

Abstract Submitted  
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**Metallic GGG at TPa pressure** MARIUS MILLOT, SUZANNE ALI, RAYMOND JEANLOZ, UC Berkeley, MARIA BARRIOS, TOM BOEHLI, LLE Rochester, JON EGGERT, GILBERT COLLINS — The Gadolinium Gallium Garnet (GGG)  $\text{Gd}_3\text{Ga}_5\text{O}_{12}$  has attracted a strong interest since Gas gun shock wave experiments unraveled a high pressure phase stiffer than diamond in the 100 GPa to 250 GPa range [Mashimo], recently confirmed by DAC static compression experiments up to 180 GPa [Mao]. The quasi incompressible phase has been found to remain much more insulating than metallic fluid Hydrogen and appeared as a potential perfect anvil for off-Hugoniot Hydrogen shock compression to very high density. We have conducted laser driven shock experiments on GGG and determined the EoS through using velocimetry (VISAR) and pyrometry (SOP) diagnostics and an impedance match analysis with quartz standards at Omega-LLE and Jupiter-LLNL facilities. We have observed metallic reflectivity in GGG from  $\sim 200$  GPa to  $\sim 2500$  GPa. However, GGG is found to remain highly incompressible in this very high density and temperature range. References: [Mashimo] Mashimo et al., *Transition to a Virtually Incompressible Oxide Phase at a Shock Pressure of 120 GPa (1.2 Mbar):  $\text{Gd}_3\text{Ga}_5\text{O}_{12}$* , PRL 96, 105504 (2006) [Mao] Mao et al., *Equation of state of a high-pressure phase of  $\text{Gd}_3\text{Ga}_5\text{O}_{12}$* , PRB in press

Marius Millot  
UC Berkeley

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