

Abstract Submitted  
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**The M101 Satellite Luminosity Function and the Halo to Halo Scatter Among Local Volume Hosts**<sup>1</sup> PAUL BENNET, Texas Tech University — The Lambda Cold Dark Matter model for structure formation has been very successful at reproducing observations of large scale structures; however challenges emerge at sub-galactic scales. Observations of the faint end of galaxy satellite luminosity functions are important in reconciling the differences at these smaller scales. This is crucial to constrain the physics governing galaxy formation and evolution and will also allow us to understand the relation between the stellar content and dark matter halo in dwarf galaxies. As part of a wider survey for low surface brightness galaxies in the Canada-France-Hawaii-Telescope Legacy Survey (CFHTLS), we have examined the M101 group in detail discovering 37 new diffuse dwarf candidates in the vicinity of M101. Examination of 19 of these dwarfs with the Hubble Space Telescope has allowed us to extend the satellite luminosity function of M101 down to  $M_V = -8.2$  and compare it to other Local Volume hosts. This has shown a potential relationship between the satellite luminosity function, star forming fraction and host galaxy environment.

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