

Abstract Submitted
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Phase Diagram of Carbon Dioxide at High Pressure and Temperatures: Implications to the Deep Carbon Cycle¹ CHOONG-SHIK YOO, Dept of Chemistry and Institute for Shock Physics, Washington State University, Pullman, WA 99164, AMARTYA SENGUPTA, Institute for Shock Physics, Washington State University, Pullman, WA 99164 — Carbon dioxide is an important terrestrial volatile often considered to exist in the deep interior of the Earth. The phase diagram of carbon dioxide is critical to validate such hypothesis. In this study, we will present the phase diagram of carbon dioxide including the most recent finding of coesite-like carbon dioxide, a missing analog to SiO₂, address several controversies in terms of phase metastabilities and thermal path dependent transitions, and discuss about the implication to the deep carbon cycle.

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