# Current Developments at the IUE Data Analysis Center

IUEDAC Staff (CSC)

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## 1 Facility Status

In March, 1993 the IUE Regional Data Analysis Facility (IUE RDAF) was officially renamed the IUE Data Analysis Center (IUEDAC). The name change was because of the closing of the Colorado RDAF in September 1992.

### 1.1 Staff Changes

Dr. Mario Perez has left his position as IUEDAC Astronomer to work on the IUE Final Archive. Dr. Michael Carini is currently the IUEDAC astronomer, in addition to his duties as Resident Astronomer, which he has been performing for over 3 years.

### 1.2 Software Changes

A REMINDER: On December 3, 1993, we will be "decommissioning" the old IDL Version 1 based IUE RDAF software. It will be removed from our computers, and it will no longer be serviced. This date will mark the second anniversary of moving IUEDAC software (at that time the RDAF) from FORTRAN based IDL to C based IDL v2.0. Our software currently runs under IDL v3.0.

We are currently in the process modifying and testing our IDL v3.0 based analysis software to handle NEWSIPS data. We currently have FITS input and output capabilities ready to use on NEWSIPS data, and many of our analysis routines are ready for use with these new data. We expect to implement the new versions of the software by January 1 1994.

For the current software based on IDL v3.0, the entries below describe the major software and data base modifications implemented at the IUEDAC since July 1993.

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23-JUL  The IUE FES catalog was updated. Goddard images through May 29th
        are included.
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23-AUG  A new version of HFIX was implemented which allows wildcards for
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file names and runs slightly faster than the previous version.


21-SEP   Several routines have been implemented from the experimental
         library:
         ASC_READ     - corrects problem when 12 parameters are specified
         CONVERT      - reduced printout and add version number for VMS systems
         CON_SAV      - supports multinet FTP software
         DCCOR        - updated wavelength corrections
         FEATURE      - time stamp added and noprint option
         GETIUE       - reads abscal record from current MEHI files
         GOTORDAF     - converts GO format disk files to rdaf-format
         IDFILE       - accepts VMS RDAF-format disk files
         IFITSRD      - reduced printout and add silent mode
         IPS          - creates a color postscript file from an IDL array
         IUECOPY      - faster version & accepts truncated data records
         IUEDISPLAY  - reads & displays IUE data on IVAS image display system
         IUEFX        - references new NDADS staging area
         IUELCT       - like loadct but includes 'iue' color table
         IUEREF       - IUE bibliographic reference database search routine
         IUESAVE      - minor coding changes
         LINEID       - minor coding changes
         NSPLOT       - NEWSIPS version of IUEPLOT
         PRECOMP_GETDAT - allows 0 as first number in image sequence number
         RBCORR       - applies Ralph Bohlin's absolute calibration
         READMX       - reads NEWSIPS MXLO files
         TRANS_BYTES- replaced swap_bytes calls with intrinsic byteorder command
         UNRED_CCM   - generates unreddening models
         WDUMP        - allows dumping x-window display to a color postscript file
         WRITEMX      - creates MXLO-like FITS files


27 SEP   New versions of IDBDATE, ISMENU2, and ISVIEW have been implemented
         to be compatible with the change to modified Julian date in the IUE
         Merged Log.

14 OCT   New versions of the following FITS routines were implemented:
             IMXGEN - properly handles partial data records when creating
                      a FITS image extension
             HDUGEN - properly handles partial data records when creating
                      a FITS primary array file
             KEYGEN - allows a FITS header to be input when using 'DATA' mode.

IUEFHMOD - properly modifies the value of a keyword in a FITS file

20 OCT A new version of TABINV was implemented that corrects a problem
which occurs when input arrays contain 16,000 to 32,000 elements.

The latest version of the User's Tutorial Manual is available online as a LATEX file in the account: IUE$USER1:[IUERDAF.MANUALS]TUTORIAL.TEX.

## 1.3 IDL License News

IUE researchers who wish to use the IUEDAC software and/or the IUE Remote observing software at the their home institutions must first purchase IDL from Research Systems, Inc (RSI). The IUE project has renegotiated an agreement with RSI to make IDL available at a discount for another year. As before, a discount of 50Universities, and a discount of 40associated with the IUE project for purchasing the standard workstation class IDL license. In addition, a 25IDL for Windows (PC-DOS) and IDL for Macs (for Macintosh computers). (Note that the IUEDAC staff will begin work on porting the IUEDAC software to DOS and MACs later this year.)

This special discount expires on September 30, 1994 but may be renegotiated if there is sufficient interest. To qualify for this discount, you must obtain a letter authorizing the discount from the IUE project. Please contact Randy Thompson at the IUEDAC to obtain a copy of this letter.

# 2 New Services, Available and Planned

## 2.1 PC and MAC Port of IUEDAC Software

A NASA Astrophysical Data Program (ADP) proposal submitted by IUEDAC, has been approved for converting the IUE data analysis software to run on personal computers (PCs). The 2-year grant will include converting the existing Unix/Ultrix/VMS software to run under both "IDL for Windows" (*i.e.*, IBM-compatible PCs) and "Mac IDL" (expected to be released by RSI this fall). New routines for reading and analyzing NEWSIPS data sets will be included. The converted software will be made available via network transfer and floppy disks.

## 2.2 IUE PUBLIC RELATION IMAGES FOR DOWNLOADING

The IUE project is making available to interested users several color illustrations of objects, spectra and statistics relevant to the IUE mission. All of these images are in color and/or B & W postscript format. Examples of the objects available (in most cases these figures are a collage of FES, CCD and spectral images) include artwork of comet Halley, IUE survey, NGC 1068, NGC 5548, SN 1987A, SN 1992A, Z And, etc. Several figures with interesting statistics are also available such as the total number of

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images taken by object class, images acquired each year, number of IUE publications per year, annual operations efficiency, oversubscription rates, etc (most of them are updated through 1992). There is a README.txt file on-line in which the file sizes are listed and a brief explanation of each image is included. At the moment, these files reside in the IUEBCK account (subdirectory IMAGES) on IUE and can be retrieved, via network (FTP or VMS/COPY), by requesting the password from a staff member. If you use any of these images in public presentations or written articles, please add: "Courtesy of the IUE Data Analysis Center, NASA-GSFC".

## 2.3   New Tutorials Available

We have placed two short tutorials on iuesn1.gsfc.nasa.gov which can be obtained via anonymous ftp. They are in the pub/manuals directory.

The first one is our introduction to using IUEDAC software with NEWSIPS data (newsips.user.prel). It briefly describes what will be needed to get started, and gives a few hints about what to expect. The two primary things this guide offers are descriptions of the file readers required to load IUE NEWSIPS FITS formatted data into the IDL environment and a list of additional IUEDAC procedures which can currently be used in analysis.

The second one describes procedures for converting both IUESIPS data and NEWSIPS data into formats that are compatible with the IRAF environment (iraf_conv.tex ). This tutorial provides a brief background on the need for converting these IUE data files, along with seven different data reformatting situations, and the procedures required to transcribe the data into IRAF compatible format.

Both guides provide specific examples to get the user started. As always, any questions which arise may be directed to the IUEDAC staff.

## 2.4   How to Obtain the IUEDAC Software Package

VMS - Copies of the IUEDAC IDL-based software package in VMS save sets are now available from the project. The most recent versions of the software can be provided on a 9-track magtape and are also now available on disk for electronic transfer. These disk files are located in IUE$USER5:[IUEBCK]. A README file is included in that directory which contains installation instructions. A password is needed to retrieve these save sets, and it can be obtained from Randy Thompson, whose address and number is listed at the end of this article.

UNIX - The software package for UNIX (SunOS) and ULTRIX systems are available through the network via anonymous ftp or on 1/4" cartridges and 9-track tapes. To transfer the files (sun_*.tar.Z), via anonymous ftp, use the following commands:

- ftp iuesn1.gsfc.nasa.gov (128.183.57.16)
- login - anonymous

- password - username@host
- cd pub
- get README
- get DOC          ✈
- get INSTALL
- get REGISTER
- binary
- mget sun*.Z (or mget ultrix*.Z)
- bye

These files are intended to be unpacked in the installation directory using the "uncompress" and "tar xvf" commands. More complete installation instructions can be found in the file INSTALL. Introductory documentation on the IUEDAC procedures can be found in the file DOC. If you retrieve the software via anonymous ftp or from IUEBCK, please send us the Registration form (file REGISTER) via e-mail. A copy of this Registration form can also be found in IUE Newsletter #51.

Feel free to contact Randy Thompson (rthompson@iuedac.gsfc.nasa.gov), the IUEDAC Manager, or Pat Lawton (lawton@iuesn1.gsfc.nasa.gov) for additional assistance with your installation of the IUEDAC software.

## 2.5   UNIX and ULTRIX Release Updates

The compressed tar files of the UNIX and Ultrix releases of the IUEDAC software were updated on the 15th of September 1993. They are in the pub subdirectory of the anonymous ftp account on iuesn1. For files updated and/or added to the IUEDAC software between versions of the compressed tar files, please see the pub/beta subdirectory. The README file in that subdirectory will provide the necessary information for adding the new files to your current installation.

## 2.6   Database Updates and Availability

The IUE Merged Log (IUELOG) database has been updated and is now current for observations through the 1st of September, 1993. The IUEFES database is current for observations through the 29th of May, 1993. The Julian dates given for the observation, processing and release dates in IUELOG, and for the observation date in IUEFES have all been changed to Modified Julian Dates. (Julian Date - 0.5)

An Ultrix version of the iuerdaf/database/mergelog directory is now available. This directory contains the IUE Merged Log databases, IUELOG and IUEFES, that the IUEDAC IDL procedure SEARCH uses. It also contains the IUE Reference databases, ALIAS, IUECOAU, and IUEJRNL, that the IUEDAC IDL procedure IUEREF uses. The file is ultrix_mergelog.tar.Z and it is in the pub subdirectory of iuesn1's anonymous

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ftp account. Please note, for Ultrix installations that wish to install the iuerdaf/database/mergelog directory, the following line must be added to the current iuerdaf/operations/idldef file:

**setenv IUER_MLOG $iuerdaf/database/mergelog/**

The IUEDAC wishes thanks NSSDC for access to a DECstation to permit this file to be created.

### 2.7  Miscellaneous Projects

The IUEDAC has begun distributing an electronic IUEDAC newsletter. The newsletter is intended primarily to inform remote sites of recent changes to the IUEDAC software and will be distributed via electronic mail. The initial distribution list was generated from lists of recent IUE observers, IUEDAC users, and remote sites which have requested the IUEDAC software. Users can be added or deleted from this current distribution list by sending e-mail to IUE::NEWS (or news@iue.gsfc.nasa.gov). The newsletter will be distributed approximately monthly.

The IUEDAC continues to participate in the NASA Astrophysics Data Systems (ADS) project which allows remote users to access catalogs and online documentation maintained at major observatories throughout the U.S. using a common software system. The IUE node currently supports about 18 ADS users each month.

## 3  Communicating with the IUEDAC

### 3.1  IUEDAC Access

Personnel at the IUEDAC can be contacted in any of a number of ways. We are committed to providing analysis tools, the training to use them and to make the analysis of IUE data as productive as possible. We remain ready to help solve problems related to the software we provide and we continue to work on our package to improve its quality and expand its usefulness. Let us know what we can do to improve the package, or to help you use it more effectively.

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Electronic Mail -  Internet:    name@IUEDAC.GSFC.NASA.GOV
                   DECNet  :    IUEDAC::name or 16074::name
                                (staff members are listed
                                at the end of the article)


   Remote Login    -  You need to have a local account on the IUE computer.
                      If you need one, please call Randy Thompson (IUEDAC
                      Manager) at (301) 286-8800. To do searches or retrieve
                      data you can access one of the IUE accounts such as
                      IUEORDER (call for the password).
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    Modem:           (301) 286-9000    (1200, 2400 baud)
                     (301) 286-4000    (9600 baud)
                   Enter Number:  LASP

                   local> C IUE

      Call back lines are also available at 1200 and 2400
      baud rates.

      TELNET 128.183.57.58

      SET HOST IUE or SET HOST 15378
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File Transfer    –    FTP 128.183.57.58
                      (enter your IUE account name and password)
                      Note that the if you want to transfer binary files
                      (e.g., .DAT, .LAB, or .SAV), you need to specify
                      ''quote site io\_mode'' and ''binary'' and run
                      CON\_RDAF if transferring files across different
                      platforms.

                      VMS DCL command Copy (from IUE to you local computer)
                      COPY 15378''name password''::disk:[name]file.ext *.*
                      (disk e.g., IUE$USER1)

In case you have questions please send e-mail to Randy Thompson. If you need more detailed information we can send you the IUEDAC Remote Users Guide.

## 3.2  Software Registration

Those who have copied the IUEDAC IDL based Spectral Analysis Software package should be sure to register yourselves as owners/users. There are a number of reasons for this.

Perhaps the single most important reason to register your use of this software in these days of budget cuts is to provide the IUEDAC with usage statistics. NASA Head Quarters has mandated that the IUEDAC make software exportation one of its highest priorities, and your registrations give us a means of demonstrating that we are meeting that directive.

From the user's standpoint, it is helpful to you that we know who has the software in case problems arise. Obviously, we can service the users' implementations better if we know who the users are. Should we uncover a problem with the package, we can broadcast this information to all users more efficiently. We can also broadcast

the locations of replacement modules and patches to remedy these problems IF WE KNOW WHERE TO SEND THE INFORMATION!

Please help us help you by registering your IUEDAC software installation with us. A copy of the registration form can be found in IUE Newsletter #51 or in the anonymous FTP account on IUESN1 (see above).

## 3.3 The Current IUEDAC Staff

Should you have any questions, problems or suggestions concerning the services or products available at the IUEDAC, feel free to contact any of the personnel listed below.

| Function | Name | Preferred E-mail Address | Phone |
|----------|------|--------------------------|-------|
| Supervisor | Dr. Tom Meylan | IUEDAC::MEYLAN | 301-286-7762 |
| | | meylan@iuedac.gsfc.nasa.gov | 301-794-1471 |
| Manager | Mr. Randy Thompson | IUEDAC::RTHOMPSON | 301-286-8800 |
| | | rthompson@iuedac.gsfc.nasa.gov | |
| Astronomer | Dr. Michael Carini | IUEDAC::CARINI | 301-286-7762 |
| | | carini@iuedac.gsfc.nasa.gov | |
| UNIX Support | Ms. Pat Lawton | lawton@iuesn1.gsfc.nasa.gov | 301-286-5103 |
| Assistant | Ms. Lyla Taylor | IUEDAC::STAFF | 301-286-3938 |
| | | staff@iuedac.gsfc.nasa.gov | |
| Assistant | Ms. Ruth Bradley | IUEDAC::STAFF | 301-286-8060 |
| | | staff@iuedac.gsfc.nasa.gov | |