



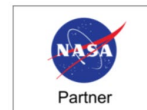
2023 Recommendations: Progress Report

Jennifer Lynn Bartlett, Stephanie Jarmak,
Timothy Hostetler, Kelly Lockhart,
Anna Kelbert, Caroline Grant,
Felix Grezes, Brit Myers, & the ADS Team

ADS Users Group Meeting, 05-06 Dec. 2024



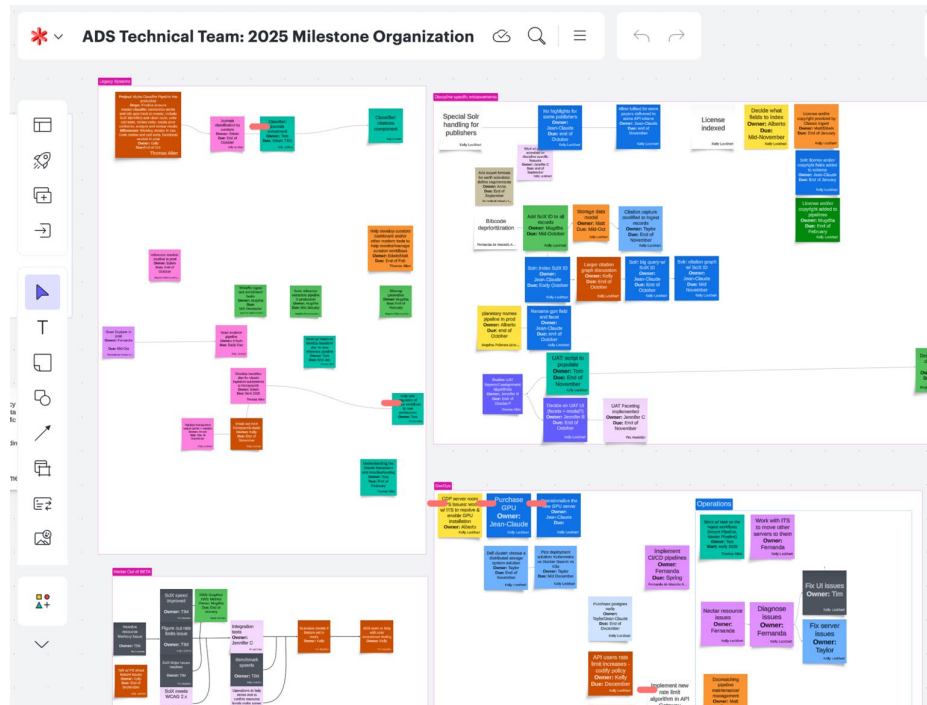
CENTER FOR
ASTROPHYSICS
HARVARD & SMITHSONIAN



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- **Following recommendation to clarify development priorities, we have:**

- **More information on 2025 development roadmap in Sessions 3 and 4**



Lucid Spark board showing mapping of high-level development team priorities in 2025



Create performance standards

- Create baseline web application performance measurements
 - Measure app performance using core web vitals
 - Develop integration testing platform to measure custom timings across common workflows
 - Use current telemetry setup to gather real-world user experience metrics
- Coming up in the User Interface presentation
 - Show how SciX and ADS compare against other competing applications
 - SciX is shown to be faster to show critical content than ADS
 - Show some opportunities for improvements in both apps
 - Plans for analyzing user trends and regular automated testing

Following recommendation to create clear performance standards, we have made progress quantifying our performance. More details in Session 3.



Yvette via Pixabay



Core Design Principles

- **Embrace Innovation:** We commit to exploring new technologies and stepping outside our comfort zone to create better solutions. Innovation must simplify and enhance the research process.
- **Welcome Feedback:** We value user input as a cornerstone of growth. By embracing feedback, we uncover weaknesses, adapt to changing needs, and continuously refine our tools to support and improve researchers' efforts.
- **By Scientists, For Scientists:** As scientists and users ourselves, we participate directly in the development feedback loop. This ensures our tools are built for and by the communities we serve, advancing research through practical, relevant, and disciplined solutions.
- **Preserve Trust:** Our reputation as a trusted source of truth is essential. We maintain this trust by prioritizing integrity, accuracy, and reliability while staying responsive to the evolving needs of the research community.

Following recommendation for core design principles, we have articulated these and are beginning to use them to inform design decisions.



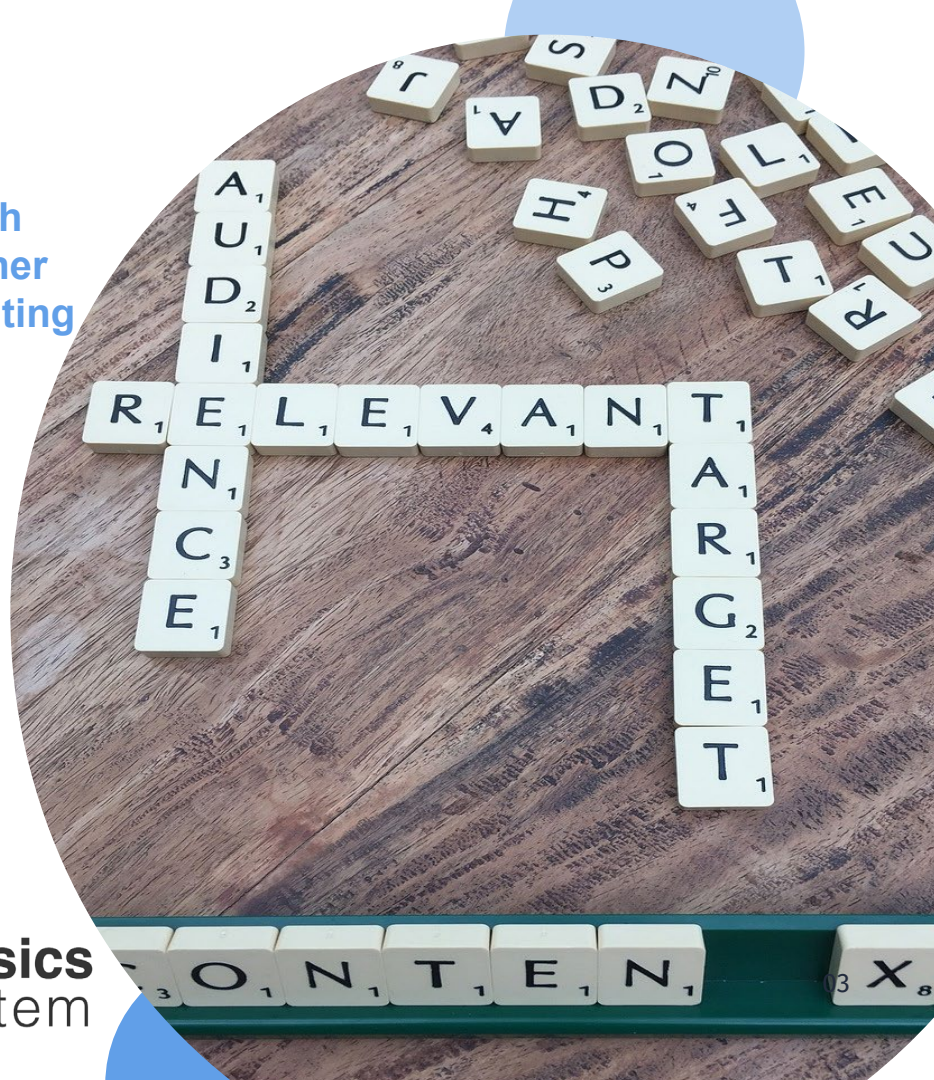
User Profiles & Use Cases

Following recommendation to document user profiles & use cases

- 2024 work begun
 - Brainstorming during retreat
 - Discussions with Observatory Bibliographers Group
 - Diversity, Equity, Inclusion, and Accessibility (DEIA) needs assessment
- 2025 planned work
 - Data-driven persona development
 - Use **user queries**, **search behavior**, & **engagement metrics** to refine personae with assistance from search consultants
 - Aggregate content frequently searched to identify user needs
 - Collaborate with outreach specialists to ensure personae align with community expectations
 - Incorporate persona insights into system design
 - Inform **search relevancy algorithms** using discipline-specific terminology and content preferences
 - Adapt **UI/UX** to better serve workflows for researchers, students, librarians, educators, and administrators
 - Customize features like notifications, filters, and recommendations based on persona-driven needs

miss
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journal e
stem librarian fun
engine
reviewer
bibliographer
educ
scientific

astrophysics
data system





Last Author Search

Position Search: `pos (fieldedquery, startposition, [endposition]`

`fieldedquery` can be `author`, `aff`, or `title`

`startposition` is integer representing where to start, -1 for last

`endposition` is integer representing where to end, if omitted

only `startposition` will be evaluated

First author:

```
pos(author:"van Paradijs"
```

Second or third author:

```
pos(author:"van Paradijs, J.", 2, 3)
```

Last author:

```
pos(author:"van Paradijs, J.", -1)
```

More about positional search at <https://ui.adsabs.harvard.edu/help/search/positional>

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

pos(author:"van Paradijs, J.", -1)

Your search returned 19 results

range: 1997-1998 x property: refereed x

Remove all filters

Filters

Year(s)

1997-1998

Author

- ☐ van Paradijs, J. 19 >
- ☐ van der Klis, M. 7 >
- ☐ Groot, P. 5 >
- ☐ Mendez, M. 5 >
- ☐ van der Hooft, F. 5 >
- ☐ Kouveliotou, C. 4 >
- ☐ Lewin, W. 4 >
- ☐ Augusteijn, T. 3 >

Date

1 ☐ The eclipsing cataclysmic variable GS Pavonis: I. Hfill Evidence for disk radius changes
Groot, P. J.; Augusteijn, T.; Barzly, O.; van Paradijs, J.; [show details](#)
1998/12 - Astronomy and Astrophysics - cited: 10

2 ☐ Difference Frequency of Kilohertz QPOs Not Equal to Half the Burst Oscillation Frequency in 4U 1636-53
Méndez, Mariano; van der Klis, Michiel; van Paradijs, Jan; [show details](#)
1998/10 - The Astrophysical Journal - cited: 60

3 ☐ The Radio-to-X-Ray Spectrum of GRB 970508 on 1997 May 21.0 UT
Galama, T. J.; Wijers, R. A. M. J.; Bremer, M.; Groot, P. J.; Strom, R. G.; Kouveliotou, C.; van Paradijs, J.; [show details](#)
1998/06 - The Astrophysical Journal - cited: 113

4 ☐ The 1.4 GHz Light Curve of GRB 970508
Galama, T. J.; Wijers, R. A. M. J.; Bremer, M.; Groot, P. J.; Strom, R. G.; de Bruyn, A. G.; Kouveliotou, C.; Robinson, C. R.; van Paradijs, J.; [show details](#)
1998/06 - The Astrophysical Journal - cited: 53

Following recommendation for last author Quick Field, we are engaging with expansion communities to determine which interfaces should have it.



Author-submitted Related Resources

In abstract view, “**Make Corrections**”

In middle of “**Edit Record**” form, author can add “**Other**” URL of any type iPoster, Astrobites summary, author video/podcast, visualization, ect.

SciX “**Associated Articles**” form takes all links, ADS form will soon

cal interstellar matter

p:A

Make Corrections

Bottom of
Abstract View

Middle of Edit
Record form

URLs			
	TYPE	URL	ACTIONS
1	arXiv	https://arxiv.org/abs/2405.14943	
2	arXiv	https://arxiv.org/pdf/2405.14943	
3	DOI	https://doi.org/10.1051%2F0004-6361%2F202449943	
4	PDF	https://www.aanda.org/10.1051/0004-6361/202449943/pdf	
5	Other	https://astrobites.org/2024/11/21/eyes-on-orion-mcc/	
	arXiv		

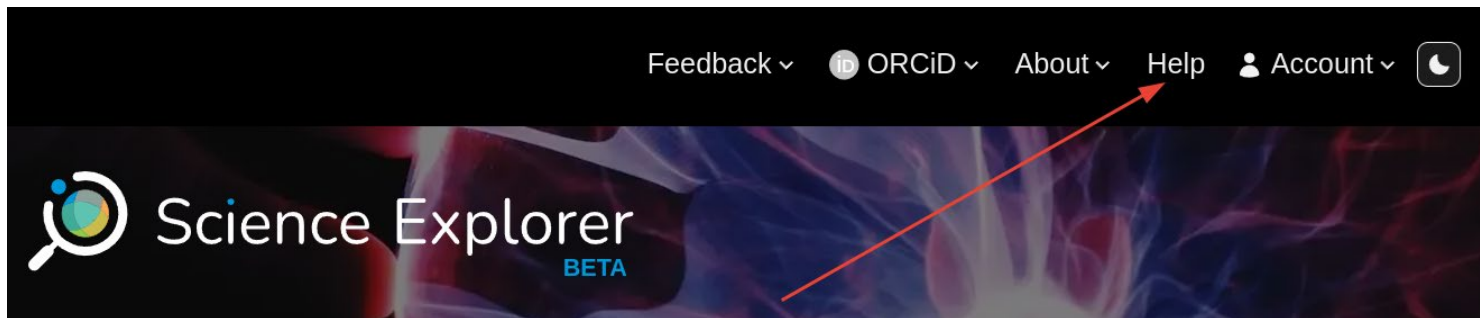
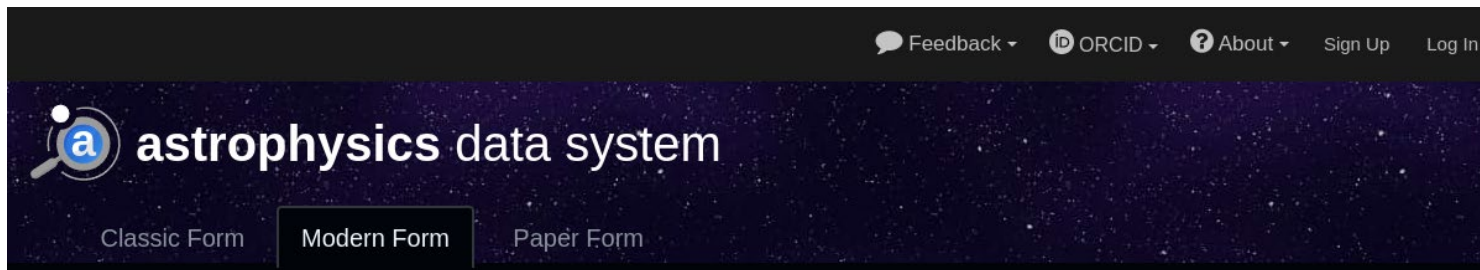
Abstract *

Context. The Orion Molecular Cloud complex, one of the nearest ($D \approx 406$ pc) and most extensively studied massive star-forming regions, is ideal for constraining the physics of stellar feedback, but its ~ 12 deg diameter on the sky requires a dedicated approach to mapping ionized gas structures within and around the nebula. Aims. The Sloan Digital Sky Survey (SDSS-V) Local Volume Mapper (LVM) is a new optical integral field unit (IFU) that will map the ionized gas within the Milky Way and Local Group galaxies, covering 4300 deg^2 of the sky with the new LVM Instrument (LMV-I). Methods. We showcase optical emission line maps from LVM covering 12 deg^2 inside of the Orion belt region, with 195 000 individual spectra combined to produce images at 0.07 pc ($35.3''$) resolution. This is the largest IFU map made (to date) of the Milky Way, and contains well-known nebulae (the Horsehead Nebula, Flame Nebula, IC 434, and IC 432), as well as ionized interfaces with the

Following recommendation for linking resources other than papers, data, and software with articles, we are working to advertise this capability more broadly starting with documenting it other than on the form itself.

Improve visibility of SciX Help pages

Moved the *Help* to the Navbar for increased visibility



Training and Toolkits

Following recommendation for additional tools targeting specific user profiles

- User profiles still in development
- Quick Start Guide for new SciX users with no ADS experience available at <https://scixplorer.org/scixhelp/>
- Open Science Librarians training module in development with UCLA Libraries using The Carpentries
- Involve the Ambassadors more in designing documentation for their particular communities





ChatBots Coming Soon

papers by Mike Kurtz on weak lensing

- **Following recommendation for chatbot or virtual assistant on the landing page, 3 chatbots will debut at AAS**
 - help pages chatbot
 - API code helper chatbot
 - chatbot that converts natural language queries to structured Solr queries
- **More details in Session 4**



Talked to api.adsabs.harvard.edu ▾

I found several papers authored by Michael Kurtz on the topic of weak lensing. Here are five relevant results:

1. **Title:** [SHELS: Testing Weak-Lensing Maps with Redshift Surveys](#)
 - **Authors:** Geller, Margaret J.; Kurtz, Michael J.; Dell'Antonio, Ian P.; et al.
 - **Abstract:** Evaluates the efficiency and completeness of weak-lensing-selected galaxy clusters by combining SHELS redshift surveys with the Deep Lens Survey.
 - **Bibcode:** 2010ApJ...709..832G
2. **Title:** [Reducing Systematic Error in Weak Lensing Cluster Surveys](#)
 - **Authors:** Utsumi, Y.; Miyazaki, S.; Geller, M. J.; Kurtz, Michael J.; et al.
 - **Abstract:** Discusses methods to suppress systematic errors in weak-lensing surveys using B-mode signals and other techniques.
 - **Bibcode:** 2014ApJ...786..93U
3. **Title:** [Testing Weak-lensing Maps with Redshift Surveys: A Subaru Field](#)
 - **Authors:** Kurtz, Michael J.; Geller, M. J.; Utsumi, Y.; Miyazaki, S.; et al.
 - **Abstract:** Analyzes the completeness and purity of weak-lensing maps using dense redshift surveys in Subaru fields.
 - **Bibcode:** 2012ApJ...750..168K
4. **Title:** [Comparison of Galaxy Clusters Selected by Weak-lensing, Optical Spectroscopy, and X-Rays in the Deep Lens Survey F2 Field](#)



Ambassador program



- Following recommendation for the development of a SciX ambassador program, we have:
 - Recruited 11 lead ambassadors for 2024-2026 and 7 lead ambassadors for 2025 - 2027
 - We organized a workshop for the inaugural cohort that took place August 2024
 - The next cohort will overlap for one year with this inaugural cohort, and they join August 2025
- More information on our community engagement and ambassador program activities in Session 5



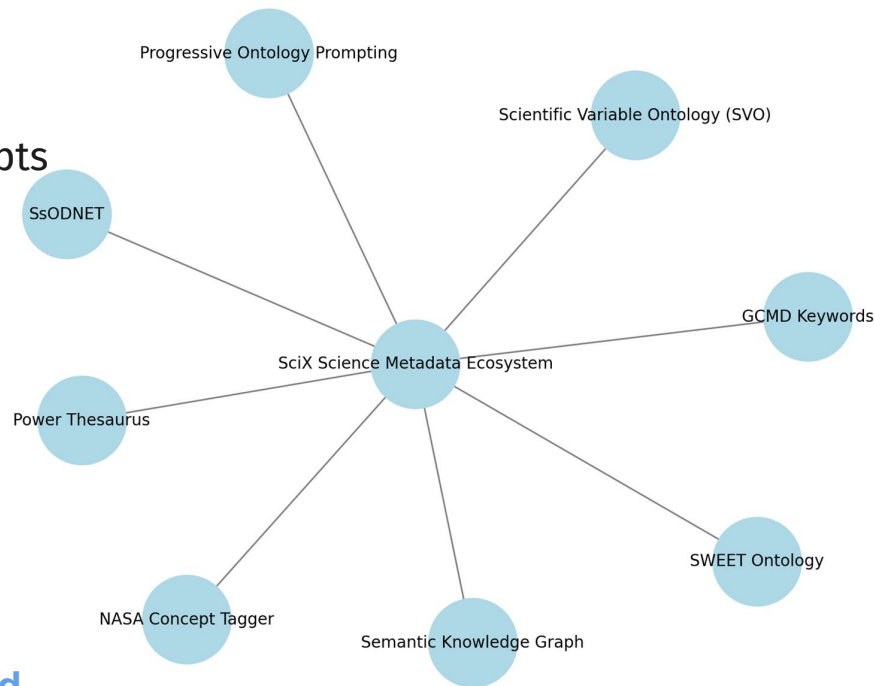
Example graphics by ambassador Yueyi Che (glaciologist)



Keyword Systems

- **Astrophysics:** Unified Astronomy Thesaurus (UAT) expanding heliophysics & planetary science concepts
- **Earth Science:** Semantic Web for Earth and Environmental Terminology (SWEET) ontologies, Global Change Master Directory (GCMD) keywords
- **Planetary Science:** Solar System Open Database Network (SsODNet)
- **NASA SMD Tools:** NASA Concept Tagger, Scientific Variable Ontology (SVO), Progressive ontology prompting, Semantic Knowledge Graph from SciX corpus, Power Thesaurus

SciX Science Metadata Ecosystem and Components



Following recommendation that we identify keyword systems for expansion communities, we are exploring how to use these to aid discovery within disciplines and encourage exploration across disciplines.



UAT Implementation

Input

TITLE: Long-term Evolution of Supercritical Black Hole Accretion with Outflows: A Subgrid Feedback Model for Cosmological Simulations

ABSTRACT: We study the long-term evolution of the global structure of axisymmetric accretion flows onto a black hole (BH) at rates substantially higher than the Eddington value ($\dot{M}_{\mathrm{Edd}}$), performing 2D hydrodynamical simulations with and without radiative diffusion. In the high-accretion optically thick limit, where the radiation energy is efficiently trapped within the inflow, the accretion flow becomes adiabatic and comprises [...]

Output

KAILAS ASSIGNED KEYWORDS:

hydrodynamics
radiative transfer
radiative transfer simulations
hydrodynamical simulations
radiative magnetohydrodynamics
accretion
supermassive black holes
active galactic nuclei

Compare

AUTHOR ASSIGNED KEYWORDS:

supermassive black holes
quasars
high-redshift galaxies

Following recommendation for expanded UAT implementation, we are creating and training KAILAS (Keyword AI Labeler At SciX) to assign UAT concepts automatically. More details in Session 4.



Science Explorer Advisory Board Call for Nominations

B I U ↺ ✕

The [Science Explorer \(SciX\)](#) is a transformative digital library that fosters open, interdisciplinary science across astronomy, Earth science, heliophysics, planetary science, and NASA-funded biological and physical sciences while substantially increasing the overall research efficiency of these disciplines. SciX is a discovery platform that connects the earth and space science literature to NASA and other relevant data and software repositories, enhancing the science return on investments in individual archives. As the natural extension of the NASA Astrophysics Data System (ADS), which has served the astronomy community for the past 30 years, SciX now expands its scope to support all NASA Science Mission Directorate (SMD) disciplines. We are currently seeking nominations for the SciX Advisory Board, which will guide the strategic development and continuous improvement of SciX over a three-year term. The Advisory Board will consist of individuals with a commitment to interdisciplinary research and a vision for how SciX can best serve the scientific community. The advisory board will meet quarterly. For additional details about the position responsibilities please refer to the [Science Explorer Advisory Board Charter](#).

Selection will be based on the nominee's expertise, leadership experience, and potential to contribute to SciX's mission. Self-nominations are welcome. For more information about SciX, please see our [website](#).

Please complete this submission by November 6th.

Open call for SciX Advisory Board nominations and self-nominations

SciX Advisory Board

- **Complimentary to ADS Users Group**
 - Serves in advisory capacity to help guide content curation, technical infrastructure, management, and priority setting for SciX expansion
 - 10-15 scientists and representatives from the library and digital repository communities
 - Covers subdisciplines of Earth science, heliophysics and planetary science
 - Call for nominations issued on October 18th, nominations closed on November 6th
 - 58 candidates considered; initial selections made

More information on the functions and intended composition of SciX Advisory Board in Session 5.



Continue Survey

- **Following recommendation to continue the user survey and broaden participation**
 - Issued 2024 survey with greater focus on how ADS is used
 - Decided against surveying expansion communities while SciX is still in beta
 - Received 325 responses this year, 252 last year
 - Respondents were mostly core users
 - 91% report daily or weekly use of ADS
 - 64% encountered the survey via the website banner
 - 21% read about it in professional e-newsletters
 - 15% learned about it through social media
 - Will try to get into more targeted e-newsletters next year
- **Details in next presentation**

