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STAR FORMATION IN UNPERTURBED LIRGS

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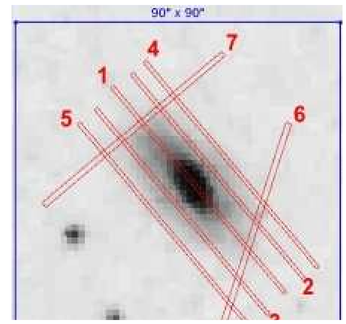
Luminous infrared galaxies (LIRGs) are galaxies with $L_{\rm FIR} > 10^{11}$ $L_{\rm sun}$ (Sanders & Mirabel 1996). For a star-forming galaxy to emit at a LIRG level, it must have a very high star formation rate (SFR). In the local Universe, the star formation (SF) is primarily triggered by interactions. However, at intermediate redshift, a large fraction of LIRGs are disk galaxies with little sign of recent merger activity (Zheng et al. 2004). The question arises whether the intermediate redshift LIRGs are "triggered" or experiencing "normal", if elevated, SF. Understanding these SF processes is important since this type of systems may have contributed to 20% or more of the cosmic star-formation rate in the early Universe (Blain & Phillips 2002).

To address this issue, we study local isolated late-type galaxies displaying LIRG activity in the Local Universe using different observational techniques in order to trace the SF history of these systems. Here we present preliminary observational results.

Galaxies have been taken from the AMIGA sample (Verdes-Montenegro et al. 2005) which aims to build a statistically sample of the most isolated galaxies in the Local Universe. This is of great importance since we want to guarantee there are no nearby companions perturbing these galaxies and thus inducing SF through tidal perturbations or torques. None of these galaxies seems to harbor any AGN, which indicates the excess in IR luminosity is solely due to very enhanced star-forming activity.

Bottom panel of Figure 1 shows the long-slit spectrum of a region in the Sc galaxy CIG 866. This region is indicated with number 2 in the top panel of the same figure. Though this is a rough spectrum, we can see that [NII] seems to be brighter than Hα which could be indicative of on-going shocks in these regions. The extended kinematics of these regions, derived with the scanning Fabry-Perot interferometer PUMA need to be analyzed in order to explore the see if any important non-circular motions are present in these regions indicating violent star-forming processes.



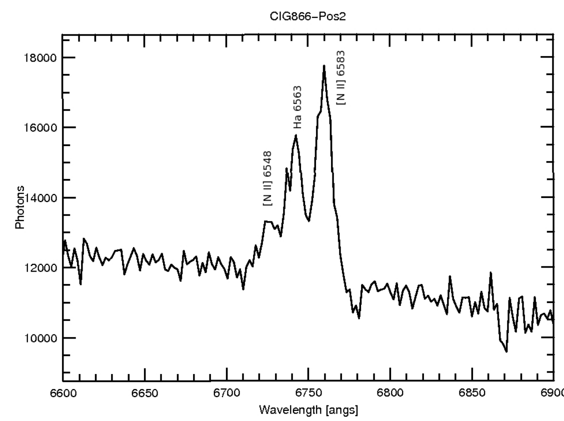


Fig. 1. Top panel: Direct DSS image of CIG 866 indicating different list positions. Bottom panel: Spectrum corresponding to slit number 2. Observations were done on the 2.1 m telescope in the OAN-SPM using the Boller & Chivens spectrometer.

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