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Report on Recent Changes at the Goddard IUE
Regional Data Analysis Facility
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Several changes/improvements have been made, or are planned, at the Goddard Regional Data Analysis Facility (RDAF) which should be of interest to both visitors and remote users.

New RDAF Terminal Room:

The RDAF terminal room has been moved from room GC-23 to room G-33, which is across the hall from the previous room, and slightly closer to the IUE TOC. The chairs and other furniture have all been replaced. The new modular furniture provides each user with his/her own desk, lighting, and shelf space. The new arrangement relieves the cramped conditions typical of the previous room and is generally quieter.

Staff Changes:

Data Analysis Assistant Rosalie Ewald has transferred from the RDAF to a software development task within the IUE Observatory. Replacing her will be new part-time employee Jennifer Gagliardi, and former Assistant Ruth Bradley. Jennifer will work full-time during the busy months in the summer.

Hardware Changes:

The IUE SUN 4/280 workstation which was purchased in part to support the NASA Astrophysics Data System (ADS) Directory Service has been expanded to include a color monitor, and an Apple LaserWriter II Postscript printer.

The International Imaging Systems (IIS) IVAS image display system, which was initially planned to be connected to the IUE VAX via the BI bus, was finally connected to the VAX after IIS loaned the project a Unibus controller. The problems encountered with connecting the IVAS to the more efficient BI bus are still being discussed with IIS representatives. Programs are currently available for displaying IUE image files, changing color tables, and zooming or roaming across

displayed images. Within the next few months, the Tektronix terminals will be replaced with GraphOn GO-235 graphics terminals (with mice). The Tektronix 4631 printer will also be replaced with an HP LaserJet II printer for allowing screen dumps and hardcopies of IDL plots from the GraphOn terminals. In addition, a GraphOn GO-250 terminal with support for X-windows has been purchased for investigating the possible use of windowing software for the RDAF. As is true with the current terminals, all the GraphOns will be connected to terminal servers to allow connections to either the IUE VAX or SUN workstation.

As a result of the IUE Spectral Image Processing System (SIPS) and calibration groups move to the new computer facility at Greentec, RDAF users have more CPU time available to them on the IUE VAX. The number of simultaneous VAX users is generally half that typical of a year ago, and typical computer response times are noticeably faster.

Software Changes:

SUN IDL

The coding for the UNIX (Sun OS and DEC Ultrix) RDAF software package was completed in January 1990. The RDAF staff are presently involved in testing and documenting the software in preparation for its release in late April 1990. This package currently consists of 155 IDL procedures, approximately half of which are applicable to general astronomical data reduction. In addition to the functions described in the existing IUE RDAF tutorial for the VAX VMS software, it provides the ability to read IUE GO format tapes and convert IUE datasets from VAX to either Sun or DECstation internal data formats. New image display routines included in this package also allow the examination and manipulation of IUE images, including raw image and line-by-line spectrum files. The interactive graphics routines provided in the UNIX RDAF software make use of the capabilities of windowing workstation monitors or Tektronix compatible graphics terminals. (Note, a separate article on the SUN IDL conversion effort is included in this newsletter.)

VAX IDL

The VAX VMS software has now been distributed to 17 sites including centers in Italy, England, Canada, and France. Although requesters must purchase IDL in order to run the RDAF procedures, the only additional requirement is that requesters acknowledge receipt of the software. Since the C-based version of IDL has also been converted to run under VAX VMS, it is expected that the SUN IDL procedures described above will be transferred back to the VAX and will eventually replace our existing VAX IDL procedures. This will

allow VAX users to use the added features of C-based IDL as well as allow the staff to maintain only one set of programs.

The entries below describe the major software and data base modifications implemented on the IUE VAX since August.

- 01-AUG A new version of the IUEGWY program was implemented which uses the full IUE camera acronym in the file name.
- 04-AUG The IUE merged observing log was updated. Goddard entries up to July 10th (GMT 191) are included.
- 08-AUG Minor changes were made to two routines currently stored in the experimental library:
IUESPEC - displays 10 rather than 9 lines of the header label (to allow the observation date to be displayed),
SDC - allows users to exit program by typing 0,0 for the observation date.
- 16-AUG A new procedure known as ARTIFACT was added to the experimental library which outputs fluxes of known camera artifacts for IUE low dispersion spectra.
- 17-AUG The IDL routine EXESLO will be renamed EXMELO to agree with current IUESIPS file naming conventions. A version of EXMELO as well as a version of MAKEMELO which calls EXMELO were added to the experimental library.
A new version of IDTAPE was also added to the experimental library which when called with the single parameter UNIT, will display the the 1st 5 lines of an IUE tape file label.
- 18-AUG The IDL Users library was updated to agree with the version currently running on CHAMP.
- 22-AUG The system level IDL library search path was updated to include the latest IDL libraries developed by UIT personnel. A list of all the current IDL procedures accessible by RDAF users is contained in IUE\$USER0:[IUERDAF.MANAGER]LIB.LIS. (Note that these changes do not affect access to the standard RDAF libraries.)
- 29-AUG A new version of CRSPROD (a subroutine of CRSCOR) was added to the experimental library which generates more accurate cross correlation functions. The new version should be compiled (i.e. .RUN EXPLIB:CRSPROD) before running CRSCOR.
- 06-SEP New versions of SEARCH and a subroutine of SEARCH called MENU2 were added to the experimental library. SEARCH properly resets the print format and output device after repeated searches of the merged log, and MENU2 provides more information on specifying

negative declination values.

- 11-SEP An experimental version of IUEGET was added to the experimental library which uses an intrinsic median filtering routine called FMEDIAN instead of spawning to a FORTRAN task. Although FMEDIAN gives a slightly different result than the FORTRAN program, it can be used to avoid the recent problems with spawning from IDL.
- 12-SEP The following experimental routines were implemented in the standard RDAF production library: IUESPEC, SDC, DDISK, READ_DATA, ARTIFACT, EXMELO (formerly EXESLO), MAKEMELO, and IDTAPE. Also, a new version of KURUCZ was added to the experimental library.
- 13-SEP The experimental versions of SEARCH, MENU2, and CRSPROD described above were implemented in the RDAF production libraries.
- 12-OCT A new routine for precessing coordinates was added to the experimental library which uses the FORTRAN precession routine written by IUE RA Chris Shrader. The IDL routine is compiled by typing .RUN EXPLIB:PRECESS and executed by typing PRECESS,0. The user is prompted for all the necessary information.
- 13-OCT A new version of MOSEARCH was added to the experimental library which will allow searches for more than 20,000 entries. To use the new version, type .RUN EXPLIB:MOSEARCH before running SEARCH.
- 20-OCT The [IUERDAF] and [IUEIDL] accounts were moved from IUE\$USER0 to IUE\$USER2. The system level logical RDAF_DISK, which is used by many programs to locate RDAF files, was redefined today to point to IUE\$USER2. The [IUERDAF] and [IUEIDL] accounts on IUE\$USER0 will be deleted.
- 22-NOV The IUE merged observing log was updated. Goddard entries up to November 7th (GMT 311) are included.
- 06-DEC A new version of DISPCON was added to the experimental library which properly extracts the dispersion constants from recent IUE images. Users running MISDAT should use this version of DISPCON.
- 20-DEC A new version of WFIT was added to the experimental library which should prevent the 'divide by zero' error messages occasionally seen with the GEX routines.
- 22-JAN IDL was relinked to include the commands for accessing the recently installed IVAS image display system.
- 24-JAN A new program called IUEDISPLAY was added to the experimental library to allow IUE image files to be displayed on the IVAS image display system. After running IUEDISPLAY, the IDL command TVROAM can be used to 'zoom in' or 'roam' on the displayed image.
- 20-FEB The IUE merged observing log was updated. Goddard entries up

to January 29th are included.

- 21-FEB The low dispersion sensitivity degradation correction routine RSENSECOR now uses an updated SWP correction. The new correction is based on images as recent as 1989.
- 13-MAR A new version of IUEDISPLAY and LOADCT was added to the experimental library. LOADCT can now emulate the IUE EDS color table by typing, LOADCT,'IUE'.
- 16-MAR A new version of POINT was added to the experimental library which allows users to print the results on a QMS laser printer.
- 03-APR A program for applying David Finley's low dispersion absolute calibration correction was added to the experimental library. The correction is based on comparisons of white-dwarf models with actual IUE spectral data.

Miscellaneous Projects:

TCP/IP support software has now been installed on the IUE VAX which allows Internet users to access the RDAF. Since TCP/IP is the default protocol for UNIX-based computers, any user on a networked UNIX computer can now log on to the IUE VAX. (Note, a separate article on remote RDAF usage is included in the newsletter.)

The RDAFs are participating in the NASA Astrophysics Data Systems (ADS) project which will eventually allow remote users to access datasets maintained at all the major observatories in the U.S. through a common software system. The initial configuration will connect IPAC, IUE, NSSDC, SAO, and STScI and is scheduled to begin beta-site testing this summer.

Current RDAF Phone Numbers

Jerry Bonnell	Astronomer/programmer	286-7762
Ruth Bradley	Data Analysis Assistant	286-8060
Jennifer Gagliardi	Data Analysis Assistant	286-3938
Lyla Taylor	Data Analysis Assistant	286-3938
Terry Teays	Astronomer	286-8060
Randy Thompson	Manager/scheduling	286-8800
RDAF Terminal Room (local calls only)		286-8746
Call-back Modem Lines		344-0709 & 344-5351