

Abstract Submitted
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Polarization Spectroscopy of Na₂ A – X Transitions PENG QI, JIANMEI BAI, OMER SALIHOGLU, A. M. LYYRA¹, Temple University, T. H. BERGEMAN², SUNY Stony Brook — We have measured or remeasured thousands of lines in the Na₂ A ← X system, using a heat-pipe oven, with sub-Doppler resolution. The line widths are typically 250 MHz with >10 signal:noise ratio, yielding line centers to an accuracy of 90 MHz including calibration uncertainties. In certain cases, the rotational quantum number assignments are determined by measuring dispersed fluorescence. These data points are being added to thousands of other measured term values from about 20 sources for the Na₂ A¹Σ_u⁺ and b³Π_u states in a comprehensive compilation and analysis [1]. The present status of this analysis is adequate to assign most of the lines observed in the present study, with iterative refinement. Accurate potential curves and spin-orbit coupling functions are obtained, and can be used, for example, to identify mixed singlet-triplet “window” states through which to excite higher triplet levels.

1. T. Bergeman, A. M. Lyyra, Li Li, A. Ross and others: work in progress.

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