

Structural Relationships of Dwarf Galaxies in the Virgo Cluster.

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Is there an evolutionary relationship between blue compact dwarf galaxies (BCD), normal dwarf irregular galaxies (dIm) and dwarf elliptical galaxies (dE)? Would BCDs look like normal dIm or dEs once their central starburst is shut down? In order to probe these fundamental questions about galaxy evolution and transformation, we carried out a study of the structural parameters of dwarf galaxies in the Virgo Cluster. Our analysis is based on the deep optical imaging data from the Next Generation Virgo Cluster Survey (NGVS), which reaches down to a limit surface brightness of 29 mag/arcsec^2 in g band, and this offers us an excellent opportunity for exploring the underlying low surface brightness host component of dwarf galaxies. In particular, we determined the structural parameters, such as the effective radii, average surface brightness, clumpiness, and asymmetry, of dIm, the low surface brightness host of BCDs, and dEs with recent star formation activities in the Virgo Cluster. We explored the possible existence or lack of structural relationships between these different types of Virgo dwarf galaxies, which provides important implications on the evolution of the populations of dwarf galaxies in a galaxy cluster environment.