Abstract Submitted
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LENS: Science Scope and Development Stages[1] R. BRUCE VOGELAAR, Virginia Tech, LENS COLLABORATION — The Low-Energy Neutrino Spectroscopy (LENS) experiment will resolve the solar metallicity question via measurement of the CNO neutrino flux, as well as test the predicted equivalence of solar luminosity as measured by photon versus neutrinos. The LENS detector uses charged-current interaction of neutrinos on Indium-115 (loaded in a scintillator, InLS) to reveal the *complete* solar neutrino *spectrum*. LENS's optically segmented 3D lattice geometry achieves precise time and spatial resolution and unprecedented background rejection and sensitivity for low-energy neutrino events. This first-of-a-kind lattice design is also suited for a range of other applications where high segmentation and large light collection are required (eg: sterile neutrinos with sources, double beta decay, and surface detection of reactor neutrinos). The physics scope, detector design, and logic driving the microLENS and miniLENS prototyping stages will be presented. The collaboration is actively running programs; building, operating, developing, and simulating these prototypes using the Kimballton Underground Research Facility (KURF). New members are welcome to the LENS Collaboration, and interested parties should contact R. Bruce Vogelaar.

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