The NASA Science Explorer: ADS for all of NASA Science

Alberto Accomazzi
aaccomazzi@cfa.harvard.edu

astrophysics data system

NASA Science Explorer

Accelerating the discovery of NASA Science.
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), a digital library focusing on Space Science research.
What is the NASA Science Explorer?

NASA SciX is a literature-based, open digital information system covering and unifying the research disciplines funded by the NASA Science Mission Directorate.
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.
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.

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.

https://SciXplorer.org
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.

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.

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

[https://SciXplorer.org](https://SciXplorer.org)
Why the NASA Science Explorer?

All discipline-specific research content is aggregated, connected, and indexed for each of the SMD divisions

https://SciXplorer.org
Why the NASA Science Explorer?

All discipline-specific research content is aggregated, connected, and indexed for each of the SMD divisions. Relevant taxonomies are used to capture the knowledge and semantics of the subject disciplines.

https://SciXplorer.org
Why the NASA Science Explorer?

All discipline-specific research content is aggregated, connected, and indexed for each of the SMD divisions.

Relevant taxonomies are used to capture the knowledge and semantics of the subject disciplines.

Digital collections are enriched with links to other research objects such as datasets, software, notebooks, and funding information.

https://SciXplorer.org
Why the NASA Science Explorer?

All discipline-specific research content is aggregated, connected, and indexed for each of the SMD divisions.

Relevant taxonomies are used to capture the knowledge and semantics of the subject disciplines.

Digital collections are enriched with links to other research objects such as datasets, software, notebooks, and funding information.

Discipline-specific capabilities and analytic services are exposed to the relevant research communities.

https://SciXplorer.org
How is it different from ADS?

SciX is built on top of the same database and API, but has a few different features:
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
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”
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” (including the “Classic Form”)
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
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 (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
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 (with links to additional resources)
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
- Improved ORCID integration
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
- 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
Example search: cassini saturn

WELCOME TO THE
SciX Digital Library

Learn more about the SciX digital library and how it can support your scientific research in this welcome video and brief user tutorial from Dr. Stephanie Jarmak.
Example search: cassini saturn

8,660 results, sorted by relevance
Example search: cassini saturn

8,660 results, sorted by relevance
7,803 published in the last 20 years
Example search:

8,660 results, sorted by relevance
7,803 published in the last 20 years
261 with data products
Example search:

8,660 results, sorted by relevance
7,803 published in the last 20 years
261 with data products
7 collaboration groups detected
Example search:

8,660 results, sorted by relevance
7,803 published in the last 20 years
261 with data products
7 collaboration groups detected
1 group selected
### Example search:

- **Variable morphology of Saturn’s southern ultraviolet aurora**
  - cited: 80; 5 authors from this group
- **Open flux estimates in Saturn’s magnetosphere during the January 2004 Cassini-HST campaign, and implications for reconnection rates**
  - cited: 84; 6 authors from this group
- **Auroral current systems in Saturn’s magnetosphere: comparison of theoretical models with Cassini and HST observations**
  - cited: 84; 10 authors from this group
- **Signature of Saturn’s auroral cusp: Simultaneous Hubble Space Telescope FUV observations and upstream solar wind monitoring**
  - cited: 51; 6 authors from this group
- **Morphological differences between Saturn’s ultraviolet aurorae and those of Earth and Jupiter**
  - cited: 129; 8 authors from this group
- **Recurrent energization of plasma in the midnight-to-dawn quadrant of Saturn’s magnetosphere, and its relationship to auroral UV and radio emissions**
  - cited: 122; 8 authors from this group
- **On the origin of Saturn’s outer auroral emission**
  - cited: 44; 4 authors from this group
- **Characterization of auroral current systems in Saturn’s magnetosphere: High-latitude Cassini observations**
  - cited: 56; 6 authors from this group
- **Oscillation of Saturn’s southern auroral oval**
  - cited: 79; 5 authors from this group

8,660 results, sorted by relevance
7,803 published in the last 20 years
261 with data products
7 collaboration groups detected
1 group selected
75 papers authored by group
Example search:

8,660 results, sorted by relevance
7,803 published in the last 20 years
261 with data products
7 collaboration groups detected
1 group selected
75 papers authored by group
view papers sorted by citations
Example search:

8,660 results, sorted by relevance
7,803 published in the last 20 years
261 with data products
7 collaboration groups detected
1 group selected
75 papers authored by group
view papers sorted by citations
view & select concepts in papers
33 papers containing “plasma”
8,660 results, sorted by relevance
7,803 published in the last 20 years
261 with data products
7 collaboration groups detected
1 group selected
75 papers authored by group
view papers sorted by citations
view & select concepts in papers
33 papers containing “plasma”
9 of which have PDS data
The Response of Saturn's Dawn Field-Aligned Currents to Magnetospheric and Ring Current Conditions During Cassini's Proximal Orbits: Evidence for a Region 2 Response at Saturn

Hunt, G. J.; Provan, G.; Bradley, T. J.; Cowley, S. W. H.; Dougherty, M. K.; Roussos, E.

Cassini's 2017 proximal orbit in Saturn's dawn sector in relation to dawn region auroral field-aligned currents. For current sheet, located in Saturn's main auroral oval, increases in strength with increasing total ring current and location of the peak downwards current moves inwards toward Saturn. While the inverse relation occurs during intervals of quiet or expanded magnetospheric conditions. During compression events there is an increase in the energetic particle intensities, in particular, in the protons (35-508 keV), within the downward current region. This current system is akin to an Earth-like “region 2” field-aligned current within Saturn's magnetosphere, with tail reconnection occurring when the magnetosphere is compressed resulting in a partial nightside ring current closed by a downward current near to dawn. Within the upward current sheet, mapping to Saturn's main auroral oval, both non-rotating subcorotating current and the rotating Planetary Period Oscillations (PPOs) currents flow. The upward current is strongly modulated by the PPOs but also increases in strength, with enhanced high-energy protons, during intervals of magnetospheric compressions and tail reconnection. We conclude that the enhanced plasma injected into the midnight-dawn sector during tail reconnection events results in an enhanced subcorotation current system.

Publication: Journal of Geophysical Research: Space Physics, Volume 127, Issue 6, article id. e29852
Publication Date: 2022-06-00
DOI: 10.1029/2021JA029852
Bibcode: 2022JGRA..12729852H
Keyword(s): Saturn, magnetosphere, field-aligned currents, current systems, magnetospheric dynamics
Example search:

8,660 results, sorted by relevance
7,803 published in the last 20 years
261 with data products
7 collaboration groups detected
1 group selected
75 papers authored by group
view papers sorted by citations
view & select concepts in papers
33 papers containing “plasma”
9 of which have PDS data
view one article
view associated PDS data
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

NASA Science Explorer

Accelerating the discovery of NASA Science.
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

NASA Science Explorer

Accelerating the discovery of NASA Science.
Thank You!

For more information:
https://SciXplorer.org
@SciXCommunity
Visit us at booth #315