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OBSERVATION AND ANALYSIS OF ION-PAIR TRANSITIONS OF I ₂ COOLED IN A SUPERSONIC FREE-JET EXPANSION	
J. TELLINGHUISEN, Department of Chemistry, Vanderbilt University, Nashville, TN 37235; X. ZHENG, 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:	
$B_0'' = 0.028054, B_c' = 0.020526, \alpha_c' = 5.3 \times 10^5,$ $\omega_c' = 103.953, \omega_{x_c'} = 0.2097, \omega_{y_c'} = 2.687 \times 10^4.$	
Many bands of the β - A transition have also been observed. These originate from A, v'' = 0, and terminate on levels with 25 ≤ v' ≤ 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. 176 , 373 (1991).	
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| 3. Electronic (theory) | 8. Jet and Beam Spectra | 13. Mini-symposium: Ultra-cold Molecules |
| 4. Infrared (experimental) | 9. Radicals and Ions | 14. Mini-symposium: Cavity Enhanced Spectroscopy |
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