



The ESO telescope bibliography:

Connecting papers and data
in support of the FAIR principles



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▶ Intro to ESO telescope bibliography (telbib)

- Data lifecycle at ESO
- What is telbib?

▶ Lessons learned from 25 years of telbib

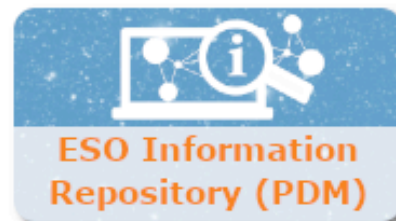
- Aspects of telbib curation:
Curation, **C**ommunity involvement, **C**onnectivity, **C**ollaboration, **C**ourage
- What is important? (keywords)
- Why are we doing it? (aim)
- How did ESO do it? (what works, what doesn't?)
- Where to find help? (useful tips)

BACKGROUND: ESO LDIS DEPARTMENT

Library, Documentation, and Information Services department

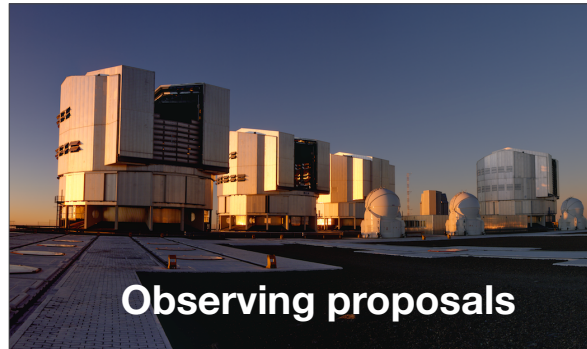
- Central information and documentation unit
- Developments in scholarly communication, Open Access / Open Science, identifiers (DOI, ORCID)
- Productivity measures (Telescope Bibliography database, telbib.eso.org)

www.eso.org/libraries

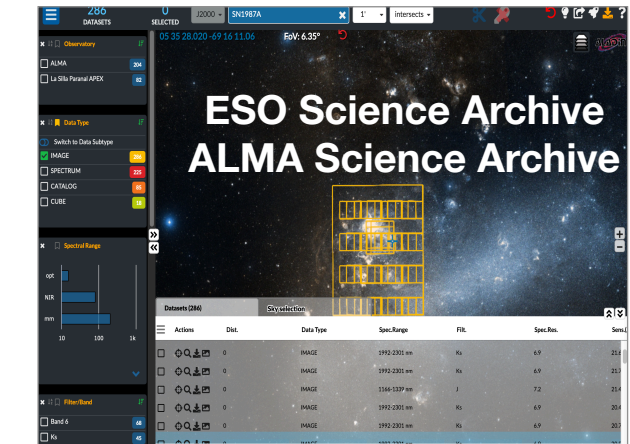


DATA LIFECYCLE AT ESO

Open Science



Open Data



Standardised identifiers



Open Access



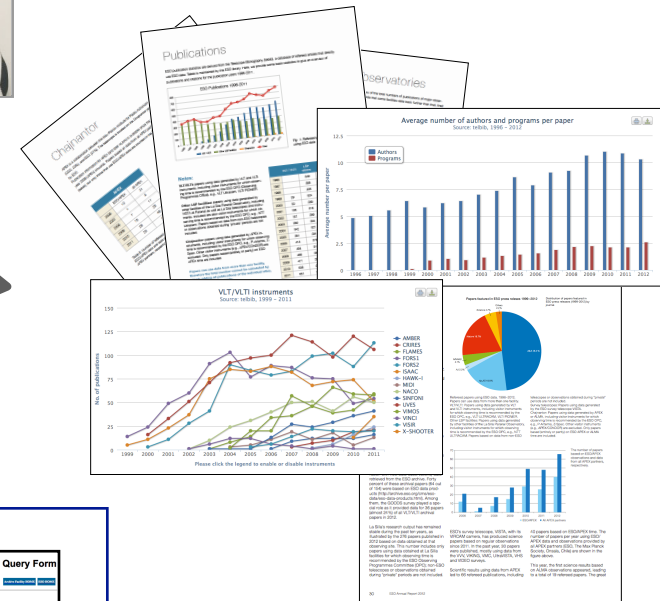
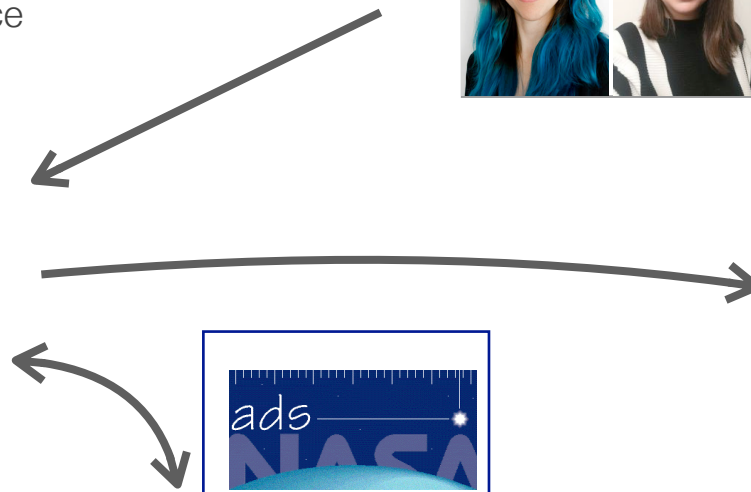
ESO TELESCOPE BIBLIOGRAPHY

telbib:

- **establishes links** between ESO data papers and the observations in the Science Archive
- **built and curated** by ESO Librarians
- **interlinking** resources
- **tool to evaluate** ESO's performance and impact through bibliometrics



Coding / scripting
Data ingestion and curation
Strategic development



LESSONS LEARNED: CURATION

▶ **Keywords:**

- text mining, automated retrieval, human inspection

▶ **Aim:**

- Ensure **correct and complete** (within ~5%) set of data papers in telbib

▶ **ESO telbib:**

- FUSE full text search tool extremely helpful,
but human curation necessary



DATA CITATION POLICY

<https://www.eso.org/sci/observing/policies/publications.html>

The screenshot shows the ESO website's 'Publications based on ESO Data' page. The header includes the ESO logo, the text 'European Southern Observatory', and the slogan 'ESO — Reaching New Heights in Astronomy'. A navigation bar contains links for 'Public', 'Science', 'User Portal', 'Intranet', 'Contact', and 'Site Map', along with a search box and a 'Go!' button. A breadcrumb trail reads: 'Science Users Information > Observing with ESO Telescopes > Policies and Procedures > Publications with ESO Data'. The date '17 May 2022' is displayed in the top right corner.

The main content area is titled 'Publications based on ESO Data'. It states: 'Publications making use of ESO observational data must include the following statement in a footnote or in the acknowledgement: **Based on observations collected at the European Southern Observatory under ESO programme(s) TP.C-NNNN(R)* or PPP.AAAA.nnn** and/or data obtained from the ESO Science Archive Facility with DOI(s) under https://doi.org/10.18727/archive/NNN*****'.

Below this, it says: 'Please substitute the place-holder (TP.C-NNNN(R) or PPP.AAAA.nnn) with the programme ID(s) of the data used, e.g., 094.A-1234(A) or 105.20UA.001. You will find the identifier in the FITS header of the observations.'

Footnotes explain the codes:

- * all programmes approved before ESO period 105: T: leading character indicating the programme type (0 P: period (2 digits for P<100, 3 digits for P>=100)
- C: category (A, B, C, D, L, ...)
- NNNN: four digit integer (unique within each semester)
- R: run (A, B, ...)
- ** as of ESO period 105: PPP.AAAA.nnn
- P: period
- A: unique identifier composed of numbers and letters
- n: number of the run

It concludes with: 'Please consult the information on [ESO Programme and Run Identification Codes](#) for further details.'

A final footnote states: '*** for ESO Science Archive DOIs (Digital Object Identifiers), please substitute NNN with the correct number from the doi column in the table at <https://archive.eso.org/wdb/wdb/doi/collections/query>'.

ESO + program IDs / data DOIs





FULLTEXT SEARCH TOOL

fuse
fulltext search

Queries

- » Insert
- » Queue (8)

Searches

- » Searches
- » Search papers
- » Annual Searches

Admin

- » Journals
- » Displays
- » Stop Words
- » Keywords
- » ADS limit
- » Help

Manuscripts

- » Upload files

Current Query #4459

User: automatic
 Query Date: 2022-04-02 07:01:11
 Journals Searched: A&A, AJ, ApJ, ApJS, ApJL, AN, EM&P, Icar, MNRAS, Natur, NewA, NewAR, PASP, P&SS, Sci
 Query Link: [https://ui.adsabs.harvard.edu/#search/q=database:\(...](https://ui.adsabs.harvard.edu/#search/q=database:(...)
 Dates Searched: 2022-03-24 - 2022-04-01

Notes:
 Keywordlist: ESO keywords
 Records Searched: 10
 Keywords found: 1046
[View Search Log](#)

Go to: **ALMA papers (0)** | **Survey papers (5)** | **ProID papers (5)** | **Others (0)** || Filter: go

Delete Selected | [Delete Data/Hosted/Staff Papers](#) | [Delete Shadow](#) | [Delete All Records](#) | [Fulltext Search](#) | [Fulltext arxiv Search](#) | Export Records

ID#	Status	Search	Record/Keyword(s)	Type	LookInside	Online	Debug	Delete
527188		Not Included	2022MNRAS.512.1262H Hamadouche, M. L. A combined VANDELS and LEGA-C study: the evolution of quiescent galaxy size, stellar mass, and age from z = 0.6 to z = 1.3 Monthly Notices of the Royal Astronomical Society, Volume 512, Issue 1, pp.1262-1274 Found Keywords: ESO, European Southern, European Southern Observatory, LEGA-C, MAD, Paranal, ProgramID, Silla, Southern Observatory, UltraVISTA, VANDELS, Very Large Telescope, VIMOS, VISTA, VLT, www.eso.org, zCOSMOS Keyword categories: SurveyProID, ESO instruments, Surveys, ESO telescopes, Staff, others	Survey	527188.txt	Publ. PDF arxiv PDF	debug	<input type="checkbox"/> del

program IDs (regular expressions)

"amme ID 179.A-2005 and on"
 "e ID(s) 194.A-2003 (E-Q) ("
 "005 and 1100.A-0949 (The "
 " the Visible Multi-Object Spectrograph (**VIMOS** ; Le Feuvre et al. 2004) on the ESO Very Large Tel"
 "bluc Spectroscopy Survey, making use of **VIMOS** on the VLT. The full survey provides high-quality"
 "016) and Straatman et al. (2018). 2.2.1 **LEGA-C** photometric catalogues and parent sample The LEGC"

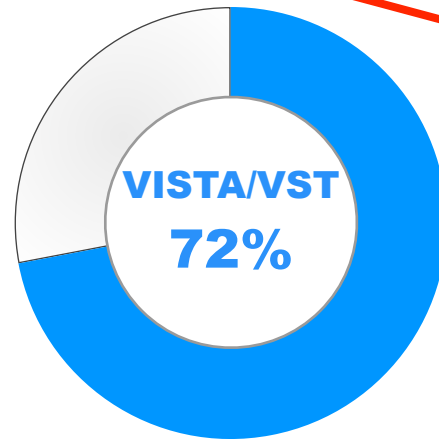
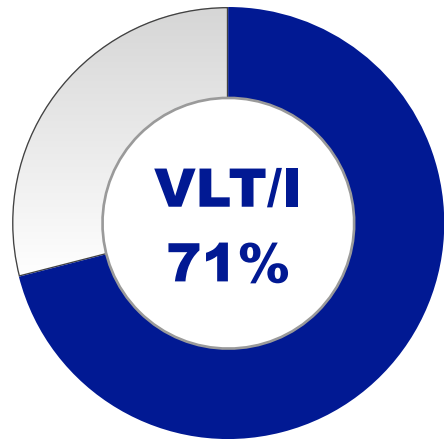
All papers inspected by curators before inclusion!

ESO facilities, survey names, etc., displayed by priority



INFO PROVIDED BY AUTHORS

Fraction of data papers with **correct** and **incorrect** telbib information (2012-2017)



Intervention by telbib curators needed



Uh oh.



COMMUNITY INVOLVEMENT

▶ **Keywords:**

- author awareness

▶ **ESO telbib:**

- existence of data citation policy
- dissemination of data citation policy through
 - data citation website
 - ESO Science Archive interface
 - instrument scientists
 - “power users / ambassadors”
- presentations at conferences, workshops, etc.
- **communication with authors**

COMMUNICATION WITH AUTHORS



Email exchange with authors: approx. 10% of telbib records

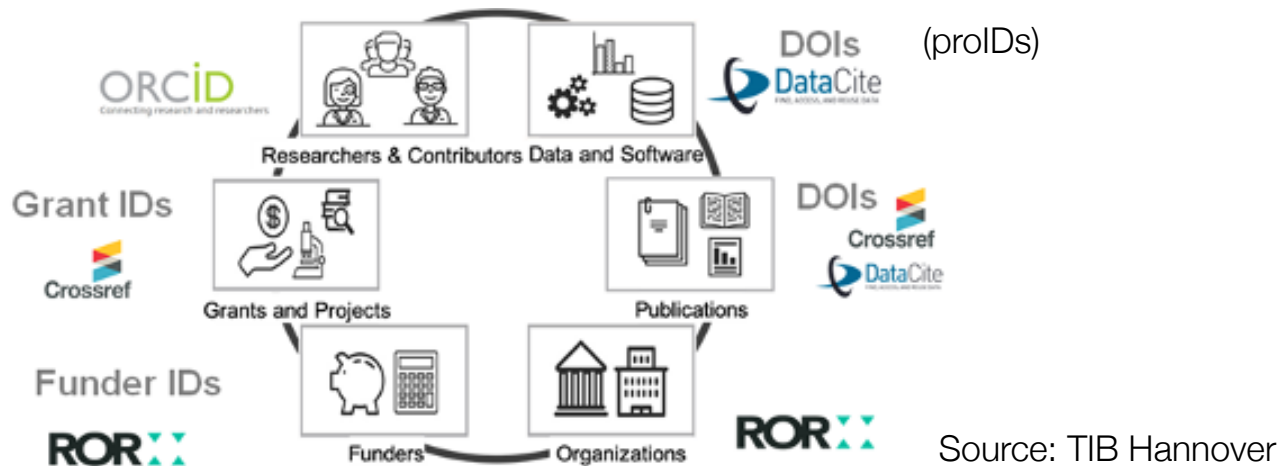
Sample from Q4 / 2017:

- **414** records added to telbib; 45 authors contacted (**11%**)
- authors replied: 28 (**62%**), authors did not reply: 17 (**38%**)



INCENTIVES FOR AUTHORS

- ▶ Question: Why should they follow our data citation policy?
- ▶ (Tentative) Answer(s):
 - to become part of the science network and apply the **FAIR** principles
 - to be compliant with **funders'** requirements
 - to link (open) data resulting from their research to their **ORCID** profile
 - to be at the forefront of the changing research and **evaluation** paradigm



▶ **Keywords:**

- access, interoperability, data exchange

▶ **ESO telbib:**

- Sybase database chosen for **easy data exchange** with ESO Science Archive
- various **identifiers** to link in and reach out

IDENTIFIERS



From	To	Identifier
ADS	telbib	bibcode / article DOI
ESO Arc / Obs sched	telbib	ESO program ID / data DOI
ESO Press Releases	telbib	bibcode
telbib	ADS	bibcode / article DOI
telbib	ESO Arc / Obs sched	ESO program ID / data DOI
telbib	ESO Press Releases	bibcode
telbib	ESO instrument info	https
telbib	Altmetric	article DOI
telbib	authors' ORCID profile	ORCID
anywhere	telbib	API

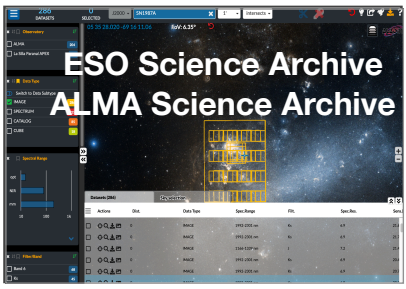
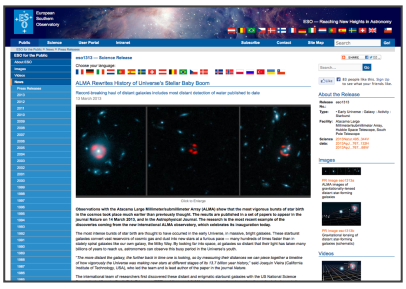
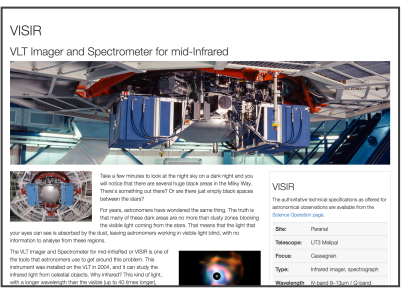


DETAILED INFORMATION	
Author(s)	Pian, E. ; D'Avanzo, P. ; Benetti, S.; Branchesi, M.; Brocato, F.; Campana, S.; Cappellari, M.; Ghisellini, G.; ; Hjorth, J.; Kouveliotou, C.; Levan, A.; Limatola, L.; Male show all authors ▾
Title	Spectroscopic identification of r-process nucleosynthesis in a double neutron-star merger
Keywords	Astrophysics - High Energy Astrophysical Phenomena
Abstract	show abstract ▾
Publication details	Nature, 2017, vol. 551, p. 67
BibCode	2017Natur.551...67P
Fulltext (via ADS)	ADS fulltext
DOI	10.1038/nature24298 article DOI
Citations (from ADS)	58 53 altmetric.com
Further information	http://www.eso.org/public/news/eso1733/ (Press Release) ESO PR
Instruments and Observing Programmes used:	
FORS2 (VLT / Paranal)	} data
099.D-0382 (access to raw data)	
099.D-0622 (access to raw data)	
OMEGACAM (VST / Paranal)	
099.D-0191 (access to raw data)	
XSHOOTER (VLT / Paranal)	
099.D-0382 (access to raw data)	
099.D-0622 (access to raw data)	
Hosted facilities	REM
Other tags	PI data



article DOI

instrument info



COLLABORATION

▶ **Keywords:**

- teamwork, exchange of best practices, networking

▶ **ESO telbib:**

- joint efforts to establish new features
- **define policies and guidelines** with other bibliography curators (HST, Gemini, Spitzer)

COLLABORATION: EXAMPLES

▶ Example 1:

- ALMA Bibliography



*“The ALMA bibliography is **jointly maintained** by the librarians at ESO and NRAO as well as NAOJ.”*



▶ Example 2:

- Observatory Bibliographer Collaboration (led by Jenny Novacescu, STScI)

Collaborative effort between astronomical observatory bibliographers worldwide, with focus on sharing transparent and fair bibliography methods and standards, and creating shared documentation and processes.



STScI | SPACE TELESCOPE
SCIENCE INSTITUTE



COURAGE / ANTICIPATION

▶ **Keywords:**

- feedback, suggestions, user requests

▶ **ESO telbib, e.g.:**

- “Can you add parameter XXX?”
- “Can you provide access to further info about YYY on the public interface?”

(SOME) TELBIB PARAMETERS

▶ Bibliographic info (from ADS)

- all telbib papers refereed
- bibcode, article DOI
- title, **publication month + year**, journal, vol., pages, author-assigned keywords
- **citations**, article views
- data use by other large observatories (HST, Gemini, Keck, Gemini, Subaru)

▶ Authors (mostly from ADS)

- name (accented, translated), **1st author / co-author**, ORCID, affiliation, **country**
- ESO: site (Garching, Chile)

▶ Observing programs (mostly from ESO Science Archive)

- **program ID, data DOIs** (coming soon), observing type + mode, ESO survey name
- ESO telescope + **instrument**, hosted telescopes, ALMA project code + array, **ALMA partner**
- archival y/n (based on author / PI_Col overlap), **PI vs. Arc+PI data vs. Arc-only** data use

▶ Other info (assigned by telbib curators)

- ESO Press Release URL
- **location + type of reference to ESO** (data citation policy)
- details re. communication with authors

IT'S OK TO SAY NO SOMETIMES

▶ Bottom line:

- try to **anticipate** future needs/requests
- but: increasing number of papers & parameters & ESO facilities (with same number of staff)
- find the courage to **decline requests**



TAKE-AWAY POINTS

1. telbib enables Open Science and the FAIR principles

- ▶ by **interconnecting** resources
- ▶ by using **standardised identifiers** and access protocols
- ▶ by alerting researchers about the importance of a **network of scholarly resources**

2. Basis: “5 Cs”

- | | | |
|--------------------------|-------|-----------------------------|
| ▶ Curation | _____ | experience, knowledge |
| ▶ Community involvement | _____ | technical, programming |
| ▶ Connectivity | _____ | human factor, “soft skills” |
| ▶ Collaboration | _____ | |
| ▶ Courage / Anticipation | _____ | |

Skills:

3. Strategy

- ▶ **proactively implement** new features
- ▶ reflect **demand from stakeholders** and **developments in scholarly publishing**
- ▶ **select** requests that are feasible and of lasting benefit