The LITTLE THINGS Survey

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Dwarf galaxies seem so simple. Yet the processes that lead to star formation on galactic scales are poorly understood. We have, therefore, embarked on a comprehensive study of a sample of 42 dwarf irregular (dIm) galaxies spanning a range in luminosity in order to unravel the processes which govern star formation in these tiny systems. Our approach begins with assembling a complete dataset on these galaxies, tracing their stellar populations, gas content, dynamics, and star formation indicators. We have been granted 376 hours of time with the VLA in the current B, C, and D array configurations to obtain deep HI-line maps of dIm galaxies with high angular and velocity resolution. We will combine these data with optical, UV, and IR data to answer the following questions: 1) What regulates cloud/star formation in tiny galaxies? 2) How is star formation occurring in the outer parts of dwarf galaxies, where the gas is gravitationally stable? 3) What happens to the star formation process at breaks in the exponential stellar light profiles? 4) And, what is going on with Blue Compact Dwarfs? More information can be found at http://www.lowell.edu/users/dah/littlethings/.

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