Comets

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February 3, 2006

Abstract

High resolution spectroscopy of comets, both in the far ultraviolet, from space using the *Far Ultraviolet Spectroscopic Explorer* and the *Hubble Space Telescope*, and in the near infrared (2.9 – 5.0 μm), from the ground, have revealed a wealth of new information, particularly about the molecular consituents that make up the volatile fraction of the comet's nucleus. Interpretation of these data requires not only proper wavelengths for identification but also information about the photolytic processes at temperatures typical of the inner coma (70 – 100 K) that lead to the observed spectral signatures. Often, nearly simultaneous ultraviolet and infrared observations do not lead to consistent abundance determinations which may be the result of improper modeling of the excitation mechanisms in either or both regimes. Several examples, mainly from *FUSE* and *HST* spectra of comets observed during the last few years, will be given to illustrate some of the outstanding issues.

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