Receiving Credit for Research Software

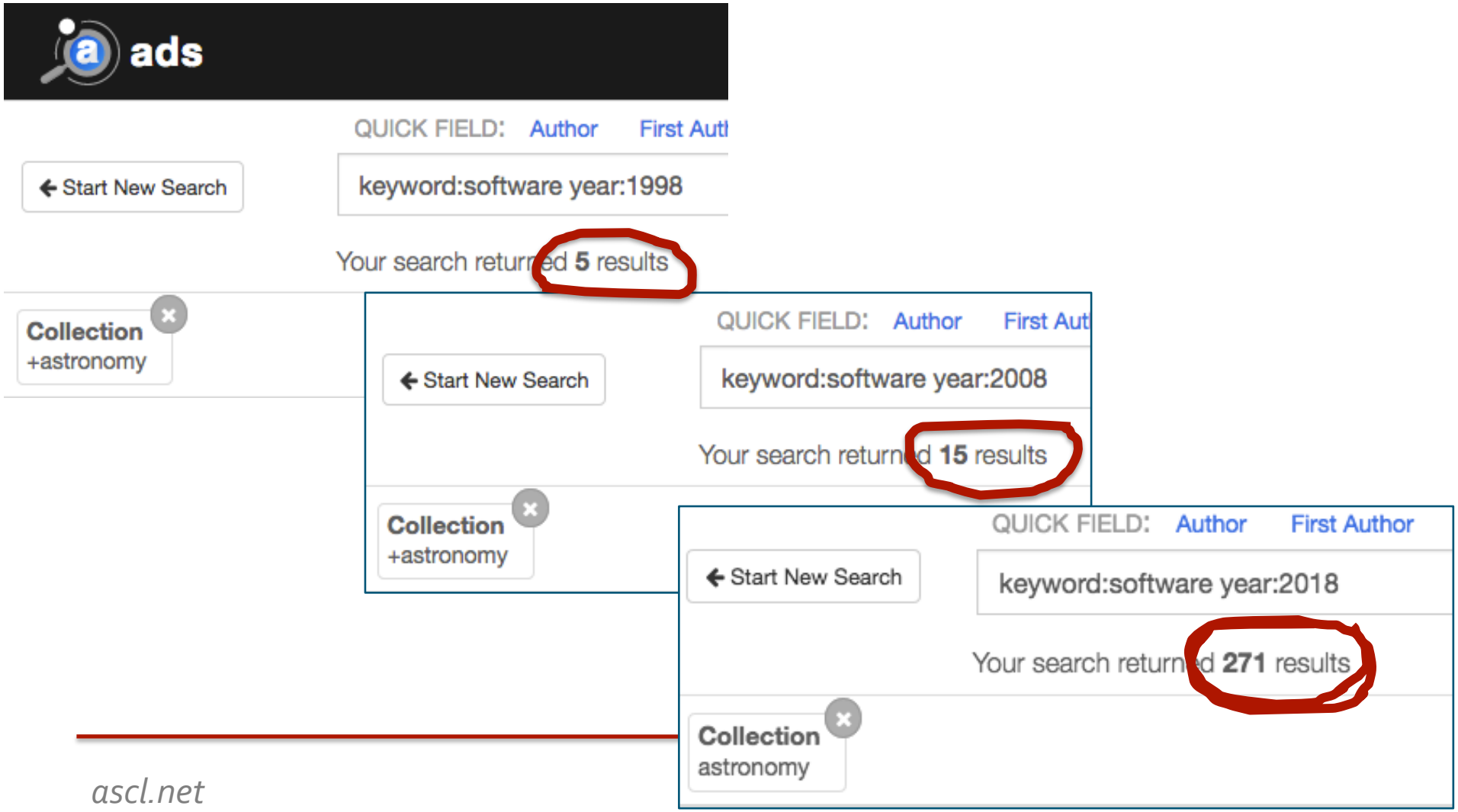
Alice Allen

Astrophysics Source Code Library (ASCL)/UMD

@owlice @asclnet aallen@ascl.net

Abstract

Though computational methods are widely used in many disciplines, those who author these methods have not always received credit for their work. This presentation will cover recent changes in astronomy, and indeed, in many other disciplines, that include new journals, policy changes for existing journals, community resources, changes to infrastructure, and availability of new workflows that make recognizing the contributions of software authors easier. This talk will include steps coders can take to increase the probability of having their software cited correctly and steps researchers can take to improve their articles by including citations for the computational methods that enabled their research.


ads
QUICK FIELD: Author First Auth
Start New Search
keyword:software year:1998
Your search returned 5 results
Collection
+astronomy
QUICK FIELD: Author First Aut
Start New Search
keyword:software year:2008
Your search returned 15 results
Collection
+astronomy
QUICK FIELD: Author First Author
Start New Search
keyword:software year:2018
Your search returned 271 results
Collection
astronomy

Software is the most used instrument in astronomy

New journals

JORS

Journal of Open Research Software

A&C

Astronomy and Computing

ComAC

Computational Astrophysics and Cosmology

SoftX

Software X

JOSS

Journal of Open Source Software

RNAAS

Research Notes of the AAS

Changes in existing journals

Encourage or require software citations

Allow software articles without research results

Encourage or require code release

Community resources

- More places to put software and information about software
- Indexers capture/track software citations
- Broader efforts cross disciplines and influence others

Even more ADS magic

Doctype field value *software*

Can be combined with other fields, such as *keyword*


GREATER RECOGNITION

1. Release your software

"… anything less than release of actual source code is an indefensible approach for any scientific results that depend on computation…"

Ince, Hatton, & Graham-Cumming, *The case for open computer programs,* Nature, v. 482, Feb. 23, 2012

…"a hidden coding error fueled a seven-year dispute between two of condensed matter's top theorists." *Physics Today, 22 Aug 2018*

…a change in a code researchers had not noticed led to incorrect results

M. Zorotovic, M. R. Schreiber and S. G. Parsons, A&A, Aug 2014

Lorena Barba
@LorenaABarba

The lesson here is not merely that a piece of research code had a bug that led to operating-system-dependent results, but that PUBLISHING THE CODE led to discovery of the problem vice.com/en_us/article/… #Reproducibility

1. Release your software
2. Assign a license
3. Specify citation method with codemeta.json or CITATION.cff

Citation methods

- Software itself via ASCL, JOSS, DOI from archiving service
- Article using or describing the code
- ~~GitHub, SourceForge, BitBucket repo URL~~ *NO!*
- ~~URL to personal institutional page~~ *NO!*
- ~~URLs in general~~ *NO!*

1. Release your software
2. Assign a license
3. Specify citation method with codemeta.json or CITATION.cff
4. Register your code with the ASCL

Benefits

- Unique identifier
- Listing in indexing services, including ADS, Web of Science, Google Scholar
- Trackable citation method
- Increased discoverability

How to register

Use handy online form

Email info to editor@ascl.net

Submit via codemeta.json file

1. Release your software
2. Assign a license
3. Specify citation method, preferably with codemeta.json or CITATION.cff
4. Register your code
5. Archive your code
6. Cite other people's codes well
7. Include a software section in articles

You can change the world!*

Links to the resources mentioned are available at:
http://ascl.net/wordpress/resources/receiving-credit-for-software/

* At least a small part of it, which is still cool!