

FIG. 3(a). The effect of pressure on the spectra of color centers in KCl: 1% AgCl, Part 1.

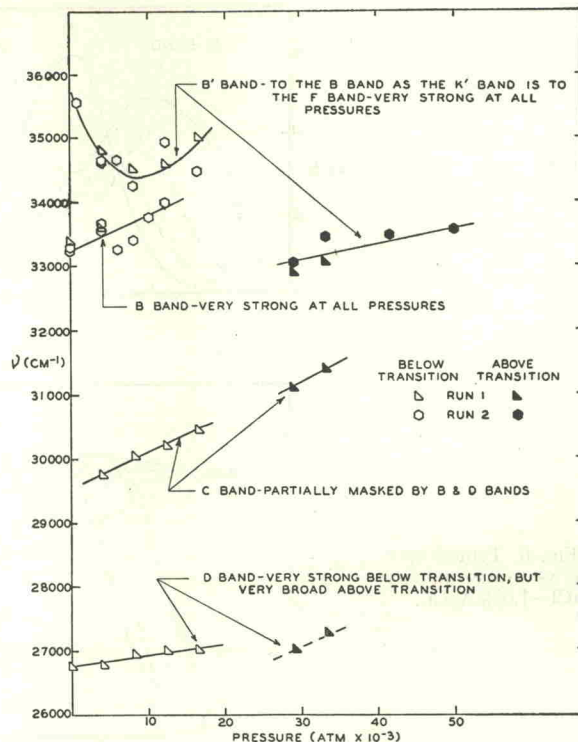


FIG. 4(a). The effect of pressure on the spectra of color centers in KBr: 0.1% AgBr, Part 1.

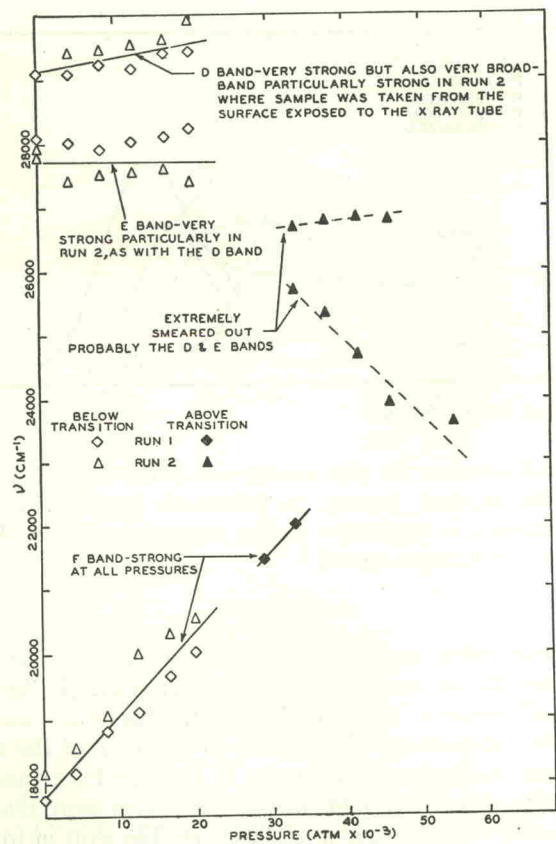


FIG. 3(b). The effect of pressure on the spectra of color centers in KCl: 1% AgCl, Part 2.

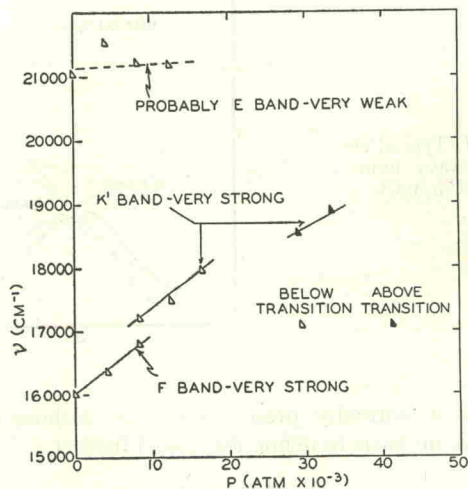


FIG. 4(b). The effect of pressure on the spectra of color centers in KBr: 0.1% AgBr, Part 2.

RESULTS

a. A Center

The data on this band are scanty and of very poor quality, due to the band's location far into the ultra-violet. The shift with increasing pressure appears to be slightly to lower energy. This is consistent with the generally held conclusion that this is a hole phenomenon, (that is, a phenomenon associated with the ab-

FIG. 5. Typical spectra vs wave number: NaCl -0.1% AgCl .

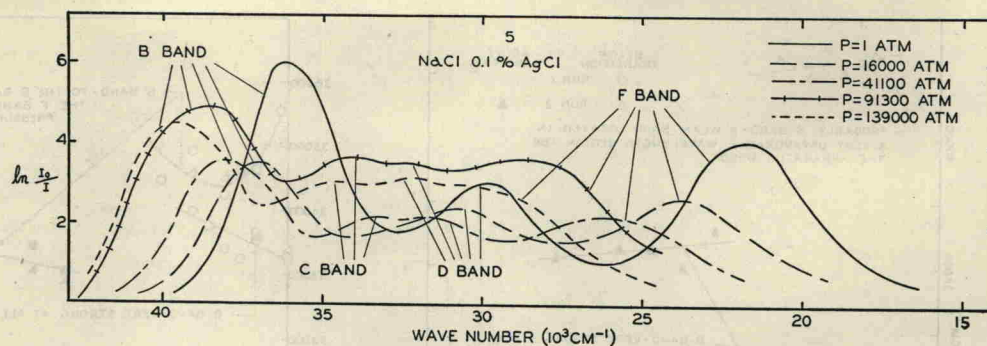


FIG. 6. Typical spectra vs wave number: NaCl -1.0% AgCl .

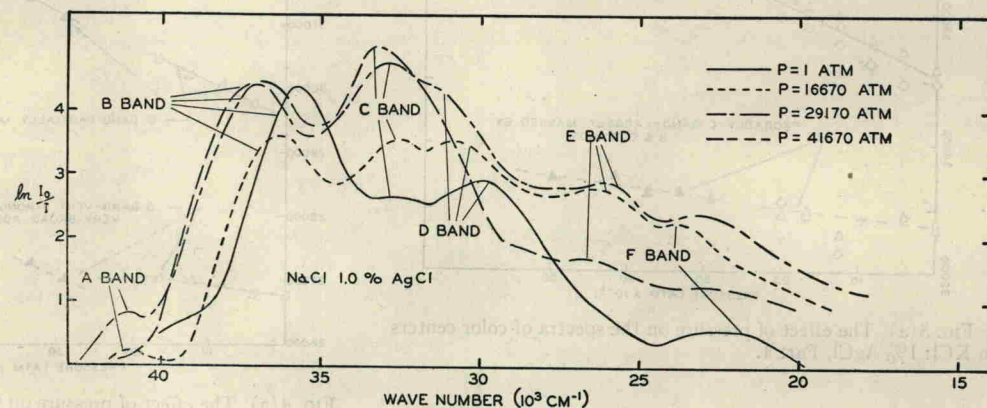
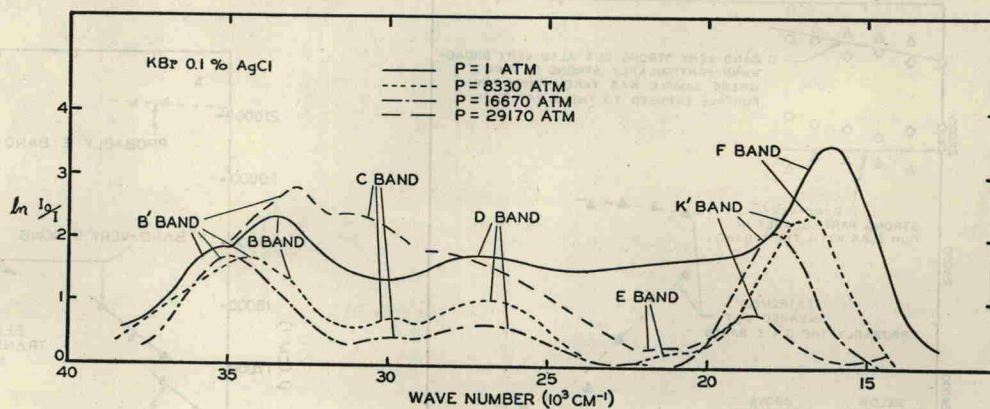


FIG. 7. Typical spectra vs wave number: KBr -0.1% AgCl .



sence of a normally present electron) although the data give no basis to define the model further.

b. B Center

The data on this band are of excellent quality and provide strong confirmatory evidence to the proposal that this center is a substitutional silver ion adjoining an F center. The shift with pressure is to higher energy, in magnitude roughly one-half that of the F band. A rough Ivey-like relation has been prepared for the B center (see Fig. 8). A comparison of the slope of the pressure shifts with the slope of the Ivey-like relation reveals the same approximate 2 to 1 relationship that was observed for the F center.¹⁰ However, the strongest evidence for this model of the center is the emergence

of a B' band on the high-energy side of the B band, and at the expense thereof, in potassium bromide. This occurrence is analogous to the emergence of the K' band in the same crystal.¹¹

c. C Center

A somewhat unusual phenomenon occurred with this center. In the rest of this color-center work (in Ag^+ -doped crystals), the intensities of the bands are relatively independent of pressure. In the case of the C center, however, the intensity of the band increases rapidly with increase of the pressure; often more than an order of magnitude in 50 000 atm. The shift in fre-

¹¹ W. G. Maisch and H. G. Drickamer, *J. Phys. Chem. Solids* 5, 328 (1958).