

## THE ABUNDANCE OF $C_7^-$ IN DIFFUSE INTERSTELLAR CLOUDS

D. P. RUFFLE, R. TERZIEVA, E. HERBST, *Departments of Physics and Astronomy, and Chemical Physics Program, The Ohio State University, Columbus, OH 43210.*

It has recently been proposed that  $C_7^-$  is a carrier of five of the numerous diffuse interstellar bands. In this talk, we report an attempt to reproduce the required abundance of  $C_7^-$  relative to hydrogen of  $4 \times 10^{-8}$  through the use of various models for the chemistry in diffuse clouds. Our models incorporate large neutral and charged linear hydrocarbons, and contain the time-dependent desorption of seed molecules from grain surfaces. We are able to find conditions that lead to the production of the required fractional abundance of  $C_7^-$  but only for short periods of time in an astronomical sense.