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The New Astrophysics Data System

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Abstract. The Astrophysics Data System (ADS) is moving towards public domain access software for its data holdings. Several ADS services are already accessible through the World Wide Web (WWW) (e.g., abstract service, catalogs, *Einstein* archive) and more are planned.

1. Introduction

The Astrophysics Data System has been restructured in the recent past. We now concentrate on making data available through the World Wide Web (WWW). The main emphasis of the restructured ADS Project will be the operation and development of the ADS Astrophysics Science Information and Abstract Service (ASIAS) (formerly the ADS Abstract Service). We also will consolidate the data assets already created by the ADS Project so that they will be administered within the restructured project and continue to be made available.

This paper introduces some of the new capabilities that are already available and then describes some of the improvements that are in development.

2. Astrophysics Science Information and Abstract Service (ASIAS)

The ASIAS has been very successful in providing the astronomy researcher the capability to search the astronomical literature. It currently provides access to over 160,000 astronomical abstracts with a sophisticated search engine. The WWW interface to the ASIAS was made available in 1994 February. It is accessible through the ADS Abstract Service[1]. It uses the same search engine as the original ADS abstract service. The data are returned as hypertext documents.

Figure 1 shows the results of two ASIAS queries. On the left is the result of a query which returned three abstracts. The links at the bibliographic codes point directly to the abstracts. This allows the user to retrieve one abstract at a time. Several abstracts can be retrieved at the same time by selecting the check boxes at the requested abstracts and pushing the "Retrieve" button. On the right is a full abstract. This particular abstract has a link to data tables at the Centre de Donnees in Strasbourg, France. The CDS provides on-line access to data tables for some publications. These data are automatically cross-referenced

[1] http://adsabs.harvard.edu/abstract_service.html

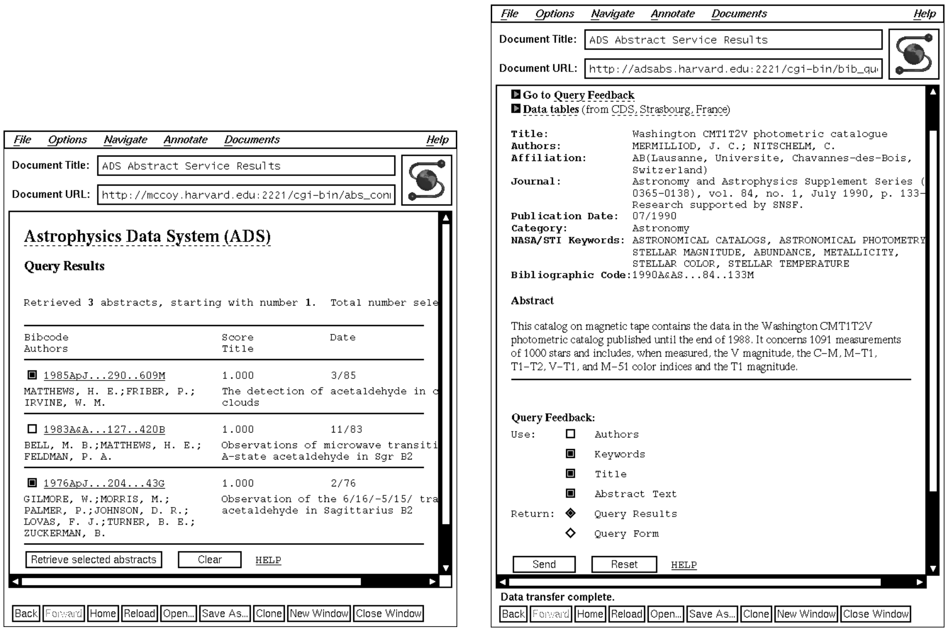

Figure 1. ASIAS query result. Short results with three references (left) and full abstract (right). Original PostScript figures

with the ASIAS abstracts. The link is displayed whenever a particular abstract has data associated with it.

The query feedback feature allows the user to automatically build and execute a new query from the current abstract. This allows the user to easily find more information about a given subject.

3. Catalog Data

The ADS now provides access to most of the old ADS catalogs through the WWW. It is accessible through the ADS Catalog Service[2] This WWW access tool provides access to catalogs at SAO, at CASA (University of Colorado), the Center for EUV Astronomy at Berkeley, and at the University of Minnesota. For some catalogs, like the plate scan data at the University of Minnesota, the ADS is the primary means of data access. It is therefore important that we maintain this catalog access.

Figure 2 shows the query form from the Catalog Service for one of the plate scan catalogs at the University of Minnesota. In this form the user can select which fields of the catalog to retrieve, what selection criteria to apply for different fields, and what output format to use for the individual fields. Currently the data can be retrieved as ASCII tables, ADS tables, FITS tables, and, for the plate scan catalogs, finder charts. The user can select to either display the data or to store the file directly on disk.

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[2] http://adscat.harvard.edu/catalog_service.html

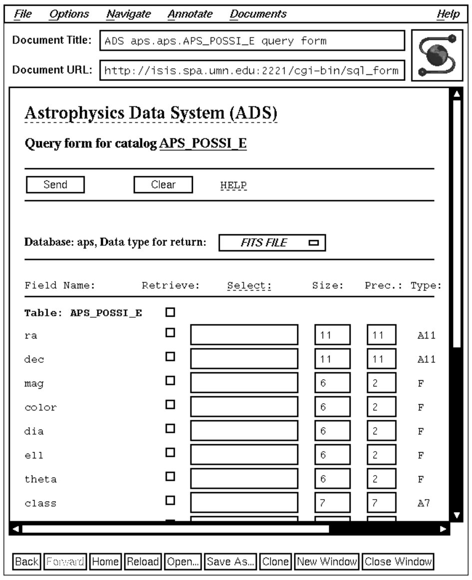

Figure 2. ADS Catalog Service query form for an APS catalog.

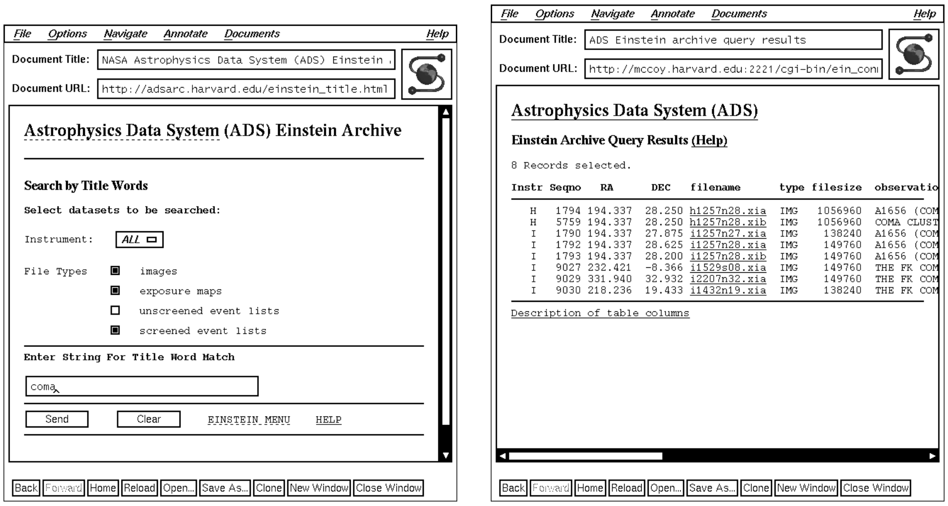

Figure 3. ADS *Einstein* Archive Service query form (left) and query results (right).

4. Archive Data

We are currently providing access to the *Einstein* Observatory data set maintained at SAO. This WWW interface again provides the same functionality as the original ADS interface. Figure 3 shows one of the query forms for the *Einstein* Archive Service (left) and the results of a query (right). The form on the left provides the capability to query the *Einstein* archive by words in the description of data files. Figure 3 (right) shows the result of such a query with the word COMA in the title. It returns information about the data files that fit the query. The filenames are hyperlinks that allow the user to directly download these files. The *Einstein* Archive Service is available through the ADS *Einstein* Archive Service[3]

5. Future Plans

We plan to greatly enhance the utility of the ASIAS in the next year by expanding its data base, providing access to full articles and other data associated with the articles. Accomazzi et. al. (1995) describe the future plans of the ASIAS in more detail.

The central location catalog service provided by the ADS helps to deal with the general problem of how the user community can know about the existence of valuable data. We plan to continue to provide this important (and unique) function through our WWW Catalog Server. We encourage other data holders to make their catalogs available on the WWW. We have a set of programs that provides WWW access to catalog data. They currently work with several databases and can easily be adapted to other databases. Instructions on how to get and install the catalog server are at Catalog Server Installation[4]

In order to facilitate the access to archive data, we will work with our current data providers to help in the transition from ADS servers using our proprietary protocol to servers based on WWW protocols. We will also include links within the ADS WWW Services HomePage[5] to other sources of astronomical data so that users can have a single starting point for finding these resources.

The efforts described above will extend the scope of the abstract service and expand it into a wide ranging digital library service with greatly enhanced utility for the astronomical community

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References

Accomazzi, A., Grant, C. S., Eichhorn, G., Kurtz, M. J., & Murray, S. S. 1995, this volume, p. **??**

[3] http://adsarc.harvard.edu/einstein_service.html

[4] http://adsdoc.harvard.edu/install.html

[5] http://adswww.harvard.edu/ads_services.html