

Shock compression of water to above 200 GPa

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Laser-driven shock compression of liquid water was performed at the Matter in Extreme Conditions endstation of the Linac Coherent Light Source. *In situ* X-ray diffraction was used to interrogate the structure of the material following isentropic compression to 210 GPa and 3000 K. Solidification into a BCC structure was observed, in contrast to the FCC structure predicted by theory. These data extend the pressure-temperature stability field of BCC ice, which has implications for the planetary interiors of ice giants.