



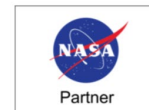
ADS Funding and Guidance from NASA

Alberto Accomazzi
and the ADS Team

ADS Users Group Meeting, 05-06 Dec. 2024



CENTER FOR
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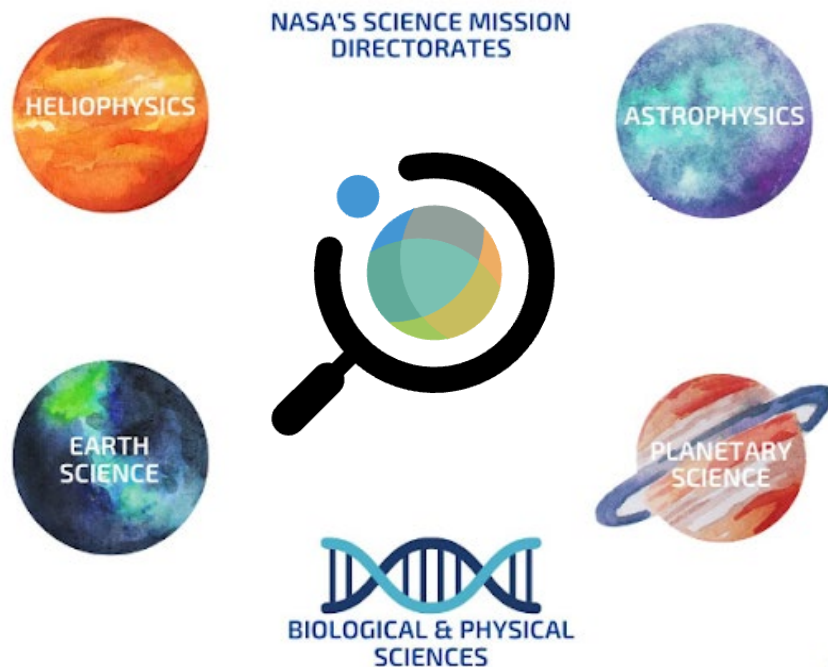




SciX: ADS for all of NASA Science

In 2022, NASA asked ADS to expand its services to all the NASA-funded science disciplines to support its open science goals: facilitating discovery and dissemination publications, data, and software by aggregating and linking them.

In Dec. 2023, the ADS team launched the Science Explorer Platform (SciX), a new digital library portal covering all SMD disciplines: Astrophysics, Heliophysics, Planetary Science, Earth Science, and Biological and Physical Sciences.



<https://SciXplorer.org>



Ultimate Goal: SciX > ADS

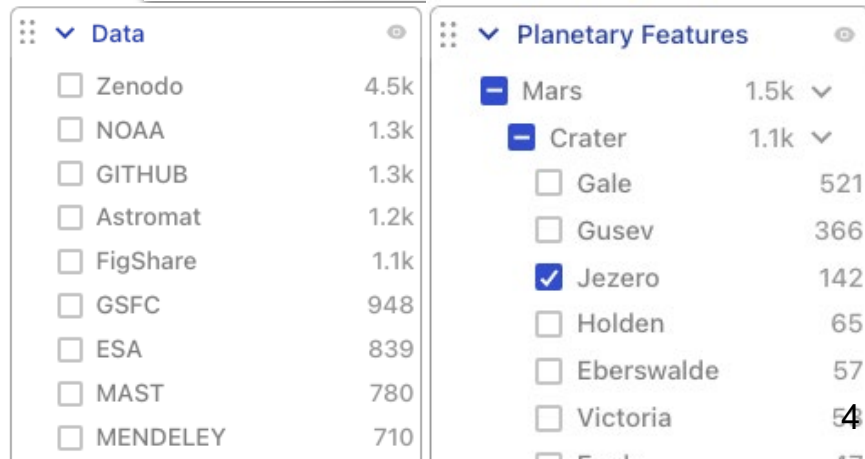
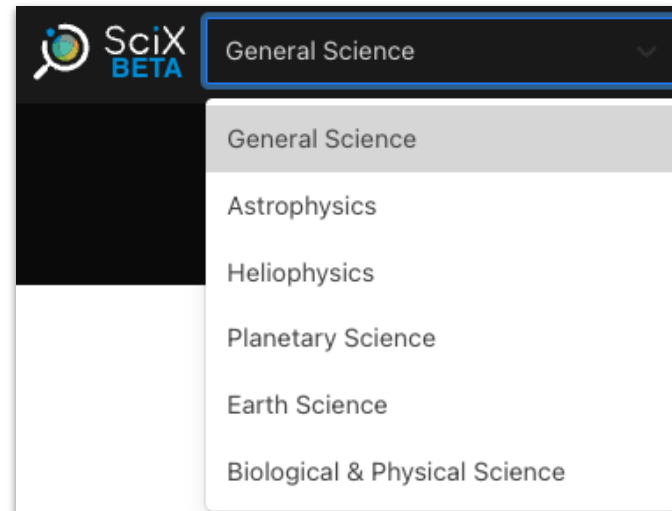
We want to have a system that is superior to ADS

Content: we want new and existing users to find all their papers

User Interface: we want users to experience a more responsive and faster system

Features: we want new, better interdisciplinary functionality

We want to give astronomers reasons to use the new system and ditch ADS!





NASA 2024 Proposal - Summary

In the spring of 2024 the ADS team submitted its 5-year funding proposal to NASA. Some highlights:

The NASA Science Explorer (SciX) will be a permanent component of open science infrastructure. At NASA's request, SciX builds on the 30 year legacy of the Astrophysics Data System (ADS) by expanding it to encompass all scholarly disciplines supported by the NASA Science Mission Directorate. Including Astrophysics, Planetary Science, Heliophysics, Earth Science, and Biological and Physical Sciences marks a significant expansion in scope and collaborative potential.

The strategic shift from ADS to SciX is marked by a significant change in team structure to include discipline-specific project scientists, paving the expansion to new communities. This evolution reflects a broader vision of fostering interdisciplinary communication, collaboration, and research, and collapsing silos between scientific domains.

In the next five years, we aim to enlarge and enrich our collections and collaborations while also advancing our technical capabilities to unify NASA science discovery on a single platform. However, the realization of SciX's full potential is contingent upon strategic investment and support. The risks of underfunding the project during its critical expansion phase carry implications not just for the project but for NASA SMD's open science ecosystem and for the global scientific community that depends on it.



NASA 2024 Proposal - Development & Ops

Development of SciX capabilities will focus on services and features that benefit all disciplines and communities, irrespective of their research focus. These foundational services include **author disambiguation, search infrastructure, text mining, citation processing, and metadata enrichment pipelines.**

Operating SciX will focus on a set of core activities, such as **ingestion of content, user interface updates, user support, interoperability with research systems, collaborations with publishers and data providers, and maintenance of system infrastructure.**

Given the scope of the expansion, there is no scenario under which traditional ingest and curation alone can scale up to enable an ingestion of SciX content twice the size of the current ADS system.

Investments in technology, coupled with the establishment of disciplinary teams, provide the only viable path to the increase in efficiencies required to accomplish our goals, and informs the choices we have made in creating the SciX team and schedule of activities.



NASA 2024 Proposal - Curation Tasks

	AP	PS	HP	ES	BPS
Census	✓	✓	✓	✓	2025
Ingestion	✓	✓	✓	2025-27	2026
Citation	✓	2025	2025	2026-28	2027-28
Bibliographies	✓	2026	2025-26	2025-26	2026-27
Data Links	2025	2025	2026	2025-28	2028
NER (Missions)	2026	2026	2026	2026	(2027)
Taxonomies	2025	2027-30	2027	2026-27	(2030)
API integration	✓	2026	2028	(2027)	(2030)
Enrichment	2025-30	2027-30	2028-30	2027-30	(2030)

Legend:

Next Y

Mid 3 Y

Last 2 Y

(Tentative
and/or
best effort)



NASA 2024 Proposal - Evaluation

Review Panel Rating of proposal: Excellent/Very Good

Quotes from panel feedback:

ADS is the way that astrophysicists and astronomers access scientific publications.

Essentially every researcher in this field uses it. It generally works very well, and it is crucial that it continues ingesting and maintaining the astrophysics literature.

SciX will be an improvement over the way researchers in those fields currently find publications using, e.g., Google Scholar or Web of Science (WoS). *SciX has a better publication vetting process, better citation metrics, higher quality metadata, better search functionality, and, unlike WoS, does not require a paid subscription.*

SciX will enable significant science return through the ease with which users can reach a tremendous compilation of NASA SMD knowledge. *The proposal demonstrated its utility for facilitating interdisciplinary research.*

Astrophysics will be at the center of SciX. *ADS will be largely unchanged, and the proposal makes it clear that the expansion to SciX will leave existing crucial features of the current ADS intact. One individual will have the job of ensuring that they do not “break” ADS.*



NASA 2024 Proposal - Direction

Agency's request:

*Your current cooperative agreement will be terminated at the end of task year 4 or soon thereafter (in the first few months of calendar 2025), to be replaced by **separate agreements** for work supporting **Astrophysics** and work on **extending services to the other divisions of SMD**.*

*ADS is directed to prepare **separate statements** of work and **separate budgets** for these two new agreements.*

The per-fiscal-year budget for the Astrophysics-funded cooperative agreement includes a 3% increase for inflation beyond FY25/Year-1.

The per-fiscal-year budget for the SMD-funded cooperative agreement will be \$4M in FY25/Year-1, and \$3M per year thereafter.

ADS -- \$k	FY25/Yr1	FY26/Yr2	FY27/Yr3	FY28/Yr4	FY29/Yr5	FY30/Yr5+1
APD coop	4,400	4,532	4,668	4,808	4,952	5,101
SMD coop	4,000	3,000	3,000	3,000	3,000	3,000



NASA 2024 Proposal - Budget

Increased SAO overhead + 5% COLA + budget reductions from NASA SMD mean a sharp decrease in funds and FTEs:

- Original plan called for a team of 30 FTEs, now down to 25.5 in Y1 due to new SAO rates
- Shortfall of 2.3M in Y5 over Y1 level of NASA funding

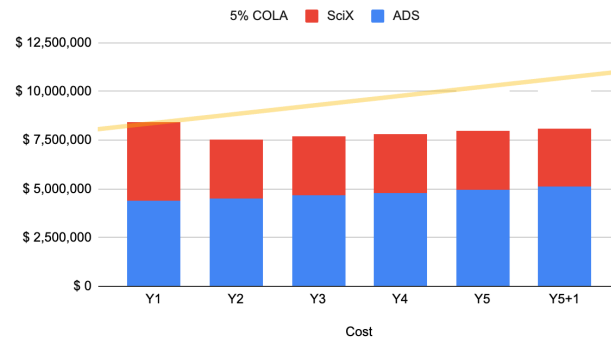
Consequences:

- Hiring of personnel next year cut back
- Shortfall of 6 FTEs from Y1 to Y5
- Sharply reduced SOW for SciX may imperil its success

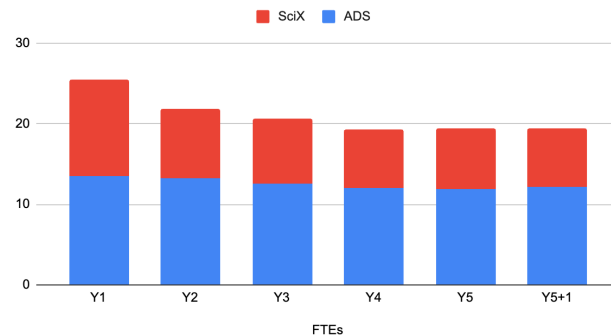
Possible Strategies:

- Underspend in Y1 to smooth out budget cliff
- Watch and see what COLA turns out to be and adjust
- Lobby NASA SMD/Divisions for augmentation
- Seek additional funding elsewhere

ADS, SciX and 5% COLA

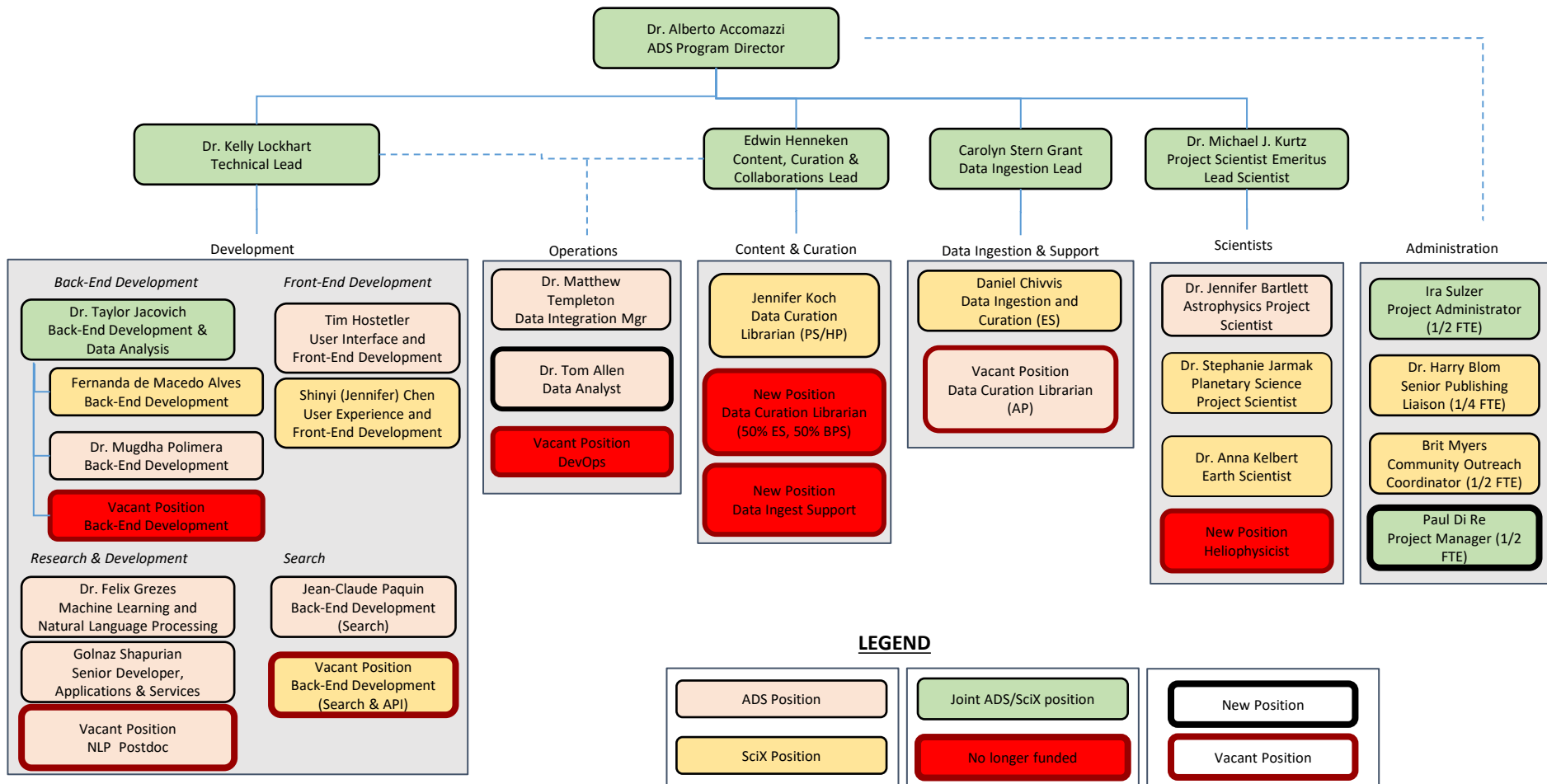


ADS and SciX FTEs





Revised OrgChart



Outcome and Impact

Contrary to our recommendation, ADS and SciX will be funded as separate efforts per NASA's request.

Astrophysics support is adequate to ensure continued development and operations of ADS. Move to a unified SciX interface will be delayed.

Due to SciX budget cuts and increased SAO overhead, future funding levels for SciX present the greatest challenge to the success of the expansion and the development of a unified platform for ADS/SciX.