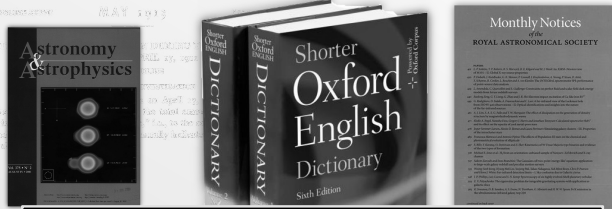


# Scientific Writing 6951

THE  
ASTROPHYSICAL JOURNAL  
AN INTERNATIONAL JOURNAL OF SPECTROSCOPY  
AND ASTROPHYSICAL PHYSICS

Wednesdays 10-12 Room 0.008



<http://www.astro.uni-bonn.de/~izzard/writing.html>

Scientific Writing



# Previously on Scientific Writing...

- Style



Scientific Writing



# Citation, Ethics, Plagiarism

- Citation

- Why, when and how to cite
- LaTeX and BibTeX
- ADS
- Dos and don'ts

- Ethics and Plagiarism

- Reading:

*Eloquent Science*

Chapters 12 and 15

[citation needed]

Your right to know the Authenticity!



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# Why bother citing?

- Literature review (in your Introduction)
- Describe development of the field
- Distinguish your work from others
- Credit previously published material
- Critique work of others
- Convince others you are not ignorant!
- Direct quotation  
(rare in articles, common in e.g. proposals)
- Avoid fights at conferences!



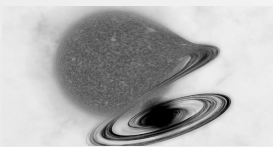
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# Why cite? (2)

- To defend your ideas based on those of others

Most barium stars with  $P < 500$  days are in circular orbits as predicted by tidal circularisation theory. Most of the rest of the barium stars have periods between 500 and  $10^4$  days.



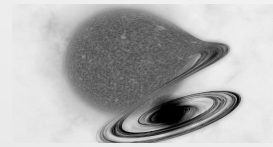
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# Why cite? (2)

- To defend your ideas based on those of others

Most barium stars with  $P < 500$  days are in circular orbits as predicted by tidal circularisation theory (e.g. Zahn 1977, 1989). Most of the rest of the barium stars have periods between 500 and  $10^4$  days (Jorissen et al. 1998).



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## Why cite? (3)

- You want to keep your job as Germany's *Defence Minister*?



## Citation systems

- **Author – year**

We employ the stellar code of **Izzard (2015)**.

We model stars with an approximate stellar evolution code (**Izzard 2015**).

**Izzard (2015)** describes our stellar evolution code.

**Easy to read/edit**  
**Flexible sentence structure**

### References

Izzard R.G. 2015, *Made Up Astronomy*, vol. **42**, 69

## Citation systems

- **Numbered citations**

~~We employ the stellar code of Izzard (2011).~~

We model stars with an approximate stellar evolution code<sup>1</sup>.

~~Izzard (2011) describe our stellar evolution code.~~

**Shorter – easier to read?**  
**Rigid sentence structure**

### References

1. Izzard R.G. 2015, *Made Up Astronomy*, vol. **42**, 69

## Sentence structure

- Citations at the **end** expect where ambiguous

Most barium stars with  $P < 500$  days are in circular orbits as predicted by tidal circularisation theory (Zahn 1977, 1989, Jorissen et al. 1998).

Most barium stars with  $P < 500$  days are in circular orbits (Jorissen et al. 1998) as predicted by tidal circularisation theory (Zahn 1977, 1989).

- Cite in **chronological** order
- First time: if only three authors cite **in full**

## Et tu syntax

- et al. = *et alia* “and others”

. is required (is *Al* the author?)

, after is required in *American* English

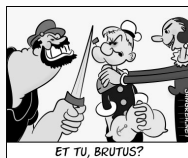
Izzard et al. (2011) show ...

- e.g. = *exempli gratia* “for example”

. and . are required

, after in *American*

Previous results on the subject are nonsense (e.g. Izzard 2011).



## Et tu syntax

- **Personal communication**

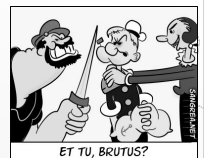
For an **unpublished** or **informal** citation, not an opinion or obvious fact! (Perhaps supplement with information in Acknowledgements)

- Page numbers: for citing **part of** a book

- Abbreviations:

Izzard et al. (2011, hereafter **I11**) show ...

... cf. **acronyms** ...



## Tu et syntax



- Footnotes: **no no no no no!**<sup>1</sup>
- **Initials:** *J. Smith (2010) and D. Smith (2010)*
- **Year?**  
Smith (2010) showed... Smith showed...  
Beware **ambiguity!**
- “See” ? Cut it – means the same!  
The stars blew up (**see** Izzard 2011).  
The stars blew up (Izzard 2011).

## Tu et syntax



- *The paper of* Smith (2011) shows...  
or, better, just:  
Smith (2011) shows ...
- Ditto for superfluous forms:  
*The* Smith (2011) *article* shows...  
*The article of* Smith (2011) shows...  
*In his paper,* Smith (2011) shows...

## Direct Quotations “ ”

- Rarely directly quote sources but sometimes necessary (e.g. *review articles*)
- Interpret the quotation, context essential
- **Copyright?** ©
- You **can** edit the quotation  
(... [sic] *italics for emphasis* etc.)
- Take care with **images** and **tables**  
(Best to not edit an image or table!)

## What to cite: what not to cite

- **Peer-reviewed** journal articles and results presented therein
- Review articles : try to cite **original** sources
- **Books:** sometimes, give pages/edition
- “**Grey**” sources: PhD theses, textbooks, biographies, conference proceedings, newspapers, **Wikipedia**, “cult” articles ... **beware** the world wide web (**URLs** change!)  
(Check journal policy!)
- **Self-citation** is a plague!



## Citations with LaTeX/BibTeX

- <http://www.bibtex.org/>
- Combined with LaTeX this **automates** the construction of your reference list.
- Use **Natbib** package
- Cite commands:  
`\citep` (Smith et al. 2011)  
`\citet` Smith et al. (2011)
- Store your **BibTeX** references (**ADS!**) in a file
- Use **LyX** or **TeXshop** or similar software



## What is ADS?

- [http://esoads.eso.org/abstract\\_service.html](http://esoads.eso.org/abstract_service.html)
- The SAO/NASA Astrophysics Data System (**ADS**) is a **Digital Library portal for researchers in Astronomy and Physics**, operated by the Smithsonian Astrophysical Observatory (SAO) under a **NASA** grant.
- The **ADS** maintains three bibliographic databases containing 11,244,794 records (as of 5<sup>th</sup> January 2015, [adswww.harvard.edu/ads\\_abstracts.html](http://adswww.harvard.edu/ads_abstracts.html)):  
Astronomy and Astrophysics, Physics, and **arXiv** e-prints.



# How to use ADS

Sign on

SAO/NASA ADS Astronomy Query Form for Tue Nov 22 10:51:48 2011

[Sitemap](#) [What's New](#) [Feedback](#) [Basic Search](#) [Preferences](#) [FAQ](#) [HELP](#)

Check out ADS Labs!

[Send Query](#) [Return Query Form](#) [Store Default Form](#) [Clear](#)  
Databases to query:  Astronomy  Physics  arXiv e-prints

Authors: (Last, First M, one per line)  SIMBAD  NED  ADS Objects  
 Exact name matching  Object name/position search  
 Require author for selection  Require object for selection  
 (  OR  AND  simple logic ) (Combine with:  OR  AND)

Publication Date between  and   
(MM) (YYYY) (MM) (YYYY)

Enter Title Words   
(Combine with:  OR  AND  simple logic  boolean logic)  Require title for selection

Enter Abstract Words/Keywords   
(Combine with:  OR  AND  simple logic  boolean logic)  Require text for selection

Under it

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[Send Query](#) [Return Query Form](#) [Store Default Form](#)

Databases to query:  Astronomy  Physics

Authors: (Last, First M, one per line)  SIMBAD  Object name  
 Exact name matching  Require  
 Require author for selection  Require  
 (  OR  AND  simple logic ) (Combine

Publication Date between  and   
(MM) (YYYY)

Enter Title Words   Require t

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[Send Query](#) [Return Query Form](#) [Store Default Form](#) [Clear](#)

Databases to query:  Astronomy  Physics  arXiv e-prints

Authors: (Last, First M, one per line)  SIMBAD  NED  ADS Objects  
 Exact name matching  Object name/position search  
 Require author for selection  Require object for selection  
 (  OR  AND  simple logic ) (Combine with:  OR  AND)

Publication Date between  1904 and  1906  
(MM) (YYYY) (MM) (YYYY)

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## Energie

4	<a href="#">1906AnP...325..199E</a>	1.000	00/1906	E E	R C	U
	Einstein, A.					
	Zur Theorie der Lichterzeugung und Lichtabsorption					
5	<a href="#">1906AnP...324..371E</a>	1.000	00/1906	E E	C	U
	Einstein, A.					
	Zur Theorie der Brownschen Bewegung					
6	<a href="#">1906AnP...324..289E</a>	1.000	00/1906	E E	C	U
	Einstein, A.					
	Eine neue Bestimmung der Moleküldimensionen					
7	<a href="#">1905AnP...323..639E</a>	1.000	00/1905	E E	R C	U
	Einstein, A.					
	Ist die Trägheit eines Körpers von seinem Energieinhalt abhängig?					
8	<a href="#">1905AnP...322..891E</a>	1.000	00/1905	E E	C	U
	Einstein, A.					
	Zur Elektrodynamik bewegter Körper					
9	<a href="#">1905AnP...322..549E</a>	1.000	00/1905	E E	R C	U
	Einstein, A.					
	Über die von der molekularkinetischen Theorie der Wärme geforderte Bewegung von in ruhenden Flüssigkeiten suspendierten Teilchen					
10	<a href="#">1905AnP...322..132E</a>	1.000	00/1905	E E	C	U
	Einstein, A.					
	Über einen die Erzeugung und Verwandlung des Lichtes betreffenden heuristischen Gesichtspunkt					

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## SAO/NASA ADS Astronomy Abstract Service

- Find Similar Abstracts (with default settings below)
- Electronic Refereed Journal Article (HTML)
- Full Refereed Journal Article (PDF/Postscript)
- References in the article
- Citations to the Article (76) (Citation History)
- Refereed Citations to the Article
- Also-Read Articles (Reads History)

### Translate This Page

Title: Ist die Trägheit eines Körpers von seinem Energieinhalt abhängig?  
 Authors: Einstein, A.  
 Publication: Annalen der Physik, vol. 323, Issue 13, pp.639-641 (AnP Homepage)  
 Publication Date: 00/1905  
 Origin: WILEY  
 Language: German  
 DOI: 10.1002/andp.19053231314  
 Bibliographic Code: 1905AnP...323..639E

### Abstract

Not Available

Bibtex entry for this abstract Preferred format for this abstract (see Preferences)

[Add this article to private library](#) [Remove this article from private library](#)

Scientific

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## SAO/NASA Astrophysics Data System (ADS)

### Citations for 1905AnP...323..639E from the ADS Databases

[Go to bottom of page](#)

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

Selected and retrieved 76 abstracts. (Citation History)

Sort options

#	Bibcode	Cites	Date	List of Links
Authors	Title	Access Control	Help	
1	<a href="#">2011JHEP...50..2961D</a>	1.000	10/2011	A E B
	Darvas, Gyorgy			
	The Isotopic Field Charge Spin Assumption			
2	<a href="#">2011AnPhy.326..1972F</a>	1.000	08/2011	A E B U
	Fry, J. L.; Musielak, Z. E.; Chang, Trei-Wen			
	Relativistic wave and particle mechanics formulated without classical mass			
3	<a href="#">2011arXiv1107.2286K</a>	1.000	07/2011	A X B U
	Kiessling, Michael K. -H.			
	On the motion of point defects in relativistic fields			
4	<a href="#">2011PhyU...54..371M</a>	1.000	04/2011	A E B
	Morozov, Valerii B.			
	On the question of the electromagnetic momentum of a charged body			
5	<a href="#">2011arXiv1104.4414D</a>	1.000	04/2011	A X B C U
	Durkee, Mark			
	New approaches to higher-dimensional general relativity			
6	<a href="#">2011Phys...24..308L</a>	1.000	00/2011	E B U
	Liu, Daqing; Li, Xinghua;			
	A covering theory of special relativity			

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SAO/NASA Astrophysics Data System (ADS)

References for 1905AnP...323..639E from the ADS Database

The Reference database in the ADS is NOT complete. Please keep this in mind when using the [ADS Reference lists](#).

Selected and retrieved 1 abstract. Total references: 1


# Bibcode	Cites	Date	Title	List of Links	Access Control	Help
1 <input type="checkbox"/> 1905AnP...323..639E	1,000	00/1905	E E		C	U
		Einstein, A. Zur Elektrodynamik bewegter Körper				

Retrieve the above record in other formats

Return

Custom format:

Email results to:

Scientific Writing 


Query Results from the ADS Database

Retrieved 1 abstracts, starting with number 1. Total number selected: 1.

```
@ARTICLE{1905AnP...323..639E,
  author = {{Einstein}, A.},
  title = "{Ist die Tr{a}gheit eines K{e}rpers von seinem Energieinhalt abh{a}ngig?",
  journal = {Annalen der Physik},
  year = 1905,
  volume = 323,
  pages = {639-641},
  doi = {10.1002/andp.19053231314},
  adsurl = {http://esoads.eso.org/abs/1905AnP...323..639E},
  adsnote = {Provided by the SAO/NASA Astrophysics Data System}
}
```

**BibTeX format!**

Copy-paste this into YOUR BibTeX file :  
Zero opportunity for error!  
(Also no excuses .)

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## Journal Year/Volume/Page

SAO/NASA ADS Astronomy Abstract Service Journal/Volume/Page Query Form


This page allows you to find articles from journal references by year, journal, volume, and/or page. Each of the fields is optional. The query will return all references that match the input parameters.

Journal Name/Code:


Year:  Volume:  Page:


Retrieve  abstracts starting with number

The entries in these fields can contain wildcard characters (?). For instance 2??1 in the page field finds pages 2001, 2011, 2101, etc. The Journal Codes are available in the [List of Bibliographic Code Abbreviations](#). Each field is optional. If any field is not specified, all matching references will be returned.


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## ADS help pages

- There are many more features:
- **Targetted (filtered) emails** 
- **Title/keyword searches**
- Links to data (CDS) and SIMBAD
- Help manual:  
[http://esoads.eso.org/abs\\_doc/help\\_pages/adshelp.pdf](http://esoads.eso.org/abs_doc/help_pages/adshelp.pdf)
- Online:  
[http://esoads.eso.org/abs\\_doc/help\\_pages/](http://esoads.eso.org/abs_doc/help_pages/)


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## Wikipedia and The Web

- Great tools... but they are in the "grey" area 
- Wikipedia usually has a **References** section
- Cite the **original** source of the information!

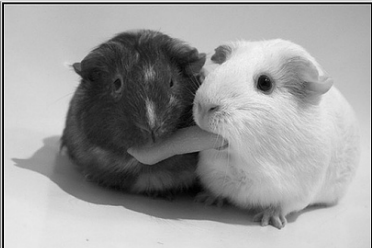
References [edit]


1. <sup>#</sup> <sup>#</sup> <sup>p</sup> "Should Germany Help Bail Out GM?" *Time*. 14 March 2009. Retrieved 7 May 2010.
2. <sup>#</sup> Dr. Karl-Theodor Freiherr zu Guttenberg – short biography at the website of the German defence ministry (English)
3. <sup>#</sup> Entry <sup>#</sup> at WW-Person <sup>#</sup>, the WWW Data base of European nobility
4. <sup>#</sup> Seibt, Gustav. "Warum Guttenberg beliebtester Politiker ist". *Süddeutsche Zeitung*. Retrieved 2011-02-18.
5. <sup>#</sup> <sup>#</sup> "Beliebteste Politiker: Guttenberg zieht an Merkel vorbei" (in German). *Frankfurter Rundschau*. 2009-07-24. Retrieved 2011-02-18.
6. <sup>#</sup> <sup>#</sup> <sup>#</sup> "Guttenberg bediente sich bei sechs Bundestags-Experten" (in German). *Süddeutsche Zeitung*. 2011-02-24. Retrieved 2011-08-18.
115. <sup>#</sup> "Germany's Guttenberg Visits Afghanistan, Meets Troops, Karzai" *Bloomberg*. 2009-11-12. Retrieved 2011-08-13.
116. <sup>#</sup> "Germany's Guttenberg Visits Afghanistan Amid Airstrike Fallout" *Bloomberg*. 2009-12-11. Retrieved 2011-08-13.
117. <sup>#</sup> "Guttenberg in der Gefechtszone" (in German). *Spiegel Online*. 2010-08-29. Retrieved 2011-08-13.
118. <sup>#</sup> "Guttenberg trifft seine Soldaten an der Front" (in German). *Welt Online*. 2010-11-04. Retrieved 2011-08-13.
119. <sup>#</sup> (in German) *Guttenberg besucht Kampfgebiet* (Television production). n-tv. 2010-08-30. Retrieved 2011-08-13.
120. <sup>#</sup> "German minister takes wife to Afghanistan". *euronews*. 2010-12-13. Retrieved 2011-08-13.

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## Ethics

- Do not steal, **cite**
- But also be good to your colleagues



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## Ethics: Definitions



- Fabrication: **making up data/results**
- Falsification: **manipulating results and presenting them inaccurately**
- Plagiarism: **stealing ideas/results without giving appropriate credit**

(does not include *disagreement/mistakes*)

National Science Foundation

<https://www.nsf.gov/oig/misconscieng.jsp>

See also *Eloquent Science* Ch.15, pp. 184

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## Plagiarism

*Where do you draw the line?*



1. Copying a paragraph verbatim from a source without any acknowledgement
2. Copying a paragraph and making small changes
3. Cutting and pasting a paragraph by using sentences of the original but omitting one or two
4. Composing a paragraph by taking short phrases from a number of sources and putting them together
5. Paraphrasing a paragraph by rewriting with substantial changes in language and organisation
6. Quoting a paragraph by placing it in block format with the source cited in text & bibliography

Based on *Academic Writing for Graduate Students* by Swales and Feak (University of Michigan, 1993)

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## Avoid stealing



- Write about **your** ideas
- Build on others' ideas with citations
- Never copy text verbatim  
(until putting the final text together)
- Always **quote and cite** together
- Separate **your contribution** from the cited source **e.g.**

*Smith et al. (2011) claim "the Universe is flat" but we find it is curved.*

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## Self-Plagiarism

- You can steal from yourself!
- **Duplicate publication**  
e.g. submitting an article to two journals at the same time!
- **Recycling** of your text: might be acceptable
- Copyright!
- <http://www.plagiarismtoday.com>

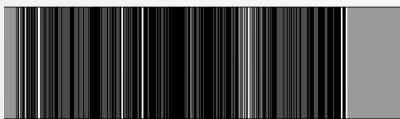


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## zu Googleberg

1218 Plagiatsfragmente aus 135 Quellen  
auf 371 von 393 Seiten (94.4%)  
in 10421 plagierten Zeilen (63.8%)



50 100 150 200 250 300 350 400 450

Stand: 03.04.2011 11:55 Uhr

- black = plagiarized from one source
- red = plagiarized from several sources
- white = no plagiarism found
- blue = table of contents and appendices

[http://de.guttenplag.wikia.com/wiki/GuttenPlag\\_Wiki/English](http://de.guttenplag.wikia.com/wiki/GuttenPlag_Wiki/English)

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**Assume  
you will  
be  
caught**

## A final word on citation

- Read the articles you cite . . .



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## Course (so far) Discussion

- Soon we will head into the *English Language* section: a bit dull but useful!
- How is it going for you?
- What more would you like to see?



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