

GREEN BANDS OF CuBr

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For a long time it was believed that the lowest lying excited state of the copper monohalides (CuX, X= F, Cl, Br, I) was $^1\Pi$. However, recent spectroscopic and theoretical investigations of the electronic transitions of CuH and CuF suggest that the lowest excited state is $a^3\Sigma^+$ and the $^1\Pi$ is the $\Omega = 1$ component of this $a^3\Sigma^+$ state. Because the other copper halides such as CuCl and CuBr are calculated to be similar, we have measured the green bands of CuCl^a and CuBr with a Fourier transform spectrometer. The emission spectrum of CuBr was generated in flowing Ar gas (2.5 Torr) over a mixture of cuprous bromide (CuBr) and copper powder in a copper hollow cathode (100 mA). The molecular constants and the electronic structure of CuBr are revised.

^aThe result of CuCl will be presented separately in this conference by T. Parekunnel.