

Strategies for Finding and Reading Journal Papers – Links and Tricks

TIMESTEP – 4/24/19

Finding Papers

- **NASA / Harvard CfA Astrophysical Data System (ADS)**
 - <https://ui.adsabs.harvard.edu/> or google ‘NASA ADS’
 - Database of millions of peer-reviewed and non-reviewed journal papers
 - Contains bibtex entries for creating bibliographies with LaTeX
- **arXiv (Astrophysics section called ‘Astro-ph’)**
 - arxiv.org
 - Respository of electronic *preprints*, and are often not peer-reviewed final journal versions.
 - Generally the most ‘hot off the press’ results, and you can set up email alerts for relevant papers.
- **Astrobites**
 - astrobites.org (or astrobitos.org for the Spanish version!)
 - Daily summaries of recent peer-reviewed astrophysics papers. *The summaries are written by graduate students with the intention of being accessible to undergraduate physical science students.*
- **Colloquia/Talks/Clubs**
 - <https://www.as.arizona.edu/scientific-talks>
 - Science coffee is M-W-F 9:30am, 30 minute low pressure paper discussions in the library. Journal Club Wednsdays at noon in N305
- **The Paper Rabbit Hole**
 - Once you have a paper in hand, find the papers that study references (using above databases and websites) and read those papers etc.
 - Introduction sections of papers are great for finding background papers!

Tools

- **Vox Charta**
 - <https://arizona.voxcharta.org/> or just voxcharta.org
 - A tool for institutions to vote on papers they want to discuss at science coffe-type meetings. Sign up and you can keep track of what papers are being discussed, even if you can’t make it to every science coffee.
- **Annual Reviews**
 - To easily find these use the new ADS: bibstem: “ARA&A”, or for example: bibstem: “ARA&A” reviews(“gaseous galaxy halos”)
 - Annual reviews discuss the fundamental state of a particular subfield. Typically very long, but contain everything you’d want to know about background of a field and also have tons of references.

Reading Tips

- The “Getting to the Point” method
 - Read the Abstract and then immediately read the Conclusions. This helps establish the major points of the paper. Then, parse through the Figures one by one. Finally, read the Introduction and the rest.
- The “Big Picture Method”
 - Read the Abstract, then slowly and intentfully read through the Introduction. Then, read through the Conclusions to see how they answered questions from the Introduction. Finally, return to the Figures and the rest of the paper text.
- Use ctrl-f to search for the first instance of acronyms you don’t know. It will be defined the first time it’s brought up in the text.
- Write down questions as they pop into your head while reading. Then discuss these questions with professors, your adviser, and other group members/students.
- Do not get discouraged at first! Stick with it and over time reading through papers will become second-nature. It’s OK to not know things; ask questions!

Bonus: Astronomical Databases

- NASA/IPAC Extragalactic Database (NED)
 - <https://ned.ipac.caltech.edu/>
 - Use to find images/data for extragalactic sources.
 - Can also find references for papers that study specific objects!
- SIMBAD
 - <http://simbad.u-strasbg.fr/simbad/>
 - Search for non-solar system objects
- SDSS SkyServer
 - <http://skyserver.sdss.org/dr15/en/home.aspx>
 - Search for photometry and spectroscopy of sources in the Sloan Digital Sky Survey (SDSS)
- Sky View
 - skyview.gsfc.nasa.gov
 - Search for astronomical data from radio all the way to gamma-ray!

ADS search shortcuts

author	author:"huchra, john"	citations	citations(author:"huchra, j") ?
first author	author:"^huchra, john"	references	references(author:"huchra, j") ?
abstract + title	abs:"dark energy"	reviews	reviews("gamma-ray bursts") ?
year	year:2000		
year range	year:2000-2005	refereed	property:refereed ?
full text	full:"gravitational waves"	astronomy	database:astronomy ?
publication	bibstem:ApJ ?	OR	abs:(planet OR star) ?
