THE ORIGIN OF THE Ar$\cdots$I$_2$ $B-X$ CONTINUUM EXCITATION SIGNAL BELOW AND ABOVE THE I$_2$(B) DISSOCIATION LIMIT: BOUND-FREE TRANSITIONS OF THE LINEAR COMPLEX

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Discrete features associated with transitions of both the T-shaped and linear Ar$\cdots$I$_2$(X, v''=0) complexes are observed in laser-induced fluorescence and action spectroscopy experiments performed throughout the I$_2$ $B-X$ electronic region. The binding energy of the linear conformer is directly measured to be 250(2) cm^{-1}, 10 to 15 cm^{-1} greater than that of the T-shaped conformer. Continuum signals are observed in the spectra that continue to energies well above the I$_2$(B) dissociation limit. Our results indicate that the continuum signals can be attributed to transitions of the linear Ar$\cdots$I$_2$(X,v''=0) complex to the inner, repulsive walls of many Ar + I$_2$(B,v') intermolecular potentials. The excited state complexes are thus very short lived and undergo direct dissociation into Ar + I$_2$(B,v') products. There is no evidence for the previously proposed one-atom caging mechanism.