



ESRF

Experiment title:

Test of area detectors with heated DAC for studies of superlattice reflexions under pressure

Experiment number:

HC 185

Beamline:

ID9-BL3

Date of experiment:

from: 08.04.1995

to: 10.04.1995

Date of report:

Shifts: 6

Local contact(s): Dr. D . Häusermann

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Report:

The displacive transition in La is studied in the pressure range up to 26 GPa and under temperatures up to 630 K with angular dispersive X-ray diffraction at the ESRF and with energy dispersive X-ray diffraction in HASYLAB to elucidate further details of this transition with an extension of the transition line up to 22.5(5) GPa and 590(1 O) K and a determination of the order parameter down to a level of $\eta \approx 5 \cdot 10^{-1}$.

The new data for the cF4-hR24 phase transition line are illustrated in fig. 1 and a detailed report is submitted for publication in High Pressure Research

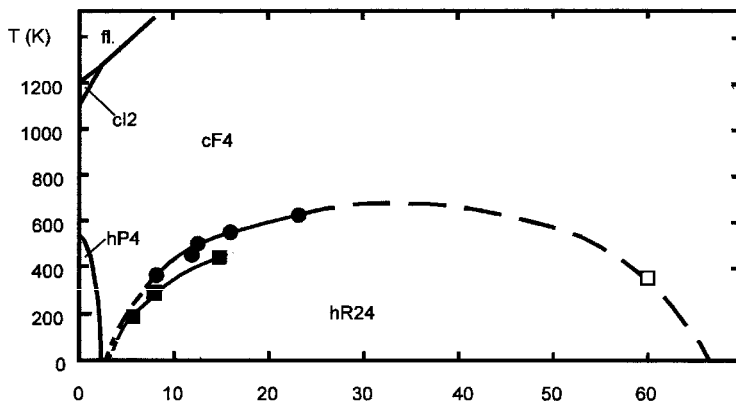


Figure 1: Phase diagram for lanthanum with the new data for the cF4-hR24 phase line given by solid dots. References for the previous data are given in:

1. "Novel reentrant high pressure phase transition in lanthanum", F. Porsch and W.B. Holzapfel, Phys. Rev. Lett. 70,4087- 4089(1993)
2. "Characterization of the fcc-distorted fcc-structural transition in lanthanum in an extended pressure and temperature range", M. Seipel, F. Porsch, and W. B. Holzapfel in: "High Pressure Research" (submitted).