The IUE Regional Data Analysis Facilities (RDAF)

Computer facilities for interactive analysis of IUE data are now available at Goddard and at the University of Colorado. Both facilities are staffed by astronomers and assistants to help you with your program of analysis. The capabilities of the facilities and the requirements for scheduling are described below. While the use of these facilities is free of charge to all astronomers, it is expected that current IUE observers and archival researchers will use funds from their IUE grants to cover travel and per diem expenses incurred during their use of the facilities. In order to minimize overall expenses, a special effort will be made to accommodate those astronomers who are already at Goddard for an observing run and who wish to remain to analyze their data.

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RDAF Capabilities

At the RDAF, the visitor uses a Tektronix graphics terminal to display and measure spectra interactively. Most first-time visitors are able to become proficient users after an hour or so of training. A data analysis assistant is available full-time to help with any questions or problems. The capabilities provided by the existing routines include the following:

- convenient, interactive measurements on low or high dispersion spectra: wavelengths, radial velocities, and equivalent widths of spectral lines; continuum fluxes in any desired bands
- comparisons of spectra: adjustment to a common wavelength scale and calculation of a ratio, difference, or average.
- smoothing and filtering
- identification of low quality data points due to reseau, the saturation of the detector, microphonic noise, particle hits, etc.
- estimation of interstellar extinction and correction for it
- comparison with the library of spectral standards or with blackbody spectra or with spectra from the IUE data archives
- customized re-extraction of low dispersion spectra; this is especially useful to reduce noise and reject "hits" in the spectra of faint sources
- customized extraction of low dispersion spectra of spatially extended sources
- publication quality plots

Observers can request to examine their new spectra during their observing run. Generally, the images are available the next working day after they are obtained.

The RDAF is particularly helpful in the analysis of spectra from the IUE data archives:

- -searching the log of observations for objects by name, position, spectral type, etc.
- -rapid access to any of the 30,000 released spectra (at GSFC, a spectrum can often be obtained in a few hours if necessary, although it is safest to allow a few weeks advance notice).
- -accessing the engineering data or the processing history in the image header.
- -improvements for deficient processing of the original data (e.g. SWP linearity errors, calibration of high dispersion spectra, correction of velocity scale)
- - Calcomp plots for high dispersion spectra
- - picture display of images (e.g. to replace the photowrite, which is not available for any of the VILSPA images)

In addition, the RDAF staff is often able to modify existing routines or to write new ones as required to meet any special needs of an individual observer, especially if advance notice is provided. There is a limited budget for continued software development, so that users should contact the staff to get updates on the capabilities or to register suggestions for new routines.

RDAF SCHEDULING

Many observers find it convenient to stay on a day or two after observing to use the RDAF for initial study and measurement of their data. A second trip some time later might be required to correct or complete any measurements, compare with models, make plots for publication, etc.

Some advance notice is required to schedule access to the computer terminal, assistance from the staff, storage space on disk, use of peripheral equipment such as the tape drives and plotters, etc. While we are happy to attempt to fit in last minute requests, it is best to call at least 3 to 4 weeks in advance to discuss your requirements and reserve a time slot. This is especially true if you want to get spectra from the archives or to do some complicated processing.

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