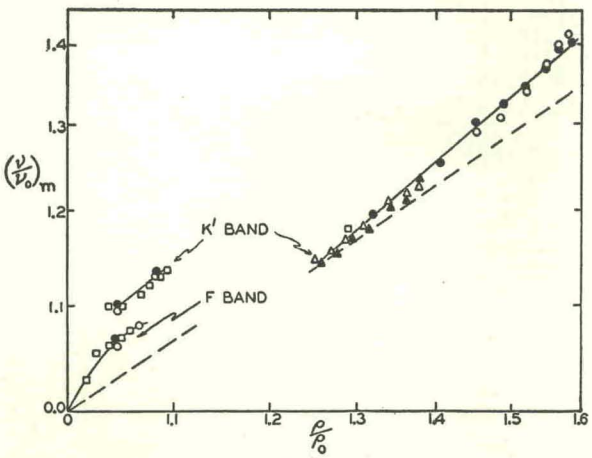

FIG. 13. $\text{Log}(\nu/\nu_0)_m$ vs $\log\rho/\rho_0$—KBr; — — —, $\nu/\nu_0 \sim (\rho/\rho_0)^{2/3}$.

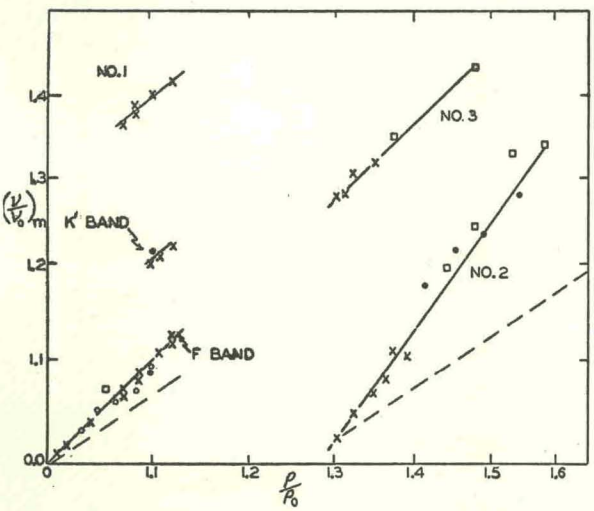

FIG. 14. $\text{Log}(\nu/\nu_0)_m$ vs $\log\rho/\rho_0$—KI; — — —, $\nu/\nu_0 \sim (\rho/\rho_0)^{2/3}$.

20 000 atm pressure. A discontinuous shift of the peak frequency to higher energies is observed at the transition (see Figs. 3–5 and 12–14). Interpretation of these data are hampered by the growth of the K' band in KBr and KI, and by further structure in KI which also was observed by Maisch and Drickamer.[3]

D. Effect of Pressure on the M Center

When crystals containing F centers are irradiated with light in the F-band region at room temperature, the F band bleaches and several new bands appear on the low energy side of the F band.[13] The strongest of these is the M center.

The nature of this center is uncertain. Seitz[14] proposed that it consists of an F center plus a vacancy pair. More recent experiments[15] indicate that it possesses a higher degree of symmetry than Seitz' model would indicate. Knox[16] proposed a modification of Seitz' model which possesses this higher symmetry, wherein a positive ion and an electron occupy a vacancy aggregation consisting of two negative ion vacancies and two positive ion vacancies.

The effect of pressure to 50 000 atm has been measured on the M center in LiCl. The results are compared with data for the F center in LiCl in Fig. 15. The shift with pressure for the M center is less than one-fifth that of the F center.

The low compressibility seems inconsistent with the Seitz[14] model. On the other hand, the Knox modification to this model[16] does appear to be somewhat more consistent with the data since the atom in the middle of the center might tend to oppose the compression to a greater degree than one fixed in the corner.

TABLE II. Comparison of experimental and calculated values of f_T.

Compound	f_T exptl.	f_T calc
NaCl	2.1	2.9
NaBr	2.3	2.4
KCl	2.3	2.1
KBr	1.8	2.1
KI	1.7	2.3

TABLE III. Density of LiCl vs pressure.

P (kg/cm²)	$\Delta V/V_0$
0	0.000
50 000	0.121
100 000	0.183

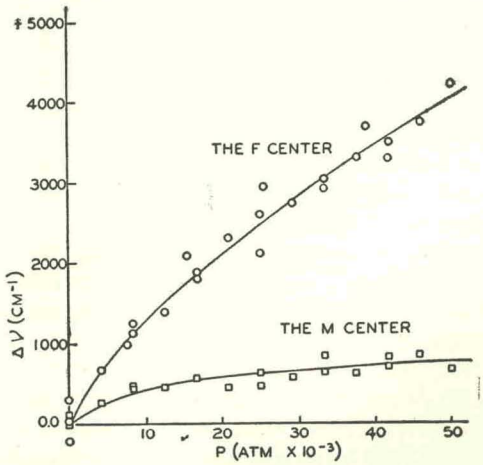

FIG. 15. Effect of pressure on the spectra of the F and M centers in LiCl.

ACKNOWLEDGMENTS

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