

Image: Hubble captures a cluster in the Large Magellanic Cloud

December 8 2023, by Claire Andreoli



NASA's Hubble Space Telescope can resolve individual stars in the densely-packed cores of globular clusters like NGC 2210. Credit: ESA/Hubble & NASA, A. Sarajedini

This striking Hubble Space Telescope image shows the densely packed

globular cluster known as NGC 2210, which is situated in the Large Magellanic Cloud (LMC). The LMC lies about 157,000 light-years from Earth and is a so-called satellite galaxy of the Milky Way, meaning that the two galaxies are gravitationally bound. Globular clusters are very stable, tightly bound clusters of thousands or even millions of stars. Their stability means that they can last a long time, and therefore globular clusters are often studied to investigate potentially very old stellar populations.

In fact, 2017 [research](#) using some of the data that were also used to build this image revealed that a sample of LMC [globular clusters](#) were incredibly close in age to some of the oldest stellar clusters found in the Milky Way's halo. They found that NGC 2210 specifically probably clocks in at around 11.6 billion years old.

Even though this is only a couple of billion years younger than the universe itself, it made NGC 2210 by far the youngest globular cluster in their sample. All other LMC globular clusters studied in the same work were found to be even older, with four of them more than 13 billion years old. This tells astronomers that the oldest globular clusters in the LMC formed contemporaneously with the oldest clusters in the Milky Way, even though the two galaxies formed independently.

As well as being a source of interesting research, this old-but-relatively-young cluster is also extremely beautiful, with its highly concentrated population of stars. The [night sky](#) would look very different from the perspective of an inhabitant of a planet orbiting one of the stars in a globular cluster's center: the sky would appear to be stuffed full of stars, in a stellar environment that is thousands of times more crowded than our own.

Provided by NASA

Citation: Image: Hubble captures a cluster in the Large Magellanic Cloud (2023, December 8)
retrieved 28 April 2024 from

<https://phys.org/news/2023-12-image-hubble-captures-cluster-large.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.