

FIG. 9. Condensed phase diagram for He<sup>3</sup>.

### B. DISCUSSION OF He<sup>3</sup> RESULTS

At high pressures the properties of He<sup>3</sup> along the melting curve roughly parallel those of He<sup>4</sup>. At low pressures, although He<sup>3</sup> does not display superfluidity, there are other unique features which merit detailed discussions.

#### 1. The solid-solid transition

With reference to Fig. 2, the discontinuity in the  $\Delta V_m$  curve for He<sup>3</sup> at  $\sim 141$  kg/cm<sup>2</sup> is a consequence of a triple point in the melting curve where two types of solid are in equilibrium with the fluid phase. A careful determination of the melting curve showed a slight discontinuity in slope which occurs at 141 kg/cm<sup>2</sup>