The Role of the ADS in Software Discovery and Citation

Alberto Accomazzi
Edwin Henneken, Sergi Blanco Cuaresma
@aaccomazzi

AAS 231st Meeting - 1/11/2018

ADS Core Responsibilities

- Maintaining a comprehensive, timely and complete database of scholarly papers in Astronomy
- Tracking citations to scholarly papers
- Integrating in its database bibliographies and links to data products
- Providing discovery services and metrics to researchers, librarians, collaborators

ADS Core Responsibilities v1.1

- Maintaining a comprehensive, timely and complete database of scholarly papers in Astronomy
- Tracking citations to scholarly papers
- Integrating in its database bibliographies and links to data products
- Providing discovery services and metrics to researchers, librarians, collaborators

ADS Core Responsibilities v1.1

- Maintaining a comprehensive, timely and complete database of scholarly ~~papers~~ works in Astronomy
- Tracking citations to scholarly papers
- Integrating in its database bibliographies and links to data products
- Providing discovery services and metrics to researchers, librarians, collaborators

ADS Core Responsibilities v1.1

- Maintaining a comprehensive, timely and complete database of scholarly ~~papers~~ works in Astronomy
- Tracking citations to scholarly ~~papers~~ content
- Integrating in its database bibliographies and links to data products
- Providing discovery services and metrics to researchers, librarians, collaborators

ADS Core Responsibilities v1.1

- Maintaining a comprehensive, timely and complete database of scholarly ~~papers~~ works in Astronomy
- Tracking citations to scholarly ~~papers~~ content
- Integrating in its database bibliographies and links to data products and software
- Providing discovery services and metrics to researchers, librarians, collaborators

How ADS selects and ingests content

In order for some work to be considered for inclusion in ADS it must be:

- Scholarly in nature
- Related to Astronomy
- Published and (ideally) available online

How ADS selects and ingests content

In order for some work to be considered for inclusion in ADS it must be:

- Scholarly in nature
- Related to Astronomy
- Published and (ideally) available online

➔ **If you want a record for your software included in ADS, publish it in a known repository or register it in ASCL**

How ADS awards citations (“A cites B”)

- The citing work A is in ADS
- ADS has the the full-text or reference section of A available for analysis
- The reference to B has been successfully identified
- The cited work B is in ADS

How ADS awards citations (“A cites B”)

- The citing work A is in ADS
- ADS has the the full-text or reference section of A available for analysis
- The reference to B has been successfully identified
- The citing work B is in ADS

➔ **If you want your software citation to count, make sure it appears as a formal citation via a unique identifier**

“Software” publishing and citation in 1987

1987PASP...99..191S

PUBLICATIONS OF THE ASTRONOMICAL SOCIETY OF THE PACIFIC
99:191-222, March 1987

DAOPHOT: A COMPUTER PROGRAM FOR CROWDED-FIELD STELLAR PHOTOMETRY

PETER B. STETSON

Dominion Astrophysical Observatory, Herzberg Institute of Astrophysics
5071 West Saanich Road, Victoria, British Columbia V8X 4M6, Canada

Received 1986 October 13, revised 1986 December 5

ABSTRACT

The difficult art of stellar photometry in crowded fields is currently undergoing a surge of popularity, and a number of different computer programs for deriving photometric information from two-dimensional digital images are currently in use. This paper describes one such program, DAOPHOT, which was written and continues to be developed at the Dominion Astrophysical Observatory. Emphasis is placed on the various types of philosophical and technical complications which arise when accurate photometry is sought for blended stellar images, and on the mathematical algorithms with which DAOPHOT attempts to deal with these complications, rather than on details of the coding. Some ways in which DAOPHOT resembles or differs from other similar programs are mentioned, and a discussion is presented of known shortcomings of the current program as well as possibilities for future improvement.

Key words: data-handling techniques–photometry (general)

red images using the point-spread-function
gram DAOPHOT (Stetson 1987). Photometri
ions were made using observations of Landolt's

Stetson, P. 1987, *Pub. A.S.P.*, **99**, 191.

“Software” publishing and citation in 1987

1987PASP...99..191S

PUBLICATIONS OF THE ASTRONOMICAL SOCIETY OF THE PACIFIC
99:191-222, March 1987

DAOPHOT: A COMPUTER PROGRAM FOR CROWDED-FIELD STELLAR PHOTOMETRY

PETER B. STETSON

Dominion Astrophysical Observatory, Herzberg Institute of Astrophysics
5071 West Saanich Road, Victoria, British Columbia V8X 4M6, Canada

Received 1986 October 13, revised 1986 December 5

ABSTRACT

The difficult art of stellar photometry in crowded fields is currently undergoing a surge of popularity, and a number of different computer programs for deriving photometric information from two-dimensional digital images are currently in use. This paper describes one such program, DAOPHOT, which was written and continues to be developed at the Dominion Astrophysical Observatory. Emphasis is placed on the various types of philosophical and technical complications which arise when accurate photometry is sought for blended stellar images, and on the mathematical algorithms with which DAOPHOT attempts to deal with these complications, rather than on details of the coding. Some ways in which DAOPHOT resembles or differs from other similar programs are mentioned, and a discussion is presented of known shortcomings of the current program as well as possibilities for future improvement.

Key words: data-handling techniques–photometry (general)

red images using the point-spread-function
gram DAOPHOT (Stetson 1987). Photometri
ions were made using observations of Landolt's

Stetson, P. 1987, *Pub. A.S.P.*, **99**, 191.

Software “publishing” and citation in 1997

Home | What's New | FTP | FAQ | Docs | ADASS News | Help | Tips |
Contrib | X11IRAF | Tutorials | Search

The IRAF FTP archive is the main distribution point for all software and documentation. We also archive all traffic on the ADASS newsgroups and provide list

iraf.noao.edu

- README - Overview of network archive.
- NOTES - Log of all changes to the archive.
- /iraf - IRAF software and documentation

- FAQ - Frequently Asked Questions (text version)
- ORDERFORM - Order a taped distribution
- REGISTER - Register your site
- conf - ADASS Conference materials
- docs - Main documentation directory. The README file serves as a Table of Contents.
- extern-v212 - External packages for IRAF V2.12. The README file serves as a Table of Contents.
- extern-v211 - External packages for IRAF V2.11. The README file serves as a Table of Contents.
- misc - Miscellaneous software (e.g. SAOimage, cbind.c, etc)
- v212 - V2.12 distribution directory (all platforms). NEW
- v211 - V2.11 distribution directory (all platforms).
- v210 - V2.10 distribution directory (all platforms). Contains the system Buglog.
- v29 - V2.9 distribution directory (all platforms)
- v28 - V2.8 distribution directory (CONVEX only)
- x11iraf - XGterm, XImtool etc. Binaries, source, utilities. NEW

- /contrib - User contributed software, STSDAS/TABLES binaries, etc.
- /misc - Miscellaenous
- /util - Network archive utilities
- ls-lR.Z - Index to the files in the archive (compressed) ls-lR.gz - Index to the files in the archive (GNU compressed)
- ls-ltR.Z - Same, sorted by time

Archive file search pattern: ☑ **Substring?**

IRAF NOAO

Last updated: 16May2002

reduced using the standard routines in the IRAF echelle reduction guide (Wilmarth & Barnes 1994; Massey 1997). The remaining

Wilmarth D., Barnes J., 1994, A Users Guide to Reducing Echelle Spectra With IRAF, http://iraf.noao.edu/iraf/web/docs/spectra.html

Software “publishing” and citation in 1997

ANONYMOUS FTP ARCHIVE

Home | What's New | FTP | FAQ | Docs | ADASS News | Help | Tips |
Contrib | X11IRAF | Tutorials | Search

The IRAF FTP archive is the main distribution point for all software and documentation. We also archive all traffic on the ADASS newsgroups and provide list

iraf.noao.edu

- README - Overview of network archive.
- NOTES - Log of all changes to the archive.
- /iraf - IRAF software and documentation

- FAQ - Frequently Asked Questions (text version)
- ORDERFORM - Order a taped distribution
- REGISTER - Register your site
- conf - ADASS Conference materials
- docs - Main documentation directory. The README file serves as a Table of Contents.
- extern-v212 - External packages for IRAF V2.12. The README file serves as a Table of Contents.
- extern-v211 - External packages for IRAF V2.11. The README file serves as a Table of Contents.
- misc - Miscellaneous software (e.g. SAOimage, cbind.c, etc)
- v212 - V2.12 distribution directory (all platforms). NEW
- v211 - V2.11 distribution directory (all platforms).
- v210 - V2.10 distribution directory (all platforms). Contains the system Buglog.
- v29 - V2.9 distribution directory (all platforms)
- v28 - V2.8 distribution directory (CONVEX only)
- x11iraf - XGterm, XImtool etc. Binaries, source, utilities. NEW

- /contrib - User contributed software, STSDAS/TABLES binaries, etc.
- /misc - Miscellaenous
- /util - Network archive utilities
- ls-lR.Z - Index to the files in the archive (compressed) ls-lR.gz - Index to the files in the archive (GNU compressed)
- ls-ltR.Z - Same, sorted by time

Archive file search pattern: ☑ **Substring?**

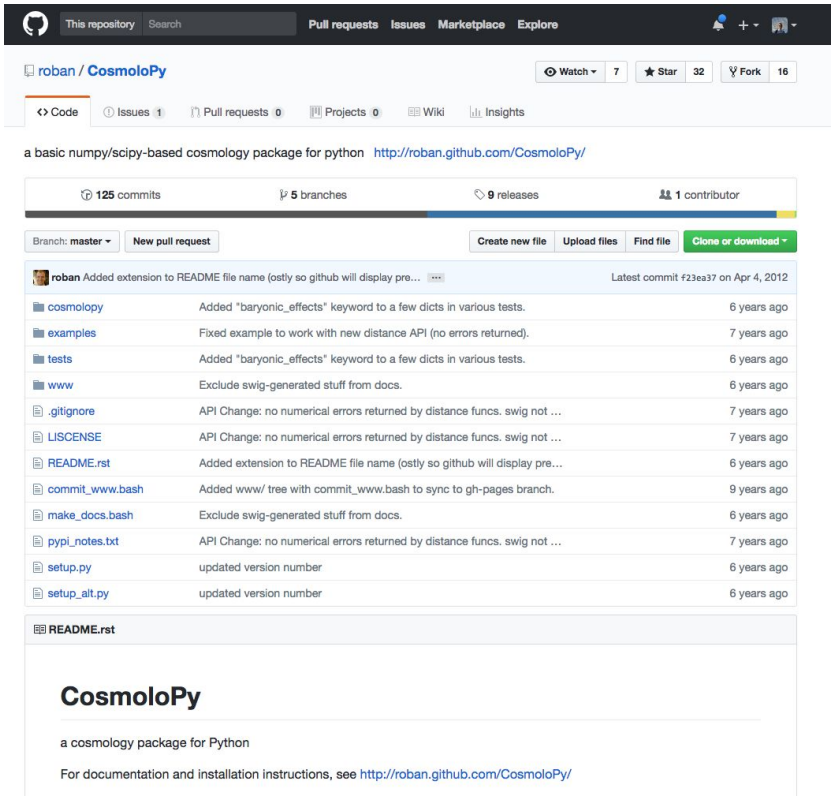
IRAF NOAO

Last updated: 16May2002

reduced using the standard routines in the IRAF echelle reduction guide (Wilmarth & Barnes 1994; Massey 1997). The remaining

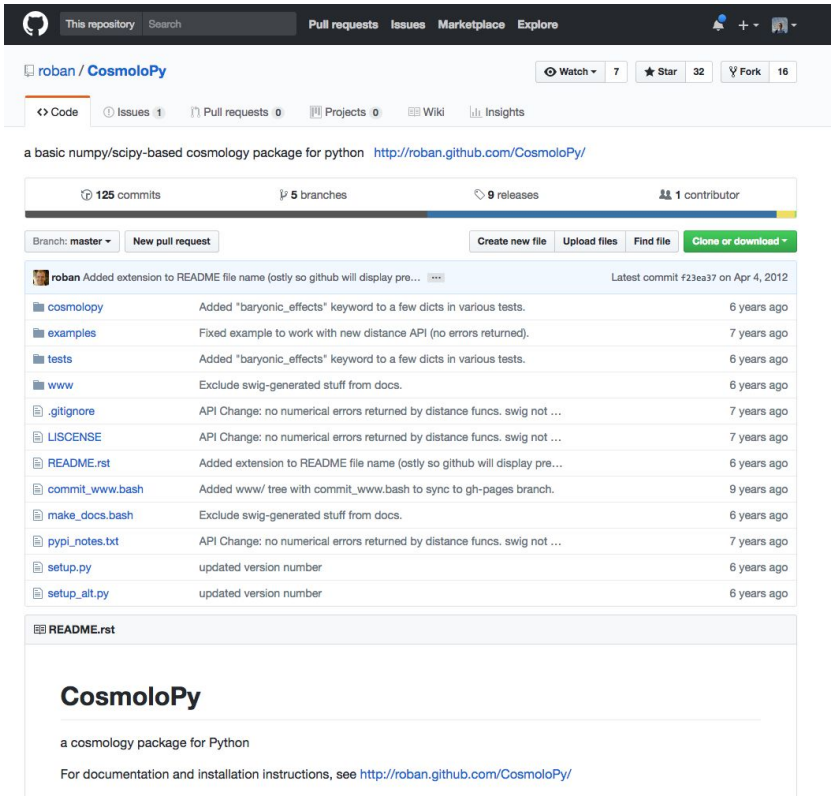
Wilmarth D., Barnes J., 1994, A Users Guide to Reducing Echelle Spectra With IRAF, http://iraf.noao.edu/iraf/web/docs/spectra.html

Software “publishing” and “citation” in 2010



[1] The full compendium of code and ancillary files needed to reproduce the present paper is available from the first author. Cosmologial calculations were made with the CosmoloPy package. The EnrichPy package encapsulates our enrichment model. These resources are available at `http://www.astro.phys.ethz.ch/kramer/`, `http://roban.github.com/CosmoloPy/`, and `http://roban.github.com/EnrichPy/`.

Software “publishing” and “citation” in 2010



[1] The full compendium of code and ancillary files needed to reproduce the present paper is available from the first author. Cosmologial calculations were made with the CosmoloPy package. The EnrichPy package encapsulates our enrichment model. These resources are available at
http://www.astro.phys.ethz.ch/kramer/,
http://roban.github.com/CosmoloPy/, and
http://roban.github.com/EnrichPy/.

Software “publishing” and citation in 2012

Starlink

The Starlink Project was a long running UK Project supporting astronomical data processing. It was shut down in 2005 but the Astronomy Centre until March 2015, and is now maintained by the East Asian Observatory. The code is open source.

Starlink News was last updated August 10th 2017.

Getting the Software

The Joint Astronomy Centre and East Asian Observatory have made a number of releases. The r
instructions are also provided.

**Please note that there was a leap second at the end of December 2016; data taken since th
(or 2016A, or a development rsync version) to reduce JCMT data taken from this point onw**

For a cutting edge version, you can rsync from the East Asian Observatory's build.

Citing the software

If you have used Starlink software in your research, please cite the software in your papers.

For the Starlink software package please use:

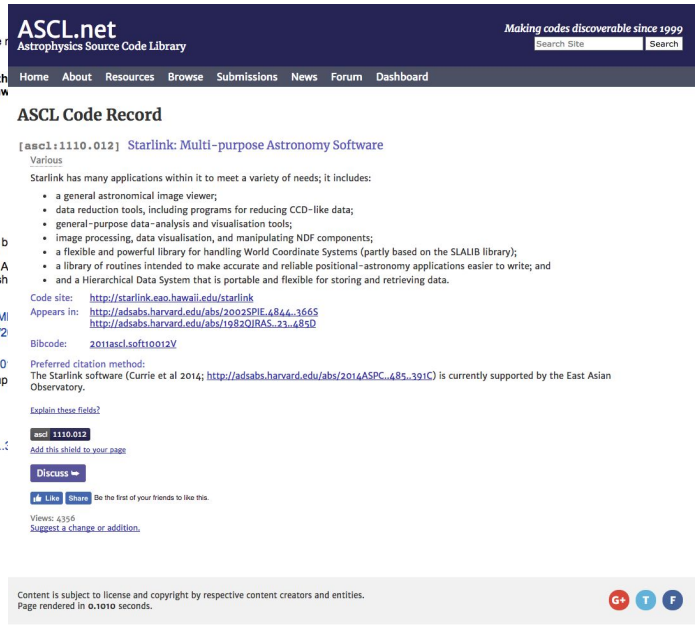
- Starlink citation: Currie et al 2014 2014ASPC..485..391C
- Starlink acknowledgment: "The Starlink software (Currie et al 2014) is currently supported b

All of the individual packages are on the Astronomy Source Code Library, which have entries in A
reference, please cite the ASCL entry. The following packages have a preferred reference you sh
reference):

- SMURF: For makemap (SCUBA-2 DR) please cite http://adsabs.harvard.edu/abs/2013MI
  For makecube (heterodyne/ACSIS DR) please cite http://adsabs.harvard.edu/abs/2
- CUPID: 2007ASPC..376..425B
- The FellWalker algorithm (implemented inside Cupid's clumpfind) has its own citation: 20
  Berry, D S 2015 "FellWalker-A clump identification algorithm" in Astronomy and Comp
- SPLAT-VO ascl:1402.007 prefers 2014A&C.....7..108S
- SPLAT: ascl:1402.008
- NDF: http://ascl.net/1411.023 prefers: 2015A&C....12..146J
- PAL: http://ascl.net/1606.002 prefers: http://adsabs.harvard.edu/abs/2013ASPC..475..
- SURF: ascl:1403.008 prefers http://adsabs.harvard.edu/abs/1998ASPC..145..216J
- AST: ascl:1404.016 prefers http://adsabs.harvard.edu/abs/2016A&C....15...33B
- SLALIB: ascl:1403.025 prefers http://adsabs.harvard.edu/abs/1994ASPC...61..481W

In addition, all Starlink SUNs also have bibliographic records on ADS.

external algorithm code is from the Starlink software collection (Currie et al., 2014; ascl:1110.012) and uses the ADAM messaging system (Allan, 1992), but this is not required by the



Software “publishing” and citation in 2012

Login

Starlink: WelcomePage

RecentChanges | FindPage | HelpContents | WelcomePage

Immutable Page | Info | Attachments | More Actions:

Starlink

The Starlink Project was a long running UK Project supporting astronomical data processing. It was shut down in 2005 but the Astronomy Centre until March 2015, and is now maintained by the East Asian Observatory. The code is open source.

Starlink News was last updated August 10th 2017.

Getting the Software

The Joint Astronomy Centre and East Asian Observatory have made a number of releases. The r
instructions are also provided.

**Please note that there was a leap second at the end of December 2016; data taken since th
(or 2016A, or a development rsync version) to reduce JCMT data taken from this point onw**

For a cutting edge version, you can rsync from the East Asian Observatory's build.

Citing the software

If you have used Starlink software in your research, please cite the software in your papers.

For the Starlink software package please use:

- Starlink citation: Currie et al 2014 2014ASPC..485..391C
- Starlink acknowledgment: "The Starlink software (Currie et al 2014) is currently supported b

All of the individual packages are on the Astronomy Source Code Library, which have entries in A
reference, please cite the ASCL entry. The following packages have a preferred reference you sh
reference):

- SMURF: For makemap (SCUBA-2 DR) please cite http://adsabs.harvard.edu/abs/2013MI
  For makecube (heterodyne/ACSIS DR) please cite http://adsabs.harvard.edu/abs/2
- CUPID: 2007ASPC..376..425B
- The FellWalker algorithm (implemented inside Cupid's clumpfind) has its own citation: 20
  Berry, D S 2015 "FellWalker-A clump identification algorithm" in Astronomy and Comp
- SPLAT-VO ascl:1402.007 prefers 2014A&C.....7..108S
- SPLAT: ascl:1402.008
- NDF: http://ascl.net/1411.023 prefers: 2015A&C....12..146J
- PAL: http://ascl.net/1606.002 prefers: http://adsabs.harvard.edu/abs/2013ASPC..475..
- SURF: ascl:1403.008 prefers http://adsabs.harvard.edu/abs/1998ASPC..145..216J
- AST: ascl:1404.016 prefers http://adsabs.harvard.edu/abs/2016A&C....15...33B
- SLALIB: ascl:1403.025 prefers http://adsabs.harvard.edu/abs/1994ASPC...61..481W

In addition, all Starlink SUNs also have bibliographic records on ADS.

external algorithm code is from the Starlink software collection (Currie et al., 2014; ascl:1110.012) and uses the ADAM messaging system (Allan, 1992), but this is not required by the

ASCL.net
Astrophysics Source Code Library

Making codes discoverable since 1999

Search Site | Search

Home | About | Resources | Browse | Submissions | News | Forum | Dashboard

ASCL Code Record

[ascl:1110.012] Starlink: Multi-purpose Astronomy Software

Various

Starlink has many applications within it to meet a variety of needs; it includes:

- a general astronomical image viewer;
- data reduction tools, including programs for reducing CCD-like data;
- general-purpose data-analysis and visualisation tools;
- image processing, data visualisation, and manipulating NDF components;
- a flexible and powerful library for handling World Coordinate Systems (partly based on the SLALIB library);
- a library of routines intended to make accurate and reliable positional-astronomy applications easier to write; and
- and a Hierarchical Data System that is portable and flexible for storing and retrieving data.

Code site: http://starlink.eao.hawaii.edu/starlink

Appears in: http://adsabs.harvard.edu/abs/2002SPIE.4844..366S
http://adsabs.harvard.edu/abs/1982QJRAS..23..485D

Bibcode: 2011ascl.soft10012V

Preferred citation method:
The Starlink software (Currie et al 2014; http://adsabs.harvard.edu/abs/2014ASPC..485..391C) is currently supported by the East Asian Observatory.

Explain these fields?

ascl 1110.012

Add this shield to your page

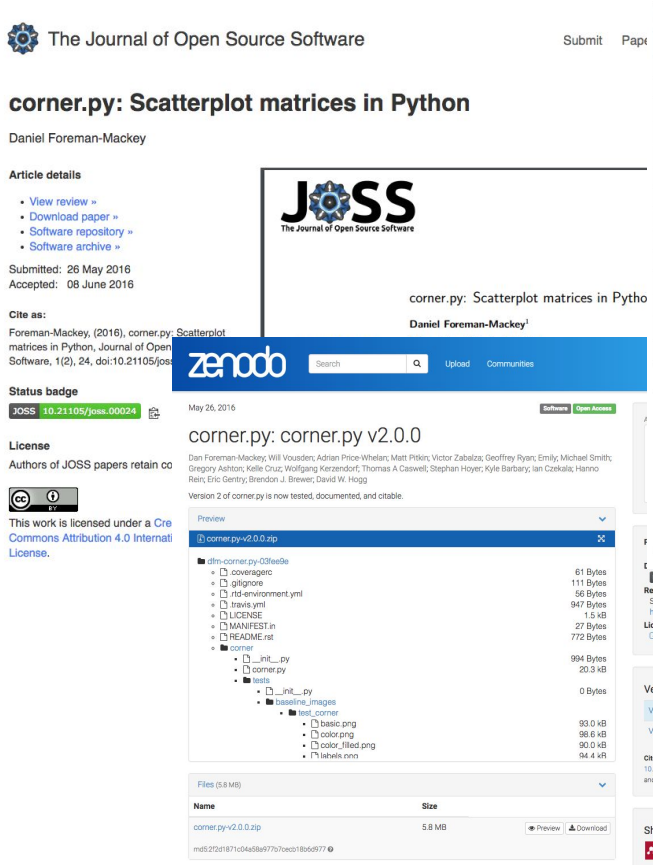
Discuss

Like | Share Be the first of your friends to like this.

Views: 4356

Suggest a change or addition.

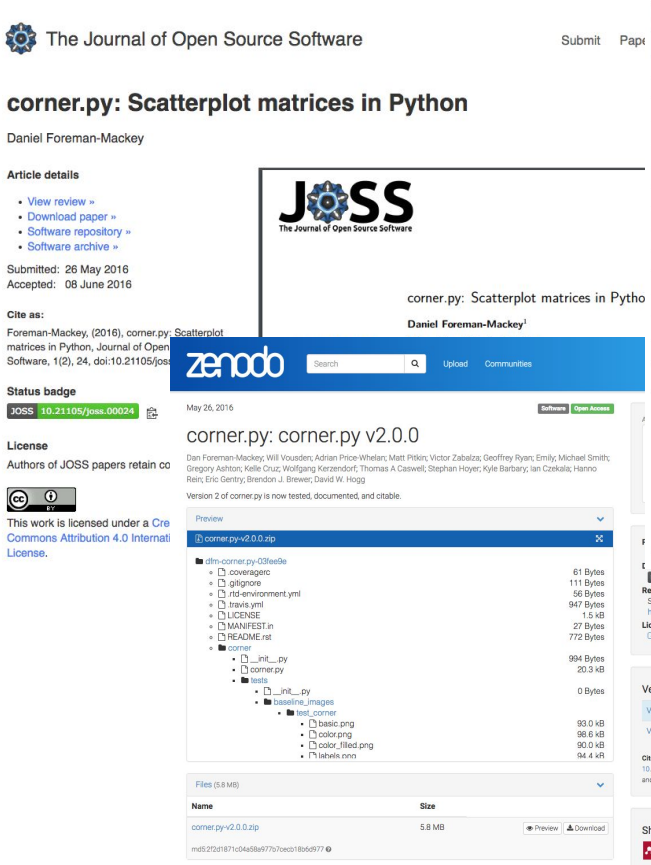
Software publishing and citation in 2016



Daniel Foreman-Mackey. corner.py: Scatterplot matrices in python. *The Journal of Open Source Software*, 24, 2016. doi:10.21105/joss.00024.

Foreman-Mackey D. et al., 2016, corner.py: corner.py v2.0.0, Available at: https://doi.org/10.5281/zenodo.53155

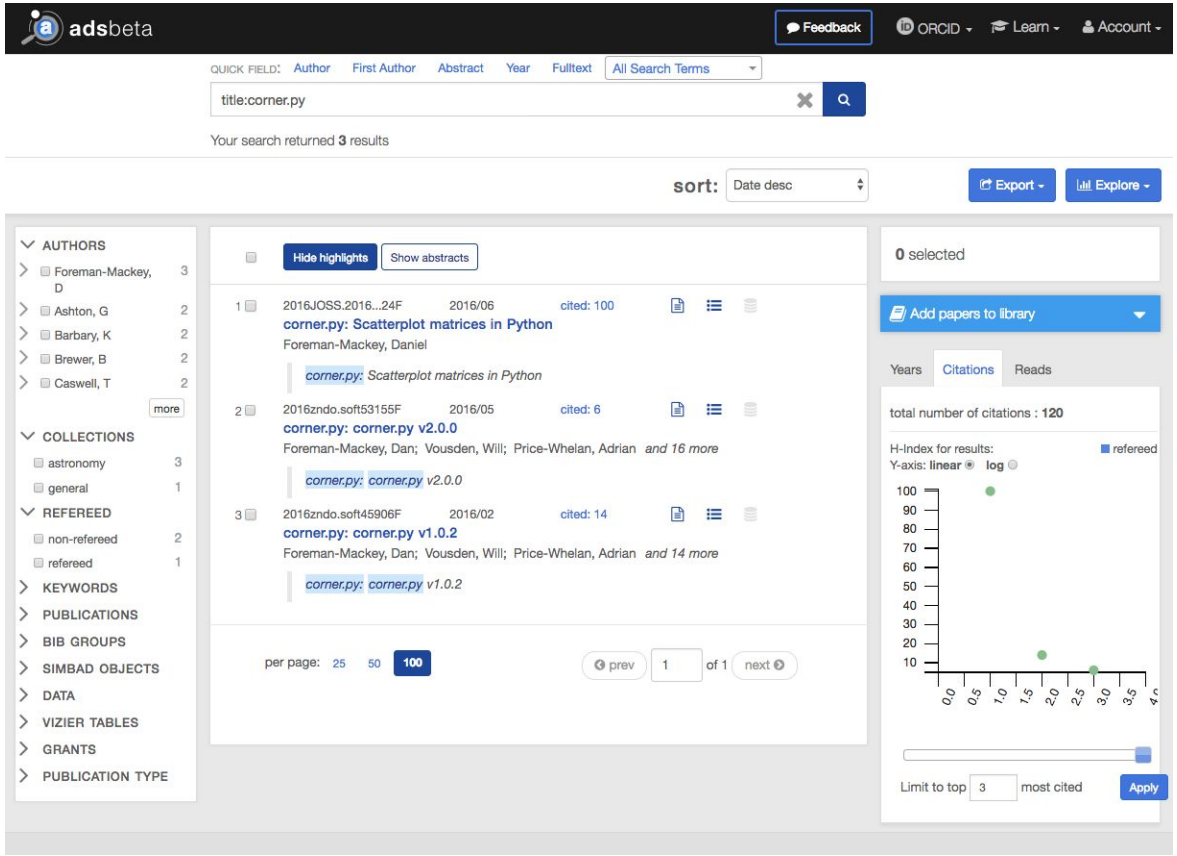
Software publishing and citation in 2016



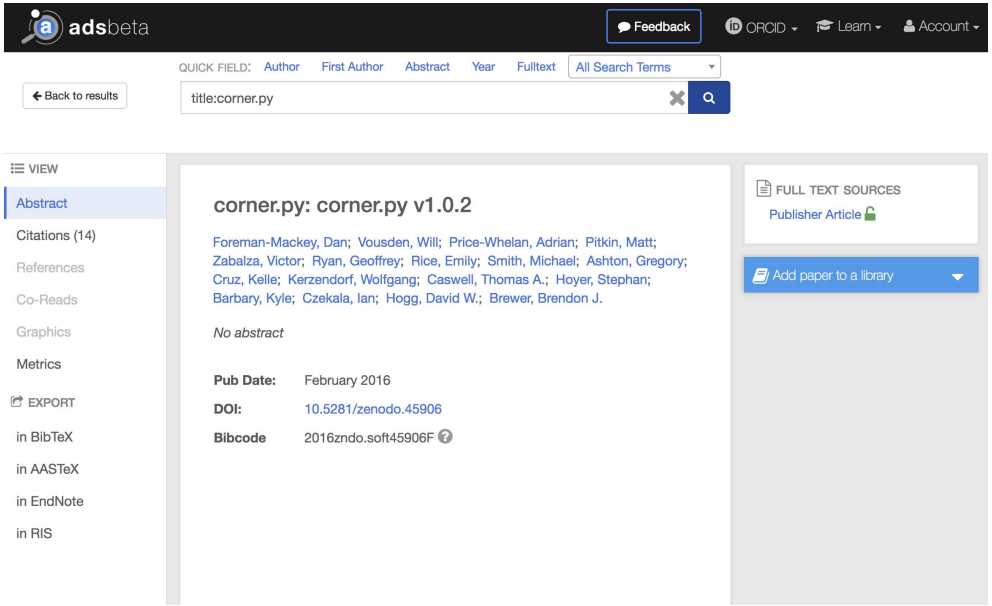
Daniel Foreman-Mackey. corner.py: Scatterplot matrices in python. *The Journal of Open Source Software*, 24, 2016. doi:10.21105/joss.00024.

Foreman-Mackey D. et al., 2016, corner.py: corner.py v2.0.0, Available at: https://doi.org/10.5281/zenodo.53155

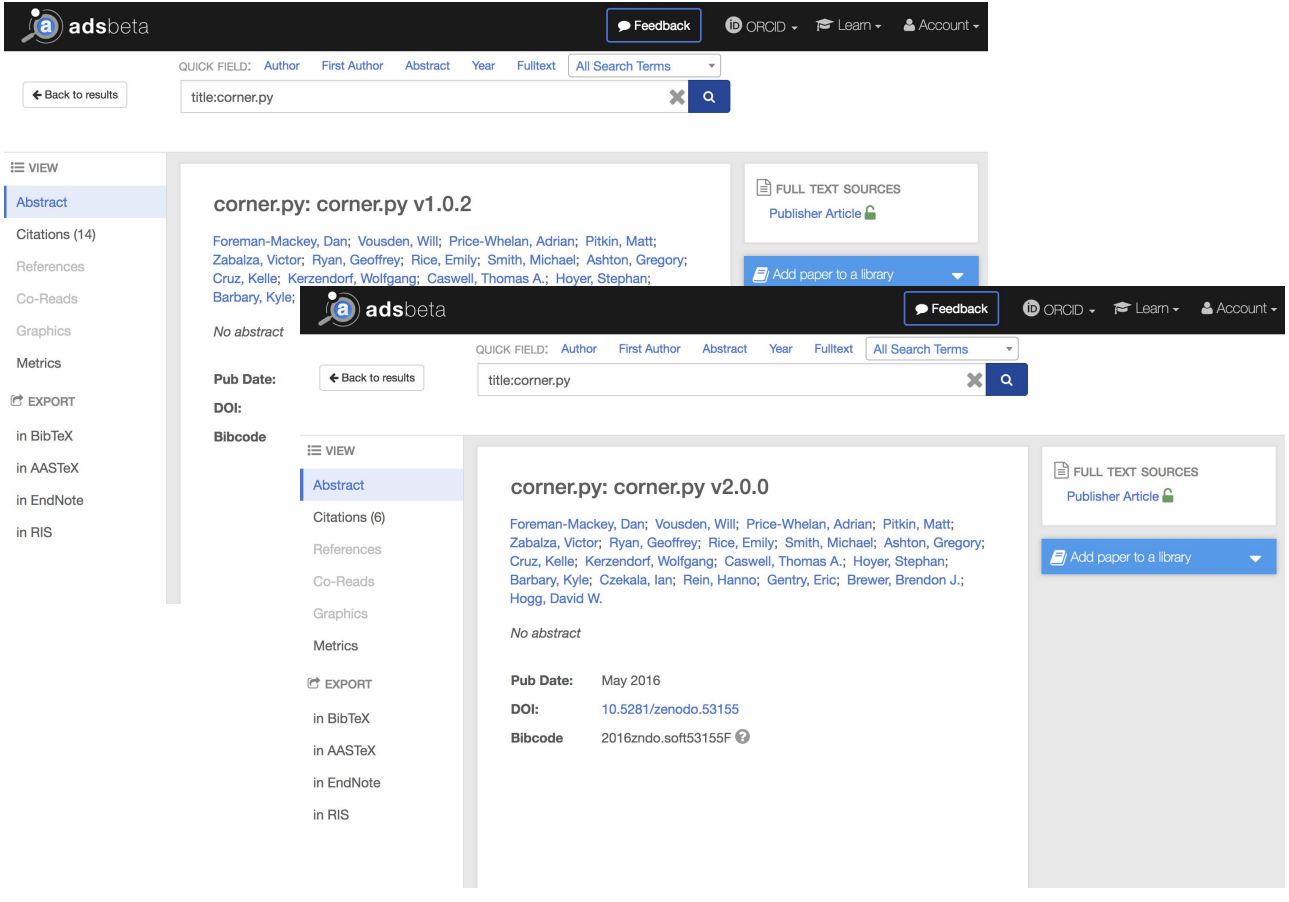
How is ADS dealing with this



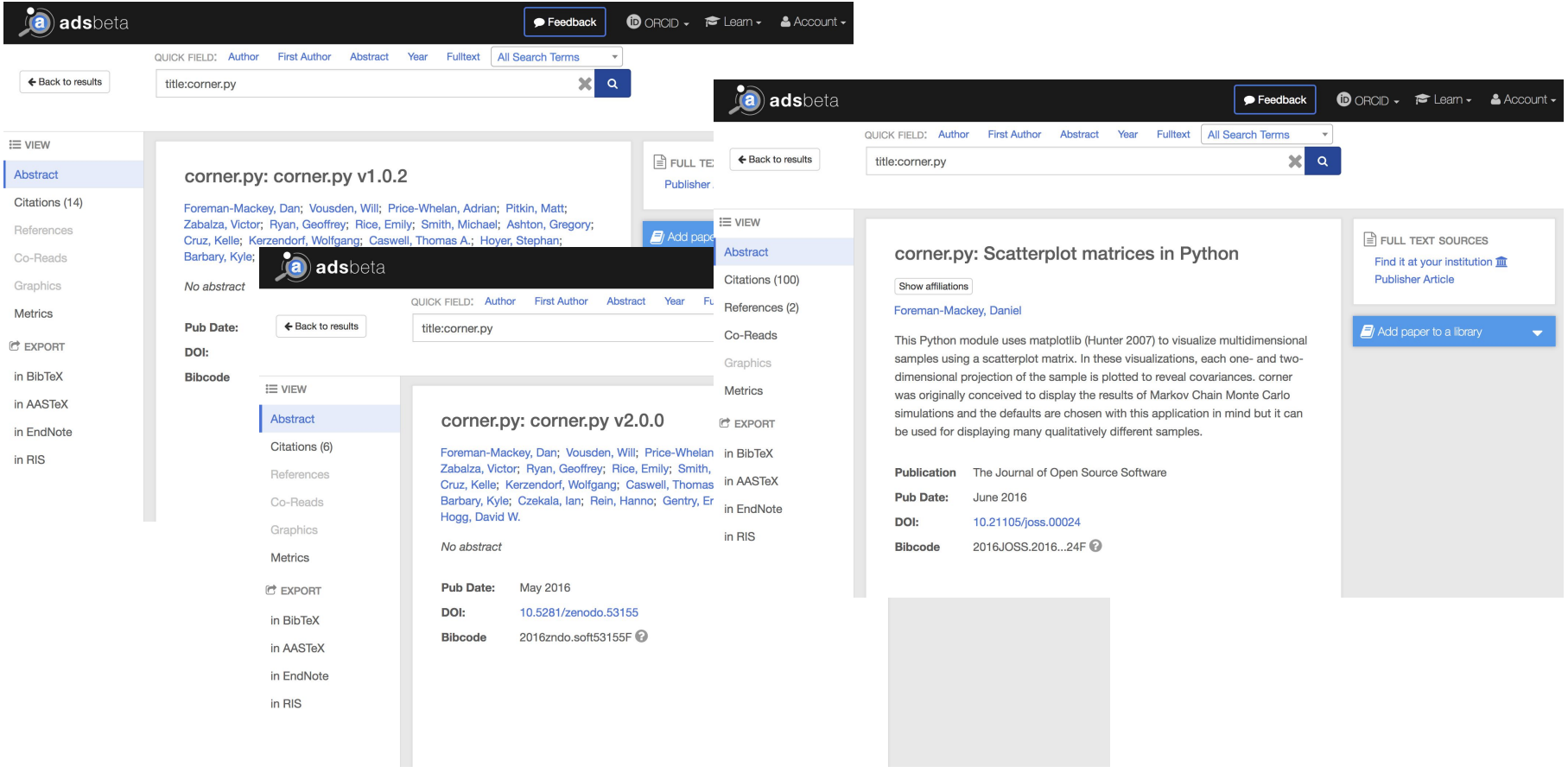
How is ADS dealing with this - today



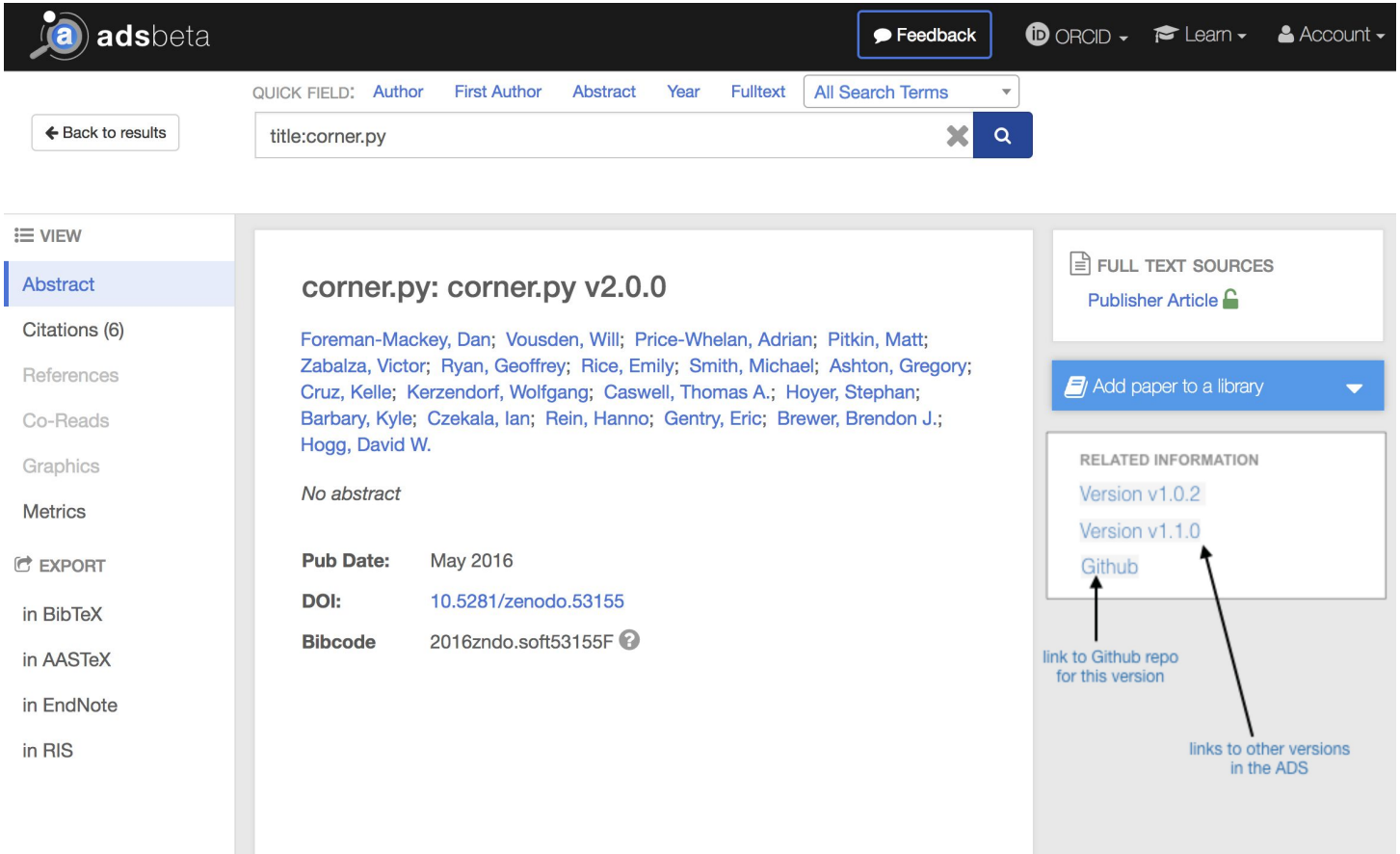
How is ADS dealing with this - today



How is ADS dealing with this - today



How is ADS dealing with this - tomorrow



How is ADS dealing with this - later this year

- Software packages ingested in ADS upon the detection of a citation from the refereed literature via a DOI; citation awarded to identified (versioned) resource
- Different software versions cross-linked in detail view
- Eventually: cumulative metrics (citations, reads) available for versions of same software product
- Citation event data publicly available through API