Huge extragalactic structure found hiding behind the Milky Way

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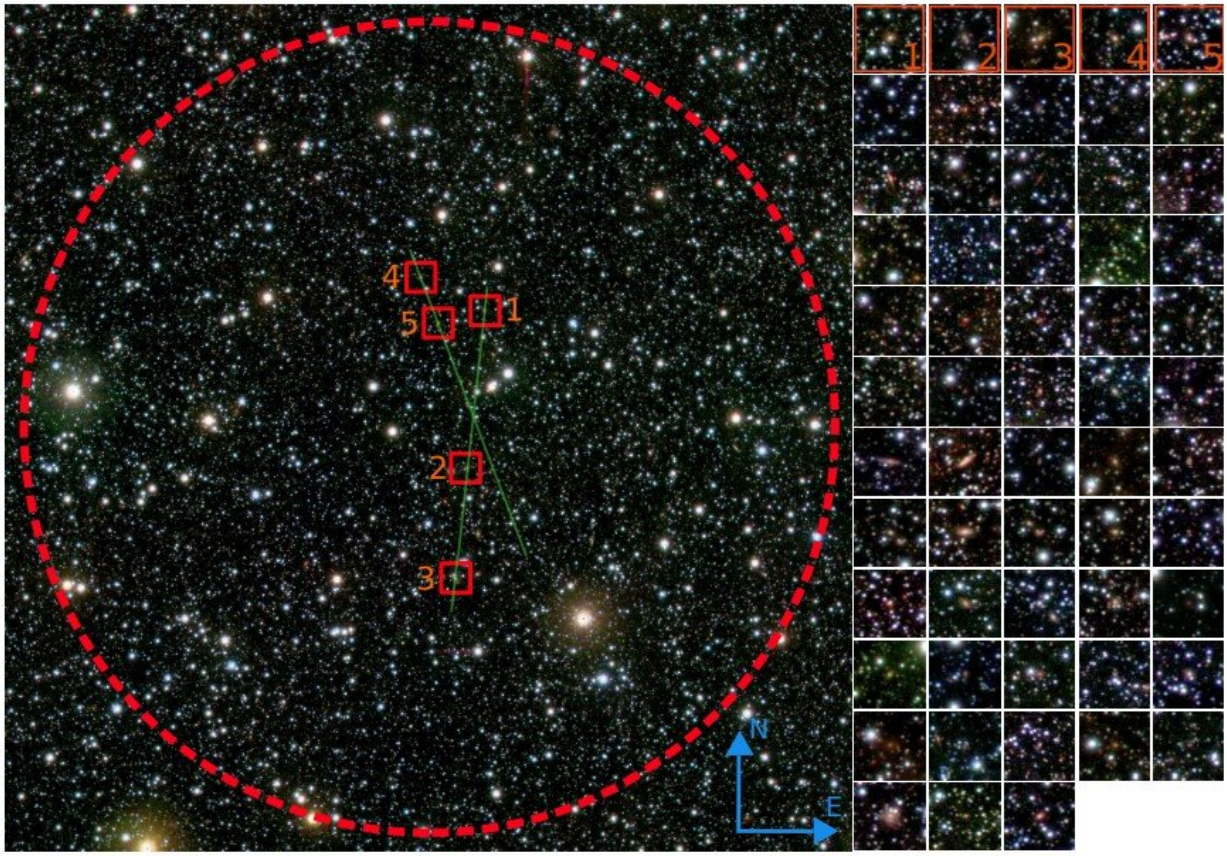

False-color Z (blue), J (green), and Ks (red) image of a region corresponding to the galaxy group/cluster candidate. The red dashed circle delimits the six arcmin radius central area, the green lines indicate the two long-slit positions and the red squares show the five galaxies observed with F2. In the right panels we zoomed the 58 galaxy candidates within the studied area. The length of each box side is 20 arcsec. Credit: *arXiv* (2022). DOI: 10.48550/arxiv.2210.16332

A team of researchers with members from Universidad Nacional de San Juan, Universidade Federal do Rio Grande do Sul and Universidad Andres Bello has found evidence of a large extragalactic assembly hiding behind one part of the Milky Way galaxy. The group has published a paper describing their findings on the arXiv preprint server while awaiting publication in the journal *Astronomy & Astrophysics*.

Space scientists have known for some time that there is one part of the night sky that is mostly obscured from view due to a bulge in the galaxy. Known as the "zone of avoidance," it makes up approximately 10% of the dark sky and has had researchers wondering what might be behind it. Because it offers researchers so little to work with, the zone has not been very well studied; thus, little is known about what it might be hiding. In this new effort, the researchers used a variety of tools to gain a better understanding of what might be hidden from view.

Over the past several years, scientists have used a variety of tools to probe the zone of avoidance. The researchers with this new effort started by gathering all of the data that has been collected so far and added more using information recently obtained from the VVV Survey.

The VVV Survey is a project sponsored by an intergovernmental research organization called the European Organization for Astronomical Research in the Southern Hemisphere. It involves multiple state-of-the-art research facilities located at multiple sites. The survey has been involved in studying the stars using infrared emissions rather than visible light. Such emissions are able to pass through the gas, dust and light from the stars in the bulge and on to instruments set up here on Earth.

In studying the infrared imagery, the researchers found that they were able to identify several galaxies that exist far beyond the Milky Way. And because of their numbers, the researchers believe that together, they

make up what they describe as a massive extragalactic structure. They estimate that there might be as many as 58 galaxies in the structure.

More information: Daniela Galdeano et al, Unveiling a new structure behind the Milky Way, *arXiv* (2022). DOI: 10.48550/arxiv.2210.16332