

Title

HIGHLIGHTS: The role of satellites in shaping Leo I's iconic HI ring

Abstract

We propose a pilot study of the M96-M95 spiral galaxy system, a sub-group of Leo I and its iconic ~ 200 kpc HI ring, at exquisite spectral and spatial resolution. While the large HI structures in Leo I have been studied for decades, several open questions regarding their formation mechanism remain, especially considering new smaller scale discoveries such as the faint satellites from LIGHTS, an ongoing deep optical survey of the tidal features in nearby disk galaxies, and the optically "dark" HI clouds. The proposed observations will provide the kinematic information needed to investigate (1) if the faint galaxies and dark clouds have a common origin and (2) if the satellites are interacting with the M96-M95 system and complex environment. MeerKAT "HIGHLIGHTS" will demonstrate the need for the combined use of deep optical and HI mapping to address fundamental issues on galaxy evolution.