New Capabilities of the ADS Abstract Service. G. Eichhorn¹, M. J. Kurtz¹, A. Accomazzi¹, C. S. Grant¹, E. Henneken¹, E. H. Bohlen¹, D. M. Thompson¹, S. S. Murray¹.
¹Harvard-Smithsonian Center for Astrophysics, 60 Garden Street, Cambridge, MA 02138, USA, gei@cfa.harvard.edu.

Introduction: The Smithsonian-NASA Astrophysics Data System (ADS) Abstract Service provides a sophisticated search capability for the literature in Astronomy, Planetary Sciences, Solar Physics, and Physics/Geophysics. The ADS is funded by NASA and access to the ADS services is free to anybody world-wide without restrictions. It allows the user to search the literature by author, title, and abstract text.

The ADS database contains over 4.5 million references (over 1 million in the Astronomy/Planetary Sciences database), more than half of these with full abstracts. The coverage for the Astronomy literature is better than 95% from 1975. Much of the journal literature is covered back to volume 1. We now get abstracts on a regular basis from most journals.

The second part of the ADS is the Article Service. We have scanned over 3.1 million pages in over 420,000 articles from 43 journals, 15 conference proceedings series and 67 individual conference proceedings. Most of the societies have given the ADS permission to scan their publications. This includes for instance the Astrophysical Journal, Astronomical Journal, Astronomy and Astrophysics, Monthly Notices of the Royal Astronomical Society, Publications of the Astronomical Society of the Pacific, Meteoritics and Planetary Sciences, Solar Physics, Earth, Moon, and Planets, and more, all back to volume 1.

The following describes some of the new features in the ADS: myADS, Private Libraries, Full Text Queries, Citation History Plots, and new Author Queries.

myADS: This feature allows our users to define a set of custom queries. These queries are executed each time the ADS database is updated. The results are then emailed to the user.

You can specify a set of authors to query for, as well as two text queries. When myADS runs, it executes the following queries for each user:

1. Find recent citations to the users own articles
2. Find recent articles by the authors specified in the myADS setup.
3. Find recent articles for each text query
4. Find recent preprints for each text query
5. Find also-read for each text query
6. Find citations to articles resulting from each text query

The results from the execution of the myADS queries are emailed to the user as an html message. This means that html-aware email readers will allow the user to click on articles in order to get detailed article information.

You can setup queries for each of the three ADS databases (either separate queries of the same for all databases). In addition you can sign up for myADS for the arXiv e-prints. This will execute the query daily after the new entries from the arXiv e-prints are received.

New Author Search Capability: We have completely changed the author indexing. We now index the full names, including middle names. This allows you to search for authors more specifically than was possible before. The search will always return all potential matches. For instance if you search for:

Smith, Stanley Mark

The search will return articles with the following author names:

Smith, Stanley Mark
Smith, Stanley M
Smith, S Mark
Smith, S M
Stanley
Smith, S

The search will not return articles with the following author names:

Smith, Stanley Milton
Smith, Sean Mark
Smith, Stanley G
Smith, Sean

A search for:

Smith, S

will return all the examples above.
This new capability provides much more flexibility in author searches (which make up 75% of all ADS queries).

**Multiple Private Libraries:** This feature lets our users set up collections of articles that the want to remember. This is especially useful for preparing reference lists for articles. The user can collect separate reference lists for different articles that are being written. Once the reference list is completed, it can be exported in the format for submission to the journal. The Private Library system uses cookies, so the user needs to have cookie setting enabled in order to use this feature. Any article in a results list from an ADS query can be added to a private library by selecting it with its checkbox and then clicking on “Add selected articles to private library” at the bottom of the results page. The system will then give the user a choice to add the article to an already existing library or start a new library. The user can have as many libraries as desired. Clicking on the link “Private Library” on the main query page will return the list of articles stored in the user specific library (if there is only one), or a list of the user's private libraries. The links to the user's private libraries are public links. That means these links do not depend on the user's cookie and can therefore be shared with other ADS users. However the libraries can only be modified by the user to which they belong.

**Full Text Search:** The ADS has converted all scanned pages to text through Optical Character Recognition (OCR). All the text produced by the OCR process has been indexed and this index serves as the basis for the full text search. This search allows all features that are already available for the regular ADS query form (for author, abstract and title searches): synonym replacement, removal of stop words, search word translation and simple logic (see the ADS online Help for the exact definition of these features).

In addition to searching the OCRd text in the ADS for journal back issues, you can search external search system at various publishers simultaneously and retrieve the combined results. Currently 5 publishers can be searched through this service and we expect to add several more in the near future. You can select which external publisher to search.

The simple search allows you to search for words or phrases. The advanced search allows the user to restrict the search to a date (range) and even to a specific journal. The limitation here of course is, that it has to be a journal for which we have scans available that have been processed with the OCR software, or that is available in one of the external archives that we are searching. These options, together with the search features like phrase searching and simple logic, give the user a powerful filter to find publications on a specific subject.

**Cookie Synchronization:** Many scientists use the ADS from several computers. This results in users having different cookies. This means that cookie-based features of the ADS (like the Private Library, Recently Read articles, and Preferences Settings) don't have the same behavior on different machines. The ADS now provides a mechanism to synchronize your cookies so that all machines will use the same cookie. In order to synchronize your cookies, go to the Preferences on the main query page from your main computer. In the Abstract service Preferences set your email address. You can now go to the “Cookie Reset Form” (which is linked from the Preferences page) on any other computer and type in your email address. The ADS will look up your record with your email address and send you email with a link that will set your cookie to the one on your main computer. You can follow the same link on any computer, and it will set the cookie on that computer. This will allow you to use for instance the Private Library on different computers and retrieve the same list of articles.

**Citation and Reads Histories:** This new capability allows you to view the citation history of an article graphically. Click on the “C” link of an article to get the list of citations to that article. Near the top of the resulting list is a link to “Citation History”. When you click on that link, it will return a plot that shows the number of citations to this article per year.

To see how much an article has been read, you can click on the “U” link of that articles (the “Also-Read” link). Near the top of the resulting list is a link to “Reads History”. When you click on that link, it will return a plot that shows the number of reads for this article per year. Reads are defined as clicks by a user on any of the letter-links in an ADS results list.