



Telescope Bibliographies and Astronomical Data

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Overview

Part I (Uta)

- ▶ Life cycle of astronomical data
- ▶ Telescope bibliographies - what? why? how?
- ▶ Interconnected resources

Part II (Jill)

- ▶ Uses and value
- ▶ DOI project
- ▶ Astrobib
- ▶ Take-aways



European Southern Observatory (ESO)

- ▶ Intergovernmental research organization in astronomy
- ▶ 14 European member states + Brazil + host country Chile



- ▶ Headquarters: Garching near Munich, Germany
- ▶ www.eso.org

- ▶ Observing sites: Chile
 - ★ La Silla Paranal Observatory
 - ★ ALMA, Chajnantor
 - ★ E-ELT, Armazones (planned)



Very Large Telescope (VLT)





European Southern Observatory (ESO)

- ▶ Intergovernmental research organization in astronomy
- ▶ 14 European member states + Brazil + host country Chile



- ▶ Headquarters: Garching near Munich, Germany

▶ www.eso.org

140 M

120 M

100 M

80 M

60 M

40 M

20 M



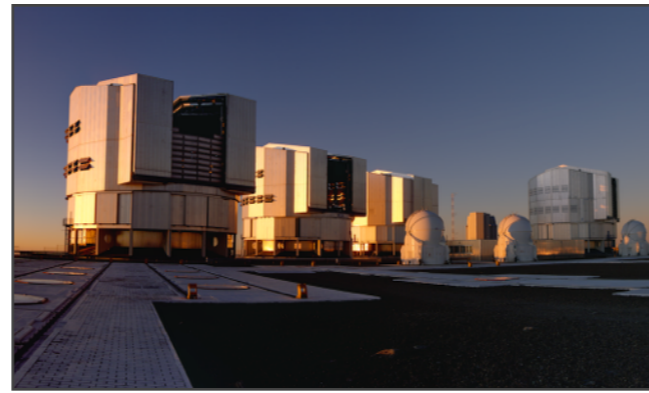
E-ELT



Very Large Telescope (VLT)



Data lifecycle



Maximum return of science benefits from observing proposals

Observing programs

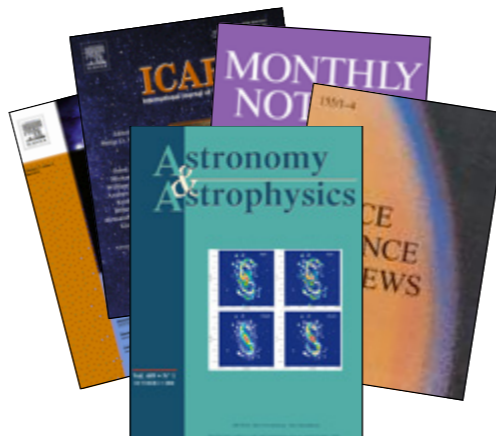


Telescope bibliography

Data archive



Papers





Telescope Bibliographies

► What?

- Databases of **refereed papers** that **use observational data**

► Why?

- compile **entire set** of observatory's papers
- **interconnect** resources (observing proposals → data → papers)
- measure **scientific output** (productivity + impact), **evaluate performance**
- define guidelines for **future facilities**

► Who is interested?

- Project scientists
- Observatory management
- Funding & governing bodies



Refereed journals





Text mining

- ▶ keywords, programIDs
- ▶ visual inspection necessary

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"



telbib records: metadata

Metadata

Edit Paper

PaperID: 44244 BibCode: [View ADS](#) | [View telbib](#)
 Bibliographic info: MNRAS, vol. 415, pp. 1479-1508 (8/2011)
 CitationCount: 117 | Reads: 961 | PubDelay : 737 (min) | 548 (med) | 188 (max) day(s)
 Also data used from:

Title:

Private Comment:

e.g. Affil corrected manually. | 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

List of **Programs** (8)

ID	Mode	Part	Type	Instrument	Archive Del	arc?
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	VIMOS	Y	
168.A-0485	sm	-	Large	VIMOS	Y	
082.A-0890	sm	-	Normal	HAWKI	N	
183.A-0666	sm	-	Large	VIMOS	N	
		-	Any	-	N	

Additional **tags**: [Add/Edit](#)
 :Archive_Plus_New ✖
 :Proc_Level: Data Products ✖
 :Provenance: ESO ✖
 Staff+Instr ✖
 :GOODS ✖
 :LESS ✖

Author(s): (Add/Edit/List/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:

ESO Key :

Staff
 Staff+Instr

Refereed
 Made Public

Shadow

ProgramID found
 Best source:
 Location:
 Facilities:

Data Management:
 ADSQueryOK: Yes
 EntryDate: Jul 25 2011 3:41PM
 ModifiedDate: Jan 14 2014 11:50AM
 ADSQueryDate: Feb 21 2016 7:56AM
 MadePublicDate: Jul 25 2011 3:49PM

Program IDs





telbib records: metadata

List of **Programs** (8)

ID	Mode	Part	Type	Instrument	Archive D
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	VIMOS	Y
168.A-0485	sm	-	Large	VIMOS	Y
082.A-0890	sm	-	Normal	HAWKI	N
183.A-0666	sm	-	Large	VIMOS	N
		-	Any	-	N

proID obs mode partner obs type instru-ments arc





telbib records: metadata

List of **Programs** (8)

ID	Mod
078.F-9028	sm
079.F-9500	sm
080.A-3023	sm
081.F-9500	sm
171.A-3045	sm
168.A-0485	sm
082.A-0890	sm
183.A-0666	sm

proID

ob

- ▶ only ~70% correct and complete programIDs
- ▶ human curation needed
 - ➔ verify program IDs
 - ➔ use data archives to find missing programs
 - ➔ inspect cited papers (“Paper I”)
 - ➔ communicate with scientists and authors
- ▶ DOIs instead of programIDs?
 - ➔ (somewhat) higher awareness among authors
- ▶ Automatic extraction of data-usage statements?
 - ➔ assumes authors are aware of and consistently apply data publication policies



telbib public interface: telbib.eso.org

European Southern Observatory

ESO Telescope Bibliography

telbib Statistics | API | Help | Libraries Home | Archive Home | ESO Home

NEW SEARCH EDIT SEARCH

[← back to results](#)

DETAILED INFORMATION

Author(s)	Campbell, Simon W.; D'Orazi, Valentina; Yong, David; Constantino, Thomas N.; Lattanzio, John C.; Stancliffe, Richard J.; Angelou, G Wylie-de Boer, Elizabeth C.; Grundahl, Frank
Title	Sodium content as a predictor of the advanced evolution of globular cluster stars
Keywords	not available
Abstract	The asymptotic giant branch (AGB) phase is the final stage of nuclear burning for low-mass stars. In the Milky Way globular clusters, the AGB phase provides relatively homogeneous populations of stars that are used to constrain stellar evolution theory. It is predicted by stellar evolution models that stars around the current turn-off mass (that is, stars that are currently leaving the main sequence) will reach the AGB phase. Here we report that all of the stars in the population fail to reach the AGB phase. Through spectroscopic abundance measurements, we find that the population has a low sodium abundance, indicating that they are exclusively first-generation stars. This implies that the population is not suitable for star counts to test stellar evolution timescales if the AGB phase is included. We have no clear explanation for this observation. hide abstract ↗
Publication details	Nature, 2013, vol. 498, p. 198-200
BibCode	2013Natur.498..198C
Fulltext (via ADS)	ADS
Citations (from ADS)	1 58
Further information	http://www.eso.org/public/news/eso1323/ (Press Release)
Instrument(s)	FLAMES-GIRAFFE
Telescope(s)	PressRelease, VLT
Site(s)	Paranal, Surveys+PRs
ProgramID(s)	089.D-0038 (access to data)
Persistent URL	http://telbib.eso.org/detail.php?bibcode=2013Natur.498..198C

CDS data center

fulltext

altmetric.com

ESO Press Releases

ESO data archive



Telescope Bibliographies and Astronomical Data

Part II : Now What?

Uses and Value

DOI project

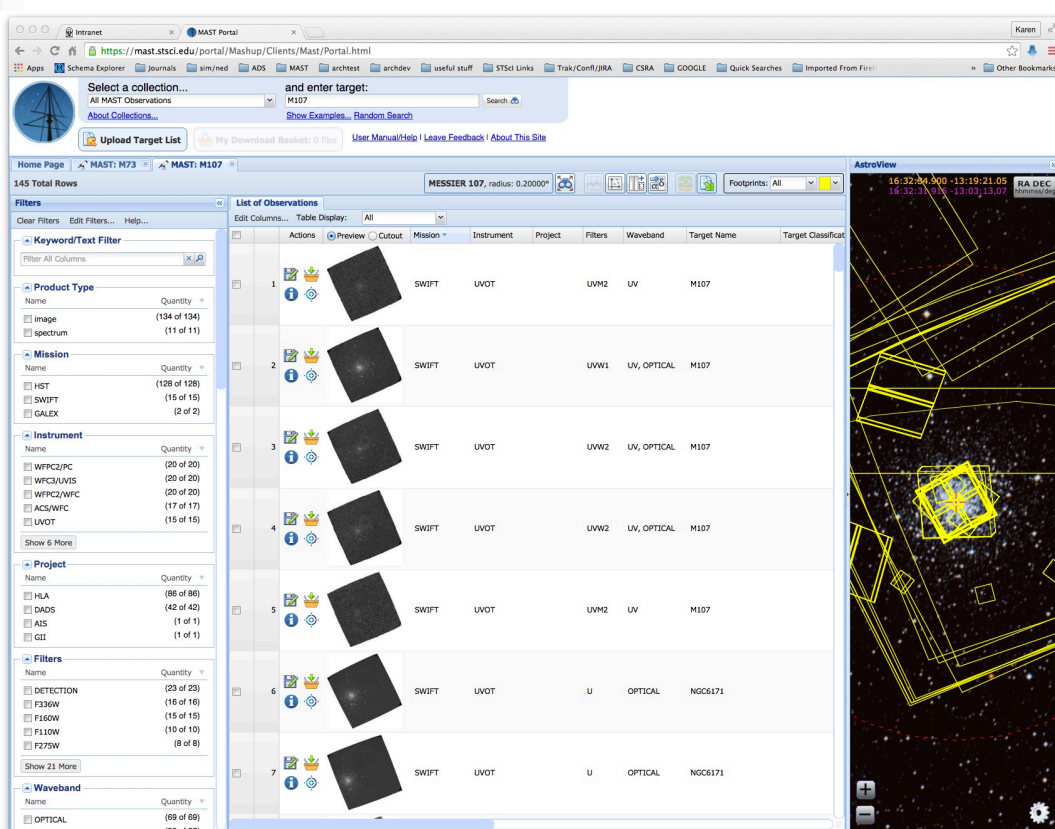
Astrobib

Take-aways



- Launched in 1990
- NASA and ESA
- Orbits earth every 97 minutes
- Near UV, Visible, Near IR
- Nobel prize
- 11K+ papers

Mikulski Archive for Space Telescopes



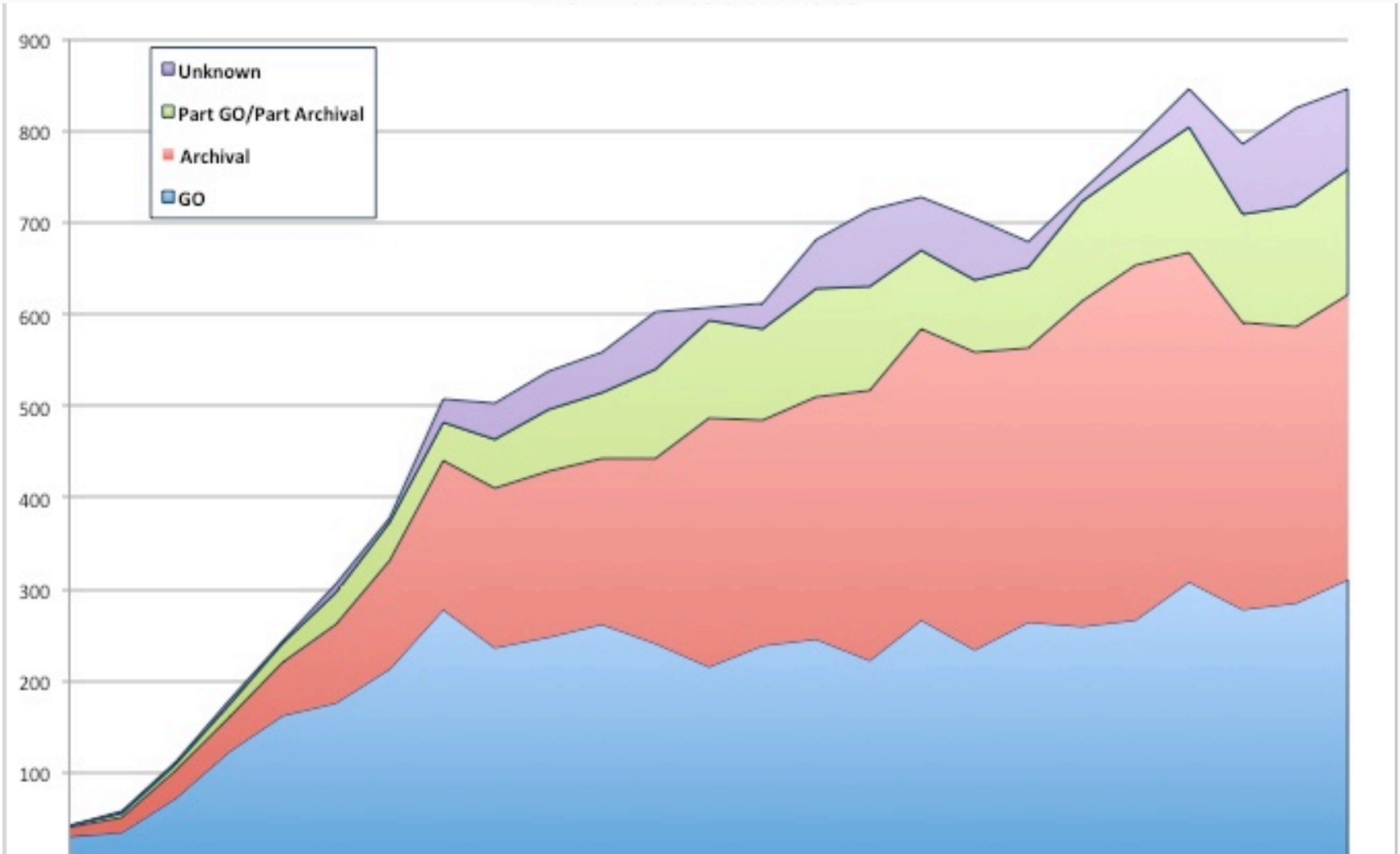
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1			SWIFT	UVOT		UVM2	UV	M107	
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3			SWIFT	UVOT		UWV2	UV, OPTICAL	M107	
4			SWIFT	UVOT		UWV2	UV, OPTICAL	M107	
5			SWIFT	UVOT		UVM2	UV	M107	
6			SWIFT	UVOT		U	OPTICAL	NGC6171	
7			SWIFT	UVOT		U	OPTICAL	NGC6171	

- Primary archive and distribution center for HST (& others) data
- Data is proprietary for one year (or less) after observations; then open to anyone to retrieve
- 670 TB held
- 230+ TB distributed 2015

Why do this?

- Publications are one of the few tangible products of scientific inquiry
- Help shape observing policies
- Resource for discovery
- Astro-sociology : what is being studied? What are the hottest topics for your telescope?

Archive is valuable



DOI Portal

https://mastdev.stsci.edu/portal_doi/Mashup/Clients/DOI/DOIPortal.html

This version of the Portal is for the creation of DOIs. To download data, use the [Discovery Portal](#).

Search by... and enter target:
 Object name or position: frontier fields Search

anonymous
 Login...
 Account Info...

Upload Target List My DOI Basket: 0 observations User Manual/Help | Leave Feedback | About This Site

Help Page MAST: M87

Displaying 2166 of 2280 Total Rows MESSIER 087, radius: 0.06917°

Print Table Download Data

Footprints: All

Filters

Clear Filters Edit Filters... Help...

Keyword/Text Filter
 Filter All Columns

Product Type

Name	Quantity
<input type="checkbox"/> image	(1977 of 2054)
<input type="checkbox"/> spectrum	(189 of 226)

Mission

Name	Quantity
<input checked="" type="checkbox"/> HST	(2166 of 2166)
<input type="checkbox"/> SWIFT	(0 of 67)
<input type="checkbox"/> GALEX	(0 of 24)
<input type="checkbox"/> IUE	(0 of 13)
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Instrument

Name	Quantity
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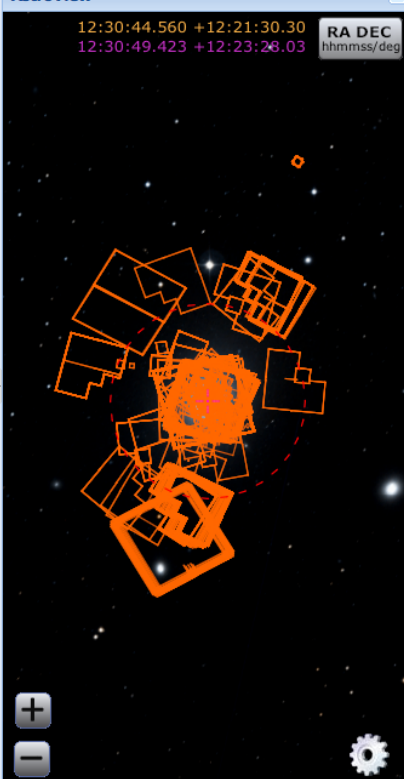
List of Observations

Edit Columns... Table Display: All

	Actions	Preview	Cutout	Mission	Instrument	Project	Filters	Waveband	Ta
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AstroView

12:30:44.560 +12:21:30.30
 12:30:49.423 +12:23:28.03 RA DEC
 hhmmss/deg



Astrobib

- Google discussion group for curators of telescope bibliographies.
- Developed a best practices document for the IAU.
- wink@head.cfa.harvard.edu to join.

Observatory bibliographies are curated

- ✧ Still much time and effort to verify metadata
- ✧ Text mining alone not reliable yet
- ✧ Workflow ensures quality content

Observatory bibliographies provide valuable insights

- ✧ Large range of parameters
- ✧ Statistics, reports & visualizations
- ✧ Tool to understand publishing trends

Astronomy is a good test bed

- ✧ Rather self-contained discipline
- ✧ Data-driven science
- ✧ Inspire development of new features

Questions?

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