

# Arash Bahramian

## Curriculum Vitæ

Postdoctoral researcher  
Dept. of Physics and Astronomy  
Michigan State University  
East Lansing, MI 48824

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<https://bersavosh.github.io/>

### Employment

2016 - present Michigan State University, East Lansing, MI  
Postdoctoral research associate

### Education

2011 - 2016 Ph.D. Physics  
University of Alberta, Edmonton, Alberta, Canada  
Advisor: C.O. Heinke  
Dissertation: *Behavior of low-mass X-ray binaries and their formation in globular clusters*

2007 - 2011 B.Sc. Physics  
Isfahan University of Technology, Isfahan, Iran

### Fellowships and Awards

2015 Andrew Stewart Memorial Graduate Research Prize  
*University of Alberta*

2013 Best Student Poster Award  
*Canadian Astronomical Society Meeting 2013 (Vancouver, Canada)*

2013 Graduate Student Teaching Award  
*Faculty of Science, University of Alberta*

### Experience and analysis skills

- X-ray spectroscopy and imaging analysis (*Chandra, Swift/XRT, Swift/BAT, NuSTAR, XMM-Newton, MAXI*)
- Ultraviolet imaging and photometry analysis (*Swift/UVOT*)
- Near-Infrared spectroscopy and imaging analysis (*Gemini/NIFS, Gemini/GNIRS, Gemini/FLAMINGOS-2*)
- Programming: Python, C++, R, Mathematica, MATLAB, Fortran
- Major astronomical packages: AstroPy, AstroML, CIAO, HEASoft (XSpec, Xronos, XStar, FTools), IRAF

### Professional Talks

2016 Dec *University of Michigan (Ann Arbor, Michigan, USA)*, **Invited Talk**  
“47Tuc X9: the first ultra-compact X-ray binary identified in quiescence”

2016 Dec *University of Western Ontario (London, Canada)*, **Invited Talk**  
“Population of X-ray binaries in globular clusters”

2016 Aug *Institute for Research in Fundamental Sciences (Tehran, Iran)*, **Invited Talk**  
“47Tuc X9: the first ultra-compact X-ray binary identified in quiescence”

2016 June *Canadian Astronomical Society Meeting 2012 (Winnipeg, Canada)*  
“47 Tuc X9: the first ultra-compact X-ray binary identified in quiescence and its twisted accretion”

2015 Dec *Modelling and Observing Dense Stellar Systems conference 2015 (Kobe, Japan)*, **Invited Talk**  
“Population of X-ray binaries in globular clusters and correlation with globular cluster properties”

2015 June *European Week of Astronomy and Space Science 2015 (Tenerife, Spain)*  
“Low-level accretion in transitional MSPs and connection with very faint X-ray binaries”

2015 June *Max Planck Institute for Radio-astronomy (Bonn, Germany)*  
“Symbiosis in stars: classification of species”

2015 June *Texas Tech. University (Lubbock, Texas, USA)*, **Invited Talk**  
“X-ray binary population in globular clusters and correlation with globular cluster properties”

- 2014 Jul *International Conference on Physics of Neutron Stars 2014 (St.Petersburg, Russia)*  
 “Discovery of the third transient X-ray binary in the Galactic globular cluster Terzan 5”
- 2012 Jun *Canadian Astronomical Society Meeting 2012 (Calgary, Canada)*  
 “X-ray binary population in globular clusters and correlation with stellar encounter rate”

### Accepted Observatory Proposals (as PI)

1. “*NIR photometry of very faint X-ray transients*”, SOAR Observatory, Term 2017A, Awarded 7 hours time.
2. “*Determining the nature of donor stars in sub-luminous transient X-ray binaries*”, Gemini Observatory, Terms 2016A and 2017A, Awarded 16 hours time.
3. “*Near-infrared spectroscopy of unusual transient X-ray binaries*”, Gemini Observatory, Term 2015A, Awarded 6 hours time.
4. “*The Heartbeat of the Cannonball: Searching for pulsations from the Sgr A East NS.*”, XMM-Newton, Cycle AO13, Awarded 17 hours time.
5. 32 Swift Target of Opportunity proposals, Awarded a total of 28 hours time for 14 different targets.

### Refereed Publications

13. **A Bahramian**, CO Heinke, V Tudor, JCA Miller-Jones, S Bogdanov, TJ Maccarone, C Knigge, GR Sivakoff, L Chomiuk, J Strader, JA Garcia, T Kallman. “*The ultracompact nature of the black hole candidate X-ray binary 47 Tuc X9*” 2017, [MNRAS 467 2199](#).
12. BE Tetarenko, **A Bahramian**, RM Arnason, JCA Miller-Jones, S Repetto, CO Heinke, TJ Maccarone, L Chomiuk, GR Sivakoff, J Strader, F Kirsten, W Vlemmings. “*The first low-mass black hole X-ray binary identified in quiescence outside of a globular cluster*” 2016, [ApJ 825 10](#).
11. AJ Tetarenko, **A Bahramian**, GR Sivakoff, E Tremou, M Linares, V Tudor, JCA Miller-Jones, CO Heinke, L Chomiuk, J Strader, D Altamirano, N Degenaar, T Maccarone, A Patruno, A Sanna, R Wijnands. “*Disc-Jet Coupling in the Terzan 5 Neutron Star X-ray Binary EXO 1745248*” 2016, [MNRAS 460 345](#).
10. R Wijnands, N Degenaar, MA Padilla, D Altamirano, Y Cavecchi, M Linares, **A Bahramian**, CO Heinke. “*Low-level accretion in neutron-star X-ray binaries.*” 2015, [MNRAS 454 1371](#).
9. **A Bahramian**, CO Heinke, N Degenaar, L Chomiuk, R Wijnands, J Strader, WCG Ho, D Pooley. “*Limits on thermal variations in a dozen quiescent neutron stars over a decade.*” 2015, [MNRAS 452 3475](#).
8. N Degenaar, R Wijnands, **A Bahramian**, GR Sivakoff, CO Heinke, EF Brown, JK Fridriksson, J Homan, EM Cackett, A Cumming, JM Miller, D Altamirano, D Pooley. “*Neutron star crust cooling in the Terzan 5 X-ray transient Swift J174805.3-244637.*” 2015, [MNRAS 451 2071](#).
7. CO Heinke, **A Bahramian**, N Degenaar, R Wijnands. “*The nature of very faint X-ray binaries: hints from light curves.*” 2015, [MNRAS 447 3034](#).
6. EW Koch, **A Bahramian**, CO Heinke, K Mori, N Rea, N Degenaar, D Haggard, R Wijnands, G Ponti, JM Miller, F Yusef-Zadeh, F Dufour, WD Cotton, FK Baganoff, MT Reynolds. “*The 2013 outburst of a transient very faint X-ray binary, 23 arcsec from Sgr A\*.*” 2014, [MNRAS 442 372](#).
5. **A Bahramian**, JC Gladstone, CO Heinke, R Wijnands, R Kaur, D Altamirano. “*Revealing a new symbiotic X-ray binary with Gemini Near-infrared Integral Field Spectrograph.*” 2014, [MNRAS 441 640](#).
4. M Linares, **A Bahramian**, CO Heinke, R Wijnands, A Patruno, D Altamirano, J Homan, S Bogdanov, D Pooley. “*The neutron star transient and millisecond pulsar in M28: from sub-luminous accretion to rotation-powered quiescence.*” 2014, [MNRAS 438 251](#).
3. **A Bahramian**, CO Heinke, GR Sivakoff, D Altamirano, R Wijnands, J Homan, M Linares, D Pooley, N Degenaar, JC Gladstone. “*Discovery of the Third Transient X-Ray Binary in the Galactic Globular Cluster Terzan 5.*” 2014, [ApJ 780 127](#).
2. **A Bahramian**, CO Heinke, GR Sivakoff, JC Gladstone. “*Stellar Encounter Rate in Galactic Globular Clusters.*” 2013, [ApJ 766 136](#).
1. WS Stacey, CO Heinke, HN Cohn, PM Lugger, **A Bahramian**. “*An Examination of the X-Ray Sources in the Globular Cluster NGC 6652.*” 2012, [ApJ 751 62](#).

## Press releases

- 2017      *“Star Discovered in Closest Known Orbit Around Likely Black Hole”*  
Chandra X-ray Observatory, NASA
- 2016      *“Clandestine Black Hole May Represent New Population”*  
Chandra X-ray Observatory, NASA

## Astronomer’s Telegrams

(The *Astronomer’s Telegram* is a publication system for quick report of astronomical observations.)

- I’ve led 17 Astronomer’s Telegrams as the PI.
- I’ve been involved in a total of 34 Astronomer’s Telegrams.

The complete list of my Astronomer’s Telegrams [as listed by ADS](#).

## Outreach

- 2016      Volunteer, International observe the moon night, Michigan State University Observatory
- 2011 - 2015      Volunteer, weekly observing events, University of Alberta Observatory
- 2014      Teaching Assistant, University of Alberta Observatory
- 2014      Volunteer, Women in scholarship, engineering, science and technology Conference, University of Alberta
- 2010      Director, undergraduate astronomy club, Isfahan University of Technology