Astronomy Libraries - Your Gateway to Information

Uta Grothkopf
ESO Library
esolib@eso.org

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

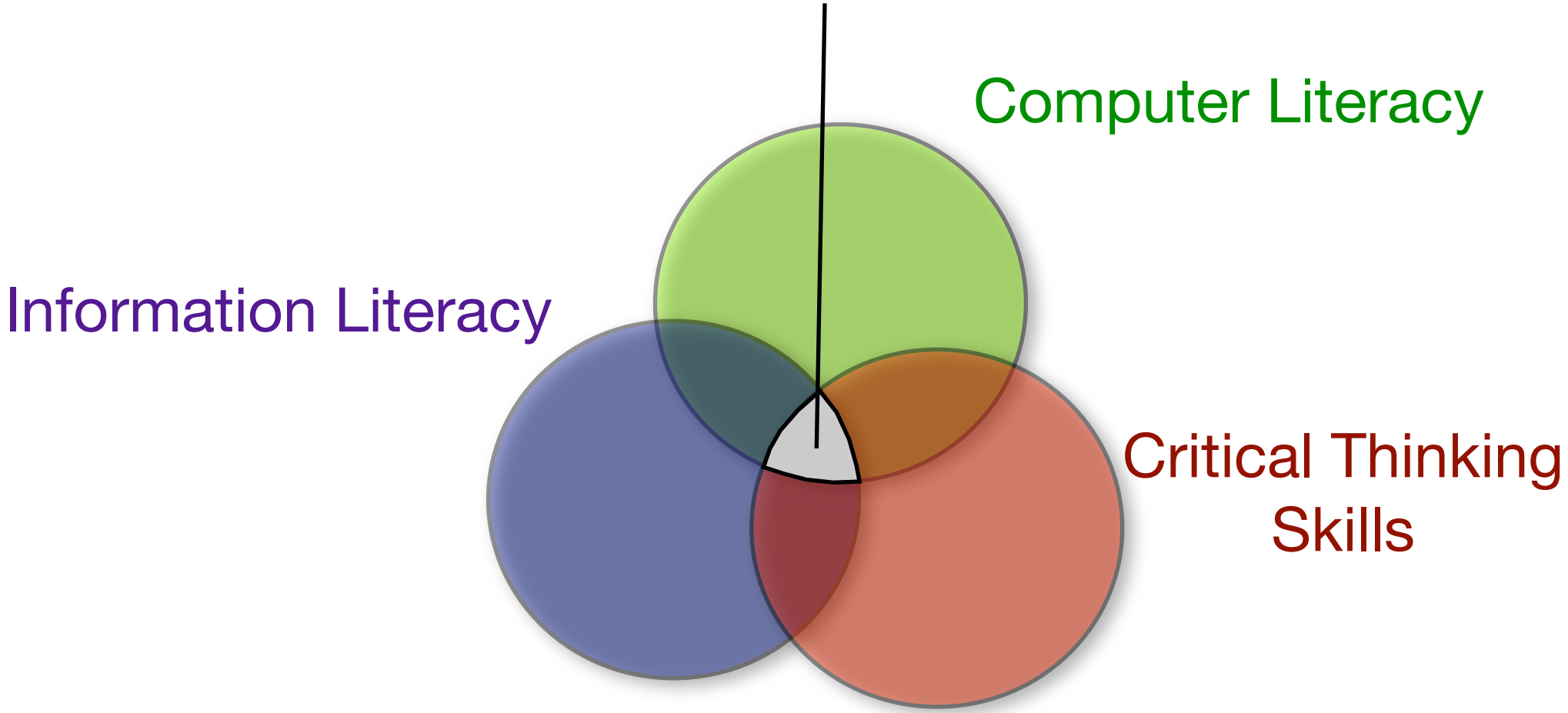
Hardware, software, network technology

- 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

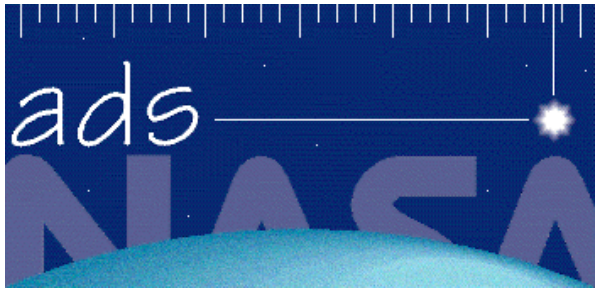


Source: Pat Viele, Physics & Astronomy Librarian, Cornell University

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

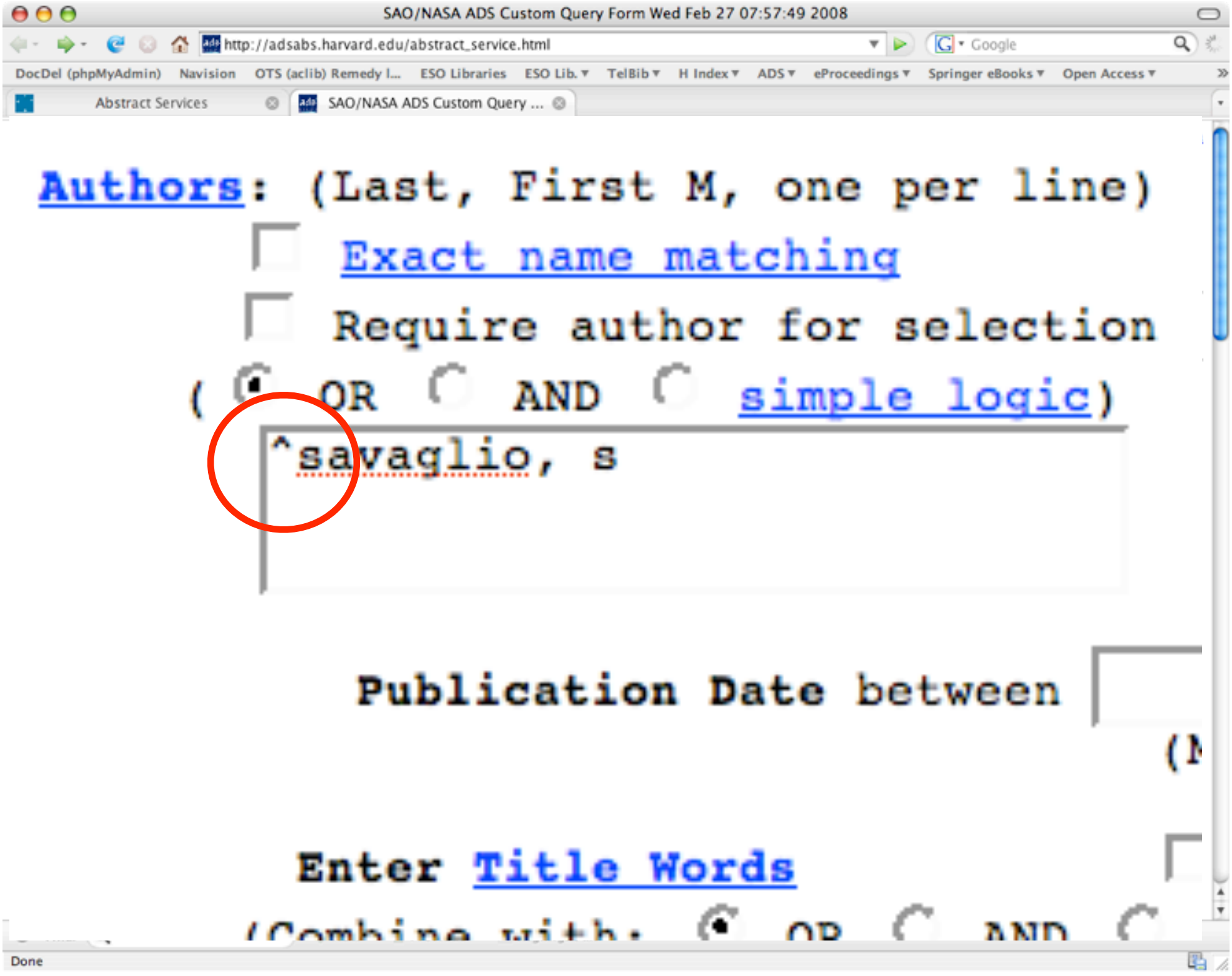
The 2 Big Ones in Astronomy



- 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: ^


SAO/NASA ADS Custom Query Form Wed Feb 27 07:57:49 2008
http://adsabs.harvard.edu/abstract_service.html
Google
DocDel (phpMyAdmin)
Navision
OTS (aclib) Remedy l...
ESO Libraries
ESO Lib.
TelBib
H Index
ADS
eProceedings
Springer eBooks
Open Access
Abstract Services
SAO/NASA ADS Custom Query ...
Authors: (Last, First M, one per line)
Exact name matching
Require author for selection
(OR AND simple logic)
^savaglio, s
Publication Date between
Enter Title Words
(Combine with: OR AND
Done

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: ^
  - filters, e.g., refereed only

SAO/NASA ADS Custom Query Form Wed Feb 27 07:57:49 2008

http://adsabs.harvard.edu/abstract_service.html

DocDel (phpMyAdmin) Navision OTS (aclib) Remedy I... ESO Libraries ESO Lib. TelBib H Index ADS eProceedings Springer eBooks Open Access

Abstract Services | SAO/NASA ADS Custom Query ...

(Combine with: OR AND simple logic boolean logic)

Return 200 items starting with number 1

Full Text Search: Search OCRd text of scanned articles

myADS: Personalized notification service

Private Library and Recently read articles for 449f9828ae

Send Query | Return Query Form | Store Default Form | Clear

Journal/Volume/Page Current Journals Unread Journals

refereed ≠ refereed

FILTERS

Select References From:

- All bibliographic sources — Select only articles
- All refereed articles
- All non-refereed publications

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):

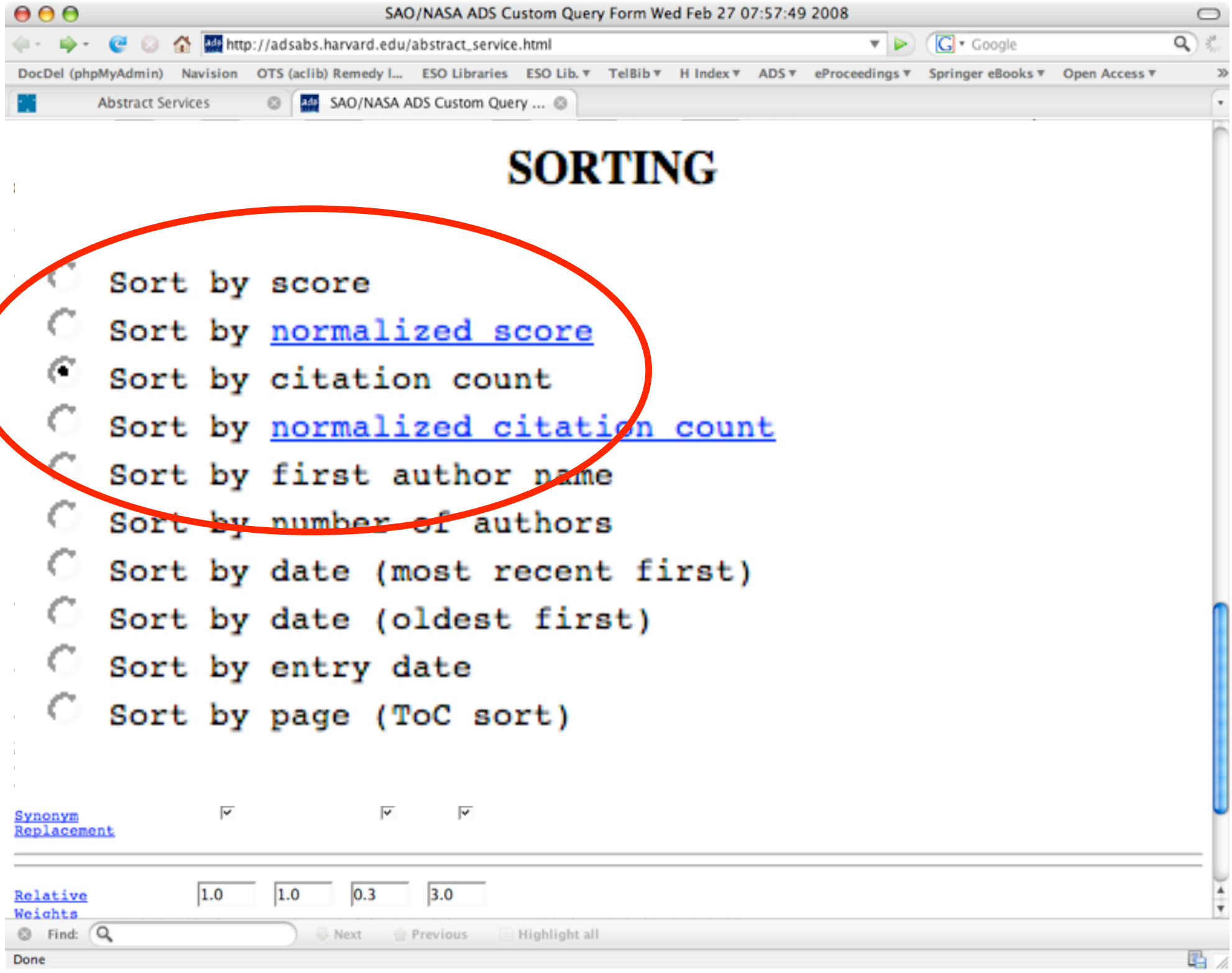
Abstracts	Data Links	
Full Text Articles	Scanned Articles	Electronic Articles
arXiv e-print	Table of Contents	Mail Order Links
References	Citations	Other related articles

Find: Next Previous Highlight all

Done

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: ^
  - filters, e.g., refereed only
  - citations: “Sorting / Sort by citation count”


SAO/NASA ADS Custom Query Form Wed Feb 27 07:57:49 2008
http://adsabs.harvard.edu/abstract_service.html
Google
DocDel (phpMyAdmin)
Navision
OTS (aclib) Remedy l...
ESO Libraries
ESO Lib.
TelBib
H Index
ADS
eProceedings
Springer eBooks
Open Access
Abstract Services
SAO/NASA ADS Custom Query ...
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
1.0
1.0
0.3
3.0
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	1.000	09/2008	A E X R C S U
	Lawler, J. E.; Sneden, C.;	Improved Laboratory Transition Probabilities for Er II and Application to the Erbium Abundances of the Sun and		

bibcode citation count pub month/year

2	2000AJ....120..801R Rejkuba, Marina; Minniti, Dante; Gregg, Michael D.; Zijlstra, Albert A.; Alonso, M. Victoria; Goudfrooij, Paul	32.000	08/2000	A E F	Deep Hubble Space Telescope STIS C Horizontal Branch
3	2001A&A...369..812R Rejkuba, M.	31.000	04/2001	A E F	Deep VLT search for globular clusters function
4	2005ApJ...631..262R Rejkuba, Marina; Greggio, Laura; Harris, William E.; Harris, Gretchen L. H.; Peng, Eric W.	23.000	09/2005	A E F	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

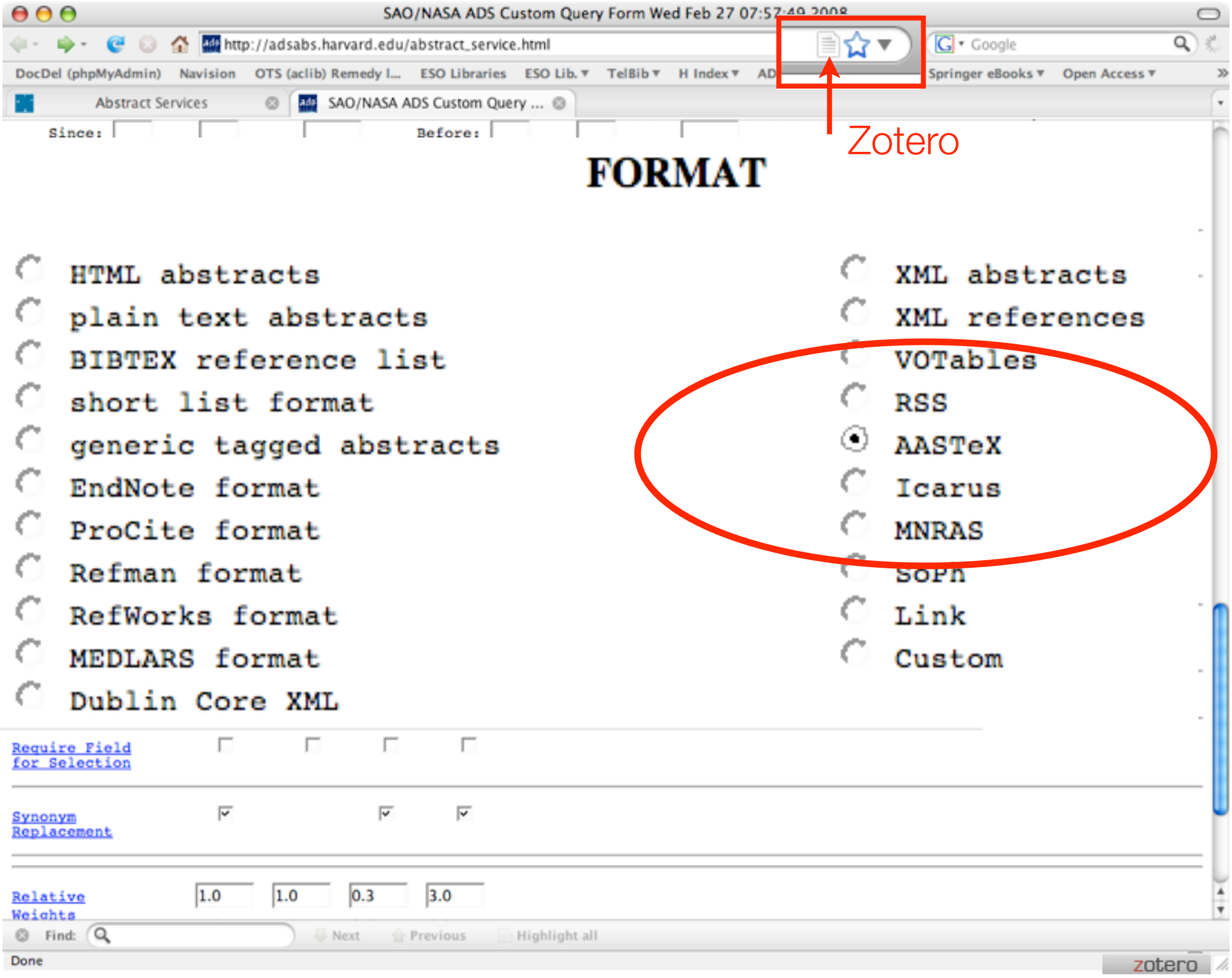
E = HTML R = References O = Associated articles

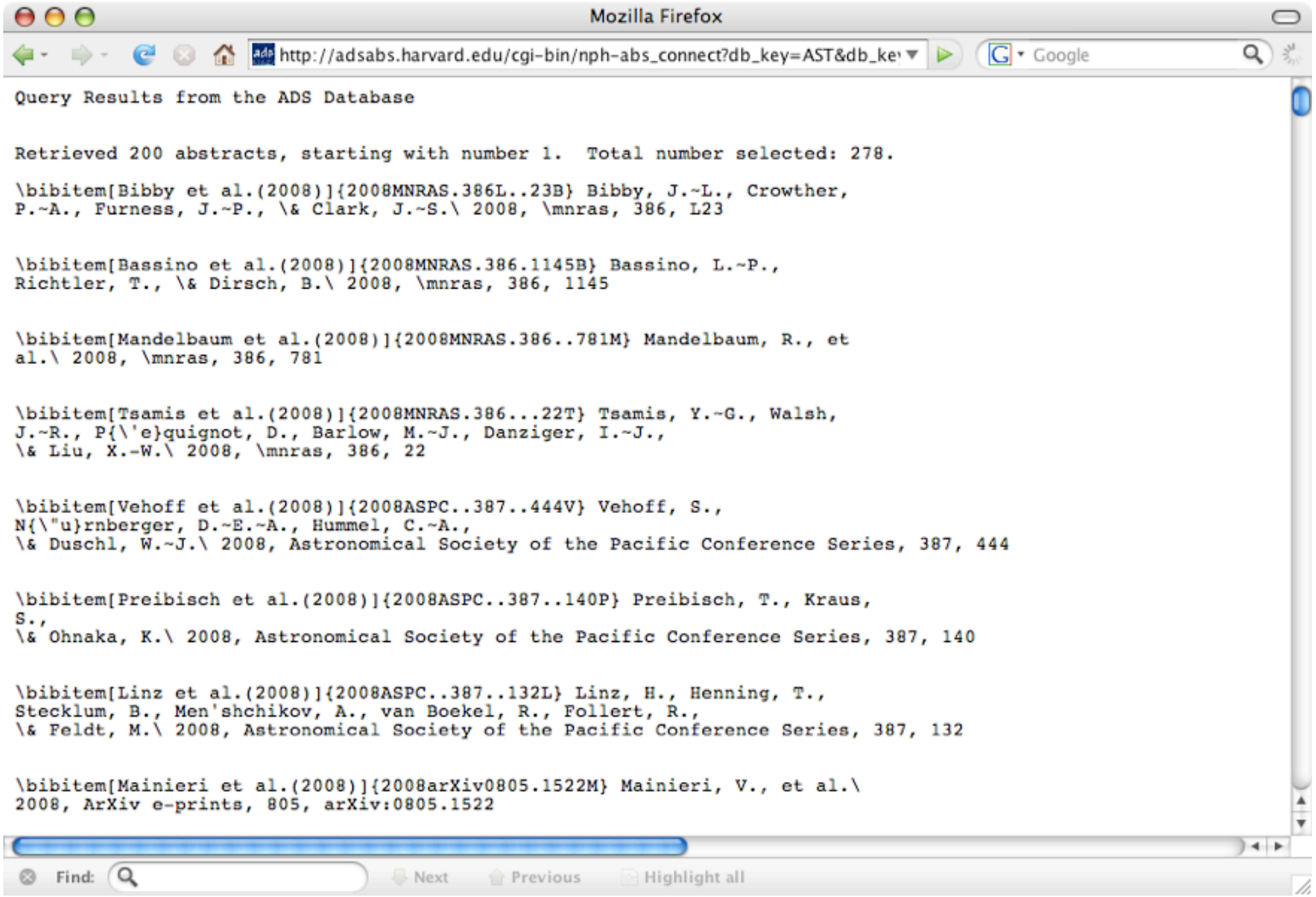
F = PDF C = Citations U = Also read

X = arXiv S = SIMBAD

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: ^
  - filters, e.g., refereed only
  - citations: “Sorting / Sort by citation count”
  - export search results for reference lists


SAO/NASA ADS Custom Query Form Wed Feb 27 07:57:49 2008
http://adsabs.harvard.edu/abstract_service.html
Google
DocDel (phpMyAdmin)
Navision
OTS (aclib) Remedy l...
ESO Libraries
ESO Lib.
TelBib
H Index
Springer eBooks
Open Access
Abstract Services
SAO/NASA ADS Custom Query ...
Zotero
Since:
Before:
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
SoPh
Link
Custom
Require Field for Selection
Synonym Replacement
Relative Weights
1.0
1.0
0.3
3.0
Find:
Next
Previous
Highlight all
Done
zotero



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

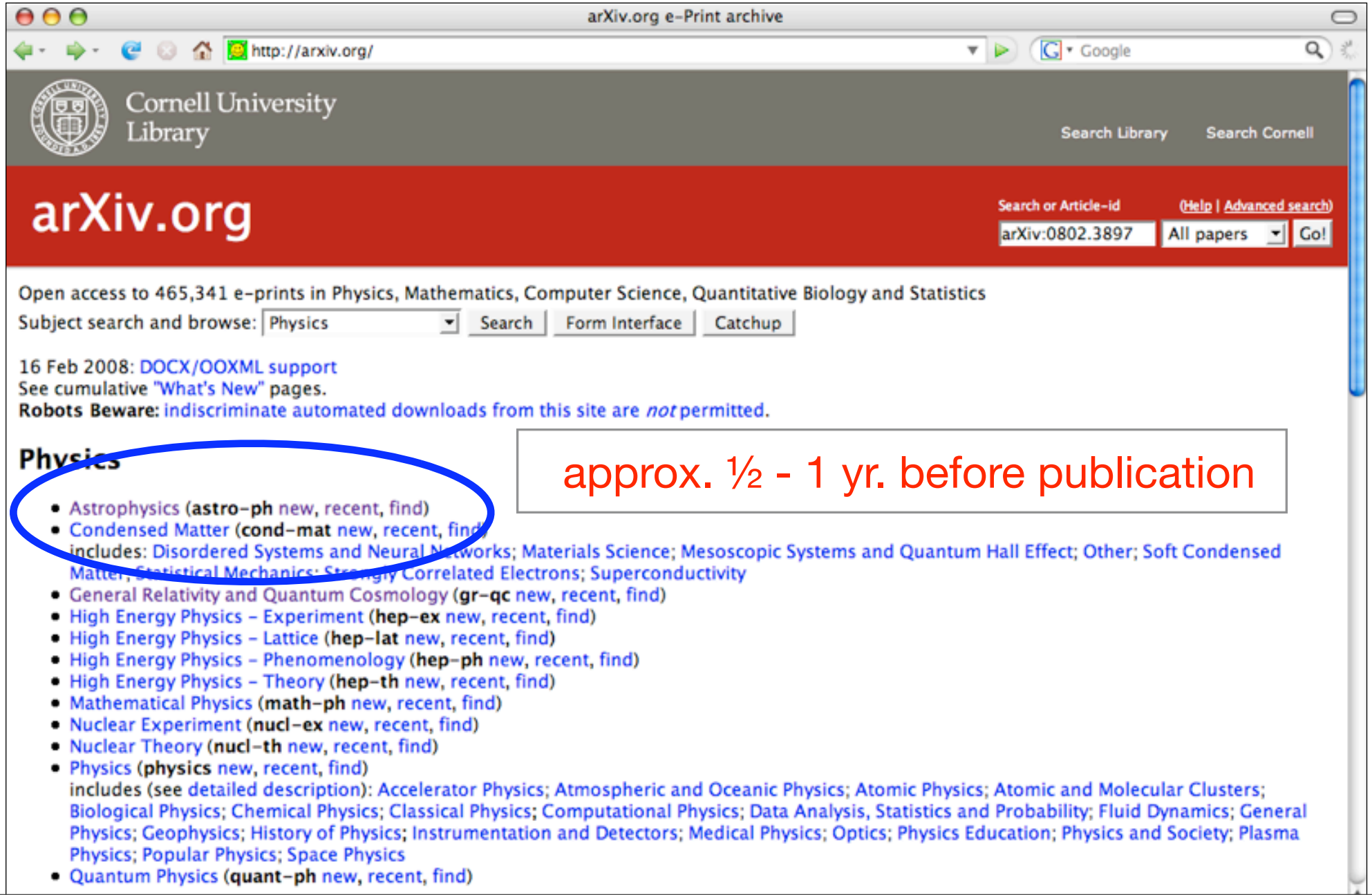
\bibitem[Linz et al.(2008)]{2008ASPC..387..132L} Linz, H., Henning, T., Stecklum, B., Men'shchikov, A., van Boekel, R., Follert, R., \& Feldt, M.\ 2008, Astronomical Society of the Pacific Conference Series, 387, 132

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

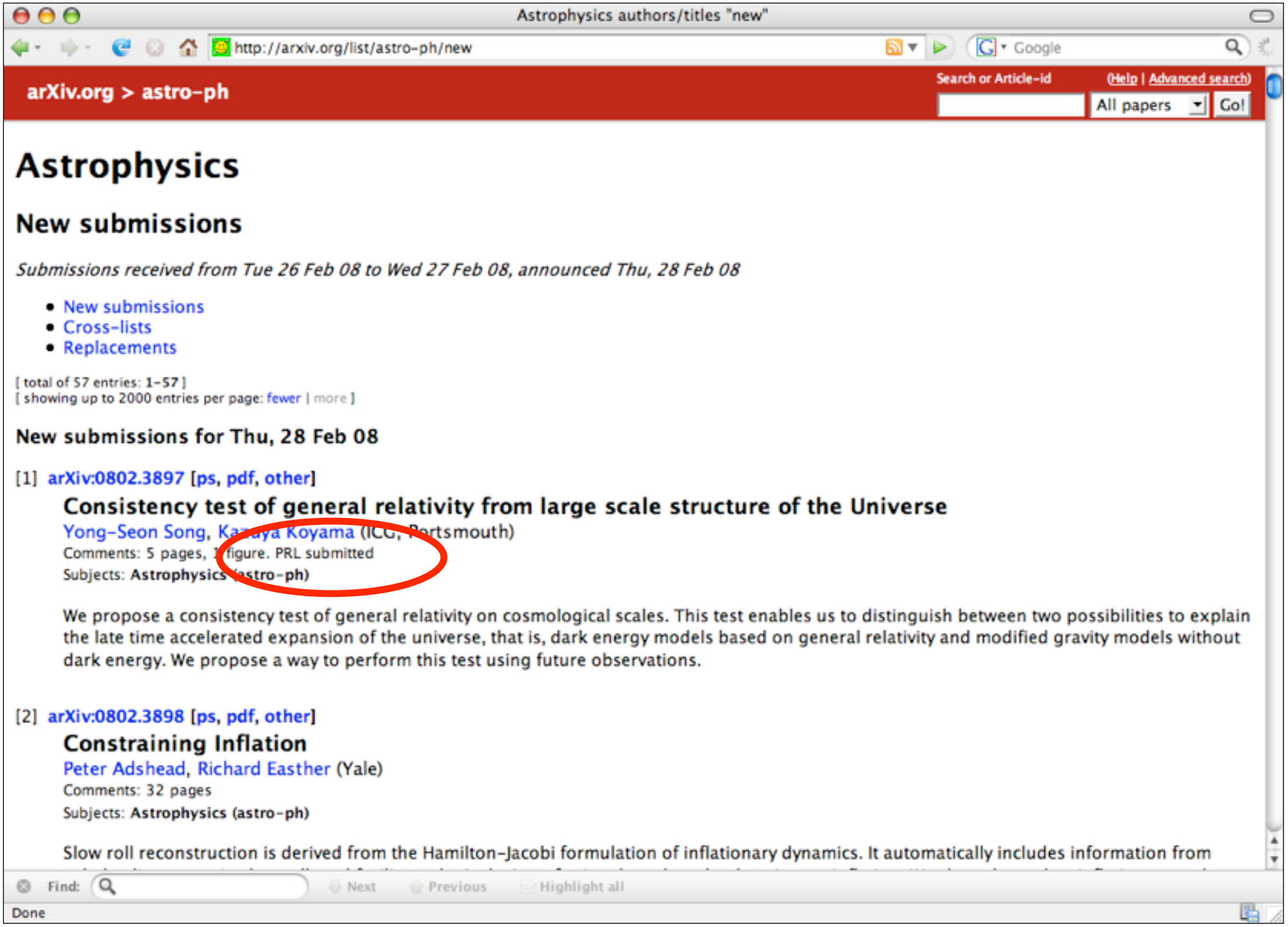
NASA  ADS

- 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: ^
  - filters, e.g., refereed only
  - 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

astro-ph / arXiv



approx. ½ - 1 yr. before publication


Astrophysics authors/titles "new"
http://arxiv.org/list/astro-ph/new
Google
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]

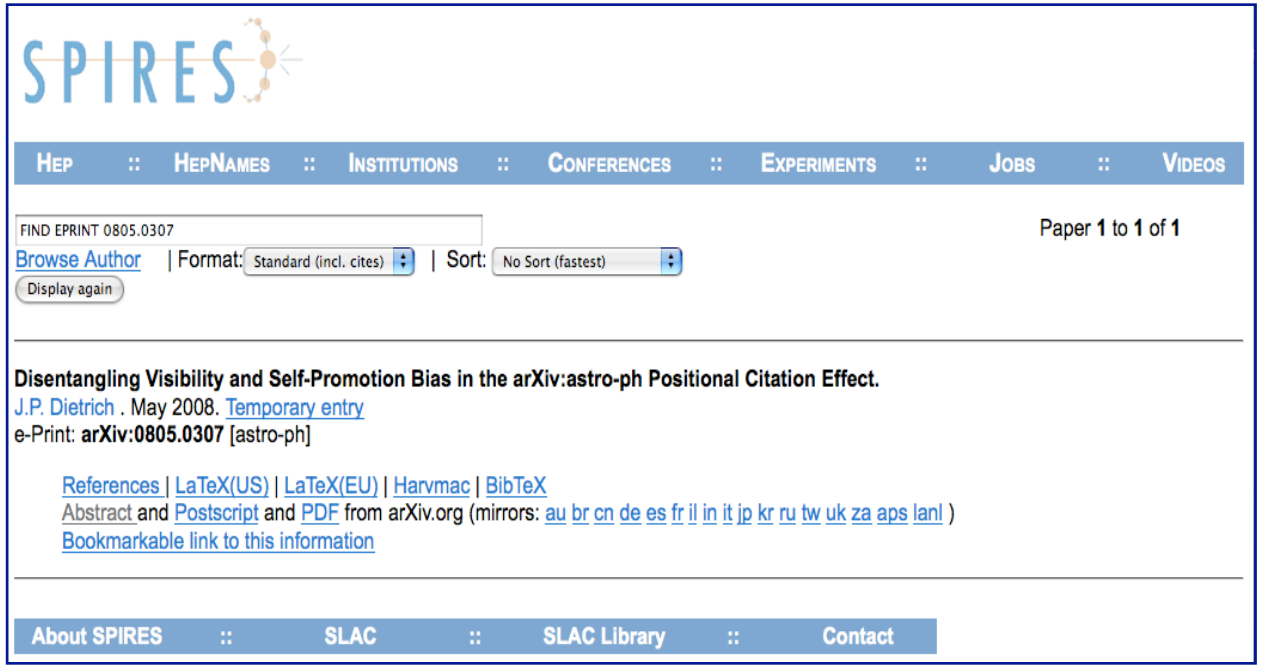
  - scientists still cite published version (e.g., in CV)
    --> journal still has a meaning (impact, reputation...)

- 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



SPIRES-HEP

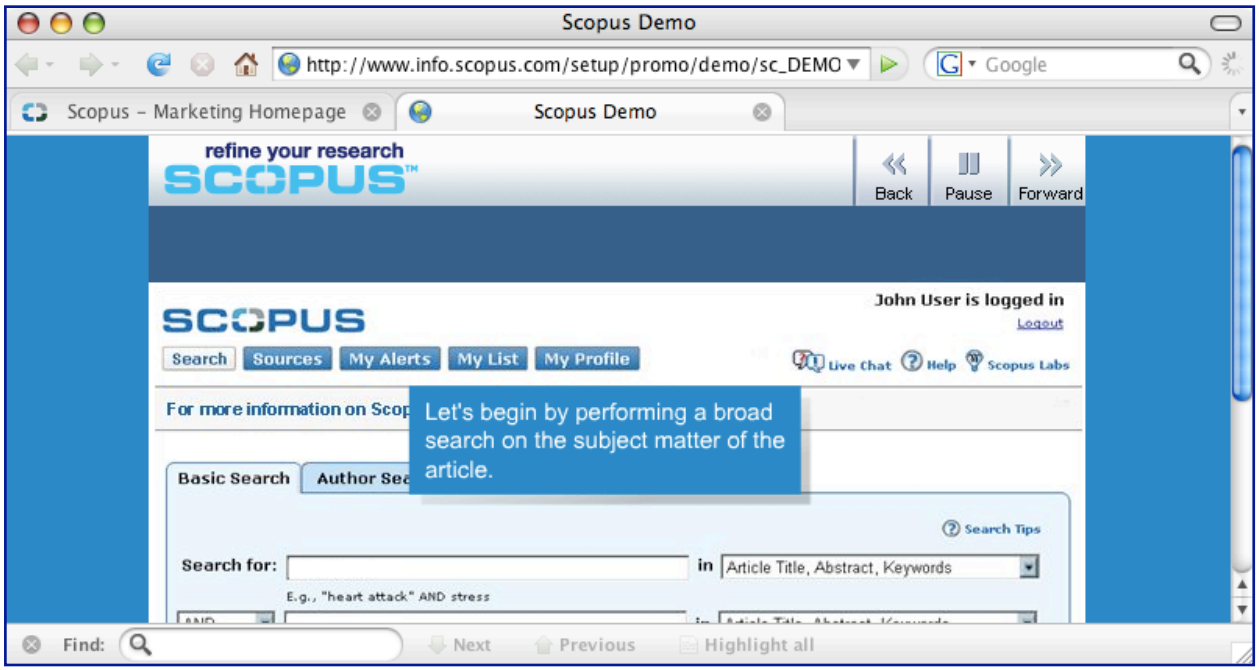
- www.slac.stanford.edu/spires/hep
- Stanford Public Information System
- SLAC, DESY, Fermilab
- bibliographic info in high-energy physics
- full-texts from arXiv and others

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)

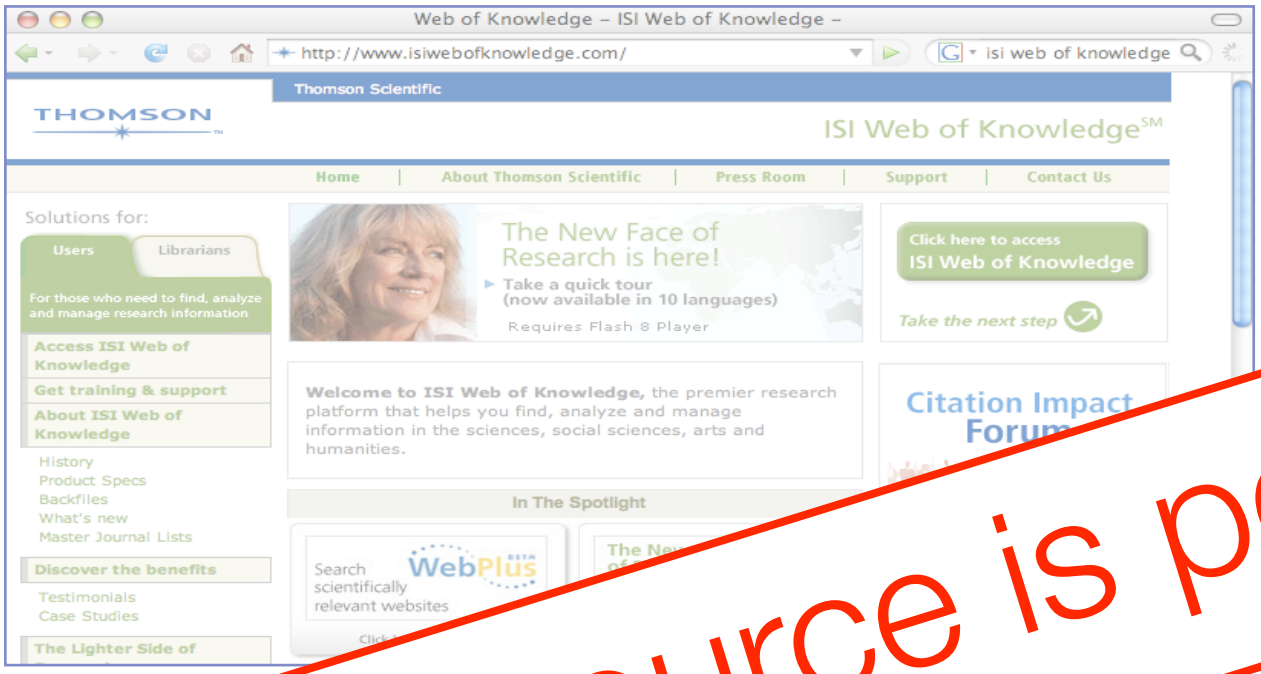
- commercial
- consists of Web of Science (citation db), analytical tools, e.g., Science Citation Index (SCI), Journal Citation Reports (JCR)

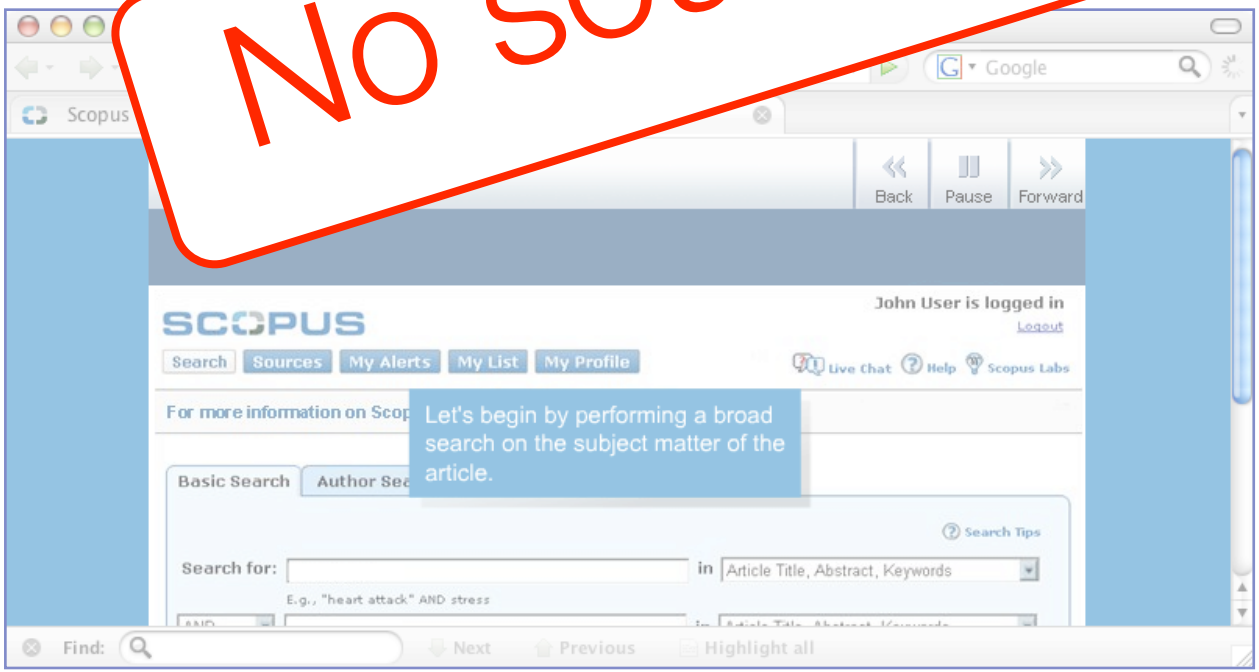
Citation overlap ≈ 60%

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





No source is perfect

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)

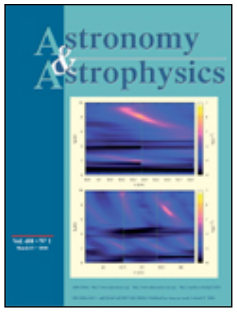
Citation overlap
≈ 60%

Scopus (Elsevier)

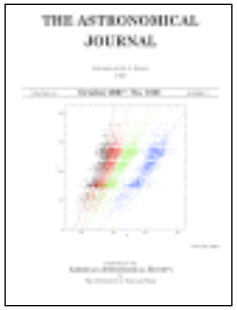
- commercial db
- 15,000 peer-rev STM & social sciences journals
- abstracts + citations
- tools to search, sort, export
- email + RSS alerts

Journals

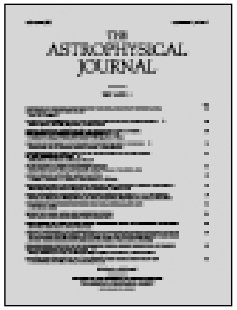
- Core journals in astronomy:



A&A
ESO



AJ



ApJ / ApJS

AAS

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

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

Reader → author

Subscribers → sponsoring institutions

DOAJ DIRECTORY OF OPEN ACCESS JOURNALS

www.doaj.org

Find Journals
New titles
Find articles
Suggest a journal

About
FAQ
News
Links
Sponsors
Membership
Feedback

For journal owners
For authors

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

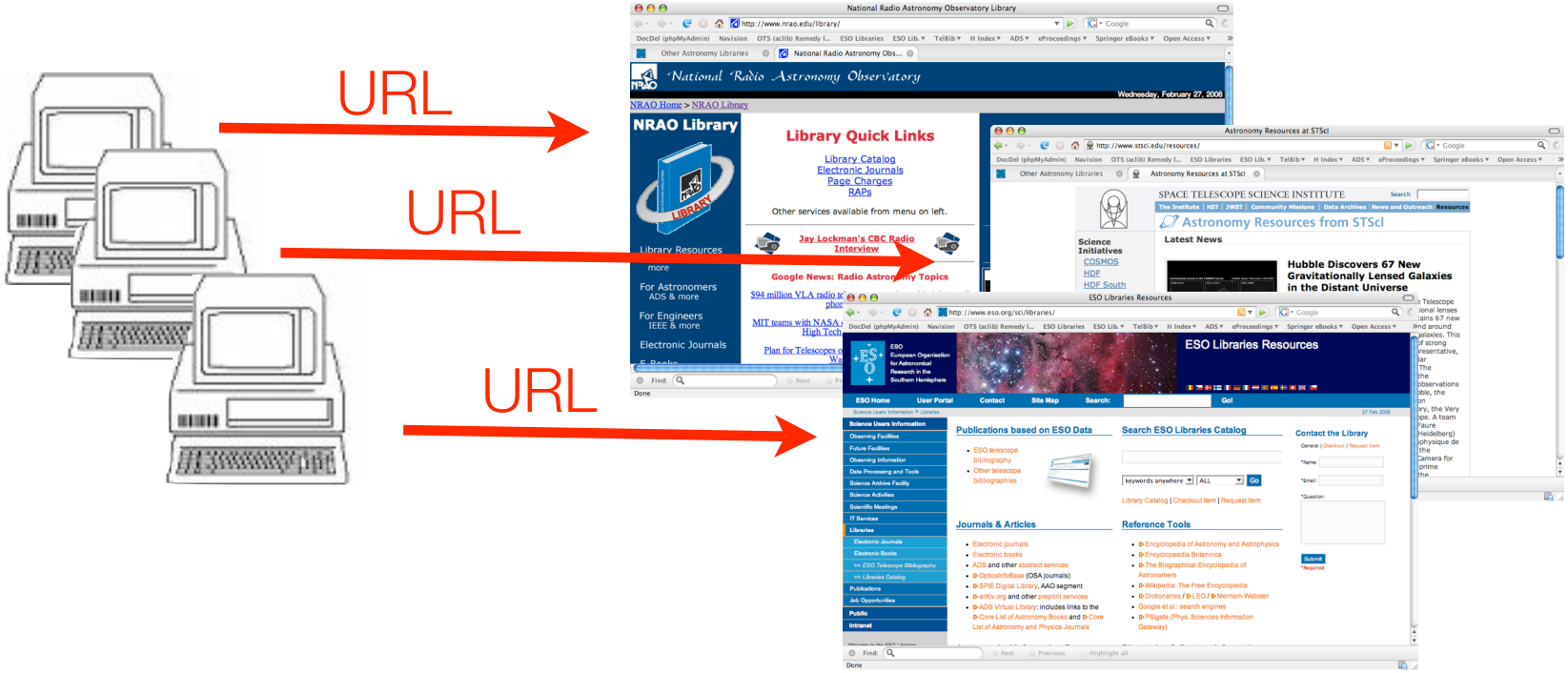
Revista Mexicana de Astronomía y Astrofísica : Universidad Nacional Autónoma de México. Instituto de Astronomía DOAJ Content
ISSN: 01851101
Subject: Astronomy (General)
Publisher: Universidad Nacional Autónoma de México

New Journal of Physics
ISSN: 13672630
Subject: Physics (General)
Publisher: Institute of Physics (IoP) and Deutsche Physikalische Gesellschaft

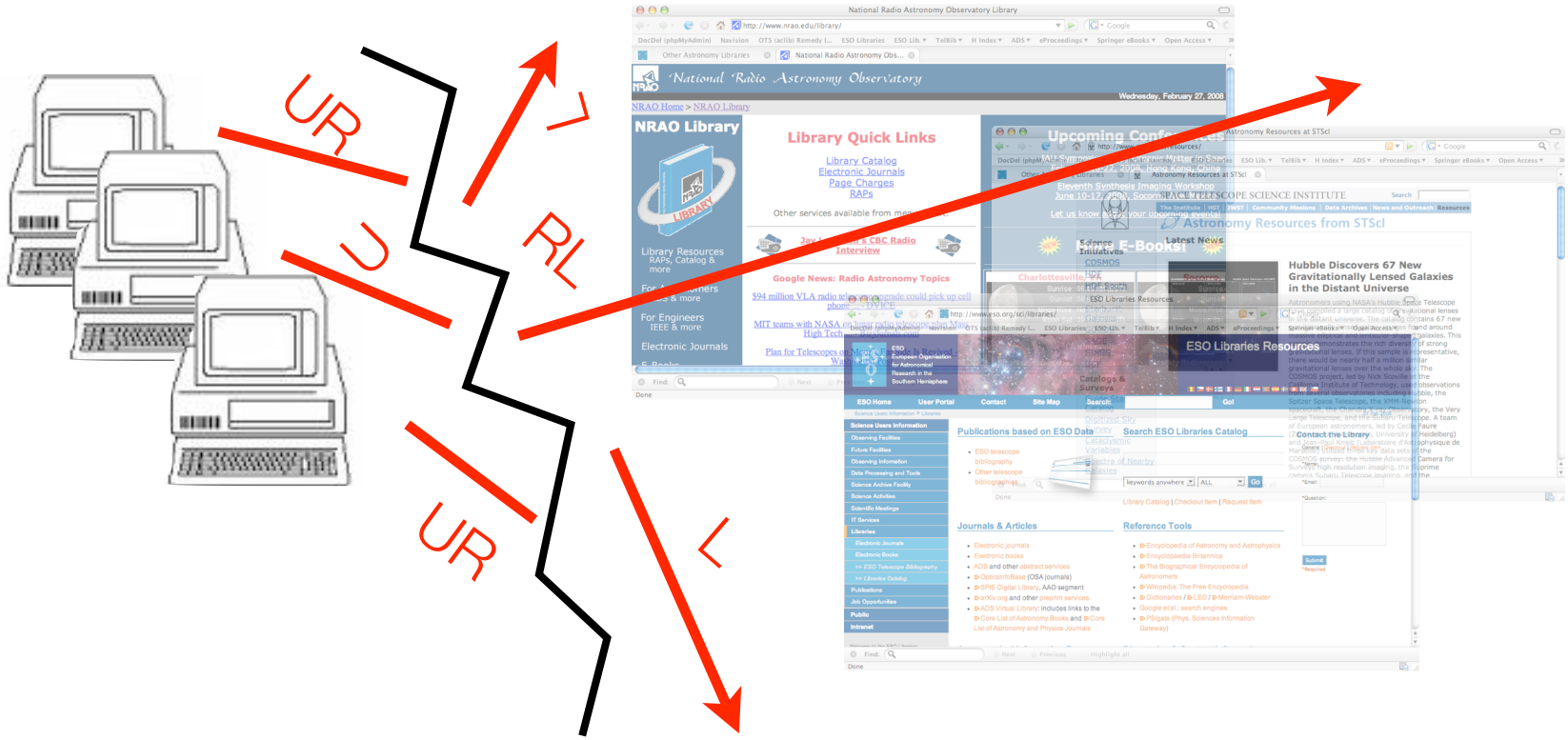
Problems with Online Documents

- 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

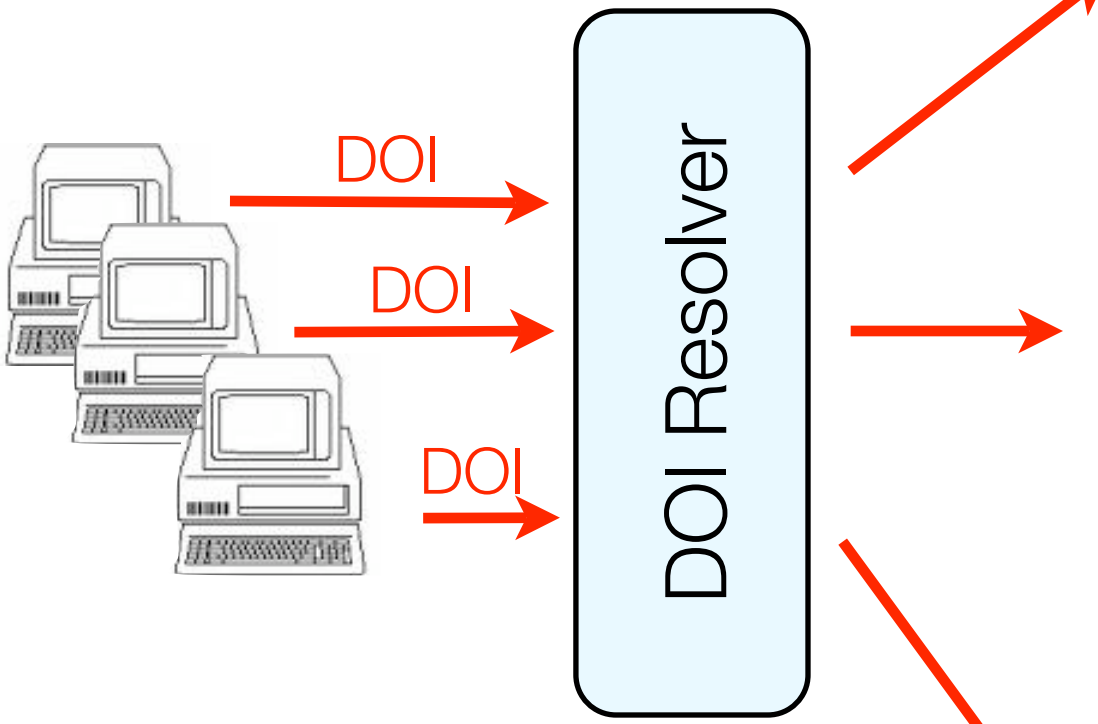
DOI (Digital Object Identifier)

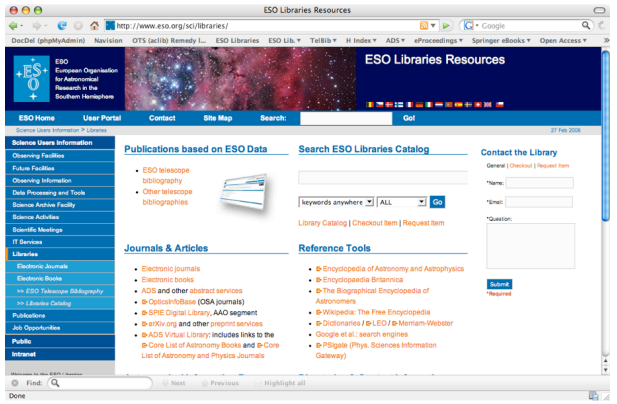


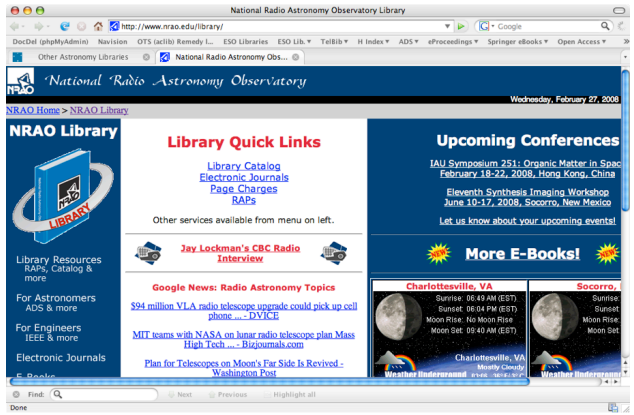
DOI (Digital Object Identifier)



DOI (Digital Object Identifier)

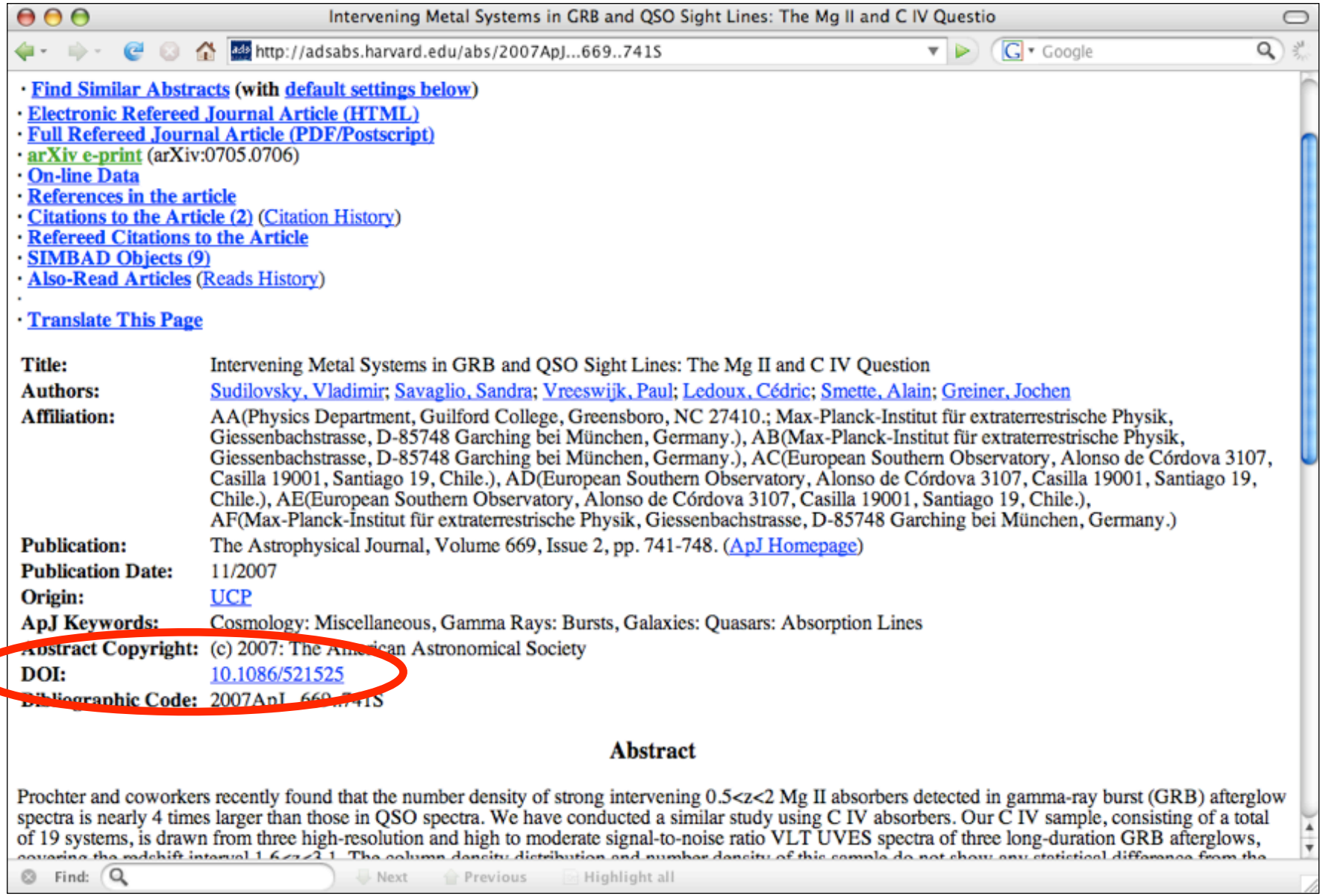


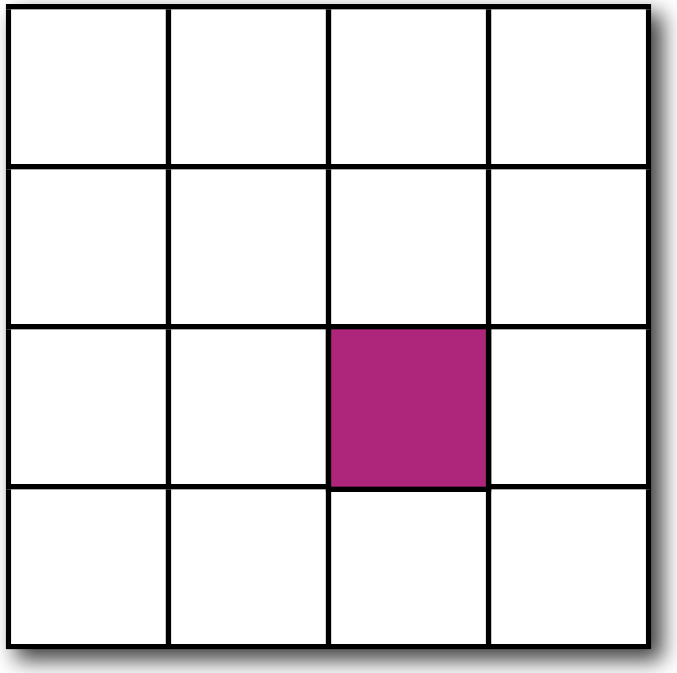




- DOIs are names, not locations
- identifiers for scientific publications
- typical DOI: 10.1065/abc123defg
- resolve through browser: http://dx.doi.org/10.1065/abc123defg

DOI Example: ADS



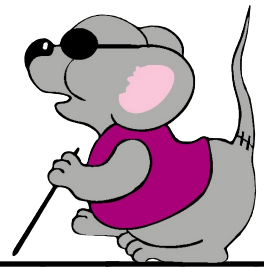


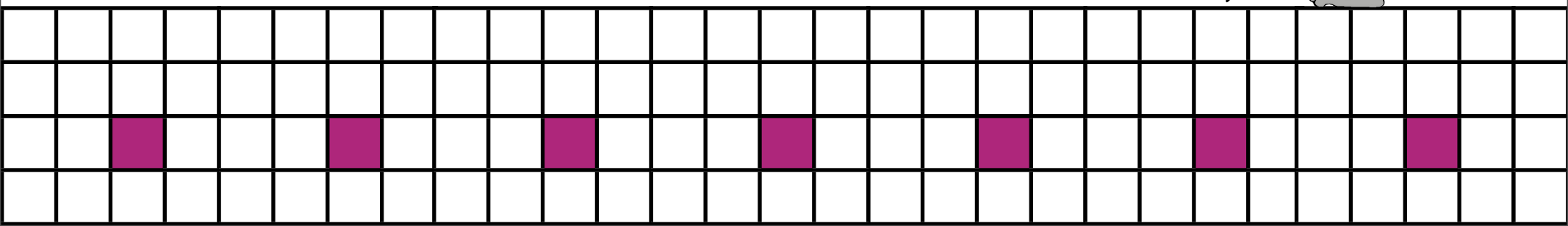
Astronomy:
almost everything online

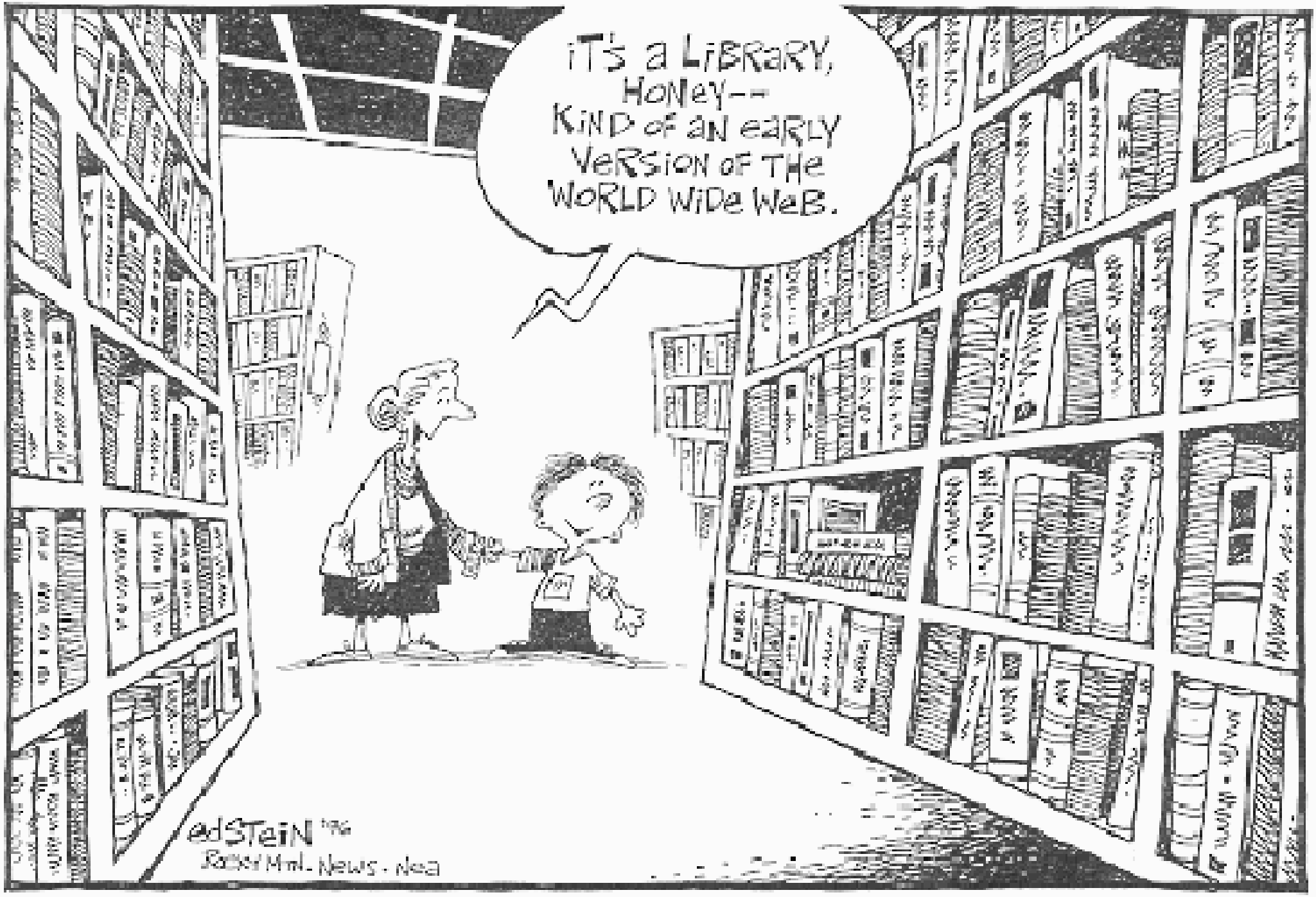
tempting and dangerous

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
Rocky Mtn. News - Nea

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