

# High Resolution Spectroscopy of Comet C/1996 B2 (Hyakutake) in the Ultraviolet and Blue Spectral Range

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On March 25, 1996, we observed comet C/1996 B2 (Hyakutake) from Kitt Peak National Observatory/NOAO. We used the echelle spectrograph on the 4-m Cassegrain telescope and obtained spectra at a spectral resolving power of 17,500. Employing a UV-sensitive CCD we were able to cover the spectral range from 3000 Å up to 4700 Å. High resolution spectra are the key to any theoretical model that tries to explain cometary emission lines quantitatively. We present selected bands of OH, NH, and CH, and compare with theoretical models. We will discuss the detectability of rare isotopes in these bands. Although the CH bands of comet Hyakutake were relatively weak we detected both the A-X and B-X system and derived a temperature for the CH X-state. The intrinsically high activity of the comet combined with the proximity to the earth rendered Hyakutake an ideal target to search for short-lived and so far undetected species, which are usually not observable at larger geocentric distances because their slit-size averaged signal is too low.