ANITA BAHMANYAR

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Citizenship Country: Canada

EDUCATION

University of Toronto, Toronto, ON, Canada
PhD direct entry in Astronomy and Astrophysics **September 2015- Present**
First Year graduate student
Topic of first year research: Constraint on Hubble flow using supernovae Type Ia

University of Toronto, Toronto, ON, Canada
Undergraduate Studies **September 2011- April 2015**
Bachelor of Science in Astronomy and Physics specialized in Astronomy and Physics
Minor in Mathematics

NODET (National Organization for Development of Exceptional Talents), Tehran, Iran
High School Diploma **September 2006- June 2010**
I was among the top five percent of students nationwide to be admitted to this school after passing two entrance exams.
Subject of Diploma: Physics and Mathematics
GPA: 19.33/20

WORK AND VOLUNTEER EXPERIENCE

Canadian Institute for theoretical astrophysics (CITA), Toronto, ON, Canada
Undergraduate Research Assistant **May 2015- August 2015**
Working under supervision of Dr. Alexander van Engelen, I modeled the cross-correlation of Cosmic Infrared Background (CIB) with lensing of the Cosmic Microwave Background (CMB) to put some constraint on primordial non-Gaussianity of the Universe. We modeled the CIB using the emissivity of galaxies as a function of redshift and mass of the dark matter halo. The CIB is also physically dependent on the rate of star-formation in galaxies and dust attenuation.

Canadian Institute for theoretical astrophysics (CITA), Toronto, ON, Canada
Undergraduate Research Assistant **May 2014- April 2015**
Working under supervision of Professor Richard Bond, Dr. Marcelo Alvarez and Dr. Amir Hajian, I developed a Python package called Halopyno for analyzing N-body dark matter halo simulations. For instance, the code populates galaxies using a density profile (such as NFW) and Poisson statistics to create mock galaxy catalogues. Each galaxy is assigned a luminosity based on a theoretical. Brightness temperature maps of cosmic infrared background (CIB) were then created. This also allows the user to cross-correlate CIB power spectrum with thermal Sunyaez-Zeldovich (SZ) effect. Currently I am working on getting 1-halo and 2-halo terms of the CIB power spectrum analytically.

Astronomy and Space Exploration Society (ASX), University of Toronto, Toronto, ON, Canada
Project Director **May 2014- April 2015**
As a project director, I am responsible for organizing ASX events in general. The biggest task is to invite speakers for the annual symposium, which is the keynote event of ASX. Each year, three speakers are invited to talk about a current topic in astronomy. This event has been running for 12 years. The responsibilities also include getting funding from sponsors and overseeing the tasks of the day of the event. We have had well-known speakers including Chris Hadfield, Anthony Aguirre, Matt Dobbs, Rafael Lopez-Mobilia, Chris McKay and Sara Seager in the past years. More information about the club can be found on ASX website: http://asx.sa.utoronto.ca

Astronomy and Astrophysics Department, University of Toronto, Toronto, ON, Canada
Telescope Operator **May 2014- Present**
I provide telescope-viewing opportunities for the public through events such as solar observing in Sidewalk Astronomy. This is an outreach event at the University of Toronto for the public, which provides them with the opportunity of observing the Sun. I also lead nighttime observing sessions after the Dunlap Institute and ASX public events. I also provide telescope-viewing options to show Jupiter, Saturn, Mars and Moon through the dome telescopes at U of T for school kids and groups as well as undergraduate students who are passionate about astronomy.

Astronomy Department, University of Toronto Toronto, ON, Canada
Volunteer on Science Rendezvous Day **May 2013 and 2014**
This is a free, all-day event that aims to promote science to the general public and students.
As a volunteer, I informed the general public, mostly children about astronomy and led solar observing sessions.

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Canadian Institute for theoretical astrophysics (CITA), Toronto, ON, Canada
Undergraduate Research Assistant **May - August 2013**
By taking the Research Excursion course, CTA399Y1, under supervision of Professor Marten van Kerkwijk and Professor Ue-Li Pen, I developed programming skills with Python and shell scripting. Moreover, I interacted with observatories in other countries including Giant Metrewave Radio Telescope (GMRT) in India, Low-Frequency Array for radio astronomy (LOFAR) in Netherlands and Algonquin Radio Observatory (ARO) in Canada to run simultaneous VLBI observations on pulsar scintillometry. We analyzed pulsar profiles later.

Shore+Moffat Architecture Library, University of Toronto, Toronto, ON, Canada
Library Assistant **June 2012-May 2014**
I organized returned books, helped students to find books and good references for their research work, checked books out, answered phone calls and gave students technical assistance for using computers, printers and scanners in the library.

Astronomy and Space Exploration Society (ASX), University of Toronto, Toronto, ON, Canada
Symposium Director **Sept. 2011-April 2014**
As a symposium director my responsibilities included planning and organizing the annual "Expanding Canada's Frontiers Symposium", which is one of the largest student-run space-centered events in Canada, with attendance of about 500 people each year. This event has been running for 12 years. In this event, three speakers from different countries, mostly U.S. come and give talks about their recent achievements on current issues in astronomy and space. Many broad topics including space travels, cosmology and exo-planets have been discussed in this event in the previous years.

TEACHING EXPERIENCE

Astronomy and Astrophysics Department, University of Toronto, Toronto, ON, Canada
Teaching Assistant **January 2015-Present**
AST201H1 course, Stars and Galaxies, taught by Dr. Michael Reid and Prof. Barth Netterfield
Book Taught: The Cosmic Perspective by Jeffrey O. Bennett
AST101 course, Solar System
These are introductory undergraduate astronomy courses aimed for non-science students. The responsibilities include reviewing lecture materials in class, running exam preparation sessions, coordinating observing nights and grading tests for a class of 50 students.

AWARDS AND SCHOLARSHIPS

NSERC (Natural Sciences and Engineering Research Council) **May – August 2015**
Canadian Institute for Theoretical Astrophysics
Awarded to students conducting research in the natural sciences and engineering

The Regents In-Course Scholarship **September 2014**
By The Senate of Victoria University
Awarded to students who have achieved overall A standing

NSERC (Natural Sciences and Engineering Research Council) **May – August 2014**
Canadian Institute for Theoretical Astrophysics
Awarded to students conducting research in the natural sciences and engineering

The Moses Henry Aikins Scholarship **September 2011**
By The Senate of Victoria University in the University of Toronto
Admission scholarship for students with high GPA

University of Toronto Scholar **September 2011**
By The University of Toronto
Admission scholarship for students with high GPA

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Certificate of Completion of Basic and Advanced Amateur Astronomy **June 2007 - June 2009**
Zaferanieh Educational Observatory, Tehran, Iran

Winner of Annual Contest of Amateur Astronomy **April 2009**
Iran Amateur Astronomy Society (IAAS), Tehran, Iran

COMPUTER SKILLS

Advanced Knowledge: Python, Linux, LaTeX, Github, Bitbucket, Text Editors(including Emacs, Gedit and Xcode), Excel, Word and PowerPoint

Intermediate Knowledge: C++, Shell Scripting

Basic Knowledge: Scikit-learn, Pandas, Mathematica

LANGUAGES

English: Fluent with high proficiency in reading and writing

Persian: Native language

Arabic: Basic knowledge of reading/writing

PERSONAL SKILLS

- Self-motivated
- Independent but able to work as a team member
- Goal-oriented
- Hard working
- Organized
- Capable of thinking critically and analytically

EXTRACURRICULAR INTERESTS AND ACTIVITIES

- Playing the Piano
- Observing night sky with telescope
- Camping
- Attending public astronomy talks
- Creating handmade bracelets
- Reading novels with themes including symbols and cryptography
- Volleyball
- Badminton
- Swimming

MEMBERSHIPS

- Member of Cosmology Discussion at CITA
  A few papers are discussed each week with post docs and professors. I am the only undergraduate who attends these discussions and I discussed (arXiv:1409.3238) paper.
- Member of CITA weekly seminars
- Member of Dunlap Institute