Omega Centauri -- The Glittering Giant of the Southern Skies

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The globular cluster Omega Centauri -- with as many as 10 million stars -- is seen in all its splendor in this image captured with the WFI camera from ESO's La Silla Observatory. The image shows only the most central part of the cluster -- the full cluster appears almost as big as the full moon on the sky. The field of view of this image is about half a degree. North is up, East is to the left. This color image is a composite of B, V and I filtered images. Note that because WFI is equipped with a mosaic detector, there are two small gaps in the image which were filled with lower quality data from the Digitized Sky Survey. Can you find them? Credit: ESO/EIS

Sparkling away at magnitude 3.7 and appearing nearly as large as the full moon on the southern night sky, Omega Centauri is visible with the unaided eye from a clear, dark observing site. Even through a modest

amateur telescope, the cluster is revealed as an incredible, densely packed sphere of glittering stars. But astronomers need to use the full power of professional telescopes to uncover the amazing secrets of this beautiful globular cluster.

This new image is based on data collected with the Wide Field Imager (WFI), mounted on the 2.2-metre diameter Max-Planck/ESO telescope, located at ESO's La Silla observatory, high up in the arid mountains of the southern Atacama Desert in Chile. Omega Centauri is about 150 light-years across and is the most massive of all the Milky Way's globular clusters. It is thought to contain some ten million stars!

Omega Centauri has been observed throughout history. Both the great astronomer Ptolemy and later Johann Bayer catalogued the cluster as a star. It was not until much later, in the early 19th century, that an Englishman, the astronomer John Frederick William Herschel (son of the discoverer of Uranus), realised that Omega Centauri was in fact a globular cluster. Globular clusters are some of the oldest groupings of stars to be found in the halos that surround galaxies like our own Milky Way. Omega Centauri itself is thought to be around 12 billion years old.

Recent research into this intriguing celestial giant suggests that there is a medium sized black hole sitting at its centre. Observations made with the Hubble Space Telescope and the Gemini Observatory showed that stars at the cluster's centre were moving around at an unusual rate — the cause, astronomers concluded, was the gravitational effect of a massive black hole with a mass of roughly 40 000 times that of the Sun.

The presence of this black hole is just one of the reasons why some astronomers suspect Omega Centauri to be an imposter. Some believe that it is in fact the heart of a dwarf galaxy that was largely destroyed in an encounter with the Milky Way. Other evidence points to the several generations of stars present in the cluster — something unexpected in a

typical globular cluster, which is thought to contain only stars formed at one time. Whatever the truth, this dazzling celestial object provides professional and amateur astronomers alike with an incredible view on clear dark nights.

Source: ESO