Report (HS-1260)

Lithium was studied to 84 GPa at 160 K. In contrast to the theoretical studies two more structural phase transition were found, one at 60 and the other at 67 GPa (Fig. 1). The data are being analyzed.

Sodium was studied to 115 GPa at ambient temperature. Ta was used as internal pressure marker. The bcc-fcc transition was observed at 65 GPa. Above 100 GPa Na adopts the cubic cI16-structure already known from Li (Fig. 2).

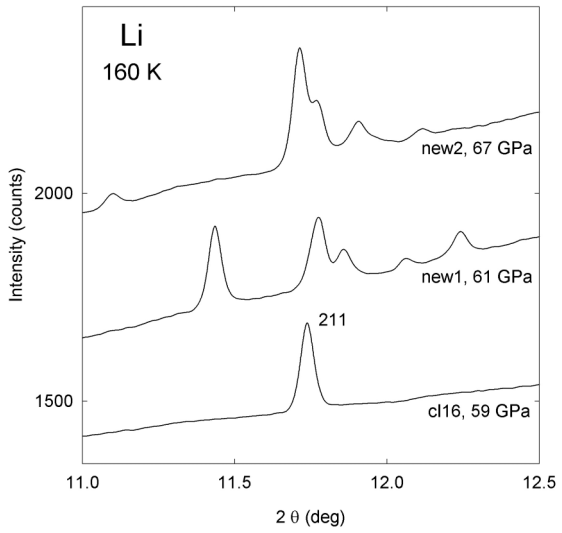

Fig. 1: Part of the diffraction pattern of Li at various pressures. Above 60 GPa five new diffraction lines appear in the vicinity of the 211 reflection of the cI16-structure. At 67 GPa the diffraction pattern changes again.

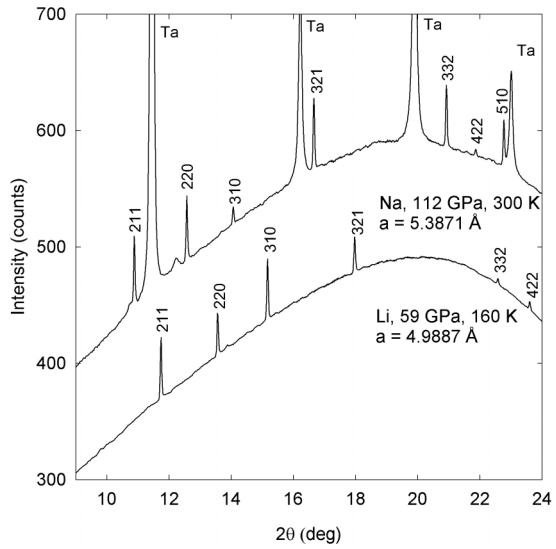

Fig. 2: Diffraction pattern of Li-cI16 at 59 GPa and 160 K and of Na-cI16 at 112 GPa and 300 K. For the Na measurement Ta was used as pressure marker.