A Targeted Survey for HI Clouds in Galaxy Groups

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Five galaxy groups with properties similar to those of the Local Group have been surveyed for clouds with the Arecibo Telescope. In total 300 pointings have been observed on grids of approximately $2.5 \times 1.5$ Mpc centred on the groups. The $4.5\sigma$ detection limit on the minimal detectable masses is approximately $7 \times 10^6 \, (H_0 = 65)$. All detections could be attributed to optical galaxies; no significant detections of clouds have been made. This null result leads to the conclusion that the total mass of intragroup clouds must be less than 10 per cent of the total mass of galaxy groups and less than 0.05 per cent of the dynamical mass. The recent hypothesis that Galactic high velocity clouds are Local Group satellite galaxies is highly inconsistent with these observations.