

## INFRARED SPECTROSCOPY OF SIZE-SELECTED CARBOCATIONS I.: $C_3H_3^+$ , $C_3H_5^+$ , AND $C_4H_9^+$

GARY E. DOUBERLY, ALLEN M. RICKS, and MICHAEL A. DUNCAN, *Department of Chemistry, University of Georgia, Athens, Georgia 30602..*

Cold, rare gas tagged, gas phase carbocations are produced in a pulsed electric discharge supersonic expansion cluster source. The infrared spectra of the size-selected species are obtained *via* infrared photodissociation spectroscopy. The structure and spectroscopy ( $700\text{-}4000\text{ cm}^{-1}$ ) of the propargyl, cyclopropenyl, allyl, 2-propenyl, and t-butyl ions will be discussed. The infrared spectral signatures of the title ions are compared to the interstellar unidentified infrared emission bands.