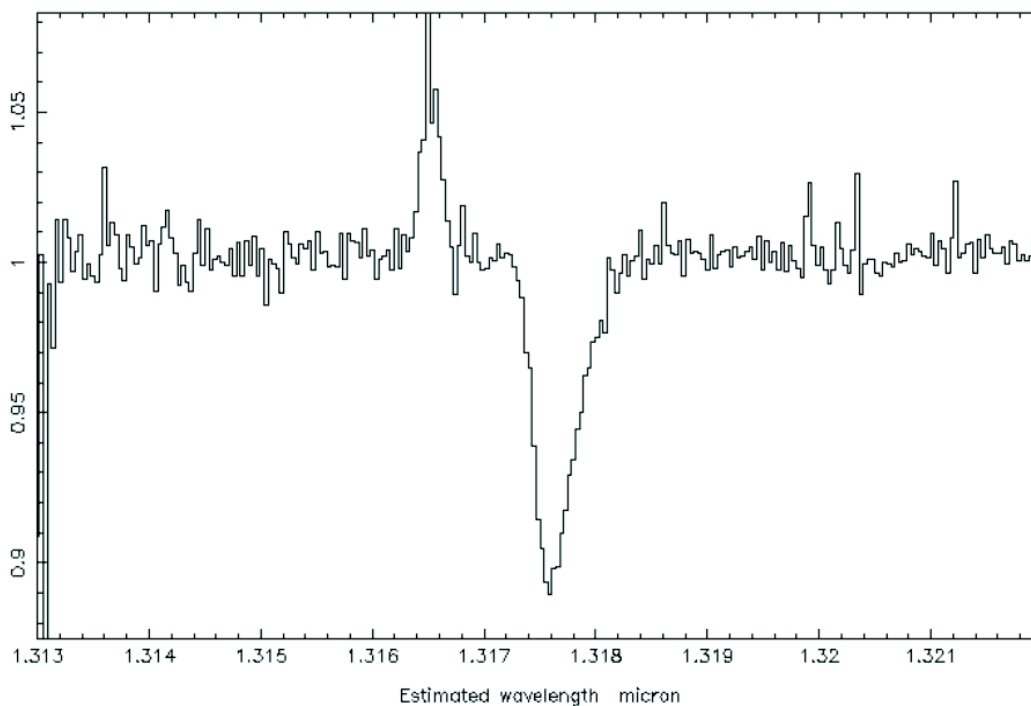


A High-Resolution Study of the Near-Infrared Diffuse Interstellar Bands

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Since their initial detection by Heger in 1922, the identification of the carriers of the Diffuse Interstellar Bands (DIBs) has gone on to become one of the longest standing problems in astrophysics, with several hundred DIBs now having been detected at visual wavelengths. Although the carriers are widely thought to be carbonaceous molecules/ions, an unambiguous carrier identification for most of the bands remains elusive. One strong observational constraint on the nature of the carriers, however, is the detection of DIB substructure via high-resolution echelle spectroscopy.

In addition to the many visual DIBs found, two DIB detections were reported in the near-infrared by Joblin et al. (1990), near 11797.5 and 13175 Å. These remain the longest-wavelength DIBs observed, and consequently have further implications for the nature of the carriers. Despite this, there have been few follow-up observations of these DIBs. We present here high-resolution UKIRT echelle spectroscopy of the two NIR DIBs. Detections towards sightlines exhibiting a range of visual extinctions are presented, and variations in the properties and profile shapes of the bands are considered.



Preliminary reduction of one of the NIR bands ($\lambda 13175$) as observed toward HD 183143.