

MESSIER 28 GLOBULAR CLUSTER

Messier 28 (also known as M28 or NGC 6626) is a globular cluster in the constellation Sagittarius. It was discovered by French astronomer **Charles Messier** on July 27, 1764 and is one of the authentic discoveries of Charles Messier, who catalogued it on July 27, 1764. He briefly described it as follows:

In the night of the 26th to the 27th of the month July 1764, I have discovered a nebula in the upper part of the bow of Sagittarius, at about 1 degree from the star Lambda of that constellation, & little distant from the beautiful nebula M22, which is between the head & the bow. That new one may be the third of the older one, & doesn't contain any star, as far as I have been able to judge when examining it with a good Gregorian telescope which magnifies 104 times. It is round, its diameter is about 2 minutes of arc; one sees it with difficulty with an ordinary refractor of 3 feet & a half of length. I have compared the middle of it with the star Lambda Sagittarii.

OBSERVATION DATA (J2000 EPOCH)

Class IV

Constellation Sagittarius

Right ascension 18h 24m 32.89s

Declination $-24^{\circ} 52' 11.4''$

Distance 17.9 kly (5.5 kpc)

Apparent magnitude (V) +7.66

Apparent dimensions (V) 11'.2

PHYSICAL CHARACTERISTICS

Mass $5.51 \times 10^5 M_{\odot}$

Radius 30 ly

VHB 15.55 ± 0.10

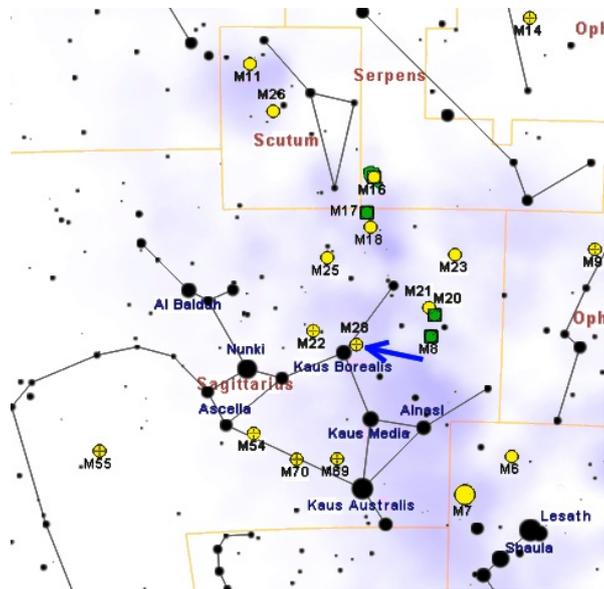
Metallicity [Fe / H] = $-1.32[3]$ dex

Estimated age 12.0 Gyr

NOTABLE FEATURES

Contains first pulsar discovered in a globular

Other designations M 28, NGC 6626, GCl 94



Map of Constellation Sagittarius, with M28 shown arrowed at the top of the Teapot

In the sky it is less than a degree to the northwest of the 3rd magnitude star *Kaus Borealis*. This cluster is faintly visible as a hazy patch with a pair of binoculars and can be readily found in a small telescope with an 8 cm aperture, showing as a nebulous feature spanning 11.2 arcminutes. At 15 cm the core becomes visible and a few individual stars can be resolved along the periphery. Larger telescopes will provide greater resolution, with a 25 cm telescope revealing a 2' core.

M28 is at a distance of about 17,900 light-years away from Earth. It has a combined 551,000 times the mass of the Sun and is 12 billion years old. 18 RR Lyrae type variable stars have been observed in this cluster. In 1986, M28 became the first globular cluster where a millisecond pulsar, PSR B1821–24, was discovered with the Lovell Telescope at Jodrell Bank Observatory. A total of 11 additional millisecond pulsars have since been detected in the cluster with the Green Bank Telescope. As of 2011, this is the third largest known population of pulsars in a cluster following Terzan 5 and 47 Tucanae.

John Herschel in 1847 described it as follows: Globular Cluster, very bright, round and very much compressed; gradually brighter toward the middle. A fine object that resolves into stars of 14 to 16 magnitude; It occurs in the Milky Way, of which the stars here are barely visible and immensely numerous.

AK, with Wikipedia Notes



Messier 28, taken by the Hubble Space Telescope; 2.5' view
Credit: NASA/STScI/WikiSky