Discovering and Accessing Scientific Literature and Data with the Science Explorer (SciX)

Stephanie Jarmak & Science Explorer Team Harvard & Smithsonian | Center for Astrophysics stephanie.jarmak@cfa.harvard.edu FDLP Academy Webinar Feb 19 2025



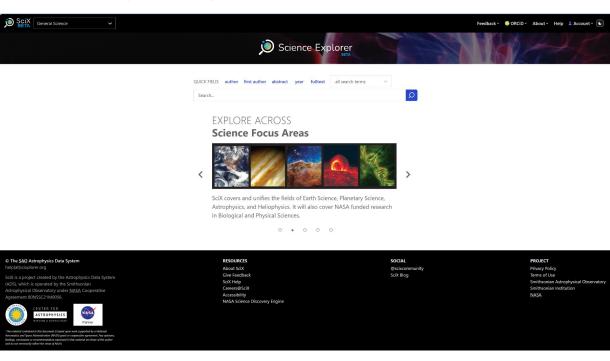






What is Science Explorer (SciX)?

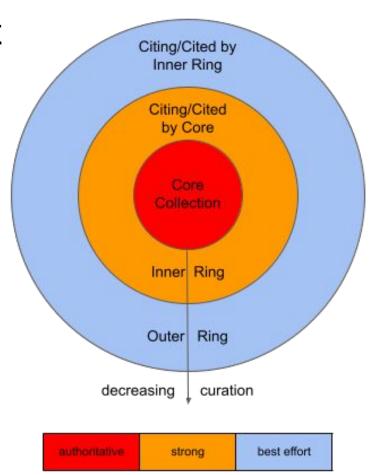
- Open, literature-based digital information system
- Covers & unifies
 - Astrophysics
 - Heliophysics
 - Planetary Science
 - Earth Science
 - NASA-funded Biological
 & Physical Sciences
- LaunchedDecember 2023



Science Explorer (SciX) Content

For each discipline, research is aggregated, connected, and indexed

- Authoritative/complete for core journals
- Strong effort to index papers directly tied to core collection
- Best effort to index papers indirectly tied to core collection

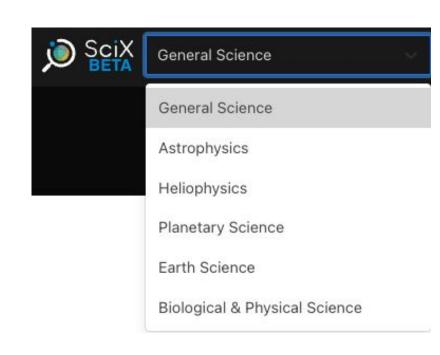


Science Explorer (SciX) Disciplinary Interfaces

Each discipline

- has a customized interface to the multidisciplinary content
- can use familiar keywords, language, and conventions

Every search accesses the full multidisciplinary library



What can SciX do?



Search Examples

QUICK FIELD: author first author abstract year fulltext all search terms

Search..

Search the scientific literature via

The SAO Astrophysics Data System

Agreement 80NSSC21M0056.

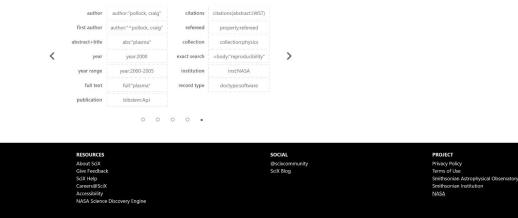
(ADS), which is operated by the Smithsonian

Astrophysical Observatory under NASA Cooperative

SciX is a project created by the Astrophysics Data System

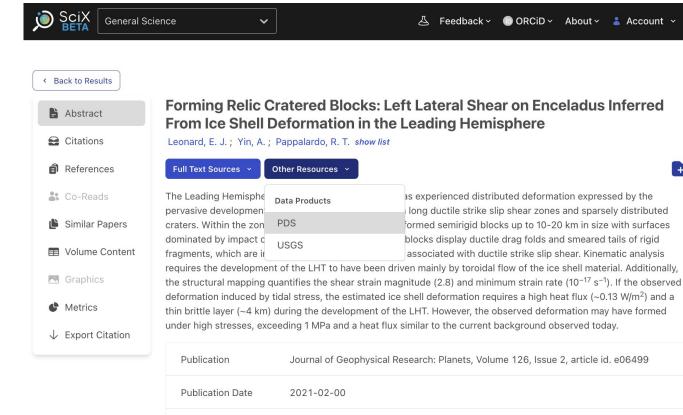
cs and Space Administration (NASA) grant or cooperative agreement. Any opinio

- Topics
- Objects
- People
- Organizations
- Ask for papers that are
 - Similar
 - Trending
 - Useful
 - Reviews



Results! Then what?

- Look interesting?
- Keep exploring!
 - OA versions
 - Citations
 - References
 - Similar papers
 - Software
 - Datasets
 - Metrics



10.1029/2020JE006499 🗗

2021JGRE..12606499L [3]

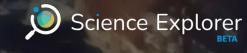
planetary science

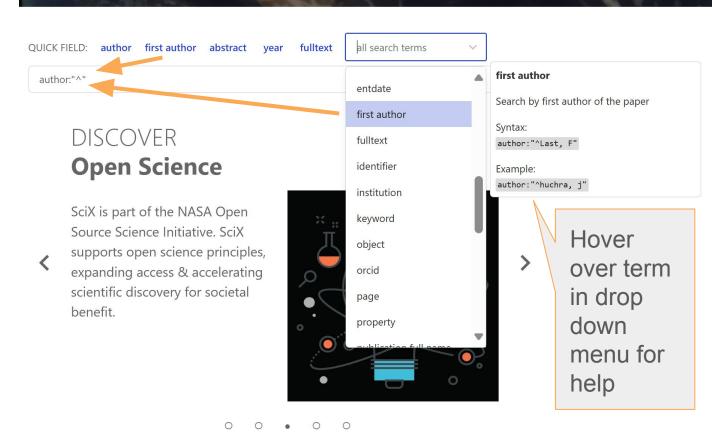
DOI

Bibcode

Keyword(s)

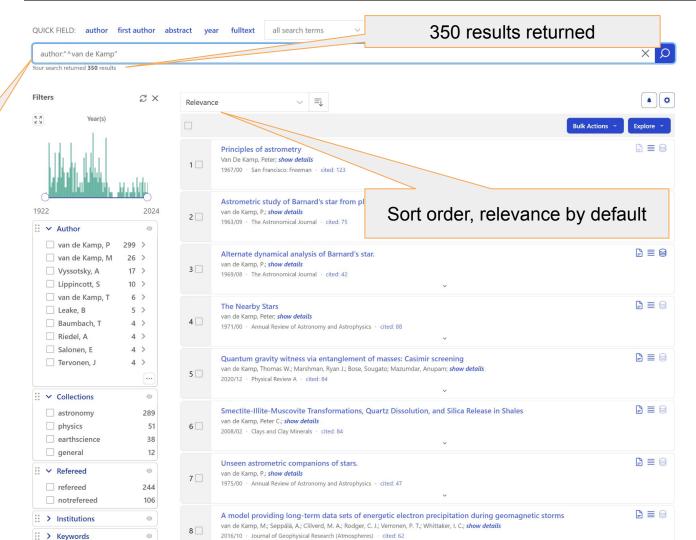
First Author Search





Too Much of a Good Thing

Original request



Reverse the order for a particular QUICK FIELD: author first author abstract all search terms fulltext Sorting Your criterion author:"^van de Kamp" Your search returned 350 results Filters CX Relevance K M Year(s) Results **Bulk Actions** Explore Relevance Date PIB **Author Count** cited: 123 Citation Count ard's star from plates taken with the 24-inch Sproul refractor. Entry Date 2024 First Author van de Kamp, P 299 > Normalized Citation Count sis of Barnan van de Kamp, M 26 > Read Count Vyssotsky, A 17 > 1969/08 · The Astronomical Journal · cited: 42 pincott. S 10 > de Kamp, T 6 > SciX Default: Relevance The Nearby Stars ke, B 5 > van de Kamp, Peter; show details 4 ımbach, T 4 > 1971/00 · Annual Review of Astronomy and Astrophysics · cite ADS Default: Date, Riedel, A 4 > Salonen, E 4 > most recent first Quantum gravity witness via entanglement of mas Tervonen, J 4 > van de Kamp, Thomas W.; Marshman, Ryan J.; Bose, Sougato 5 2020/12 · Physical Review A · cited: 84 Collections Smectite-Illite-Muscovite Transformations, Quartz Dissolution, and Silica Release in Shales astronomy 289 van de Kamp, Peter C.; show details physics 51 6 2008/02 · Clays and Clay Minerals · cited: 84 earthscience 38 general 12 Unseen astrometric companions of stars. ⋮ ∨ Refereed 0 van de Kamp, P.: show details 7 1975/00 · Annual Review of Astronomy and Astrophysics · cited: 47 refereed 244 notrefereed 106 PI A model providing long-term data sets of energetic electron precipitation during geomagnetic storms :: > Institutions van de Kamp, M.; Seppälä, A.; Clilverd, M. A.; Rodger, C. J.; Verronen, P. T.; Whittaker, I. C.; show details

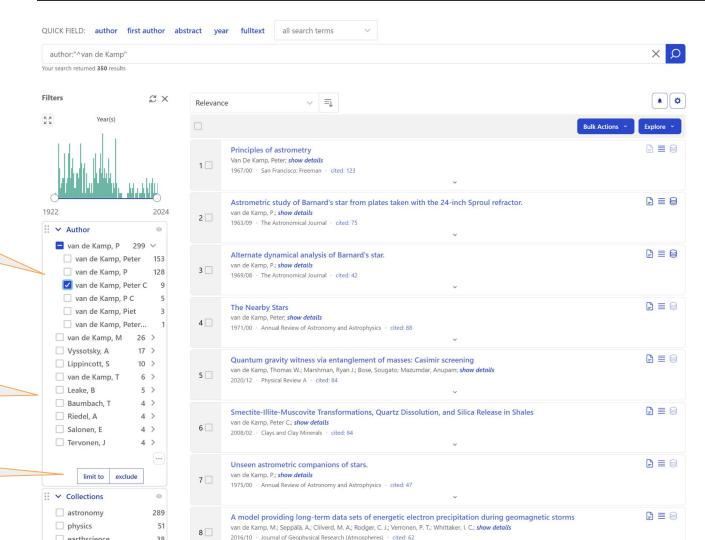
Refine by Name

https://SciXplorer.org

Variants on the requested "van de Kamp" name among the results

Other authors who contributed to the papers among the results

Limit or Exclude options



author:"^van de Kamp"

Year(s)

Your search returned 306 results author: van de Kamp, P X

Remove all filters

: > Author

:: > Collections

₩ × Refereed

refereed

:: > Institutions

:: > Keywords :: > Publications

:: > Bibgroups

:: > Publication Type

Show hidden filters (3)

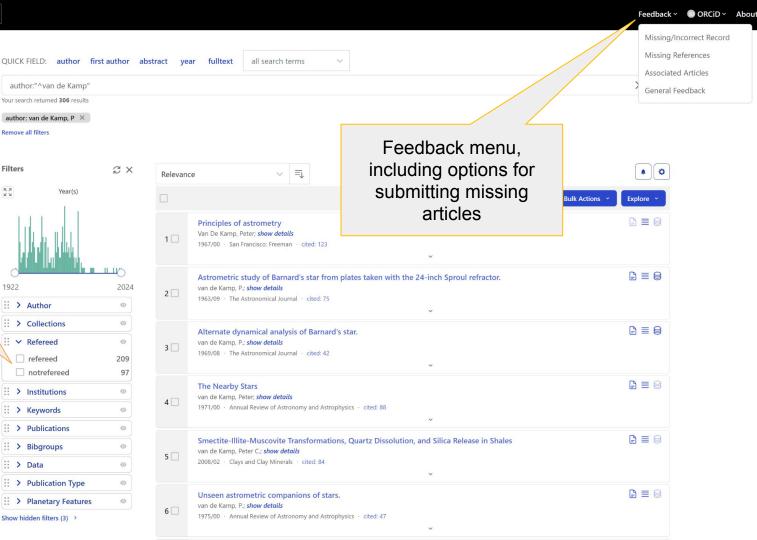
Planetary Features

:: > Data

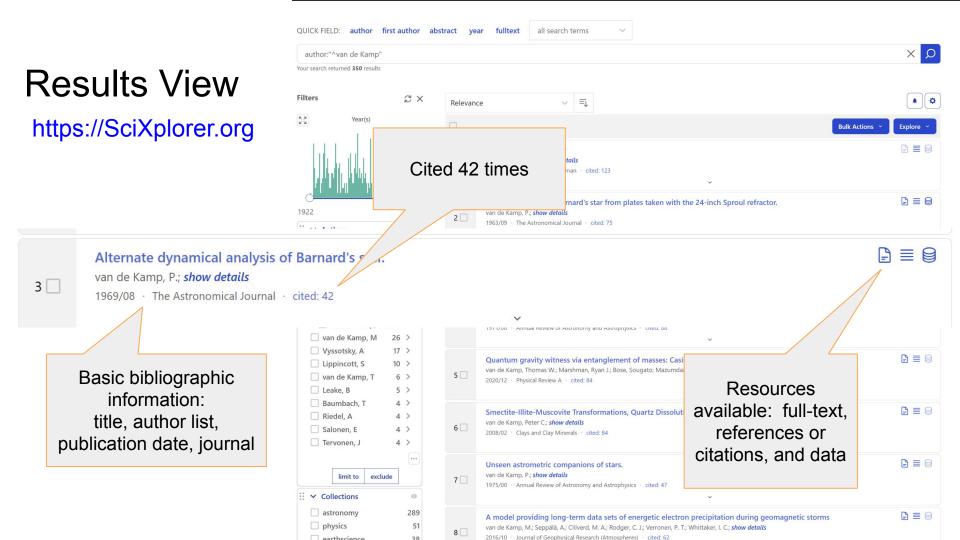
notrefereed

Filters

Limit your search to refereed or nonrefereed articles.

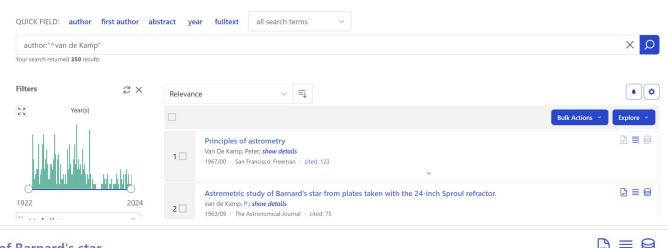


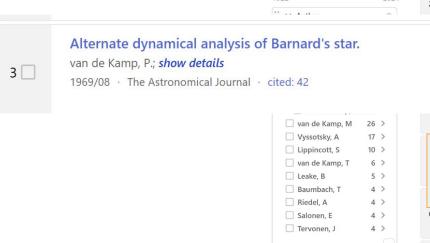




Results View

https://SciXplorer.org





limit to

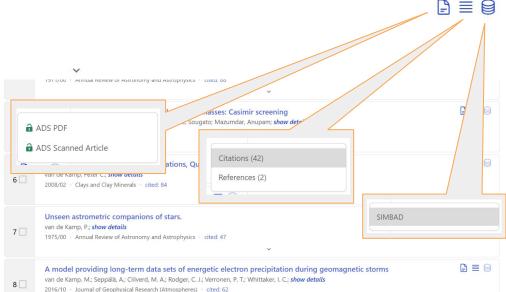
:: V Collections

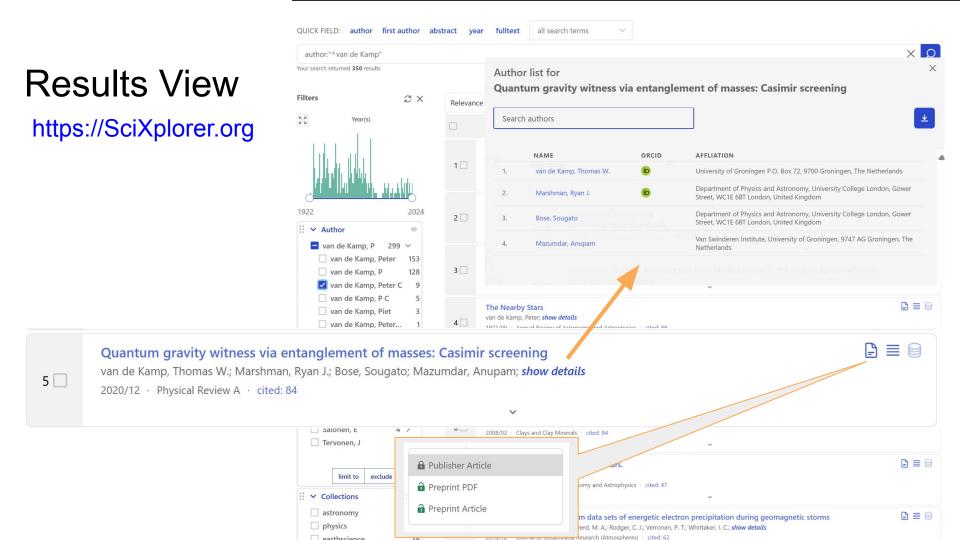
astronomy

physics

aprthesiones

exclude





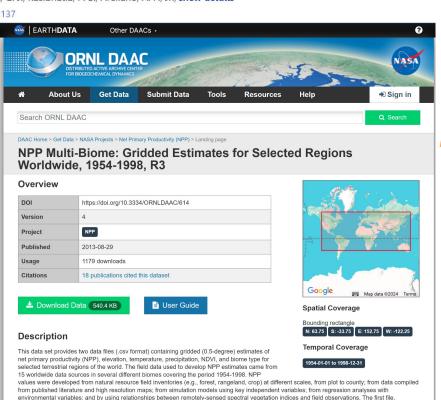
Datasets available

12

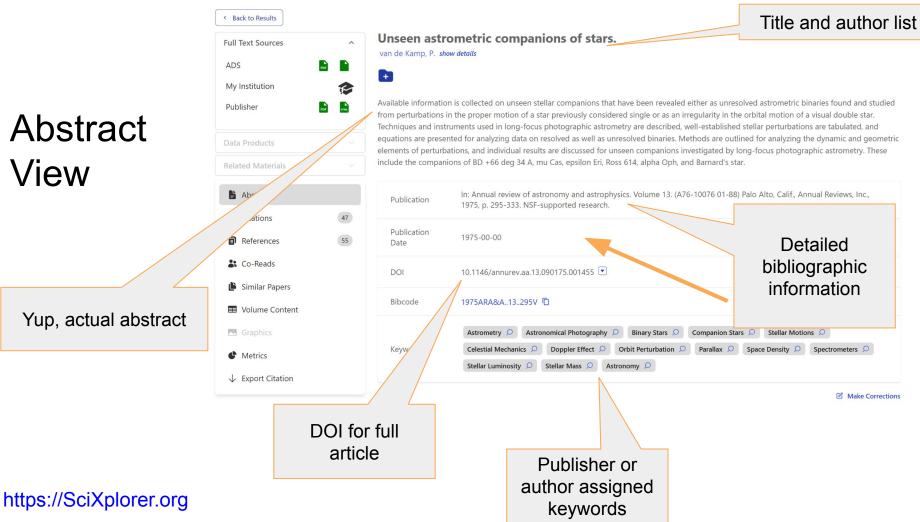
Interannual variability in global biomass burning emissions from 1997 to 2004

van der Werf, G. R.; Randerson, J. T.; Giglio, L.; Collatz, G. J.; Kasibhatla, P. S.; Arellano, A. F., Jr.; show details

2006/08 · Atmospheric Chemistry & Physics · cited: 1137



ORNL.DAAC

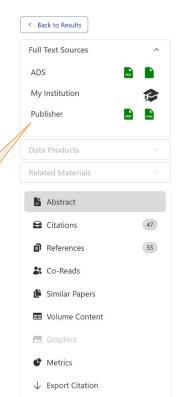


Abstract View

Yup, actual abstract

Abstract View

Full-text available from multiple sources

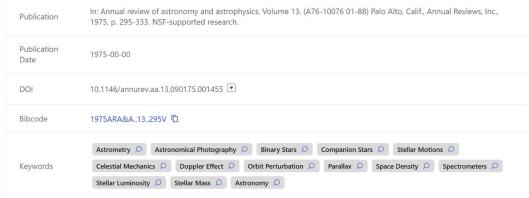


Unseen astrometric companions of stars.

van de Kamp, P. show details



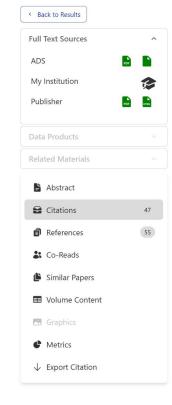
Available information is collected on unseen stellar companions that have been revealed either as unresolved astrometric binaries found and studied from perturbations in the proper motion of a star previously considered single or as an irregularity in the orbital motion of a visual double star. Techniques and instruments used in long-focus photographic astrometry are described, well-established stellar perturbations are tabulated, and equations are presented for analyzing data on resolved as well as unresolved binaries. Methods are outlined for analyzing the dynamic and geometric elements of perturbations, and individual results are discussed for unseen companions investigated by long-focus photographic astrometry. These include the companions of BD +66 deg 34 A, mu Cas, epsilon Eri, Ross 614, alpha Oph, and Barnard's star.



Something missing or incorrect? Let us know. Curators standing by.

Make Corrections

Abstract View



Papers that cite Unseen astrometric companions of stars. View as search results

□ ■ 日 A Sun-like star orbiting a black hole El-Badry, Kareem; Rix, Hans-Walter; Quataert, Eliot; Howard, Andrew W.; Isaacson, Howard; Fuller, Jim; Hawkins, Keith; Breivik, Katelyn; Wong, Kaze W. K.; Rodriguez, Antonio C.; and 11 more 2023/01 · Monthly Notices of the Royal Astronomical Society · cited: 110

□ ■ 日

Gaia's binary star renaissance El-Badry, Kareem; show details 2024/06 · New Astronomy Reviews · cited: 15

J.: show details

Stellar Multiplicity Duchêne, Gaspard; Kraus, Adam; show details

2019/06 · The Astronomical Journal · cited: 152

2013/08 · Annual Review of Astronomy and Astrophysics · cited: 1106

2023/01 · Monthly Notices of the Royal Astronomical Society · cited: 37

Unresolved stellar companions with Gaia DR2 astrometry Belokurov, Vasily; Penoyre, Zephyr; Oh, Semyeong; Iorio, Giuliano; Hodgkin, Simon; Evans, N. Wyn; Everall, Andrew; Koposov, Sergey E.; Tout, Christopher A.; Izzard, Robert; and 2 more 2020/08 · Monthly Notices of the Royal Astronomical Society · cited: 272

Winters, Jennifer G.; Henry, Todd J.; Jao, Wei-Chun; Subasavage, John P.; Chatelain, Joseph P.; Slatten, Ken; Riedel, Adric R.; Silverstein, Michele L.; Payne, Matthew

Triage of the Gaia DR3 astrometric orbits - I. A sample of binaries with probable compact companions Shahaf, S.; Bashi, D.; Mazeh, T.; Faigler, S.; Arenou, F.; El-Badry, K.; Rix, H. W.; show details

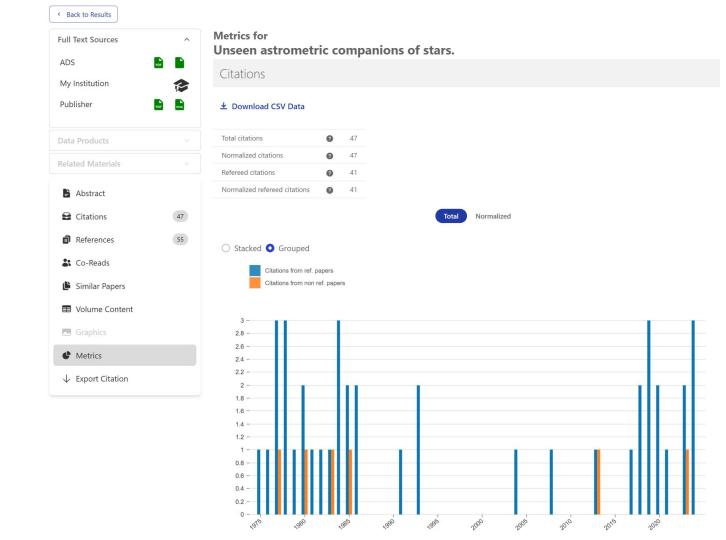
The Solar Neighborhood. XLV. The Stellar Multiplicity Rate of M Dwarfs Within 25 pc

Detecting Detached Black Hole binaries through Photometric Variability Chawla, Chirag; Chatterjee, Sourav; Shah, Neev; Breivik, Katelyn; show details 2023/10 · arXiv e-prints · cited: 3

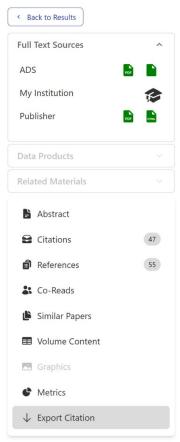
https://SciXplorer.org

Determining the true mass of radial-velocity exoplanets with Gaia. Nine planet candidates in the brown dwarf or stellar 🕒 🖹 🗎 regime and 27 confirmed planets Kiefer, F.; Hébrard, G.; Lecavelier des Etangs, A.; Martioli, E.; Dalal, S.; Vidal-Madjar, A.; show details 2021/01 · Astronomy and Astrophysics · cited: 25

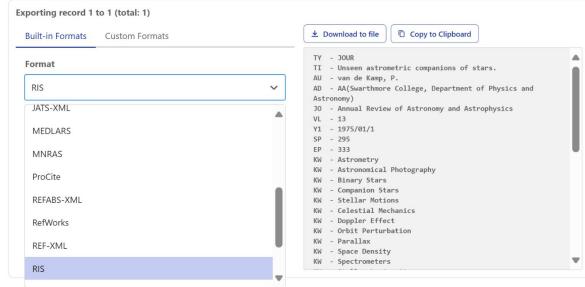
Abstract View



Abstract View



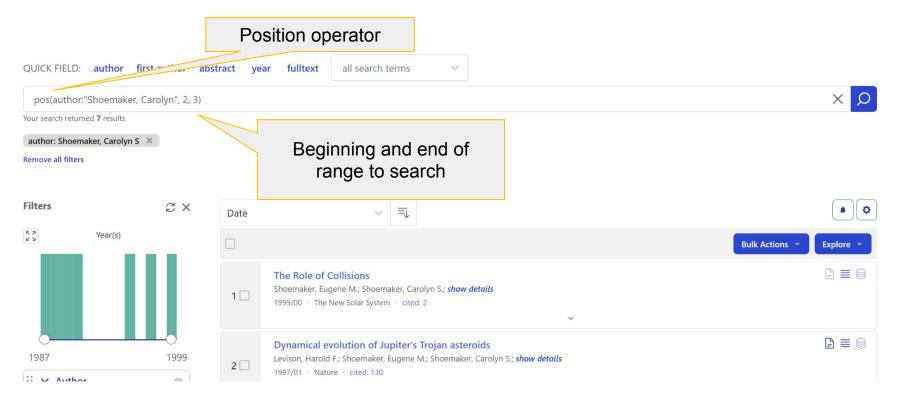
Export citation for Unseen astrometric companions of stars.



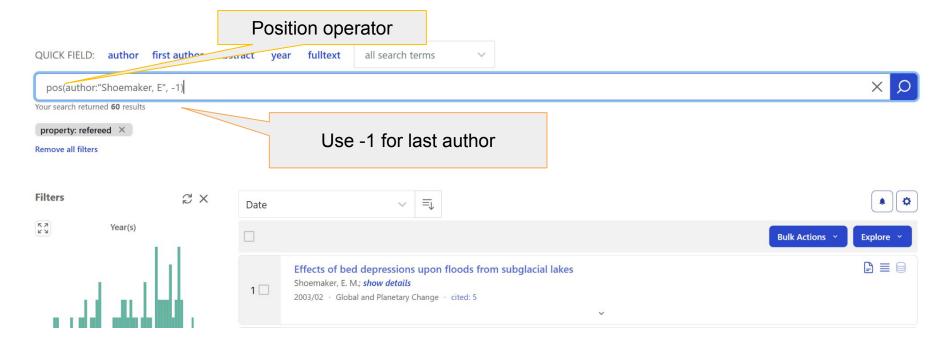
Position: Second Author Search



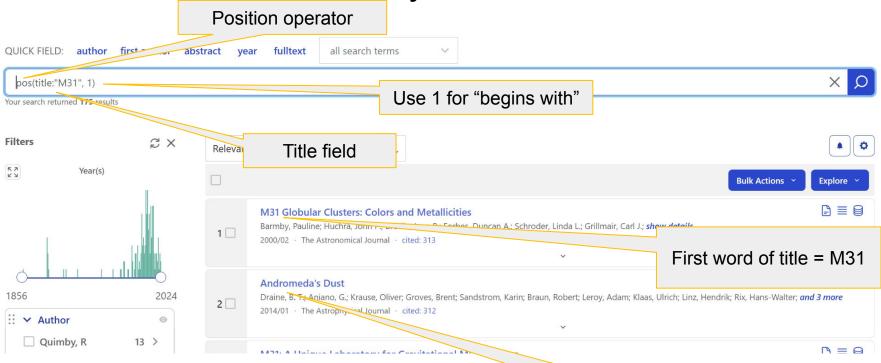
Position: Second or Third Author Search



Position: Last Author Search



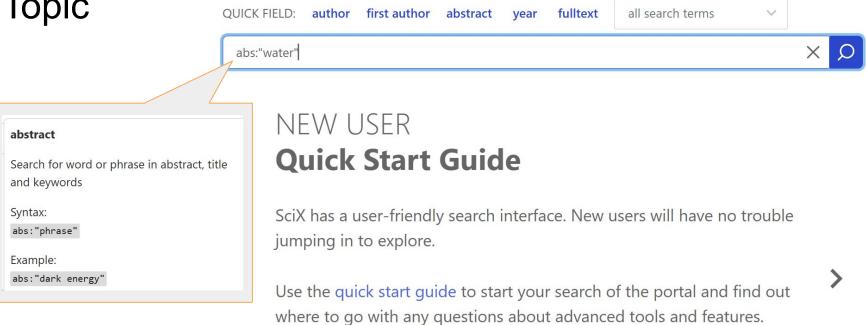
Position Works Generally



M31 is a catalog designation for the Andromeda Galaxy

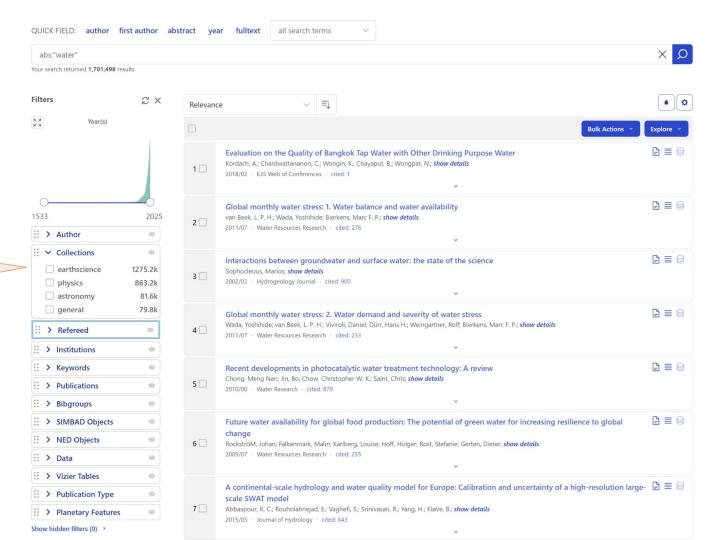
Search by Topic



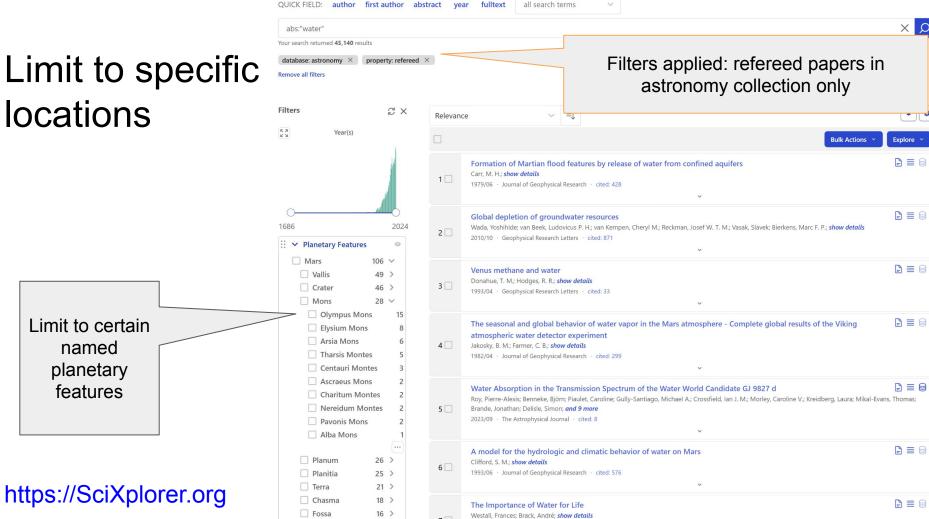


Limit the Collections Displayed

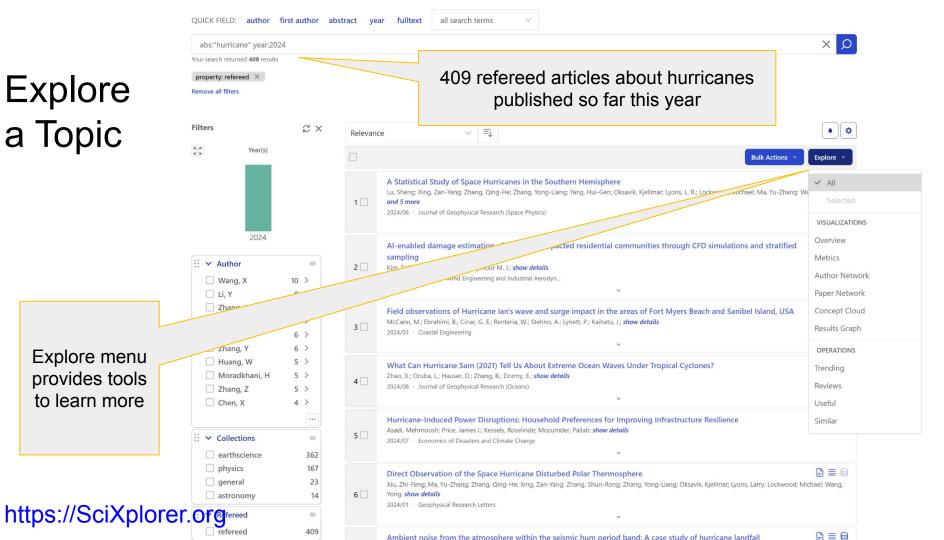
Limit your search to specific collections



Limit to specific locations



Explore a Topic

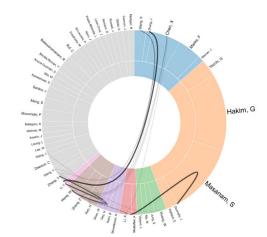


Visualize **Author** Networks, or Collaborations

< Visualizations

Overview





Metrics

Author Network

Filter current search:

Paper Network

Narrow down your search results to papers from a certain group or author

select an author or a group in the visualization and click the 'add to filter' button Search

Concept Cloud

Summary

Group 1

Add to filter

Results Graph

Total papers: 24, most recent: 2024

Parameterizations of Boundary Layer Mass Fluxes in High-Wind Conditions for **Tropical Cyclone Simulations**

2 authors from this group cited: 3

Sensitivity of HAFS-B Tropical Cyclone Forecasts to Planetary Boundary Layer and

Microphysics Parameterizations

2 authors from this group cited: 1

Cloud Height Distributions and the Role of Vertical Mixing in the Tropical Cyclone Eye **Derived From Compact Raman Lidar Observations**

1 author from this group

Asymmetries during Eyewall Replacement Cycles of Hurricane Ivan (2004)

1 author from this group

Diagnosing Radial Ventilation in Dropsonde Observations of Hurricane Sam (2021)

1 author from this group

Information retrieval and classification of real-time multi-source hurricane evacuation notices

1 author from this group

Comparison of the evolution of Rayleigh-Taylor instability during the coasting phase of the central ignition and the double-cone ignition schemes

1 author from this group cited: 1

¹⁷O-Excess in Tropical Cyclones Reflects Local Rain Re-Evaporation More Than

Moisture Source Conditions

1 author from this group cited: 1

Tropical Cyclone Monitoring and Analysis Techniques: A Review

1 author from this group

Landcover-based detection of rapid impacts of extreme storm on coastal landscape 1 author from this group

A Statistical Study of Space Hurricanes in the Southern Hemisphere

Visualize Paper Networks, or Subtopics

< Visualizations

Overview Metrics Author Network Paper Network Concept Cloud Results Graph

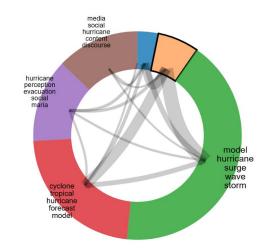
About Paper Network

This network visualization represents groups of papers from your result set which cite similar papers. Click on a group to learn more about the papers within the group, as well as the papers cited by those papers.Learn more about paper network

★ Download CSV Data

Show the first 409 papers (max is 409) Apply

Number of Papers Paper Citations Paper Downloads



Filter current search:

Narrow down your search results to papers from a certain group

select a group in the visualization and click the 'add to filter' button

Search

Summary

Detail

Group 2: cyclone, tropical, hurricane, climate, change, activity

Add to filter

X

This group consists of 42 papers, which have been cited, in total, 6 times.

Top 30 papers from this group

A Global Increase in Nearshore Tropical Cyclone Intensification

Balaguru, Karthik cited: 1

¹⁷O-Excess in Tropical Cyclones Reflects Local Rain Re-Evaporation More Than Moisture Source Conditions

Sun, Chijun cited: 1

Rapid natural hazard extent estimation from twitter data: investigation for hurricane impact areas

Florath, Janine cited: 1

Storm surge modeling in the AI era: Using LSTM-based machine learning for

enhancing forecasting accuracy

Giaremis, Stefanos cited: 1

Spatiotemporal changes in hurricane-force wind risk assessment in the Yucatan

Peninsula, Mexico

Romero, David cited: 1

Last millennium hurricane activity linked to endogenous climate variability

Yang, Wenchang cited: 1

Asset-level assessment of climate physical risk matters for adaptation finance Bressan, Giacomo

Improving Coastal Storm Surge Monitoring Through Joint Modeling Based on Permanent and Temporary Tide Gauges

Yang, Lianjun

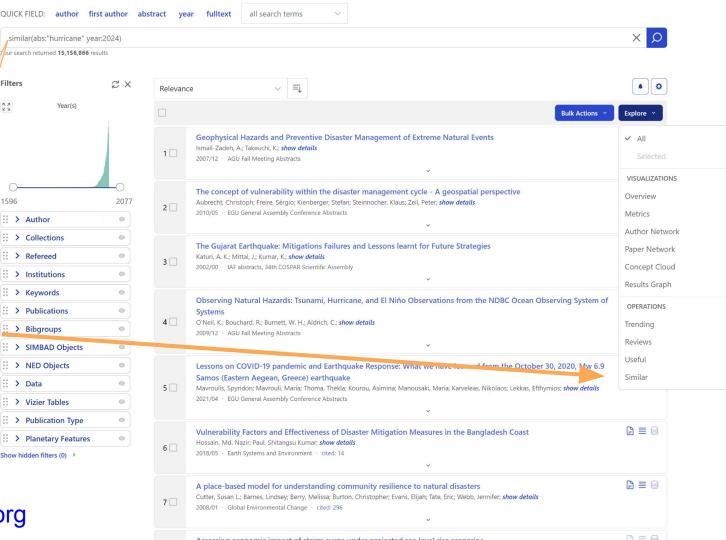
Rapid intensification of tropical cyclones in the Gulf of Mexico is more likely during marine heatwaves

Radfar, Soheil

What else should read?

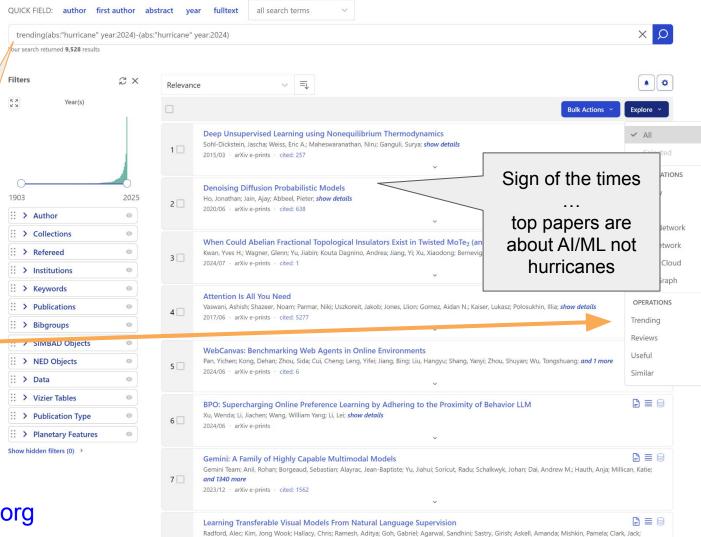
1596

15,156,866 papers textually similar to the 406 papers we initially selected



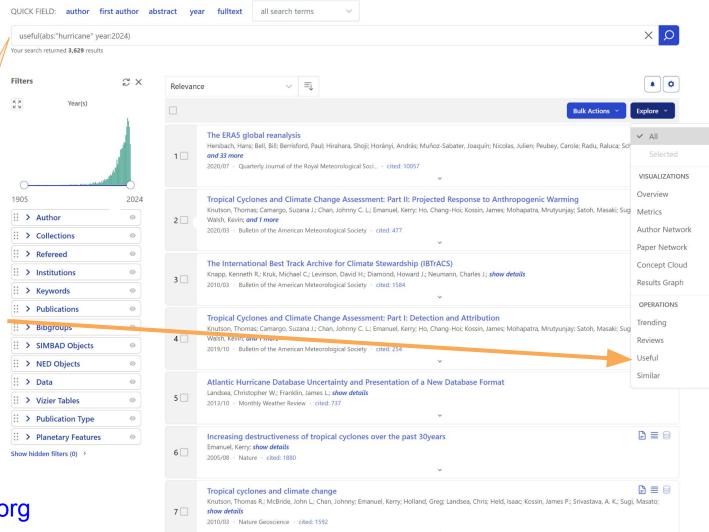
What are others reading?

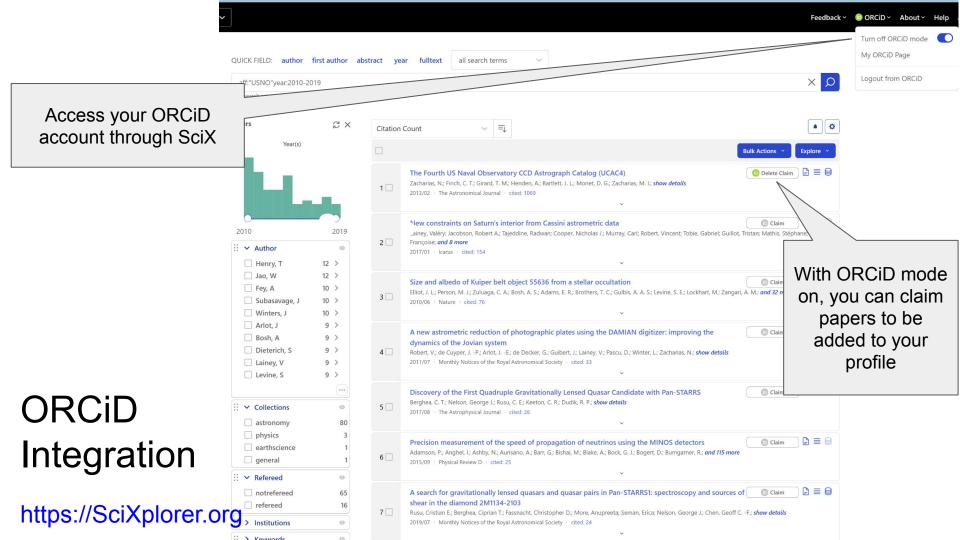
9,528 papers read by people who also read the 2024 hurricane papers

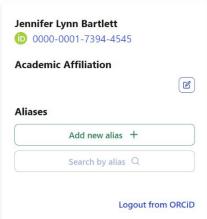


What would be useful to me?

3,629 papers used to prepare the 2024 hurricane papers

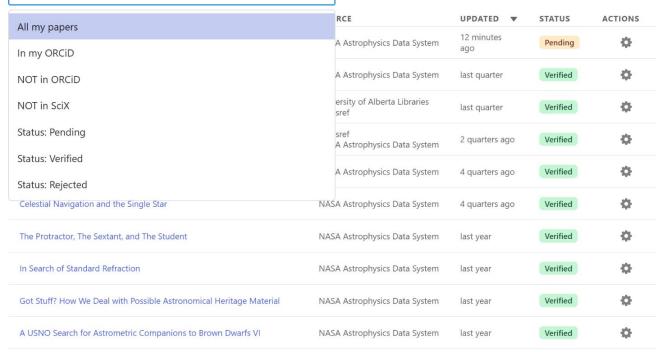






ORCiD Profile





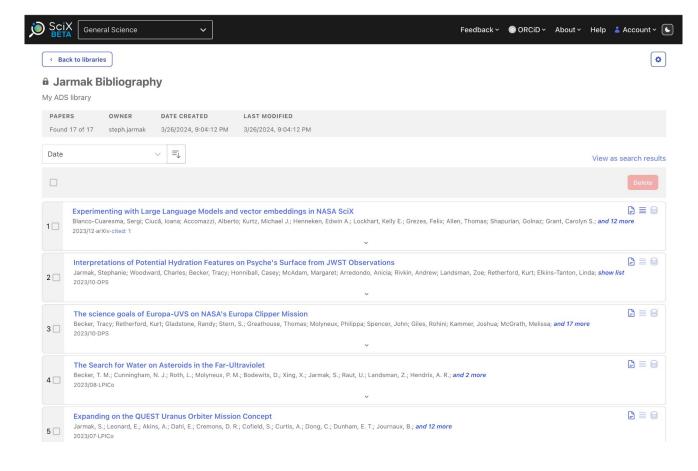
10 ~

Showing 1 to 10 of 58 results



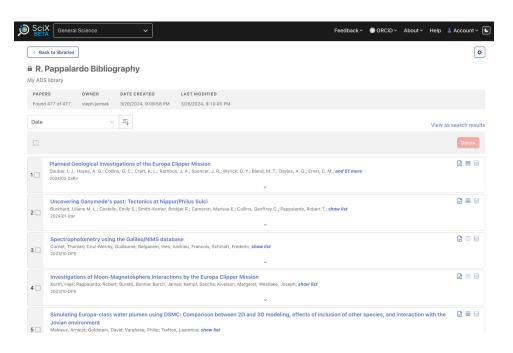
Share your research with SciX

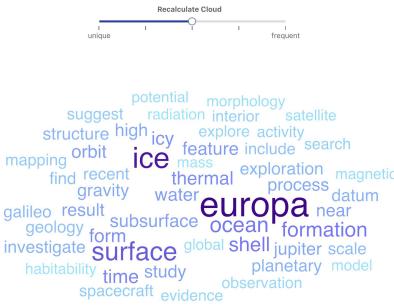
https://SciXplorer.org



Add your work to a personal, shareable library

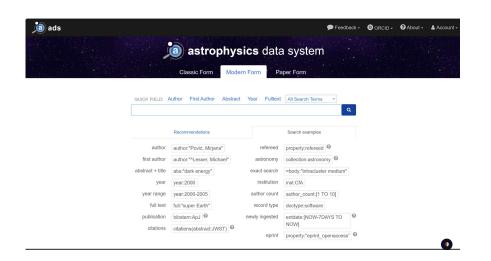
Promote your research with SciX

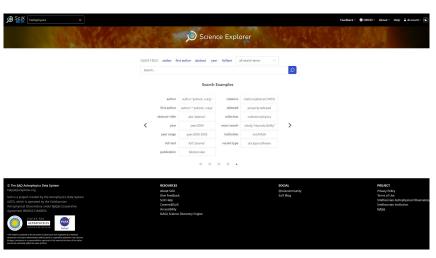




Easily produce exportable bibliographies and metrics

Why use SciX instead of ADS?





ADS will remain, but new development and features will be in SciX

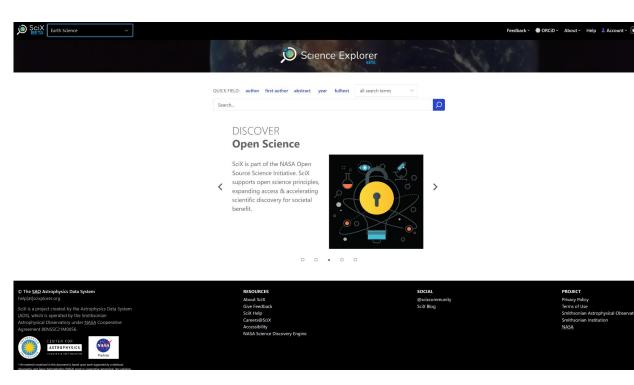
SciX provides disciplinary focus in an interdisciplinary context

Why SciX if I'm not an astronomer?

- 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

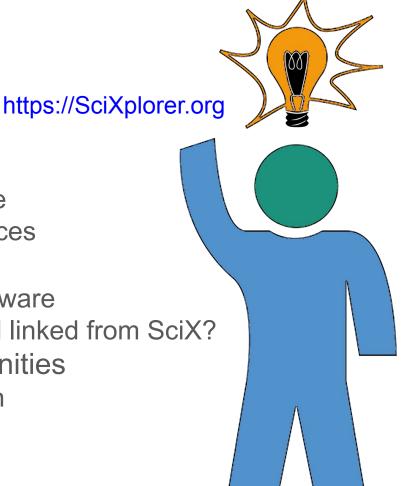




How to get involved now

NASA SciX needs

- Disciplinary Knowledge
 - Improve semantics for your discipline
 - Test disciplinary interfaces and services
- Data Linking and Indexing
 - Identify missing citable data and software
 - Is your repository represented in and linked from SciX?
- Connections to you and your communities
 - Invite us to share tailored information (presentation, newsletter, etc.)
 - Join our ambassador program



Thank you!

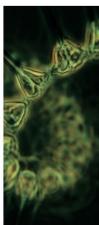


Stephanie Jarmak
(ADS/SciX Planetary Science Project Scientist)
stephanie.jarmak@cfa.harvard.edu

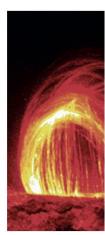












help@scixplorer.org @SciXCommunity

Science Explorer

Accelerating the discovery of NASA Science.