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Secondary Hugoniot of MgO LINDA CRANDALL, MARGARET HUFF, GREG TABAK, ZAIRE SPROWAL, J. RYAN RYGG, DANAE POLSIN, MOHAMED ZAGHOO, GILBERT COLLINS, Laboratory for Laser Energetics, DAYNE FRATANDUONO, RAY SMITH, JOHN EGGERT, LLNL, DAMIEN HICKS, Swinburne University of Technology — Magnesium oxide (MgO), or periclase, is a one of the most common constituents of Earth's mantle, as well as the cores of exoplanets. MgO also serves as a pressure standard in ramp-compression experiments because of its very stable B1 (ambient MgO solid) phase and high melting temperature. Exploring the secondary Hugoniot of materials allows us to study the phase diagram at lower temperatures than can be reached with singly shocked experiments. We present measurements of doubly shocked MgO to map the melt curve out further in pressure space. This material is based upon work supported by the Department of Energy National Nuclear Security Administration under Award Number DE-NA0003856, the University of Rochester, and the New York State Energy Research and Development Authority.

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