New results from ADMX – an ultra sensitive axion detection experiment STEVEN J. ASZTALOS, LLNL and XIA LLC — Axions are hypothetical pseudoscalar particles that exist as a consequence of the Peccei-Quinn solution to the strong-CP problem. Light axions (ueV-meV) are also a natural cold dark matter candidate. One important detection technique is via resonant conversion to microwave photons in a high-Q cavity immersed in a strong magnetic field. In this class of experiment, the signal from the cavity is amplified by an ultralow noise amplifier, and mixed down to the audio frequency range using a double-heterodyne receiver. The power spectrum results by a Fast Fourier Transform, with the putative axion appearing as a narrow line at a frequency corresponding to its rest mass. This detection strategy provides the basis for the Axion Dark Matter eXperiment (ADMX) which has been taking data at Lawrence Livermore National Laboratory (LLNL) since 1996. ADMX has established limits in two distinct data channels - a medium resolution channel configured to search for "thermalized" axions and a high resolution channel for detecting axions that have recently fallen into the gravitational well of our galaxy. This talk will present an overview of the newly reconfigured experiment featuring an ultralow-noise first stage cryogenic SQUID amplifiers and present latest results from the two data channels.