

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

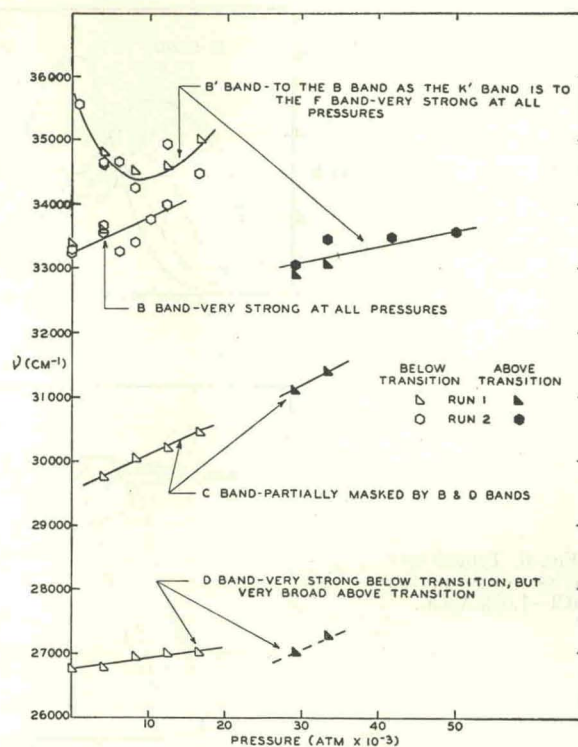


Fig. 4(a). The effect of pressure on the spectra of color centers in KBr: 0.1% AgBr, Part 1.

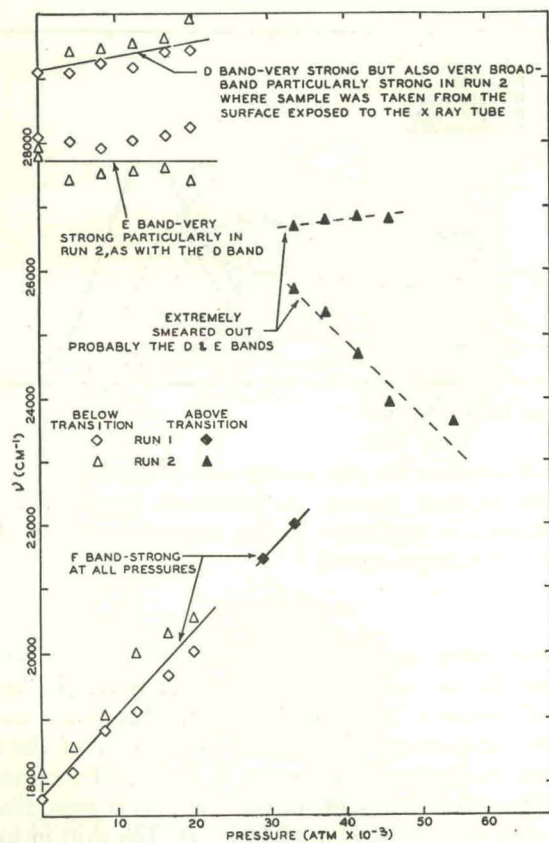


Fig. 3(b). The effect of pressure on the spectra of color centers in KCl: 1% AgCl, Part 2.

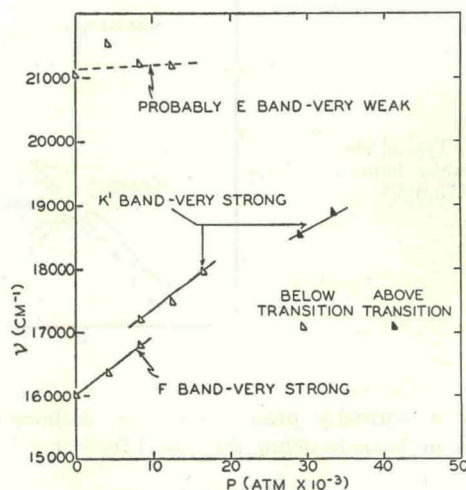


Fig. 4(b). The effect of pressure on the spectra of color centers in KBr: 0.1% AgBr, Part 2.

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 ultraviolet. 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.

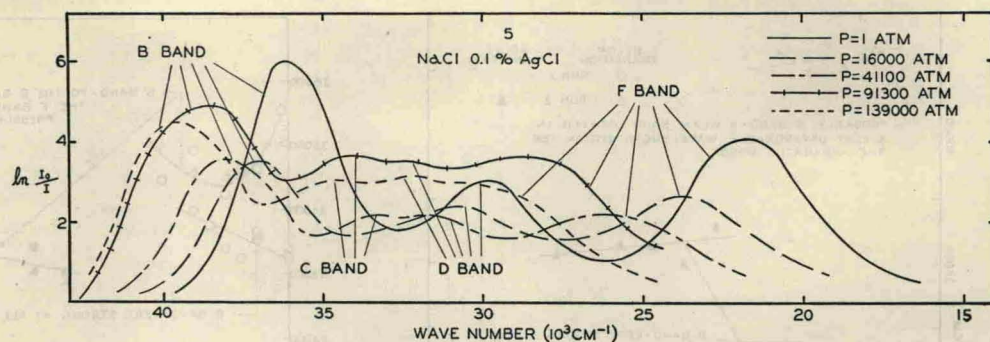


FIG. 6. Typical spectra vs wave number: NaCl—1.0% AgCl.

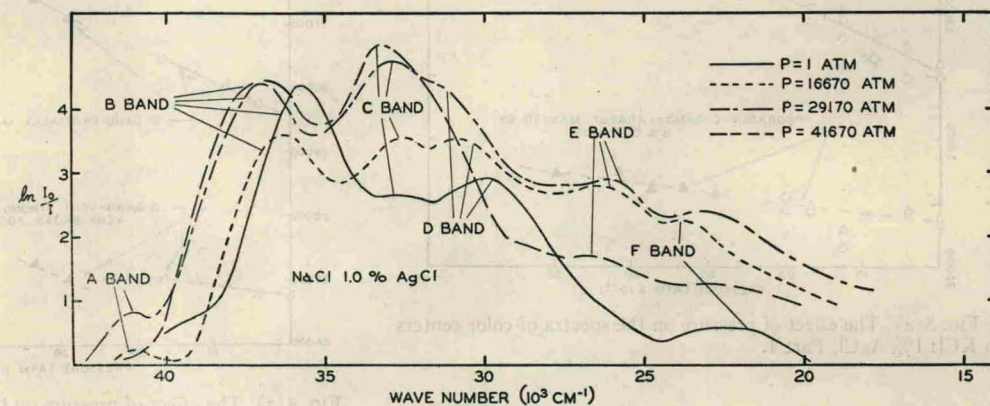
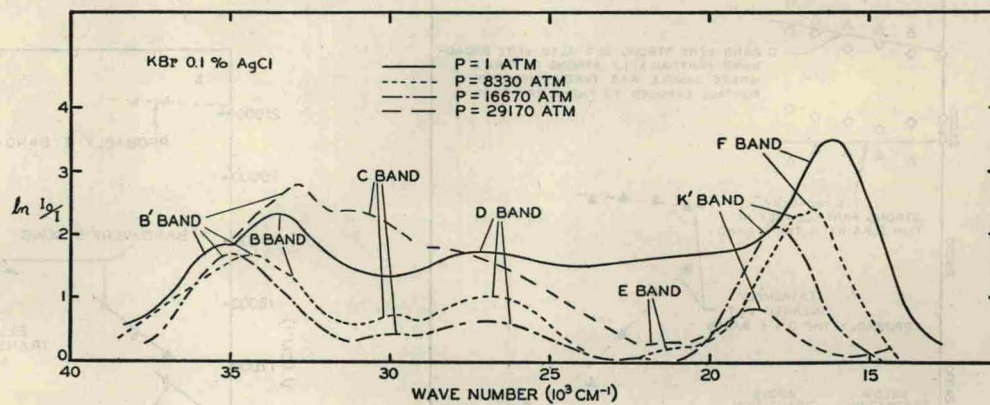


FIG. 7. Typical spectra vs wave number: KBr—0.1% AgCl.



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).