

HIGH-RESOLUTION LASER SPECTROSCOPY OF THE $A^1\Sigma^+ - X^1\Sigma^+$ TRANSITION OF CaS

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High-resolution laser excitation spectroscopy has been employed for the first time to examine the $A^1\Sigma^+ - X^1\Sigma^+$ system of CaS. Gaseous CaS was produced in a Broida-type oven by the reaction of calcium metal vapor with OCS. A Coherent 699-29 ring dye laser operating in single-frequency mode was used to investigate the rotational structure of the $A - X$ transition. The present work extends the lower resolution work of Blues and Barrow ^a on the same system to higher vibrational levels and has allowed the identification of several level crossings that occur in the $A^1\Sigma^+$ state. The deperturbation analysis of the $A - X$ transition will be discussed.

^aTrans. Faraday Soc. 65, 646 (1969)