Abstract Submitted
for the APR21 Meeting of
The American Physical Society

Searching for Lensed Fast Radio Bursts with CHIME/FRB CALVIN LEUNG, MIT, Department of Physics, ZARIF KADER, MATT DOBBS, McGill University, KIYOSHI MASUI, MIT, Department of Physics, CHIME/FRB COLLABORATION — Gravitational lensing of fast radio bursts (FRBs) on timescales of nanoseconds to milliseconds is sensitive to the presence of massive bodies up to $100M_{\odot}$–including brown dwarves, rogue stars, and exotic objects like MACHOs or primordial black holes. The CHIME telescope, a widefield low-frequency radio interferometer operating over the frequency range of 400-800 MHz, detects several FRBs every day, and I will describe the status of our search for a lensed FRB. Our coherent time-domain search uses data from the CHIME/FRB baseband system and a procedure similar to geodetic VLBI cross-correlation. This allows us to resolve images with 10^{-8} to 10^{-1} second lensing delays, and disentangles intrinsic FRB morphology from genuine multipath propagation induced by a lens.

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Date submitted: 04 Jan 2021 Electronic form version 1.4