

## Low surface-brightness galaxy population in the Centaurus Cluster from the VEGAS survey

Low surface-brightness (LSB) dwarf galaxies and the subgroup of ultra-diffuse galaxies (UDGs) are an interesting class of objects as their evolutionary paths, contribution to the galaxy luminosity function, formation scenarios and dark matter content are still poorly constrained.

The study of LSB galaxies allows us to test the galaxy formation theories in a so far unexplored and unique parameter space. It also allows us to test gravity models because LSB galaxies have the lowest stellar mass content and are strongly affected by tidal forces.

A complete census of LSB galaxies is needed to test cosmological models and, in particular, to investigate the missing satellite problem.

The upcoming large-sky surveys are going to explore the  $\mu_g > 30$  mag/arcsec<sup>2</sup> regime, providing a notable boost in the study of galaxy structure down to the LSB regime.

Using the deep imaging data from the VST Early Type Galaxy Survey (VEGAS),

I developed a new detection tool to identify and analyse LSB galaxies.

First promising results have been already obtained for the Centaurus cluster of galaxies, where I detected more than 200 new LSB galaxies, including UDGs.

This work is part of my PhD project, which aims at applying the detection tool on the entire VEGAS sample to obtain a census of more new  $\sim 5000$  LSB galaxies. In this talk, I would like to briefly illustrate the detection tool and the preliminary results, and how it could be implemented for the future deep imaging surveys.

### sessioni congresso

Galassie e Cosmologia

**Primary author:** BELLUCCO, Nicola (Università degli Studi di Padova)

**Co-author:** IODICE, Enrichetta (Istituto Nazionale di Astrofisica (INAF))

**Presenter:** BELLUCCO, Nicola (Università degli Studi di Padova)

**Session Classification:** Galassie e Cosmologia