

Video: Guide to our Galaxy

November 22 2013

This virtual journey shows the different components that make up our home galaxy, the Milky Way, which contains about a hundred billion stars.

It starts at the black hole at the centre of the Milky Way and with the [stars](#) that orbit around it, before zooming out through the central Galactic Bulge, which hosts about ten billion stars.

The journey continues through a younger population of stars in the stellar disc, home to most of the Milky Way's stars, and which is embedded in a slightly larger gaseous disc. Stars in the disc are arranged in a spiral arm pattern and orbit the centre of the Galaxy.

The discs and bulge are embedded in the stellar halo, a spherical structure that consists of a large number of [globular clusters](#) – the oldest population of stars in the Galaxy – as well as many isolated stars. An even larger halo of invisible dark matter is inferred by its gravitational effect on the motions of stars in the Galaxy.

Looking at a face-on view of the Galaxy we see the position of our Sun, located at a distance of about 26 000 light-years from the Galactic Centre.

Finally, the extent of the stellar survey conducted by ESA's Hipparcos mission is shown, which surveyed more than 100 000 stars up to 300 light-years away from the Sun. In comparison, ESA's Gaia survey will study one billion stars out to 30 000 light-years away.

Provided by European Space Agency

Citation: Video: Guide to our Galaxy (2013, November 22) retrieved 20 April 2024 from <https://phys.org/news/2013-11-video-galaxy.html>

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