

Astronomy Libraries - Your Gateway to Information

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ESO Library
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Overview

- Librarians and what they can do for you
- ADS and arXiv: tips and tricks
- Electronic journals, Open Access
- Problems with e-publications
- Cooperation between librarians and astronomers



Basic Skills

Information Literacy

Science: surplus of information, not shortage

- Know what to read
- Construct your search strategy
- Current awareness

Computer Literacy

Hardware, software, network technology

- Know your tools
- Know your sources
- How to access them (office, home, travel etc.)

Critical Thinking Skills

Is my search result correct and complete?

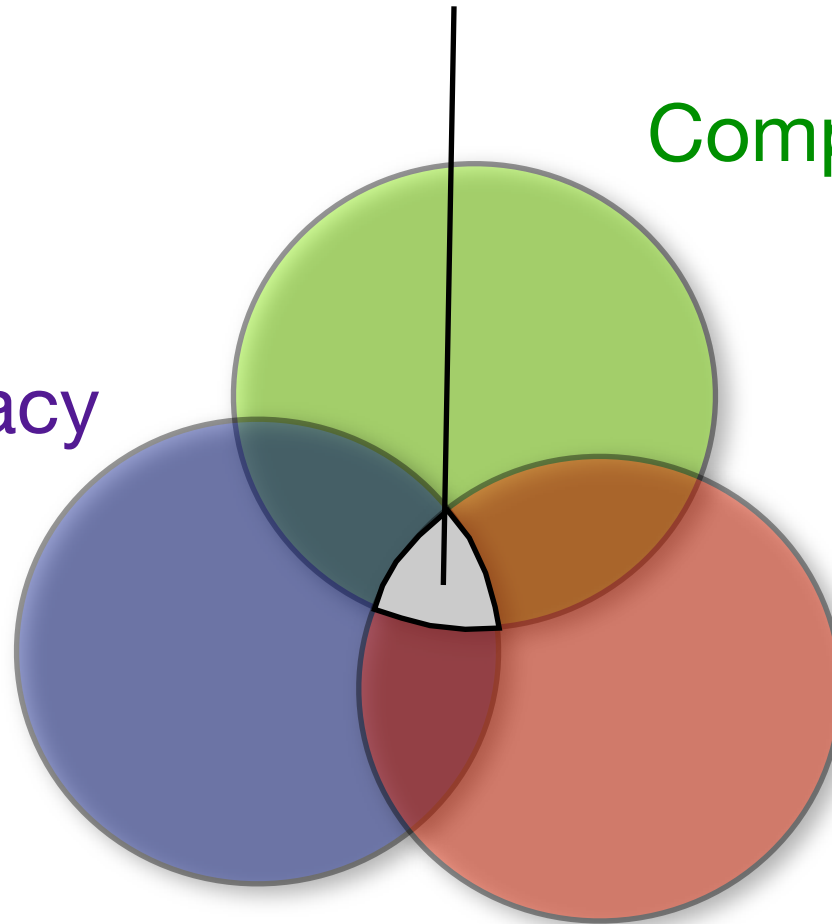


Information Fluency

Computer Literacy

Critical Thinking Skills

Information Literacy



Source: Pat Viele, Physics & Astronomy Librarian, Cornell University

What Librarians can do for you

- Provide access to print and electronic collections:
 - books and journals (also when through ADS)
 - databases, link collections, repositories
- Locate resources not immediately available
 - retrieval systems
 - networks of librarians
 - joint collections, knowledge, and ideas
- Library as meeting place
 - ‘science coffee’, (in)formal discussions
- Web 2.0 / Library 2.0
 - blogs; RSS; interactive; social networking
.... or walk into the library office
- Librarians as research catalysts
 - provide research assistance, assist with finding quality information resources, tips & tricks



The 2 Big Ones in Astronomy



- NASA ADS (Astrophysics Data System)

- ▶ www.adsabs.harvard.edu/
- ▶ published literature + preprints
- ▶ from publishers + authors
- ▶ myADS notification service

- arXiv.org e-Print archive

- ▶ arXiv.org (astro-ph)
- ▶ preprints (various versions)
- ▶ posted by authors
- ▶ e-mail listings, RSS

NASA ADS



- largest digital library in astronomy, several mirror sites around the world
- used almost daily by majority of astronomers
- collection of links to articles (2-3 most recent years: subscription needed)
- Special features include:
 - ▶ 1st author searches: ^

ads

ads

ads

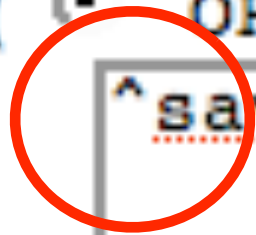
ad

Authors: (Last, First M, one per line)

Exact name matching

Require author for selection

(OR AND simple logic)



^savaglio, s

Publication Date between

(M

Enter Title Words

(Combine with: OR AND

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- Special features include:
 - ▶ 1st author searches: ^
 - ▶ filters, e.g., refereed only

ads

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ads

ad

(Combine with: OR AND [simple logic](#) [boolean logic](#))Return items starting with number [Full Text Search](#): Search OCRd text of scanned articles[myADS](#): Personalized notification service[Private Library](#) and [Recently read articles](#) for 449f9828ae[Journal/Volume/Page](#) [Current Journals](#) [Unread Journals](#)refereed \neq refereed

FILTERS

Select References From:

- [All bibliographic sources](#)
- [All refereed articles](#)
- [All non-refereed publications](#)

 Select only [articles](#)[Select/deselect publications:](#) (',' separated list)

Select References With:

- A bibliographic entry
- At least one of the following (OR):
- All of the following (AND):
- None of the following (NOT):
- | | | |
|---|--|---|
| <input type="checkbox"/> Abstracts | <input type="checkbox"/> Data Links | |
| <input type="checkbox"/> Full Text Articles | <input type="checkbox"/> Scanned Articles | <input type="checkbox"/> Electronic Articles |
| <input type="checkbox"/> arXiv e-print | <input type="checkbox"/> Table of Contents | <input type="checkbox"/> Mail Order Links |
| <input type="checkbox"/> References | <input type="checkbox"/> Citations | <input type="checkbox"/> Other related articles |

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 - ▶ 1st author searches: ^
 - ▶ filters, e.g., refereed only
 - ▶ citations: “Sorting / Sort by citation count”

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SORTING

- Sort by score
- Sort by [normalized score](#)
- Sort by citation count
- Sort by [normalized citation count](#)
- Sort by first author name
- Sort by number of authors
- Sort by date (most recent first)
- Sort by date (oldest first)
- Sort by entry date
- Sort by page (ToC sort)

[Synonym
Replacement](#)



[Relative
Weights](#)

Find:

Next

Previous

Highlight all


Done

[SAO/NASA Astrophysics Data System \(ADS\)](#)

Query Results from the ADS Database

[Go to bottom of page](#)

Selected and retrieved **26** abstracts.

Sort options 

- Sort options
- Sort by date
- Sort by citations**
- Sort by normalized citations
- Sort by author
- Sort by author count
- Sort by page (ToC sort)

#	Bibcode Authors	Score Title	Date	List of Links Access Control Help						
1	 2008ApJS..178...71L Lewler, J. E.; Sneden, C.	1.000	09/2008	A E X	R C S U					

	bibcode	citation count	pub month/year		
2	<input type="checkbox"/> 2000AJ...120..801R	32.000	08/2000	A	E F
	Rejkuba, Marina; Minniti, Dante; Gregg, Michael D.; Zijlstra, Albert A.; Alonso, M. Victoria; Goudfrooij, Paul		Deep Hubble Space Telescope STIS C Horizontal Branch		
3	<input type="checkbox"/> 2001A&A...369..812R	31.000	04/2001	A	E F
	Rejkuba, M.		Deep VLT search for globular clusters function		
4	<input type="checkbox"/> 2005ApJ...631..262R	23.000	09/2005	A	E F
	Rejkuba, Marina; Greggio, Laura; Harris, William E.; Harris, Gretchen L. H.; Peng, Eric W.		Deep ACS Imaging of the Halo of NG		

Open Access = no subscription needed

Links:

[A](#) [E](#) [F](#) [X](#) [D](#) [R](#) [C](#) [S](#) [N](#) [O](#) [U](#)

A = Abstract

D = Data

N = NED

E = HTML

R = References

O = Associated articles

F = PDF

C = Citations

U = Also read

X = arXiv

S = SIMBAD

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- Special features include:
 - ▶ 1st author searches: ^
 - ▶ filters, e.g., refereed only
 - ▶ citations: “Sorting / Sort by citation count”
 - ▶ export search results for reference lists

ads

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ad



Zotero

FORMAT

- HTML abstracts
- plain text abstracts
- BIBTEX reference list
- short list format
- generic tagged abstracts
- EndNote format
- ProCite format
- Refman format
- RefWorks format
- MEDLARS format
- Dublin Core XML
- XML abstracts
- XML references
- VOTables
- RSS
- AASTeX
- Icarus
- MNRAS
- SOPN
- Link
- Custom

[Require Field for Selection](#)

[Synonym Replacement](#)

[Relative Weights](#)

Find:

Done

Query Results from the ADS Database

Retrieved 200 abstracts, starting with number 1. Total number selected: 278.

\bibitem[Bibby et al.(2008)]{2008MNRAS.386L..23B} Bibby, J.-L., Crowther, P.-A., Furness, J.-P., & Clark, J.-S. 2008, \mnras, 386, L23

\bibitem[Bassino et al.(2008)]{2008MNRAS.386.1145B} Bassino, L.-P., Richtler, T., & Dirsch, B. 2008, \mnras, 386, 1145

\bibitem[Mandelbaum et al.(2008)]{2008MNRAS.386..781M} Mandelbaum, R., et al. 2008, \mnras, 386, 781

\bibitem[Tsamis et al.(2008)]{2008MNRAS.386...22T} Tsamis, Y.-G., Walsh, J.-R., P{\'e}quignot, D., Barlow, M.-J., Danziger, I.-J., & Liu, X.-W. 2008, \mnras, 386, 22

\bibitem[Vehoff et al.(2008)]{2008ASPC..387..444V} Vehoff, S., N{\'u}rnberger, D.-E.-A., Hummel, C.-A., & Duschl, W.-J. 2008, Astronomical Society of the Pacific Conference Series, 387, 444

\bibitem[Preibisch et al.(2008)]{2008ASPC..387..140P} Preibisch, T., Kraus, S., & Ohnaka, K. 2008, Astronomical Society of the Pacific Conference Series, 387, 140

\bibitem[Linz et al.(2008)]{2008ASPC..387..132L} Linz, H., Henning, T., Stecklum, B., Men'shchikov, A., van Boekel, R., Follert, R., & Feldt, M. 2008, Astronomical Society of the Pacific Conference Series, 387, 132

\bibitem[Mainieri et al.(2008)]{2008arXiv0805.1522M} Mainieri, V., et al. 2008, ArXiv e-prints, 805, arXiv:0805.1522

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 - ▶ citations: “Sorting / Sort by citation count”
 - ▶ export search results for reference lists
 - ▶ historical literature: scanned pages (fulltext search, back to vol. 1)
 - ▶ links to data
 - ▶ content + corrections provided by libraries

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astro-ph / arXiv

arXiv.org e-Print archive

http://arxiv.org/

Cornell University Library

Search Library Search Cornell

arXiv.org

Search or Article-id (Help | Advanced search)
arXiv:0802.3897 All papers Go!

Open access to 465,341 e-prints in Physics, Mathematics, Computer Science, Quantitative Biology and Statistics

Subject search and browse: Search Form Interface Catchup

16 Feb 2008: [DOCX/OOXML support](#)
See cumulative "What's New" pages.
Robots Beware: indiscriminate automated downloads from this site are *not* permitted.

Physics

- **Astrophysics (astro-ph new, recent, find)**
- **Condensed Matter (cond-mat new, recent, find)**
includes: Disordered Systems and Neural Networks; Materials Science; Mesoscopic Systems and Quantum Hall Effect; Other; Soft Condensed Matter; Statistical Mechanics; Strongly Correlated Electrons; Superconductivity
- **General Relativity and Quantum Cosmology (gr-qc new, recent, find)**
- **High Energy Physics - Experiment (hep-ex new, recent, find)**
- **High Energy Physics - Lattice (hep-lat new, recent, find)**
- **High Energy Physics - Phenomenology (hep-ph new, recent, find)**
- **High Energy Physics - Theory (hep-th new, recent, find)**
- **Mathematical Physics (math-ph new, recent, find)**
- **Nuclear Experiment (nucl-ex new, recent, find)**
- **Nuclear Theory (nucl-th new, recent, find)**
- **Physics (physics new, recent, find)**
includes (see detailed description): Accelerator Physics; Atmospheric and Oceanic Physics; Atomic Physics; Atomic and Molecular Clusters; Biological Physics; Chemical Physics; Classical Physics; Computational Physics; Data Analysis, Statistics and Probability; Fluid Dynamics; General Physics; Geophysics; History of Physics; Instrumentation and Detectors; Medical Physics; Optics; Physics Education; Physics and Society; Plasma Physics; Popular Physics; Space Physics
- **Quantum Physics (quant-ph new, recent, find)**

approx. 1/2 - 1 yr. before publication

Astrophysics authors/titles "new"

http://arxiv.org/list/astro-ph/new

arXiv.org > astro-ph

Search or Article-id [Help](#) | [Advanced search](#)

All papers Go!

Astrophysics

New submissions

Submissions received from Tue 26 Feb 08 to Wed 27 Feb 08, announced Thu, 28 Feb 08

- [New submissions](#)
- [Cross-lists](#)
- [Replacements](#)

[total of 57 entries: 1-57]
[showing up to 2000 entries per page: [fewer](#) | [more](#)]

New submissions for Thu, 28 Feb 08

[1] [arXiv:0802.3897](#) [[ps](#), [pdf](#), [other](#)]

Consistency test of general relativity from large scale structure of the Universe

[Yong-Seon Song](#), [Kazuya Koyama](#) (ICG, Portsmouth)

Comments: 5 pages, 1 figure. PRL submitted

Subjects: [Astrophysics \(astro-ph\)](#)

We propose a consistency test of general relativity on cosmological scales. This test enables us to distinguish between two possibilities to explain the late time accelerated expansion of the universe, that is, dark energy models based on general relativity and modified gravity models without dark energy. We propose a way to perform this test using future observations.

[2] [arXiv:0802.3898](#) [[ps](#), [pdf](#), [other](#)]

Constraining Inflation

[Peter Adshead](#), [Richard Easther](#) (Yale)

Comments: 32 pages

Subjects: [Astrophysics \(astro-ph\)](#)

Slow roll reconstruction is derived from the Hamilton-Jacobi formulation of inflationary dynamics. It automatically includes information from

Find: Next Previous Highlight all

Done

astro-ph / arXiv

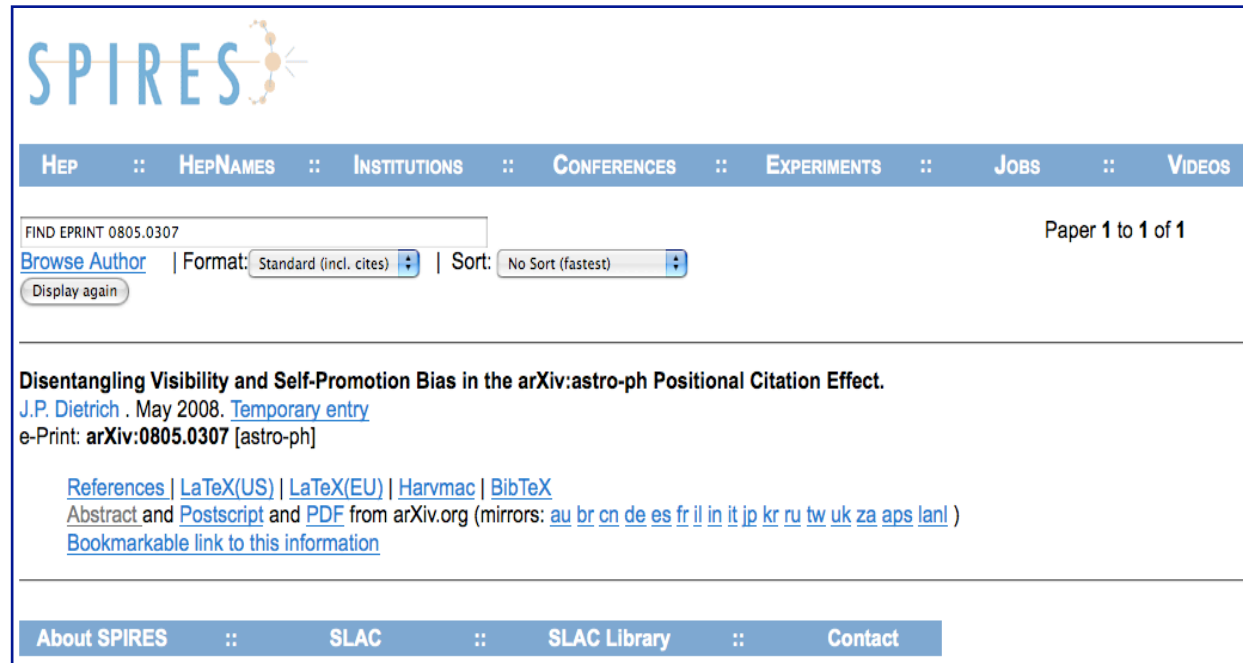
- citing arXiv papers: arXiv:YYMM.NNNv# [category]
arXiv:0803.1234v1 [astro-ph]
 - ▶ scientists still cite published version (e.g., in CV)
--> journal still has a meaning (impact, reputation...)
- Schwarz & Kennicutt (2004): astro-ph --> citations 2x
- Position on arXiv --> citations?

J.P. Dietrich:

- ▶ The importance of being first: position dependent citation rates on arXiv:astro-ph [2008PASP..120..224D]
- ▶ Disentangling visibility and self-promotion bias in the arXiv:astro-ph positional citation effect [2008PASP..120..801D]



Databases beyond ADS and astro-ph/arXiv



The screenshot shows the SPIRES-HEP website interface. At the top left is the SPIRES logo. A navigation bar contains links for HEP, HEPNAMES, INSTITUTIONS, CONFERENCES, EXPERIMENTS, JOBS, and VIDEOS. A search bar contains the text "FIND EPRINT 0805.0307". To the right of the search bar, it says "Paper 1 to 1 of 1". Below the search bar are options for "Browse Author", "Format: Standard (incl. cites)", and "Sort: No Sort (fastest)". A "Display again" button is also present. The main content area displays the title "Disentangling Visibility and Self-Promotion Bias in the arXiv:astro-ph Positional Citation Effect." by J.P. Dietrich, dated May 2008, with a "Temporary entry" link. The e-Print identifier is arXiv:0805.0307 [astro-ph]. Below the title are links for "References", "LaTeX(US)", "LaTeX(EU)", "Harvmac", and "BibTeX". Further down are links for "Abstract and Postscript and PDF from arXiv.org" with a list of mirrors (au, br, cn, de, es, fr, il, in, it, jp, kr, ru, tw, uk, za, aps, lan!) and a "Bookmarkable link to this information". At the bottom, a navigation bar includes links for "About SPIRES", "SLAC", "SLAC Library", and "Contact".

SPIRES-HEP

- www.slac.stanford.edu/spires/hep
- Stanford Public Information System
- SLAC, DESY, Fermilab
- bibliographic info in high-energy physics
- full-texts from arXiv and others

Databases beyond ADS and astro-ph/arXiv



Google Scholar

- scholar.google.com
- free research tool for scholarly literature + citations
- conf. proc, books, repositories
- good for correcting misspellings
- might have duplicates
- what sources are searched?
- Google PageRank

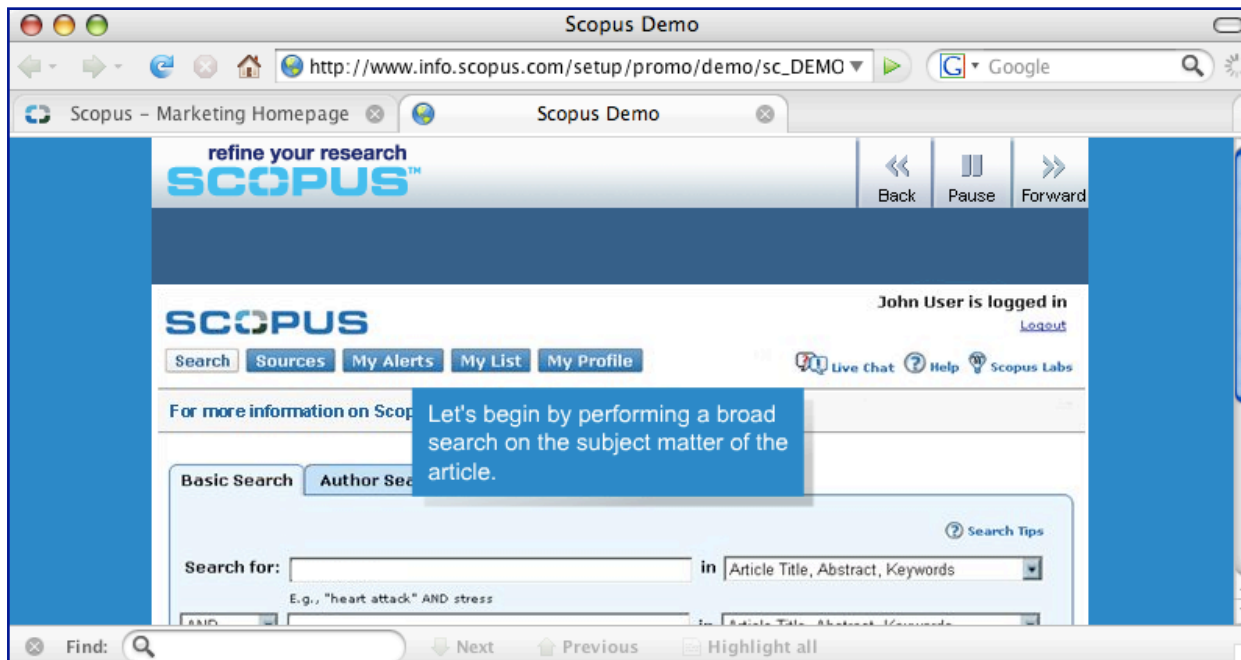
Databases beyond ADS and astro-ph/arXiv



ISI Web of Knowledge (Thompson Scientific)

- commercial
- consists of Web of Science (citation db), analytical tools, e.g., Science Citation Index (SCI), Journal Citation Reports (JCR)

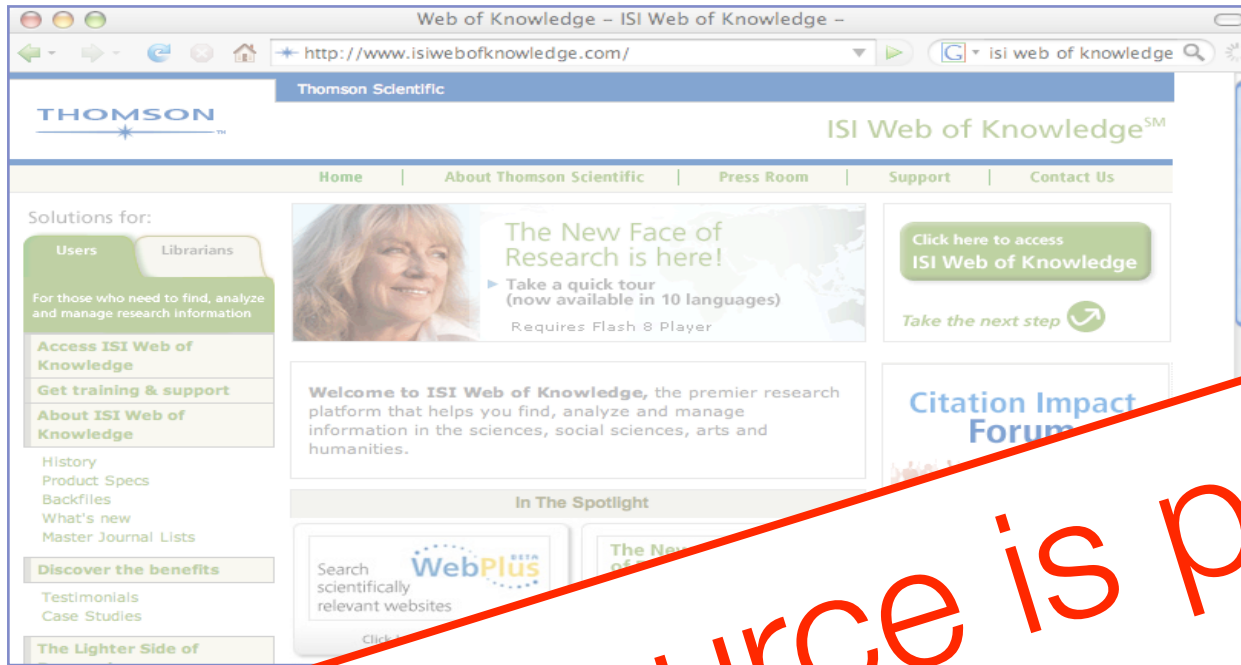
Citation overlap
 $\approx 60\%$



Scopus (Elsevier)

- commercial
- 15,000 peer-rev STM & social sciences journals
- abstracts + citations
- tools to search, sort, export
- email + RSS alerts

Databases beyond ADS and astro-ph/arXiv

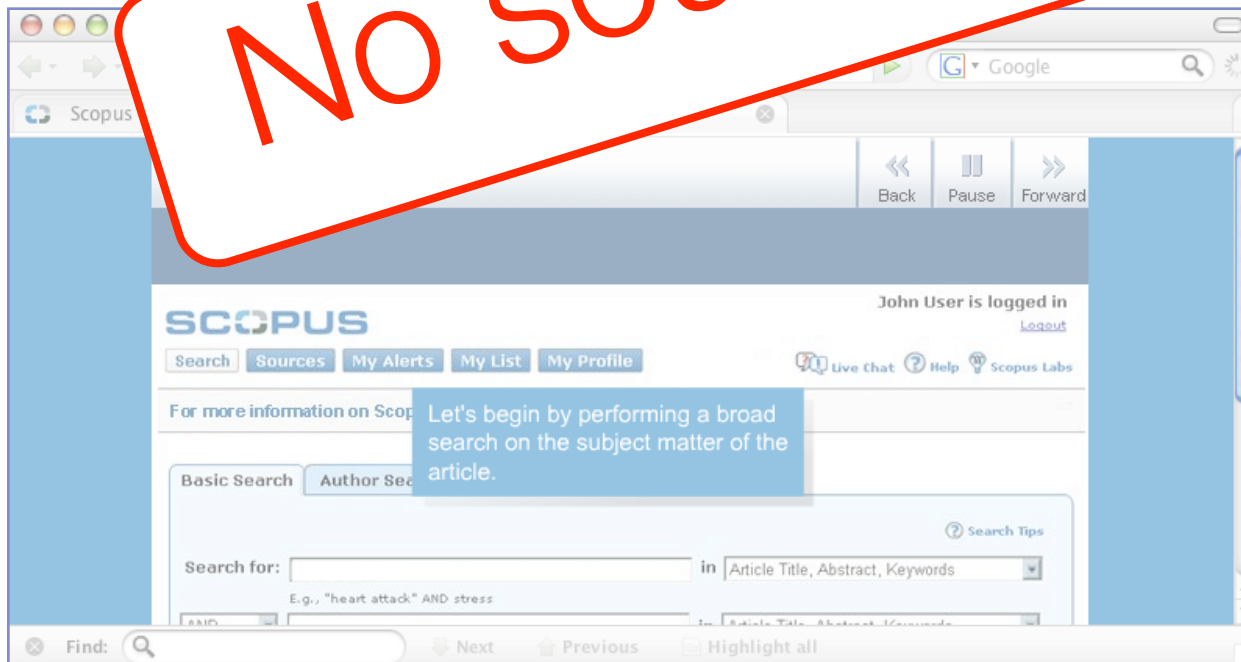


ISI Web of Knowledge (Thompson Scientific)

- commercial db
- consists of Web of Science (citation db), analytical tools, e.g., Science Citation Index (SCI), Journal Citation Reports (JCR)

No source is perfect

Citation overlap
 $\approx 60\%$

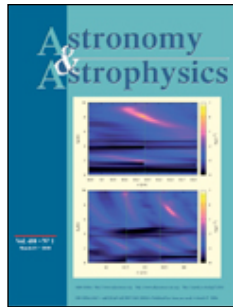


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- 15,000 peer-rev STM & social sciences journals
- abstracts + citations
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- email + RSS alerts

Journals

- Core journals in astronomy:



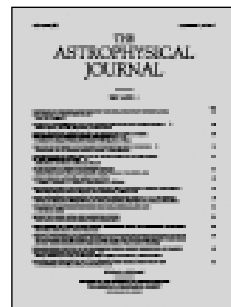
A&A
ESO



AJ



AAS



ApJ / ApJS



MNRAS

RAS



PASP

ASP



- Subscription-based, with delayed Open Access (2-3 yrs.)
- As of mid-2009: print + electronic
- Librarians pay, negotiate licenses, provide access, troubleshoot
- The Future: from static journals towards virtual journals / databases

IOPscience

299,927
Articles in IOPscience

524
Added this week

Open Access

- Make publicly funded literature available to everybody
- No subscription fees
- Archive final version, with or without journal layout
- Author self-archiving
or
repositories (arXiv)
or
Open Access Publishing
(retrievability & preservation !)



Open Access

Grothkopf & Erdmann:
Open Access — State of the Art

IAU Information Bulletin July 2008

www.iau.org/science/publications/iau/information_bulletin/



OA not for free

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Total 3172



Astronomy

[Information bulletin on variable stars](#)

ISSN: 03740676

EISSN: 15872440

Subject: [Astronomy \(General\)](#)

Publisher: Konkoly Observatory

[Journal of astrophysics and astronomy - publ. by Indian academy of sciences](#)

ISSN: 02506335

Subject: [Astronomy \(General\)](#)

Publisher: Indian Academy of Sciences

[Revista Mexicana de Astronomía y Astrofísica : Universidad Nacional Autónoma de México. Instituto de Astronomía](#) [DOAJ Content](#)

ISSN: 01851101

Subject: [Astronomy \(General\)](#)

Publisher: Universidad Nacional Autónoma de México

[New Journal of Physics](#)

ISSN: 13672630

Subject: [Physics \(General\)](#)

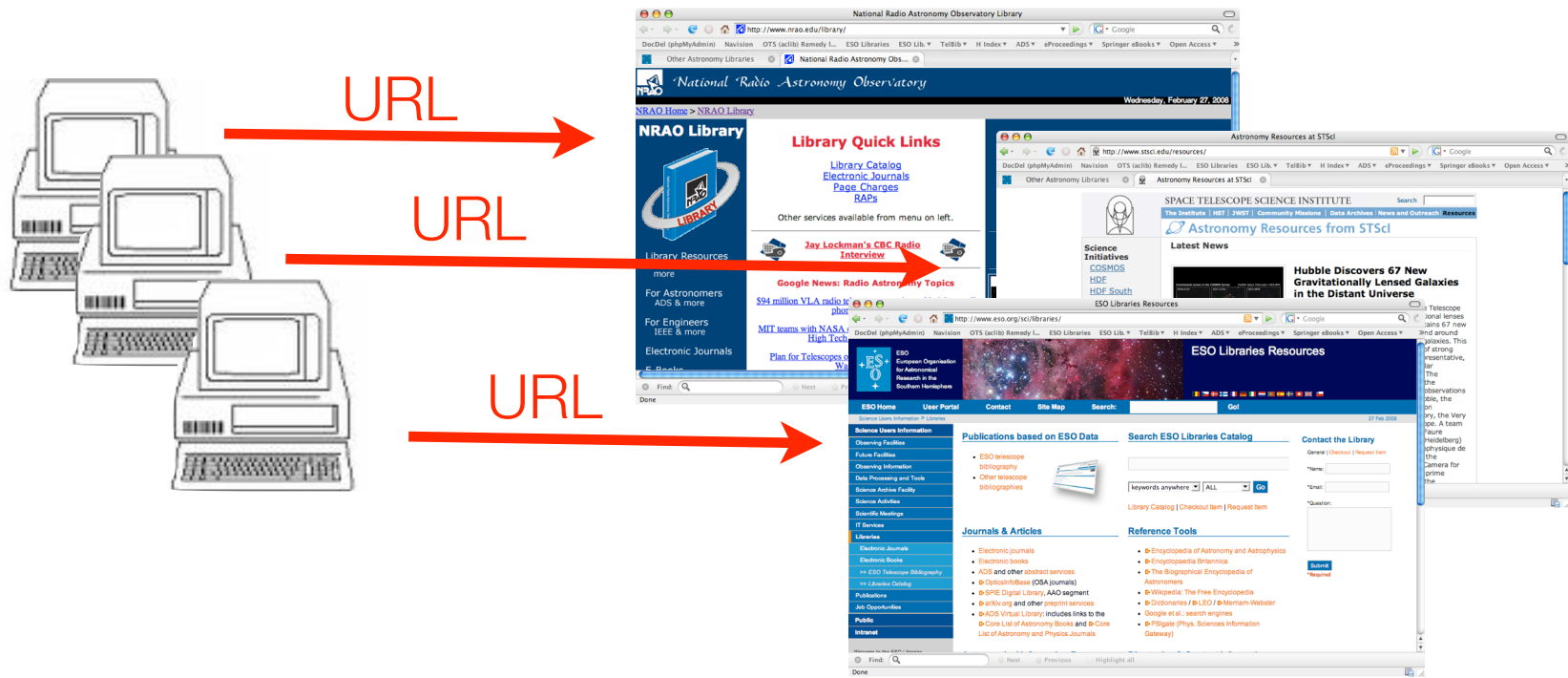
Publisher: Institute of Physics (IoP) and Deutsche Physikalische Gesellschaft

Problems with Online Documents

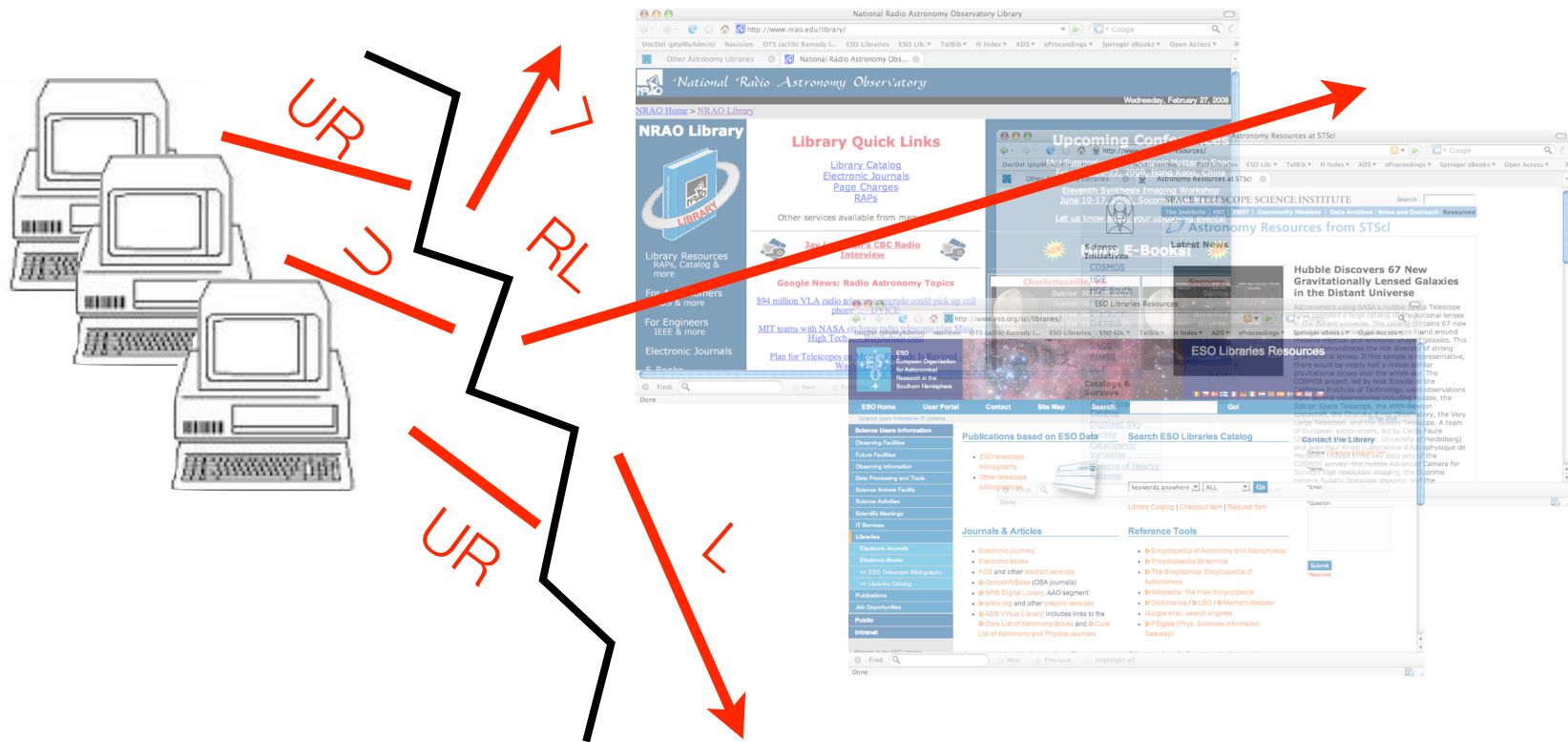
- Long-term access
 - ▶ Archiving: what, where, who?
 - ▶ Preservation: perpetual access, migration to newer formats, metadata, ownership of content, embedded links (inside and outside)
- Completeness of digitized material
 - ▶ errata, news, advertisements, columns, letters, front matter, legible figures and graphs, obituaries....
- Deleted items
 - ▶ Journals: plagiarized articles
 - ▶ Wikipedia: ceased projects
 - ▶ Mailing lists, blogs: comments and contributions
- Broken links
 - ▶ URL → URN / DOI



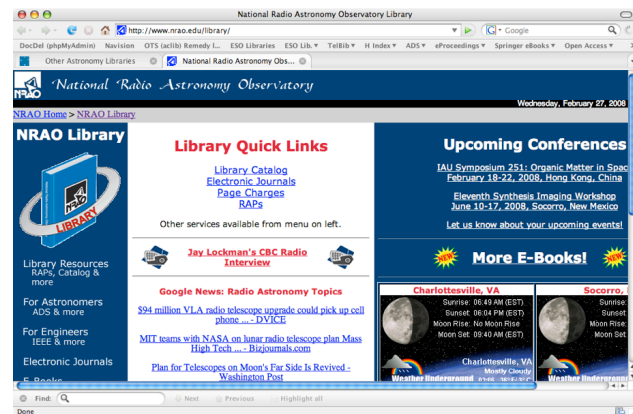
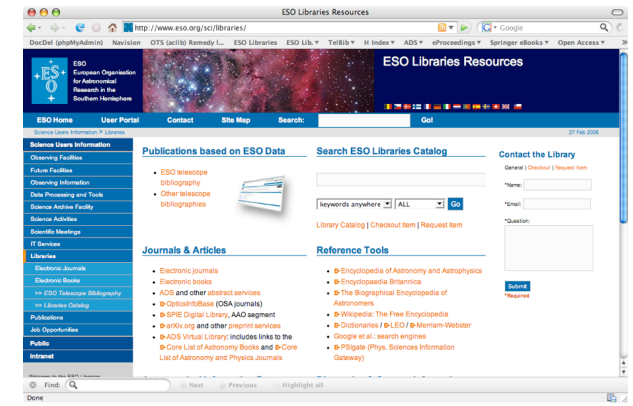
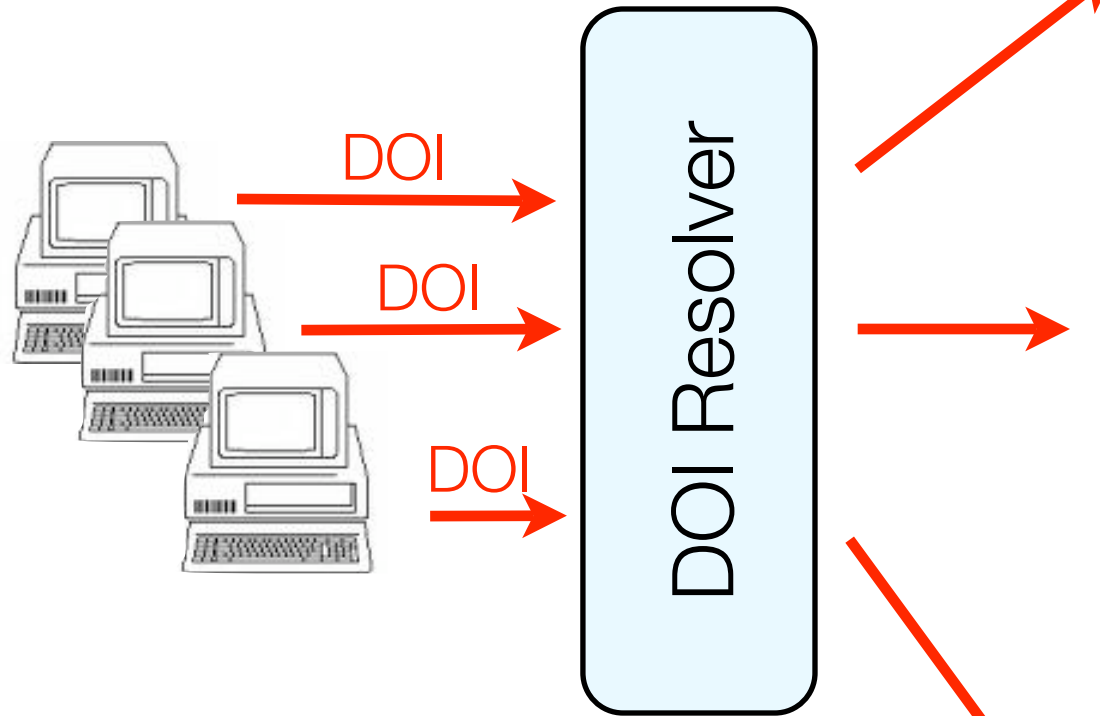
DOI (Digital Object Identifier)



DOI (Digital Object Identifier)



DOI (Digital Object Identifier)



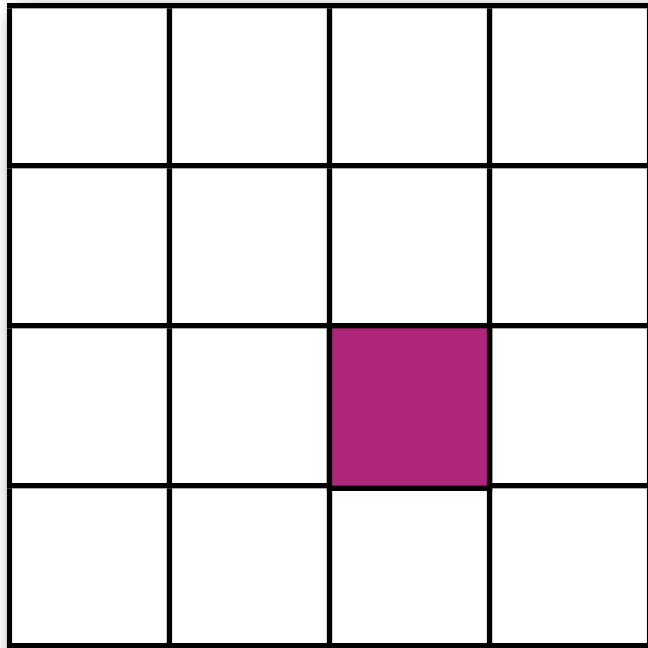
- DOIs are names, not locations
- identifiers for scientific publications
- typical DOI: 10.1065/abc123defg
- resolve through browser:
<http://dx.doi.org/10.1065/abc123defg>

DOI Example: ADS

The screenshot shows a web browser window with the title "Intervening Metal Systems in GRB and QSO Sight Lines: The Mg II and C IV Question" and the URL "http://adsabs.harvard.edu/abs/2007ApJ...669..741S". The page contains a list of links for finding similar abstracts, electronic and full journal articles, an arXiv e-print, on-line data, references, citations, SIMBAD objects, and also-read articles. Below the links is a metadata section with the following information:

- Title:** Intervening Metal Systems in GRB and QSO Sight Lines: The Mg II and C IV Question
- Authors:** [Sudilovsky, Vladimir](#); [Savaglio, Sandra](#); [Vreeswijk, Paul](#); [Ledoux, Cédric](#); [Smette, Alain](#); [Greiner, Jochen](#)
- Affiliation:** AA(Physics Department, Guilford College, Greensboro, NC 27410.; Max-Planck-Institut für extraterrestrische Physik, Giessenbachstrasse, D-85748 Garching bei München, Germany.), AB(Max-Planck-Institut für extraterrestrische Physik, Giessenbachstrasse, D-85748 Garching bei München, Germany.), AC(European Southern Observatory, Alonso de Córdova 3107, Casilla 19001, Santiago 19, Chile.), AD(European Southern Observatory, Alonso de Córdova 3107, Casilla 19001, Santiago 19, Chile.), AE(European Southern Observatory, Alonso de Córdova 3107, Casilla 19001, Santiago 19, Chile.), AF(Max-Planck-Institut für extraterrestrische Physik, Giessenbachstrasse, D-85748 Garching bei München, Germany.)
- Publication:** The Astrophysical Journal, Volume 669, Issue 2, pp. 741-748. ([ApJ Homepage](#))
- Publication Date:** 11/2007
- Origin:** [UCP](#)
- ApJ Keywords:** Cosmology: Miscellaneous, Gamma Rays: Bursts, Galaxies: Quasars: Absorption Lines
- Abstract Copyright:** (c) 2007: The American Astronomical Society
- DOI:** [10.1086/521525](https://doi.org/10.1086/521525)
- Bibliographic Code:** 2007ApJ...669..741S

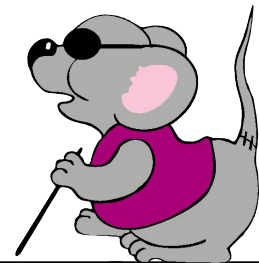
The DOI link is circled in red. Below the metadata is the "Abstract" section, which begins with the text: "Prochter and coworkers recently found that the number density of strong intervening $0.5 < z < 2$ Mg II absorbers detected in gamma-ray burst (GRB) afterglow spectra is nearly 4 times larger than those in QSO spectra. We have conducted a similar study using C IV absorbers. Our C IV sample, consisting of a total of 19 systems, is drawn from three high-resolution and high to moderate signal-to-noise ratio VLT UVES spectra of three long-duration GRB afterglows, covering the redshift interval $1.6 < z < 2.1$. The column density distribution and number density of this sample do not show any statistical difference from the



Astronomy:
almost everything online
— — —
tempting and dangerous

Information not easy to find

- Special supplements
 - ▶ e.g., (color) plates
- Radio astronomy
 - ▶ historical literature
 - ▶ recent literature in engineering journals
- Observatory publications (> 3 yrs.)
- Books, conference proceedings (> 5 yrs.)
- Non-English literature



IT'S A LIBRARY,
Honey--
KIND OF AN EARLY
VERSION OF THE
WORLD WIDE WEB.

edSTEIN '96
Roxbury Mtd. News - Nov 2

Cooperations of Librarians and Astronomers



International Astronomical Union (IAU)
Commission 5: Documentation and Astronomical Data
Working Group Libraries
www.eso.org/libraries/IAU-WGLib/



Library and Information Services in Astronomy (LISA)
www.eso.org/libraries/lisa.html



Library and Information Services in Astronomy

- Series of conferences:
 - LISA I: Washington, DC, USA, 1988
 - LISA II: Garching, Germany, 1995
 - LISA III: Tenerife, Canary Islands, Spain, 1998
 - LISA IV: Prague, Czech Republic, 2002
 - LISA V: Cambridge, MA, USA, 2006
 - LISA VI: to be held in Pune, India, 2010
- Participants: librarians, publishers, computer specialists, astronomers from around the world
- Topics covered reflect the changes in library services and information access
- Forum for exchange of experiences and information about emerging fields of interest in astronomy libraries

