not conveniently operable in our experiments.) When the pressure is applied to the movable piston the center is compressed by a greater percentage than the taper. This results in a pressure gradient from the edge of the flat to the outside edge of the piston. The greater the taper the higher the gradient, but also the higher the tendency to extrude from the flat section. After trying a wide variety of tapers and combinations of tapers, we found that a single taper of 6° on each piston was the most advantageous. The tapered piston accomplishes several objectives. The very high pressure is only on the center of the piston which does not break because ~~of the piston which does not break because~~ of the principle of "massive support" mentioned by Bridgman. The salt also supports the piston along the taper. The salt from the flat to the outside under a continuously decreasing pressure acts as a series of "cells within a cell" and minimizes extrusion, permitting a pellet of useful thickness in the center. The average applied pressure and the drop in pressure at the outsie of the piston is such that the windows have negligible tendency to extrude.

The sample is inserted in a think slice in the center of the flat portion and perpendicular to the light path.

The pressure obtained is a distinct function of the thickness of the central flat portion (t_C) as well as of the average pressure across the piston (p_A). The pressure was calibrated by using the CN^- stretching frequencies obtained on Cell I and as upper points the phase transitions rated by Bridgman[3] on AgBr at 83,200 atmospheres and AgCl at

3. Bridgman, P. W., Proc. Amer. Acad. Arts and Sci. 76, 1, 1945.