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Quantitative Results from Shockless Compression Experiments on Solids to Multi-Megabar Pressure JEAN-PAUL DAVIS, JUSTIN BROWN, MARCUS KNUDSON, RAYMOND LEMKE, Sandia Natl Labs — Quasi-isentropic, shockless ramp-wave experiments promise accurate equation-of-state (EOS) data in the solid phase at relatively low temperatures and multi-megabar pressures. In this range of pressure, isothermal diamond-anvil techniques have limited pressure accuracy due to reliance on theoretical EOS of calibration standards, thus accurate quasi-isentropic compression data would help immensely in constraining EOS models. Multi-megabar shockless compression experiments using the Z Machine at Sandia as a magnetic drive with stripline targets continue to be performed on a number of solids. New developments will be presented in the design and analysis of these experiments, including topics such as 2-D and magneto-hydrodynamic (MHD) effects and the use of LiF windows. Results will be presented for tantalum and/or gold metals, with comparisons to independently developed EOS. * Sandia National Laboratories is a multi-program laboratory managed and operated by Sandia Corporation, a wholly owned subsidiary of Lockheed Martin Corporation, for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000.

Jean-Paul Davis
Sandia Natl Labs

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