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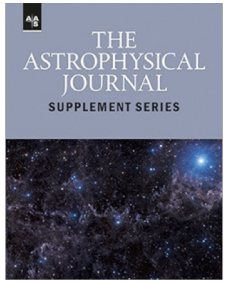

implementations and provocations from the asclepias project (2019)

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October 30, 2017 (v3) | Software | Open Access

View

astropy/photutils: v0.4

Larry Bradley; Brigitta Sipocz; Thomas Robitaille; Zé Vinícius; Erik Tollerud; Christoph Deil; Kyle Barbary; Hans Moritz Günther; Mihai Cara; Ivo Busko; Michael Droettboom; Azalee Bostroem; Erik Bray; Lars Andersen Bratholm; T. E. Pickering; Matt Craig; Geert Barentsen; Sergio Pascual; Simon Conseil; adonath; Johnny Greco; Wolfgang Kerzendorf; Miguel de Val-Borro; StuartLittlefair; Sara Ogaz; P. L. Lim; Leonardo Ferreira; Francesco D'Eugenio; Benjamin Alan Weaver;

See CHANGES.rst for release notes.

Uploaded on October 30, 2017

2 more version(s) exist for this record

Versions

Version v0.4 10.5281/zenodo.1039309	Oct 30, 2017
Version v0.3 10.5281/zenodo.164986	Nov 7, 2016
Version v0.2.2 10.5281/zenodo.155353	Sep 26, 2016

Cite all versions? You can cite all versions by using the DOI 10.5281/zenodo.596036. This DOI represents all versions, and will always resolve to the latest one. Read more.

what is asclepias?

- ➔ an infrastructure project funded by the Alfred P. Sloan Foundation to the AAS;
- ➔ a collaboration of ADS (indexing), Zenodo (archiving), and AAS (publishing);
- ➔ implementing the Force 11 software citation principles in these systems.

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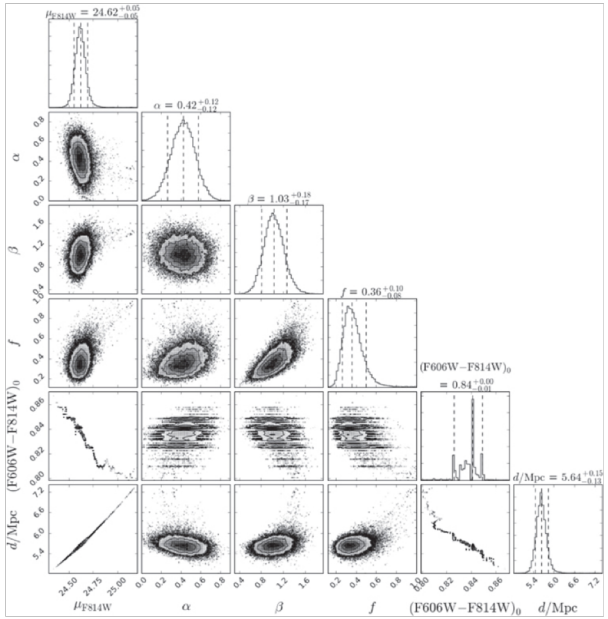

pieces and provocations

➔ ADS indexing (Edwin. Henneken)

➔ Zenodo Archiving (Lars Holm Nielsen)

➔ asclepias broker software;

➔ meet author research/bibliographic needs.

➔ TNG: citation aggregation (by version or identifier)!

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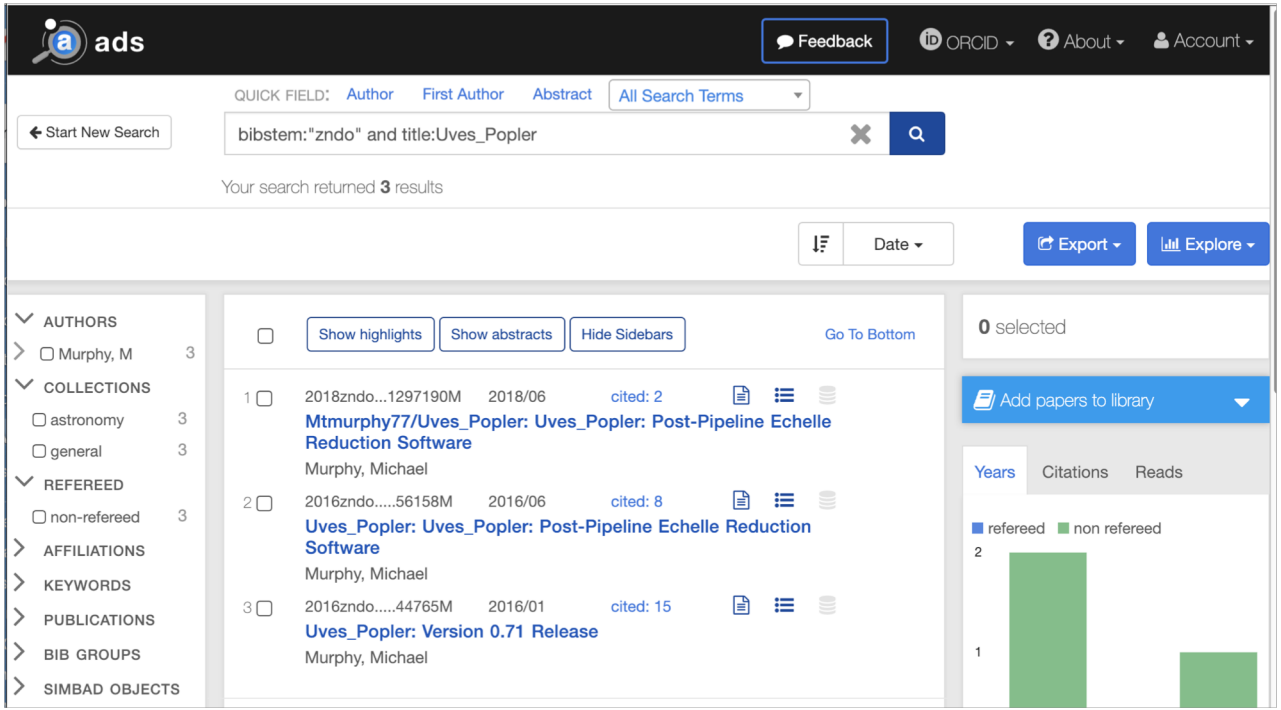

Status: ADS (more in next talk)

- ➔ discover and index DOI based software citations;
- ➔ emit software citation events for other services to ingest/use.

Status: Zenodo

- ➔ Adding citation counts from multiple sources (CrossRef, ADS);
- ➔ Pings a “broker” to listen for new citation events, rebuild metadata, and format new citations into UI.

There is a **newer version** of this record available.

January 15, 2016

Software | Open Access

UVES_popler: Version 0.71 release

Michael Murphy

This is version 0.71 of UVES_popler and the first GitHub "release" version which is tagged with a Digital Object Identifier (DOI) via Zenodo. Please use this DOI to cite this software in journal articles. For example, cite it as "Murphy M. T., 2016, Sdss_qsosel_bernet: First release. doi:10.5281/zenodo.[INSET 5-DIGIT DOI SUFFIX HERE].

Install UVES_popler using GitHub via https://github.com/MTMurphy77/UVES_popler For instructions on running UVES_popler, see http://astronomy.swin.edu.au/~mmurphy/UVES_popler

Preview

Files (412.8 kB)

Name	Size	
UVES_popler-v0.71.zip	412.8 kB	Preview Download

md5:3de066b8fc13d595fbcb3e835473acc6

Beta Citations 15

73 views | 0 downloads

See more details...

Available in GitHub

Publication date: January 15, 2016

DOI: DOI 10.5281/zenodo.44765

Related identifiers: Supplement to: https://github.com/MTMurphy77/UVES_popler/tree/v0.71

License (for files): Other (Open)

Versions

Version v1.00 Jun 24, 2018
10.5281/zenodo.1297190

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Asclepias Broker

docs passing | build passing | coverage 72% | license MIT

The Asclepias Broker is a web service that enables building and flexibly querying graphs of links between research outputs. It's aiming to address a couple of problems in the world of scholarly link communication, with a focus on Software citation:

Governance of the scholarly links data and metadata

Storage and curation of scholarly links is a problem that cannot be easily solved in a centralized fashion. In the same manner that specialized repositories exist to facilitate research output of different scientific fields, scholarly link tracking is a task performed best by a service that specializes in a specific scientific field.

Meaningful counting of software citations

Software projects (and other types of research) evolve over time, and these changes are tracked via the concept of versioning. The issue that rises is that citations to software projects end up being "diluted" throughout their versions, leading to inaccurate citation counting for the entire sotware project. Rolling-up these citations is critical to assess the impact a software project has in a scientific field.

Sharing of scholarly links across interested parties

Keeping track of the incoming scholarly links for a research artifact is a difficult task that usually repositories have to individually tackle by tapping into a multitude of external services, that expose their data in different ways. Receiving "live" notifications and having a consistent format and source for these events is crucial in order to reduce complexity and provide a comprehensive view.

These problems are addressed by providing an easy to setup service that:

- Can receive and store scholarly links through a REST API
- Exposes these scholarly links through a versatile REST API
- Can connect to a network of similar services and exchange links with them

v: latest

The code in this repository was funded by a grant from the Alfred P. Sloan Foundation to the American Astronomical Society (2016).

Status: Asclepias Broker

- ➔ Can receive and store scholarly links through a REST API;
- ➔ Exposes these scholarly links through a versatile REST API;
- ➔ Can connect to a network of similar services and exchange links with them;
- ➔ Builds/Rebuilds object metadata;
- ➔ Provide platform for citation aggregation/curation.

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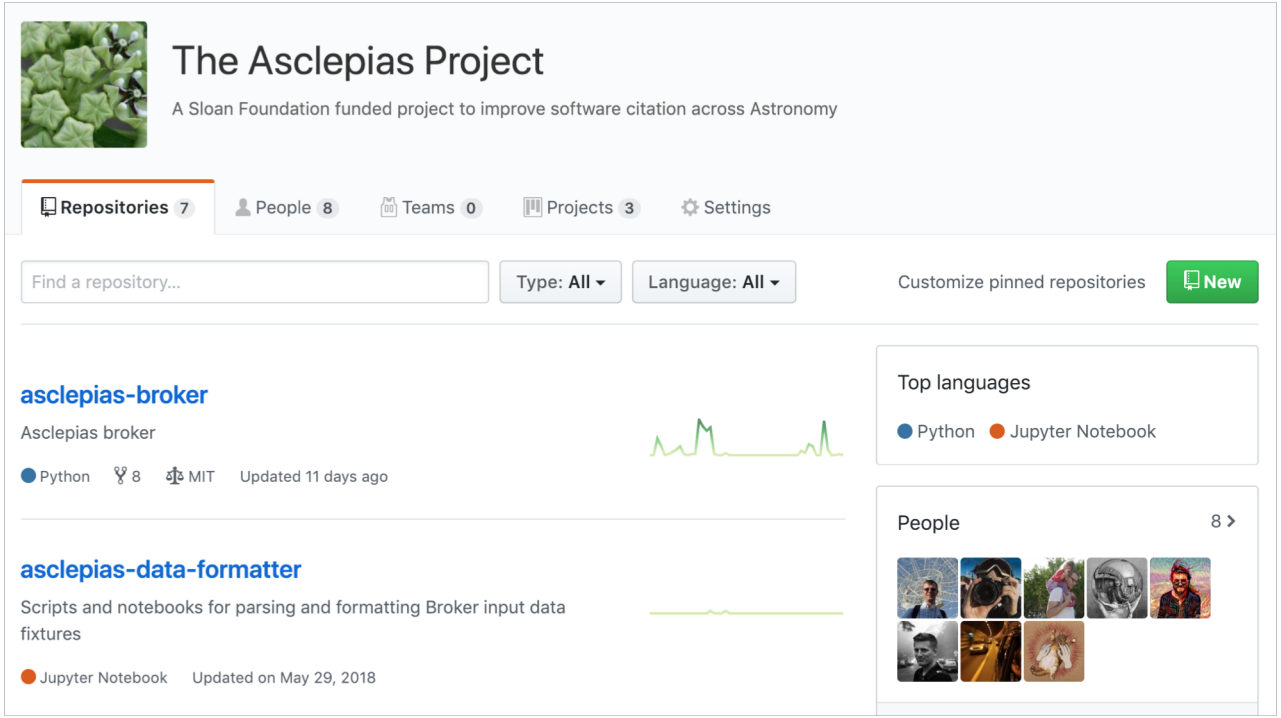
Asclepias Broker https://github.com/asclepias



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Status: AAS Publishing

- ➔ AAS BibTeX style file has supported “version” and “publisher” fields for ~18 months (**`aasjournal.bst`**)
- ➔ Use TeX tag **`\software{}`** to summarize and cite all the research code used for a paper;
- ➔ **Read the docs** and use the ASCL to find a developer’s **preferred citation** method (paper, code, ASCL, aota)

2.14.5 Citing 3rd party data repositories and software

The AAS Journals encourages authors to include data with their articles. In many cases this data can be included with the article, see Section 2.17, but sometimes the data is either too large or too complex to include. In these cases the AAS Journals recommend the author place their data in a trusted 3rd party repository that issues Digital Object Identifiers (DOIs) and properly cite the data in the bibliography. Likewise software and code in persistent repositories should also be linked to the main journal by DOI. The new policy statement on software can be found here.

The format for referencing digital objects in repositories is as follows:

```
{author*} {year}, {title}, {version^}, {publisher|howpublished~}, {prefi
x}:{identifier#}
```

To illustrate and document this format, we use a corresponding BibTeX entry taken and modified from a real example). Note that all data/software BibTeX entries should be of the `@misc` type:

```
@misc{lia_corrales_2015_15991,
author       = {Lia Corrales},
title        = {{dust: Calculate the intensity of dust scattering halos in
the X-ray}},
month        = mar,
year         = 2015,
doi          = {10.5281/zenodo.15991},
version      = {1.0},
publisher    = {Zenodo},
url          = {https://doi.org/10.5281/zenodo.15991}
}
```

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Observations...

1. **Policy shmolicy;**
2. People don't follow directions;
3. Automated workflows are automated;
4. If you give a mouse a cookie...

Guidelines for citation of software

Software can be cited in two ways:

- Citing the article describing the software (e.g. galpy: A python Library for Galactic Dynamics, Bovy 2015, *ApJ*, 216, 29);
- Citing a DOI for the software, for example, obtained via Zenodo or FigShare (e.g. Foreman-Mackey et al. 2014, corner.py, v0.1.1, Zenodo, doi:10.5281/zenodo.11020, as developed on GitHub)

Ideally, both forms of citation should be included. The former extends credit to the authors for their publication and tells the reader where to learn about the software. The latter gives the reader access to the exact version of the software used in the project. These forms of citation are intended to allow authors to properly reference their use of software; alongside these formal references, they may also want to include links to appropriate code repositories, such as GitHub, or indices, such as the Astrophysics Source Code Library.

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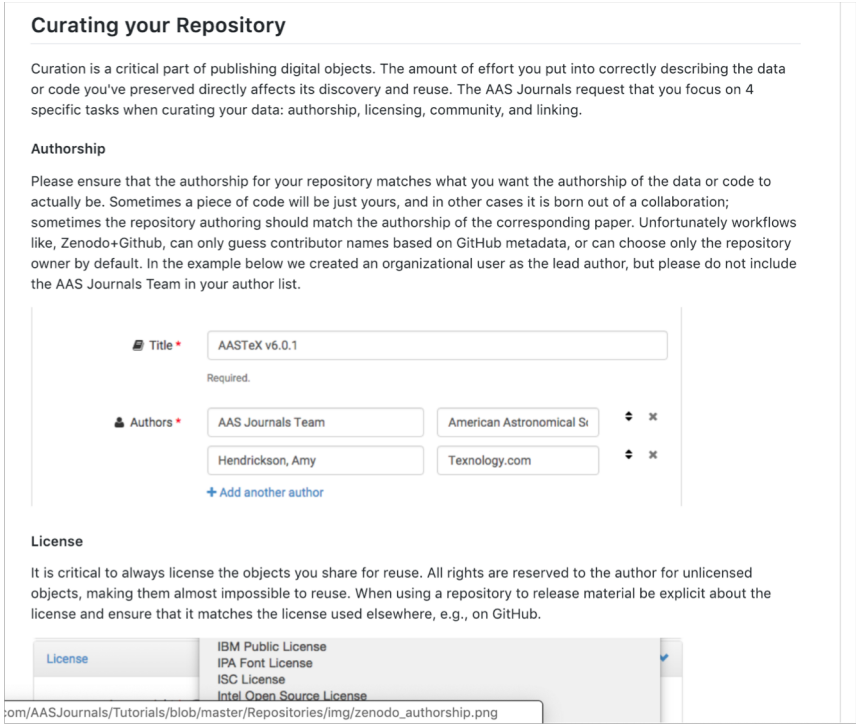

Curating your Repository

Curation is a critical part of publishing digital objects. The amount of effort you put into correctly describing the data or code you've preserved directly affects its discovery and reuse. The AAS Journals request that you focus on 4 specific tasks when curating your data: authorship, licensing, community, and linking.

Authorship

Please ensure that the authorship for your repository matches what you want the authorship of the data or code to actually be. Sometimes a piece of code will be just yours, and in other cases it is born out of a collaboration; sometimes the repository authoring should match the authorship of the corresponding paper. Unfortunately workflows like, Zenodo+Github, can only guess contributor names based on GitHub metadata, or can choose only the repository owner by default. In the example below we created an organizational user as the lead author, but please do not include the AAS Journals Team in your author list.

License

It is critical to always license the objects you share for reuse. All rights are reserved to the author for unlicensed objects, making them almost impossible to reuse. When using a repository to release material be explicit about the license and ensure that it matches the license used elsewhere, e.g., on GitHub.

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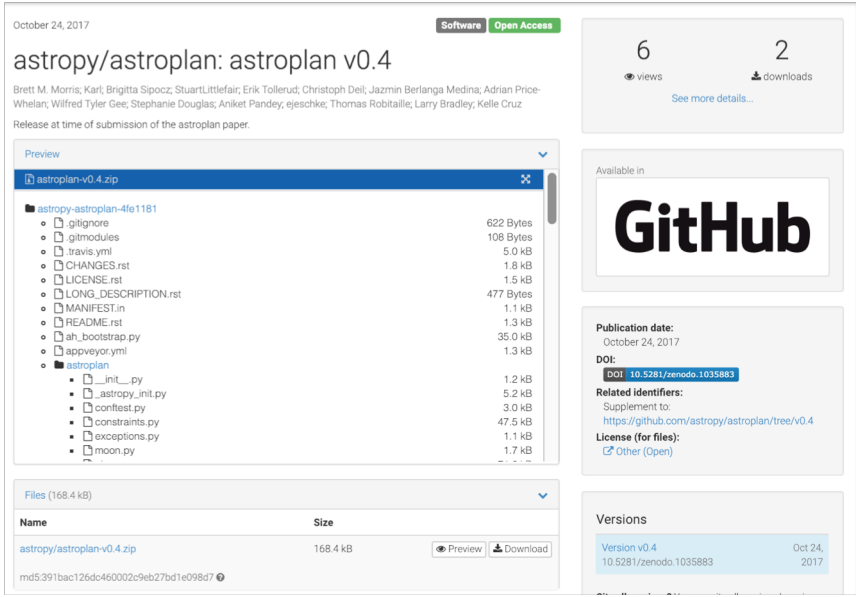

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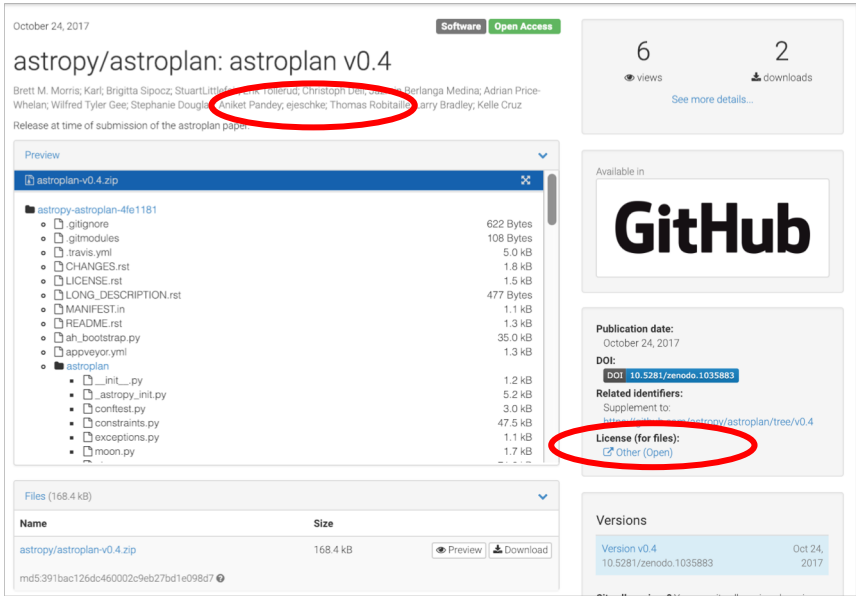

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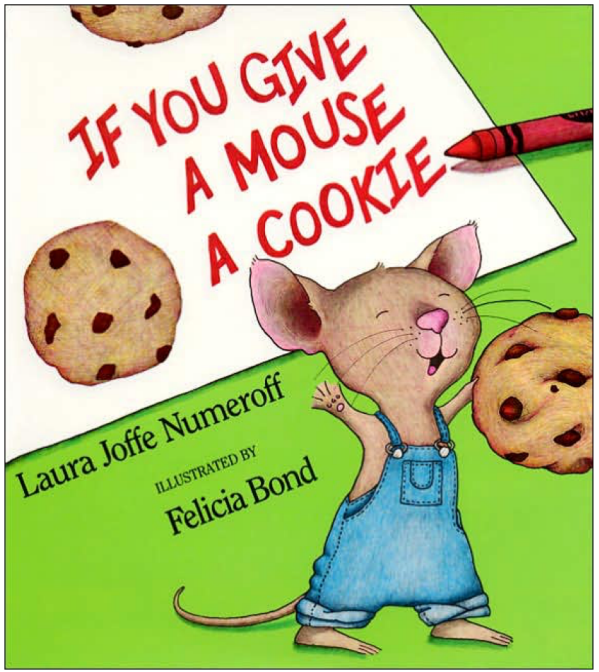

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Can you aggregate all the citations to my ApJ code paper and direct code citations and the ASCL citations, but remove the duplicates and don't include citations to Version 1 of the code because I didn't work on that version?[1]

1) This is totally made up.


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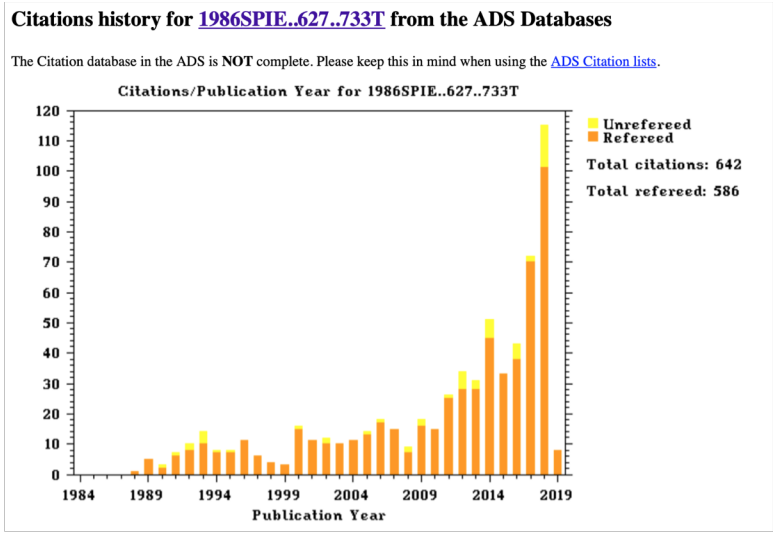
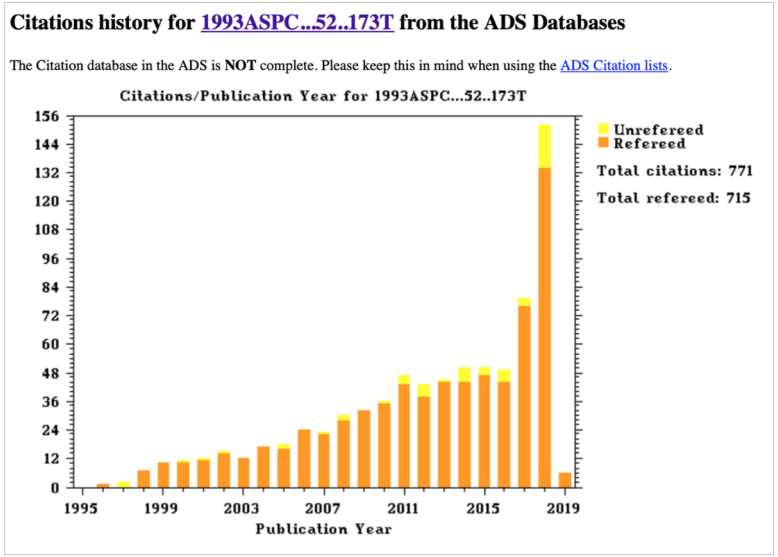
Can we fix uncited software mentions by suggesting code citations during data review at submission? We think these rapid increases in citations to these legacy codes are our fault.



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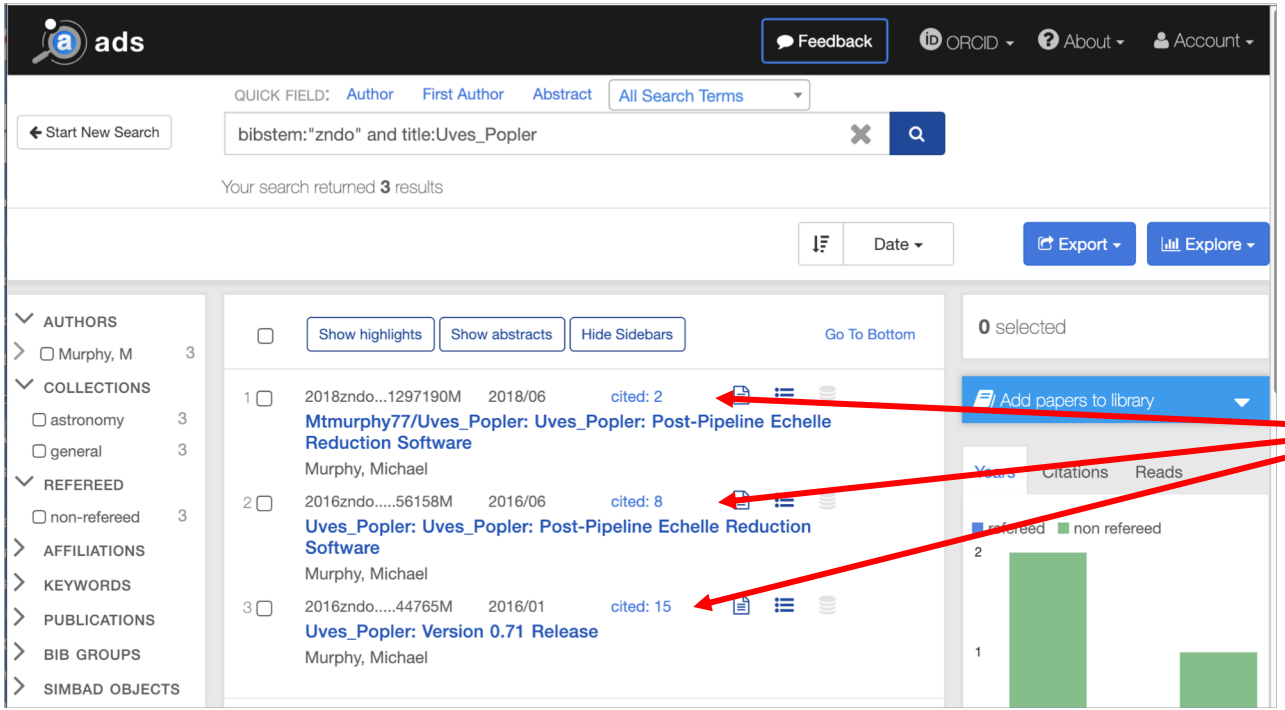

Status: ADS (more in next talk)

→ 3 versions each with individual citations (rates)

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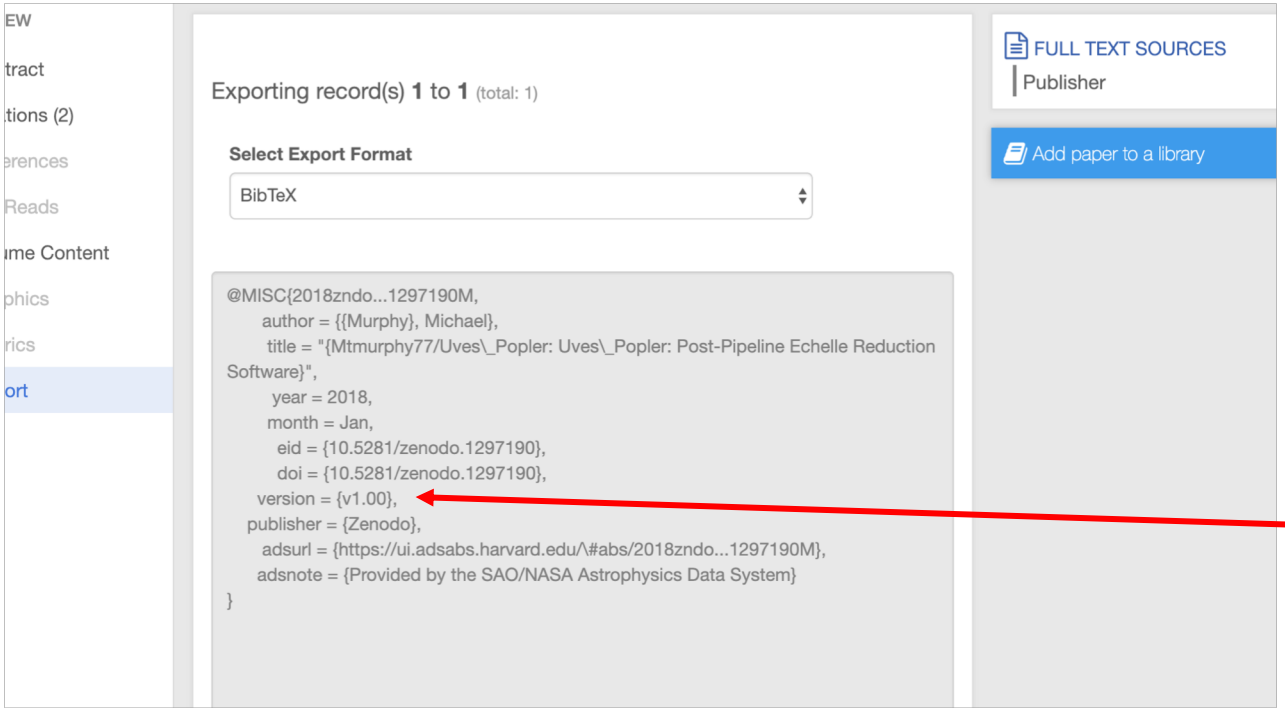

Status: ADS (more in next talk)

- ➔ 3 versions each with individual citations (rates)
- ➔ BibTeX output with version;


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AAS Publishing & Developers:

The Astrophysical Journal, 869:68 (8pp), 2018 December 10 https://doi.org/10.3847/1538-4357/aaee87

CrossMark

AUTOSPEC: Fast Automated Spectral Extraction Software for IFU Data Cubes

Alex Griffiths and Christopher J. Conselice
School of Physics and Astronomy, The University of Nottingham University Park, Nottingham, NG7 2RD, UK; alex.griffiths@nottingham.ac.uk
Received 2018 July 16; revised 2018 October 15; accepted 2018 November 1; published 2018 December 13

Abstract

With the ever-growing popularity of integral field unit (IFU) spectroscopy, countless observations are being performed over multiple object systems such as blank fields and galaxy clusters. With this, an increasing amount of time is being spent extracting one-dimensional object spectra from large three-dimensional data cubes. However, a great deal of information available within these data cubes is overlooked in favor of photometrically based spatial information. Here we present a novel yet simple approach of optimal source identification utilizing the wealth of information available within an IFU data cube, rather than relying on ancillary imaging. Through the application of these techniques, we show that we are able to obtain object spectra comparable to deep photometry-weighted extractions without the need for ancillary imaging. Further, implementing our custom-designed algorithms can improve the signal-to-noise ratio of extracted spectra and successfully deblend sources from nearby contaminants. This will be a critical tool for future IFU observations of blank and deep fields, especially over large areas where automation is necessary. We implement these techniques in the Python-based spectral extraction software, AUTOSPEC, which is available via GitHub at https://github.com/a-griffiths/AutoSpec and Zenodo at https://doi.org/10.5281/zenodo.1305848.

Key words: galaxies: distances and redshifts – methods: data analysis – techniques: imaging spectroscopy – techniques: spectroscopic

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galaxies, as well as extended lensing arcs. However, we have shown that its application is not limited to these types of observations.

We provide a simple-to-use tool for the spectral extraction of small or large catalogs of objects with minimized set-up and run time. While this software has been designed with MUSE observations in mind, it is applicable to any IFU data, provided it can be read by the MPDAF Python package. We make this software available under a BSD 3-Clause License via Zenodo (Griffiths 2018) and GitHub at https://github.com/a-griffiths/AutoSpec.

We thank the anonymous referee for the thorough review and helpful comments and suggestions, which significantly contributed to the improvement of the manuscript. We acknowledge the MPDAF team for providing a useful framework for our software, as well as their valuable assistance. This work was supported by the Science and Technology Facilities Council.

Facility: VLT:Yepun (MUSE).

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ORCID iDs

Alex Griffiths https://orcid.org/0000-0003-1880-3509
Christopher J. Conselice https://orcid.org/0000-0003-1949-7638

References

Bacon, R., Accardo, M., Adjali, L., et al. 2010, Proc. SPIE, 7735, 773508
Bacon, R., Conseil, S., Mary, D., et al. 2017, A&A, 608, A1
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Bertin, E., & Arnouts, S. 1996, A&AS, 117, 393
Bina, D., Pelló, R., Richard, J., et al. 2016, A&A, 590, A14
Bouché, N., Finley, H., Schroetter, I., et al. 2016, ApJ, 820, 121
Bundy, K., Bershady, M. A., Law, D. R., et al. 2015, ApJ, 798, 7
Ginsburg, A., & Mirocha, J. 2011, PySpecKit: Python Spectroscopic Toolkit, Astrophysics Source Code Library, ascl:1109.001
Griffiths, A. 2018, AutoSpec: Fast Automated Spectral Extraction Software for IFU Datacubes, Zenodo, doi:10.5281/zenodo.1305848
Griffiths, A., Conselice, C. J., Alpaslan, M., et al. 2018, MNRAS, 475, 2853
Herenz, E. C., Urrutia, T., Wisotzki, L., et al. 2017, A&A, 606, A12
Herenz, E. C., & Wisotzki, L. 2017, A&A, 602, A111
Hook, I. M., Jørgensen, I., Allington-Smith, J. R., et al. 2004, PASP, 116, 425
Horne, K. 1986, PASP, 98, 609
Karman, W., Caputi, K. I., Caminha, G. B., et al. 2017, A&A, 599, A28
Mahler, G., Richard, J., Clément, B., et al. 2018, MNRAS, 473, 663
Naylor, T. 1998, MNRAS, 296, 339

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References

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