Telescope Bibliometrics 101

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Future Professional Communication in Astronomy II
13–14 April 2010

Overview

- Bibliometric Studies
  - What are they?
  - Who is interested?
- Linking Publications and Data
  - Access how and where?
- Telescope Bibliographies
  - Who compiles them? How?
  - Current tools, methodologies, features
  - What's next?

Bibliometric studies

- Metrics to measure productivity and impact through publications and citations
- Long history (1960ies: Science Citation Index)
- Large number of articles on this topic

Title	Creator	Year	+
The Cost-Effectiveness in Terms of Publications and ...	Abt	1980	1
Some Trends in American Astronomical Publications	Abt	1981	
Citations to Single and Multiauthored Papers	Abt	1984	
Are Papers by Wellknown Astronomers Accepted for ...	Abt	1987	
What Happens to Rejected Astronomical Papers?	Abt	1988	
Growth Rates in Various Fields of Astronomy	Abt	1988	
The Most Frequently Cited Astronomical Papers Publi...	Abt	2000	1
Changing sources for research literature	Abt	2007	1
PLoS One: background, future development, and artic...	Binfield	2009	3
Scholarly assessment in the digital era	Bollen	2008	1
A Principal Component Analysis of 39 Scientific Impa...	Bollen et al.	2009	2
Citation counts for research evaluation: standards of ...	Bornmann et al.	2008	1
Electronic publishing in astronomy	Boyce	1998	1
On Hirsch's h, Egghe's g and Kosmulski's h(2)	Burrell	2009	2
Astronomers and the Science Citation Index, 1981-1...	Burstein	2000	1

Typical measures

	Good	Bad
# Publications	productivity	no impact
# Citations	impact	can be inflated
Mean / median cites per paper	allows comparison of different ages	rewards low productivity
‘High-Impact Papers’	shows trends	favors ‘hot topics’
h-index	productivity + impact	determined by years of operation

Typical measures

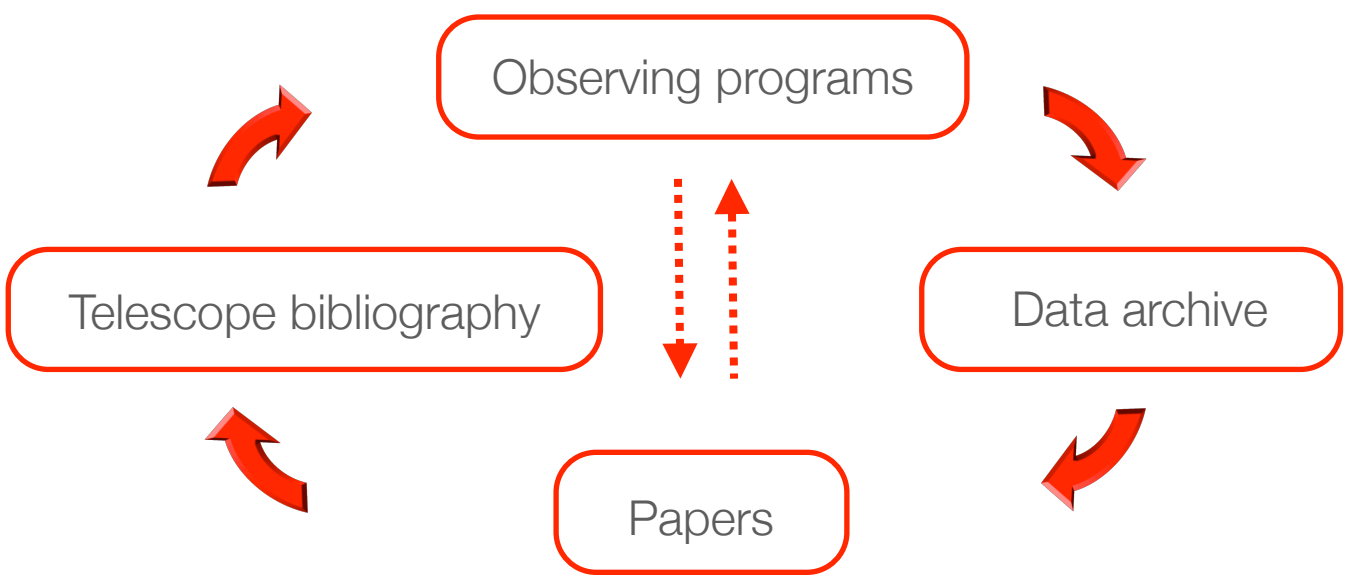
	Good	Bad
# Publications	productivity	[illegible]
# Citations	[illegible]	[illegible]
mean / median cites [illegible]	[illegible]	[illegible] low productivity
[illegible]	[illegible] trends	favors ‘hot topics’
[illegible]	productivity + impact	determined by years of operation

Handle with care !

Who is interested?

Scientists, management, governing bodies, funding agencies who want to...

- Evaluate performance of telescopes and instruments
- Measure scientific output from observing programs
- Define guidelines for future facilities
- Compare in-house facilities with other observatories and telescopes
- Interconnect resources (Virtual Observatory)

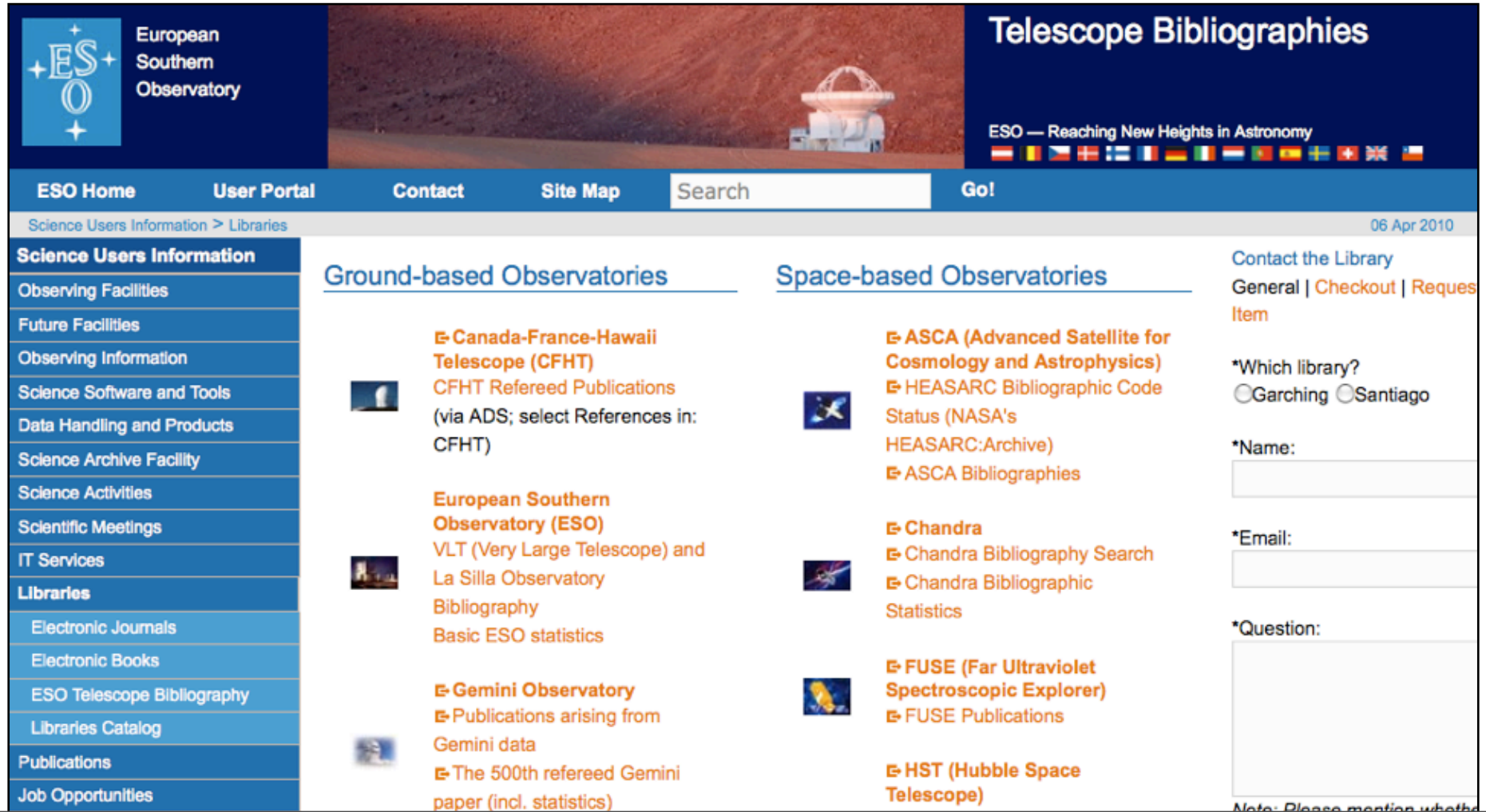


Maximum return of science benefits from observing proposals

Linking publications and data (1)

Access through observatories' web sites

http://www.eso.org/libraries/publicationlists.html



Example: Chandra

Chandra X-ray Center

Chandra Bibliography Search

Chandra Data Archive

Search | Clear Form

You may enter multiple objects, obsids or bibcodes. Separate each with a comma.

Object

Resolve Object with SIMBAD — Resolve Name

ADS Bibcode

Observation ID

Chandra Data Set — ChandraDeepFieldN

This option performs a cone search. Coordinates should be entered in decimal degrees or in the format HH MM SS.SS for RA and DD MM SS.SS for Dec. Leave radius blank to perform an exact search.

Coordinate Search — RA: — Dec: — Radius: 10 arcmin

Keyword Search — and / or

Type each keyword on a new line

List of standard keywords

Or click below to use standard keyword search

Standard Keyword Search

Select 'yes' to include in selection, 'no' to exclude from selection, or 'N/A' to ignore in selection.

Instrument	Publication Form	Publication Type	Category	Associated Subjects
and / or	N/A erratum	N/A multimedia	N/A 1. presents specific observations	and / or
N/A ACIS	N/A article	N/A circular	N/A 2. refers to published results	N/A multi-wavelength
N/A HRC	N/A data	N/A thesis		N/A theory
N/A HETG	N/A memo	N/A on-line data catalogue		N/A follow-up

Example: HST

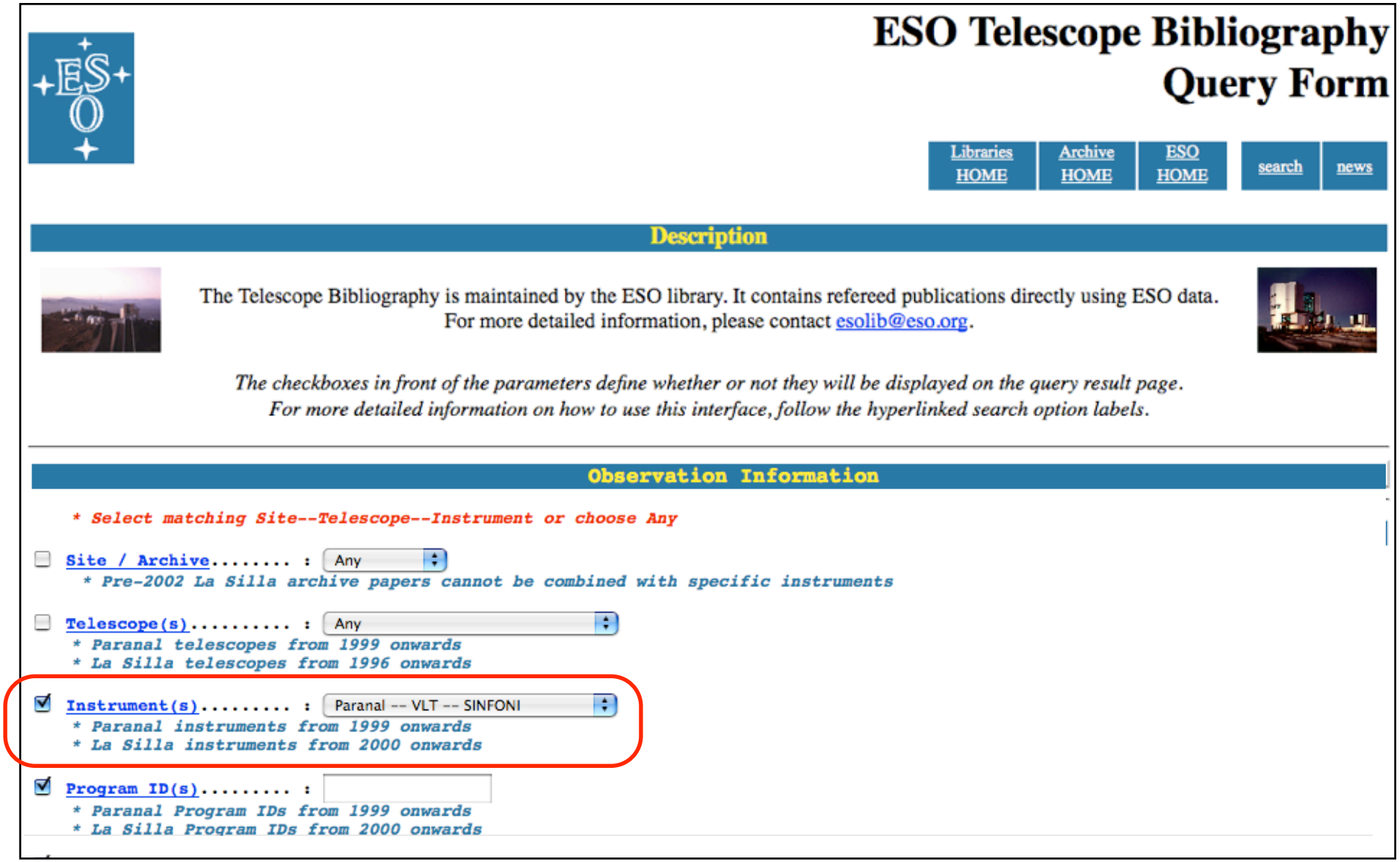
HST Bibliography Search

STScI Library | The Institute | Collection Methodology | Publication Statistics

Welcome to the HST Bibliography!
Here you may search the collection of refereed papers that use HST data.

Author(s)		e.g. Smith, J or Smith) To search for more than one author, separate names with ; (e.g. Smith, J;Jones, J) will find Smith, J OR Jones, J
	First Author only ☐	
Title		galaxy - Finds titles containing *galaxy* galaxy, cluster - Finds titles with either *galaxy* OR *cluster* galaxy, +cluster - Finds titles with both *galaxy* AND *cluster* galaxy, -cluster - Finds titles with *galaxy* but NOT *cluster*
Publication Year(s)		e.g. 2006 or 2006..2007
ADS Journal Abbreviation		e.g. ApJ (See table)
HST programs		e.g. 7387, 8216
Science or Instrument paper	☑ Science Paper ☑ Instrument Paper	Both Science and Instrument papers are selected by default
Referred or Not Refereed	☑ Refereed papers Only ☐ Unrefereed Only	
GO or Archival	☐ GO ☐ AR ☐ Part GO; Part AR ☐ Paper type unassigned	

Example: ESO


ESO Telescope Bibliography
Query Form
Libraries HOME
Archive HOME
ESO HOME
search
news
Description
The Telescope Bibliography is maintained by the ESO library. It contains refereed publications directly using ESO data.
For more detailed information, please contact esolib@eso.org.
The checkboxes in front of the parameters define whether or not they will be displayed on the query result page.
For more detailed information on how to use this interface, follow the hyperlinked search option labels.
Observation Information
* Select matching Site--Telescope--Instrument or choose Any
Site / Archive..... : Any
* Pre-2002 La Silla archive papers cannot be combined with specific instruments
Telescope(s)..... : Any
* Paranal telescopes from 1999 onwards
* La Silla telescopes from 1996 onwards
Instrument(s)..... : Paranal -- VLT -- SINFONI
* Paranal instruments from 1999 onwards
* La Silla instruments from 2000 onwards
Program ID(s)..... :
* Paranal Program IDs from 1999 onwards
* La Silla Program IDs from 2000 onwards

Example: ESO

ESO Telescope Bibliography Query Results

Libraries HOME | Archive HOME | ESO HOME | search | news

More help on display options.

Define new query

Programs used in papers

Paper ID	Author	Author(s)	Title	Journal	Vol.	Pages	Publ	Abstract	BibCode	Instrument(s)	
38798 (refereed)	Aharonian, F.	Aharonian, F.; Akhperjanian, A. G.; Barres de Almeida, U. et al.	HESS observations and VLT spectroscopy of PG 1553+113	A&A	477	481-489	2008	ADS	2008A&A...477..481A	SINFONI	276.B-5036
41929 (refereed)	Alvarez-Candal, A.	Alvarez-Candal, A.; Barucci, M. A.; Merlin, F. et al.	The trans-Neptunian object (42355) Typhon: composition and dynamical evolution	A&A	511	35-	2010	ADS	2010A&A...511A..35A	FORS2, ISAAC, SINFONI	178.C-0036

Example: ESO

ESO Observing Programmes

Archive Facility HOME | ESO HOME | Form INFO

Define new query

Access to proposal information

Allocation	Period	Mode	Prog ID	Nights	Programme	Instrument	PI/CoI	Raw Products
276.B-5036(A), Service Mode, VLT-Yepun	77	Service	276.B-5036(A)	0 hrs	DDT	SINFONI	Boisson/ Benbow/ Costamante/ Dubus/ Giebels/ McComb/ Pita/ Punch/ Puehlhofer/ Sol/ Wagner/ Ward	FileList
276.B-5036(A), Service Mode, VLT-Yepun	76	Service	276.B-5036(A)	5 hrs	DDT	SINFONI	Boisson/ Benbow/ Costamante/ Dubus/ Giebels/ McComb/ Pita/ Punch/ Puehlhofer/ Sol/ Wagner/ Ward	FileList

A total of 2 were found matching the provided criteria

Example: ESO

ESO Observing Programmes

Archive Facility HOME | ESO HOME | Form INFO

Define new query

276.B-5036(A), Service Mode, VLT-Yepun

Period	77	Mode	Service
Telescope	VLT-Yepun		
Nights	0 hrs		
Programme Type	DDT		
Instrument	SINFONI		
PI/CoI	Boisson/ Benbow/ Costamante/ Dubus/ Giebels/ McComb/ Pita/ Punch/ Puehlhofer/ Sol/ Wagner/ Ward		
Observer			
Remarks	*comment: carry-over DDT*		
Title	*Redshift of the high-frequency peaked TeV gamma-ray emitting blazar 1ES1553+113*		
Abstract	Abstract of proposal		
Raw Products	FileList		
Publications	PublicationList		

Request data

Other papers based on same program

Linking publications and data (2)

At the ADS / Filters section

Select References In:

- ○ All Groups
- ○ At least one of the following groups (OR):
- ◉ All of the following groups (AND):

☐ ARI	☐ CfA	☐ CFHT	☐ Chandra
☐ ESO/Lib	☐ ESO/Telescopes	☐ GBT	☐ Gemini
☑ HST	☐ ISO	☐ IUE	☐ Keck
☐ Leiden	☐ LPI	☐ NCSA/ADIL	☐ NRAO
☐ ROSAT	☐ SDO	☐ SMA	☐ Spitzer
☐ Subaru	☐ USNO	☐ VSGC	☐ XMM

Linking publications and data (2)

Access through the ADS / Filters section

SAO/NASA Astrophysics Data System (ADS)

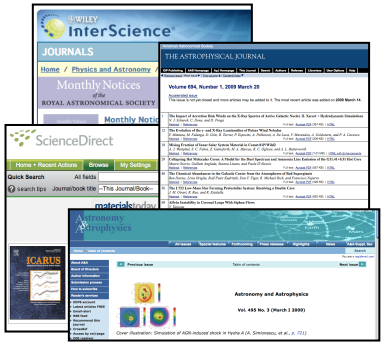
Query Results from the ADS Database

Selected and retrieved **62** abstracts.

#	Bibcode Authors	Score Title	Date	List of Links Access Control Help										
1	2007AJ....134.2118F Ferrero, P.; Sanchez, S. F.; Kann, D. A.; Klose, S.; Greiner, J.; Gorosabel, J.; Hartmann, D. H.; Henden, A. A.; Møller, P.; Palazzi, E.; and 11 coauthors	1.000 Constraints on an Optical Afterglow and on Supernova Light Following the Short Burst GI	12/2007	A	E	F	X	D	R	C	S		U
2	2007A&A...474..793G Guidorzi, C.; Vergani, S. D.; Sazonov, S.; Covino, S.; Malesani, D.; Molkov, S.; Palazzi, E.; Romano, P.; Campana, S.; Chincarini, G.; and 23 coauthors	1.000 GRB 070311: a direct link between the prompt emission and the afterglow	11/2007	A	E	F	X	D	R	C	S	O	U
3	2007A&A...469..503D Dolcini, A.; Farfanelli, F.; Ciprini, S.;	1.000 REM near-IR and optical multiband observations of PKS 2155-304 in 2005	07/2007	A	E	F	X	D	R	C	S	O	U

Prerequisites for telescope bibliographies

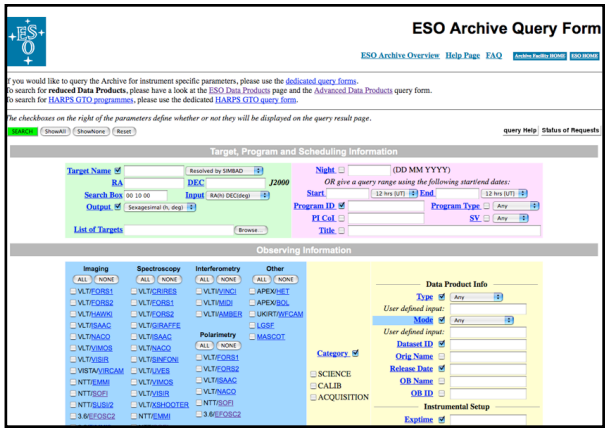
Access to literature



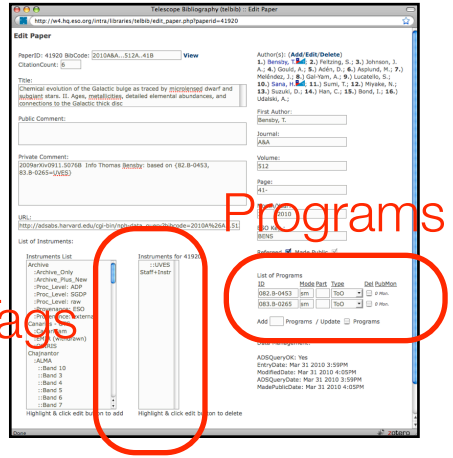
Semi-automated search tool

Policy / selection criteria

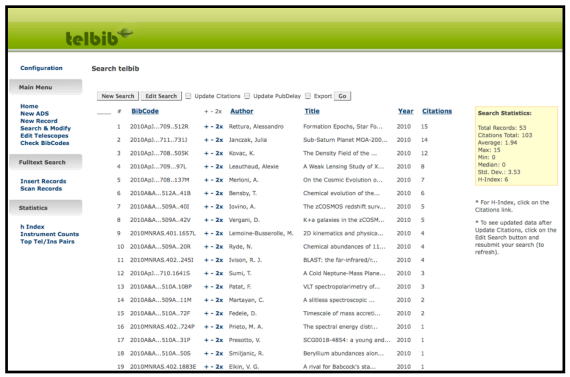
Data archive



Tags / keywords / programs



Database



Prerequisites for telescope bibliographies

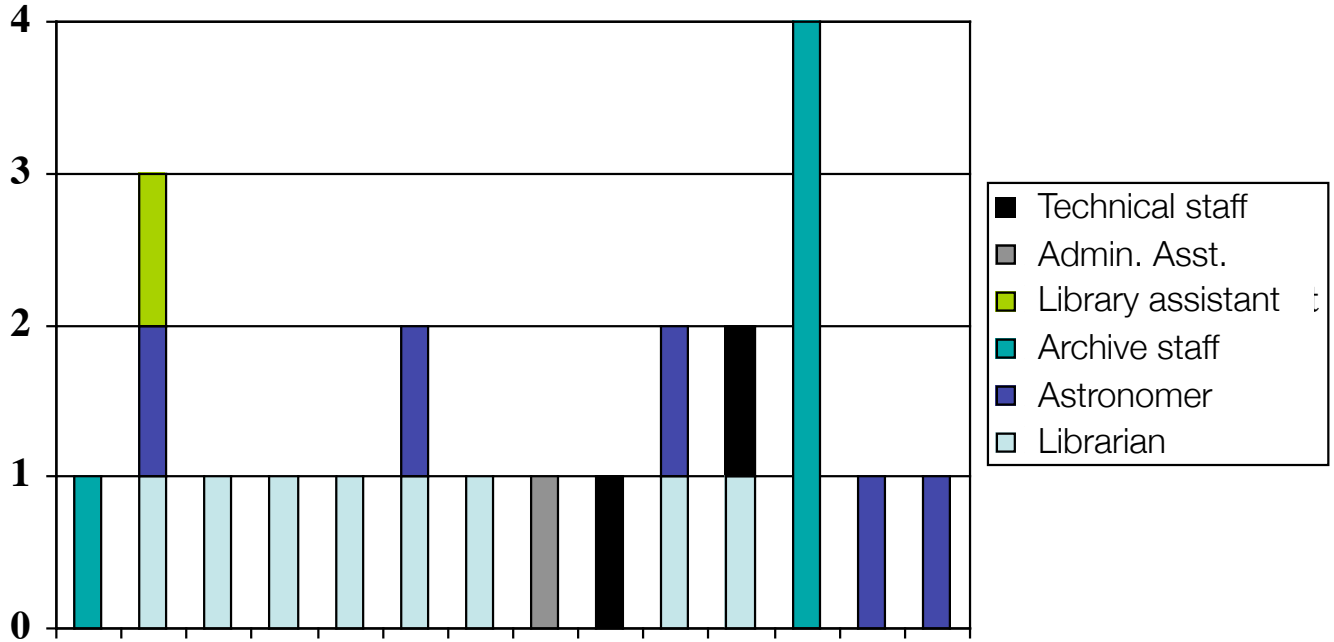
And staff !

Who compiles telescope bibliographies?

- 2010 Survey by J. Lagerstrom, STScI Library

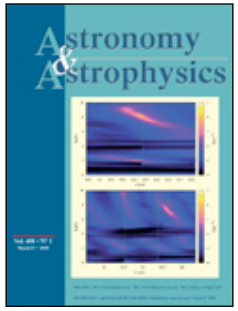
  Respondents:
  CFHT, Chandra, FUSE/Galex/IUE, ESO, Gemini, HST, ING, Keck, NOAO, NRAO, SDSS, Spitzer, Subaru, XMM Newton

- Who does it? How many people are involved?

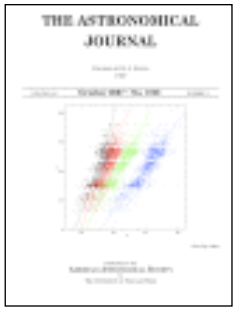


Which sources?

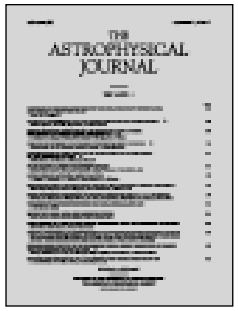
- 30+ journals listed, only 4 in common



A&A



AJ



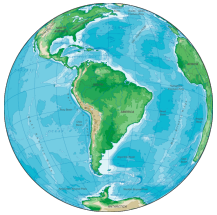
ApJ / ApJS

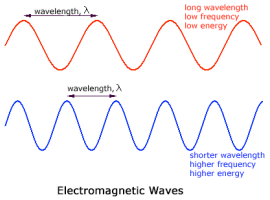
MNRAS

- Print journals
  E-journals (pdfs) } Access to entire text of papers (incl. footnotes, figures, captions etc.)
  Journals' web sites → Entire article?
  ADS abstracts → Only title, abstract, selected footnotes
  Self-reporting → Rely on PIs / authors

Search strategies

- Observatory, telescope, instrument names
- Science programs, surveys, archive names
- Geographic locations
- Concepts





- Challenges:
  - papers: missing references to obs identifiers
  - publisher restrictions for downloading papers
  - central full-text search feature at ADS?

Tools of the trade

Full-text search tool (FUSE)

fuse
fulltext search

Search
- » Insert
- » Queue

Admin
- » Journals
- » Displays
- » Stop Words
- » Keywords
- » Searches
- » Help

Last Resort
- » Insert
- » Manual

Current Query

User: Uta
Query Date: 2010-03-22 09:45:53
Journals Searched: A&A,A&ARv,AN,AJ,ApJ,ApJS,ARA&A,EM&P,Icar,MNRAS.3,MNRAS.4,Natur,NewA,NewAR,PASP,P&SS,Sci
Query Link: http://adsabs.harvard.edu/cgi-bin/nph-abs_connect?...
Dates Searched: 2010-03-12 - 2010-03-19
Notes: telbib 12/03/10 - before 19/03/10 (278 records)
Records Searched: 52
Keywords found: 1132

View Search Log

Delete Selected | Delete All Records | Fulltext Search | Export Records - choose -

ID#	Status	Search	Record/Keyword(s)	LookInside	Online	Delete	Debug
30244		Not Included	2010A&A...512A..29B *Beuther, H.* **Disk and outflow signatures in Orion-KL: the power of high-resolution thermal infrared spectroscopy** Astronomy and Astrophysics, Volume 512, id.A29	30244.txt	PDF/HTML	☐	debug

*"solution InfraRed Echelle Spectrograph (**CRIRES** , Käufl et al. 2004) at the VLT. Both object"*
*"he associated gas. Methods. We used the **CRIRES** high-resolution spectrograph mounted on the VLT "*
*" entities. Based on observations of the **ESO** program 380.C-0380(A). While studies at (sub)mm wav"*
*"010) DOI: 10.1051/0004-6361/200913107 c **ESO** 2010 Astronomy & Astrophysics Disk and outflow "*
*" al. 2004) mounted on UT1 at the VLT on **Paranal** , Chile. Two grating settings were selected (12/"*
*"f recent instruments like CRIRES on the **VLT** . The general picture for source n is relatively sim"*
*";ufl et al. 2004) mounted on UT1 at the **VLT** on Paranal, Chile. Two grating settings were select"*
*"(CRIRES, Käufl et al. 2004) at the **VLT** . Both objects are well detected at mid-infrared wav"*
*"-resolution spectrograph mounted on the **VLT** to study the*

Users:
ESO, STScI, Gemini,
Subaru, Carnegie Obs.
coming soon: IUCAA

Tools of the trade

ESO Telescope Bibliography (telbib)

telbib

Configuration

Main Menu

Home
New ADS
New Record
Search & Modify
Edit Telescopes
Check BibCodes

Fulltext Search

Insert Records
Scan Records

Statistics

h Index
Instrument Counts
Top Tel/Ins Pairs

Search telbib

New Search | Edit Search | Update Citations | Update PubDelay | Export | Go

#	BibCode	+ - 2x	Author	Title	Year	Citations
1	2010ApJ...709..512R	+ - 2x	Rettura, Alessandro	Formation Epochs, Star Fo...	2010	15
2	2010ApJ...711..731J	+ - 2x	Janczak, Julia	Sub-Saturn Planet MOA-200...	2010	14
3	2010ApJ...708..505K	+ - 2x	Kovac, K.	The Density Field of the ...	2010	12
4	2010ApJ...709...97L	+ - 2x	Leauthaud, Alexie	A Weak Lensing Study of X...	2010	8
5	2010ApJ...708..137M	+ - 2x	Merloni, A.	On the Cosmic Evolution o...	2010	7
6	2010A&A...512A..41B	+ - 2x	Bensby, T.	Chemical evolution of the...	2010	6
7	2010A&A...509A..40I	+ - 2x	Iovino, A.	The zCOSMOS redshift surv...	2010	5
8	2010A&A...509A..42V	+ - 2x	Vergani, D.	K+a galaxies in the zCOSM...	2010	5
9	2010MNRAS.401.1657L	+ - 2x	Lemoine-Busserolle, M.	2D kinematics and physica...	2010	4
10	2010A&A...509A..20R	+ - 2x	Ryde, N.	Chemical abundances of 11...	2010	4
11	2010MNRAS.402..245I	+ - 2x	Ivison, R. J.	BLAST: the far-infrared/r...	2010	4
12	2010ApJ...710.1641S	+ - 2x	Sumi, T.	A Cold Neptune-Mass Plane...	2010	3
13	2010A&A...510A.108P	+ - 2x	Patat, F.	VLT spectropolarimetry of...	2010	3
14	2010A&A...509A..11M	+ - 2x	Martayan, C.	A slitless spectroscopic ...	2010	2
15	2010A&A...510A..72F	+ - 2x	Fedele, D.	Timescale of mass accreti...	2010	2
16	2010MNRAS.402..724P	+ - 2x	Prieto, M. A.	The spectral energy distr...	2010	1
17	2010A&A...510A..31P	+ - 2x	Presotto, V.	SCG0018-4854: a young and...	2010	1
18	2010A&A...510A..50S	+ - 2x	Smiljanic, R.	Beryllium abundances alon...	2010	1

Search Statistics:

Total Records: 53
Citations Total: 103
Average: 1.94
Max: 15
Min: 0
Median: 0
Std. Dev.: 3.53
H-Index: 6

* For H-Index, click on the Citations link.

* To see updated data after Update Citations, click on the Edit Search button and resubmit your search (to refresh).

Users:
ESO, NRAO

Citations

Bibliographic details + metadata from ADS

Telescope Bibliography (telbib) :: Edit Paper

http://w4.hq.eso.org/intra/libraries/telbib/edit_paper.php?paperid=41920

Edit Paper

Author affiliations

PaperID: 41920 BibCode: 2010A&A...512A..41B **View**

CitationCount: 6

Title:

Chemical evolution of the Galactic bulge as traced by microlensed dwarf and subgiant stars. II. Ages, metallicities, detailed elemental abundances, and connections to the Galactic thick disc

Public Comment:

Private Comment:

2009arXiv0911.5076B Info Thomas Bensby: based on {82.B-0453, 83.B-0265=UVES}

URL:

http://adsabs.harvard.edu/cgi-bin/nph-data_query?bibcode=2010A%26A...51

List of Instruments:

Instruments List

Archive
:Archive_Only
:Archive_Plus_New
:Proc_Level: ADP
:Proc_Level: SGDP
:Proc_Level: raw
:Provenance: ESO
:Provenance: external
Canarias - GTC
:CanariCam
:EMIR (withdrawn)
:OSIRIS
Chajnantor
:ALMA
::Band 10
::Band 3
::Band 4
::Band 5
::Band 6
::Band 7

Highlight & click edit button to add

Instruments for 41920

::UVES
Staff+Instr

Highlight & click edit button to delete

Tags / keywords

Author(s): (**Add/Edit/Delete**)
1.) Bensby, T.; **2.**) Feltzing, S.; **3.**) Johnson, J. A.; **4.**) Gould, A.; **5.**) Adén, D.; **6.**) Asplund, M.; **7.**) Meléndez, J.; **8.**) Gal-Yam, A.; **9.**) Lucatello, S.; **10.**) Sana, H.; **11.**) Sumi, T.; **12.**) Miyake, N.; **13.**) Suzuki, D.; **14.**) Han, C.; **15.**) Bond, I.; **16.**) Udalski, A.;

First Author:
Bensby, T.

Journal:
A&A

Volume:
512

Page:
41-

Month/Year:
3 2010

PubMonth

ESO Key :
BENS

Refereed ☑ Made Public ☑

List of Programs

ID	Mode	Part	Type	Del	PubMon
082.B-0453	sm		ToO		0 Mon.
083.B-0265	sm		ToO		0 Mon.

proIDs ObsMode ObsType

Data Management:

ADSQueryOK: Yes
EntryDate: Mar 31 2010 3:59PM
ModifiedDate: Mar 31 2010 4:05PM
ADSQueryDate: Mar 31 2010 3:59PM
MadePublicDate: Mar 31 2010 4:05PM

Done zotero

Statistics / reports

- Basic ESO Statistics

  http://www.eso.org/libraries/

  - Publication + citation statistics
  - ESO and other observatories
  - ESO Top 20
  - Instruments' pub stats
  - Further reading

- regularly updated
- other reports on demand

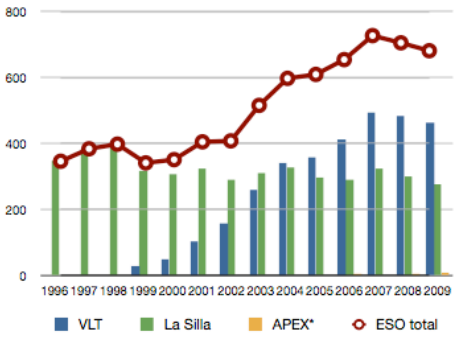
ESO publication statistics

(version March 2010, contact: Uta Grothkopf, ESO Library, library@eso.org)

ESO publication statistics are derived from the Telescope Bibliography (telbib), a database of refereed articles that directly use ESO data. Telbib is maintained by the ESO library. Here, we provide some basic statistics to give an overview of publications and citations for the publication years 1996-2009. For more detailed information, please use telbib's public interface (www.eso.org/libraries/telbib.html) or consult the librarians at library@eso.org

provided by ESO Library

ESO publication statistics



Publications by observing site

	VLT	La Silla	APEX*	ESO total
1996		348		348
1997		386		386
1998		400		400
1999	29	319		343
2000	52	310		353
2001	105	324		407
2002	159	290		410
2003	260	312		518
2004	341	329		600
2005	360	298		612
2006	412	292	6	657
2007	494	327	1	730
2008	484	302	7	708
2009	466	277	11	684

* APEX: includes only papers that use ESO data

Total and average citations

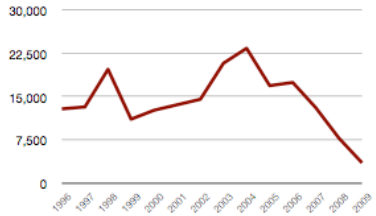
	Pubs	Cites	Average
1996	348	12,960	37.2
1997	386	13,301	34.5
1998	400	19,798	49.5
1999	343	11,185	32.6
2000	353	12,732	36.1
2001	407	13,678	33.6
2002	410	14,621	35.7
2003	518	20,852	40.3
2004	600	23,432	39.1
2005	612	16,980	27.7
2006	657	17,525	26.7
2007	730	13,150	18.0
2008	708	7,905	11.2
2009	684	3,636	5.3

In bibliometric studies, numbers of publications show the observatory's *productivity*, citations the *impact* papers have made among the community.

Since it takes time to gather citations, older papers typically have higher citation numbers than recent ones.

While it is tempting to use publication and citation statistics for comparisons, this has to be done with utmost care as the numbers may have been obtained with different methodologies.

Total citations (as of March 2010)

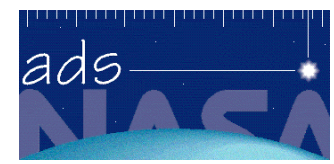


Average citations (as of March 2010)

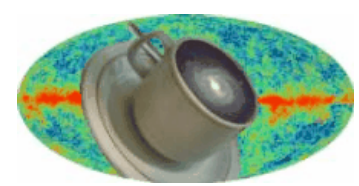
What's next?

- Citations are problematic
  - Incompleteness: listings often incomplete
  - Incorrectness: incorrect citing, multiple journal abbreviations
  - Citing behavior: cite well-known authors, friends citing friends
  - Multi-author papers: self-cites (introduce normalized citation counts?)

- Tracing usage and popularity
  - Reads (ADS)
  - Downloads (arXiv, Citebase)
  - Forum discussions (e.g., CosmoCoffee)



citebase Search



Citations vs. Reads

- Find Similar Abstracts (with default settings below)
- Full Refereed Journal Article (PDF/Postscript)
- Full Refereed Scanned Article (GIF)
- arXiv e-print (arXiv:astro-ph/9503101)
- On-line Data
- References in the article
- Citations to the Article (170) (Citation History)
- Refereed Citations to the Article
- Also-Read Articles (Reads History)
-
- Translate This Page

Title:	The morphological identification of the rapidly evolving population of faint galaxies
Authors:	Glazebrook, Karl; Ellis, Richard; Santiago, Basilio; Griffiths, Richard
Affiliation:	AA(Institute of Astronomy, Madingley Road, Cambridge CB3 0HA, UK), AB(Institute UK), AC(Institute of Astronomy, Madingley Road, Cambridge CB3 0HA, UK), AD(D University, 3400 North Charles St, Baltimore, MD 21218, USA)
Publication:	Monthly Notices of the Royal Astronomical Society, Volume 275, Issue 2, pp. L19-L22.
Publication Date:	07/1995
Origin:	MNRAS; KNUDSEN
MNRAS Keywords:	SURVEYS, GALAXIES: EVOLUTION, GALAXIES: STRUCTURE, GALAXIES: F
Abstract Copyright:	(c) 1995 The Royal Astronomical Society
Bibliographic Code:	1995MNRAS.275L..19G

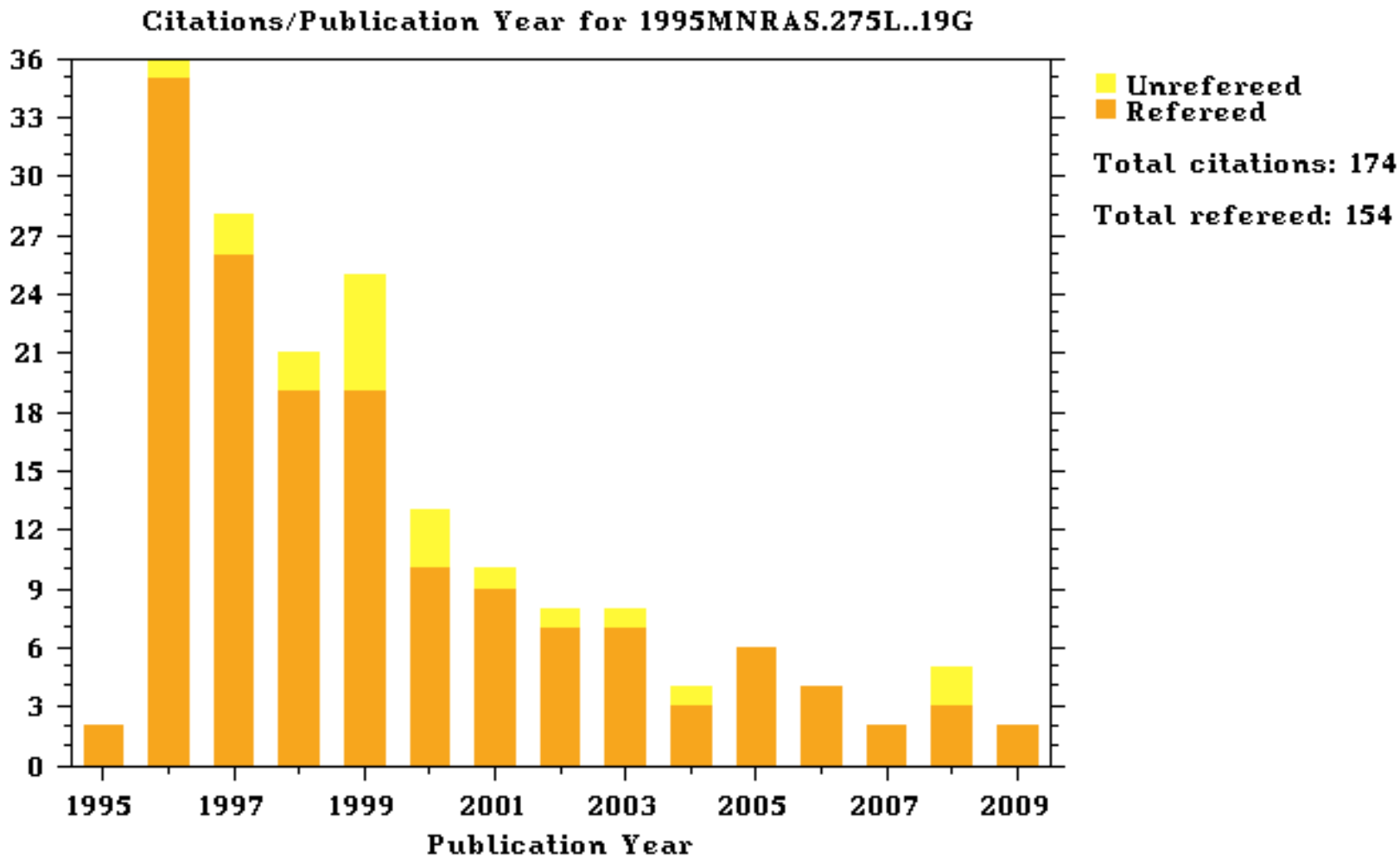
Abstract

The excess numbers of blue galaxies at faint magnitudes are a long-standing cosmological puzzle. We present new morphology from the first deep fields of the Cycle 4 Hubble Space Telescope Medium Deep Survey project. Fron spiral and irregular/peculiar galaxies to I=22. We find two principal results. First, the elliptical and spiral galaxy co

Citations vs. Reads

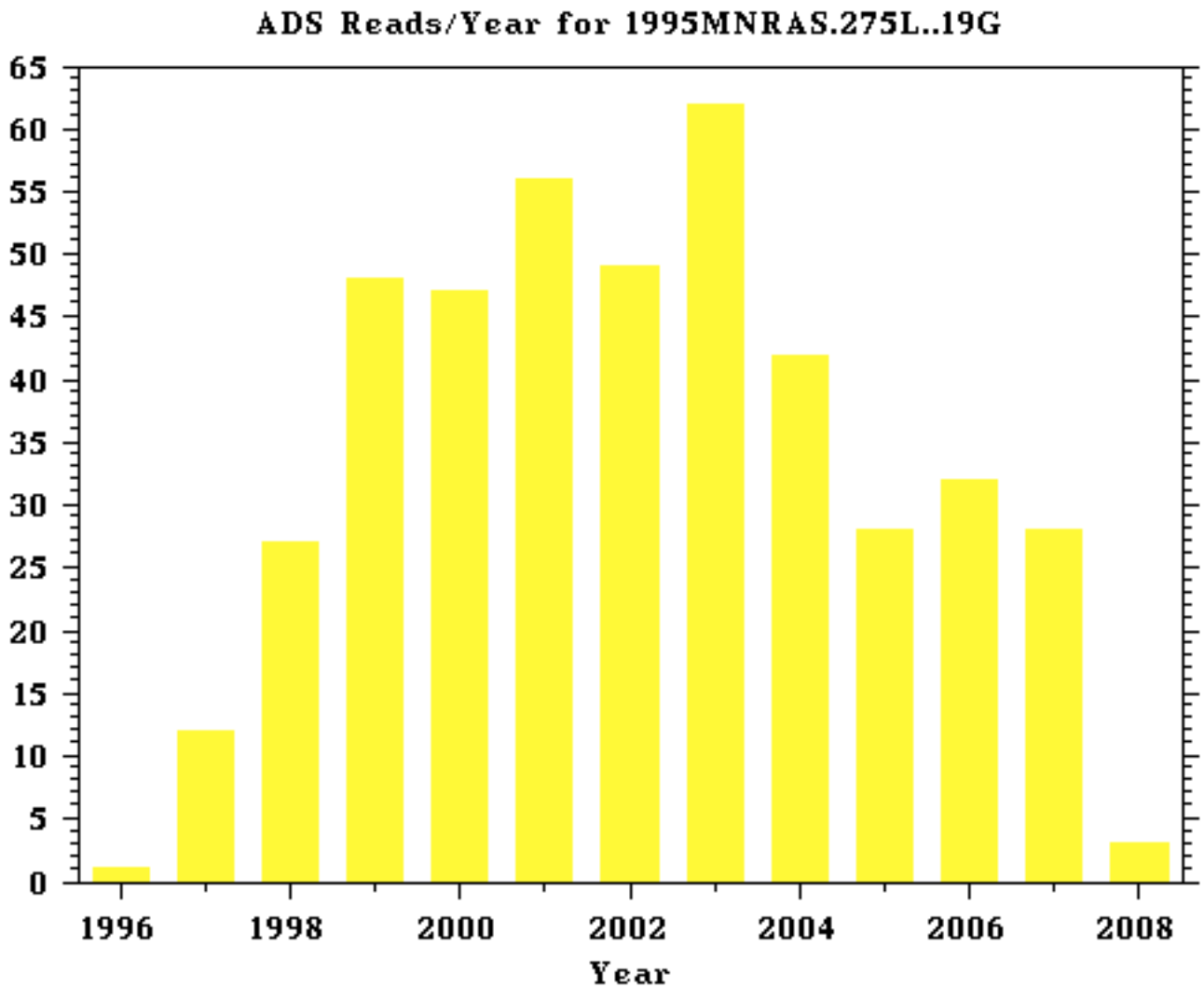
Citations history for 1995MNRAS.275L..19G from the ADS Databases

The Citation database in the ADS is **NOT** complete. Please keep this in mind when using the ADS Citation lists.



Citations vs. Reads

Reads history for 1995MNRAS.275L..19G from the ADS Databases



Total reads: 435

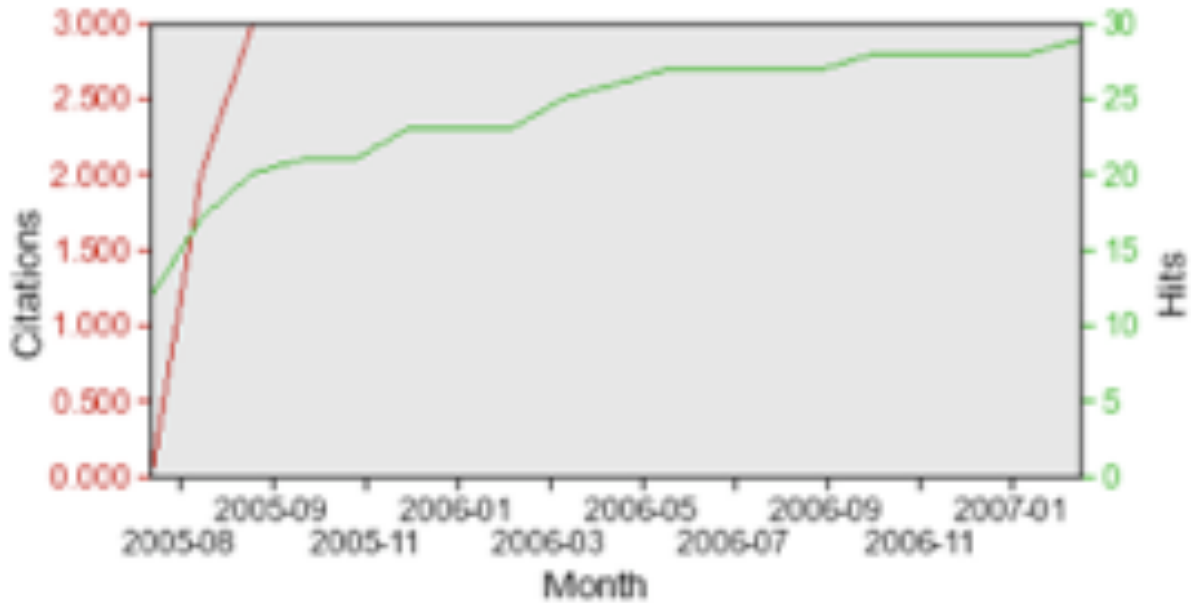
Downloads from Citebase.org

Citebase – The Gemini Deep Deep Survey. VII. The Redshift Evolution of the Mass-Metallicity Relation

http://www.citebase.org/abstract?id=oai:arXiv.org:astro-ph/0508407

Citebase is currently only an experimental demonstration. Users are cautioned not to use

	Citations	Downloads
To this article	3	29
To authors (mean)	14.11	24.85



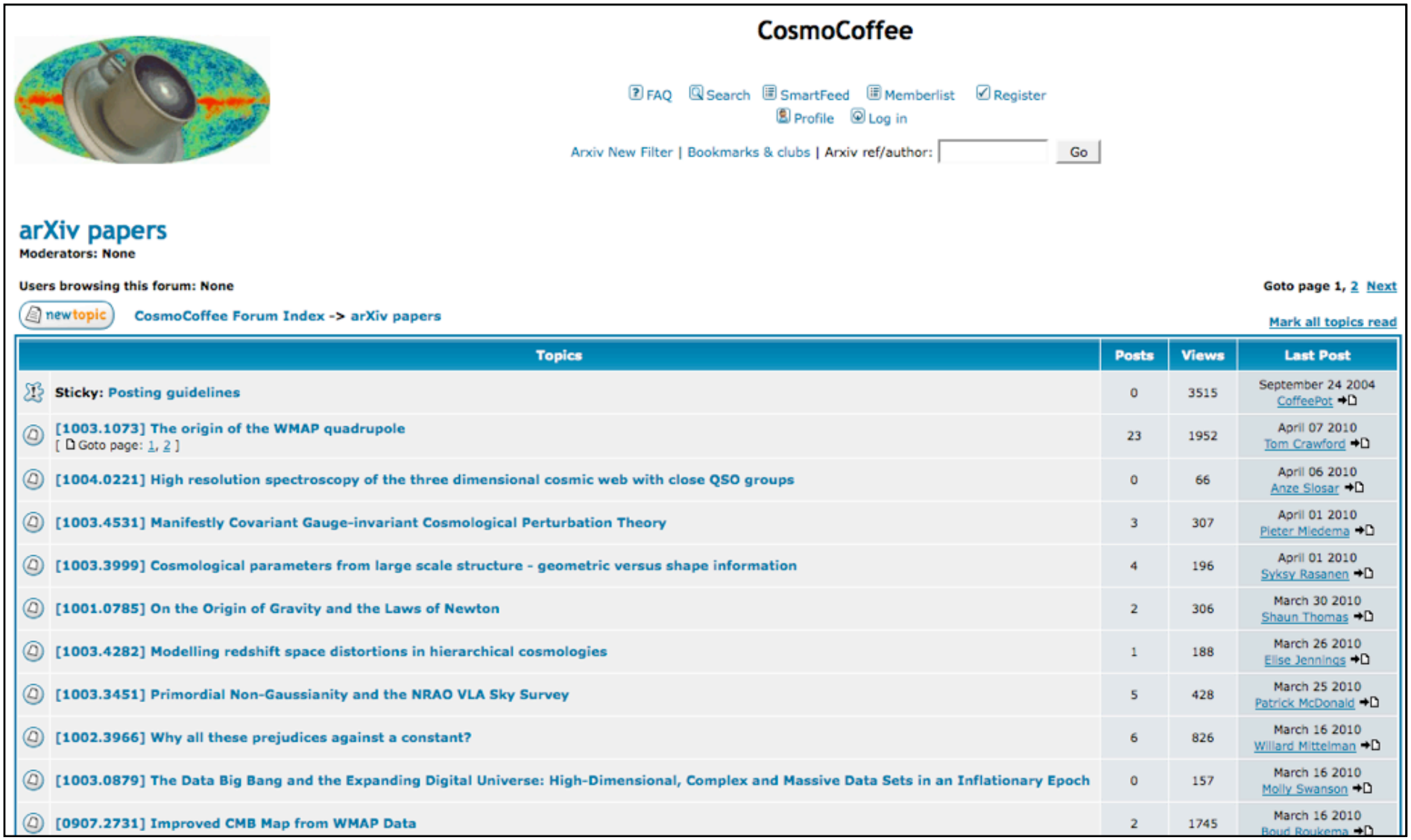
article (to see all citing articles identified by Citebase follow the bottom link)

The Mass-Metallicity Relation at z~2 [Abstract, 15 Cites, , Pre-print PDF]
15 Erb, Dawn K.; Shapley, Alice E.; Pettini, Max et al (2006-02-21) oai:arXiv.org:astro-ph/0602473
We use a sample of 87 rest-frame UV-selected star-forming galaxies with mean spectroscopic redshift z=2.26 to study the correlation between metallicity and stellar mass at high redshift. Using stellar masses determined from SED fitting to 0.3-8 micron photometry, we divide the sample into six bins in ... Comment: 18 pages, 9 figures, 2 tables; accepted for publication in ApJ

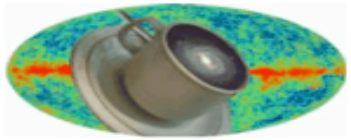
Velocity-Metallicity Correlation for high-z DLA Galaxies: Evidence for a Mass-Metallicity Relation? [Abstract, 12 Cites, , Pre-print PDF]
12 Ledoux, C.; Petitjean, P.; Fynbo, J. P. U. et al (2006-06-08) In *ASTRON.ASTROPHYS. 457 71 (2006)*
We used our database of VLT-UVES quasar spectra to build up a sample of 70 Damped Lyman-alpha (DLA) or strong sub-DLA systems with total neutral hydrogen column densities of log N(HI)>20 and redshifts in the range

Done zotero

Discussions at CosmoCoffee.info



Discussions at CosmoCoffee.info



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[1003.1073] The origin of the WMAP quadrupole

Goto page 1, 2 Next

Authors: Hao Liu, Ti-Pei Li

Abstract: The cosmic microwave background (CMB) temperature maps from the Wilkinson Microwave Anisotropy Probe (WMAP) are of great importance for cosmology. After finding out significant systematics in official WMAP maps, we had developed our own map-making software independently of the WMAP team. The new maps produced from the WMAP raw data and our software are notably different to the official ones, and the power spectrum as well as the best-fit cosmological parameters are significantly different too. By revealing the inconsistency between the WMAP raw data and their official map, we pointed out that there must exist an unexpected problem in the WMAP map-making routine. Here we state that the trouble comes from the inaccuracy of antenna pointing direction caused by improper offset of the quaternion interpolation in the WMAP routine. The CMB quadrupole in the WMAP release can be generated from a differential dipole field which is completely determined by the spacecraft velocity and the antenna directions without using any CMB signal. After correcting the WMAP team's error, the CMB quadrupole component disappears. Therefore, the released WMAP CMB quadrupole is almost completely artificial and the real quadrupole of the CMB anisotropy should be near zero. Our finding is important for understanding the early universe.

[PDF] [PS] [BibTex] [Bookmark]

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Author	Message
Douglas Applegate Joined: 19 Oct 2007 Posts: 8 Affiliation: Kavli Institute for Particle Astrophysics & Cosmology (KIPAC)	Posted: March 07 2010 quote These authors have been quite busy reprocessing the WMAP data. I noticed that some of their last papers have also been posted on Cosmo Coffee for comment. In this paper, the authors hit on a small, but they say crucial, difference between the official analysis and their analysis. Basically, the telescope pointing is off by half a pixel (interesting amount), and thus the quadrapole is mis-measured. Putting aside the hard question of correctness, is it plausible that an incorrect model for the telescope pointing would result in a mis-measured quadrapole?
Back to top	profile email
Boud Roukema Joined: 24 Feb 2005 Posts: 66 Affiliation: Torun Centre for Astronomy, University of Nicolaus Copernicus	Posted: March 09 2010 quote **Douglas Applegate wrote:** ... is it plausible that an incorrect model for the telescope pointing would result in a mis-measured quadrapole? Bennett et al 2003 arXiv:astro-ph/0302207 give 3.3mK for the dipole. $\sin(7^\circ) * 3.3mK = 0.002 * 3.3mK = 6.7\mu K$

Ongoing projects

- Further metadata from the ADS:
  - Subject terms / keywords
  - Full info re. citations (to eliminate self-cites)
  - All available links (DOI, ePrintID etc.)
  - Author gender (in collaboration with AuthorID projects?)

- Additional internal links:
  - Authors' acknowledgments of observing time
  - Fully link telbib records and ESO Press Releases
  - Gather information on publication delay

Thank you