

Disk structures in the CGS Survey

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Abstract. The Carnegie-Irvine Galaxy Survey (CGS) is a long term program to investigate the photometric and spectroscopic properties of a statistically complete sample of 605 bright ($B_T \leq 12.9$ mag), southern ($\delta \leq 0$ deg) galaxies using the facilities at Las Campanas Observatory. For each galaxy, we have broadband images (BVRI) with good seeing ($\approx 1''$) and deep surface brightness (≈ 27.5 B-band). Using the IRAF task ELLIPSE and the fourier decomposition method, we measured the bar and the lopsidedness properties of disk galaxies in the CGS sample. Our results show that the bar fraction is lower in the early-type galaxies than that in the late-type ones. The (relative) bar length is longer in early-type ones, and strong bars are rare (the one with large ellipticity). We find that the lopsidedness is independent on the galaxy environment, and correlation studies suggest that the lopsided disk may have helped drive gas inward to form stars.
