

Abstract Submitted  
for the MAR07 Meeting of  
The American Physical Society

**Volume collapse in Ce alloys under pressure by neutron diffraction**<sup>1</sup> JAMES L. SMITH, ANNA LLOBET, SERGEI M. STISHOV<sup>2</sup>, DARRICK WILLIAMS, JASON C. LASHLEY, Los Alamos National Laboratory — Neutron-diffraction measurements under hydrostatic pressure up to 10 kbar were performed on the  $\text{Ce}_{0.9-x}\text{La}_x\text{Th}_{0.10}$  system to investigate the tricritical point at  $x_c = 0.14$ . For  $x < x_c$ , we observe first-order transitions with a pressure derivative of the transition temperature,  $dT/dP = 20$  K/kbar. For  $x > x_c$  we observe a continuous transition that is second order, which again demonstrates a tri-critical point in the pressure-temperature phase diagram. The results will be presented and discussed.

<sup>1</sup>Work performed under the auspices of the US DOE.

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Date submitted: 30 Nov 2006

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