

Fornax cluster Deep Survey (FDS): Low surface brightness structures in the Fornax cluster.

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Abstract:

In recent years it has been shown that galaxies are surrounded by stellar streams that are remnants from their past interactions (e.g. Mihos et al. 2005, Duc et al. 2014). These streams are invaluable fossils of the interaction history of galaxies with their environment, providing a new and very powerful way of studying galaxy evolution.

Fornax cluster Deep Survey (FDS) is a deep optical multi-band survey performed using the 1 deg x 1 deg field of view instrument OmegaCAM attached to VST. FDS will cover an area of 25 deg² centered at the core of the Fornax cluster, of which 20 deg² have been finished so far. The whole area is imaged with Sloan u,g,r and i filters with depths similar to NGVS (Ferrarese et al. 2012). Due to its depth, color information and continuous coverage, the FDS data allows us to study the low surface brightness structures in Fornax cluster in unprecedented detail.

We have visually identified and classified an extensive sample of diffuse structures in the FDS images. By comparing the images of different filters with each other and the Dark Energy Survey data (Diehl et al., 2014), we have confirmed that all the new-found objects are real structures instead of imaging artefacts. Here we will present the new sample of low surface brightness structures in the Fornax cluster.



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