

## Messier 9 or NGC 6333

DATA J2000 epoch

Constellation Ophiuchus

Right ascension 17h 19m 12s

Declination  $-18^{\circ} 30' 58''$

Distance from us 25.8 kly

Apparent magnitude +7.9

Apparent dimensions 9.3'

Mass  $4.22 \times 10^5 M_{\odot}$

Radius 45 ly

Metallicity  $Fe / H = -1.77$

Estimated age 12.0 Gyr

Other designations HD 156587, NGC 6333



Messier 9 a globular cluster in the constellation of Ophiuchus

Messier 9 or M9 (also designated NGC 6333) is a globular cluster in the constellation of Ophiuchus. It is positioned in the southern part of the constellation to the southwest of *Eta Ophiuchi*, and lies atop a dark cloud of dust designated Barnard 64. Ophiuchus is located between the constellations Aquila, Serpens and Hercules, northwest of the centre of the Milky Way.

The southern part lies between Scorpius to the west and Sagittarius to the east. It is located opposite Orion in the sky. Ophiuchus is depicted as a man grasping a serpent; the interposition of his body divides the snake constellation Serpens into two parts, Serpens Caput and Serpens Cauda, which are nonetheless counted as one constellation. Ophiuchus straddles the equator but lies predominately to its south, even touching the ecliptic.

Messier 9 cluster was discovered by French astronomer **Charles Messier** on June 3, 1764 who then described it as a "nebula without stars". In 1783, English astronomer **William Herschel** was able to use his large reflector to resolve individual stars within the cluster. He found the cluster to be 7-8' in diameter with stars densely packed near the centre.

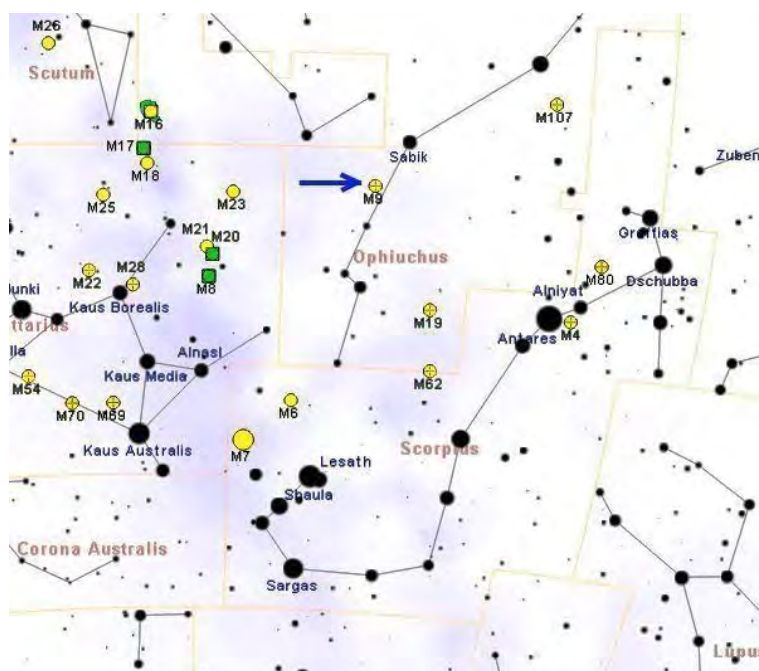
M9 has an apparent magnitude of 7.9, an angular size of 9.3', and can be viewed with a small telescope. It is one of the nearer globular clusters to the centre of the Milky Way Galaxy with a separation of around 5,500 light-years from the Galactic Core. Its distance from Earth is 25,800 light-years.

**The total luminosity of this cluster is around 120,000 times that of the Sun, the absolute magnitude being -8.04.**

The brightest individual stars in M9 are of apparent magnitude 13.5, making them visible in moderately sized telescopes. There have been 24 variable stars found in M9: 21 RR Lyrae variables, plus a long-period variable, Type II Cepheid, and an eclipsing binary.

**Based upon the periods of the RR Lyr variables, this cluster is classified as an Oosterhoff type II globular, which precludes an extra-galactic origin.**

*The Dutch astronomer Pieter Oosterhoff noticed that there appear to be two populations of globular clusters, which became known as the Oosterhoff groups. Both groups have weak lines of metallic elements. The lines in the stars of Oosterhoff type I cluster are slightly more pronounced than those in type II. Hence type I are referred to as "metal-rich" while*



M9 lies to the South/West of Eta Ophiuchi (Sabik), a binary system that is difficult to resolve in amateur telescopes but whose true nature was determined through use of more advanced techniques. The primary star is slightly larger and hotter than its companion. Individually each star is a fairly unremarkable A class main sequence star, but as a binary pair they are unusual.

*type II are "metal-poor". The type II group has a slightly longer period of RR Lyrae variable stars.*  
**NGC, the New General Catalogue of Nebulae and Clusters of Stars (abbreviated as NGC) is a catalogue of deep-sky objects compiled by John Louis Emil Dreyer in 1888, as a revision of John Herschel's General Catalogue of Nebulae and Clusters of Stars.**

The NGC contains 7,840 objects. It is one of the largest comprehensive catalogues, as it includes all types of deep space objects and is not confined to, for example, galaxies. Dreyer also published two supplements to the NGC in 1895 and 1908, known as the Index Catalogues, describing a further 5,386 astronomical objects. He published "A History of Astronomy from Thales to Kepler" in 1905, and in 1920 co-edited with **Herbert Hall Turner** the first official history of the Royal Astronomical Society.

Objects in the sky of the southern hemisphere were catalogued somewhat less thoroughly, mostly based on the observations by John Herschel or **James Dunlop**. The NGC had many errors, and a serious attempt to eliminate them was initiated by the NGC/IC Project in 1993, and the Revised New General Catalogue and Index Catalogue (RNGC/IC) was compiled in 2009 by **Wolfgang Steinicke**.

AK, with Wikipedia Notes