What's New @ ADS

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http://ui.adsabs.harvard.edu

January 2024

CENTER FOR ASTROPHYSICS HARVARD & SMITHSONIAN

astrophysics data system

NASA

Overview

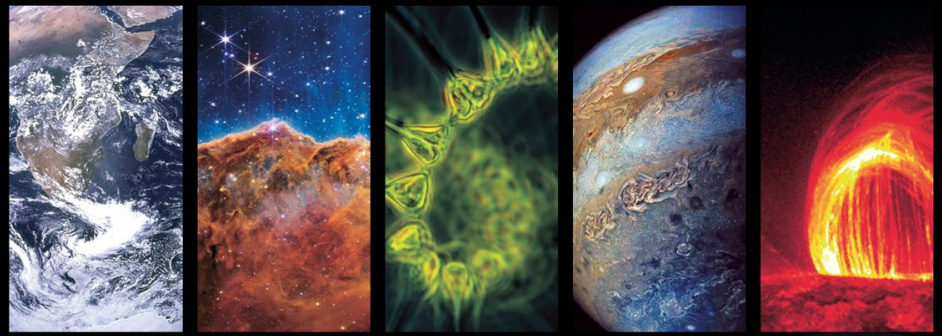
A review of the exciting developments taking place with ADS:

- Launch of the NASA Science Explorer (SciX) platform
  (Alberto Accomazzi)
- AI/ML initiatives at ADS
  (Kelly Lockhart)
- Using ADS in the SciX Era
  (Jennifer Lynn Bartlett & Michal Kurtz)

The NASA Science Explorer: ADS for all NASA Science

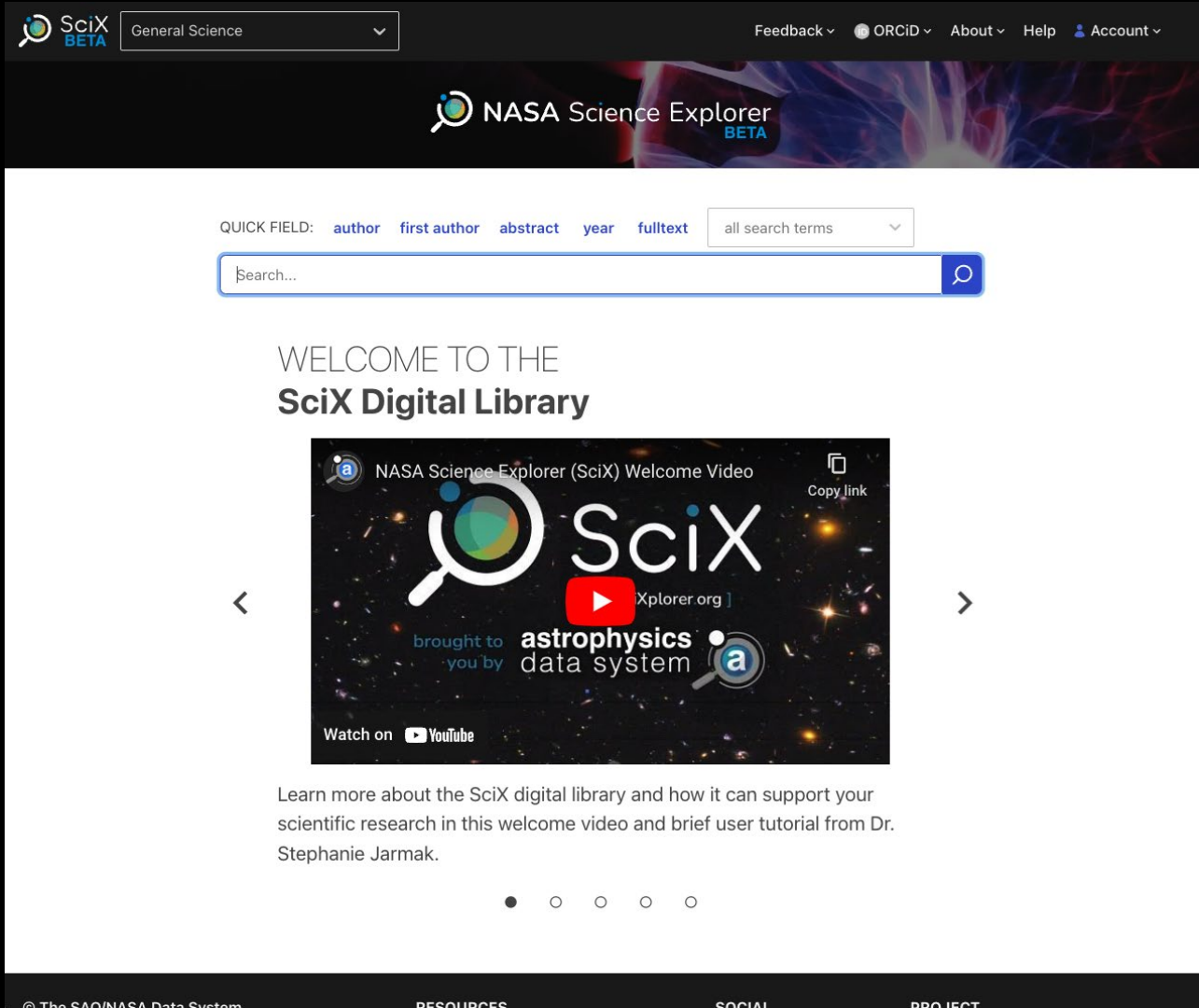
SciX

[SciXplorer.org]



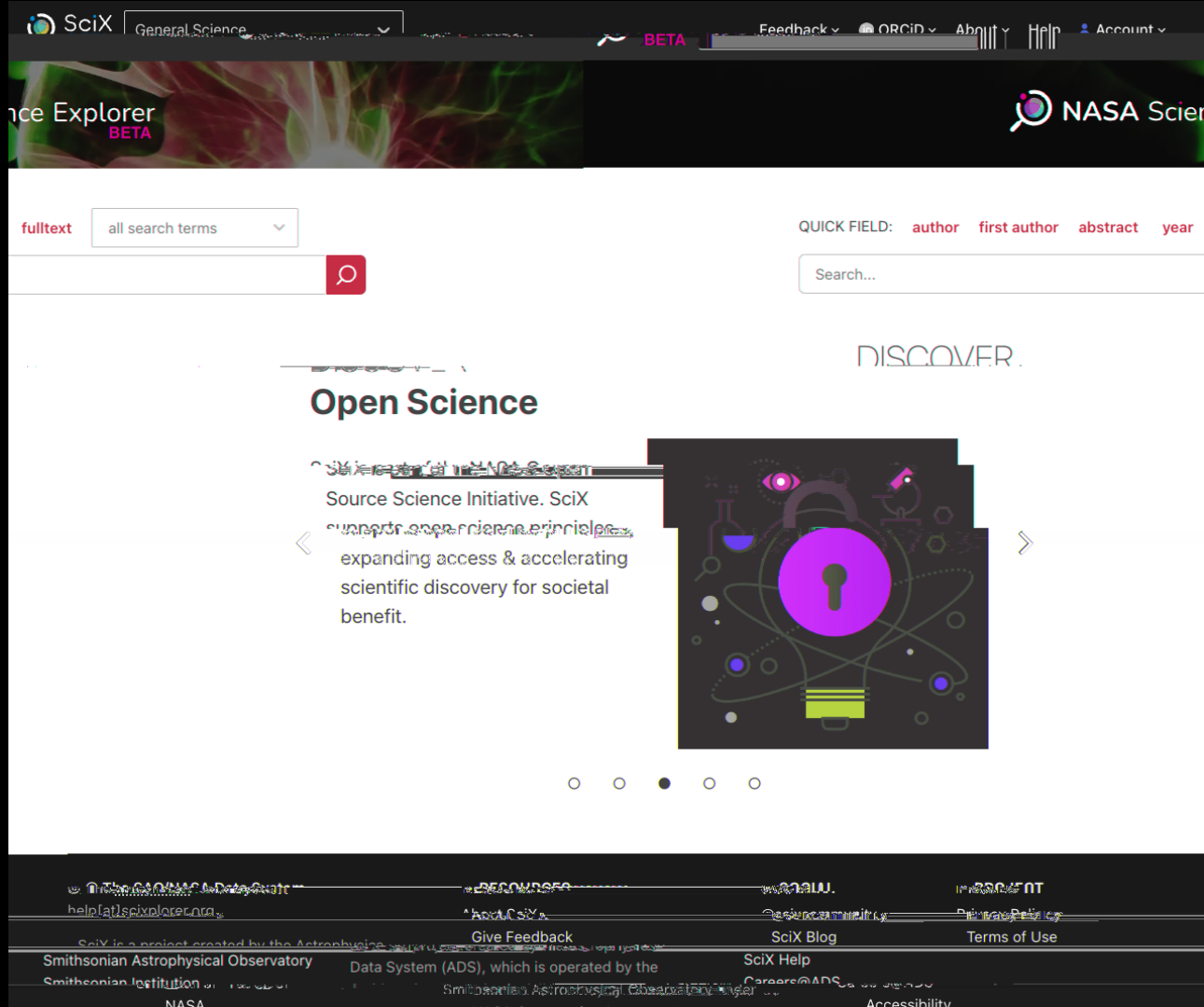
What is the NASA Science Explorer?

SciX is a new literature portal that we just launched as part of the expansion of the NASA Astrophysics Data System (ADS) to the research disciplines funded by the NASA Science Mission Directorate: Astrophysics, Planetary Science, Heliophysics, Earth Science, Biological and Physical Sciences



What is the NASA Science Explorer?

SciX supports NASA's Open Science efforts and enables interdisciplinary research and collaboration.

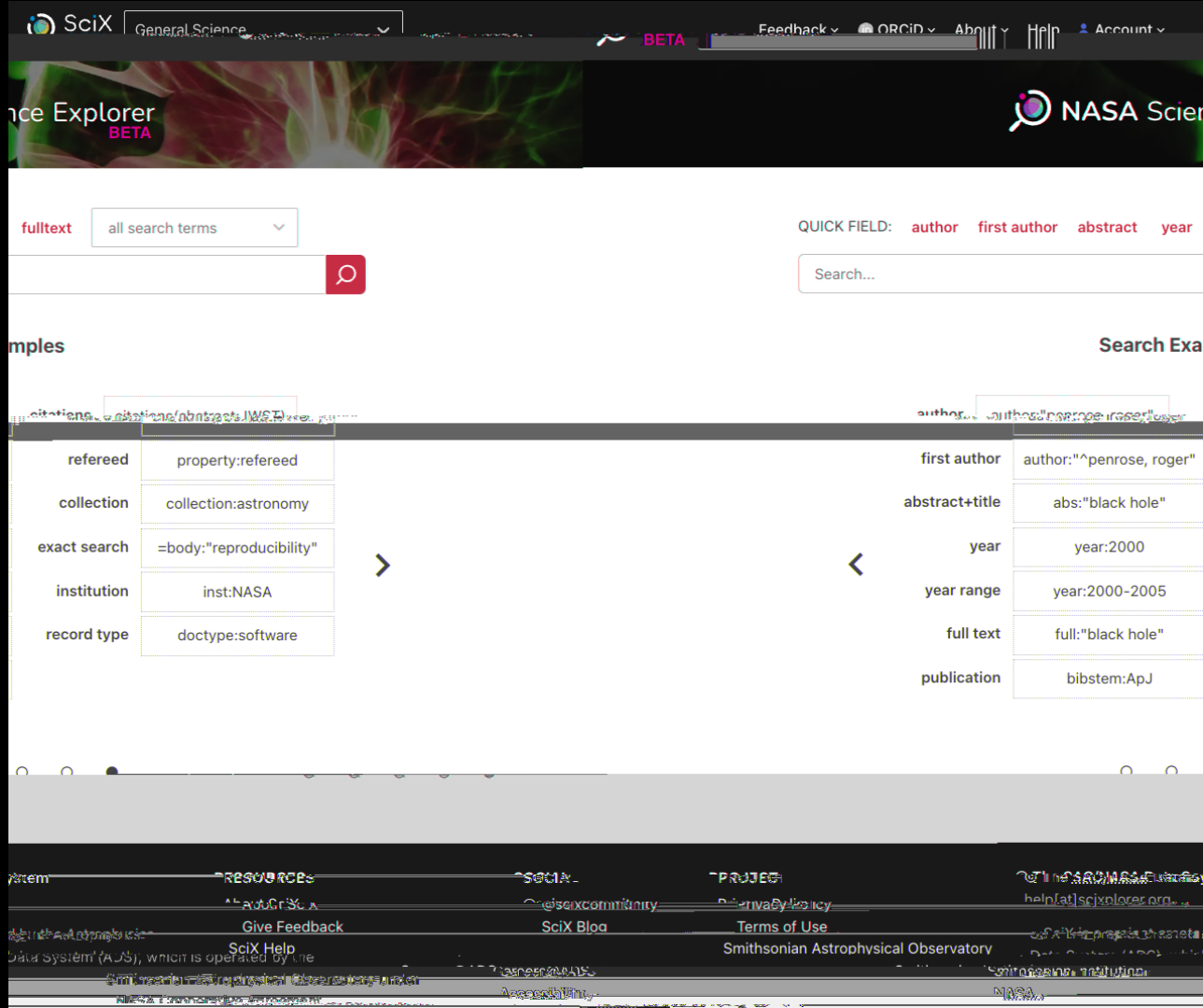


What is the NASA Science Explorer?

The NASA Science Explorer, or SciX for short, is available as a beta release at the following website:

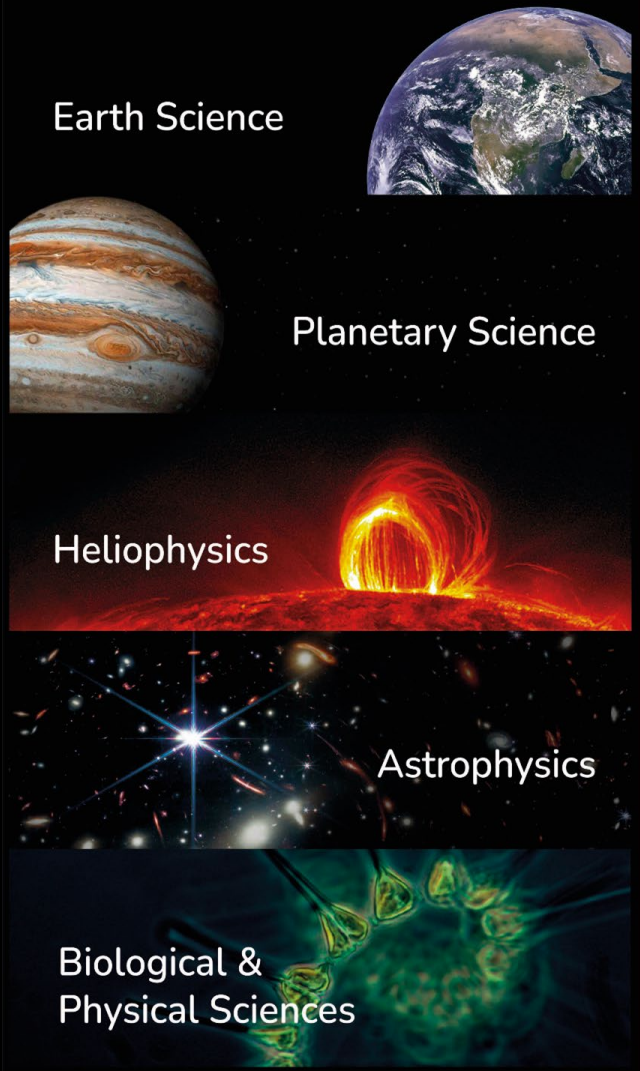
https://SciXplorer.org

While the system is still under development, it already provides a wealth of information and functionality ready for use.



Why the NASA Science Explorer?

NASA’s Science Mission Directorate in 2019 calls for the creation of interdisciplinary literature portal spanning across SMD in support of Open Science.



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ADS has been selected for its support of open science goals: facilitating discovery and dissemination of OA publications, data, and software by aggregating and linking them.

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Over the next three years, the ADS team will be developing and expanding the **NASA Science Explorer** to include all relevant NASA SMD content.

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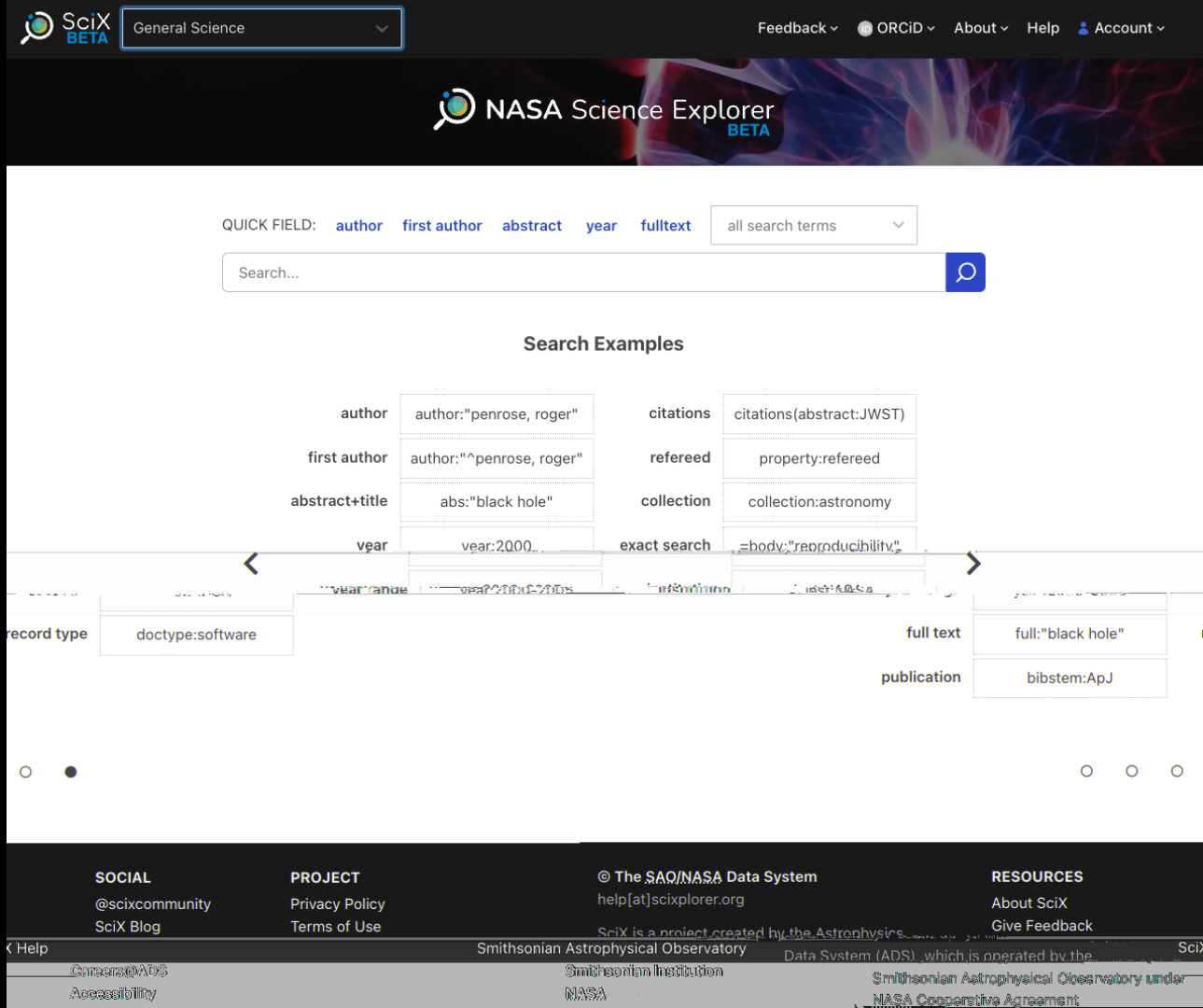
How is it different from ADS?

SciX is built on top of the same database and API, but has a few different features:



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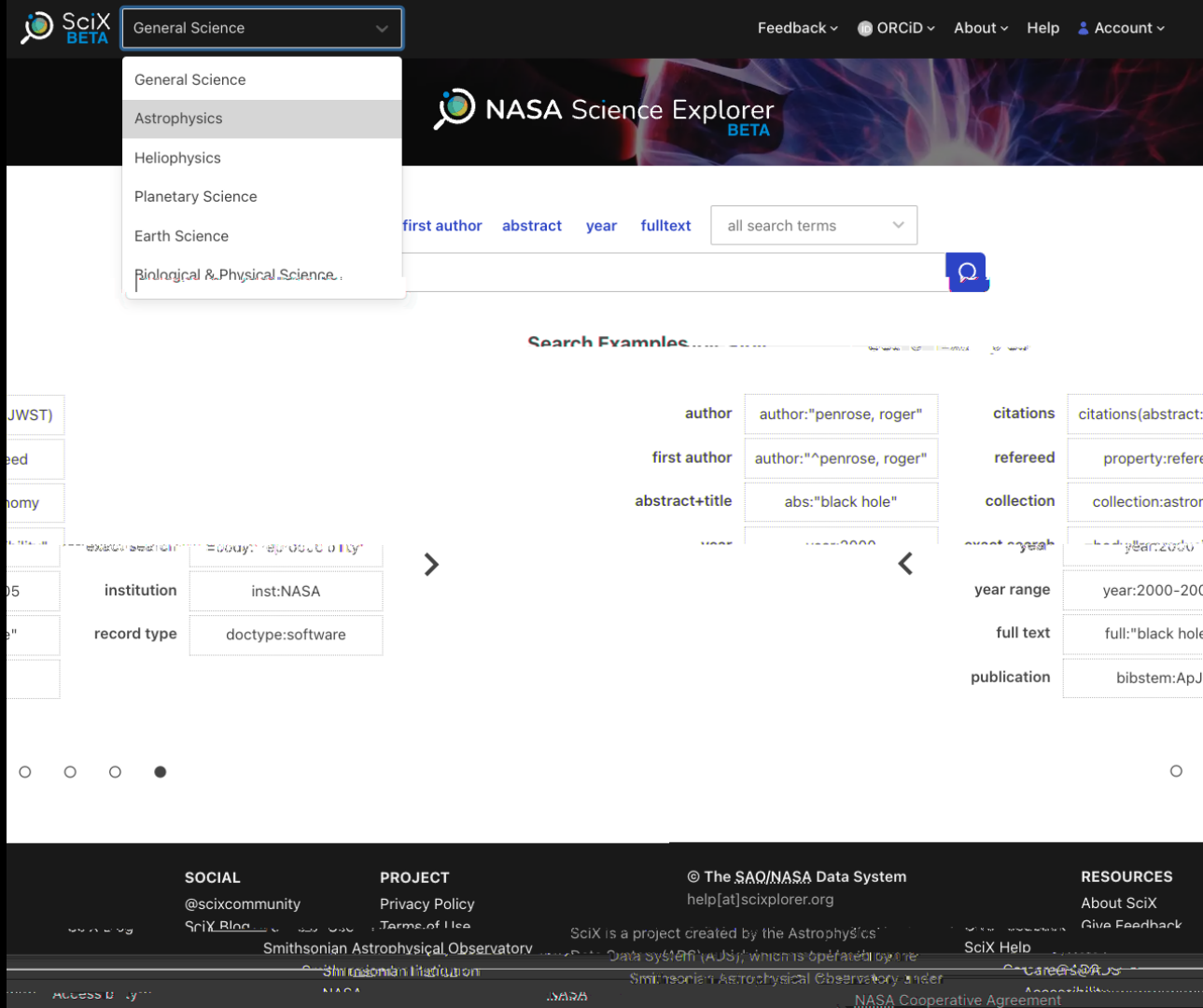

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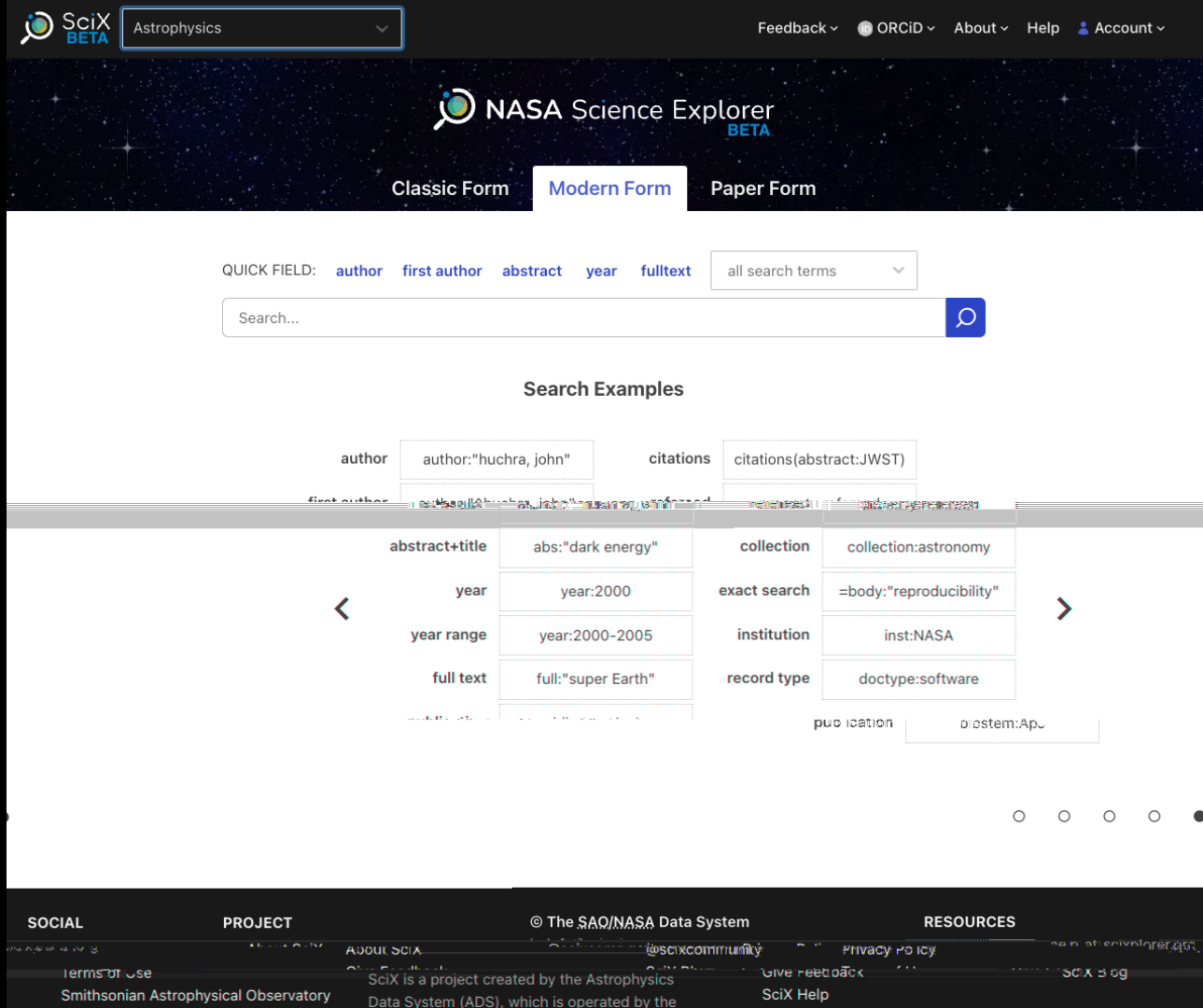
- Discipline specific “skins”



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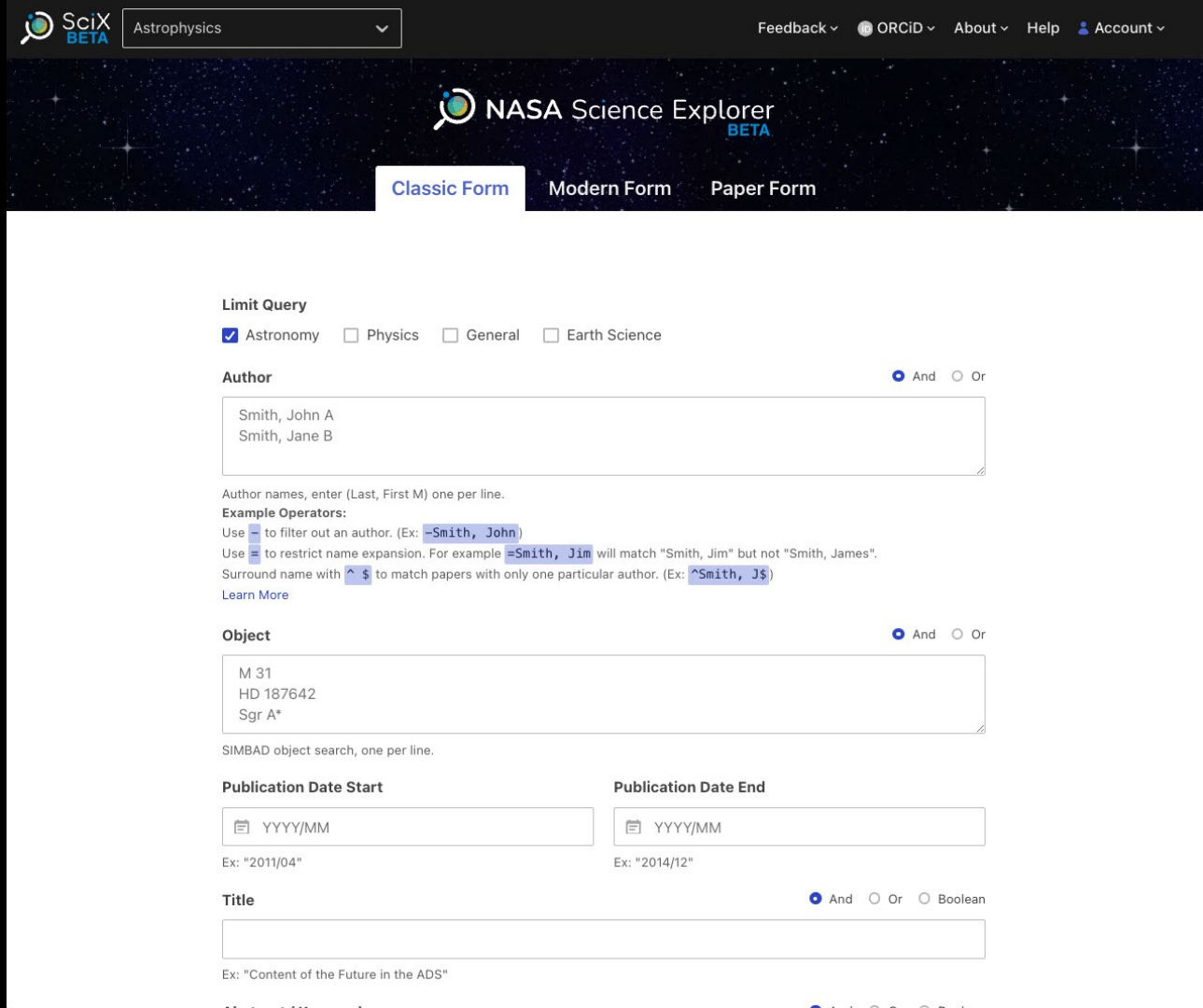

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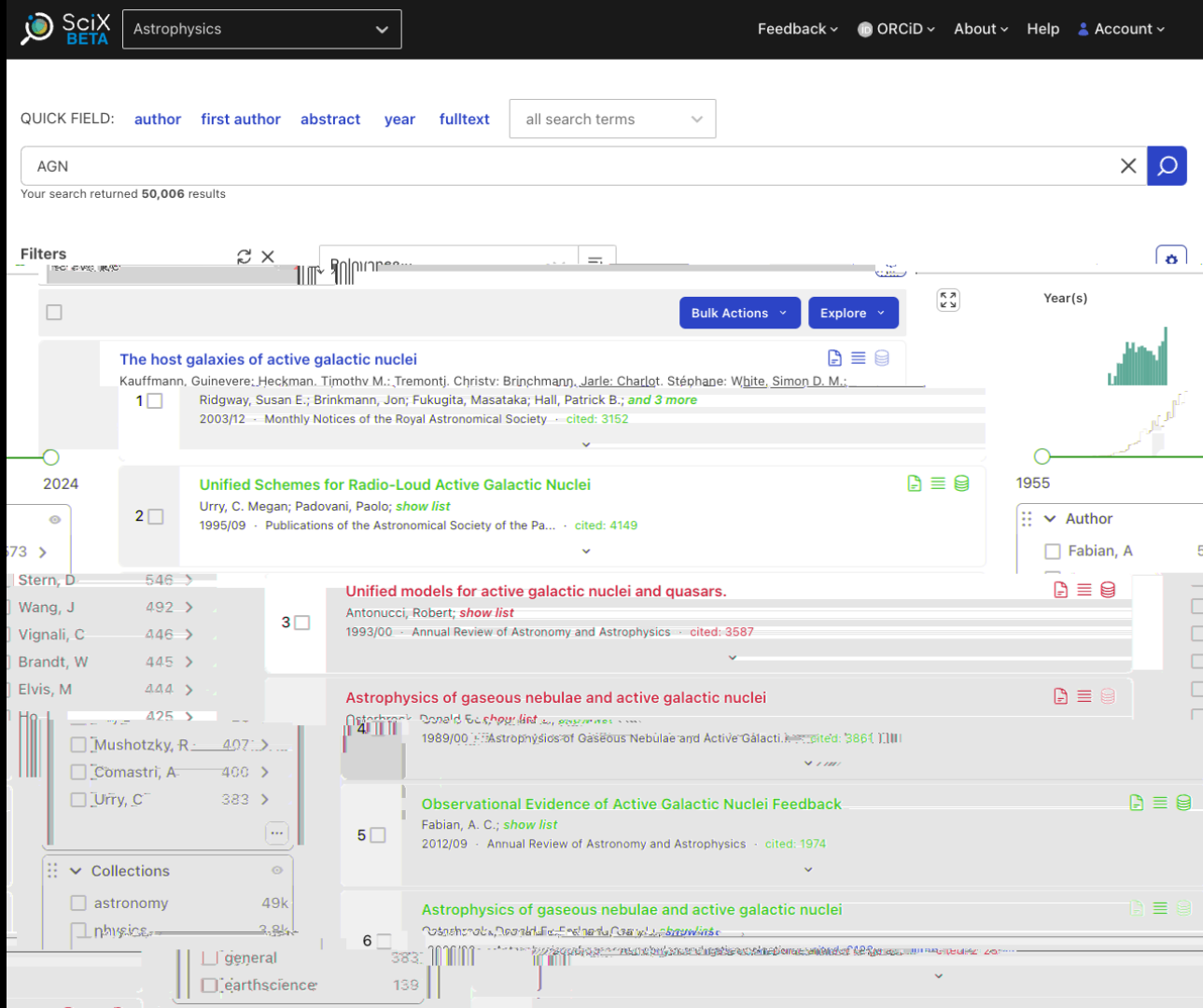
- Improved accessibility
- Discipline specific “skins”
- Better handling of filters



How is it different from ADS?

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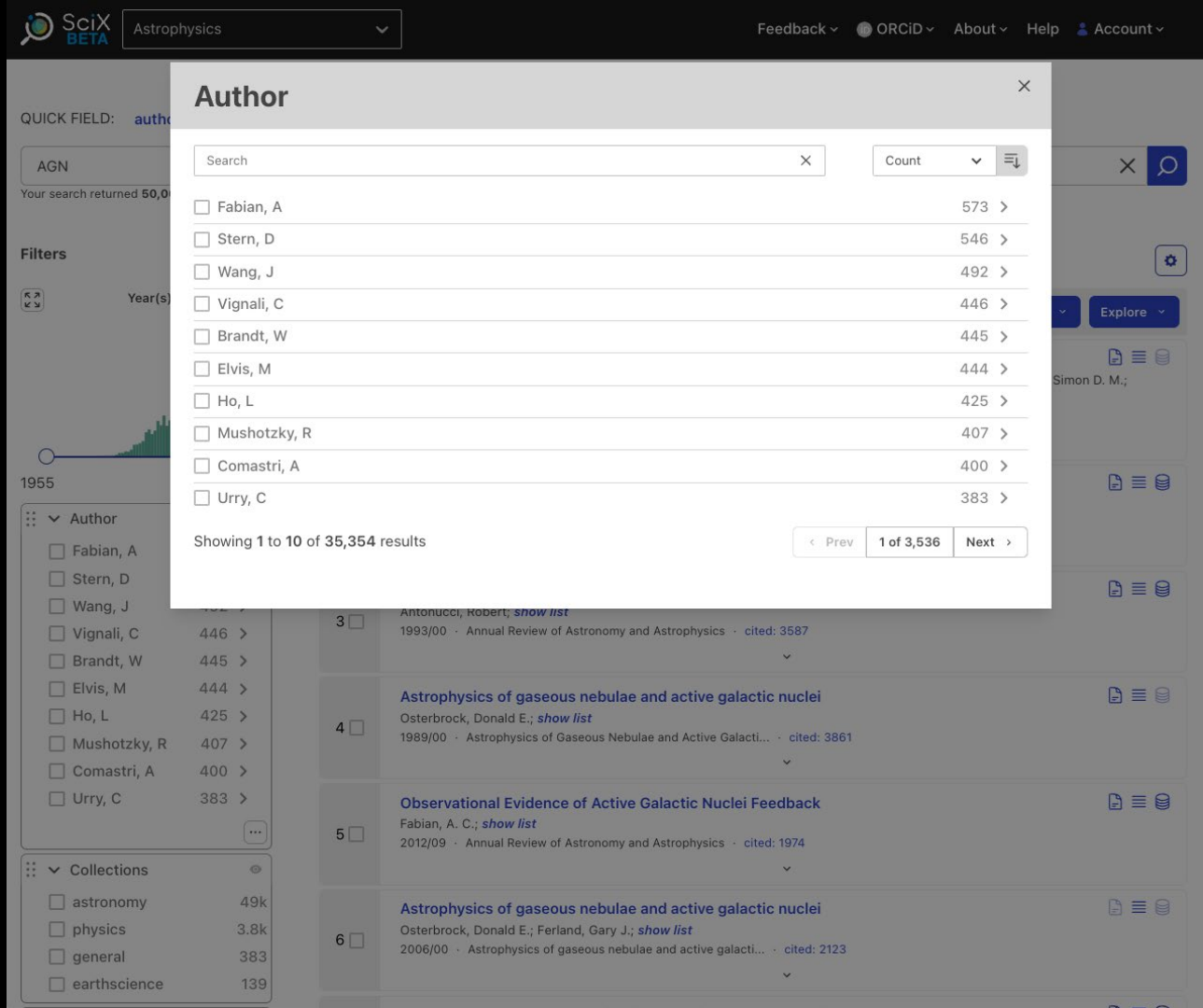
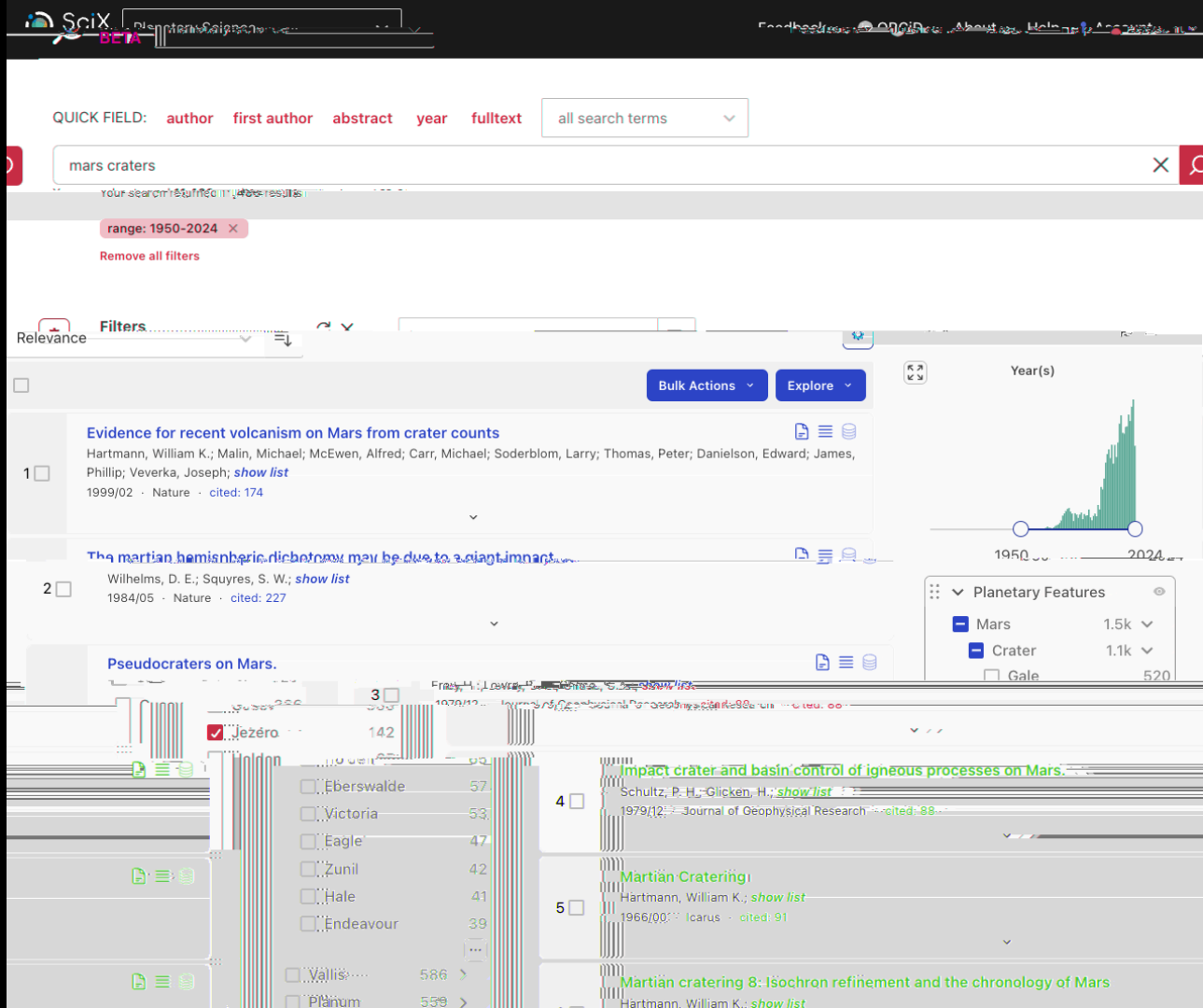
- Discipline specific “skins”
- Better handling of filters (paging, sorting & searching)



How is it different from ADS?

SciX is built on top of the same database and API, but has a few different features:

- Improved accessibility
- Discipline specific “skins”
- Better handling of filters
- Discipline-specific enhancements



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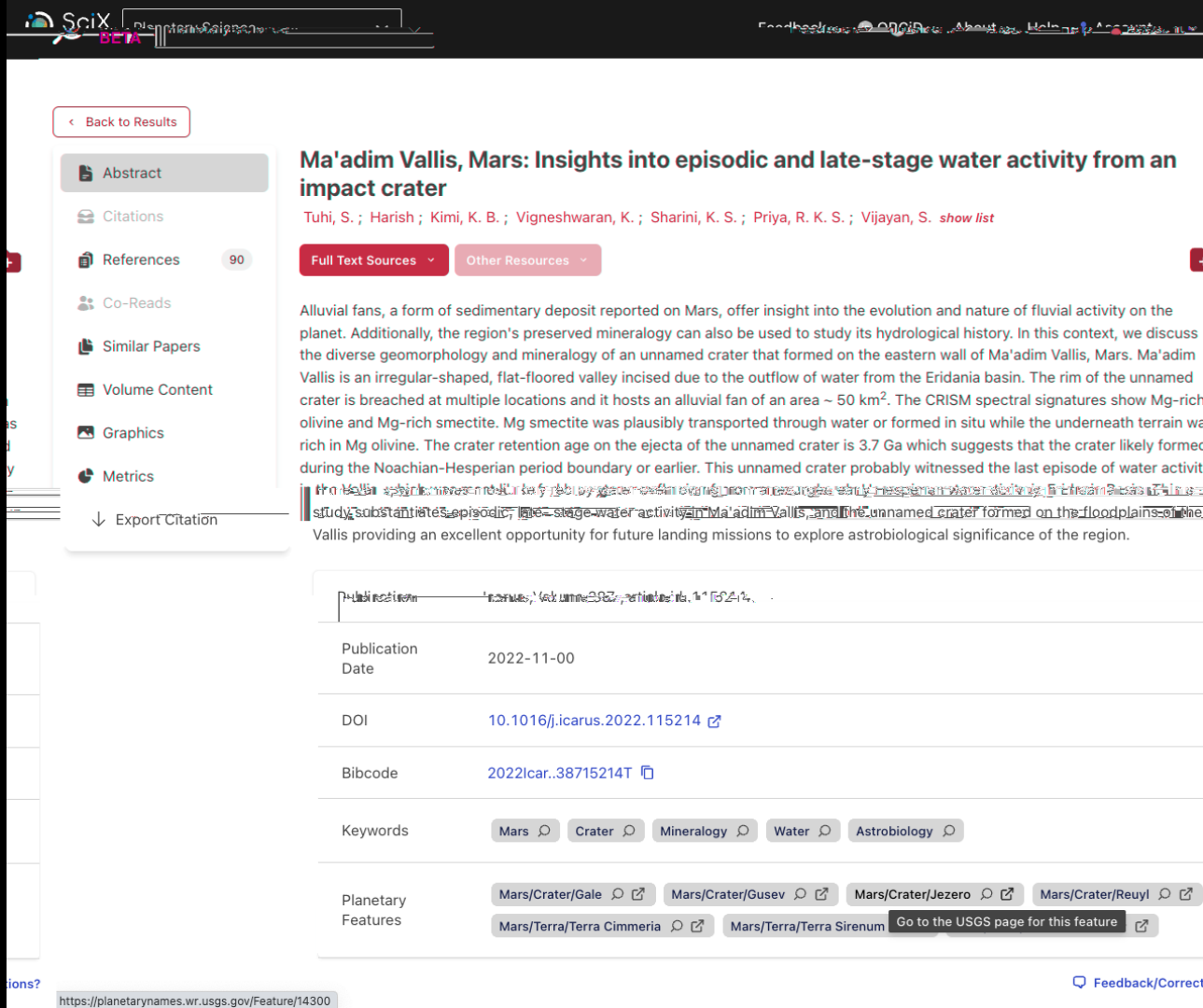
- Improved accessibility
- Discipline specific “skins”
- Better handling of filters
- Discipline-specific enhancements (with links to additional resources)



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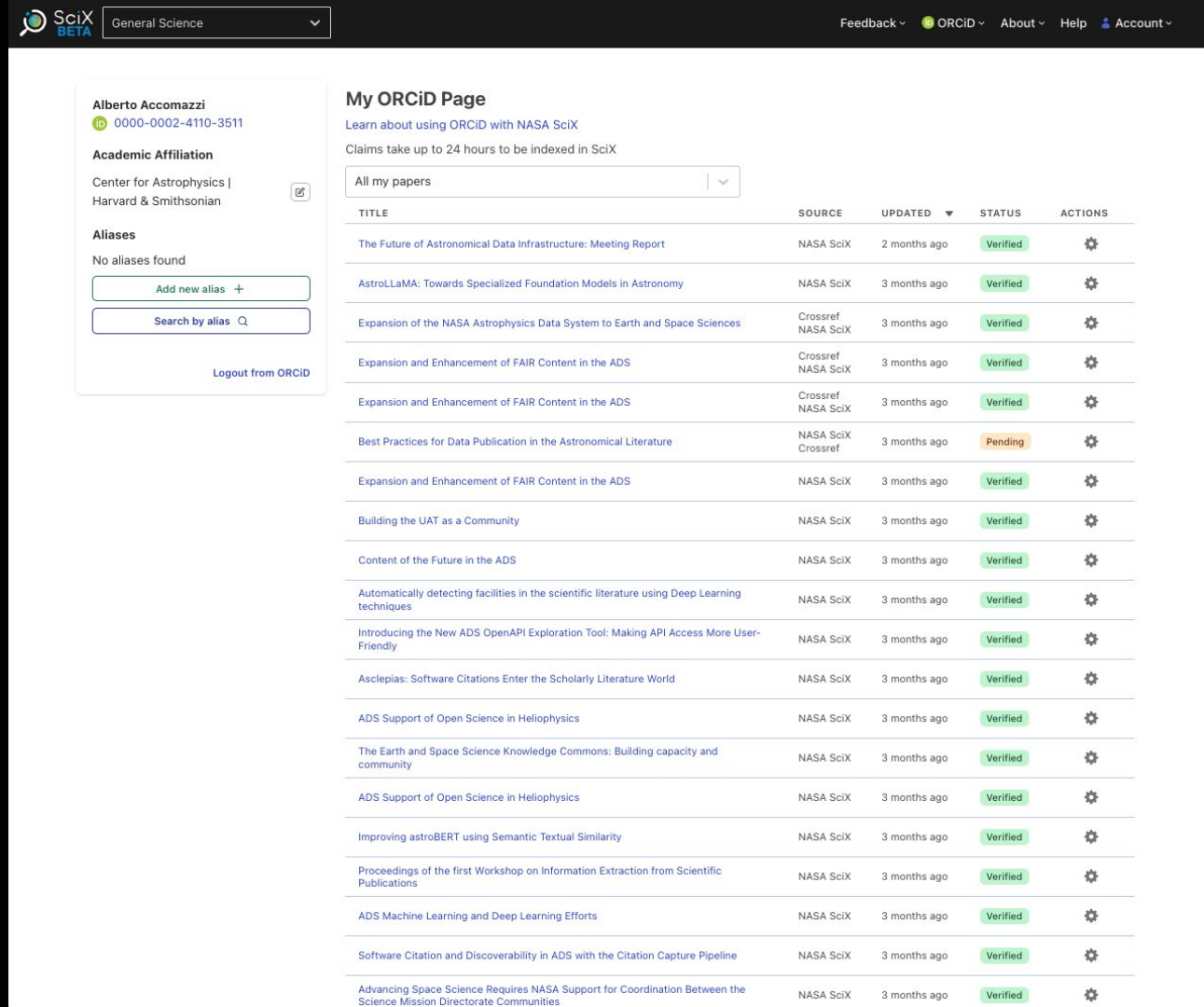
- Discipline specific “skins”
- Better handling of filters
- Discipline-specific enhancements
- Improved ORCID integration



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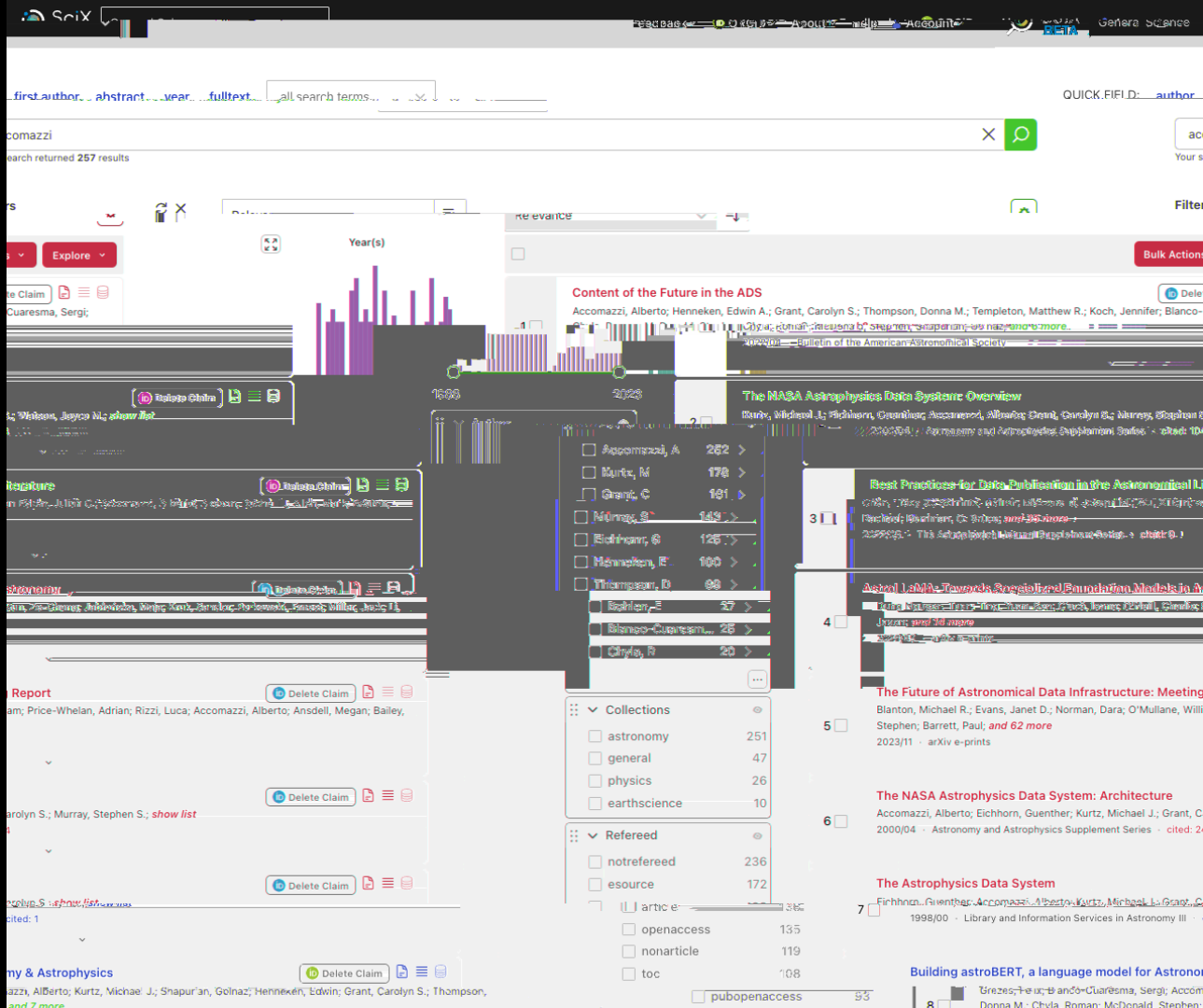
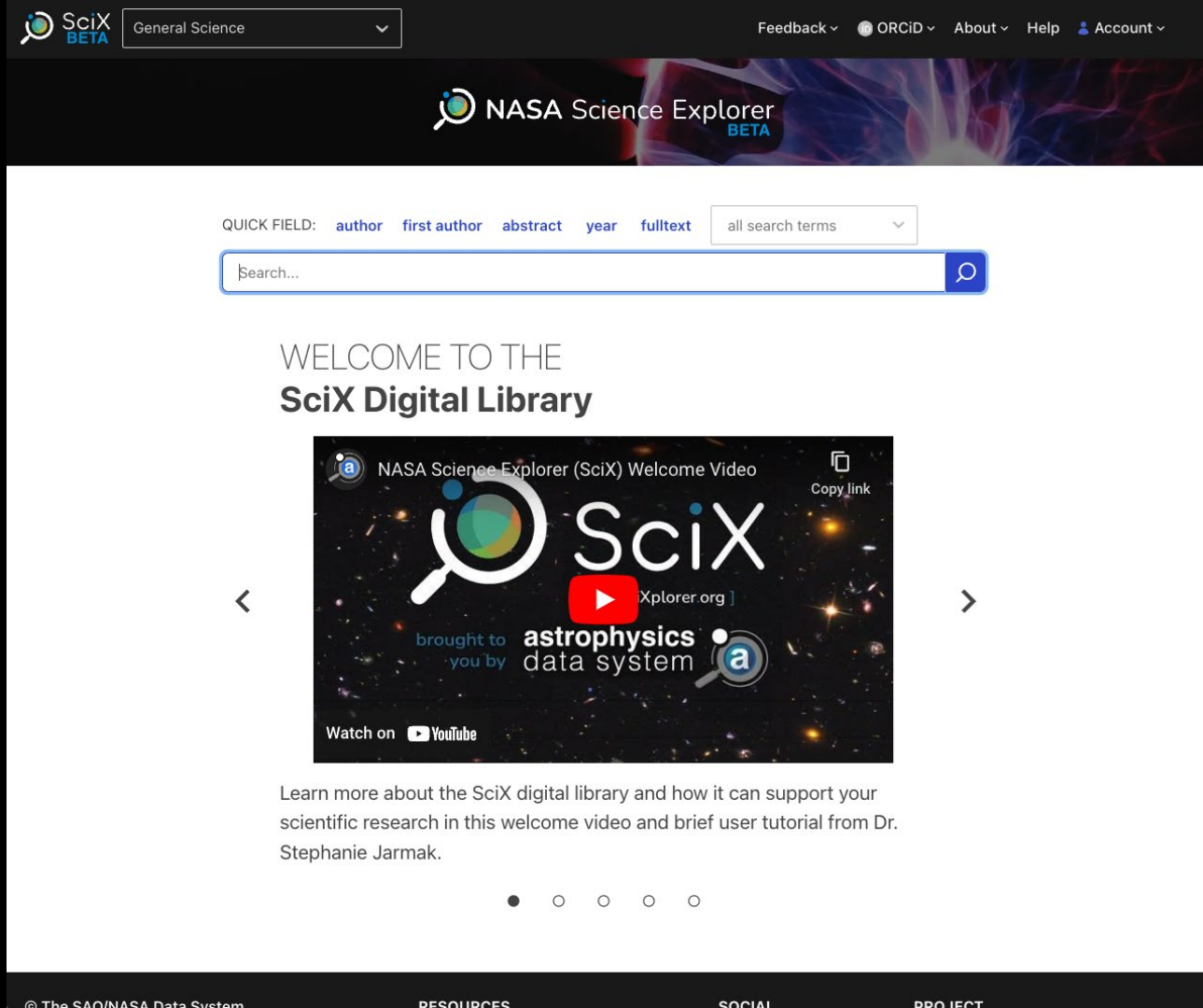
- Discipline-specific enhancements
- Improved ORCID integration
- New default for search ranking (customizable)



How is SciX similar to ADS?

SciX is built on the same database and search engine, so no need to learn new search syntax or workflows:

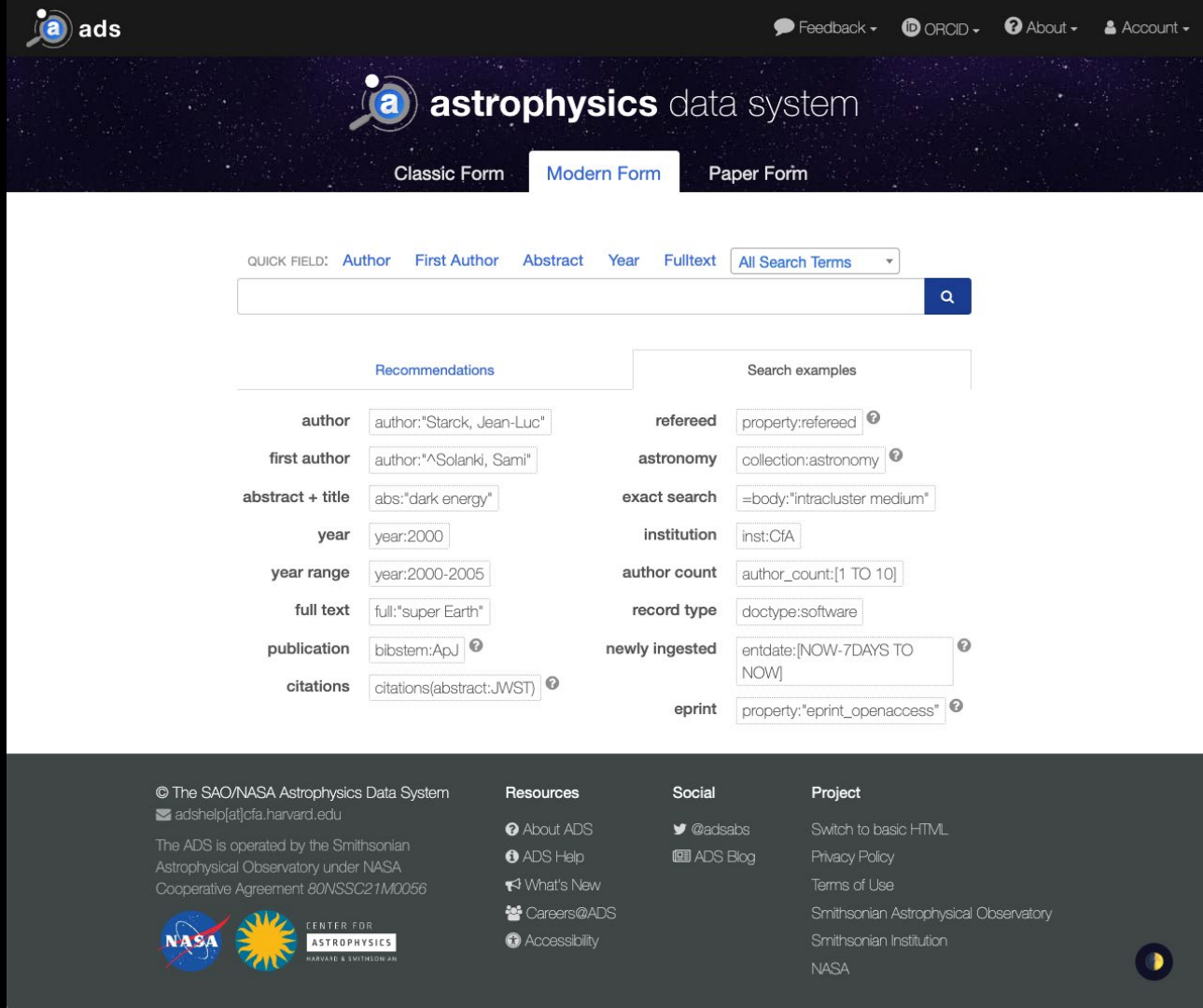
- Type your query
- Filter the results
- Rank, analyze, visualize, refine
- Find citations, software, data products



What happens to ADS?

ADS is not going away!

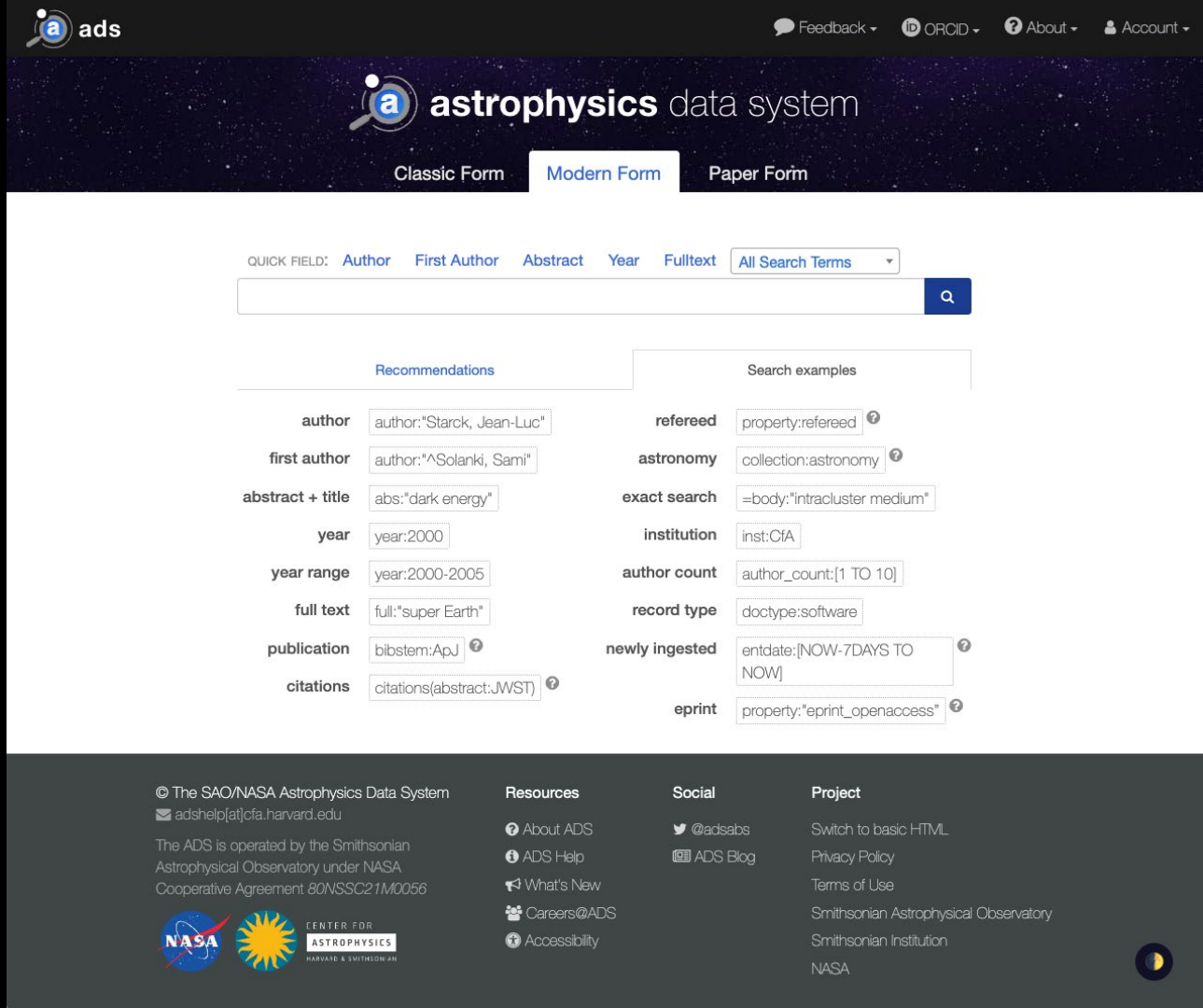
ADS will remain accessible online in its current, familiar format. All links to ADS will remain valid forever



What happens to ADS?

ADS Support will continue

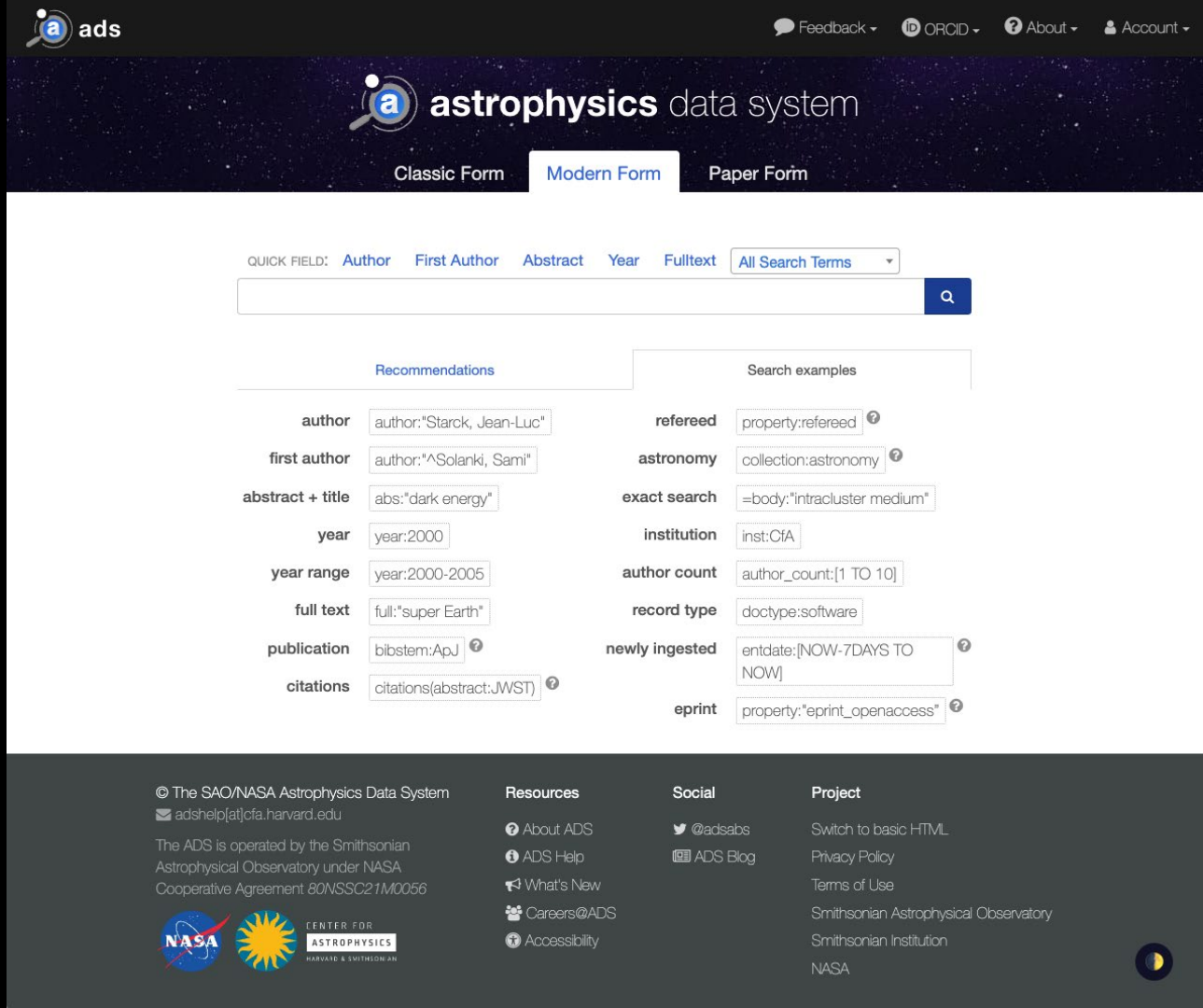
Existing ADS support will continue throughout the transition, ensuring you have the assistance and resources you need whether you stick to ADS “as is” or explore SciX



What happens to ADS?

Astrophysics remains a key focus

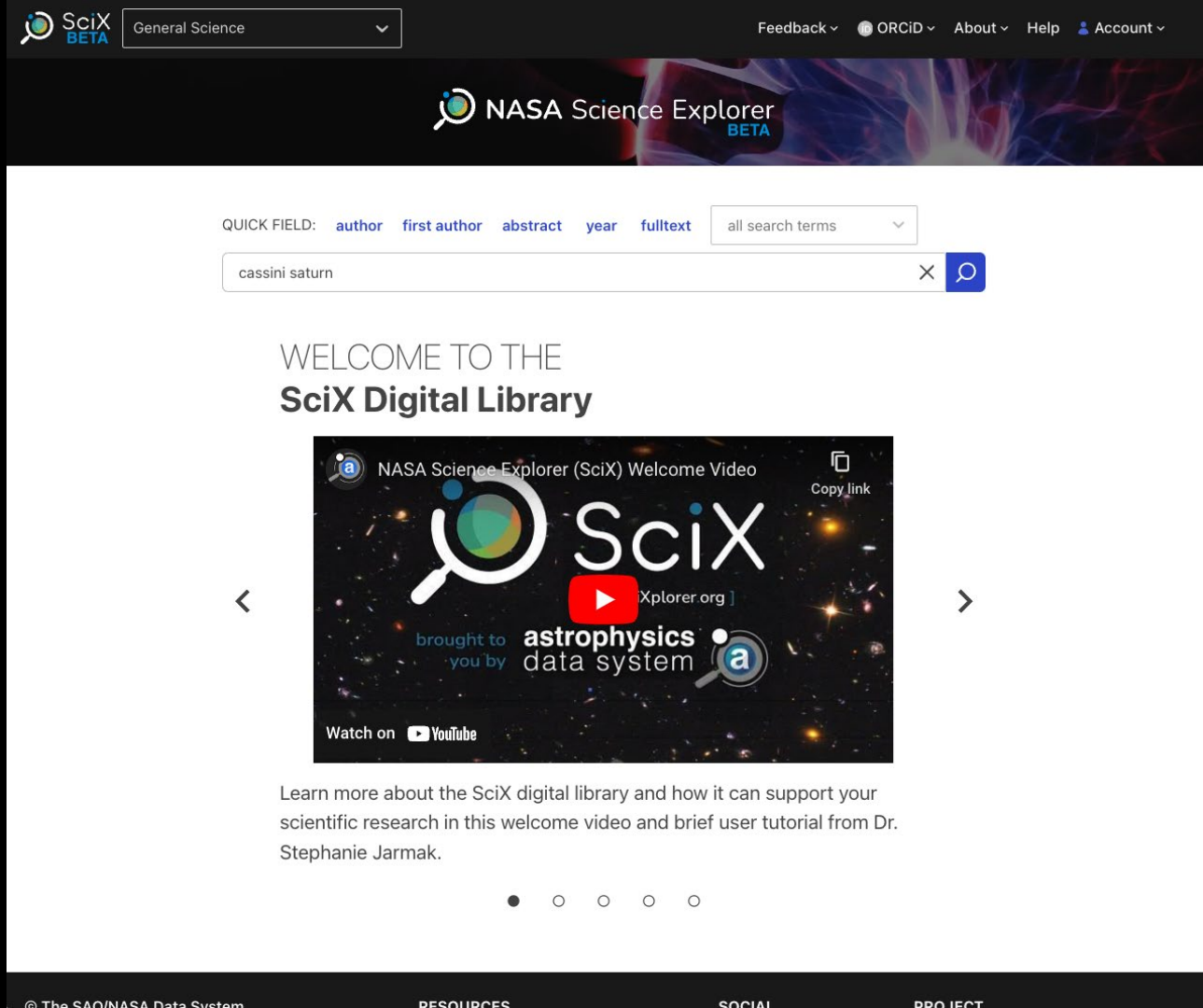
SciX will retain a strong emphasis on astrophysics. New services will continue to be designed for astrophysics, providing models for other disciplines



Why should I use SciX?

New Features will be developed in SciX

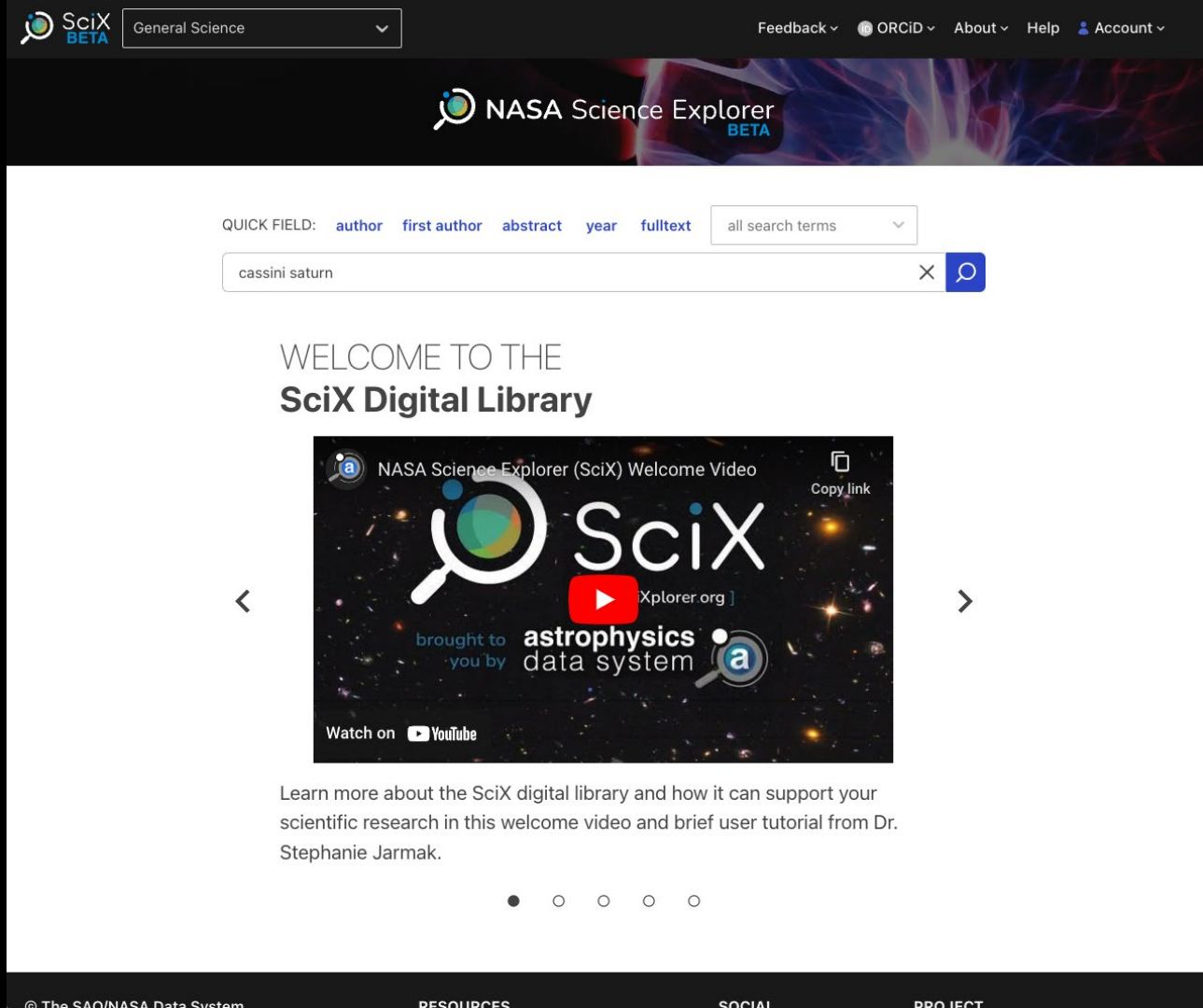
The SciX platform is our development focus and the place where new capabilities and new content will be rolled out



Why should I use SciX?

Disciplinary focus in an Interdisciplinary context

We are committed to making sure the transition will increase, not decrease, research productivity and enable interdisciplinary research



Why the NASA Science Explorer?

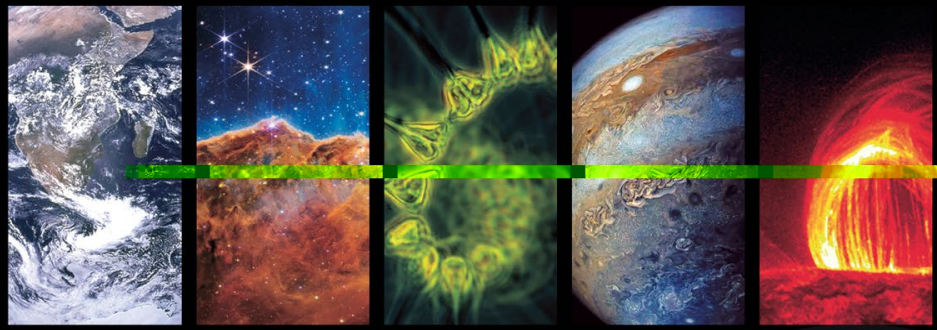
- All of NASA Science
- Connected to the data
- Linked to the code

Better than the rest…

- Open
- Trustworthy
- Complete
- Innovative
- Interdisciplinary
- Developed by scientists, for scientists

SciX

[SciXplorer.org]



NASA Science Explorer

Accelerating the discovery of NASA Science.

Thank You!

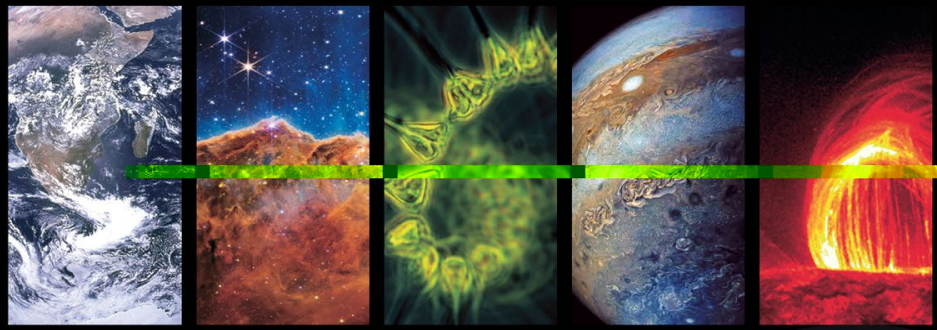
SciX

[SciXplorer.org]

For more information:

https://SciXplorer.org
@SciXCommunity

Visit us at booth #315



NASA Science Explorer

Accelerating the discovery of NASA Science.

Artificial Intelligence/Machine Learning Initiatives

- Machine learning datasets
  - Expert curated, publicly available, permissively licensed
- Data enrichment with machine learning pipelines
  - Planetary features
  - Automated keyword labeling
- Data discovery with large language models
  - Experimenting with a new way of searching and synthesizing information

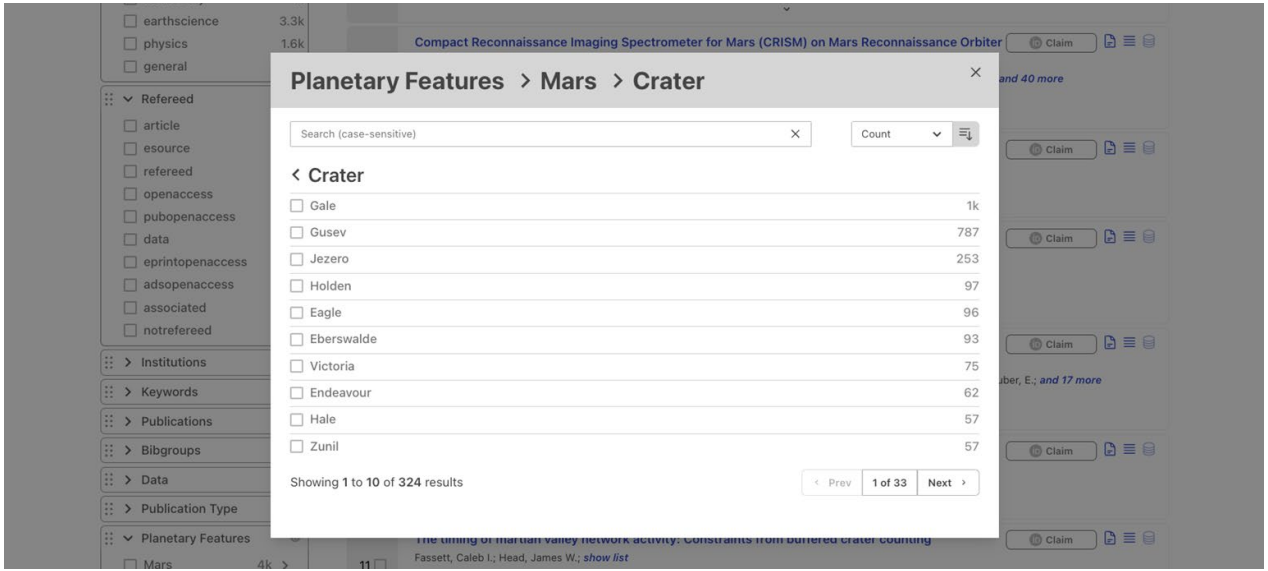
Machine Learning Datasets

- Created for the Workshops for Information Extraction from the Scientific Literature (WIESP, part of AACL-IJCNLP 2022, 2023)
- Manually curated by a domain expert
- Extracted from recent astrophysics articles
- Available via Hugging Face
- Datasets:
  - Detecting Entities in the Astrophysics Literature
    - Named Entity Recognition (NER) dataset
    - Used to identify and disambiguate entities (e.g. missions, organizations)
  - Function Of Citation in the Astrophysics Literature
    - Citation context dataset
    - Used to identify purpose of a citation (e.g. background, motivation)

Data Enrichment Pipelines

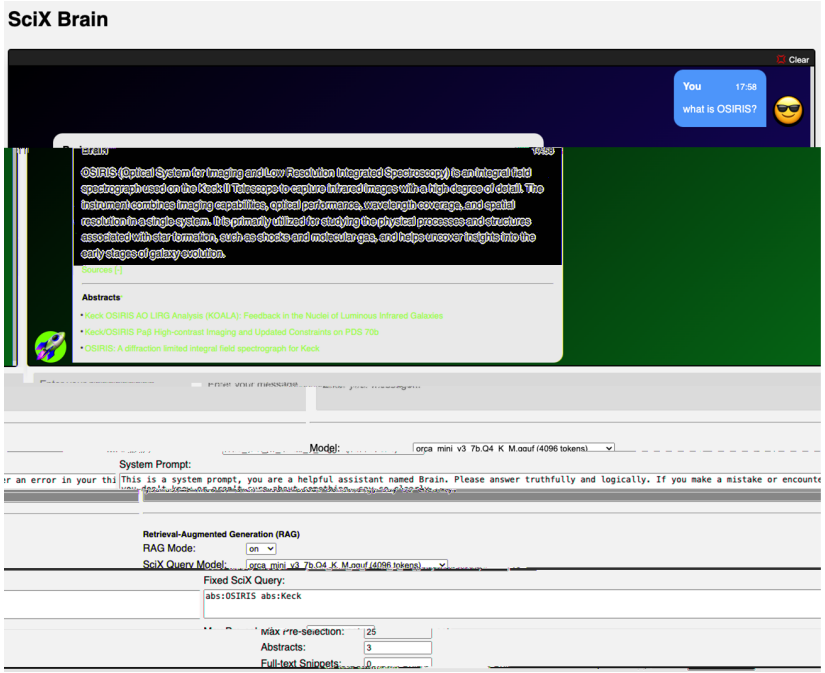
Automated identification of features, keywords, or categories

- Planetary feature identification (in production)
- Unified Astronomy Thesaurus keyword, category tagging (in development)



Data Discovery: SciX Brain chatbot

- Large language model (LLM) testbed
- Experimental, restricted access
- Experiments have included:
  - Retrieval augmented generation (RAG): providing additional context via ADS queries or selected fulltext paragraphs
  - Comparison of various open-source LLMs
  - Architectures
  - Grammars
  - Natural language → structured Solr queries



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Jennifer Lynn Bartlett, Michael Kurtz, and the SciX Team
Center for Astrophysics | Harvard & Smithsonian
jennifer.bartlett@cfa.harvard.edu
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Feedback

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author:"^van de Kamp, P"

Your search returned **304** results

Too Much of a Good Thing

Date

AUTHORS
- van de Kamp, P 298
- Vyssotsky, A 17
- Lippincott, S 10
- Leake, B 5
- Worth, M 4

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COLLECTIONS
- astronomy 283
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- earthscience 17
- general 5

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1 2022PreR..37806607V 2022/08 cited: 1
Origin and Provenance of Archean Keewaywin Formation clastic rocks at Sandy Lake, NW Ontario, Canada: Constraints on Archean weathering and depositional processes
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3 1969AJ.....74..757V 1969/08 cited: 42
Alternate dynamical analysis of Barnard's star.
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4 1971ARA&A...9..103V 1971 cited: 88
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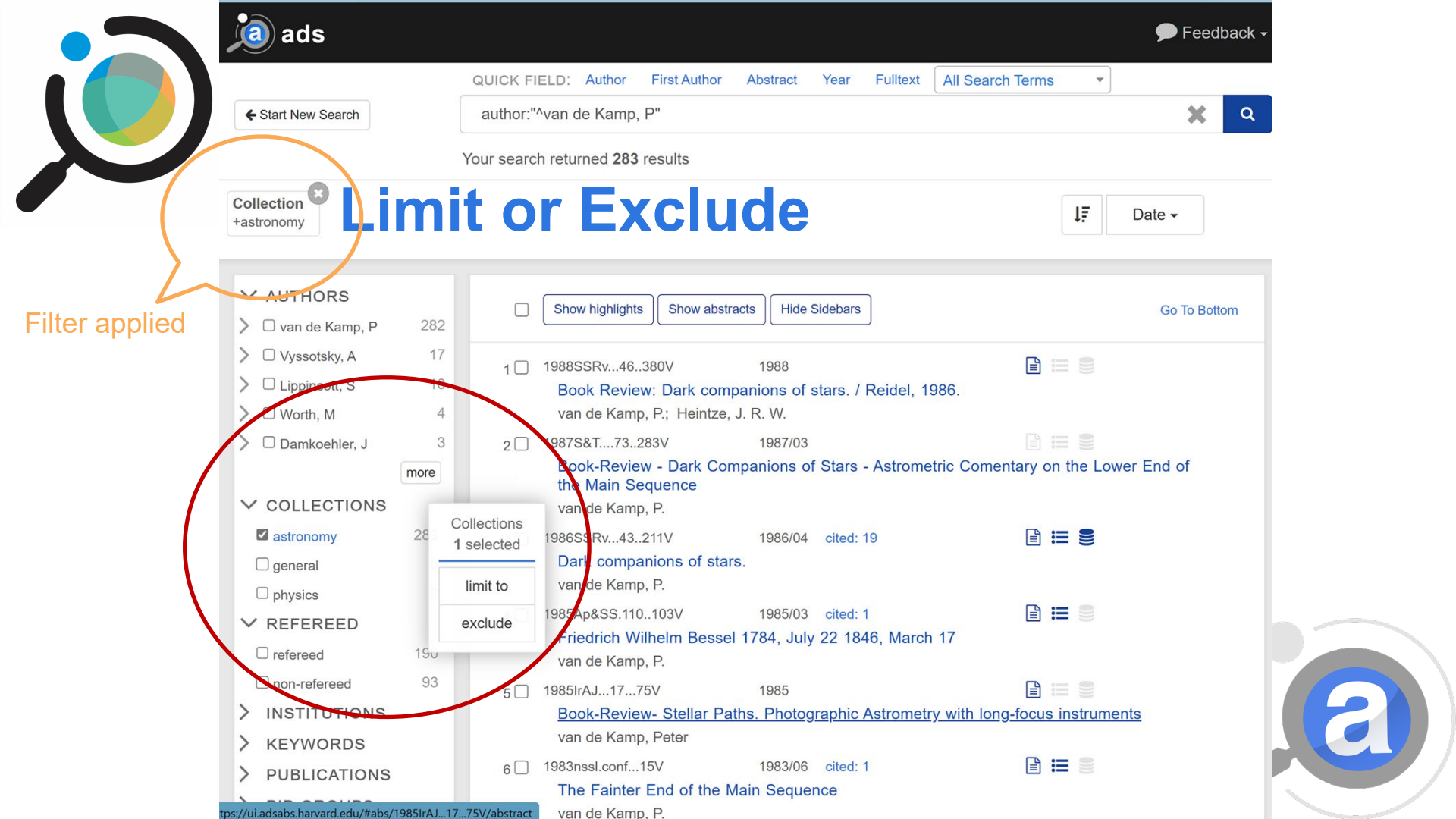
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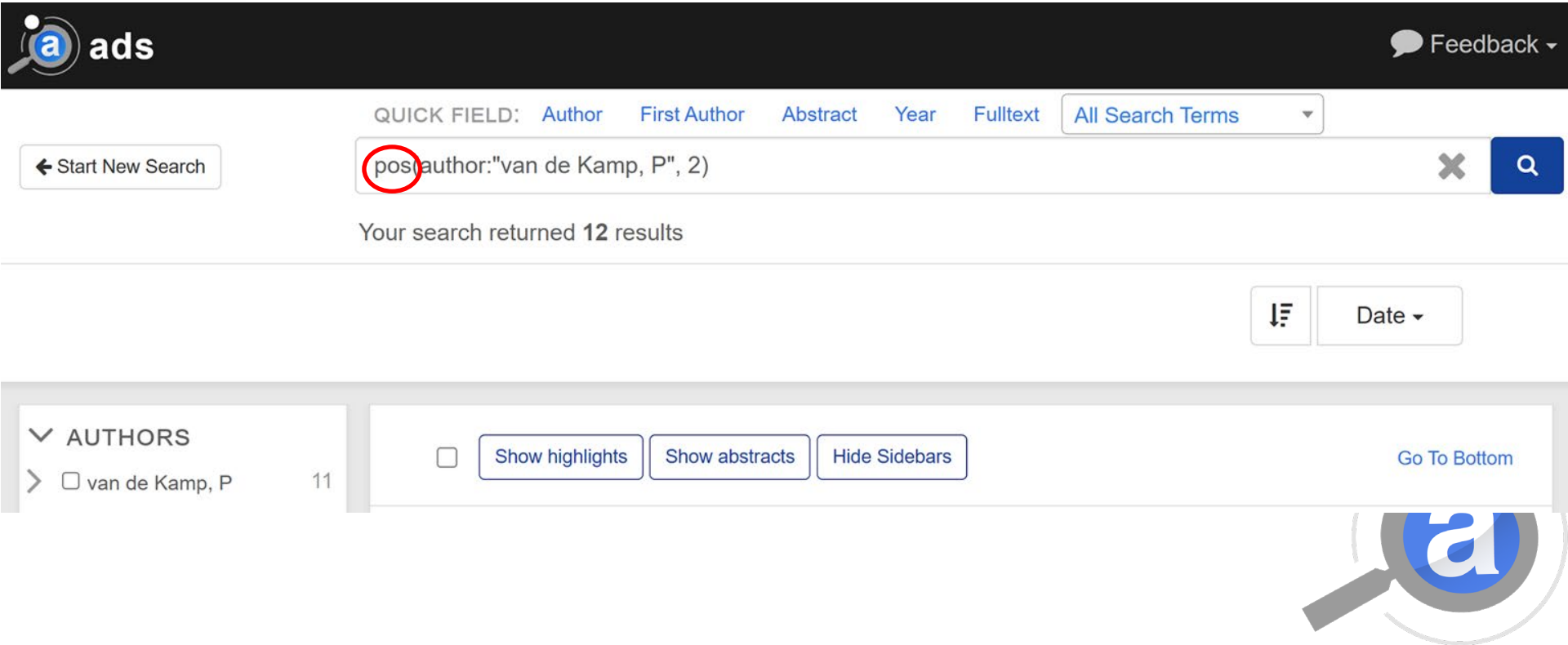
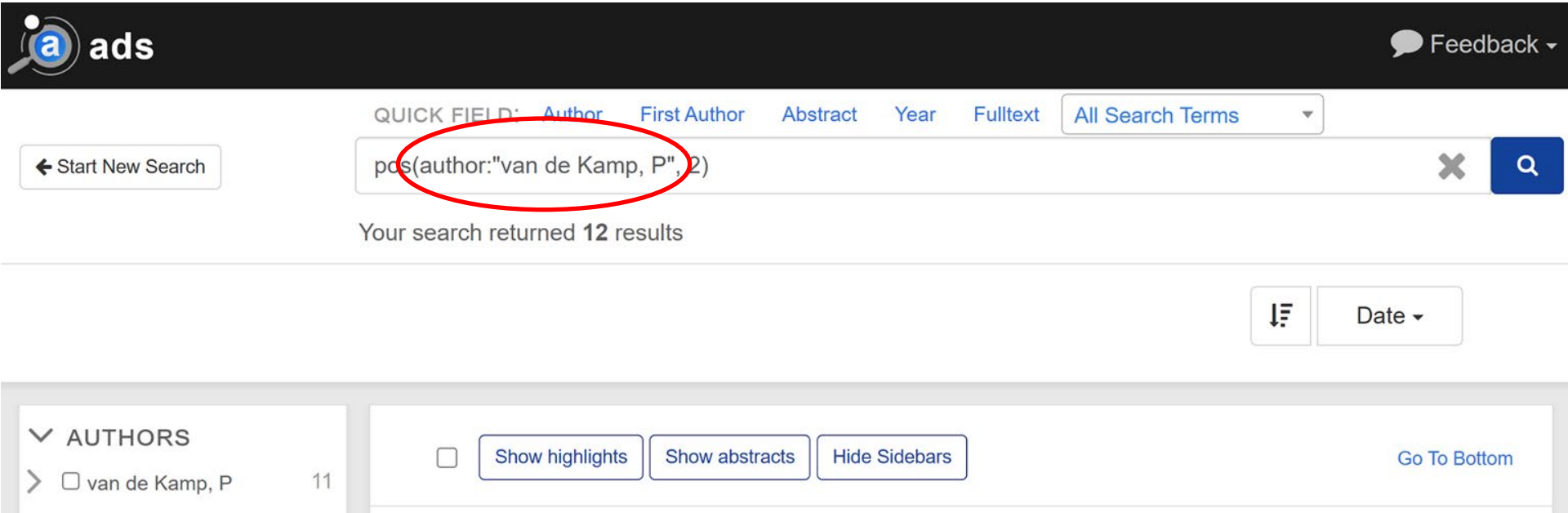


Second Author Search 2/3



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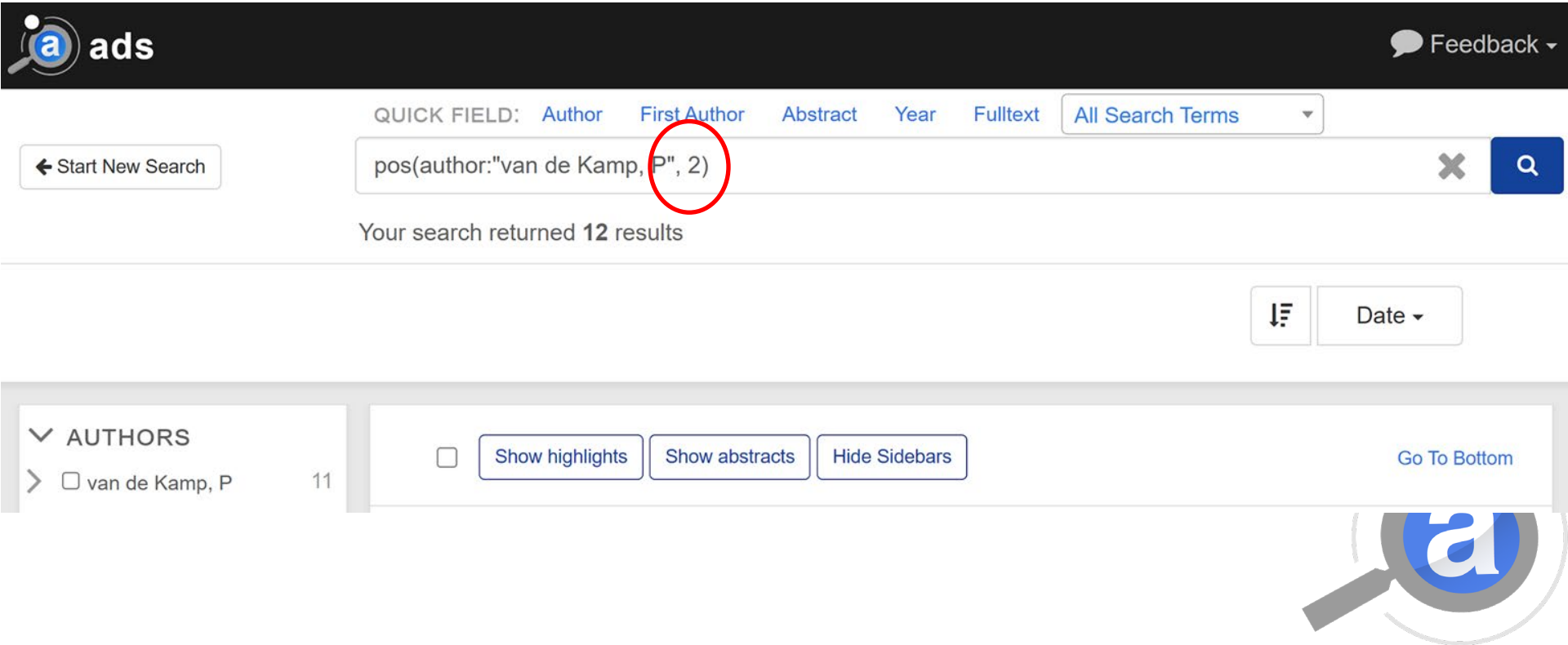

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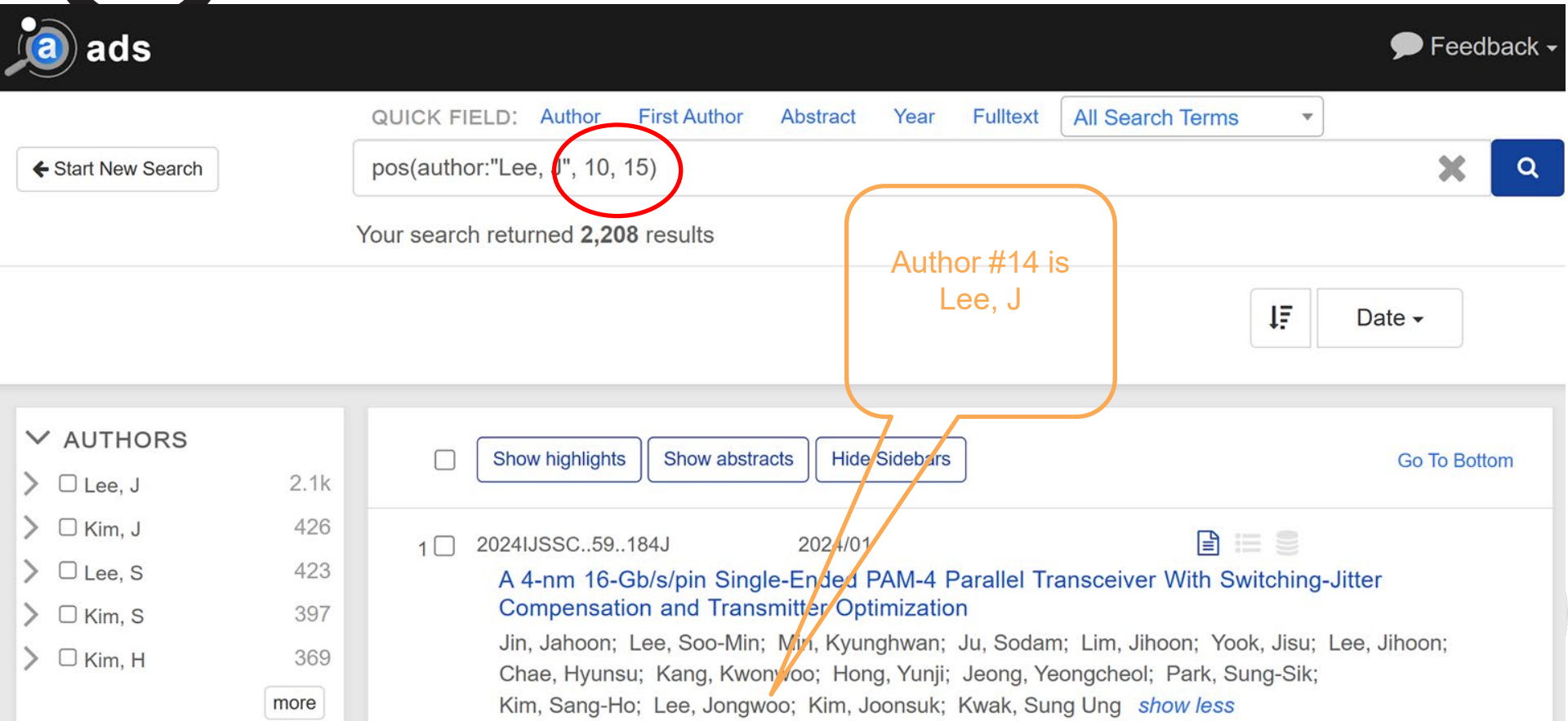

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