

SURVEY OF H_3^+ TRANSITIONS BETWEEN 3000 AND 4200 CM^{-1}

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Most of a large gap in the laboratory ro-vibrational spectrum of H_3^+ around 3800 cm^{-1} has been filled using a recently computer controlled color center laser spectrometer which scans between 3000 and 4200 cm^{-1} . A liquid nitrogen cooled He/ H_2 discharge is used to produce rotationally cool, yet vibrationally hot H_3^+ . Variational calculations^a predict that roughly 300 new lines from the fundamental, the first overtone, combination, and hot bands may be observable with the sensitivity of our spectrometer. The results of this survey will be reported and compared to the theoretical calculations.

^aJ. K. G. Watson, private communication.