

JOBs



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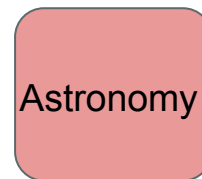
JOBs outside Astronomy

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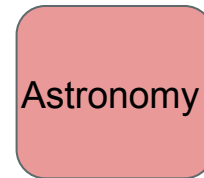
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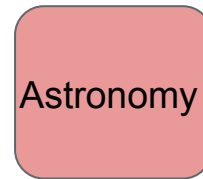
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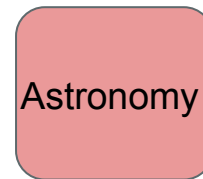
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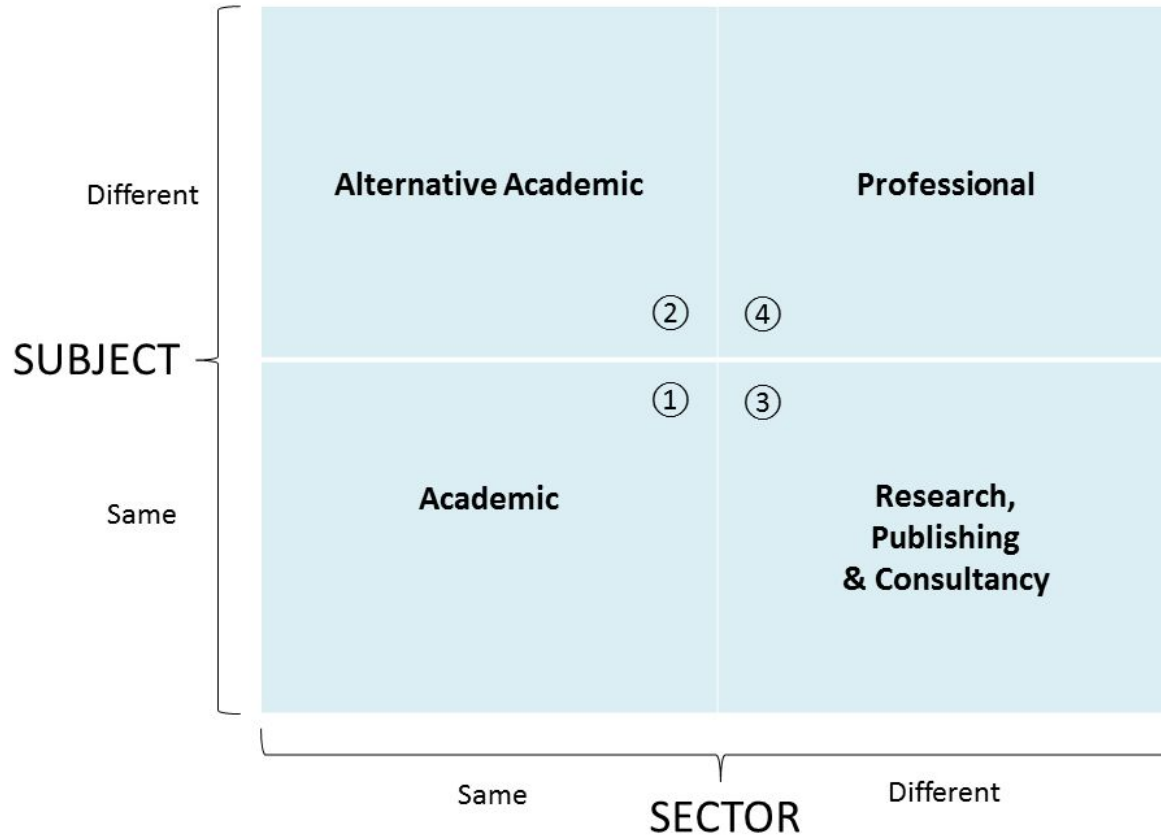
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After your PhD ... What's next ?



Why Should You Think about it NOW ???

- What if somewhere down the road the government and private agencies decide to cut funding for research in astronomy?
- What if I love astronomy but want my job to have more of an effect on the daily lives of others?
- What if, horror of horrors, I get four years into a PhD and realize that research just isn't for me
- If you start to ask yourself these questions ... maybe you want to think about jobs outside Astronomy

Why Should You Think about it NOW ???

- Obviously ... the competition in tenure positions is HIGH
- Oversupply of PhD vs Lacking of grant money vs Permanent tenure positions
- Astronomy/Astrophys grad students have some certain skills sets which can be useful for non-academia (with better paycheck ??) jobs
- If you want any job outside astronomy + academia world, you have to be prepared! The world outside your grad school is highly competitive ...
 - Many of us don't know how to write "Resume" "Cover Letter" and prep for "Job Interview"
- Prepare NOW for high figures salary and lavish lifestyle.

Jobs for Astronomy/Astrophys PhD by Skills

“Your skills are rarely properly marketed to the correct people”

... Ioanna Arka – Jobs for Astronomers

Analytical Skills

Problem-Solving Skills

Critical Thinking Skills

Typical skills sets of Astro folks

Strong Research Skills

Communication Skills

Interpersonal Skills

With skills obtained, here are possible paths ...

- Analyst / Data Analyst
 - Business Analyst
 - Medical Data Analyst
 - Financial/Investment Analyst - Better to have certificate like CFA level 1 at least
 - Data Scientist
- Consulting
 - Aerospace Industry
 - Software Industry
 - Any technical-oriented Industry

With skills obtained, here are possible paths ...

- Energy field - Research and Development
 - Working with Public sector / Federal Agencies
 - Working with Private companies like Exxon Mobil, Chevron etc.
- Management Consulting
 - Big Management Consulting firms like McKinsey, Deloitte, EY etc.
 - Public Agency like Research Executive Agency in the EU

With skills obtained, here are possible paths ...

- Medical Physics Field
 - Medical Physicist
 - Dealing with Clinical Services and Consultation , R&D, and Teaching
 - Positions in private sector and public sector
 - Some possibility to conduct medical research (extra degree / training required)
 - E.g. MRI imaging (New Technology by U.Va. Physics increase 10M x sensitivity)
 - E.g. Ion Beam Application SA (IBAB) develop Proton Therapy for cancer

With skills obtained, here are possible paths ...

- Meteorology and Climate Science Field
 - Working as Scientist and Researcher
 - Need Analytical skills, Researching skills and Codings according to the testimonials from people in this field
- Patent Agency and Patent Law
 - Patent Examiner - Investigate and Make a decision if the invention can be legally protected
 - Patent Attorney - Basically an attorney/lawyer >>> definitely need a law practice or legal training

With skills obtained, here are possible paths ...

- Scientific and Educational Publishing
 - Working as Publisher or Translator or Webmaster/Web editor/ Contents Creators
 - Possible to work on your own schedule as a freelance or start your own business
 - Works involving translation of Scientific or Technical texts for different types of audiences
 - Need some expertises in areas and some creativity

With skills obtained, here are possible paths ...

- Software Development field
 - Many opportunities based on programming languages and level of expertise
 - Scientific programmer at research facilities
 - Programmer at Tech firms
 - Possible to work on your own schedule as a freelance or start your own business

With skills obtained, here are possible paths ...

- Space and Aeronautics field
 - Varieties of opportunities from ATC (Air Traffic Controller), Management Engineer to R&D researcher
 - Possible to work in Private sector with aerospace/defense companies like Boeing, Lockheed Martin*, Airbus
 - Working with public sector like ESA, NASA, JAXA

With skills obtained, here are possible paths ...

- Teaching !!
 - Teaching at School
 - Teaching at non-college university i.e. some people suggest teaching at Online University or University like University of Phoenix
 - Some people are satisfied with their job ... some not so much
- Engineering and Technical field
 - Many opportunities in IT services, Engineering services, and R&D positions
 - Working with public sector and private sector

With skills obtained, here are possible paths ...

- Wall Street ... yes It could fall into Analyst/Consulting ... but I want to add it
 - One can not simply walk into Wall Street - Unless you have a PhD in Astrophysics, Physics, Maths, Stats
 - You will be working in “The Quant Hedge Fund”
 - Possible positions will be Quantitative Researcher, Quantitative Trader, Quantitative Developer
 - Using your analytical skills, statistical and data analytical skills to come up with trading algorithm to make \$\$\$\$
 - Opportunities with firms like D.E. Shaw, Two Sigma, AQR, Renaissance Technologies, World Quant
 - High Payment but some place have high turn over rate

Conclusion ???

- At the end of the day ... There are many opportunities outside Astronomy
- HOWEVER, you have to practice Jobs Hunting skills
 - Get Help from Graduate Career Services as much as you want !
 - Attend career fair to see opportunities and make some connection
 - Practice Jobs interview with experts in industry
- Do your due diligence about position you want to apply and reach out to alumni or Astro PhD who are in that field / job
- Maybe you should start from “What do you want in your life ?” “What kind of lifestyle do I want ?”
- Still want to stick with Astro-Academia? Think about Investment for Retirement too! Be financially smart

Resources

- <https://www.physicsforums.com/threads/careers-in-astrophysics.214812/>
- <https://astrobites.org/2013/02/18/jobs-for-astronomers-careers-beyond-the-academic-horizon/>
- <http://www.jobsforastronomers.com/resources>
- <https://astrobites.org/2011/09/08/careers-in-astronomy-what-am-i-doing-with-my-life/>
- <http://www.nature.com/news/2011/110420/pdf/472276a.pdf>
- <http://www.astrobetter.com/wiki/tiki-index.php?page=Possible+Career+Paths>
- <http://womeninastronomy.blogspot.com/search/label/career%20profiles>
- <https://aas.org/jobs/career-profiles>
- <http://www.bls.gov/ooh/life-physical-and-social-science/physicists-and-astronomers.htm#tab-1>
- <http://theprodigalacademic.blogspot.com/p/non-academic-science-career-information.html>