The ADS at the IUE RDAF

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What is the ADS?

The Astrophysics Data System (ADS) is a distributed service-oriented information system. It networks existing and planned Astrophysics Data Centers and archives with the user via the NASA Science Internet (NSI). The ADS allows the user to remotely access the information kept at the various Data Centers (also referred to as Nodes) using a standard interface. Each node may use a different database management system to archive its data providing it "understands" standard SQL. Thus, the ADS user does not have to know anything about the various database management systems because the ADS takes care of that for the user.

Currently, the ADS can only access catalog data. Access to binary data is planned for the future. According to F. Giovane (ADS Project Manager, NASA Headquarters), the Astrophysics Data System (ADS) is meant to serve as the primary way of distributing data for NASA's satellite missions. It is not meant to be the only means for accessing this data, but the ADS is intended to offer a standard interface between all the NASA projects.

Who is involved in the ADS?

The ADS's project management is at The Center for Astrophysics. User Support and Quality Assurance are at the Center for Astrophysics and Space Astronomy (CASA). System Development and Node Support are at the Infrared Processing and Analysis Center (IPAC).

The currently available nodes are:

```
Center for Astrophysics
Cambridge, MA
X-ray Astronomy

Infrared Processing and Analysis Center
Pasadena, CA
Infrared Astronomy

IUE Regional Data Analysis Facility
Goddard Space Flight Center
Greenbelt, MD
Ultraviolet Astronomy

Center for Astrophysics and Space Astronomy
Boulder, CO
Ultraviolet Astronomy

Space Telescope Science Institute
Baltimore, MD
Hubble Space Telescope
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Pennsylvania State University
Department of Astronomy and Astrophysics
University Park, PA
HEAO-1 Archival Data and MuliWaveLink Database

High Energy Astrophysics Science Archival Research Center
Greenbelt, MD
Archival X-ray Astronomy
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Please see Appendix A for a list of the databases available at each node.
Not currently available, but planned for addition in the near future are:

```
GRO Science Center
Greenbelt, MD
Gamma Ray Astronomy

Center for EUV Astrophysics
Berkeley, CA
Extreme Ultraviolet Astronomy

National Space Science Data Center
Goddard Space Flight Center
Greenbelt, MD
General Astronomical Catalogs
```

ADS users have several sources to contact with questions. The main source of assistance is the ADS User Support "hot seat" located at CASA. User Support handles registration, "How do I...?", and "What did I do wrong?" questions. Secondly, each user is requested to select a home node. The ADS User Support personnel at the home nodes can assist a user with general questions, and if located physically near the user, may offer "in person" assistance (versus e-mail). The third source concerns questions about the information in the databases. Each database lists a contact person in its documentation. Any questions pertaining the information in that catalog should be directed to that person.

Documentation available to assist the user includes:

Introductory User's Guide ADS Version 2.0, April 1992
Advanced Tutorial ADS Version 2.0, June 1992

What does the GSFC IUE RDAF have to do with the ADS?

Currently, the IUE Merged Observing Log, IUE Fine Error Sensor Catalog, and the IUE Observing Programs Database are available on the Goddard Space Flight Center (GSFC) IUE node. In the future, the IUE Merged Observing Log will be updated and expanded to reflect the new information being generated by the Final IUE Archive Processing effort. Access to IUE extracted data may also be provided once the ADS software has been modified to allow access to binary data.

What is the ADS currently capable of?

In the current release of ADS, Version 2.0, there are 116 catalogs (list in Appendix A). It is supported on some SUN/UNIX, DEC/Ultrix, and HP-UX systems in cursor mode (windows not required). Also, the KDS software was recently upgraded to KDS 2.5 in preparation of the release

of Version 3.0. KDS is the underlying software for the ADS software - like IDL is the underlying software for the RDAF software. KDS is copyrighted by Ellery Systems of Boulder, Colorado.

An ADS user may make queries (searches) on one or several of the catalogs. The results may be manipulated to provide the user with the needed information. Online documentation on the databases' fields is available.

What is the ADS planning for the future?

The next "major" release of the ADS software is Version 3.0. A new user graphical interface and several new services will highlight this release.

Before Version 3.0

There may be a release before the Version 3.0 release. It will include more catalogs. Also, there may be additional features such as:

- Software for converting coordinates. A user will be able to enter the right ascension in hours, minutes, and seconds and the declination in degrees, minutes, and seconds regardless of how any given database stores the right ascension and declination (i.e., radians, decimal degrees, etc.).

- Name resolvers. Many object have more than one accepted name, such as BS 617 is also known as Alpha Ari, HD 12929, and GC 2538. To allow a user to query one of the names, and receive all entries under that name and the aliases, name resolvers are necessary. The NASA/IPAC Extragalactic Database (NED) already has this type of information, and is being used to obtain all names and coordinates.

- Software for precessing coordinates. ADS currently requires coordinates to be given in Epoch 2000 decimal degrees.

- Software to allow a user to obtain the information concerning objects in a circle around a set of coordinates (instead of a box around a set of coordinates).

- Various node and operation tools.

Version 3.0

Release of the user interface software to the user community will possibly occur sometime in August.

Improvements will be beneficial to both the nodes and the users. Nodes will be able to add new catalogs and update existing catalogs without having to wait for entirely new releases.

Benefits to the users include:

- The ADS session does not have to stay interactive. A user may start a request, and even if they log off, the request will finish (data will show up in their directory).

- New graphical user interface which will only be supported with certain hardware/operating systems combination. Also, windowing terminals and shared memory are required for the graphical user interface. A user will be able to configure their own interface.

- An interface similar to the current one - referred to as "cursor" - will continue to be supported on the systems it is currently on and for use with non-windowing terminals on all supported systems.

- Catalogs will be added and updated without the user having to completely reinstall their ADS software. Nodes will not have to modify their database documentation whenever rows are added to a database. However, if major changes - such as changes in columns - are planned, then the documentation must be modified and sent to CASA for QA before the catalog can be released. This is important for the IUE node because our database is constantly growing - since IUE is still operational - and being modified through the NEWSIPS/CDIVS (Core Data Item Verification System).

- Obtaining images - such as IUE raw or processed data - will become possible via the ADS. There will be two servers to choose from, ascii fits or binary fits.

- Astronomical joins of searches from different catalogs will be possible.

- An user can access an IDL server to display basic plots - not to do data reduction. The user would not have to have IDL on their machine, but would access a machine with IDL that would act as an IDL server. Thus, the IUE node could provide a "quick-look" capability to ADS users if IUE's extracted data files were accessible from the IUE SUN computer.

After Version 3.0

Additions to ADS after Version 3.0 include:

- Access to NED planned - maybe by Fall 1992 (September/October). A prototype exists and the technology will exist in Version 3.0. However, several political issues need to be resolved before access to NED is allowed.

- Access to Simbad planned for FY 93 (April 1993). All the technical issues are resolved, but the several non-technical issues must be resolved.

- Access to astronomical literature. NSSDC is currently working on STELAR (Study of Electronic Literature for Astronomical Research) where they are scanning in abstracts. These bitmaps (that contain the abstract, title, date, and author) will be accessed by ADS via an abstract server using factor space. This type of a configuration will also eventually allow the nodes' documentation (such as the RDAF Tutorial) to be accessed.

What Computer Systems does ADS Support?

Current and Future Cursor Mode

Currently the ADS is run in "cursor" mode. The software is operational on some UNIX computers (SUN, DEC, or HP) with Ethernet and running TCP/IP. The terminal can be any terminal that a full screen editor works on. On a windowing terminal, the software can be run in one of the windows.

Future Window Mode

The "cursor" mode will continue to be supported on all systems it is currently supported on. The new windowing mode is expected to be supported on Sun Sparcstartion 1, 1+, 2, Sun 4, DECstation 3100 and 5000, or HP Apollo 9000/700 that are running SunOS 4.03, 4.1.1, 4.1.2, Ultrix 4.2, or HP-UX 8.05, 8.07. The windowing software must be MIT X11R4, X11R5, or DEC Windows with a window manager of Motif 1.1 (mwm), Trivial (twm), HP Vue, or DEC Window Manager.

VAX/VMS

VAX's running ULTRIX can run the ADS software. The ADS software does not currently support VAX/VMS. People who would like to run ADS, but their machine/operating system is not supported, should send in the ADS Hardware/ Software Survey form (Appendix B) to ensure that the ADS Project is aware of your needs.

How do I Access the ADS?

Your Own ADS Installation

If you have access to a supported system and would like to use the ADS, you will need to fill out the ADS User's Registration form. An e-mail version of these forms may be obtained from ADS User Support (user_support@cuads.colorado.edu) or Pat Lawton (lawton@iuesn1.gsfc.nasa.gov). Then send the completed forms to the address on them. You will receive an ADS userid and password, and instructions on how to obtain the ADS user software via ftp.

Access to the IUE RDAF's ADS Installation

If you do not have access to a supported system and would like to use the ADS, the IUE RDAF has a limited number of accounts on its SUN 4/280 (IUESN1) available for use

with ADS software. These accounts are regulated in a fashion similar to that used with the IUE RDAF's VAX accounts - if the account is not used for an extended period of time (about 2 months), it will be recycled. Unlike the VAX accounts, it will not be backed up for restoration at a later date. A side benefit of using the IUE RDAF's installation is that you do not need to concern yourself with updating the software or files.

To use one of the IUESN1 accounts, you must already have an ADS userid and password. To obtain an ADS userid you will need to fill out the ADS User Registration forms. An e-mail version of these forms may be obtained from ADS User Support (user_support@cuads.colorado.edu) or Pat Lawton (lawton@iuesn1.gsfc.nasa.gov). Since you will be using the RDAF's installation, the following questions should be answered as below:

```
#22.  "Using IUESN1 installation."
#23.  "Using IUESN1 installation."
#24.  "Using IUESN1 installation."
#25.  "Using IUESN1 installation."
#26.  "Using IUESN1 installation."
#27.  "N"
#28.  skip
```

It is also advisable to fill out the ADS Hardware/Software Survey in Appendix B concerning the system(s) you have access to at your home institution. You will also have to contact Pat Lawton (lawton@iuesn1.gsfc.nasa.gov) to request an IUESN1 account.

If you already have an ADS userid, then you only need to contact Pat Lawton (lawton@iuesn1.gsfc.nasa.gov) for an IUESN1 account. Your ADS userid can be used from any computer system that you have access to and that has the ADS software installed.

The IUE RDAF's ADS Account

The IUE RDAF has one ADS userid available for limited use. If you will be a Guest Observer or just visiting GSFC and would like to try the ADS, this account is available for your use. The ADS Introductory User's Guide and/or the IUE Node's ADS User Support personnel are available to assist you with learning the basics of the system. This account is intended to provide an introduction to the ADS for new users and is for limited use only. If you wish to continue your use of the ADS, it is requested that you obtain your own ADS userid.

International ADS Users

An unfortunate note for our international friends. You are welcome to use the ADS. However, all access to the ADS must be while you are physically in the United States. Currently the software can not be allowed outside the U.S. For example, if you an IUE Guest Observer from Canada, you may use the IUE RDAF's installation of the ADS while you are physically at the IUE Observatory; however, you are not permitted to log in from Canada and use the ADS software or to install the ADS user interface software at your home institution. The issue of international access to the ADS is because of export restrictions on the security part of the KDS software and is under negotiation by the ADS Project.

Upcoming Meeting

The next ADS User's Meeting is scheduled for the 5th of November 1992 in Cambridge, Massachusetts, after the Second Annual Meeting on Astronomical Data Analysis Software and Systems that will be held on the 2nd through the 4th of November 1992. Contact John Nousek (nousek@astro.psu.edu) if you wish to provide input to the User's Meeting.

Who can I Contact for Information?

The main contact for ADS users and potential ADS users is:

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Jacque Anderson
ADS User Support
user_support@cuads.colorado.edu
(303)492-0466
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or write:

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ADS USER Support Office
CASA Campus Box 289
University of Colorado
Boulder, Colorado  80309
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IUE researchers are welcome to contact the members of the GSFC IUE RDAF who are involved in this project:

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Randy Thompson            Pat Lawton
RDAF Manager              IUE Node ADS User Support
IUE::RTHOMPSON            lawton@iuesn1.gsfc.nasa.gov
(301)286-8800               or IUE::LAWTON
                          (301)286-5103
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or write:      IUE Observatory
               Code 684.9
               Goddard Space Flight Center
               Greenbelt, MD   20771
```

References

Advanced Tutorial ADS Version 2.0, June 1992

General Requirements for Compatibility with the Astrophysics Data System (ADS) Version 1.0, April 18, 1991

Introductory User's Guide ADS Version 2.0, April 1992

Catalogue of Bright Stars, 3rd Revised Edition, Hoffleit,D., Yale University Observatory, 1964.

Appendixes

A. Databases Currently Available Via the ADS - Listed by Node

B. ADS Hardware/Software Survey

International Ultraviolet Explorer
The Fine Error Sensor Catalog
The New Revised IUE Merged Observing Log
The IUE Observing Programs

Smithsonian Astrophysical Observatory
2Ecat – Einstein Observatory Catalog of IPC X-ray Sources :
Einstein Observatory Source Catalog: Field Parameters
Einstein Guest Proposals
Component Sequence Numbers for Merged EOSCAT Fields
EOSCAT List of Missed IPC Sources
ID Reference List for 2E Catalog of Einstein IPC Sources
Einstein Image Proportional Counter Source List From EOSCAT
Published IDs for 2E Sources and Fields

ESurveys – Tables of IPC and HRI Surveys (Deep, Medium) :
Einstein Deep Survey Field Parameters for HRI Observations
Einstein Deep Survey Secondary HRI Source Parameters
Einstein Deep Survey Between HRI Sources in a Single Field
Einstein Deep Survey HRI Source Positions and Count Rates
Einstein Deep Survey IPC Source Component Parameters
Einstein Deep Survey IPC Field Parameters
Einstein Deep Survey Cross-Reference of HRI and IPC Sources
Einstein Deep Survey Separations Between IPC and HRI Sources
Einstein Deep Survey Spectral Parameters for IPC Sources
Einstein Deep Survey IPC Source Parameters
EDS Optical Data for Sources in the 4.5 Sigma Sample
EDS IPC, HRI, and Optical Data for 4.5 Sigma IPC Sample
Einstein Deep Survey Target Information
Einstein Extended Medium Sensitivity Survey of X-ray Sources

HRI – Field Centers and Source List for HRI :
Field Params for the Einstein High Res. Imager Source List
Source Params for the Einstein High Res. Imager Source List

IPC – Mostly Rev 1B (results of standard processing) :
Field Parameters for the IPC Source List
Component Huts for IPC Sequences
Source Detection Parameters for Rev 1B Processing
Count Distributions for Rev 1B IPC Sources
IPC Channel Information for Rev 1B Processing
Summary of Observation Parameters for Rev 1B Sources
Variability Parameters for Rev 1B Processing

Ocat – Einstein Observatory Pointing Cat. ("Yellow Book") :
Categories of Einstein Observations
Einstein Observatory Databank Requests
Einstein Observers
Einstein Observations (OCAT alias "Yellow Book")

Quasars – Einstein and Other Quasar Lists :
The Einstein Quasar and Seyfert 1 Galaxy Database
Hewitt and Burbidge Catalog of QSO's 1989
Reference List for Hewitt and Burbidge Catalog of QSO's

Radio – Radio Catalogs :
6cm Northern Sky Catalog of Becker, et al. 1991
The 87GB (Green Bank) Catalog of Radio Sources at 4.85 GHz
Dixon Master List of Radio Sources

ROSAT – ROSAT Observing Schedule :
The ROSAT Observation List - November 1991

SNR – Supernova Remnants (Einstein) :
SNR Count Rates in Einstein Detectors
Index to FITS Images of SNR Available on Tape
Unresolved X-ray Sources Within or Nearby the SNR

Stellar Catalogs – Einstein and AAVSO Star Catalogs :
Einstein Survey of Late-type Giant and Supergiant Stars
EO Survey of Solar-type Stars: Optical Properties
EO Survey of Solar-type Stars: X-ray Fluxes
EO Survey of Solar-type Stars: X-ray Luminosities
EO Survey of Hyades-cluster Region: Observation Parameters
EO Survey of Hyades-cluster Stars: Optical Properties
EO Survey of Hyades-cluster Stars: X-ray Luminosities
EO Survey of the Pleiades Cluster: Optical Properties
EO Survey of the Pleiades Cluster: Observation Parameters
EO Survey of the Pleiades Cluster: X-ray Luminosities
X-ray Emission in the Ursa Major Stream: X-ray Results
X-ray Emission in the Ursa Major Stream: Optical Properties
X-ray Emission in the Ursa Major Stream: Temperature Fits
AAVSO Index to Variable Star Optical Data

Infrared Processing and Analysis Center
The Bright Star Catalog
Faint Source Survey Catalog Version 2.0
Point Source Catalog
Revised Air Force Geophysics Lab Infrared Sky Survey
Uppsala General Catalogue of Galaxies

Penn State University
The HEAO A-1 All Sky Catalog
The HEAO A-2 Low Energy X-ray Catalog
The HEAO A-2 Medium/High Energy X-ray Detectors
The HEAO A-3 All Sky Catalog (Hard X-ray Sources)
The HEAO A-4 All Sky Catalog
The MultiWaveLink Observatory Schedule Table

Space Telescope Science Institute
The Archived Exposures Catalog for Fixed Targets
The Archived Exposures Catalog for Solar System Targets
Guide Star Catalog

HST Completed Science Observations
HST Long Range Plan, Science Observations

High Energy Astrophysics Science Archival Research Center
HEAO 1 A-2 Piccinotti Catalog
HEAO 1 A-3 MC LASS Catalog of X-ray Sources
Channel Multiplier Array Database
Exolog Database
Bibliography of EXOSAT Publications
Ginga Log of Observations
Ginga Instrument Modes Database
EXOSAT Gas Scintillation Proportional Counter Results
EXOSAT Medium Energy Proportional Counter Results
Master X-ray Catalog Database

Center for Astrophysics and Space Astronomy
CfA Redshift Catalogue
CfA Redshift Catalogue, V > 99999
Revised Shapley-Ames Catalogue of Bright Galaxies
Catalog of Rich Clusters of Galaxies
ESO/Uppsala Survey of the ESO (B) Atlas
ESO/Uppsala Survey of the ESO (B) Atlas : Notes
ESO/Uppsala Survey of the ESO (B) Atlas : Plate Data
Catalogue of Galaxies and of Cluster of Galaxies
Catalogue of Galaxies and of Cluster of Galaxies, Headers
Catalogue of Abell Clusters of Galaxies
Catalogue of Zwicky Plate Number Cross-Ids
Catalogue of Zwicky Clusters of Galaxies
Seyfert Galaxies
Morphological Catalog of Galaxies
Compilation of the 5th Volume of MCG
Catalog of Quasars
Catalog of Active Galaxies
Catalog of BL Lac Objects
A Catalogue of Quasars and Active Galactic Nuclei, References
Merged Catalogue of Galaxies
Catalogue of Markarian Galaxies
Catalogue of Extragalactic Radio Source Ids
Catalogue of Extragalactic Radio Source Ids: References
Complete New Catalogue of Nebulae and Star Clusters
General Catalogue of Variable Stars
The New Catalogue of Suspected Variable Stars
The New Catalogue of Suspected Variable Stars - Cross Index
ROSAT Wide Field Camera Bright Source Catalogue
Smithsonian Astrophysical Observatory Star Catalog

Appendix B
ADS Hardware/Software Survey

The following is a questionnaire to determine what hardware and software platforms and configurations the ADS community is using to run the ADS software. This information will enhance several areas of the ADS project by helping ADS User Support to determine the level of support needed for the ADS 3.0 release and targeting test platforms for ADS Quality Assurance and Testing. Therefore, your participation in this survey will greatly contribute to the ADS project.

Questions, comments and suggestions concerning this survey or the questions contained in it can be directed to ads@cuads.colorado.edu via email or Jacque Anderson at (303)492-0466.

Thank you for your participation,

Jacque Anderson
Alice Bertini
Michelle Neves
Ed Brugel
ADS Quality Assurance and Testing, CASA

Please answer the following questions as they pertain to the machine that you run the ADS on or plan to run the ADS on (include all version numbers where applicable) and return this form or answers to the numbered questions to:

```
        by FAX to:          (303) 492-4052  (ATTN: Jacque Anderson)

        by email to:        ads@cuads.colorado.edu

        by U.S. Mail to:    Jacque Anderson
                            CASA, University of Colorado
                            Campus Box 389
                            Boulder, CO  80309-0389
```

```
1. Name                 -------------------------------------------

2. Node                 -------------------------------------------

3. Institution          -------------------------------------------

4. E-mail address       -------------------------------------------

5. Telephone Number     (___) --------------

6. Hardware Platform ----------------------------------------------
   (e.g. Sparc Station 2, DECstation 3100, HP Apollo 9000/700, ...)

7. Operating System   --------------------------------------------
   (e.g. SunOS 4.1.1, Ultrix 4.2, HP-UX 8.07, ...)

8. Windowing Software --------------------------------------------
   (e.g. MIT X11 Revision 4, SunView, Sun OpenWindows, DEC Windows, ...)
```

9. Window Manager(s) _____
   (e.g. Motif 1.1, Open Look (olwm), Trivial (twm), HP Vue, ...)

10. Shared Memory Installed?   _____ yes   _____ no
    (To determine if shared memory is installed execute the following
    command: ipcs -m   If the message displayed says something to affect of
    "Shared Memory facility not in system.", then shared memory is not
    installed. If shared memory is installed, then a list of the allocated
    shared memory will be displayed.)