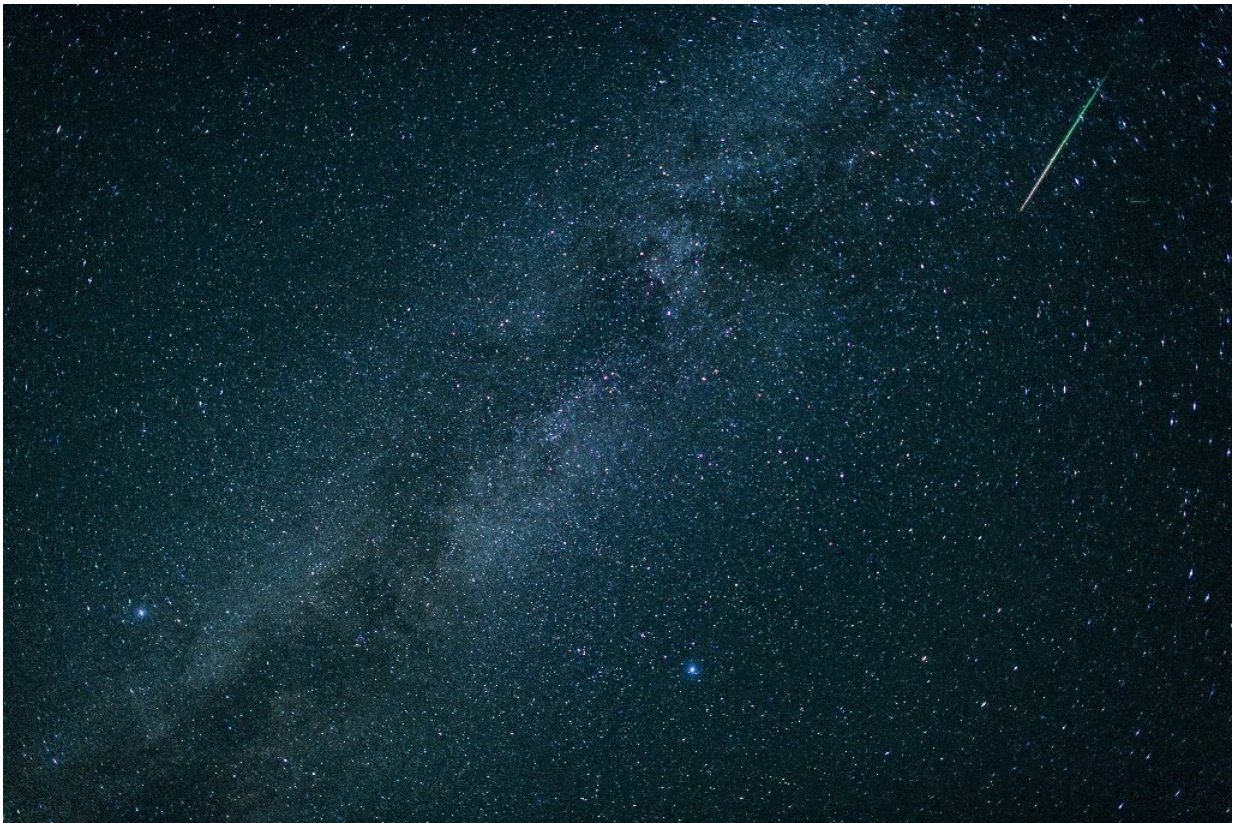


Astronomers decode Milky Way's violent birth

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The Milky Way contains at least 100 billion stars and its centre contains an intense radio source believed to be the supermassive black hole Sagittarius A

The Milky Way gobbled up a galaxy one quarter of its mass 10 billion years ago in a "violent collision" that didn't fully settle for eons,

astronomers said in new research published Monday.

Previous studies had suggested that our home galaxy was composed of two separate sets of stars, but the precise chronology of the galactic merge remained elusive.

Researchers from the Instituto de Astrofísica de Canarias (IAC) used the Gaia space telescope to take exact measurements of the position, brightness and distance of around one million stars in the Milky Way within 6,500 light years of the Sun.

They identified two distinct stellar sets—one "bluer" and containing less metal, one "redder" containing more.

After studying their movement and composition, the team determined that both sets of stars were equally old, but the bluer ones had been set into a "chaotic motion"—evidence of the Milky Way swallowing a smaller galaxy in the distant recesses of time.

"The novelty of our work is that we have been able to assign precise ages to the stars that belong to the [galaxies](#) that merged and, by knowing these ages, when the merger took place," Carme Gallart, lead author of the study published in *Nature Astronomy*, told AFP.

She said the collision, around 10 billion years ago, would have taken millions of years to unfold.

"It's a very gradual process—it's not something like a car crash—it's something that has an effect on the galaxy as a whole. It's very massive so it happens slowly in human terms, not so slowly in cosmic time."

The team believes remnants of the dwarf galaxy, known as Gaia-Enceladus, eventually formed the halo of the present-day Milky Way.

They also determined that the collision contributed to "violent bursts" of [star formation](#) for around another four billion years, after which gas from those formations settled into the Milky Way's thin disk that runs through the centre of the galaxy.

The Milky Way contains at least 100 billion [stars](#) and its centre contains an intense radio source believed to be the supermassive black hole Sagittarius A*.

More information: Uncovering the birth of the Milky Way through accurate stellar ages with Gaia, *Nature Astronomy* (2019). [DOI: 10.1038/s41550-019-0829-5](#)

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