Finding journal articles using ADS (https://ui.adsabs.harvard.edu/)

Strategy 1: General topic searches:

- Think of "keywords": words that are commonly used in describing the science theme. Example: "color gradients", "galaxy populations", "supernovae remnants", etc."
- Do an abstract search: `abs:"galaxy populations"` (words together) or `abs:("galaxy","populations")` (words individually)
- Refine the search by adding new abstract words: `abs:("galaxy populations","cluster environment")`
- Search for refereed publications: `property:refereed`
- Look for well-cited papers: `citation_count:[100 TO 10000]` (but be careful, you could miss interesting papers this way)
- Look for articles in the main astronomy journals:

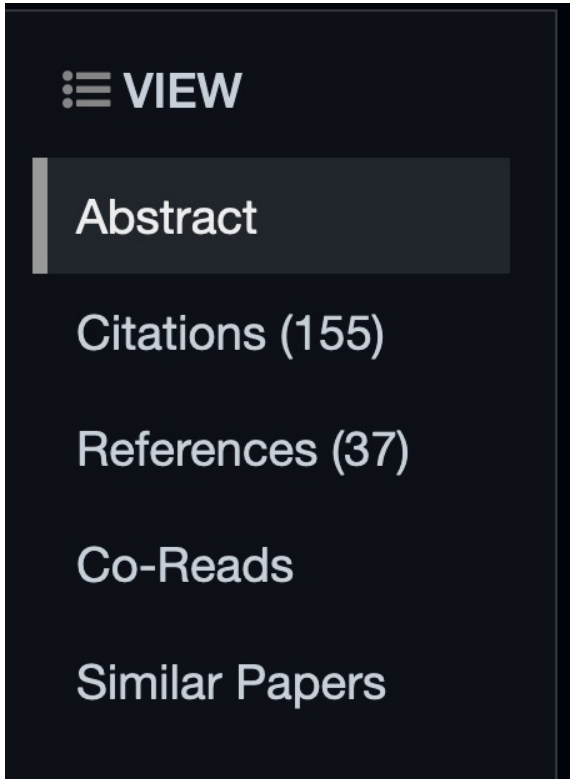
  ApJ: Astrophysical Journal **A&A**: Astronomy & Astrophysics

  AJ: Astronomical Journal **MNRAS**: Monthly Notices of the Royal Astronomical Society
- **REALLY USEFUL**: Search for review articles in Annual Reviews of Astronomy and Astrophysics: `bibstem:"ARA&A"`
- Look at titles, if one looks interesting, click on it to read the abstract. If the abstract looks interesting, download the paper and look in more detail.

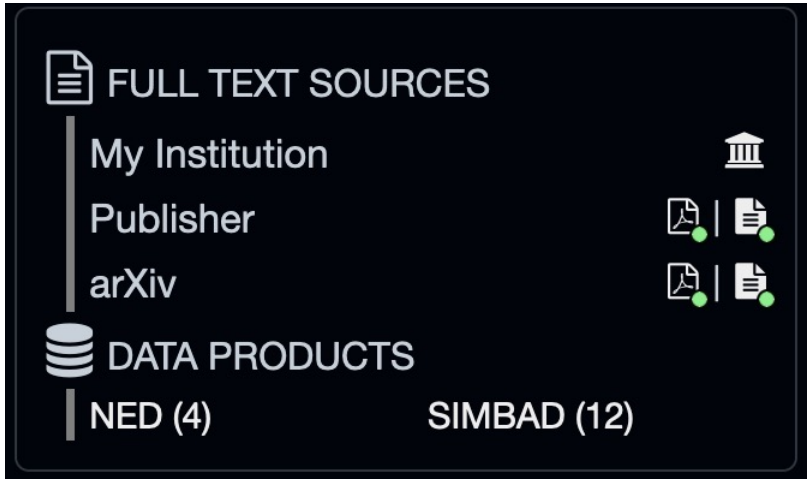
Finding journal articles using ADS (https://ui.adsabs.harvard.edu/)

Strategy 2: Starting from a known paper

- My course notes for other classes (e.g., ASTR 323, ASTR328) often have citation links.
- Find the paper on ADS by searching on first author and year: `author:"^Mihos" year:2005` (^ means first author)
- Click on the paper title, then in left side menu click either
  - Citations (other papers that cited this paper), or
  - References (other papers that this paper cited)
  - Co-reads (other papers read by people who read this paper)
  - Similar papers



Finding journal articles using ADS (https://ui.adsabs.harvard.edu/)



Strategy 3: When you have a paper that looks interesting

- Download the paper using the right hand panel. You can download from "Publisher" (may need to be on CWRU network) or "arXiv". Older papers will have an "ADS" option. Ignore "My Institution".

- Don't plan to read the whole thing and try to understand everything in detail.

- Instead:
  - Read the abstract for the overall summary
  - Look at the figures to see their data
  - Read their conclusions
  - Read the introduction to get more ideas on background and other work being done.
  - If it really looks useful, ***then*** read the whole thing.

- Follow the citation trail. If it's a useful paper,
  - Look up papers that it cites as being important
  - Look at papers that has cited it (ADS Citation search, see strategy #2)
  - Look at ADS Co-Reads or Similar Papers (see strategy #2)

Literature Searches: Big Picture Philosophy

- All this takes is a slow process and takes a lot of time.
- This is fundamental to the scientific process, it is what we do as scientists.
- It is critical for both understanding the problem, and explaining your project. It is not just “required busy work”, it makes us better scientists and it helps us do better science.
- It takes time, effort, and experience to get right, and many senior astronomers still screw it up (including me!)
- Your responsibilities, and my expectations:

    1. Do your best, try different strategies, get a feel for how to do searches and distill information from the published literature. Your goal here is to learn how this process works.
    2. You will feel overwhelmed by the volume of literature. This is normal. It’s okay. See point #1.
    3. You will miss some important references, and get side-tracked by things that may not help. That’s okay. See point #1.
    4. There is no right answer here. Different searches on the same topic will lead down different paths.
    5. I am not looking for a specific outcome, I am looking for a good faith effort. It’s usually straightforward to tell the difference between that and something thrown together in a rush at the last minute.