— satellite dwarf galaxies are much more likely to be quenched. We examine this dichotomy using a suite of extremely high-resolution, zoom-in cosmological simulations that sample both isolated field environments and the areas surrounding halos of Milky-Way analog galaxies. By comparing the properties of dwarf galaxies in both environments, we find that not only are isolated dwarf galaxies likelier to be star forming, they are also more likely to exhibit rising star formation histories and to have younger stellar populations than unquenched satellites. Moreover, these isolated galaxies have different stellar and baryonic masses than satellite galaxies of the same halo mass. Notably, these environmental differences happen across distance scales larger than the host virial radii, indicating that processes beyond direct interactions with the host galaxy may play a role in the evolution of the dwarf galaxies.

168.08 — Spitzer Imaging of the SHIELD Galaxies

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We present new Spitzer 3.6 µm images of the 82 galaxies in the "Survey of HI in Extremely Low-mass Dwarfs" (SHIELD). Selected from the ALFALFA blind HI survey, SHIELD is a volumetrically complete sample of galaxies with HI mass reservoirs smaller than 2x10^7 M$_\odot$. These galaxies populate extreme portions of parameter space and they offer unique opportunities to explore the physical properties of very low-mass halos in the local Universe. The new Spitzer images allow us to measure the stellar masses of the SHIELD galaxies. We discuss methods used to remove image artifacts and to excise foreground and background contaminants. We then measure the total 3.6 µm fluxes of the systems and apply a mass to light ratio in order to derive their stellar masses. We discuss the application of this technique to the Leoncino dwarf (AGC198691, one of the most extremely metal-poor galaxies known), resulting in a stellar mass of 7.3x10^7 M$_\odot$. This work has been supported by NSF AST-1637339 and by Macalester College.

168.09 — Characterizing the Physical Properties of Extremely Low-Mass SHIELD Galaxies

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Intrinsically faint, isolated, extremely low-mass galaxies make up one of the most numerous, yet underexplored, galaxy populations in the Universe. The Survey of HI in Extremely Low-mass Dwarfs (SHIELD), which includes a complete sample of the lowest gas mass systems from the Arecibo Legacy Fast ALFA (ALFALFA) blind HI survey, aims to characterize the gas, star-formation, and evolution of galaxies at the faint end of the luminosity function. We have obtained Hubble Space Telescope (HST) imaging of the resolved stars and Jansky Very Large Array (VLA) data of the neutral hydrogen in 30 SHIELD galaxies. From these data, we measure Tip of the Red Giant Branch distances, stellar masses, gas masses, recent star formation rates, HI circular velocities, and dynamical masses of the SHIELD galaxies to place them in a cosmological context and gain a deeper insight on the evolution of low-mass galaxies.

168.10 — Molecular Gas around a Hot Superbubble in Haro 2

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The dwarf galaxy Haro 2 is one of the closest Lyman alpha emitting galaxies. Evidence for galactic outflow makes it an ideal candidate for studying the process of starburst feedback on molecular gas. We have observed CO(2-1) in Haro 2 with the Submillimeter Array with velocity resolution 4.1 km/s and spatial resolution 2.0" x 1.6" (200pc x 160 pc). The maps reveal that the molecular gas comprises two components: 1) bright compact clumps associated with the embedded star clusters of the starburst, and 2) a halo of fainter emission extending 1 kpc to the northeast of the starburst. The extended emission, which is brighter in CO(2-1) than in CO(1-0), coincides with an X-ray bubble and has the kinematic signatures of a