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An Investigation of the Canis Major Dwarf Galaxy WILLIAM LEE POWELL JR., RON WILHELM, AMY WESTFALL, ADAM LAUCHNER, ABEL DIAZ, Texas Tech University — Martin et al. (2004) uncovered evidence for a remnant dwarf galaxy in Canis Major. Martin et al. discovered an overdensity of M-giant stars using 2MASS colors. The spatial distribution of the M-giants indicate that Canis Major is an extended, and likely disrupted, group of stars that that are centered at a distance moduli of (m-M) = 15.8 and extending over roughly 30 degrees. This discovery is not without controversy. Momany et al. (2004) found that the proper motions of the M-giants in the direction of Canis Major are consistent with the thick disk of the Galaxy, but also found modeled number densities for these stars that are consistent with the warp and flaring of the outer disk of our Galaxy. This led Momany et al. to the conclusion that Martin et al. were actually observing the outer warp of our Galaxy. We made a photometric survey to find candidates of the Canis Major galaxy which could belong to the horizontal branch of the galaxy. We then obtained spectroscopy of these stars in order to determine luminosity class, metal abundance and distance estimates. The goal was to find a group of horizontal branch stars, as is expected for an old population, in the Canis Major dwarf. This would have ramifications for our understanding of the thick disk population in our Galaxy.

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