

# ADS Update

*Alberto Accomazzi*  
*NASA Astrophysics Data System*  
*Harvard-Smithsonian Center for Astrophysics*

21 September 2011  
AAHEP 5



# Overview

- ADS in transition: new IT platform, new interface, new collaborations
- Fulltext archive and search service
- Future developments
- Data Publishing/Linking
- VAO Data Curation & Preservation efforts

# The ADS in transition

- Move system to a Open Source, modern architecture
- Provide support for richer metadata
- Industrial strength indexing, searching
- New rankings, search modes
- Improved interoperability, metadata fusion
- New user interface, additional functionality

# Technology

- **Metadata curation and management: Invenio**
  - ▶ Developed by CERN, adopted by INSPIRE and soon arXiv
  - ▶ Bibliographic data ingest, merging, citation linking, user accounts
- **Indexing and searching: SOLR/Lucene**
  - ▶ Enterprise search platform developed by Apache Foundation
  - ▶ Indexing, searching, filtering, relevancy ranking
- **Data Linking, faceting: Sesame/SOLR**
  - ▶ Semantic metadata store captures links to and properties of data products, astronomical objects

# Introducing ADS Labs

- Streamlined search with different query “modes” and rankings
- Faceted filtering, integration of external observational metadata
- Visualization of paper, author networks, sky map for related celestial objects
- Personalizations and recommendations
- Fulltext search, and “look inside the paper”



<http://adslabs.org>



author:"kurtz,m.j."

Astronomy

SEARCH

Author First author Title Object

Examples

Sort by

- Most recent
- Most relevant
- Most cited
- Most popular

Explore the field

- What people are reading
- What experts are citing
- Reviews and introductory papers

myADS articles

Recently viewed articles

- [2011arXiv1105.2001C](#): Correnti, M.: A low surface brightness halo surrounding the globular cluster NGC 5694
- [2011arXiv1105.1955G](#): Gruppioni, C.: Modelling Galaxy and AGN Evolution in the IR: Black Hole Accretion versus Star-Formation Activity
- [2011arXiv1105.2027F](#): Fleming, S. W.: Eclipsing Binary Science Via the Merging of Transit and Doppler Exoplanet Survey Data - A Case Study With the MARVELS Pilot Project and SuperWASP
- [2011arXiv1105.1775B](#): Bestenlehner, J. M.: The VLT-FLAMES Tarantula Survey III: A very massive star in apparent isolation from the massive cluster R136
- [2011arXiv1105.1947P](#): Prosekin, A. Y.: Non-variable cosmologically distant gamma-ray emitters as an imprint of propagation of ultra-high-energy protons
- [2011arXiv1105.1933B](#): Balbinot, E.: The tidal tails of NGC 2298
- [2011arXiv1105.1960B](#): Blanton, M. R.: Improved background subtraction for the Sloan Digital Sky Survey images
- [2011arXiv1105.1773J](#): Joudaki, S.: Primordial non-Gaussianity from the 21 cm Power Spectrum during the Epoch of Reionization
- [2011arXiv1105.2030M](#): Miller, M. C.: A New Method for Determining the Mass and Radius of Neutron Stars
- [2011arXiv1105.2022J](#): Jofre, P.: The age of the Milky Way halo stars from the Sloan Digital Sky Survey





## author:"kurtz,m.j." - *Most relevant*

[View as network](#) [Export to ADS Classic](#)

NO FILTERS APPLIED

### FILTER BY:

#### Authors

- [Kurtz, M \(200\)](#)
- [Murray, S \(100\)](#)
- [Accomazzi, A \(98\)](#)
- [Grant, C \(98\)](#)
- [Eichhorn, G \(91\)](#)
- [Geller, M \(56\)](#)
- [Henneken, E \(51\)](#)
- [Thompson, D \(40\)](#)
- [Bohlen, E \(25\)](#)
- [Brown, W \(20\)](#)
- [Fabricant, D \(18\)](#)
- [Kenyon, S \(18\)](#)
- [Huchra, J \(13\)](#)
- [Beers, T \(10\)](#)
- [Demleitner, M \(10\)](#)



#### Keywords

#### Archives

#### Missions

#### SIMBAD Objects

#### VizieR Tables

#### Refereed status

- Not Refereed (122)
- Refereed (78)

#### Dates

1. [1998PASP..110..934K](#) **RVSAO 2.0: Digital Redshifts and Radial Velocities**  
Kurtz, Michael J.; Mink, Douglas J.  
*The Publications of the Astronomical Society of the Pacific, Volume 110, Issue 750, pp. 934-977. Aug 1998*
2. [1992ASPC...25..432K](#) **XCSAO: A Radial Velocity Package for the IRAF Environment**  
Kurtz, Michael J.; Mink, Douglas J.; Wyatt, William F.; Fabricant, Daniel G.; Torres, Guillermo; Kriss, Gerard A.; Tonry, John L.  
*Astronomical Data Analysis Software and Systems I, A.S.P. Conference Series, Vol. 25, 1992, Diana M. Worrall, Chris Biemesderfer, and Jeannette Barnes, eds., p. 432. n/a 1992*
3. [2000A&AS..143...41K](#) **The NASA Astrophysics Data System: Overview**  
Kurtz, Michael J.; Eichhorn, Guenther; Accomazzi, Alberto; Grant, Carolyn S.; Murray, Stephen S.; Watson, Joyce M.  
*Astronomy and Astrophysics Supplement, v.143, p.41-59 Apr 2000*
4. [2007AJ....134.1360K](#)  **$\mu$ -PhotoZ: Photometric Redshifts by Inverting the Tolman Surface Brightness Test**  
Kurtz, Michael J.; Geller, Margaret J.; Fabricant, Daniel G.; Wyatt, William F.; Dell'Antonio, Ian P.  
*The Astronomical Journal, Volume 134, Issue 4, pp. 1360-1367 (2007). Oct 2007*
5. [1985AJ.....90.1665K](#) **The X-ray cluster Abell 744**  
Kurtz, M. J.; Huchra, J. P.; Beers, T. C.; Geller, M. J.; Gioia, I. M.; Maccacaro, T.; Schild, R. E.; Stauffer, J. R.  
*Astronomical Journal (ISSN 0004-6256), vol. 90, Sept. 1985, p. 1665-1675. Sep 1985*
6. [2010ASPC..434..155K](#) **Using Multipartite Graphs for Recommendation and Discovery**  
Kurtz, M. J.; Accomazzi, A.; Henneken, E.; Di Milia, G.; Grant, C. S.  
*Astronomical Data Analysis Software and Systems XIX. Proceedings of a conference held October 4-8, 2009 in Sapporo, Japan. Edited by Yoshihiko Mizumoto, Koh-Ichiro Morita, and Masatoshi Ohishi. ASP Conference Series, Vol. 434. San Francisco: Astronomical Society of the Pacific, 2010., p.155 Dec 2010*
7. [2005IPM....41.1395K](#) **The Effect of Use and Access on Citations**  
Kurtz, Michael J.; Eichhorn, Guenther; Accomazzi, Alberto; Grant, Carolyn; Demleitner, Markus; Henneken, Edwin; Murray, Stephen S.  
*Information Processing and Management, Vol. 41, Issue 6, p. 1395-1402 Mar 2005*
8. [1992ASPC...52..122K](#) **Intelligent Text Retrieval in the NASA Astrophysics Data**





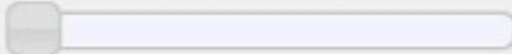


Selection type:

None

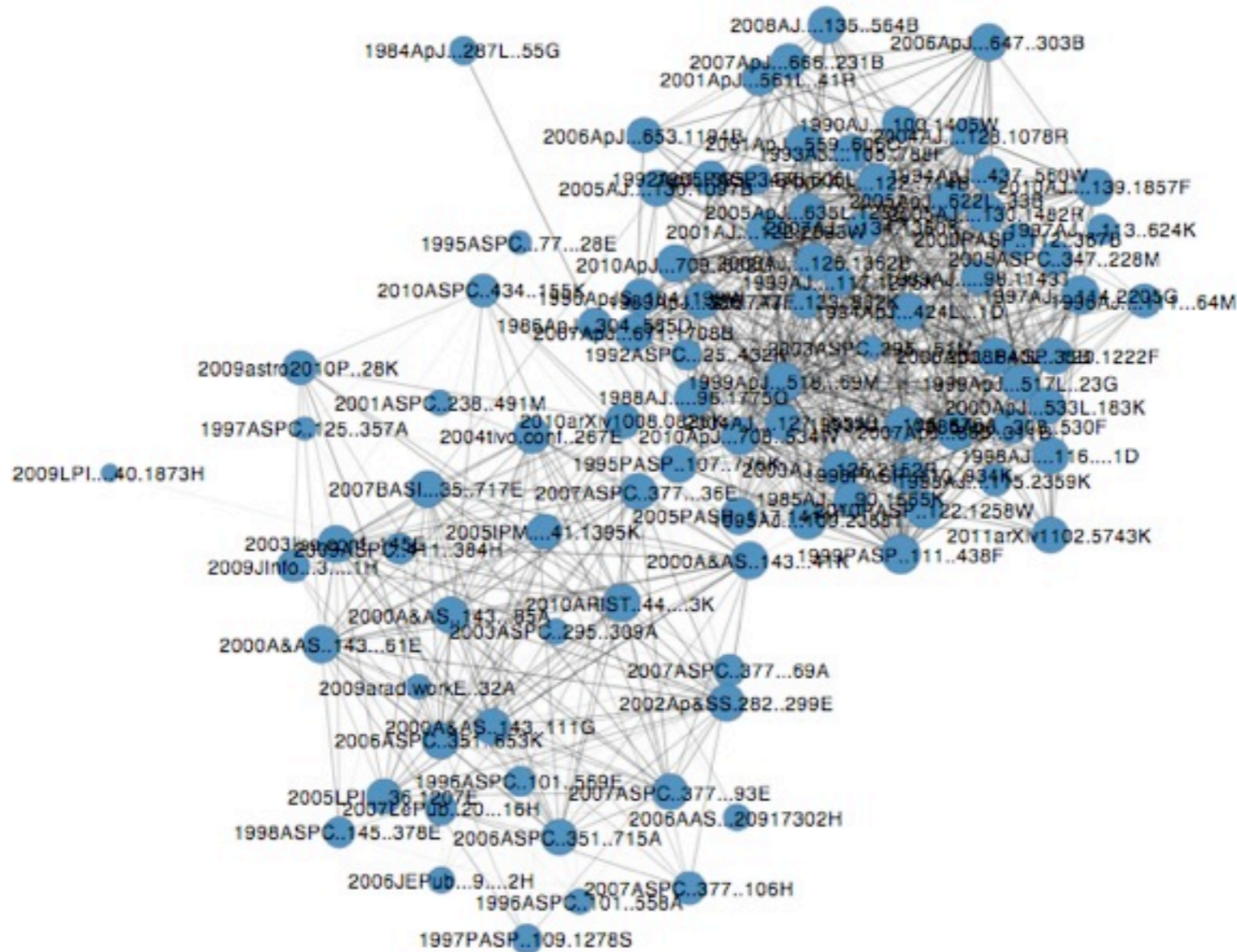
Filter by coupling strength

min



max

[View selected papers only](#)



weak gravitational lensing - *Most popular*

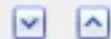
[View as network](#) [Export to ADS Classic](#)

NO FILTERS APPLIED

FILTER BY:

Authors

- [Broadhurst, T \(14\)](#)
- [Umetsu, K \(13\)](#)
- [Mandelbaum, R \(11\)](#)
- [Massey, R \(10\)](#)
- [Refregier, A \(10\)](#)



Keywords

Archives

Missions

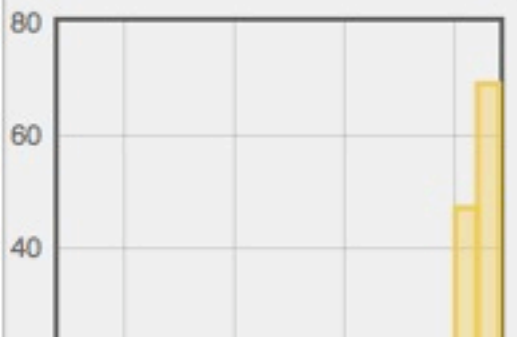
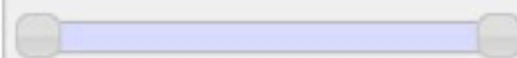
SIMBAD Objects

VizieR Tables

Refereed status

Dates

from 1992 to 2011



1. [1998AJ...116.1009R](#) **Observational Evidence from Supernovae for an Accelerating Universe and a Cosmological Constant**

Riess, Adam G.; Filippenko, Alexei V.; Challis, Peter; Clocchiatti, Alejandro; Diercks, Alan; Garnavich, Peter M.; Gilliland, Ron L.; Hogan, Craig J.; Jha, Saurabh; Kirshner, Robert P.; *and 10 coauthors*

*The Astronomical Journal*, Volume 116, Issue 3, pp. 1009-1038. Sep 1998

[Matches in Abstract](#) / [Matches in fulltext](#)

2. [2006ApJ...648L.109C](#) **A Direct Empirical Proof of the Existence of Dark Matter**

Clowe, Douglas; Bradač, Maruša; Gonzalez, Anthony H.; Markevitch, Maxim; Randall, Scott W.; Jones, Christine; Zaritsky, Dennis

*The Astrophysical Journal*, Volume 648, Issue 2, pp. L109-L113. Sep 2006

[Matches in Abstract](#) / [Matches in fulltext](#)

Matches in fulltext

- ... using *weak gravitational lensing* (Mellier 1999; Bartelmann Schneider 2001), which measures the distortions ...
- ... of the *weak-lensing* results by more than a factor of 3. In this Letter, we measure distances at the redshift ...
- ... panel: 500 ks Chandra image of the cluster. Shown in green contours in both panels are the *weak-lensing*  $\kappa$  ...
- ... independent of any *gravity* or dark matter models. 4. DISCUSSION A key limitation of the *gravitational lensing* ...
- ... to have cooled into stars) extending from the cluster at the locations of the *weak-lensing* peaks. To explain ...
- ... While such projections become more important in nonstandard *gravity* models because the thin *lens* approximation breaks ...
- ... possibility is that some alternative *gravity* models may be able to suppress the *lensing* potential ...
- ... 1. INTRODUCTION We have known since 1937 that the *gravitational* potentials of galaxy clusters ...
- ... dominant quantities of nonluminous "dark matter" (Oort 1932) or alterations to either the *gravitational* ...
- ... 1983). Previous works aimed at distinguishing between the dark matter and alternative *gravity* hypotheses ...

3. [2011arXiv1102.1183G](#) **Why the dark matter of galaxies is clumps of micro-brown-dwarfs and not Cold Dark Matter**

Gibson, Carl H.

*eprint arXiv:1102.1183* Feb 2011

[Matches in Abstract](#) / [Matches in preprint](#)



## weak gravitational lensing - *Most popular*

[View as network](#) [Export to ADS Classic](#)Missions:  HST [X]**FILTER BY:****Authors**

- Broadhurst, T (14)
- Umetsu, K (13)
- Mandelbaum, R (11)
- Massey, R (10)
- Refregier, A (10)

**Keywords****Archives****Missions**

- HST (36)
- CXO (12)
- XMM (5)

**SIMBAD Objects****VizieR Tables****Refereed status****Dates**

from 1992 to 2011



2. [2006ApJ...648L.109C](#) **A Direct Empirical Proof of the Existence of Dark Matter**  
Clowe, Douglas; Bradač, Maruša; Gonzalez, Anthony H.; Markevitch, Maxim; Randall, Scott W.; Jones, Christine; Zaritsky, Dennis  
*The Astrophysical Journal, Volume 648, Issue 2, pp. L109-L113. Sep 2006*  
[Matches in Abstract](#) / [Matches in fulltext](#)
27. [2010A&A...516A..63S](#) **Evidence of the accelerated expansion of the Universe from weak lensing tomography with COSMOS**  
Schrabback, T.; Hartlap, J.; Joachimi, B.; Kilbinger, M.; Simon, P.; Benabed, K.; Bradač, M.; Eifler, T.; Erben, T.; Fassnacht, C. D.; and 12 coauthors  
*Astronomy and Astrophysics, Volume 516, id.A63 Jun 2010*  
[Matches in Abstract](#) / [Matches in preprint](#)
36. [2007MNRAS.382...29B](#) **The Bullet Cluster 1E0657-558 evidence shows modified gravity in the absence of dark matter**  
Brownstein, J. R.; Moffat, J. W.  
*Monthly Notices of the Royal Astronomical Society, Volume 382, Issue 1, pp. 29-47. Nov 2007*  
[Matches in Abstract](#) / [Matches in fulltext](#)
58. [2010ApJ...723.1678C](#) **A High-resolution Mass Map of Galaxy Cluster Substructure: LensPerfect Analysis of A1689**  
Coe, Dan; Benítez, Narciso; Broadhurst, Tom; Moustakas, Leonidas A.  
*The Astrophysical Journal, Volume 723, Issue 2, pp. 1678-1702 (2010). Nov 2010*  
[Matches in Abstract](#) / [Matches in fulltext](#)
61. [2006ApJ...652..937B](#) **Strong and Weak Lensing United. III. Measuring the Mass Distribution of the Merging Galaxy Cluster 1ES 0657-558**  
Bradač, Maruša; Clowe, Douglas; Gonzalez, Anthony H.; Marshall, Phil; Forman, William; Jones, Christine; Markevitch, Maxim; Randall, Scott; Schrabback, Tim; Zaritsky, Dennis  
*The Astrophysical Journal, Volume 652, Issue 2, pp. 937-947. Dec 2006*  
[Matches in Abstract](#) / [Matches in fulltext](#)
67. [2010ApJ...709...97L](#) **A Weak Lensing Study of X-ray Groups in the Cosmos Survey: Form and Evolution of the Mass-Luminosity Relation**  
Leauthaud, Alexie; Finoguenov, Alexis; Kneib, Jean-Paul; Taylor, James E.; Massey, Richard; Rhodes, Jason; Ilbert, Olivier; Bundy, Kevin; Tinker, Jeremy; George, Matthew R.; and 20 coauthors

## weak gravitational lensing - *Most popular*

[View as network](#) [Export to ADS Classic](#)

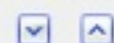
 Missions:  HST [X]

 AND Object:  Other object [X]

### FILTER BY:

#### Authors

- [Broadhurst, T \(14\)](#)
- [Umetsu, K \(13\)](#)
- [Mandelbaum, R \(11\)](#)
- [Massey, R \(10\)](#)
- [Refregier, A \(10\)](#)



#### Keywords

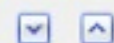
#### Archives

#### Missions

- HST (36)
- CXO (12)
- XMM (5)

#### SIMBAD Objects

- [Other object \(55\)](#)
- [ACO 1689 \(20\)](#)
- [CIG 0657-56 \(15\)](#)
- [ZwCl 0024+1652 \(13\)](#)
- [ACO 2390 \(10\)](#)
- [ACO 383 \(10\)](#)
- [ACO 370 \(9\)](#)
- [ACO 1835 \(8\)](#)



- [Galaxy \(29\)](#)
- [Star \(6\)](#)
- [Radio Source \(2\)](#)

58. [2010ApJ...723.1678C](#) **A High-resolution Mass Map of Galaxy Cluster Substructure: LensPerfect Analysis of A1689**  
 Coe, Dan; Benítez, Narciso; Broadhurst, Tom; Moustakas, Leonidas A.  
*The Astrophysical Journal, Volume 723, Issue 2, pp. 1678-1702 (2010). Nov 2010*  
[Matches in Abstract](#) / [Matches in fulltext](#)
61. [2006ApJ...652..937B](#) **Strong and Weak Lensing United. III. Measuring the Mass Distribution of the Merging Galaxy Cluster 1ES 0657-558**  
 Bradač, Maruša; Clowe, Douglas; Gonzalez, Anthony H.; Marshall, Phil; Forman, William; Jones, Christine; Markevitch, Maxim; Randall, Scott; Schrabback, Tim; Zaritsky, Dennis  
*The Astrophysical Journal, Volume 652, Issue 2, pp. 937-947. Dec 2006*  
[Matches in Abstract](#) / [Matches in fulltext](#)
67. [2010ApJ...709...97L](#) **A Weak Lensing Study of X-ray Groups in the Cosmos Survey: Form and Evolution of the Mass-Luminosity Relation**  
 Leauthaud, Alexie; Finoguenov, Alexis; Kneib, Jean-Paul; Taylor, James E.; Massey, Richard; Rhodes, Jason; Ilbert, Olivier; Bundy, Kevin; Tinker, Jeremy; George, Matthew R.; and 20 coauthors  
*The Astrophysical Journal, Volume 709, Issue 1, pp. 97-114 (2010). Jan 2010*  
[Matches in Abstract](#) / [Matches in fulltext](#)
78. [2010MNRAS.405..257M](#) **Detailed cluster mass and light profiles of A1703, A370 and RXJ1347-11 from deep Subaru imaging**  
 Medezinski, Elinor; Broadhurst, Tom; Umetsu, Keiichi; Oguri, Masamune; Rephaeli, Yoel; Benítez, Narciso  
*Monthly Notices of the Royal Astronomical Society, Volume 405, Issue 1, pp. 257-273. Jun 2010*  
[Matches in Abstract](#) / [Matches in fulltext](#)
103. [2010ApJ...714..423K](#) **Suzaku Observation of A1689: Anisotropic Temperature and Entropy Distributions Associated with the Large-scale Structure**  
 Kawaharada, Madoka; Okabe, Nobuhiro; Umetsu, Keiichi; Takizawa, Motokazu; Matsushita, Kyoko; Fukazawa, Yasushi; Hamana, Takashi; Miyazaki, Satoshi; Nakazawa, Kazuhiro; Ohashi, Takaya  
*The Astrophysical Journal, Volume 714, Issue 1, pp. 423-441 (2010). May 2010*  
[Matches in Abstract](#) / [Matches in fulltext](#)

- Galaxy
- QSO** Other object
- Star
- Radio Source
- Infrared Source
- X-Ray Source
- Nebula
- UV Source
- HII Region

Right Ascension:

Start:

Stop:

Declination:

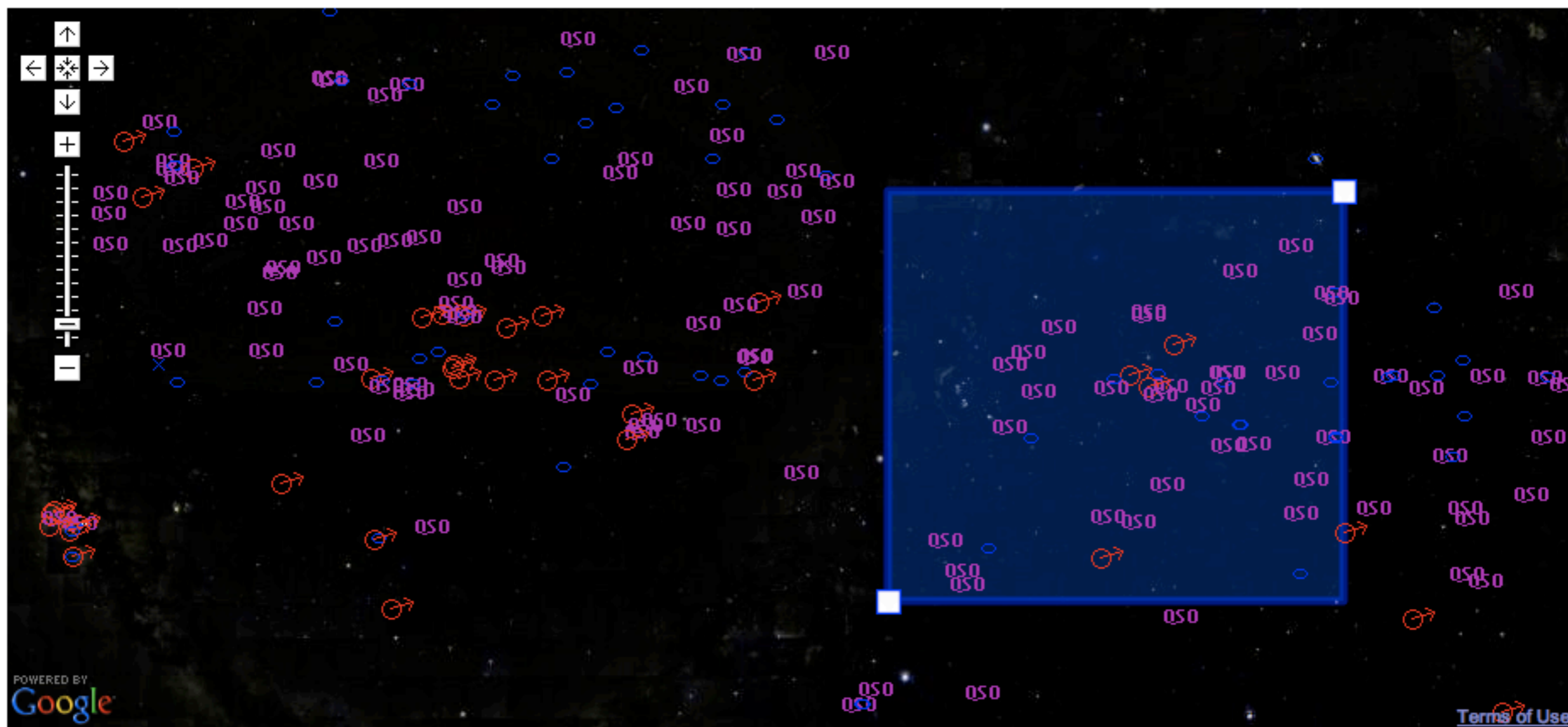
Start:

Stop:

Show Labels

Apply to facets

Object Selection



Matches in Abstract / Matches in preprint

### Simbad Objects on Sky Map



2010ApJ...723.1678C

[Abstract](#)[References](#)[Citations \(14\)](#)[Similar Articles](#)

## A High-resolution Mass Map of Galaxy Cluster Substructure: LensPerfect Analysis of A1689

Coe, Dan; Benitez, Narciso; Broadhurst, Tom; Moustakas, Leonidas A.

*The Astrophysical Journal*, Volume 723, Issue 2, pp. 1678-1702 (2010).

Published in Nov 2010

We present a strong lensing (SL) mass model of A1689 which resolves substructures an estimated 25 kpc across within the central  $\sim 400$  kpc diameter. We achieve this resolution by perfectly reproducing the observed (strongly lensed) input positions of 168 multiple images of 55 knots residing within 135 images of 42 galaxies. Our model makes no assumptions about light tracing mass, yet we reproduce the brightest visible structures with some slight deviations. A1689 remains one of the strongest known lenses on the sky, with an Einstein radius of  $RE = 47 \text{ farcs}0 \pm 1 \text{ farcs}2$  ( $143^{+3}_{-4}$  kpc) for a lensed source at  $z_s = 2$ . We find that a single Navarro-Frenk-White (NFW) or Sérsic profile yields a good fit simultaneously (with only slight tension) to both our SL mass model and published weak lensing (WL) measurements at larger radius (out to the virial radius). According to this NFW fit, A1689 has a mass of  $M_{\text{vir}} = 2.0^{+0.5}_{-0.3} \times 10^{15} M_{\text{sun}} h^{-1} 70$  ( $M_{200} = 1.8^{+0.4}_{-0.3} \times 10^{15} M_{\text{sun}} h^{-1} 70$ ) within the virial radius  $r_{\text{vir}} = 3.0 \pm 0.2 \text{ Mpc } h^{-1} 70$  ( $r_{200} = 2.4^{+0.1}_{-0.2} \text{ Mpc } h^{-1} 70$ ), and a central concentration  $c_{\text{vir}} = 11.5^{+1.5}_{-1.4}$  ( $c_{200} = 9.2 \pm 1.2$ ). Our SL model prefers slightly higher concentrations than previous SL models, bringing our SL + WL constraints in line with other recent derivations. Our results support those of previous studies which find A1689 has either an anomalously large concentration or significant extra mass along the line of sight (perhaps in part due to triaxiality). If clusters are generally found to have higher concentrations than realized in simulations, this could indicate that they formed earlier, perhaps as a result of early dark energy.

### Keywords:

**ApJ:** dark matter, galaxies: clusters: general, galaxies: clusters: individual: A1689, gravitational lensing: strong, gravitational lensing: weak, methods: data analysis

DOI: [10.1088/0004-637X/723/2/1678](https://doi.org/10.1088/0004-637X/723/2/1678)

arXiv: [arXiv:1005.0398](https://arxiv.org/abs/1005.0398)

### Fulltext Sources

[Publisher article](#)[Publisher PDF](#)[arXiv eprint](#)[FIND IT @ HARVARD](#)

### Data Products

[SIMBAD objects](#)[NED objects](#)[Archival data](#)

### Suggested articles

[2009MNRAS.392..930O](#) Oguri,+ : What is the largest Einstein radius in the universe?

[2005ApJ...618..46J](#) Jee,+ : Weak-Lensing Analysis of the  $z \sim 0.8$  Cluster CL 0152-1357 with the Advanced Camera for Surveys

[2006MNRAS.367.1209L](#) Liesenborgs,+ : A genetic algorithm for the non-parametric inversion of strong lensing systems

[2010ApJ...713..491M](#) Morandi,+ : Unveiling the Three-dimensional Structure of Galaxy Clusters: Resolving the Discrepancy Between X-ray and Lensing Masses

[2010MNRAS.404..325R](#) Richard,+ : LoCuSS: first results from strong-lensing analysis of 20 massive galaxy clusters at  $z = 0.2$

[2009ApJ...699.1038O](#) Oguri,+ : Subaru Weak Lensing Measurements of Four Strong Lensing Clusters: Are Lensing Clusters Overconcentrated?

[2007ApJ...668..643L](#) Limousin,+ : Combining Strong and Weak Gravitational Lensing in Abell 1689

[2009ApJS..180..330K](#) Komatsu,+ : Five-Year Wilkinson Microwave Anisotropy Probe Observations: Cosmological Interpretation



Export in: [BibTeX](#)

# Future developments

- Transition from ADS Labs to “ADS 2.0”
  - ▶ Complete transition to new IT platform (2012/2013)
  - ▶ Wean people off old system by providing new functionality, features in new one
- Future efforts
  - ▶ Text mining for metadata enrichment, improved services
  - ▶ Enhanced links to data products, annotations
  - ▶ Better support for metrics, personal and project pages
  - ▶ Support distributed/collaborative curation

# Full-text Use Cases

- Support full-text search, data mining
  - Most requested feature from librarians, archivists
  - Born-digital content has structure, markup, links
- Full-text is not only the end but the means
  - ADS metadata enrichment (keywords, abstracts, citations)
  - Extraction of acknowledgements, funding sources
  - Search enhancements (look inside paper)
  - Support annotations (“this paper uses the Chandra catalog for source selection and Spitzer imaging”)
  - Support semantics (link keywords, objects, facilities, grant numbers, etc. to appropriate knowledge bases)



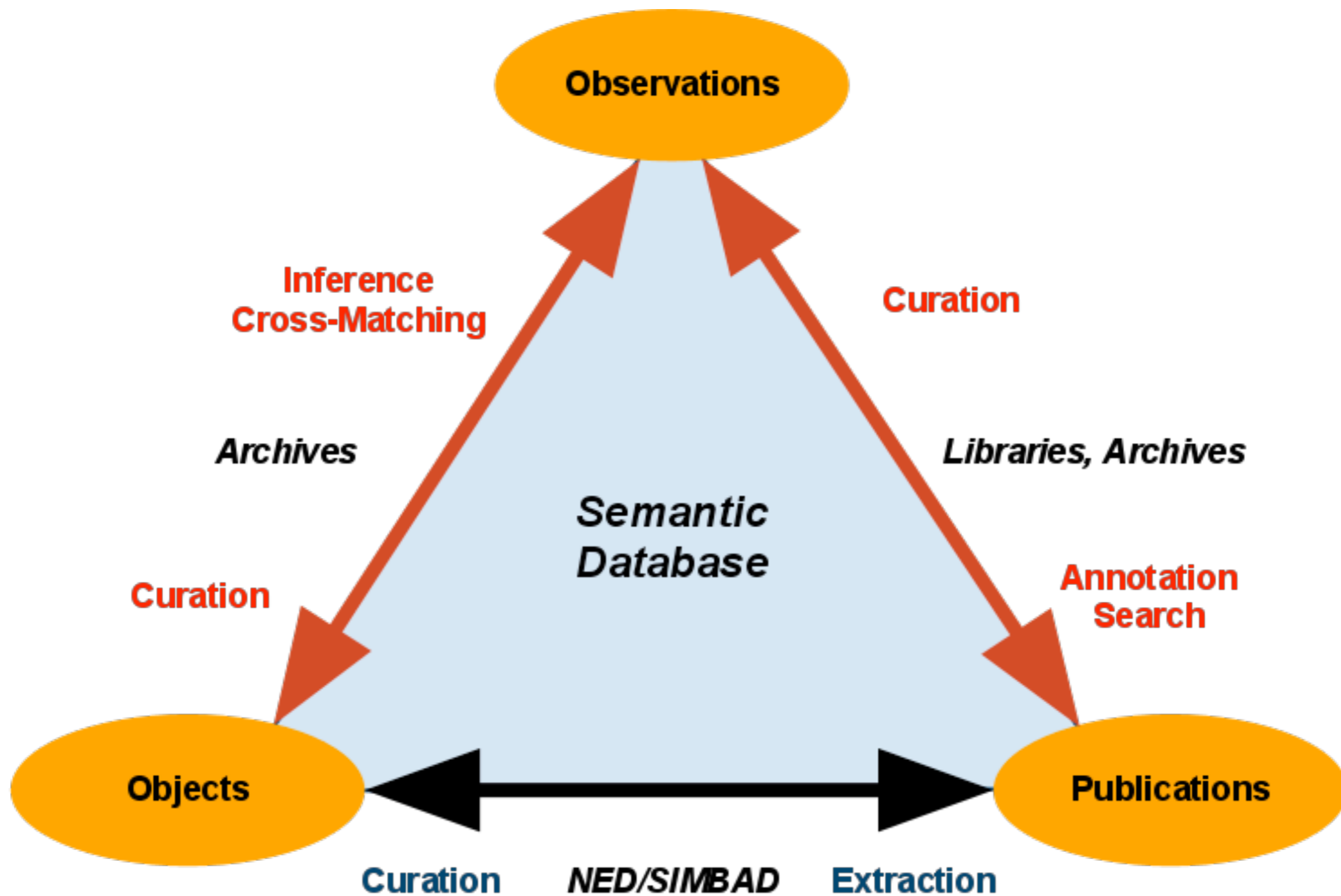
# Support for Metrics

- ADS already used to evaluate papers, people, projects
  - Citations, readership used to rank papers
  - Refereed publications, citations, h-index used to evaluate people, institutions, projects
  - Problems exist with author disambiguation, normalizations
- Provide support for better statistics, interfaces
  - Author ID, paper claiming will reduce ambiguity
  - Affiliation normalization will aid institutional metrics
  - “Author” or “Project” summary pages possible

# VAO AstroExplorer

- **Research Portfolio App to browse Resources, Concepts**
  - Connect Publications, Objects, Datasets, Proposals
  - Focus on Pointed Observations from missions, archives
  - Incorporate bibliographic, object metadata
- **Science Functions: Explore, Search, Filter, Save**
  - Provide views of Publications, Datasets, Objects, Proposals
  - Complement Portal: do not replicate positional search
  - Promote data reuse, research repeatability
- **Generate Metrics**
  - App will additionally be useful for librarians, program managers, funders, etc, as linkages can be used to evaluate impact
- **LESS IS MORE:** Keep signal to noise high, stress curation

<http://adslabs.org/semantic>



[V\* II Peg(12)] [V\* V711 Tau(24)]  
 [V\* bet CMa(12)] [V\* eps Eri(17)]

**Data Facets**

**Observation Types**

[MAST/euve/Unspecified(213)]  
 [MAST/hpol/Unspecified(33)]  
 [MAST/wuppe/Unspecified(23)]

**Data Product Types**

[spectra(259)]

**Wavelengths**

[EUV(213)] [OPTICAL(46)] [UV(24)]  
 [X-RAY(213)]

**Instruments**

[MAST/EUVE/DS/S(213)]  
 [MAST/HPOL/HPOL(33)] [MAST/WUPPE/ASTRO-1 WUPPE(9)]  
 [MAST/WUPPE/ASTRO-2 WUPPE(14)]

**Targets**

[MAST/AB Dor(7)] [MAST/AD Leo(12)]  
 [MAST/AR Lac(7)] [MAST/AU Mic(13)]  
 [MAST/Comet Hale-Bopp(6)] [MAST/EK Dra(7)]  
 [MAST/G191-B2B(10)] [MAST/GD 246(7)]

**FUSE Observation of the Narrow-Line Seyfert 1 Galaxy RE 1034+39: Dependence of Broad Emission Line Strengths on the Shape of the Photoionizing Spectrum (Link) [P]**

line formation | galaxies quasars

**Authors:** Baron, E ; Casebeer, D ; Leighly, K

**Year:** 2006 **BibCode:** 2006ApJ...637..157C **Citations:** 86

**Objects:**

Name	Type
2MASX J10343860+3938277 [P]	Seyfert_1 ~ [P]
QSO J2155-0922 [P]	Seyfert_1 ~ [P]

**Datasets:**

Mission	Observation	Exposure time (s)	Observation date	Target name	RA	Dec
EUVE	2euve_j1034_39_6__0004290513N [P]	68772.8	2000-04-29T05:13:59Z	2EUVE J1034+39.6 [P]	158.6625	39.641666

**Abstract:** We present an analysis from simultaneous FUSE, ASCA, and EUVE observations, as well as a reanalysis of archival HST spectra, from the extreme narrow-line Seyfert 1 Galaxy RE 1034+39 (KUG 1031+398). RE 1034+39 has an unusually hard spectral energy distribution (SED) that peaks in the soft X-rays. Its emission lines are unusual in that they can all be modeled as a Lorentzian centered at the rest wavelength with only a small range in velocity widths. In order to investigate whether the unusual SED influences the emission-line ratios and equivalent widths, we present three complementary