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	OBSERVATION AND ANALYSIS OF ION-PAIR TRANSITIONS OF I₂ COOLED IN A SUPERSONIC FREE-JET EXPANSION
	J. TELLINGHUISEN, Department of Chemistry, Vanderbilt University, Nashville, TN 37235; <u>X. ZHENG</u> , S. FEI, AND M.C. HEAVEN Department of Chemistry, Emory University, Atlanta, GA 30322.
	The A' state of I ₂ was observed for the first time in a free-jet expansion, where it was prepared by ArF laser excitation of I ₂ /Ar mixtures close to the nozzle ^a . Twenty-seven bands in the v'' = 0 progression of the D' - A' transition were studied by laser excitation spectroscopy, leading to the following improved constants (cm ⁻¹) for the A' and D' states:
	$B_0'' = 0.028054$, $B_0' = 0.020526$, $\alpha_c' = 5.3 \times 10^{-5}$, $\omega_c' = 103.953$, $\omega_{cx_c}' = 0.2097$, $\omega_{cy_c}' = 2.687 \times 10^{-4}$.
	Many bands of the β - A transition have also been observed. These originate from A, v'' = 0, and terminate on levels with $25 \leq v' \leq 68$ of the β state. Full analyses of both band systems will be presented.
	^a J. Tellinghuisen, S. Fei, X. Zheng, and M.C. Heaven, Chem. Phys. Lett. <u>176</u> , 373 (1991).
	Scheduling information for Symposium office use only
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| 4. Theory (other) | 9. Radicals and Ions | 14. Mini-symposium: Clusters Containing Water |
| 5. Infrared | 10. Matrix | |