IUEAGN: A Database of Ultraviolet Spectra of Active Galactic Nuclei

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In 13 years of operation, *IUE* has gathered ~5000 spectra of almost 600 Active Galactic Nuclei (AGN). In order to undertake AGN studies which require large amounts of data, we are consistently reducing this entire archive and creating a homogeneous, easy-to-use database. First, the spectra are extracted using the Optimal extraction algorithm (Kinney, Bohlin & Neill, 1991, *P.A.S.P.*, 103, 694). Continuum fluxes are then measured across pre-defined bands, and line fluxes are measured with a multi-component fit (see Figure 1). These results, along with source information such as redshifts and positions, are placed in the IUEAGN relational database. Analysis algorithms, statistical tests and plotting packages run within the structure, and this flexible database can accommodate future data when they are released.

This archival approach has already been used to survey line and continuum variability in six bright Seyfert 1s (Edelson, Krolik, & Pike, 1990, *Ap. J.*, 359, 86). and rapid continuum variability in 14 blazars (Edelson, Saken, Pike, Kinney, & Shull 1992, *Ap. J.*, in press) (see Figure 2). Among the results that could only be obtained using a large archival study is evidence that blazars show a positive correlation between degree of variability and apparent luminosity, while Seyfert 1s show an anti-correlation. This suggests that beaming dominates the ultraviolet properties for blazars, while thermal emission from an accretion disk dominates for Seyfert 1s. Our Future plans include a survey of line ratios in Seyfert 1s, to be fitted with photoionization models to test the models and determine the range of temperatures, densities and ionization parameters. We will also include data from *IRAS*, *Einstein*, *EXOSAT*, and ground-based telescopes to measure multi-wavelength correlations and broadband spectral energy distributions.

Figure 1a

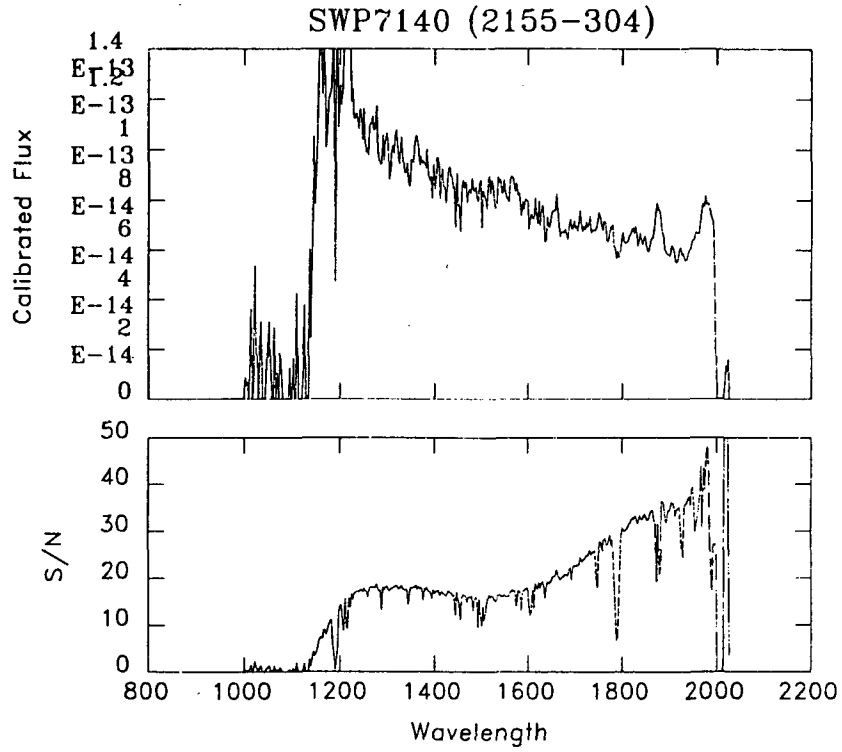

Figure 1b

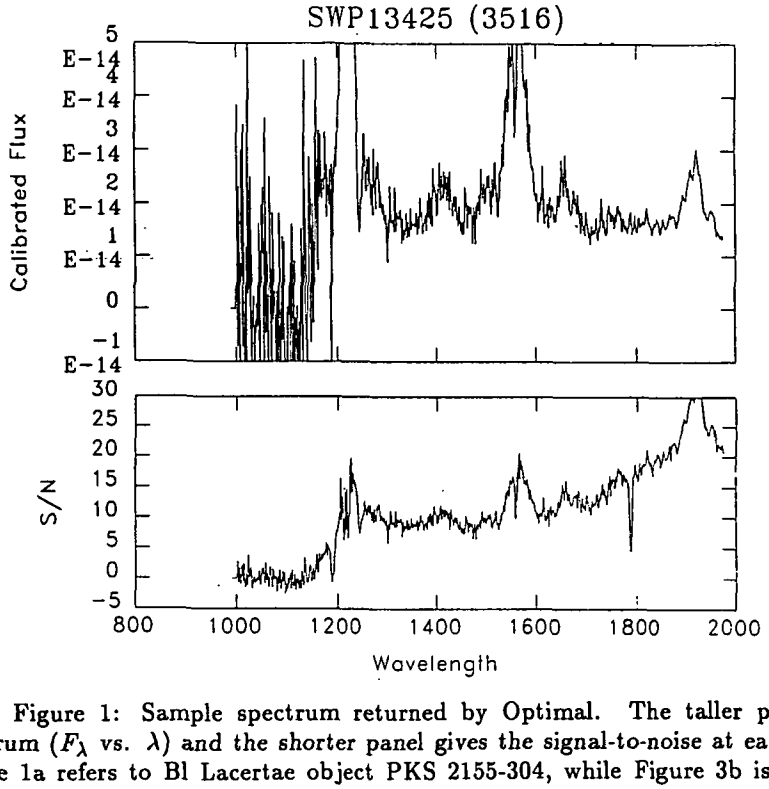

Figure 1: Sample spectrum returned by Optimal. The taller panel gives the spectrum (F_λ vs. λ) and the shorter panel gives the signal-to-noise at each wavelength. Figure 1a refers to Bl Lacertae object PKS 2155-304, while Figure 3b is NGC 3516, a Seyfert 1.

Figure 2

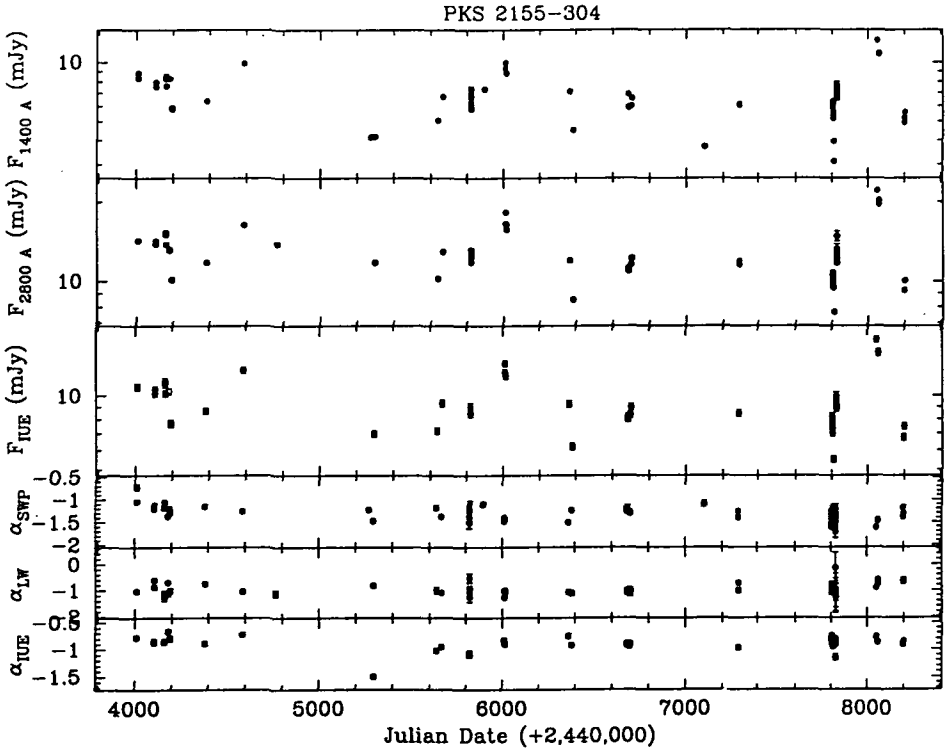

Figure 2: Light curve for the BL Lacertae object PKS 2155-304 during the period 1978-1990 (Edelson, Krolik & Pike, 1990, *Ap. J.*,359, 86).