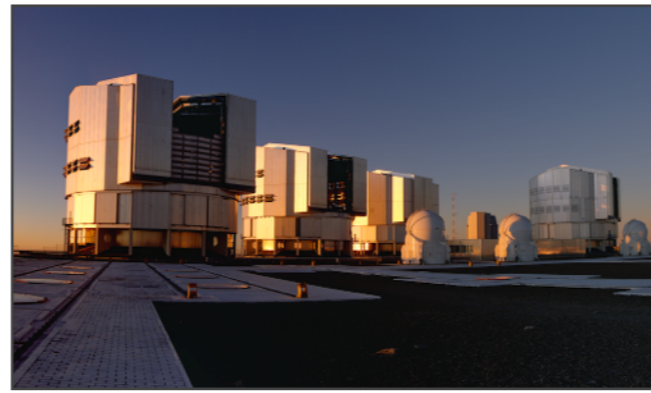


TELESCOPE BIBLIOGRAPHIES: SHARED CURATION, BETTER RESULTS

Uta Grothkopf & Silvia Meakins
ESO Library
library@eso.org

Data lifecycle



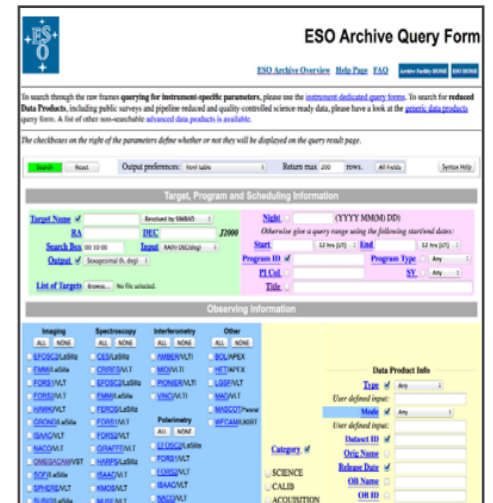
Maximum return of science benefits from observing proposals

Observing programs

Telescope bibliography

Data archive

Papers





ESO Telescope Bibliography (telbib)

▶ What?

- Database of **refereed papers** that **use ESO data**

**HARMONIZE
SELECTION CRITERIA**

▶ How?

- telbib **methodology** explained

IMPROVE WORKFLOWS

▶ Why?

- **interconnect** resources (proposals -> papers / papers -> data)
- measure ESO's **scientific output** (productivity + impact)
- **evaluate performance** of telescopes + instruments
- define guidelines for **future facilities**
- put **ESO in context** with other observatories

EXPLORE CONTEXT

ESO Telescope Bibliography (telbib): workflow

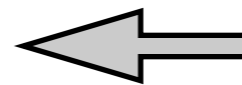
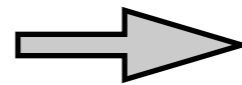
Scientific literature



ESO Telescope Bibliography (telbib): workflow



Access via NASA ADS Abstract Service



Telescope Bibliography (telbib): workflow

Scientific literature



Semi-automated search tool FUSE

The screenshot shows the FUSE search tool interface. It includes a search bar, a 'Current Query' section with details like 'User: Uta', 'Query Date: 2012-03-03 17:04:31', and 'Records Searched: 1'. Below this is a table of search results with columns for ID#, Status, Search, Record/Keyword(s), LookInside, Online, and Delete/Debug. The first result is ID# 88795, Status 'Not Included', and Record '2012MNRAS.420..346G Gruij, N.'. The abstract for this record is displayed below the table.

ID#	Status	Search	Record/Keyword(s)	LookInside	Online	Delete	Debug
88795	Not Included		2012MNRAS.420..346G Gruij, N.	88795.txt	PDF/HTML	<input type="checkbox"/>	debug

Stellar velocity dispersion of luminous compact galaxies at intermediate redshift
Monthly Notices of the Royal Astronomical Society, Volume 420, Issue 1, pp. 346-351.

"00) spectrograph FORS1 and FORS2 on the VLT/Kuyen telescope. The spectra revealed some strong a"
"the velocity field for some LCGs using GIRAFFE at the VLT. However, because of the small appar" "s for a handful of LCGs, measured with ISAAC at the VLT (Tresse et al. 2002), show a "double h" "observed 22 of these galaxies with the FORS /R600 and I600 spec- trograph at the European South"
"on (R > 600) spectrograph FORS 1 and FORS 2 on the VLT/Kuyen telescope. The spectra revealed "
"the resolution (R > 600) spectrograph FORS 1

Telescope Bibliography (telbib): workflow

fuse fulltext search

Search

- » **Insert**
- » **Queue**

Admin

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

Last Resort

- » **Insert**
- » **Manual**

Current Query

User: Uta
Query Date: 2012-03-03 17:04:31
Journals Searched:
Query Link: http://adsabs.harvard.edu/cgi-bin/nph-abs_connect?...
Dates Searched: 0000-00-00 - 0000-00-00
Notes: Dates Searched: 2012-01-13 - 2012-01-20
Records Searched: 1
Keywords found: 11

[View Search Log](#)

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

ID#	Status	Search	Record/Keyword(s)	LookInside	Online	Delete	Debug
88795		Not Included	2012MNRAS.420..346G <i>Gruel, N.</i> Stellar velocity dispersion of luminous compact galaxies at intermediate redshift Monthly Notices of the Royal Astronomical Society, Volume 420, Issue 1, pp. 346-351.	88795.txt	PDF/HTML	<input type="checkbox"/>	debug

"00) spectrograph FORS1 and FORS2 on the VLT /Kuyen telescope. The spectra revealed some strong a"

" the velocity field for some LCGs using GIRAFFE at the VLT. However, because of the small appar"

"hs for a handful of LCGs, measured with ISAAC at the VLT (Tresse et al. 2002), show a `double h"

" observed 22 of these galaxies with the FORS /R600 and I600 spec- trograph at the European South"

"ion (R > 600) spectrograph FORS 1 and FORS 2 on the VLT/Kuyen telescope. The spectra revealed "

"te resolution (R > 600) spectrograph FORS 1

visual inspection

ESO TELBIB SELECTION CRITERIA:

Papers that

- ▶ partly or exclusively **use ESO data**
- ▶ **proprietary** (obt. by authors) or **archival**
—> **included**

Papers that

- ▶ **quote** results from literature
- ▶ describe **instrumentation / software**
- ▶ mention **ongoing** projects
- ▶ suggest **future observations**
- ▶ use data in **models** or **simulations** merely as examples
- ▶ use images only as **visual reference**
—> **excluded**

- ➔ J. Lagerstrom, S. Winkelman, U. Grothkopf & M. Bishop (2012):
Observatory bibliographies: current practices
Proc. SPIE 8448, doi:10.1117/12.925482
<http://proceedings.spiedigitallibrary.org/proceeding.aspx?articleid=1359172>

Workflow

The screenshot shows a web interface with a search bar and a table of results. A callout bubble points to the 'LookInside' column of the table.

Search	Export Records	- choose -	LookInside	Online	Delete	Debug
88795.txt	PDF/HTML	<input type="checkbox"/>	debug			

Callout bubble text: visual inspection

Telescope Bibliography (telbib): workflow

fuse fulltext search

Search

- » **Insert**
- » **Queue**

Admin

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

Last Resort

- » **Insert**
- » **Manual**

Current Query

User: Uta
Query Date: 2012-03-03 17:04:31
Journals Searched:
Query Link: http://adsabs.harvard.edu/cgi-bin/nph-abs_connect?...
Dates Searched: 0000-00-00 - 0000-00-00
Notes: Dates Searched: 2012-01-13 - 2012-01-20
Records Searched: 1
Keywords found: 11

[View Search Log](#)

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

ID#	Status	Search	Record/Keyword(s)	LookInside	Online	Delete	Debug
88795	Not Included		2012MNRAS.420..346G Gruel, N. Stellar velocity dispersion of luminous compact galaxies at intermediate redshift Monthly Notices of the Royal Astronomical Society, Volume 420, Issue 1, pp. 346-351.	88795.txt	PDF/HTML	<input type="checkbox"/>	debug

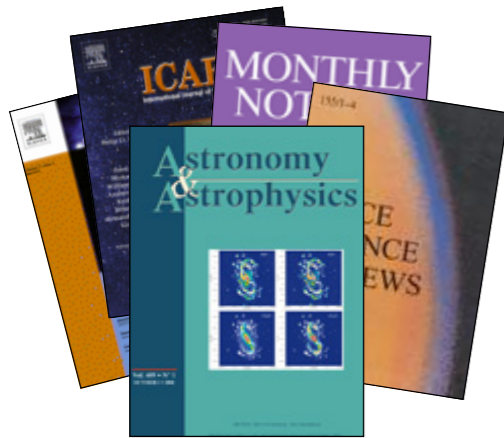
"00) spectrograph FORS1 and FORS2 on the VLT /Kuyen telescope. The spectra revealed some strong a"
" the velocity field for some LCGs using GIRAFFE at the VLT. However, because of the small appar"
"hs for a handful of LCGs, measured with ISAAC at the VLT (Tresse et al. 2002), show a `double h"
" observed 22 of these galaxies with the FORS /R600 and I600 spec- trograph at the European South"
"ion (R > 600) spectrograph FORS 1 and FORS 2 on the VLT/Kuyen telescope. The spectra revealed"
"te resolution (R > 600) spectrograph FORS 1"

transfer metadata from ADS to telbib

visual inspection

Telescope Bibliography (telbib): workflow

Scientific literature



Semi-automated search tool FUSE

A screenshot of the FUSE search tool interface. It shows a search results page with a table of records. The table has columns for ID#, Status, Search, Record/Keyword(s), LookInside, Online, and Delete/Debug. One record is highlighted with ID# 88795, Status 'Not Included', and Record/Keyword(s) '2012MNRAS.420..346G Gruel, N. Stellar velocity dispersion of luminous compact galaxies at intermediate redshift Monthly Notices of the Royal Astronomical Society, Volume 420, Issue 1, pp. 346-351.' Below the table, there is a preview of the article's abstract.



Telbib database (back-end)

A screenshot of the Telbib database back-end interface. It shows a configuration page for 'Search telbib'. There are various input fields for 'BibCode', 'PaperID', 'Author', 'Affiliation', 'Country', 'ESOSite', 'Journal', 'Volume', 'Pages', 'ESO Author', 'Date Entered', 'Since', and 'Before'. There are also checkboxes for 'Made Public', 'Referred', and 'Yes/No' options. A sidebar on the right contains a list of instrument codes like VLT, ISAAC, etc.

Telescope Bibliography (telbib): workflow

Scientific literature



Semi-automated search tool FUSE

Current Query: User: Uta, Query Date: 2012-03-03 17:04:31, Journals Searched: ADS, Query Link: http://adsabs.harvard.edu/cgi-bin/nph-abs_connect7...
 Records Searched: 1, Keywords found: 11

ID#	Status	Search	Record/Keyword(s)	LookInside	Online	Delete	Debug
88795	Not Included		2012MNRAS.420...346G Gruel, N. Stellar velocity dispersion of luminous compact galaxies at intermediate redshift Monthly Notices of the Royal Astronomical Society, Volume 420, Issue 1, pp. 346-351.	88795.txt	PDF/HTML		Debug

Telbib database (back-end)

Configuration: Search telbib, Main Menu, Home, New ADS, New Record, Search & Modify, Edit Telescopes, Check BibCodes, Fulltext Search, Insert Records, Scan Records, Statistics, Index, Instrument Counts, Top Tel/Ens Pairs, non-ESO papers.

Tags + proIDs for telbib records

The current record has been updated. PaperID: 44244, BibCode: 2011MNRAS.415.1479W, CitationCount: 17.

Title: The LABOCA survey of the Extended Chandra Deep Field-South: a photometric redshift survey of submillimetric galaxies

Author(s): Wardlow, J. L.; Small, L.; Small, L.; Cooper, K. E. K.; Alexander, D. M.; Brandt, N. R.; Davidson, A. R.; Luo, B.; Swinbank, A. M.; Walter, F.; Willott, A. J.; Ziaeepour, S.; Zappacosta, S.; Zappacosta, S.; Chapman, S. C.; Darling, H.; Dunlop, J. S.; Glazebrook, K.; Hodge, J.; Jones, K. J.; Kovalev, K.; Kovalev, A.; Lacey, C. G.; Merten, K. M.; Padilla, N. R.; Pas, T. W.; van der Werf, P. P.

ID	Mode Part	Type	Instrument	Archive Del
078-F-9028	sm	ESO	Normal LABOCA	N
079-F-9500	sm	MPG	Normal LABOCA	N
080-A-3023	sm	ESO	Normal LABOCA	N
081-F-9500	sm	MPG	Normal LABOCA	N
171-A-3045	sm	-	Large VMOS	Y
168-A-0485	sm	-	Large VMOS	Y
082-A-0890	sm	-	Normal HARLE	N
183-A-0666	sm	-	Large VMOS	N
-	-	Any	-	N

Other tags: Instr. + pro IDs, Other tags

Telescope Bibliography (telbib): workflow

Edit Paper

The current record has been updated.

PaperID: 44244 BibCode: [View](#)
 CitationCount:

Title:

Private Comment:

e.g. Affil corrected manually | Non-ESO APEX paper. | HARPS ADP/ESO as disc. w/ Jeremy Walsh 31/3/11 | N. Delmotte: UVES POP (266.D-5655) not ADP nor Archive [unless retrieved from Arc] 24/8/07

[+] Abstract, Keywords, Public Comment, URL

ID	Mode	Part	Type	Instrument	Archive	Del
078.F-9028	sm	ESO	Normal	LABOCA	N	<input type="checkbox"/>
079.F-9500	sm	MPG	Normal	LABOCA	N	<input type="checkbox"/>
080.A-3023	sm	ESO	Normal	LABOCA	N	<input type="checkbox"/>
081.F-9500	sm	MPG	Normal	LABOCA	N	<input type="checkbox"/>
171.A-3045	sm	-	Large	VIMOS	Y	<input type="checkbox"/>
168.A-0485	sm	-	Large	VIMOS	Y	<input type="checkbox"/>
082.A-0890	sm	-	Normal	HAWK-I	N	<input type="checkbox"/>
183.A-0666	sm	-	Large	VIMOS	N	<input type="checkbox"/>
			Any	-	N	<input type="checkbox"/>

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

Highlight & click edit button to add

Instruments for 44244

- :Archive_Plus_New
- :Proc_Level: ADP
- :Provenance: ESO
- Staff+Instr
- :GOODS

Highlight & click edit button to delete

Author(s): **(Add/Edit/Delete)**
1.) Wardlow, J. L.; **2.)** Smail, Ian; **3.)** Coppin, K. E. K.; **4.)** Alexander, D. M.; **5.)** Brandt, W. N.; **6.)** Danielson, A. L. R.; **7.)** Luo, B.; **8.)** Swinbank, A. M.; **9.)** Walter, F.; **10.)** Weiß, A.; **11.)** Xue, Y. Q.; **12.)** Zibetti, S.; **13.)** Bertoldi, F.; **14.)** Biggs, A. D.; **15.)** Chapman, S. C.; **16.)** Dannerbauer, H.; **17.)** Dunlop, J. S.; **18.)** Gawiser, E.; **19.)** Ivison, R. J.; **20.)** Knudsen, K. K.; **21.)** Kovács, A.; **22.)** Lacey, C. G.; **23.)** Menten, K. M.; **24.)** Padilla, N.; **25.)** Rix, H.-W.; **26.)** van der Werf, P. P.;

First Author:

Journal:

Volume:

Page:

Month/Year:

Refereed Made Public

ProgramID found
 Best source:
 Location:
 Facilities:

Data Management:
 ADSQueryOK: Yes
 EntryDate: Jul 25 2011 3:41PM
 ModifiedDate: Sep 9 2011 3:18PM
 ADSQueryDate: Sep 9 2011 11:28AM
 MadePublicDate: Jul 25 2011 3:49PM

▶ define policies
▶ apply them consistently

Instr. + pro IDs

Other tags

Telescope Bibliography (telbib): workflow

[+] Abstract, Keywords, Public Comment, URL

Abstract:

We derive photometric redshifts from 17-band optical to mid-infrared photometry of 78 robust radio, 24- μm and Spitzer IRAC counterparts to 72 of the 126 submillimetre galaxies (SMGs) selected at 870 μm by LABOCA observations in the Extended Chandra Deep Field-South (ECDF-S). We test the photometric redshifts of the SMGs against the extensive archival spectroscopy in the ECDF-S. The median photometric redshift of identified SMGs is $z = 2.2 \pm 0.1$, the standard deviation is $\sigma_z = 0.9$ and we identify 11 (~ 15 per cent) high-redshift ($z \geq 3$) SMGs. A statistical analysis of sources in the error circles of unidentified SMGs identifies a population of possible counterparts with a redshift distribution peaking at $z = 2.5 \pm 0.2$, which likely comprises ~ 60 per cent of the unidentified SMGs. This confirms that the bulk of the undetected SMGs are coeval with those detected in the radio/mid-infrared. We conclude that at most ~ 15 per cent of all the SMGs are below the flux limits of our IRAC observations and thus may lie at $z \geq 3$ and hence at most ~ 30 per cent of all SMGs have $z \geq 3$. We estimate that the full S870 $\mu\text{m} > 4$ mJy SMG population has a median redshift of 2.5 ± 0.5 . In contrast to previous suggestions, we find no significant correlation between submillimetre flux and redshift. The median stellar mass of the SMGs derived from spectral energy distribution fitting is $(9.1 \pm 0.5) \times 10^{10} M_{\odot}$ although we caution that the uncertainty in the star formation histories results in a factor of ~ 5 uncertainty in these stellar masses. Using a single temperature modified blackbody fit with $\beta = 1.5$, the median characteristic dust temperature of SMGs is 37.4 ± 1.4 K. The infrared luminosity function shows that SMGs at $z = 2-3$ typically have higher far-infrared luminosities and luminosity density than those at $z = 1-2$. This is mirrored in the evolution of the star formation rate density (SFRD) for SMGs which peaks at $z \sim 2$. The maximum contribution of bright SMGs to the global SFRD (~ 5 per cent for SMGs with S870 $\mu\text{m} \geq 4$ mJy or ~ 50 per cent extrapolated to SMGs with S870 $\mu\text{m} > 1$ mJy) also occurs at $z \sim 2$.

ADSKeywords:

galaxies: evolution, galaxies: high-redshift, galaxies: starburst, submillimetre: galaxies

Telescope Bibliography (telbib): workflow

Scientific literature



Semi-automated search tool FUSE

ID#	Status	Search	Record/Keyword(s)	LookInside	Online	Delete	Debug
88795	Not Included	2012MNRAS.420..346G	Gruij, N. Stellar velocity dispersion of luminous compact galaxies at intermediate redshift Monthly Notices of the Royal Astronomical Society, Volume 420, Issue 1, pp. 346-351.	88795.txt	PDF/HTML	<input type="checkbox"/>	Debug

Telbib database (back-end)

Data archive

171A-3045(A), Service Mode, UT3-Melipal

Period: 73 | Mode: | Service: |

Telescope: UT3-Melipal
Nights: 0 hrs
Programme Type: Large
Instrument: VMOS
PI/CA: CESARSKY/ BERGERON/ CRISTIANI/ DA COSTA/ DADDI/ DICKINSON/ ELBAZ/ ETTORI/ FOSBURY/ GIALVALISCO/ HOOK/ KLINTSCHNER/ LEIBUNDGUT/ NONINO/ RENZINI/ ROSATI
Observer: Large Programme carryover
Remarks: The Great Observatories Origins Deep Survey: ESO Public Observations of the SIRTf Legacy/ISS Treasury/Chandra Deep Field South
Abstract: Abstract of proposal

New Products | **Publications** | **Publications list (2)**

Link to telbib

Tags + proIDs for telbib records

List of Programs

ID	Mode Part	Type	Instrument	Active Del
078-F-9028	sm	ESD	Normal LABOCA	N
079-F-9500	sm	MPG	Normal LABOCA	N
080-A-3023	sm	ESD	Normal LABOCA	N
081-F-9500	sm	MPG	Normal LABOCA	N
171-A-3045	sm	-	Large VMOS	Y
168-A-0485	sm	-	Large VMOS	Y
082-A-0850	sm	-	Normal VMOS	N
183-A-0666	sm	-	Large VMOS	N
-	-	Any	-	N

List of Instruments

Instrument	Pro_Level	Pro_Serv	Pro_Level	Pro_Level	Pro_Level	Pro_Level	Pro_Level	Pro_Level	Pro_Level
LABOCA	ADP	ADP	ADP	ADP	ADP	ADP	ADP	ADP	ADP
VMOS	ADP	ADP	ADP	ADP	ADP	ADP	ADP	ADP	ADP

Instr. + pro IDs

Other tags

Telescope Bibliography (telbib): workflow



ESO Observing Programmes

[Archive Facility HOME](#)[ESO HOME](#)[Form INFO](#)[Define new query](#)

171.A-3045(A), Service Mode, UT3-Melipal

Period	73	Mode	Service
Telescope	UT3-Melipal		
Nights	0 hrs		
Programme Type	Large		
Instrument	VIMOS		
PI/CoI	CESARSKY/ BERGERON/ CRISTIANI/ DA COSTA/ DADDI/ DICKINSON/ ELBAZ/ ETTORI/ FOSBURY/ GIAVALISCO/ HOOK/ KUNTSCHNER/ LEIBUNDGUT/ NONINO/ RENZINI/ ROSATI		
Observer			
Remarks	<i>Large Programmel carryover</i>		
Title	<i>The Great Observatories Origins Deep Survey: ESO Public Observations of the SIRTf Legacy/HST Treasury/Chandra Deep Field South</i>		
Abstract	Abstract of proposal		
Raw Products	FileList	Link to telbib	
Publications	PublicationList [25]		

Telescope Bibliography (telbib): workflow

Scientific literature



Telbib database (front-end)

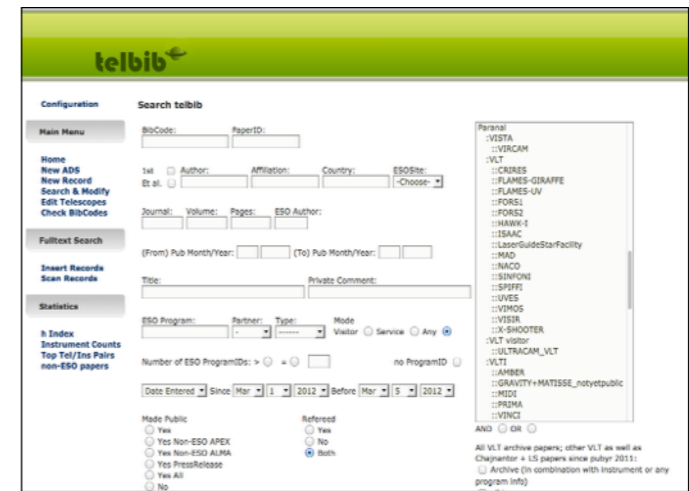
Semi-automated search tool FUSE



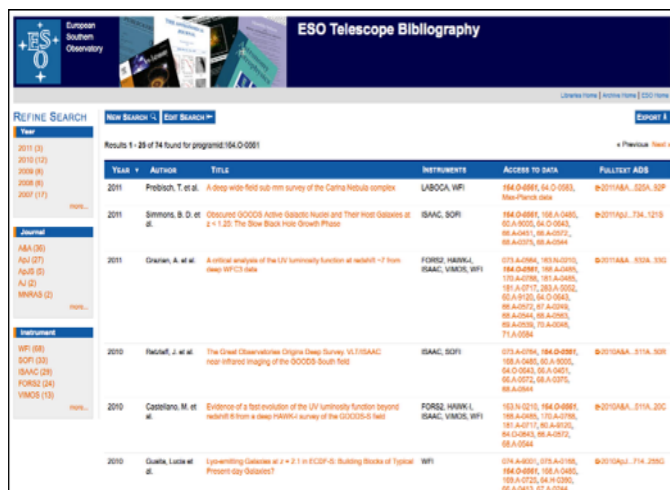
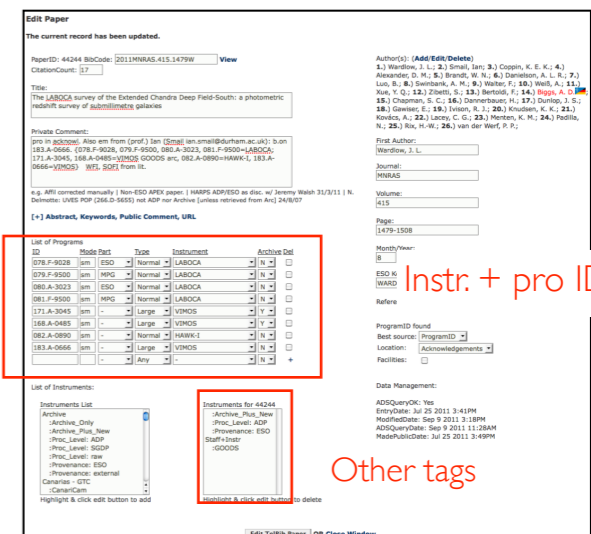
Data archive



Telbib database (back-end)



Tags + proIDs for telbib records



Link to telbib

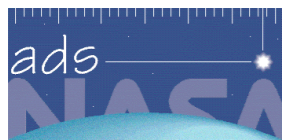


Instr. + pro IDs

Other tags

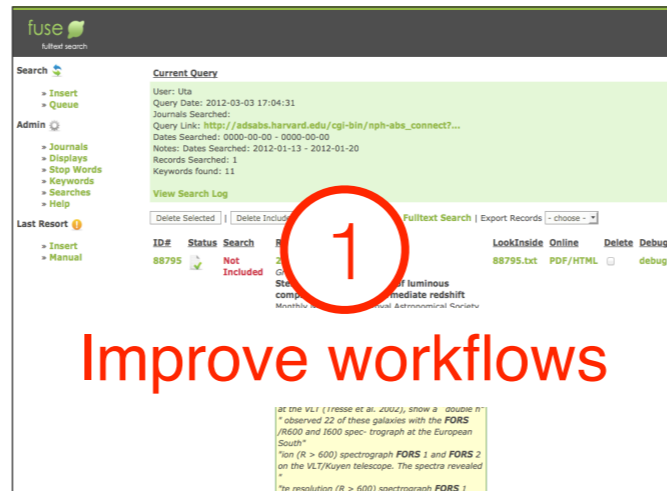
Areas for improvement

Scientific literature



Telbib database (front-end)

Semi-automated search tool FUSE

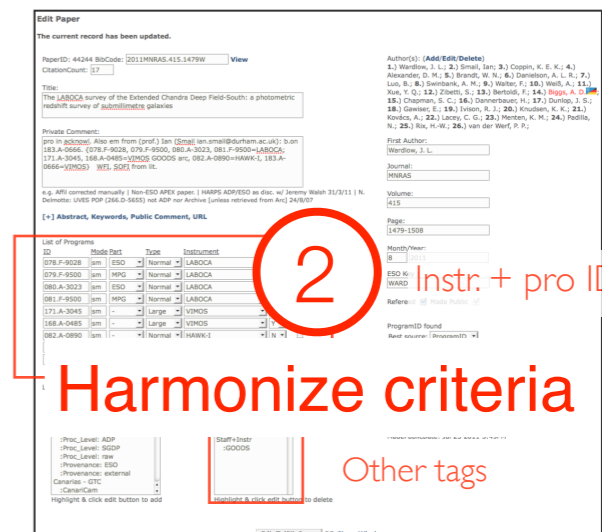
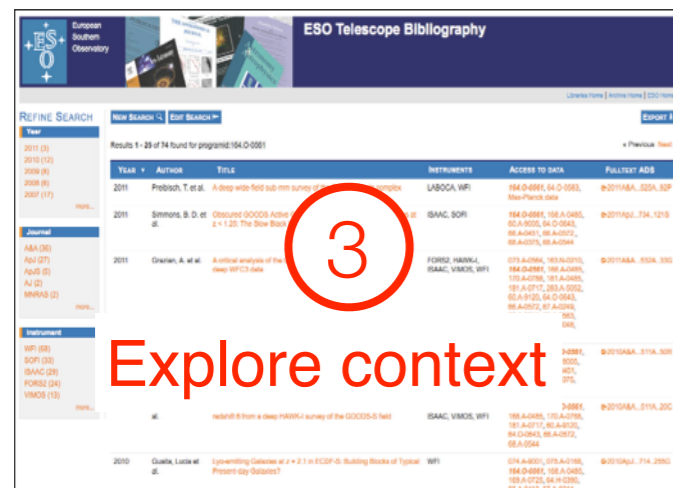


Data archive

Telbib database (back-end)



Tags + proIDs for telbib records



① Improve workflows



PROBLEMS OCCUR WITH:

▶ Access to full texts

- access to journals changes frequently
- duplication of work among observatories

▶ Text mining

- publisher & copyright restrictions
- large variety of journals
- multiple keywords (e.g., facilities, locations, concepts), regular expressions

WISH LIST:

- ▶ (Sophisticated) central **text mining at ADS** incl. unlimited number of snippets

② Harmonize criteria



AT PRESENT:

- ▶ Individual projects to cross-check selection criteria

- e.g., ESO-Gemini and ESO-Keck initiatives

- ▶ IAU WG Lib Best Practices

<http://iau-commission5.wikispaces.com/WG+Libraries+-+Best+Practices+for+Creating+a+Telescope+Bibliography>

- document endorsed by IAU Comm. 5

- ▶ AstroBib (maintained by S. Winkelman, CXC)

- mailing list (rather low traffic) & website (www.astrobibl.io/astrobib/)

WISH LIST:

- ▶ Standardized adoption of **Best Practices**; method to show compliance; develop logo/seal of quality (?)
- ▶ **AstroBib website**: add content; involve community; make it central knowledge point

③ Explore context

AT PRESENT:


- ▶ Distributed telescope bibliographies
 - access and queries vary among observatories
- ▶ Central access at ADS Labs:
 - no clear explanations for **Bib Groups** and **Data** filters

WISH LIST:


- ▶ **Clearer explanations** at ADS re. filters
- ▶ Dedicated **work area at ADS** for bibliography curators

The screenshot shows two filter panels from the ADS interface. The top panel, titled 'Bib Groups', has a dropdown arrow on the left and an 'apply' button on the right. It contains a list of telescope groups with checkboxes: ESO/Telescopes (6055) with a star icon, HST (1290), Spitzer (621), CXC (577), and Keck (425). A 'more...' link is at the bottom right. The bottom panel, titled 'Data', also has a dropdown arrow and an 'apply' button. It lists various observatories: ESO (5943), CDS (5470), NED (2405), ESA (1503), MAST (1402), HST (1290), HEASARC (268), CXO (199), XMM (182), and GALEX (78). 'less...' and 'more...' links are at the bottom left and right respectively.

Telbib public interface: <http://telbib.eso.org>



European Southern Observatory



ESO Telescope Bibliography

[telbib Statistics](#) | [API](#) | [Help](#) || [Libraries Home](#) | [Archive Home](#) | [ESO Home](#)

REFINE SEARCH

Year

- 2015 (351)
- 2014 (934)
- 2013 (884)
- 2012 (887)
- 2011 (802)

[more...](#)

Journal

- A&A (5950)
- ApJ (2333)
- MNRAS (1990)
- AJ (495)
- A&AS (242)

[more...](#)

Instrument

- UVES (1564)
- FORS2 (1195)
- FORS1 (969)
- ISAAC (929)
- SOFI (729)

[more...](#)

TELbib SEARCH

All fields or and

Author 1st auth. +

Title / Abstract / Keywords or and

Journal

Publication year From To

BibCode

ProgramID

Instrument +

Telescope +

Site/Archive

Only papers based on ESO time

The **Telescope Bibliography (telbib)** is maintained by the ESO library. It contains refereed publications that directly use ESO data.

News

telbib can now also be queried via API. For more information, see <http://telbib.eso.org/api-docu.php>.

Explore telbib metrics:

- Click the **VISUALIZE** button on the results page to view **animated charts** of your search results
- Access the **telbib Statistics** area to find **interactive graphs** of selected statistics
- Find publication and citation info in the **Basic ESO Statistics document**
- Use the **overview** of annual publication statistics to access all telbib papers that pertain to a given year

Further info:

Contact the ESO librarians at library@eso.org

Telbib public interface: <http://telbib.eso.org>

Chajnantor

APEX is a collaboration between the Max-Planck-Gesellschaft für Physik (MPE), the ESO, the University of Cologne (UNIK), the University of Bonn (UNIBONN), and the University of Leoben (UNILEOBEN). The telescope is located on the Chajnantor plateau in the Atacama Desert, Chile. The telescope is based on data from all APEX partners (ESO, MPE, UNIK, UNIBONN, UNILEOBEN). Papers based on data from all APEX partners (ESO, MPE, UNIK, UNIBONN, UNILEOBEN) are counted in the table below.

Year	APEX	all APEX
2006	12	21
2007	1	6
2008	7	17
2009	16	29
2010	29	50
2011	25	49

Table 8: Number of refereed ESO/APEX data and data from all APEX partners, respectively.

Publications

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 1996-2011.



Fig. 1: Refereed papers using ESO data

Notes:

VLT/VLTI papers using data generated by VLT and VLTI instruments, including visitor instruments for which observing time is recommended by the ESO OPC (Observing Programme Office), e.g. VLT ULTRACAM, VLT PIONEER, VLT SPHERE, etc.

Other LSP facilities: papers using data generated by other facilities of the La Silla Paranal Observatory, including visitor instruments for which observing time is recommended by the ESO OPC (Observing Programme Office), e.g. VLT ULTRACAM, VLT PIONEER, VLT SPHERE, etc.

Chajnantor: papers using data generated by APEX instruments, including visitor instruments for which observing time is recommended by the ESO OPC (Observing Programme Office), e.g. APEX/CONDOR are included. Only papers based (jointly or partly) on ESO APEX time are included.

Papers can use data from more than one facility, therefore the total number cannot be calculated by simply adding all publications of the individual sites, telescopes, or instruments.

Publication and citation statistics mentioned in this report date from February 2012.

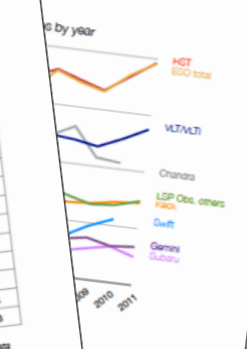
Year	VLT / VLTI	LSP others	Chajnantor	Total
1996	349	0	0	349
1997	388	0	0	388
1998	405	0	0	405
1999	29	324	0	353
2000	52	299	0	351
2001	105	316	0	421
2002	157	259	0	416
2003	250	304	0	554
2004	342	321	0	663
2005	361	291	0	652
2006	414	276	12	702
2007	494	315	1	810
2008	486	289	7	782
2009	471	267	15	753
2010	808	274	29	1111
2011	661	298	25	984

Table 1: Number of refereed papers using ESO data

Observatories

View of the total numbers of publications of major observatories that some facilities date back further than that; their numbers of publications. Obviously, this favors large institutions of investigation should normalize the numbers of data used in the papers (as many scientific instruments have high scientific and maintenance costs).

Important to assess the selection criteria applied in this graph include only papers that actually refer to the instrument. All papers were published in refereed journals.



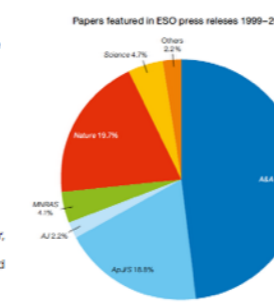
Publication Digest

In 2012, the ESO user community published over 870 refereed papers, the highest number ever in a single year (see top right figure). This brought the total number of papers using ESO data from 1996-2012 to 9455. An overview of publication numbers can be found at http://www.eso.org/sci/libraries/telbib_publications_overview.html. The statistics are linked to the corresponding records in the telescope bibliography (telbib) database.

More than 10 000 articles from selected astronomy journals (A&A, A&ARv, AJ, ApJ, ApJS, AN, ARABA, EM&P, ExA, Icar, MNRAS, Nature, NewA, NewAR, PASJ, PASP, P&SS and Science) were screened during 2012 in order to identify those that use data from ESO telescopes and instruments to achieve new scientific results. Approximately 8% of the papers qualified for inclusion in telbib.

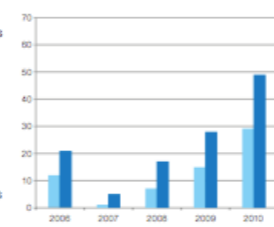
The VLT/VLTI provided data for 614 peer-reviewed papers. This repeats the strong increase in the number of papers that could be seen in 2010 and 2011 (see top right figure) and suggests that a plateau has not yet been reached. With an average number of approximately 17%, the fraction of papers based on archival VLT/VLTI data was fairly stable during the years 2006-2011. In 2012, this number increased considerably. A quarter of the 614 papers (154 publications) used exclusively or partly (i.e., in combination with new ESO observational) data retrieved from the ESO archive. Forty percent of these archival papers (64 out of 154) were based on ESO data products (<http://archive.eso.org/cms/eso-data/eso-data-products.html>). Among them, the GOODS survey played a special role as it provided data for 36 papers (almost 24% of all VLT/VLTI archival papers in 2012).

La Silla's research output has remained stable during the past ten years, as illustrated by the 276 papers published in 2012 based on data obtained at that observing site. This number includes only papers using data obtained at La Silla facilities for which observing time is recommended by the ESO Observing Programmes Committee (OPC); non-ESO telescopes or observations obtained during "private" periods are not included.



Papers featured in ESO press releases 1999-2012

Refereed papers using ESO data, 1996-2012. Papers can use data from more than one facility: VLT/VLTI: Papers using data generated by VLT and VLTI instruments, including visitor instruments for which observing time is recommended by the ESO OPC, e.g. VLT ULTRACAM, VLT PIONEER, VLT SPHERE, etc. Other LSP facilities: Papers using data generated by other facilities of the La Silla Paranal Observatory, including visitor instruments for which observing time is recommended by the ESO OPC, e.g. APEX/CONDOR are included. Only papers based (jointly or partly) on ESO APEX or ALMA time are included.



The number of papers based on ESO/APEX observations and data from all APEX partners, respectively.

ESO's survey telescope, VISTA, with its VIRCAM camera, has produced science papers based on regular observations since 2011. In the past year, 30 papers were published, mostly using data from the VVV, VIKING, VMC, UltraVISTA, VHS and VIDEO surveys.

Scientific results using data from APEX led to 66 refereed publications, including

telescopes or observations obtained during "private" periods are not included. Survey telescopes: Papers using data generated by the ESO survey telescope VISTA. Chajnantor: Papers using data generated by APEX or ALMA, including visitor instruments for which observing time is recommended by the ESO OPC, e.g. APEX/CONDOR are included. Only papers based (jointly or partly) on ESO APEX or ALMA time are included.

This year, the first science results based on ALMA observations appeared, leading to a total of 19 refereed papers. The great



Keywords in telbib records

- ▶ assigned by authors
- ▶ journal keywords
- ▶ imported into telbib from ADS

Supersolar metal abundances in two galaxies at $z \sim 3.57$ revealed by the GRB 090323 afterglow spectrum

Savaglio, S. ; Rau, A. ; Greiner, J. ; Krühler, T. ; McBreen, S. ; Hartmann, D. H. ; Updike, A. C. ; Filgas, R. ; Klose, S. ; Afonso, P. ; [and 5 coauthors](#)
[show affiliations](#)

Monthly Notices of the Royal Astronomical Society, Volume 420, Issue 1, pp. 627-636.

Published in Feb 2012

DOI: [10.1111/j.1365-2966.2011.20074.x](https://doi.org/10.1111/j.1365-2966.2011.20074.x)

We report on the surprisingly high metallicity measured in two absorption systems at high redshift, detected in the Very Large Telescope spectrum of the afterglow of the gamma-ray burst (GRB) GRB 090323. The two systems, at redshift $z = 3.5673$ and 3.5774 (separation $\Delta v \approx 660 \text{ km s}^{-1}$), are dominated by the neutral gas in the interstellar medium of the parent galaxies. From the singly ionized zinc and sulphur, we estimate supersolar metallicities of $[Zn/H] = +0.29 \pm 0.10$ and $[S/H] = +0.67 \pm 0.34$, in the blue and red absorber, respectively. These are the highest metallicities ever measured in galaxies at $z > 3$. We propose that the two systems trace two galaxies in the process of merging, whose star formation and metallicity are heightened by the interaction. This enhanced star formation might also have triggered the birth of the GRB progenitor. As typically seen in star-forming galaxies, the fine-structure absorption Si II* is detected, both in $z = 3.5774 \pm 0.0005$ and 3.5673 ± 0.0003 . From the rest-frame ultraviolet emission in the GRB location, we derive a relatively high, not corrected for dust extinction, star formation rate $\approx 6 M_{\odot} \text{ yr}^{-1}$. These properties suggest a possible connection between some high-redshift GRB host galaxies and high- z massive submillimetre galaxies, which are characterized by disturbed morphologies and high metallicities. Our result provides additional evidence that the dispersion in the chemical enrichment of the Universe at high redshift is substantial, with the existence of very metal-rich galaxies less than two billion years after the big bang. Partly based on observations collected at the European Southern Observatory under ESO proposal No. 082.A-0693.

Keywords:

Astronomy: cosmology; observations; galaxies: ISM; gamma-ray burst: individual: GRB 090323
arXiv: Astrophysics - Cosmology and Extragalactic Astrophysics

ESO Telescope Bibliography

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DETAILED INFORMATION

Author(s)	Savaglio, S.; Rau, A.; Greiner, J.; Krühler, T.; McBreen, S.; Hartmann, D. H.; Updike, A. C.; Filgas, R.; Klose, S.; Afonso, P.; Clemens, C.; Küpcü Yoldaş, A.; Olivares E., F.; Sudilovsky, V.; Szokoly, G.
Title	Supersolar metal abundances in two galaxies at $z \sim 3.57$ revealed by the GRB 090323 afterglow spectrum
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Abstract	show abstract
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Further information	http://www.eso.org/public/news/eso1143/ (Press Release)
Instrument(s)	FORS2, VIS_GROND
Telescope(s)	La Silla_2.2m, PressRelease, VLT
Site(s)	Paranal, Staff+Instr, Surveys+PRs, Visitor Instruments
ProgramID(s)	082.A-0693 (access to data)

Keywords in telbib records



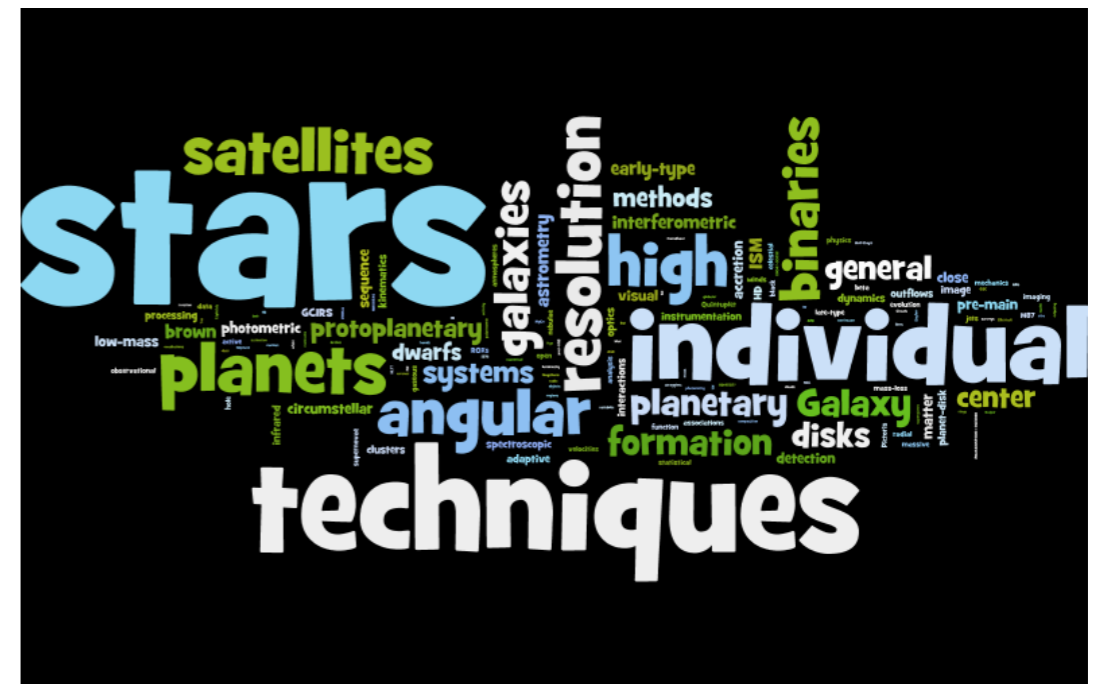
ISAAC



X-SHOOTER

- ▶ low precision
- ▶ general concepts (galaxies, stars...)

NACO



Keywords in telbib records + Unified Astro Thesaurus

- ▶ better precision with UAT?
- ▶ ensure consistent use of UAT terms by authors, editors, librarians...
- ▶ trying to answer various question, e.g.:

Which **keywords** appear in research based on **instruments A, B, C** ?

Which **instruments** are used for research on **keywords X, Y, Z** ?

Which **trends in research** can be seen?

Stay tuned....