Astronomical Literature Publicly Accessible On-Line: a Short Status Report

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Computers are changing the way scientists are searching for bibliographical information. The rapid growth of wide-area networks in the past few years, most notably the Internet, is being followed by a rapid increase in the number and kinds of services offered via these networks. More and more information sources are becoming available which are of immediate interest to astronomers.

Here, we aim to list where and how one can avail of the astronomical literature on-line, and some other related services, from your desk. Many of the details are specific to an ESO Unix user.

1. Astronomical Literature On-Line

● *Abstracts of Major Journals*

A large source of abstracts of articles in major journals derives from the STELAR (Study of Electronic Literature for Astronomical Research) project, part of the Astrophysical Data Facility at Goddard Space Flight Center. Eight journals of interest to the astronomical community are covered: ApJ, ApJS, AJ, PASP, A&A, A&AS, MNRAS, and JGR. The abstracts are supplied by the NASA Scientific and Technical Information System (STI) bibliographic retrieval system, which covers aeronautics, space and relevant scientific disciplines. The abstracts are specially prepared for the RECON system, which is used by STELAR. Thus the abstracts differ from the original author-supplied abstracts or those produced for the Astronomy and Astrophysics Abstracts series. Abstracts from about 1965 through March 1993 are available. Early entries may have only bibliographic details and not an abstract.

One can access these abstracts via WAIS (Wide Area Information Servers). WAIS is easy to use since it allows queries to be formulated in natural language and returns matching abstracts with a relevance ranking score. Any abstract found during the search can be fed back to have WAIS search for similar abstracts. A useful feature of WAIS is that it allows a query to be sent to more than one server simultaneously. Results retrieved are merged and sorted with respect to the relevance score.

To access these abstracts via WAIS, use the source file abstracts.src. In case this is not accessible system-wide,

copy the abstracts.src. file from address hypatia.gsfc.nasa.gov, directory /wais-sources, by anonymous ftp (or see section 3 below).

● *ADS Abstract Service: Astronomical Abstracts*

NASA's Astrophysical Data System (ADS) offers another sophisticated user interface to the NASA STI (cf. above) bibliographic database. Boolean querying and feedback are supported. Following the release of ADS, however, a few weeks ago, it transpired that access to this particular bibliographic retrieval part of ADS was not allowed to non-US users.

● *Conferences and Meetings*

Electronically submitted abstracts for American Astronomical Society meetings (June 92, January 93, June 93) are available for free-text querying through WAIS. Relevant source files, with extension .src, are available from hypatia. gsfc.nasa.gov, directory /wais-sources, by anonymous ftp (or see section 3 below).

● *Preprint Lists*

– Space Telescope Science Institute (STScI) preprint abstracts are available through Gopher. They are also accessible through WAIS. Gopher may also be used to access the STScI Library catalogue. Use the command xgopher stsci.edu.
– The NRAO (National Radio Astronomy Observatory) list of preprints received in Charlottesville library from 1986 onwards contained about 13,000 records in early May 1993. Titles, authors, and citation information are available. The exact reference to the published article is added, when the paper is published. This database is updated biweekly. In WAIS, the source to use is nrao-raps.src. If it is necessary to obtain the source file, nrao-raps.src, try the ST-ECF anonymous ftp area cited in section 3 below.

● *Tables of Contents*

– ApJ, ApJS, AJ, PASP On-Line Index. The Center for Astrophysics, Cambridge, provides on-line access to the contents of these journals. Coverage

is from January 1988 to June 1993 (at the time of writing, end of May 1993). Access is obtained via telnet to cfaN. harvard.edu, where N = 3, 4, 5, 7, or 8. To review titles of papers login as user apjaj.
– PASP abstracts and tables of contents are available via anonymous ftp to stsci.edu in directory pasp; or via Gopher using the command xgopher stsci. edu.

● *Commercial Bibliographic Services*

The Information Retrieval System (IRS) of the European Space Agency at Frascati, south of Rome, houses a range of scientific and engineering databases. These include COMPENDEX, INSPEC, PASCAL, NASA/STI, and others, a number of which cover physics and astronomy. Such bibliographic databases are temporarily accessible free of charge through ESIS (European Space Information System). Telnet to: *esis.esrin.esa.it* (192.106.252.127). Follow the menu items: *User Shell, Databases* and *Quest.*

● *Preprint Collections*

– LANL: an automated bulletin board for preprints is available at Los Alamos National Laboratory. Many subdisciplines of physics are covered. According to *Science* (26 February 1993, p. 1246) the number of users of this system is now more than 8,000. To get information on its use, send the word HELP in the Subject field of a message to hepth@xxx.lanl.gov. Information on subscribing, accessing, etc. will be automatically returned. Access by anonymous ftp is also possible. As an indication of the size of this repository, in the April 1993 subdirectory, there are 165 papers, and there are more than this in the March 1993 subdirectory.
– SISSA (International School for Advanced Studies), Trieste, Italy. Topics which might be preferentially sought for, via this server, include cosmology, and theoretical and particle astrophysics. According to the administrators of this server, in February 1993 there were around 800 users. Mail the one word, help to address astroph@babbage.sissa.it.
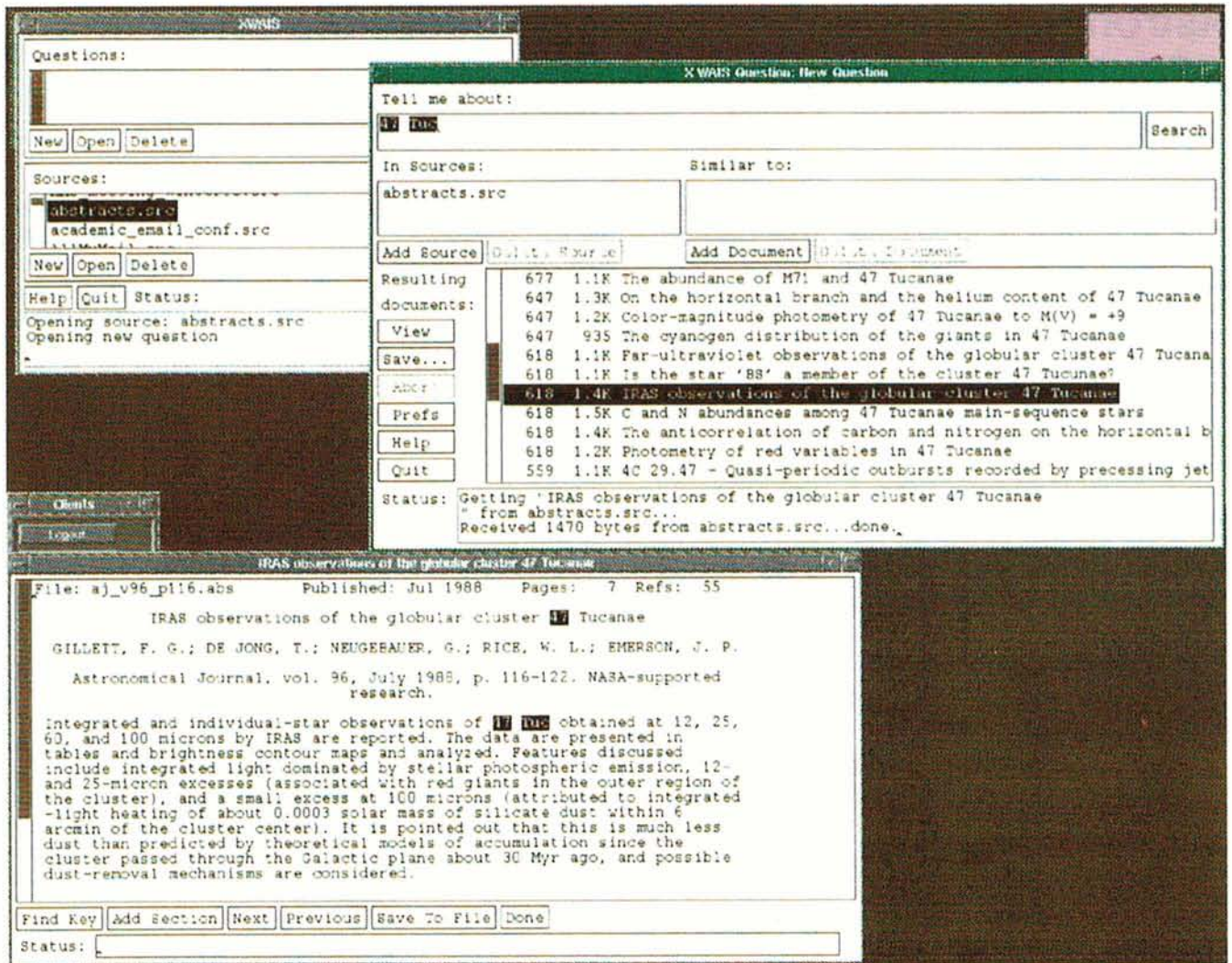– CERN: The European Centre for Nuclear Research (Geneva) supports a preprint server. Included are all CERN

Figure 1: *A number of WAIS windows. The top left one is obtained first. Initiating a new* question *gives the top right window. A* source *is selected using the* Add Source *button. Then a free-text query is input (here: "47 Tuc"). Documents retrieved are ranked by relevance. By clicking on* View, *the document text (here, an abstract) can be obtained (bottom window).*

preprints, those of Los Alamos National Laboratory, and various other documents. In 1992, 3,000 full documents were received electronically and included in this system. Via anonymous ftp, use address asis 01. cern.ch.Directory preprints provides access to hundreds of subdirectories, each associated with one or a few institutes. An X Windows based access mechanism is also supported (but the slowness of this access mechanism at ESO discourages its use).

2. Some Other Information Sources of Interest

● *HST Information (Various)*

Various types of information can be accessed at the STScI by Gopher using the command xgopher stsci.edu. Included here are planned HST observations and the long-term observing timeline.

● *Chilean weather reports through Gopher*

Weather forecasts for Chile, in Spanish. Use command xgopher to the address tortel.dcc.uchile.cl (or 146.83.4.40) and choose the menu items: *Servicios Miscelaneos*, then *Pronosticos Meteorologicos*, and then *Informe Diario Direccion Meteorologica de Chile*.

3. Available Tools and Their Use

The tools used to gain access to these information services are increasingly widely used. Here is a short description of some of them. All are freely available, and in many cases are available for platforms other than Unix also.

● The command xwais makes a WAIS window pop up. WAIS allows you access to other sites which have set up full-text indexed files, in such a way that you specify keywords of your own choosing in order to locate files of interest. WAIS also can pro-

vide the file itself. With WAIS, click on new question, which gives another screen. Then choose a source, e.g. astronomical abstracts.src. Confirm this with ok, and this source appears in the active sources slot. Then enter your selection of index terms in the upper entry slot.

WAIS works by having all relevant address and access information in "source files" with extension .src. If relevant files have not been set up system-wide, you can easily set them up in your own directory. Create a subdirectory called wais-sources, and place them there. A number of useful .src files are available for you to copy from: anonymous ftp to ecf.hq.eso.org, directory pub/swlib/various-wais-sources.

● The command xgopher powers up Gopher. This is a tool which greatly facilitates the use of telnet and ftp, firstly by succinctly showing you what is available in remote directories, and secondly by facilitating access. It

allows travelling from one Gopher site to another. It front-ends files and tools of all kinds, including a range of ways to track down correspondents' network addresses.

● The command xarchie gives access to archie, a directory of software and other files available by anonymous ftp. Archie automatically polls anonymous ftp sites, and collects directory listings. With some idea of the possible name of the software or data item sought, archie is a valuable first stage in locating potential sites. Archie is perhaps of most interest for the user trying to trace a particular software package.

4. Conclusion

In this note we have concentrated on freely-available services, accessible at all times of the day or night. Tools such as WAIS and Gopher enormously facilitate access to stores of bibliographic and other data. Such "wide area network resource discovery tools" have caught the imagination of research workers in many different fields in the past year or two. An ever-increasing amount of relevant and important information is becoming available via one's workstation on one's desk. These are valuable tools which can aid in one's research, – in finding relevant references, in tracking down exact citations, or in open-ended information browsing.
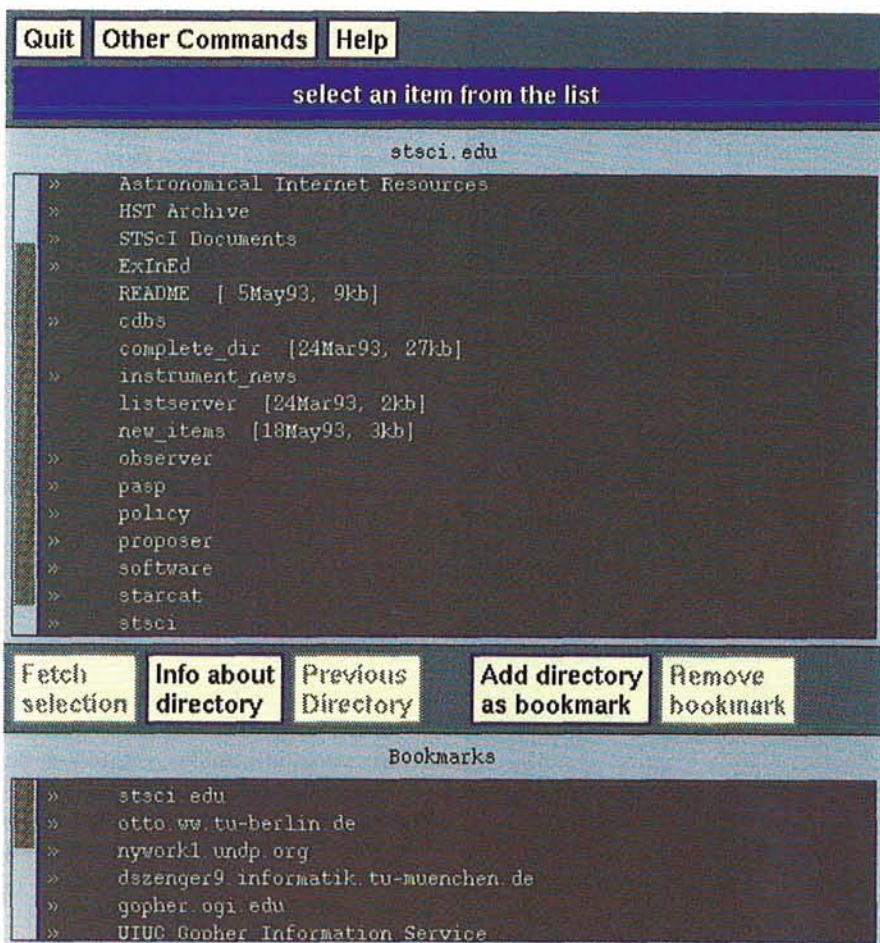

Figure 2: *A Gopher window, showing the STScI Gopher service. This is a convenient window-based way to navigate remote directories, and – further – to navigate between publicly-accessible sites.*

Written-Off Items Available at ESO Garching

The following electronic parts, in good condition for further use, have been written off at ESO, Garching, and are immediately available for donation to Scientific Institutes provided that:
– a formal request is presented to ESO, Contracts and Procurement (Mr. F. Palma, Tel.: 0049-89-32006-205, Fax: 0049-89-3207327), until August 31, 1993;
– the Institute takes charge with own means of picking up the equipment in the place, state and condition where the item is located; alternatively, the Institute can request delivery from ESO to a given destination at no warranty, bearing, however, the costs of removal, packing and transport.

Assignments will be done
– in order of presentation of a formal request up to exhausting items;
– giving priority to Institutes in the ESO Member States;

– giving preference to Institutes located in other countries, for which no export

licence from Germany is necessary.

F. PALMA, ESO

Manufacturer	Description	Part Number	S/N	Year of manufact.
Digital Equipment	VAX Mainframe with Mass- and Unibus	8600-40MB	860284094	1986
Digital Equipment	VAX Mainframe with Mass- and Unibus	8600-40MB	860284095	1986
Digital Equipment	Cluster Cont.	HSC50AB	CX50520	1986
Digital Equipment	Disk	RA81-CD	KB06577	1984
Digital Equipment	Disk	RA81-CD	KB08192	1984
Digital Equipment	Disk	RA81-AD	KB08967	1984
Digital Equipment	DiskRA81 (x3)	H9CAB-B	KB01974	1986
Digital Equipment	Disk	H9CAB-B	KB01939	1986
Digital Equipment	Printer	LA120-DA	PN097615	1982
Digital Equipment	Printer	LA120-DA	PN34544	1982
Digital Equipment	Printer	LA12-DB	PN56150	1984
EMC2	16MB for VAX8600	2×16MB		1988