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# Andromeda 'suburbs' bigger than thought: new research

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[CBC News](#)

Astronomers have found an enormous halo of stars around the Andromeda galaxy, suggesting the nearby galaxy could be up to five times bigger than previously thought.

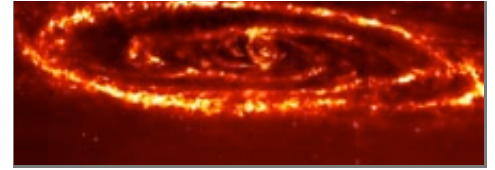
"I am absolutely astounded by how big this halo is. As we looked farther and farther out, we kept finding stars that look like halo stars," says Puragra (Raja) Guhathakurta, professor of astronomy and astrophysics at the University of California, Santa Cruz.

Guhathakurta presented the findings on Sunday at a meeting of the American Astronomical Society meeting in Seattle.



The researchers, out of UCSC, UCLA and the University of Virginia, say their work promises to shed new light on how large galaxies formed.

"Galaxy formation theories tell us that halos are pristine, the oldest component of the galaxy, but this is based almost entirely on studies of our own galaxy," says Guhathakurta. "A detailed study of this newly discovered Andromeda halo will allow us to test whether these theories apply more generally to galaxies other than the Milky Way."



This image provided by NASA of an infrared photograph taken with NASA's Spitzer Space Telescope reveals a never-before-seen dust ring deep within the Andromeda galaxy (near center of the image).  
(NASA/AP)

## Close enough to see stars

Andromeda (also known as M31) is a large spiral galaxy similar to the Milky Way. Andromeda can be seen from Earth with the naked eye as a smudge in the sky.

While it is difficult for astronomers to study the overall structure of the Milky Way from Earth's vantage point within it, Andromeda is close enough for them to observe individual stars within it.

Andromeda is about 2.5 million light-years from Earth and is the largest galaxy in the Local Group, which also includes the Milky Way and about 30 smaller galaxies.

The astronomers' findings show that Andromeda's "suburbs" are so vast that they nearly overlap with those of the Milky Way.

## Scientists searched for halo for 2 decades

Andromeda's stellar halo is a distinct structural component of the galaxy that has eluded astronomers for over 20 years, says Guhathakurta.

He and his colleagues were able to isolate the halo using a sophisticated technique for distinguishing halo stars in Andromeda from the more numerous foreground stars in the Milky Way.

A foreground star with low luminosity and a luminous star that is much farther away can be hard to tell apart because they appear to be equally bright from our perspective, says Guhathakurta.

"A firefly 10 feet [3.05 metres] away and a powerful beacon in the distance can have the same apparent brightness. In this case, the fireflies are dwarf stars in our own galaxy and the beacons are red giant stars in Andromeda."