

Messier 92, Globular Cluster in Hercules

Messier 92 (also known as M92, M 92, or NGC 6341) is a globular cluster of stars in the northern constellation of Hercules. It was discovered by **Johann Elert Bode** in 1777, then published in the *Jahrbuch* during 1779. The cluster was independently rediscovered by **Charles Messier** on March 18, 1781 and added as the 92nd entry in his catalogue. M92 is at a distance of about 26,700 light-years away from Earth.

M92 is one of the brighter globular clusters in the northern hemisphere, but it is often overlooked by amateur astronomers because of its proximity to the even more spectacular Messier 13 (see below). It is visible to the naked eye under very good conditions.

OBSERVATION DATA (J2000 EPOCH)

Class IV

Constellation Hercules

Right ascension 17h 17m 07.39s

Declination +43° 08' 09.4"

Distance 26.7×10^3 ly (8.2 kpc)

Apparent magnitude (V) +6.3

Apparent dimensions (V) 14' arc minutes

Mass $2.0 \times 10^5 M_{\odot}$

Estimated age 14.2 ± 1.2 Gyr

Among the Milky Way population of globular clusters, Messier 92 is among the brighter clusters in terms of absolute magnitude. It is also one of the oldest clusters. Messier 92 is located around 16×10^3 ly above the galactic plane and 33×10^3 ly from the Galactic Centre. The heliocentric distance of Messier 92 is 26.7×10^3 ly (8.2 kpc).

Messier 92 has a very low abundance of elements other than hydrogen and helium; what astronomers term its metallicity. Relative to the Sun, the abundance of iron in the cluster equates to only 0.5% of the solar abundance. This puts the estimated age range for the cluster at 14.2 ± 1.2 billion years, or roughly the age of the Universe.

The cluster is not currently in a state of core collapse and the core radius is about 2 arcseconds. It is an Oosterhoff type II globular cluster, which means it belongs to the group of metal poor clusters with longer period RR Lyrae variable stars. The 1997 Catalogue of Variable Stars in Globular Clusters listed 28 candidate variable stars in the cluster, although only 20 have been confirmed. As of 2001, there are 17 known RR Lyrae variables in Messier 92. 10 X-ray sources have been detected within the 1.02 arcminute half-mass radius of the cluster, of which half are candidate cataclysmic variable stars.

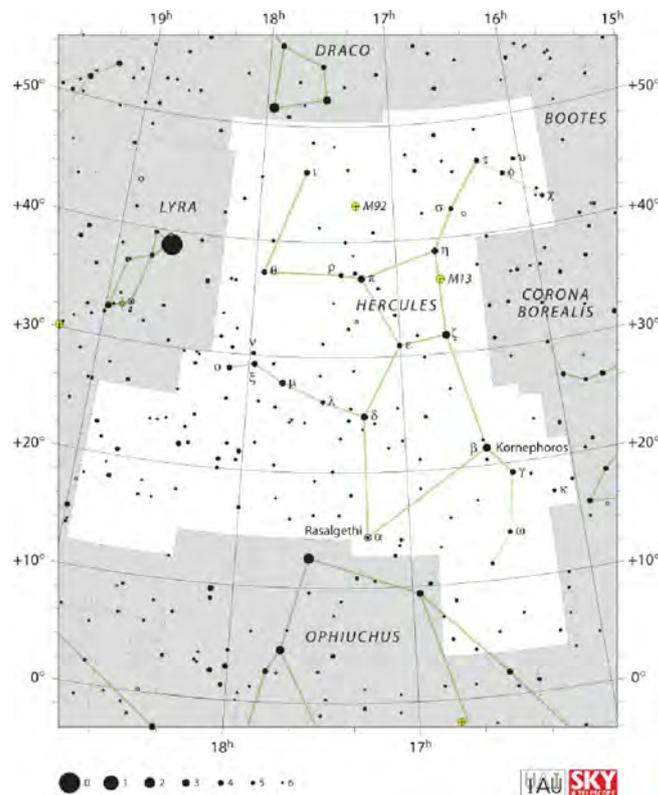
One other Messier Object in Hercules is Messier 13

Messier 13 or M13, also designated NGC 6205 and sometimes called the Great Globular Cluster in Hercules or the Hercules Globular Cluster, is a globular cluster of several hundred thousand stars in the constellation of Hercules.

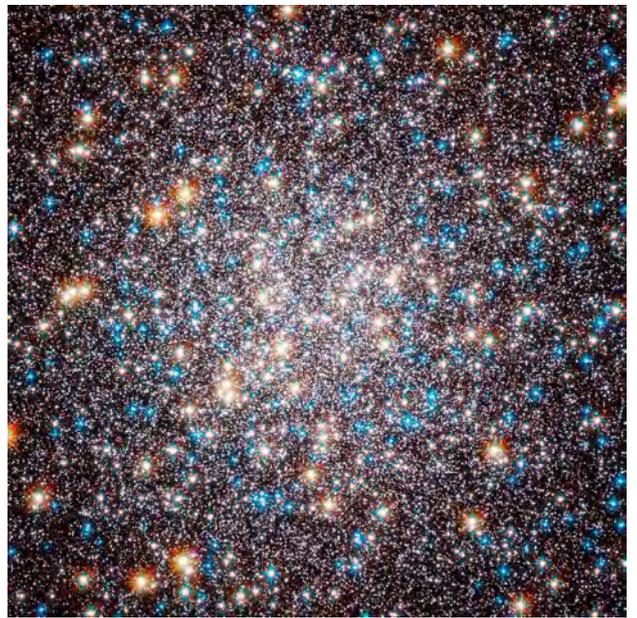
M13 was discovered by **Edmond Halley** in 1714, and cataloged by Charles Messier on June 1, 1764 into his list of objects not to mistake for comets; Messier's list, including Messier 13, eventually became known as the Messier Catalogue.



Messier 92 is one of the brightest globular clusters in the Milky Way, and is visible to the naked eye under good observing conditions.



About 1/3 of the way from Vega to Arcturus, four bright stars in the constellation of Hercules form the Keystone asterism. M13 can be seen partway between Zeta Herculis and Eta Herculis. Although only telescopes with great light-gathering capability fully resolve the stars of the Cluster, M13 can be visible to the naked eye depending on circumstances. With a low-power telescope, Messier 13 looks like a comet or fuzzy patch. The cluster is visible throughout the year from latitudes greater than 36 degrees north, with the longest visibility during northern hemisphere spring and summer. Its diameter is about 23 arc minutes and it is readily viewable in small telescopes. Nearby is NGC 6207, a 12th magnitude edge-on galaxy that lies 28 arc minutes directly northeast. A small galaxy, IC 4617, lies halfway between NGC 6207 and M13, north-northeast of the large globular cluster's centre.



Traditional binoculars make the Hercules Globular Cluster look similar to a round patch of light. At least four inches of telescope aperture will allow observing the stars that constitute M13 as small pinpoints of light. However, only larger telescopes allow resolving stars further into the centre of the cluster.

M13 is about 145 light-years in diameter, and it is composed of several hundred thousand stars, the brightest of which is a red giant, the variable star V11, with an apparent visual magnitude of 11.95. M13 is about 22,200 light-years away from Earth.

It wasn't until 1779 that the single stars in this globular cluster were resolved. Compared to the stars in the neighbourhood of the Sun, the stars in M13's stellar population are more than a hundred times denser. They are so densely packed together that they sometimes collide and produce new stars. The newly-formed, young stars, so-called "blue stragglers," are particularly interesting to astronomers.

MYTHOLOGY

Hercules is a constellation named after Hercules, the Roman mythological hero adapted from the Greek hero Heracles. Hercules was one of the 40 constellations listed by the 3rd century astronomer **Ptolemy**, and it remains one of the 88 modern constellations today. **It is the second largest of the modern constellations.**

Hercules is bordered by Draco to the north; Boötes, Corona Borealis, and Serpens Caput to the east; Ophiuchus to the south; Aquila to the southwest; and Sagitta, Vulpecula, and Lyra to the west. It ranks 5th among the 88 constellations in size.

Alpha Herculis, traditionally called Rasalgethi, is a triple star system, partly resolvable in small amateur telescopes, 359 light-years from Earth. The primary is an irregular variable star; it is a bright giant with a minimum magnitude of 4 and a maximum magnitude of 3. Its common name means "the kneeler's head".

According to **Gavin White**, the Greek constellation of Hercules is a distorted version of the Babylonian constellation known as the "Standing Gods". The story connecting Hercules with the constellation is recounted by **Dionysius of Halicarnassus**:

*On his way back to Mycenae from Iberia having obtained the Cattle of Geryon as his tenth labour, Heracles engaged in battle with two giants, **Albion and Bergion or Dercynus**. The opponents were strong; Hercules was in a difficult position so he prayed to his father Zeus for help. It was this kneeling position of Heracles when praying to his father Zeus that gave it the name "the Kneeler".*

AK, with EarthSky and Wikipedia Notes



Hercules as depicted in Urania's Mirror. The figure appears upside down in the sky relative to neighbouring constellations