

Figure Captions

- Fig. 1. Energy diagram for the homogeneous ordering step in  $\text{Cu}_3\text{Au}$ .  $U$  is the energy barrier to be overcome in taking a pair of atoms from right to wrong sites;  $W$  is the resultant change in internal energy of the alloy.
- Fig. 2. Bridgman anvil and split gasket assembly used for the high pressure measurements.
- Fig. 3. Observed melting temperature of lead as a function of indicated pressure in the Bridgman anvil device.
- Fig. 4. Resistance of  $\text{Cu}_3\text{Au}$  wire during heating and subsequent cooling through  $T_c$  at a pressure of 10.5 kbar.
- Fig. 5. Observed dependence of the critical temperature for ordering on the pressure.
- Fig. 6. Resistance changes during anneal at  $286^\circ\text{C}$  and 1 kbar of sample first equilibrated at  $368^\circ\text{C}$ . The curve is calculated to give the best fit to the data points as described in the text.
- Fig. 7. Variation of the rate constant  $\alpha$  with temperature at 900 bars. The slope of the straight line corresponds to an activation energy of 1.9 ev.
- Fig. 8. Variation of the rate constant  $\alpha$  with pressure at  $286^\circ\text{C}$ . The slope of the line corresponds to an activation volume of  $6.8 \text{ cm}^3/\text{mole}$  of atoms.