Full Processing of the IUE Final Archive Has Begun!

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On May 20, 1993, production of the IUE Final Archive with final output products began. For the past year, the NASA IUE Project has been performing partial processing of the SWP low dispersion data up to the point of spectral extraction. The system implemented in May (NEWSIPS) includes the spectral extraction and absolute flux calibration.

The data processed with the NEWSIPS system differ in several fundamental ways from data processed with IUESIPS. The NEWSIPS system is fully described in the NEWSIPS Image Processing Information Manual (Nichols-Bohlin, Garhart, De La Peña, and Bushouse, 1993) which will be available shortly. Elsewhere in this volume, the philosophy and scope of the NEWSIPS image processing is described and the output products are defined. Questions concerning the contents, processing algorithms, and calibrations for the Final Archive can be directed to the author at (301) 794-1410 (e-mail at IUEGTC::NICHOLS).

Major differences between the original IUESIPS system and the NEWSIPS system include:

1. The science images are explicitly aligned with the ITF images, allowing a significantly more accurate two-dimensional photometric correction. The pixels in the photometrically corrected image have values ranging from -1024 to +1024 and are *not* encoded with error condition information. The error condition information (ν) flags are provided in a separate flag image extension.
2. The SILO file replaces the ELBL file as the spatially resolved image. However, the SILO file is a rotated version of the photometrically corrected image which includes both low dispersion apertures. The spectral orders are horizontal in the SILO image and the wavelengths are linearized within the order. The user is provided with the starting wavelength and the wavelength increment per pixel. Wavelengths are aligned for the large and small aperture data in the SILO image. Corrections for the LWP and LWR "shazam" (spatial discontinuity), spectral format motion, and aperture tilt (extended sources only) are applied. The SILO file is in true pixel space, not oversampled as the ELBL file from IUESIPS. As in the photometrically corrected image, the ν flags are provided in a separate flag image, which is formatted as an image extension.
3. The spectral extraction is performed with a weighted slit extraction method based on the optimal extraction method of Kinney et al. (1991). The extracted spectral data

are archived as a FITS table extension with a net flux spectrum, background spectrum, sigma vector (error estimate), data quality flags (ν flags), and an absolutely calibrated spectrum.

4. All output of the NEWSIPS system is available only in FITS format. The original GO format will not be available for NEWSIPS data. The FITS format is defined elsewhere in this volume.

Processing has begun with SWP low dispersion data. The order in which the images are processed is determined solely from the point of view of efficiency of operation. No requests for specific images will be honored for the low dispersion processing.

Data processed with NEWSIPS are immediately releasable once they are cataloged and placed on-line at NSSDC. An initial software package for analysis of NEWSIPS data is available at the IUEDAC. For information contact Tom Meylan at (301) 286-7762.

Kinney, A. L., Bohlin, R. C., and Neill, J. D. 1991, PASP, 103, 694.
Nichols-Bohlin, J., Garhart, M., De La Peña, M., and Bushouse, H. 1993, CSC/SD-93/6062.