JOBS outside Astronomy

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After your PhD ... What’s next?

SUBJECT

- Different
  - Alternative Academic
    - 2
  - Professional
    - 4
- Same
  - Academic
    - 1
  - Research, Publishing & Consultancy
    - 3

SECTOR

- Same
- Different
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.
“Your skills are rarely properly marketed to the correct people”

... Ioanna Arka – Jobs for Astronomers
Typical skills sets of Astro folks

- Analytical Skills
- Strong Research Skills
- Problem-Solving Skills
- Communication Skills
- Critical Thinking 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, Lookheed 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
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://astrobites.org/2013/02/18/jobs-for-astronomers-careers-beyond-the-academic-horizon/
- http://www.jobsforastronomers.com/resources
- http://womeninastronomy.blogspot.com/search/label/career%20profiles
- https://aas.org/jobs/career-profiles