In this they observed the existence of two crystalline phases, one with the ordinary fcc lattice (a = 5.12 A) and the other with a compressed lattice of the same type (a = 4.82 A), i.e., with the same parameters as in /2/.

Measurements of the electrical resistance of cerium at low temperatures /13/ indicate that the new, denser form of cerium has a considerably lower resistance that the one existing at ordinary temperatures.

Lawson and Ting-Yan-Tang /2/ not only suggested the identity of the two forms of cerium in question but also made an approximate estimate of the heat of the transformation under pressure so as to be able to plot the p-T diagram satisfying this concept. According to these calculations, the heat of the cerium transformation should in this case be about 0.04 eV, or about 900 cal/g-atom. Our experimental value of 880 ± 40 cal/g-atom (at 13 to 18°C) is extremely close to this value. It should be mentioned that the plotting of the p-T curve directly from experimental data relating to the temperature of the phase transformation as a function of pressure is complicated in the case of cerium by kinetic factors (the retardation and incompleteness of the transformation at low temperatures), as indicated in /11/.

Conclusions

1. We have described the application of the thermographic method to the case of high pressures, the principle being to compare the thermal effects of the phase transformations of the substance under con-