



Let's Observe Globular Cluster!

Observation & Sketch

Name _____

When you look at the night sky with a telescope, sometimes you meet an celestial object which is many stars gathering. This kind of celestial object is called “Cluster”.

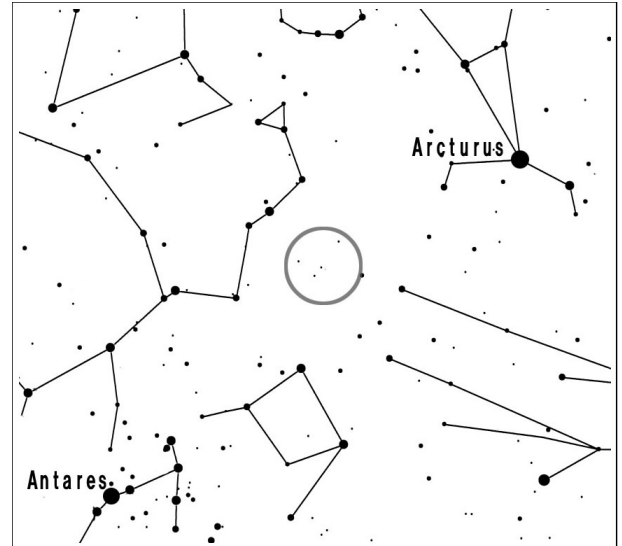
This time, let's observe a cluster!

- Let's observe stars around the circle in the star chart. Find the globular star which is looked like white cloud different from the regular star shining. When you find it, sketch what we see with both 15x and 35x telescope.

Date and Time of Observation _____

Location of Observation _____

Diameter of Telescope _____ cm



Images provided by Stellanavigator / AstroArts Inc.

Observe with 15x

Observe with 35x

- When you observe it with 35x telescope, where is looked the most bright?
If you notice anything about the difference of brightness, add those in the circle (for 35x).
- Let's observe the star with a telescope that has more power than 35x.
What did you see?



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Post Observation Study

Name _____

- The celestial object that is found by the observation is a globular cluster, called "Messier (M) 5".

The globular cluster is an object that a lot of stars are gathering like a ball. There are hundreds of thousand of stars in the M5. However, with the small telescope, it is impossible to see the star gathering in detail, it seems a white cloud.

Let's compare to the sketch of the Milky Way observation.



Images provided by National Astronomical Observatory of Japan

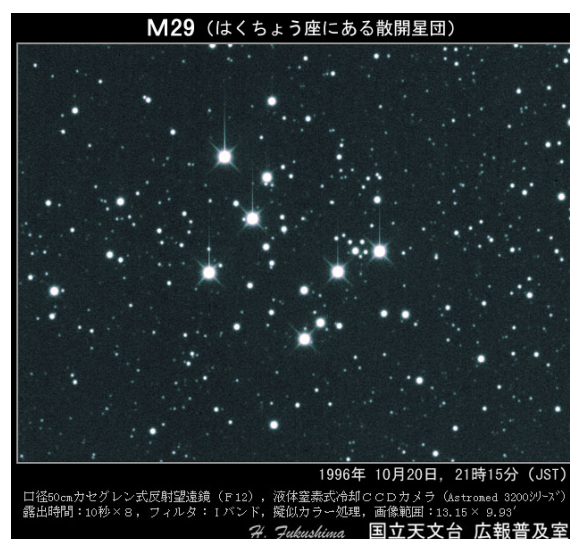
- From the result of the sketch, you can verify that the center of globular cluster looks brighter than the other parts. The reason is more stars get together in the center of cluster. Moreover, it is possible to observe bright because the appearance of the stars overlapped closed to the center.

- From the last observation that used more than 35x telescope, you would see stars separately around the M5. Thus, you can notice the globular cluster is gathering many stars. Also, check the dense of stars closed to the center of the cluster.

- Another types of cluster is open cluster except globular cluster. Compare the open cluster with globular cluster, the number of stars is less than that of the globular cluster. Also, the gathering of stars is sparse, and, the general shape of cluster does not settle.

This picture is open cluster which is called Messier (M) 29. When the brightness of globular cluster and that of open cluster are almost same, which celestial object is more distant?

Let's consider about and write it down.



Images provided by National Astronomical Observatory of Japan