

## AN EFFICIENT MECHANISM LEADING TO THE FORMATION OF NEGATIVE IONS IN SPACE

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Recent spectroscopic studies of carbon chain anions in the gas phase, and more specifically of  $C_7^-$ , have brought insight into the long-standing mystery of the unexplained diffuse interstellar bands (DIBs). Previously, negative ions had not been considered highly abundant in interstellar clouds, and the question of efficient mechanisms leading to their formation had not been investigated in great detail. We present a statistical calculation of the rate coefficients for radiative attachment of an electron to small linear carbon clusters containing 4 to 9 atoms. Our conclusion is that for molecules with 6 or more C atoms, the attachment occurs on every collision at the low temperatures of diffuse interstellar clouds.