

Abstract Submitted  
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**High Pressure Studies of  $\text{UO}_3$** <sup>1</sup> ZSOLT JENEI, MAGNUS LIPP, JAE-HYUN KLEPEIS, BRUCE BAER, HYUNCHAE CYNN, WILLIAM EVANS, Lawrence Livermore National Laboratory, CHANGYONG PARK, DIMITRI POPOV, HPCAT, Advanced Photon Source, Argonne National Laboratory — It has been reported that upon compression at ambient temperature  $\delta$ - $\text{UO}_3$  becomes amorphous at 2.2 GPa. (Journal of Alloys and Compounds 315 p59–61). We studied the properties of  $\gamma$ - $\text{UO}_3$  in diamond anvil cell up to 75 GPa. Powder diffraction experiments performed at HPCAT/Advanced Photon Source show the crystalline uranium trioxide transforms to an amorphous solid between 12 and 14 GPa and remains amorphous up to 75 GPa. The transition has been confirmed by Raman spectroscopy as well. In this paper we'll present our findings on the amorphous transition together with the equation of state of both the crystalline phase and the amorphous phase.

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