

Abstract Submitted  
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**Multiple-shock compression and optical/x-ray diagnostics of diamond in TPa pressure regime**<sup>1</sup> NORIMASA OZAKI, Osaka University, GI-ANLUCA GREGORI, University of Oxford, TSUTOMU MASHIMO, Kumamoto University, TATSUYA JITSUI, HIROYUKI URANISHI, TOMOAKI KIMURA, KOHEI MIYANISHI, TAKAYOSHI SANO, TOMOKAZU SANO, YOUICHI SAKAWA, RYOSUKE KODAMA, Osaka University, YUICHI INUBUSHI, RIKEN SPring-8, ALESSANDRA BENUZZI-MOUNAIX, MICHEL KOENIG, LULI, Ecole Polytechnique, KATERINA FALK, CHRISTOPHER MURPHY, University of Oxford, MIKAKO MAKITA, DAVID RILEY, Queens University Belfast — We have performed multiple-shock compression experiments for diamond to TPa pressures. Optical diagnostics observed shock coalescence in the diamond layer and well-characterized the shocked diamond conditions ( $P$ ,  $V$ ,  $T$ ). Noncollective x-ray scattering measurements for the shock compressed diamond have been performed for the first time. The ionized states of carbon in HED regime is indicated from the inelastic scattering components.

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