

Messier 19 or M19 Globular Cluster

Messier 19 (also designated NGC 6273) is a globular cluster in the constellation Ophiuchus. It was discovered by **Charles Messier** on June 5, 1764 and added to his catalogue of comet-like objects that same year. It was resolved into individual stars by **William Herschel** in 1784. His son, **John Herschel**, described it as "a superb cluster resolvable into countless stars". The cluster is located 4.5° WSW of Theta Ophiuchi and is just visible as a fuzzy point of light using 50 mm binoculars. Using a telescope with a 25.4 cm aperture, the cluster shows an oval appearance with a $3' \times 4'$ core and a $5' \times 7'$ halo. M19 is one of the most oblate of the known globular clusters. This flattening may not accurately reflect the physical shape of the cluster because the emitted light is being strongly absorbed along the eastern edge. This is the result of extinction caused by intervening gas and dust. When viewed in the infrared, the cluster shows almost no flattening. It lies at a distance of about 28.7 kly from the Solar System, and is quite near to the Galactic Center at only about 6.5 kly away.

This cluster contains an estimated 1,100,000 times the mass of the Sun and it is around 11.9 billion years old. The stellar population includes four Cepheids and RV Tauri variables, plus at least one RR Lyrae variable for which a period is known. Observations made during the ROSAT mission failed to reveal any low-intensity X-ray sources.

HISTORY

In the 18th century, while searching the night sky for comets, French astronomer Charles Messier began noticing a series of "nebulous objects" in the night sky. Hoping to ensure that other astronomers did not make the same mistake, he began compiling a list of these objects. Known to posterity as the Messier Catalog, this list has come to be one of the most important milestones in the research of Deep Sky objects. One of these objects is Messier 19, a globular star cluster located in the constellation Ophiuchus. This cluster is relatively difficult to spot with the naked eye, and appears as a fuzzy point of light with the help of magnification.

DESCRIPTION:

Speeding away from us at a rate of 146 kilometers per second, this gravitationally bound ball of stars measuring 140 light years in diameter, is one of the Messier globular clusters that has the distinction of being closest to the center of the Milky Way. At a little more than 5000 light-years from the intense gravitation of our own galactic core, it has played havoc on M19's round shape. In essence, Milky Way's gravity has caused M19 to become one of the most oblate of all globular clusters, with twice as many stars along the major axis as along the minor. And, although it is 28,000 light-years from Earth, it's actually on the opposite side of the galactic core. For all of its rich, dense mass, four RR Lyrae variable stars have been found in M19.

IS MESSIER 19 UNIQUE?

It has some stellar branch properties that are difficult to pinpoint. And even its age (though estimated at around 11.9 billion years old) is indeterminate. What's occurring is a horizontal branch gap – an not-quite explainable difference in the way the stars inside M19 are aging. A possible solution of the puzzle is to assume that a small fraction of the stellar population in the two clusters is strongly helium enriched. Before you yawn at viewing another globular cluster, think on the words about M19 from **Admiral Symth** "The whole vicinity affords a grand conception of the grandeur and richness even of the exterior creation; and indicate the beautiful gradation and variety of the heaven of heavens. Truly has it been said, 'Stars teach us as well as shine'.

AK, with Wikipedia Notes

