

## GAS-PHASE ELECTRONIC SPECTRA OF CARBON CHAINS

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Electronic transitions of carbon chains and their ions are being measured in the gas-phase. The neutral species, such as  $C_nH$   $n=6,8,10$ , have been observed by cavity ringdown absorption,<sup>a</sup> whereas the carbon anions by a two photon detachment approach. Comparison is made with astronomical data on diffuse interstellar bands. The case of  $C_7^-$  is striking;<sup>b</sup> the origin band of the  $A^2\Pi_u \leftarrow X^2\Pi_g$  transition, as well as the strong vibronic transitions, coincide with DIBs. This provides compelling evidence for the first identification of a carrier.

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<sup>a</sup>H. Linnartz, T. Motylewski and J. P. Maier, *J. Chem. Phys.*, **109**, 3819, (1998).

<sup>b</sup>M. Tulej, D. A. Kirkwood, M. Pachkov and J. P. Maier, *Astrophys. J.*, **506**, L69, (1998).