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The LUX Two-Phase-Xenon Dark Matter Search Experiment TYANA STIEGLER, CHARLIE CAMP, ZACH MARQUEZ, ANDREW RODINOV, JAMES WHITE, Texas A&M University Physics, LUX DARK MATTER COLLABORATION — The race to be the first experiment to detect collisions between atoms and a new type of weakly interacting massive particle (WIMP) that is conjectured to explain dark matter is heating up. The Large Underground Xenon (LUX) detector is a second-generation WIMP dark matter search experiment that employs a liquid xenon target and provides background discrimination based on the ratio of ionization to scintillation produced in subatomic particle interactions. This experiment is designed to reach the heart of the favored parameter space for supersymmetric WIMPs and has a genuine chance to be the discovery experiment. The concept, design, schedule and reach of the experiment will be discussed.

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