposure analog image:



Cropped and zoomed sketch:



Cropped and zoomed EAA stacked image:

