

An H I Survey of Actively Star-Forming Dwarf Galaxies

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We present the results of a survey of the H I content of a large, complete sample of actively star-forming dwarf galaxies. All observations were obtained with the 305-m telescope of the Arecibo Observatory. The sample consists of all galaxies cataloged in the Markarian, Case, Michigan, Wasilewski, and Haro surveys which were known to have $M_B > -17.0$ and which lie within the Arecibo declination range. In all, 139 galaxies were observed, of which 122 were detected. The data consist of high S/N H I profiles, obtained with high velocity resolution (1-2 km/s channel spacing) to ensure adequate sampling of the profiles, which are often quite narrow. The neutral gas properties of the sample are analyzed and combined with optical data when the latter are available. These objects possess a surprisingly wide range in the levels of their neutral gas content. Some of these star-forming galaxies appear to be very gas-poor even when compared with samples of less active dwarfs, but many others have large H I mass to blue light ratios. It is suggested that many of the currently starbursting dwarfs evolved from progenitor galaxies which initially had extremely high M_{HI}/L_B and were likely to be ultra-low surface brightness galaxies. These results hint at the presence of a large population of optically faint gas-rich dwarf galaxies, such as envisioned by Impey, Bothun & Malin (1988) and others.