Increasing the visibility of NASA astrophysics software through the ASCL

Peter Teuben (UMD)
Alice Allen (UMD, ASCL)

See also: iPoster's 127.01 (Mavuram) 127.05 (Allen)

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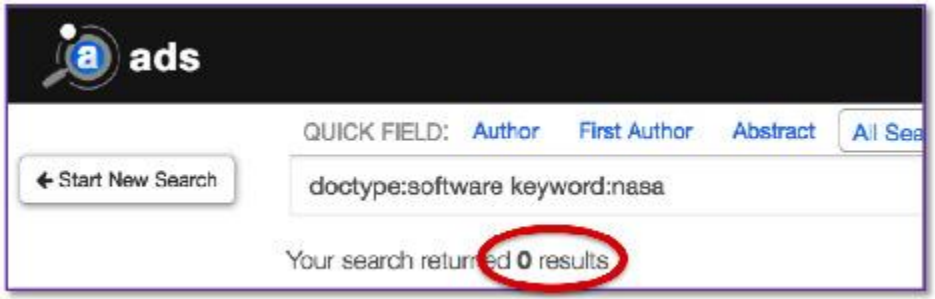
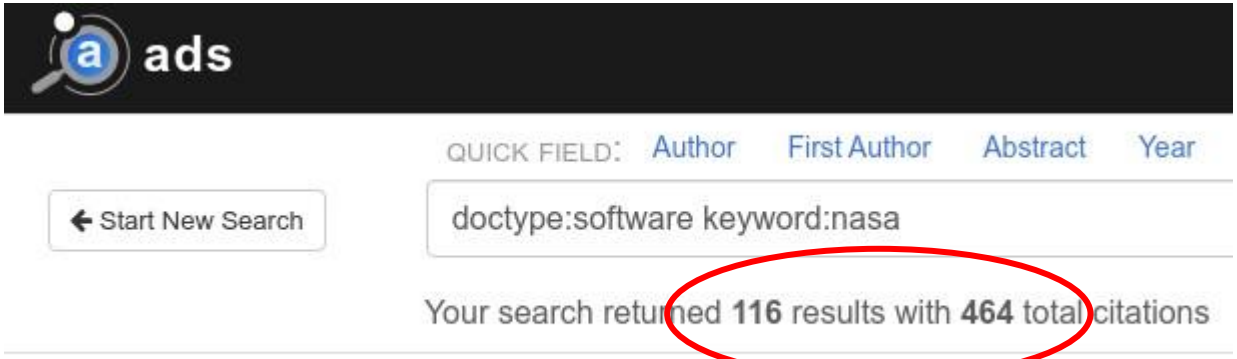
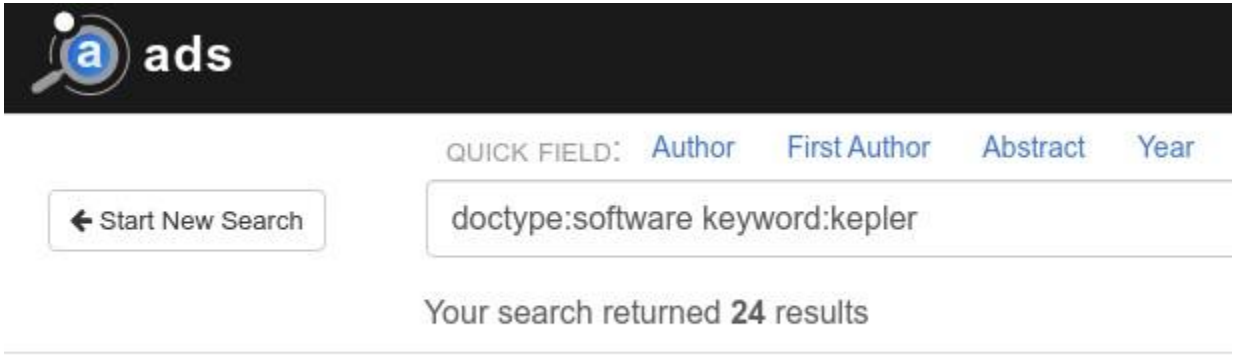



ads
QUICK FIELD: Author First Author Abstract Year
Start New Search
doctype:software keyword:nasa
Your search returned 116 results with 464 total citations


ads
QUICK FIELD: Author First Author Abstract Year
Start New Search
doctype:software keyword:kepler
Your search returned 24 results

ASCL Code Record

[ascl:1908.005] dips: Detrending periodic signals in timeseries

Prša, Andrej; Zhang, Moses; Wells, Mark

dips detrends timeseries of strictly periodic signals. It does not assume any functional fo the strictly periodic component from everything else. It has been used for detrending Ke binary stars, and exoplanets.

Code site: https://github.com/aprsa/dips

Described in: https://ui.adsabs.harvard.edu/abs/2019PASP..131f8001P

Bibcode: 2019ascl.soft08005P

Explain these fields?

Discuss ➥

Keywords: NASA, Kepler, TESS

ASCL: NASA/ADAP

- ADAP funded
- ADS doctype:software
  - Track citations
- NASA Software: https://code.nasa.gov and https://software.nasa.gov
- New: keyword search in our ASCL API (iPoster 127.01)
  - API: **q=** **fq=** **fl=**

https://ascl.net/api/search/?q=keywords:”nasa"&fl=title

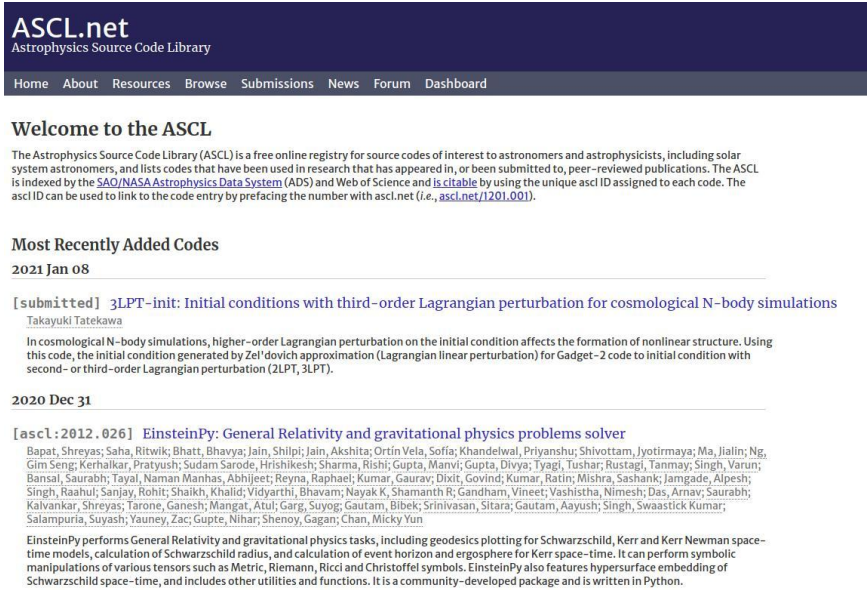
- Current keywords: https://ascl.net/code/keywords

ASCL: current keywords

NASA (113), Kepler (23), Spitzer (13), TESS (8), Fermi (6), HITS (5), HST (5), ROSAT (4), CGRO (3), RXTE (3), Swift (3), ASCA (2), Chandra (2), COBE (2), Geotail (2), Heliophysics (2), Herschel (2), LRO (2), Magellan (2), MRO (2), Polar (2), Rosetta (2), Wind (2), WISE (2), WMAP (2), Apollo (1), Cassini (1), Dawn (1), GOES (1), Hinode (1), Hitomi (1), InSight (1), INTEGRAL (1), ISO (1), Juno (1), JWST (1), Lucy (1), Lunar Quest (1), MAVEN (1), MESSENGER (1), MGS (1), NEAR (1), New Horizons (1), NICER (1), NISAR (1), NuSTAR (1), OSIRIS-REx (1), Parker Solar Probe (1), Psyche (1), RHESSI (1), SOFIA (1), SOHO (1), STEREO (1), Suzaku (1), THEMIS (1)

What is the ASCL

- Astrophysics Source Code Library (1999-)
- https://ascl.net
  - We got all those wonderful resources….
- ASCL is a registry, not a repository
  - We do keep historic backups where needed
  - FAIR principles
- Currently 2363 codes
  - 37+290 in the staging area)
- Indexing into ADS (and WoS)
  - **doctype: software**
- Small but effective meta-data
- Free form text search, now API



ASCL.net
Astrophysics Source Code Library

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Welcome to the ASCL

The Astrophysics Source Code Library (ASCL) is a free online registry for source codes of interest to astronomers and astrophysicists, including solar system astronomers, and lists codes that have been used in research that has appeared in, or been submitted to, peer-reviewed publications. The ASCL is indexed by the SAO/NASA Astrophysics Data System (ADS) and Web of Science and is citable by using the unique ascl ID assigned to each code. The ascl ID can be used to link to the code entry by prefacing the number with ascl.net (*i.e.*, ascl.net/1201.001).

Most Recently Added Codes

2021 Jan 08

[submitted] 3LPT-init: Initial conditions with third-order Lagrangian perturbation for cosmological N-body simulations

Takayuki Tatekawa

In cosmological N-body simulations, higher-order Lagrangian perturbation on the initial condition affects the formation of nonlinear structure. Using this code, the initial condition generated by Zel'dovich approximation (Lagrangian linear perturbation) for Gadget-2 code to initial condition with second- or third-order Lagrangian perturbation (2LPT, 3LPT).

2020 Dec 31

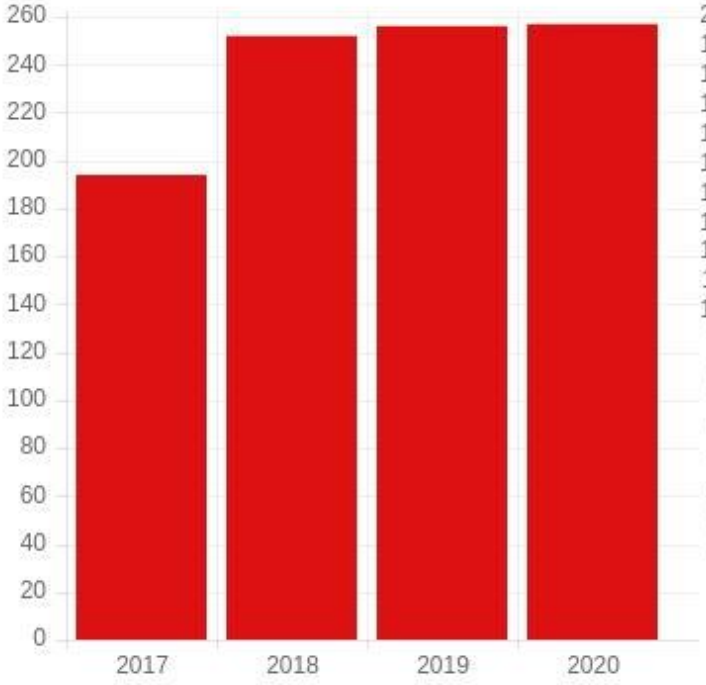
[ascl:2012.026] EinsteinPy: General Relativity and gravitational physics problems solver

Bapat, Shreyas; Saha, Ritwik; Bhatt, Bhavya; Jain, Shilpi; Jain, Akshita; Ortín Vela, Sofía; Khandelwal, Priyanshu; Shivottam, Jyotirmaya; Ma, Jialin; Ng, Gim Seng; Kerhalkar, Pratyush; Sudam Sarode, Hrishikesh; Sharma, Rishi; Gupta, Manvi; Gupta, Divya; Tyagi, Tushar; Rustagi, Tanmay; Singh, Varun; Bansal, Saurabh; Tayal, Naman Manhas, Abhijeet; Reyna, Raphael; Kumar, Gaurav; Dixit, Govind; Kumar, Ratin; Mishra, Sashank; Jamgade, Alpesh;

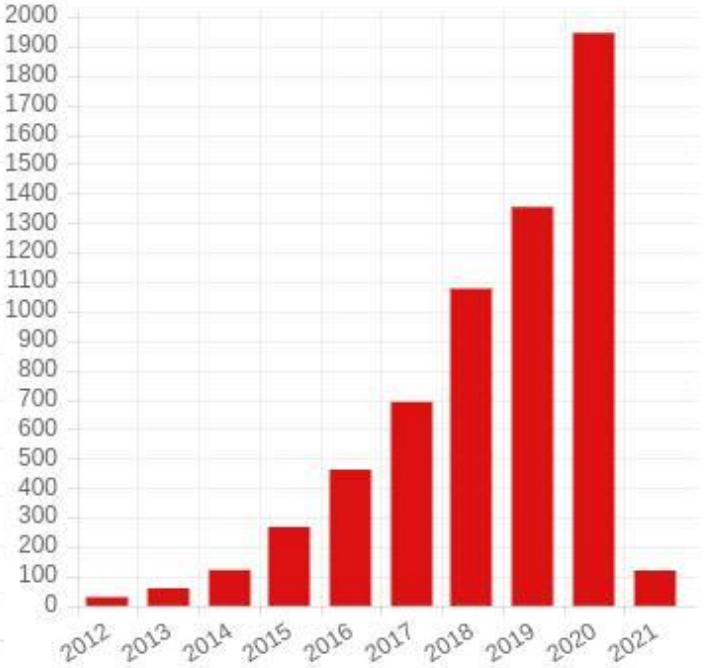
Statistics:

- There are 2363 codes in the ASCL, and 37 submitted.
- There are 6126 citations to ASCL entries in ADS.
- 2373 (100.42%) ASCL codes are in ADS.
- 884 (37.25%) have ADS citations.

Code additions by year:



Citations by year:



ASCL: Other Recent Work

- See also iPoster 127.05 **Allen**
- API: See also iPoster 127.01 **Mavuram**
- Software Metadata file generation for code authors
- Registries in other fields
- Toolkit: https://github.com/teuben/ascl-tools
  - Tools for software index in ADASS proceedings
  - API
- Keywords:
  - Stellar Dynamics and Stellar Populations (UAT)

Summaries

- ASCL provides a rich environment to aid in finding software …

- https://ascl.net register your own code. And tell your friends!

Our approach can also serve as a model how other organisations could increase their visibility of their software repositories.