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**Mega-SH0ES: Near Infrared Cepheid P-L Relation from Milky Way to M101**[1] WENLONG YUAN, LUCAS MACRI, Texas A&M Univ., SAMANTHA HOFFMANN, Johns Hopkins Univ., ADAM RIESS, Johns Hopkins Univ. & STScI, THE MEGA-SH0ES TEAM — The Mega-SH0ES project aims to obtain accurate and precise distances to host galaxies of type Ia supernovae within 50 Mpc, as part of an effort to measure the Hubble constant with percent-level uncertainty. We studied the H-band P-L relation in M101 by combining archival ACS optical data with recent WFC3 near infrared data to derive the distance modulus to this galaxy. To assistant the ongoing HST parallax project, we are observing dozens of Milky Way Cepheids using ground-based telescope. This project will help to measure the assumption-free zero point of P-L relation and improve the distance ladder. We present the analysis and preliminary results for both projects.

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