ADS Overview

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ADS Users Group Meeting - 11/20/2019

Overview

- ADSUG membership and charter
- ADS’s mission, functionality and focus
- Recommendations from last Users Group meeting
- Status and highlights for 2019
- Staffing and Management

ADSUG Membership

- Chris Lintott (U. Oxford / Zooniverse) - chair
- Kathy Flanagan (STScI) - outgoing chair
- Line Nybakk Akerholt (U. Oslo)
- Roc Cutri (IPAC, Caltech)
- Dawn Gelino (NExScI, IPAC, Caltech)
- Martin Lessmeister (for Erick Peirson - arXiv, Cornell)
- Josh Peek (STScI)
- Jonathan Sick (LSST, NOAO)
- Bryan Gaensler (U. Toronto)

Charter

The ADS Users Group (ADSUG) advises the ADS on the operations of the project, and recommends changes and improvements to both its services and procedures in order to maximize the scientific productivity of the community it serves.

The ADSUG will advocate for the user community and provide suggestions regarding content curation, technical infrastructure, management, and priority setting.

The User Group will be advisory and will make its reports to the ADS Principal Investigator (PI).

It is anticipated that the ADSUG will meet once a year. The ADSUG will summarize its deliberations in a written report to the PI, and its findings will be posted publicly on the ADS website.

Terms of Membership

“The ADSUG has a membership of approximately ten individuals chosen by the PI. The composition consists of a broad constituency of users, including scientists and representatives from the library and digital repository communities. The PI, Project Scientist, NASA Discipline Scientist, and Executive Secretary attend meetings of the group ex-officio.

To allow a balance between continuity and new input, members will be appointed for a nominal three year term starting on the date of the first meeting attended. The PI can ask a member to serve for one more year if mutually agreeable. The chair will be nominated and appointed by the PI for a two year period. The PI can ask the chair to serve for additional one year periods.”

Meeting Goals

The ADS team seeks advice on the following topics:

- Staffing and Funding strategies
- Role of ADS within NASA at large
- Prioritization of planned work
- Future services and capabilities
- The Upcoming NASA Archival Review

ADS's mission (1/2)

- Maintain a comprehensive, timely and complete database of the scholarly literature in Astronomy & Astrophysics
- Provide discovery services to support research in Astrophysics and related fields
- Promote the use of NASA Astrophysics data by integrating bibliographies and links to data products generated by NASA missions and hosted by NASA archives

ADS's mission (2/2)

- Provide services for curators and librarians involved in maintaining bibliographies, linking literature and data products, measuring impact
- Interface with publishers and the community to facilitate the implementation of agency policy and government mandates related to Open Access publishing
- Make its efforts in software development freely available under an open-source software license

Unique Functionality and Focus

- Editorial policies reflect community views
  - Making decisions daily on content inclusion, refereed status
  - Indexing of non-traditional content (catalogs, proposals, software)
- Features, Services based on community needs
  - Full-text search essential for maintenance of bibliographies, analytics
  - SIMBAD and NED objects, ORCID integration, metrics, visualizations
- Comprehensiveness, timeliness, accuracy, focus
  - The only literature system where *all* of Astrophysics is represented
  - Includes areas of Physics at the boundary with Astrophysics
- NASA Astrophysics data, scientific output exposed
  - Includes observing proposals for most missions, archives
  - Links to data products, integration of bibliographies
  - Supports wider NASA programs and goals: Planetary Sciences, Heliophysics, mission planning, instrument building, program evaluation

ADSUG Recommendations (1/5)

http://ads.harvard.edu/adsug/2018/ADSUG_Report_2018.pdf

Budget and Staffing:

ADSUG is concerned by the projected decrease in funding in 2021 followed by flat budgets for subsequent years.

We unanimously reaffirm our support for a [Project Scientist] position including a research component, and the need for NASA to support it in addition to the existing budget.

The committee strongly believes that time for independent and self-directed research is essential for all members of the ADS team, whether scientific or technical, and supports the management's efforts to explore ways to support this within existing funding arrangements.

(covered in this session)

ADSUG Recommendations (2/5)

Transition to new ADS:

We encourage ADS to make the new ADS the obvious default as early as possible, and, recognising the risk of relying on very old and poorly understood code, to not delay the transition beyond the current timeline.

We encourage ADS to prioritize load testing to prove that the system is capable of scaling to the larger user base now on classic ADS.

We are encouraged by the hard work already done since the last meeting on front-end performance issues [...] and to prioritize additional work on front-end performance optimizations.

We applaud the work that has been done to promote ADS through blogs and social media, and we encourage ADS to continue this work to promote the transition.

(covered throughout meeting)

ADSUG Recommendations (3/5)

Expanding Beyond Astrophysics:

The expansion of the ADS into exoplanet and planetary science research is greatly needed in this rapidly growing field. In April of last year, the ADS submitted a proposal to NASA to enhance its capability to support (exo)planetary research.

The ADSUG supports the full proposal and believes the [20%] request is a reasonable staff increase to adequately respond to this quickly expanding field.

There is substantial support for inclusion of this data from the scientific community. Thus, the ADSUG embraces this expansion and strongly encourages NASA to consider ways to fund this proposal.

(covered in next presentation)

ADSUG Recommendations (4/5)

Refactor of Front-End:

We appreciate that the ADS team is already identifying possible scenarios for a refactor to improve both the ease with which the code can be updated, and its performance.

We agree that a refactor [...] is worthwhile in principle, but advise that the team approach this new project cautiously.

We recommend that the ADS team not undertake this new effort until most or all of the remaining transition goals have been met, and until the open UI/UX engineer position is filled.

We recommend that, in the short term, the team identify and deliver specific performance and usability improvements that can be implemented in an incremental fashion.

(covered in Platform Transition session)

ADSUG Recommendations (5/5)

Future Directions:

We encourage ADS to think more broadly about what it can be doing in the future to best serve the astronomical and broader scientific community. This could include not only harnessing modern data science practices to build better recommendation and discovery engines, but also (e.g.) providing more powerful services to literature infrastructure (e.g. arXiv) and astronomical infrastructure (e.g. IRSA).

This effort and the present status of ADS as fundamental astronomical infrastructure should be reflected in submissions to the upcoming decadal review. In addition to any contributions from ADS itself, we encourage our colleagues who are writing science papers to remember to note explicitly that their work depends on the ADS.

(covered in Work Ahead session)

Highlights for 2019

Overall Theme: Complete system transition, make system fast and reliable

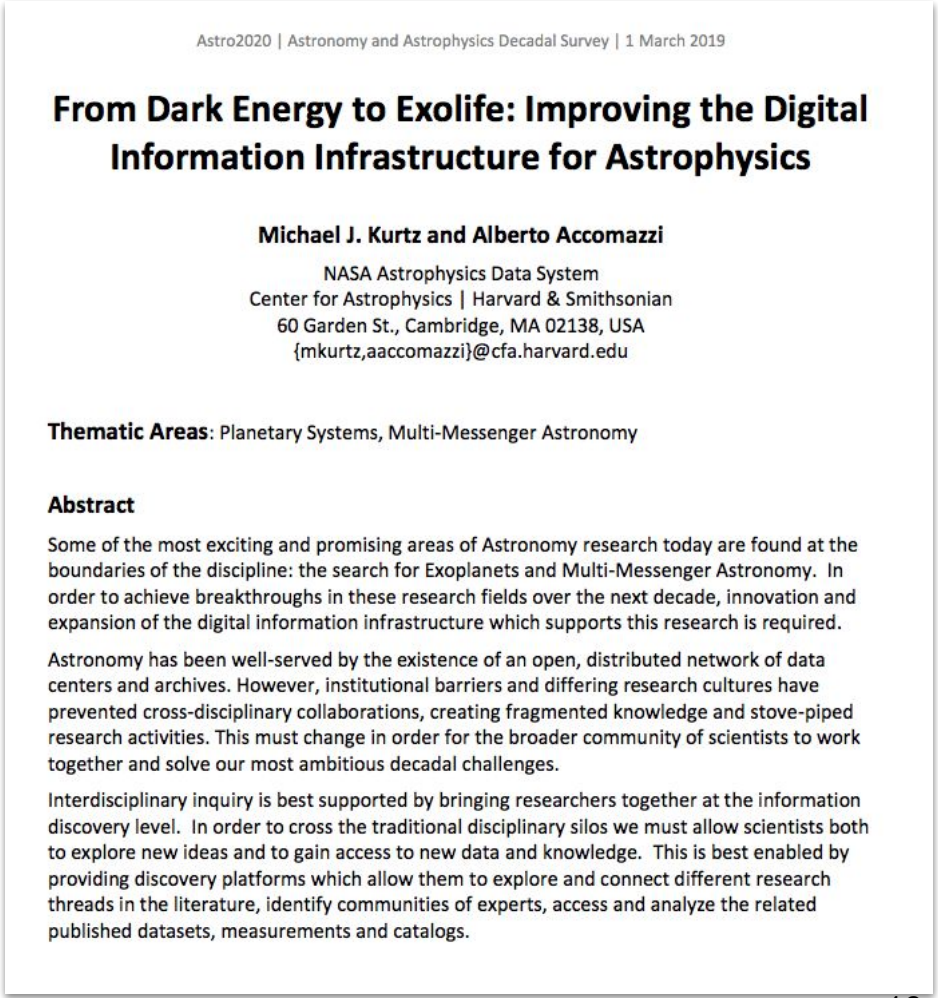
- Move to new system
  - Deprecate ADS Classic in ~~Jan~~ May 2019, EOL in ~~Summer~~ October 2019 ✓
  - Document features and operations in literature, tech blogs ✓
  - Provide transition path to new API for ADS classic crawlers, applications ✓
  - Make libraries, analytics and visualization services scalable for power users (ongoing)
- Data Curation and Indexing
  - Improve coverage of exoplanet literature, data, within astrophysics journals/archives ✓
  - Improve indexing and replication speed for daily/weekly ingests ✓
  - Enrich records with normalized affiliations, keywords, ORCIDs (ongoing)
- User Interface and Personalizations
  - Update the myADS notification system to use new search engine and user accounts ✓
  - Enable collaborative curation of ADS Libraries (ongoing)
  - Update UI for mobile apps, crawlers, web applications and widget embedding (ongoing)

Astro2020 WP

Recommendations:

- ADS should continue to cover the literature in all research areas of Astronomy and Astrophysics, including Solar Physics, Planetary Science, Exoplanets, and Multi-Messenger Astronomy
- NASA should encourage greater integration of Astrophysics and Planetary Science research, particularly as it affects Exoplanets
- DOE and NSF should emulate NASA in establishing, enhancing, and curating high-level data archives for their research portfolios, particularly as it affects MMA research

2019BAAS...51c..17K (arXiv:1903.00297)



From Dark Energy to Exolife: Improving the Digital Information Infrastructure for Astrophysics

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Thematic Areas: Planetary Systems, Multi-Messenger Astronomy

Abstract

Some of the most exciting and promising areas of Astronomy research today are found at the boundaries of the discipline: the search for Exoplanets and Multi-Messenger Astronomy. In order to achieve breakthroughs in these research fields over the next decade, innovation and expansion of the digital information infrastructure which supports this research is required.

Astronomy has been well-served by the existence of an open, distributed network of data centers and archives. However, institutional barriers and differing research cultures have prevented cross-disciplinary collaborations, creating fragmented knowledge and stove-piped research activities. This must change in order for the broader community of scientists to work together and solve our most ambitious decadal challenges.

Interdisciplinary inquiry is best supported by bringing researchers together at the information discovery level. In order to cross the traditional disciplinary silos we must allow scientists both to explore new ideas and to gain access to new data and knowledge. This is best enabled by providing discovery platforms which allow them to explore and connect different research threads in the literature, identify communities of experts, access and analyze the related published datasets, measurements and catalogs.

Staff Changes and Planning

General staffing situation

- We were not able to fill position for UI/UX developer, but still actively looking
- Suffered one resignation (DevOps engineer) in July, actively looking
- This shortage left us shorthanded at a critical time in our transition, so UI refactoring has been postponed (more on this later)

Transition planning for Project Scientist position

- Engaged NASA requesting a budget which will provide full FTE for PS role
- Michael Kurtz retirement pushed to Jan 4, 2020, will be emeritus after that
- Pavlos Protopapas (Scientific Program Director, Institute for Applied Computational Science, Harvard University) serving as interim PS for 2020

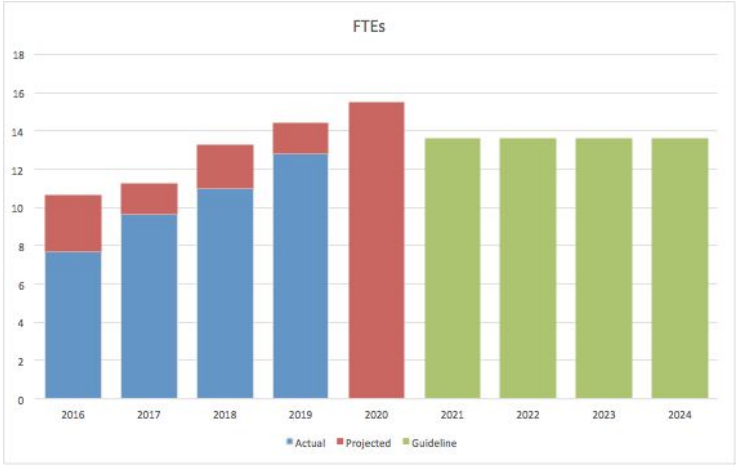
ADS Staff and Roles

- Alberto Accomazzi, PI & Program Manager
- Michael J. Kurtz, Project Scientist Emeritus(*)
- Pavlos Protopapas, Interim Project Scientist(*)
- Edwin A. Henneken, Content, Curation and Collaborations Lead
- Sergi Blanco-Cuaresma, Software Development and Cloud Operations Lead
- Carolyn S. Grant, Senior Curator
- Roman Chyla, System Architect and Senior Developer
- Donna M. Thompson, Data Curation Librarian
- Steve McDonald, Pipeline Development and Operations
- Tim Hostetler, User Interface and Front-end Developer
- Golnaz Shapurian, Senior Developer, Applications & Services
- Matthew Templeton, Data Ingest and Curation
- Kelly Lockhart, Back-End Development and Community Outreach
- Kris Bukovi, Text Mining and Search Support
- [TBD], System Operations, Cloud Computing and Search Support
- [TBD], User Experience and User Interface Development

(*) As of 1/1/2020

Budget

- NASA has been generous, but the job market has not
- Unfilled FTE positions (red) a result of delayed hiring and resignations
- Planned surge in staffing for 2020 is a result of underspending in previous years, needing more skills in team
- Budget guidelines provided by NASA for 2021 are nominal but will require a decrease in total FTEs without further funding



Note: 2021-2024 numbers represent NASA guidelines and are subject to outcome of 2020 archive review

NASA Archives Programmatic Review

ADS will be reviewed with other Astrophysics Archives next March. Goals:

- Refine its implementation strategy for the archives to achieve astrophysics strategic objectives and meet community requirements
- Prioritize tasks and activities for and within individual archive centers
- Give programmatic direction to the archives for FY 2021 through FY 2024

Evaluation criteria:

- Support for science utilization of its data holdings
- Identification and curation of content and software
- Promoting community use of archival NASA Astrophysics data
- Taking full advantage of state-of-the-art data management techniques

We welcome your suggestions throughout the meeting on how ADS should address these topics in its proposal, while recognizing potential conflicts of interest from people involved with other Archives' proposals.

Smithsonian Secretary Award

On November 6, 2019, Alberto Accomazzi was awarded the Secretary Research Prize for “excellence in scholarly websites.” The prestigious prize, which has been awarded annual since 2012, goes to Smithsonian websites providing original research and analysis to the scholarly world and the public.

“The ADS is a transformative information system for astronomers that provides links to research articles as well as cross-reference tools. As early as 1997 the use of ADS surpassed that of all astronomy libraries in the world, and since then its use has continued to increase. It is now accessed by experts in related disciplines such as heliophysics, planetary science, and high energy physics.”

https://www.cfa.harvard.edu/news/pz201905

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Thanks Bill, Christine and Giovanni!