

Abstract Submitted
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Pressure-induced iso-structural phase transition in CeO₂ above megabar pressures LEI LIU, Key Laboratory of Shock Wave and Detonation Physics, Institute of Fluid Physics, CAEP, WENGE YANG, HPSynC, Geophysical Laboratory, Carnegie Institution of Washington, HONGXING SONG, HUAYUN GENG, YAN BI, JIAN XU, Key Laboratory of Shock Wave and Detonation Physics, Institute of Fluid Physics, CAEP, KEY LABORATORY OF SHOCK WAVE AND DETONATION PHYSICS TEAM, HPSYNC TEAM — The pressure-induced structural phase transition of cerium dioxide, CeO₂, has been studied by synchrotron angle X-ray diffraction technique using diamond anvil cell up to 175 GPa at room temperature. In addition to the *Fm-3m* to *pnma* structural phase transition at about 30 GPa, which was found previously, a *pnma* to *pnma* iso-structural phase transition was found above megabar pressure range. During the phase transition, the *a* axis of the unit cell collapses, while the *b* and *c* axis expand. However, abrupt change of the unit cell volume during the phase transition was not observed.

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