AN UPDATE ON THE VISIBLE REGION SPECTRUM OF YOH

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Further analysis of the visible region electronic band systems of YOH and YOD has been performed. Three electronic states, $\tilde{X}^1\Sigma^+$, $\tilde{B}^1\Pi$, and $\tilde{C}^1\Sigma^+$, have been found. Wavelength-resolved fluorescence spectra have given a large amount of information about the vibrational frequencies of the $\tilde{X}^1\Sigma^+$ state. Exciting from the v_2'' =1 level of the ground state, we have been able to determine the separation of the l = 2 and 0 levels. The geometric structure of the ground state is found to be r(Y-O)= 1.94840(58) Å and r(O-H)=0.9215(53) Å. Due to the perturbed nature of the $\tilde{B}^1\Pi$, and $\tilde{C}^1\Sigma^+$ states, an accurate determination of their geometries has not been possible. We have tentatively identified several members of the ν_3 progressions in these states.