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Giant Molecular Clouds in Dwarf Irregulars

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Irregular dwarf galaxies were believed to show a strong deficiency in molecular line emission when compared with spiral galaxies of similar star forming activity. We present new molecular line data from two such galaxies, IC10 and NGC3077. We have mapped three giant molecular clouds (GMC's) in the J=1-0 and 2-1 lines with peak line temperatures up to 1 K. Two associated H₂O masers, the most luminous known in dwarf irregulars, were monitored over a 3 and 1 year time interval, respectively. Two of the three GMC's are found to be larger than the largest GMC's known in the Galaxy, dominating the molecular mass in their parent dwarf irregulars. It is speculated that the lack of density waves may cause the large sizes.

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Globular Clusters in NGC 676

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We report observations of the globular cluster system of the edge-on SO-a galaxy NGC 676 = UGC 1270. In its overall physical parameters NGC 676 closely resembles the Sombrero galaxy, NGC 4594. With an absolute blue magnitude of -21.6, it is one of the very luminous objects of this its morphological class.

Deep red exposures were taken with the CCD prime-focus camera of the 3.5m telescope at the Calar Alto Observatory. The clusters were searched by an automatic point-source identification algorithm. Our limiting magnitude is 25.1, reaching well beyond the peak of the globular cluster luminosity distribution in NGC 676. After corrections for incompleteness, area coverage and clusters fainter than our detection limit, we find a total number of 2500 globular clusters. This specific cluster frequency is $S = 2.8$. The spatial density distribution follows a power-law with a slope of -0.22.

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