

HI AND MASS DISTRIBUTION IN THE DWARF
"REGULAR" GALAXY UGC 2259

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ABSTRACT. HI synthesis observations of the dwarf "regular" galaxy UGC 2259 are presented. This system turns out to be most suitable for our purpose of studying the mass distribution in late-type spirals. It has a symmetrical HI distribution extending over $2 D_{25}$ and a regular velocity field which shows no sign of departure from axial symmetry. Despite the fact that UGC 2259 is fainter than most other objects of the same morphological type, its HI properties are typical of what is expected from an Scd galaxy with a $M_H/L_B = 0.43$.

While other low-luminosity galaxies, studied so far, exhibit solid-body type rotation curves, the most remarkable result for this dwarf system is that it has a flat rotation curve similar to what is seen in more massive spirals. The main difference between UGC 2259 and other low-luminosity galaxies is its regular appearance.

Despite the uncertainties in the mass distribution due to the lack of surface photometry, the most probable model implies that the dark halo and the luminous disk contribute about equally to the circular velocity at the Holmberg radius.

This result, by extending the luminosity range of well studied galaxies, strengthens earlier suggestions (Carignan and Freeman, 1985; Carignan, 1985) that the ratio of dark-to-luminous matter appears to be independent of galaxy mass and/or luminosity.

References

- Carignan, C. 1985, *Ap. J.*, 298, in press.
Carignan, C., and Freeman, K.C., 1985, *Ap. J.*, in press.