

Current Developments at the IUE Data Analysis Center

IUEDAC Staff (CSC)

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1 Facility Status

Our thanks to the many users who stopped by the IUE exhibit at the 183rd American Astronomical Society meeting in Crystal City. Your suggestions and comments are always appreciated, as is the community's continuing support for the IUEDAC and the IUE project as a whole.

1.1 Software Changes

On May 15, 1994 a new set of IUEDAC software routines was made available to the IUE user community. This major release includes the changes necessary to the software in order for it to be compatible with the format of the NEWSIPS data products. Users who are interested in analyzing NEWSIPS data should be sure to update their software libraries with this new set of routines. The new software allows users to analyze NEWSIPS data as well as prevents users from using IUESIPS specific routines on NEWSIPS data. Although the programs have been extensively tested during the last few months, users are cautioned that some paths have not been fully tested. Please report any problem to the IUEDAC immediately, so we may make the necessary changes as quickly as possible. Note also that the calling sequences for many of the procedures have changed, please refer to the prolog and the changes.txt files contained in the software distribution in the manuals subdirectory for more details.

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 October 1993.

17 NOV IDL version 3.1.1 installed

17 NOV The VMS STD_STARS HELP library has been updated to include information on the standard star spectra described in IUE Newsletter #43. Type "\$HELP STD_STARS" (from IDL) to display the new help file.

24 NOV New versions of the routines FITSCON and IUE3DRD were added to the experimental library. These routines allow multi-dimensional, as well as variable length arrays, to be read in binary table extensions of FITS format disk files.

- 13 DEC The IUE FES catalog has been updated. Goddard entries through Nov. 15th are included.
- 13 DEC A new version of KANDP has been added to the experimental library to allow table entries to be converted to air wavelengths. (Note this conversion should be used when comparing entries to IUESIPS wavelengths above 2000 angstroms.)
- 14 DEC The IUE Merged Observing Log has been updated. Goddard entries up to November 27th (GMT 330) are included.
- 07 JAN A new program was implemented called QMS to allow visitors and local users to send program printout to the old QMS printers. To execute (from IDL), type qms. To reset default values, type iuelib.
- 21 JAN The QMS printers are no longer available.
- 01 FEB Users may now run the experimental NEWSIPS-compatible routines. To run, simply exit this session and type "RDAFTEST". Although testing of these routines is ongoing, users are cautioned that these programs may still contain some bugs. Please contact a member of the IUEDAC staff if any problems are encountered.
- 01 MAR The RDAFTEST routines and data sets have now been installed in the standard IUERDAF library. The new programs support both NEWSIPS and IUESIPS data sets. Note that most of the existing programs have been modified, and many new programs have been added. Please contact a member of the IUEDAC staff if any problems occur.

WARNING: SOME PROCEDURE CALL STATEMENTS HAVE BEEN CHANGED! TYPE THE PROCEDURE NAME WITHOUT ANY PARAMETERS TO SEE THE NEW CALLING SEQUENCE. IN PARTICULAR, NOTE THE CHANGES TO IUEFX, PLOTOPEN, PLOTPRINT AND CRSCOR.

- 14 MAR The IUE Merged Log has been updated. Goddard entries through Feb. 24th (GMT 55) are included.
- 07 APR The following routines were implemented in the standard RDAF library:
- SEARCH routines - Allows faster searches on final archive status field, and researching of previous search lists.
 - COADD - Uses .SAV extension as the default for non-NEWSIPS files.
 - NEWCALIB - optionally calibrates an input error vector (used in GEX routines).
 - HIST - properly handles integer and floating point arrays.
- 13 MAY New versions of several routines were implemented in the standard

IUEDAC procedure library. Most of the changes involved making IUEDAC routines compatible with IUE Final Archive data. In some cases, the changes were only made to prevent IUESIPS-specific routines from accepting NEWSIPS files as input. The modified programs include the following:

misdat, strucrd, bspot (& subroutines), gex (& subroutines),
ipdata, ipinfo, nsplot, newcalib, printtemp, printdc, dtrans,
ips, savlist, rdz, mxcon, chisq, lwpcorflux, wpolyfit, chkfits,
and rbsenscor.

Use the command `DOC_library,'procedure'` to obtain more information on the specific modifications. Also see the file `gex_primer.txt` in `ieuser1:[iuerdaf.manuals]` for a description of changes to the gex programs.

16-MAY The latest IUEDAC routines and database files have been copied to the [IUEBCK] account for distribution to remote nodes.

17-MAY The following routines were deleted from the [IUERDAF] account since they were either implemented from the experimental library, or replaced by new routines.

ieuser1:[iuerdaf.experimental]: rdz, keygen, pregex_getdat
ieuser1:[iuerdaf.iuelib.pro]: isprt3, iuepard, searchv2
ieuser1:[iuerdaf.iuelib.inf]: searchv2.txt

10-JUN New versions of the following routines were implemented:

idfile - properly displays first 5 lines of label
srplot - allows file names without extensions
idb_item - increased size of item_names from 50 to 200 elements
pcheck - does a retall instead of prompting user for action
extfits - corrects error when multiple high dispersion orders
are converted to a binary table FITS file.

21-JUN New versions of the following routines were implemented:

isprtfull - improved full listing not in table form (used
in search)
coadd - allows respecifying input file name, improved error
messages, and outputs floating point wavelengths

21-JUN The IUE merged observing log was updated. Goddard entries through May 25th are included.

22-JUN The IUE FES catalog was updated. Goddard entries through May 23rd are included.

23-JUN New versions of the following routines were implemented:

ifitswrt - corrects error occurring when updating an existing
FITS file with more than 36 keywords in the extension
header

`isview` - includes new values for the `fa_status` database entry.
`keygen` - correct error when input header is specified.

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

1.2 Conversion to MultiNet TCP/IP Software

On Wednesday, April 6th, 1994, the Wollongong TCP/IP software installed on the IUE VAX was replaced with MultiNet. This will result in changes in how Internet e-mail addresses are specified and how binary files are transferred using FTP. Please contact a member of the IUEDAC staff for details on the changes.

1.3 Upgrade of the IUE VAX

As part of a general upgrade of the Laboratory for Astronomy and Solar Physics (LASP) computer cluster, the IUE VAX 8350, as well as nodes CHAMP and HRS, will be replaced with DEC 3000 model 600 Alpha workstations. Preliminary benchmark tests indicate that the new computers should represent an increase in CPU power by more than two orders of magnitude. In addition, lower maintenance cost for the ALPHA and special incentives from DEC for upgrading old VMS computers will result in substantial savings for the lab. The new computers should arrive sometime this summer.

The new IUE node will run OpenVMS and maintain its unlimited VMS and IDL user licenses. Except for the possibility of a few days of down time, the upgrade should not impact users adversely. The IUEDAC software is being modified to run under the OpenVMS operating system. In addition, we are taking this opportunity to generalize the portability of the IUEDAC software between operating systems.

1.4 Call Back Modem Changes

In anticipation of the Alpha upgrade described above, the two IUEDAC modems and call back authenticator connections have been modified. Instead of being connected directly to the IUE VAX, the lines are now connected to a terminal server which auto-connects to IUE. The only change in procedure will be that after users log off IUE, they must also log off the terminal server. However, if a user forgets to log off the server, it will automatically disconnect after 5 minutes.

1.5 More User Accounts

In response to the ever increasing demand for user accounts on the IUE VAX, five more user accounts were added in May 1994, bringing the total number of user accounts to 65. This is in addition to the numerous staff and local astronomer accounts the IUEDAC also supports.

1.6 IDL License News

IUE researchers who wish to use the IUEDAC software and/or the IUE remote observing software at their home institutions must first purchase IDL from Re-

search 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 50% is available to IUE researchers from Universities, and a discount of 40% is available to other individuals associated with the IUE project for purchasing the standard workstation class IDL license. In addition, a 25% discount now applies for purchasing IDL for Windows (PC-DOS) and IDL for Macs (for Macintosh computers). (Please note that the IUEDAC staff will begin work on porting the IUEDAC software to DOS and Macs later this year via an accepted ADP proposal.)

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 IUE and the World Wide Web

The World Wide Web (WWW) is the total collection of Hypertext Markup Language (HTML) documents available on the Internet. One venue through which to access these documents is a document viewing program known as MOSAIC. MOSAIC is distributed free of charge via the National Center for Supercomputing Applications (NCSA). It comes in several flavors: there is a MOSAIC for X-windows, for Macintosh computers and for computers running Microsoft Windows. In addition, there is a package called LYNX, which allows users without windowing capabilities to have access to the information on the WWW. All of this software is easily available via anonymous FTP from NCSA at *ftp.ncsa.uiuc.edu* except LYNX, which is available via anonymous FTP from *ftp2.cc.ukans.edu*. Login as *anonymous* and use your complete Internet e-mail address as the password. The online documentation will guide you to the appropriate subdirectories.

In addition to document viewing capabilities, WWW provides multi-media capabilities to the user. One can view images, movies and play back audio files, if your computer has such capabilities. Again, the add-on software packages required can be found on the Internet. Once you have MOSAIC up and running, it is trivial to find and download these additional packages.

It would not be an understatement to say that nearly all of the US astronomical community is on the WWW. NOAO, AAS, NASA (and most NASA projects), etc. all have a presence on the WWW. In most cases this presence is more than just text information. You can find pictures, documentation and most importantly for research astronomers, data. Most of NASA's online archival data can be accessed via the WWW, either through the National Space Science Data Center (NSSDC) or through research centers such as the High Energy Astrophysics Science Archive Research Center (HEASARC).

IUE has also joined the growing number of astronomical projects on the WWW. We have created an IUEDAC homepage, designed to provide IUE users access to IUE data, IUEDAC software and documentation, general project information and information and data from other NASA missions and other areas of astronomy. The URL for this homepage is:

http://iuesn1.gsfc.nasa.gov/iue/iuedac_homepage.html

In the next few months, we plan on adding the capability to search the IUE Merged Log via the WWW, thus providing IUE archival users another easy method of obtaining IUE data. Both the current archival access and the IUE Merged Log search capability are joint efforts between the IUEDAC and NSSDC. Also coming soon will be pages dedicated to an overview of the IUE Project, IUE Telescope Operations, and IUESIPS.

2.2 PC and MAC Port of IUEDAC Software

Funding from the ADP program to port the IUEDAC software to both DOS and Mac personal computers has now been received from NASA. Work on the DOS port will begin as soon as we receive delivery of a 486/DX2 notebook. We hope to have the PC port completed in time for a presentation at the Astronomical Data Analysis Software and Systems (ADASS) meeting to be held in Baltimore September 25-28. The MAC port is expected to begin later this year.

2.3 New Tutorial Available

The *IUE Data Analysis Center User's Tutorial Manual* was updated in March 1994. The new manual describes how to reduce and analyze both IUESIPS and NEWSIPS data. It can be obtained by contacting the IUEDAC staff IUEDAC::STAFF (SPAN), staff@iuedac.gsfc.nasa.gov (INTERNET) or via anonymous FTP at the address described below in the *pub/manuals* subdirectory.

2.4 Anonymous FTP Account Changes

The anonymous FTP account on IUESN1 has been rearranged and expanded. The UNIX and ULTRIX releases of the IUEDAC IDL software and databases are now in the *pub/software* directory. The *pub/beta* directory continues to have updates to the software between new versions of the compressed tar files. There are three new subdirectories: *pub/images* contains copies of the IUE Public Relations images (PostScript format), *pub/news* contains back issues of the IUEDAC electronic newsletter and *pub/proposal* contains information on how to propose for IUE observing time.

2.5 How to Obtain the IUEDAC Software Package

VMS - Copies of the IUEDAC IDL-based software package in VMS backup 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.txt 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 phone number are 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/software
- 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 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 (VMS), or Pat Lawton (lawton@iuesn1.gsfc.nasa.gov) (UNIX/ULTRIX) for additional assistance with your installation of the IUEDAC software.

2.6 Database Updates and Availability

The IUE Merged Log (IUELOG) database has been updated and is now current for observations through the 25th May 1994. The IUEFES database is current for observations through the 23rd May 1994.

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.

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).

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

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 '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 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 meylan@iuedac.gsfc.nasa.gov	301-286-7762 301-794-1471
Manager	Mr. Randy Thompson	IUEDAC::RTHOMPSON rthompson@iuedac.gsfc.nasa.gov	301-286-8800
Astronomer	Dr. Michael Carini	IUEDAC::CARINI carini@iuedac.gsfc.nasa.gov	301-286-7762
UNIX Support	Ms. Pat Lawton	lawton@iuesn1.gsfc.nasa.gov	301-286-5103

Assistant	Ms. Lyla Taylor	IUEDAC::STAFF staff@iuedac.gsfc.nasa.gov	301-286-3938
Assistant	Ms. Ruth Bradley	IUEDAC::STAFF staff@iuedac.gsfc.nasa.gov	301-286-8060