

HI observations of ultra diffuse galaxies (UDGs) in galaxy groups

Abstract

We propose HI observations of two galaxy groups, expected to contain a significant number of optically identified ultra diffuse galaxies (UDG). MeerKAT HI data of the proposed UDGs, augmented with data from the literature, will provide a sample large enough to carry out a series of comparative statistical studies into their origin and evolution. For the resolved UDGs, we will be able to study the effects of the group environment on the evolution of HI in these galaxies and also investigate their dark matter content. Results from the proposed observations will provide a significant step up in the HI data available to understand UDG intrinsic properties, environmental effects on their evolution and verify the proposed formation scenarios for these galaxies. We are requesting a total of 15 hours of telescope time, distributed over 4 pointings, in L band 32k correlator spectral line observation mode.