Ultraviolet Observations of SN1987A with the IUE Satellite

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Reference: Pun, C. S. J. et al. 1995, ApJS, accepted

This data archive consists of ultraviolet spectra of SN1987A obtained with the IUE satellite from 24 Feb 1987 (day 1.6) to 9 June 1992 (day 1567) at both the GSFC and VILSPA IUE observatories. Spectra taken by both the Short Wave Prime (SWP: 1150 --- 1975 A) and the Long Wave Prime (LWP: 1975 --- 3300 A) cameras are included. The spectral data are stored in FITS format. The contents of each TAR file are listed as follows:

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iue_swp_backgd_fits.tar : SN87A SWP spectra (day 1301 --- 1567) that are
                          averaged to give the flux of the background stars.
                          The individual spectra are named following the
                          convention: "swp.*.fits" where * denotes the
                          IUE image number. The same naming scheme is used
                          for all the SWP spectra in the data set while all
                          the LWP spectra are similarly called "lwp.*.fits".

iue_lwp_backgd_fits.tar : SN87A LWP spectra (day 1301 --- 1567) that are
                          averaged to give the flux of the background stars.

iue_swp_data_fits.tar   : SN87A SWP spectra (day 1.6 --- 1248)

iue_lwp_data_fits.tar   : SN87A LWP spectra (day 1.6 --- 1248)

iue_opt_fits.tar        : Combined IUE and CTIO (Phillips et al. 1988,
                          AJ, 95, 1087; Phillips et al. 1990, AJ, 99, 1133;
                          Suntzeff et al. 1991, AJ, 102, 1118) spectra of
                          SN87A from day 1.7 to day 1050. The individual
                          spectra are named following the convention
                          "dat*.fits" where * denotes the time of observation
                          in units of days after outburst.

tables.2-3.tex          : The journal of all the observations prepared in
                          the planotable format of the AASTeX package.
                                Table 2a: iue_swp_backgd_fits.tar
                                Table 2b: iue_lwp_backgd_fits.tar
                                Table 3a: iue_swp_data_fits.tar
                                Table 2b: iue_lwp_data_fits.tar
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The spectra in the iue_swp_backgd_fits.tar file are averaged to give the background star spectrum in the SWP camera wavelength range. This spectrum has already been subtracted from all the data in the iue_swp_data_fits.tar file. Similar procedures are followed for the LWP files in iue_lwp_data_fits.tar with the background averaged from the spectra in the iue_lwp_backgd_fits.tar file.

The IUE spectra in this dataset have all been corrected for the interstellar extinction. We have adopted the reddening values of E(B-V) = 0.06 and 0.09 respectively for the galactic and LMC corrections. The extinction function of Seaton (1979, MNRAS, 187, 73P) is used for the galactic reddening correction while the 30 Doradus extinction curve formatted by Fitzpatrick (1986, AJ, 92, 1068) is used for the LMC correction. The ratio of visual extinction over the color excess, R_V = A_V / E(B-V), is assumed to be 3.1, the standard value for the diffuse interstellar medium. The CTIO spectra are corrected for interstellar extinction with the average extinction law of Cardelli, Clayton, & Mathis (1989, ApJ, 345, 245) with E(B-V) = 0.15 and R_V = 3.1.