VELOCITY STRUCTURE IN THE DIFFUSE INTERSTELLAR BANDS

MEREDITH M. DROSBACK[a], THEODORE P. SNOW, *Center for Astrophysics and Space Astronomy, University of Colorado*; JULIE A. THORBURN, LEW M. HOBBS, DANIEL E. WELTY, DONALD G. YORK, *Department of Astronomy and Astrophysics, The University of Chicago*; BENJAMIN J. McCALL, *Departments of Chemistry and Astronomy, University of Illinois at Urbana-Champaign*; PAULE SONNENTRUCKER, *Department of Physics and Astronomy, Johns Hopkins University*; SCOTT D. FRIEDMAN, *Space Telescope Science Institute*; and BRIAN L. RACHFORD, *Department of Physics, Embry-Riddle Aeronautical University*.

We present results of a search for velocity structure in the Diffuse Interstellar Bands (DIBs) using data from a four-year survey using the Astrophysics Research Consortium Echelle Spectrograph (ARCES) at the 3.5-m telescope at Apache Point Observatory. This high resolution, high signal-to-noise (S/N $\sim$ 1000) database contains spectra of nearly 200 sight lines. A handful of these sight lines shows evidence of clear velocity structure in the atomic optical absorption lines in the spectrum. We use these observed velocity components as a template to look for the same component structure in the DIBs. Several DIBs in the lines of sight to be presented show possible evidence of velocity structure. The complete results of our analysis will be presented and discussed in the context of the implications this study may have for furthering our understanding of the nature of the diffuse interstellar bands.

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