Asmita E. Bhandare

PERSONAL INFORMATION

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ORCID iD: 0000-0002-1197-3946
Language skills: English (fluent), Hindi (fluent), Marathi (native), German (basic)

EDUCATION

- Ph.D. Astronomy
  Max Planck Institute for Astronomy, Heidelberg, Germany 2016 - 2020
- Master of Science in Astrophysics
  Argelander Institute for Astronomy, University of Bonn, Germany 2013 - 2015
- Bachelor of Science in Physics
  Fergusson College, University of Pune, India 2009 - 2012

RESEARCH INTERESTS

Formation and evolution of stars, circumstellar disks, and planets
Numerical simulations
Linking theoretical models to observations

RESEARCH EXPERIENCE

Ph.D. Thesis: Numerical simulations of star and disk formation 2016 - 2020
Advisors: Prof. Dr. Thomas Henning (MPIA), Dr. Rolf Kuiper (University of Tübingen), Dr. Christian Fendt (MPIA)

Master Thesis: Investigation of the effects of stellar encounters on protoplanetary disk size 2014 - 2015
Advisor: Prof. Dr. Susanne Pfalzner (Max Planck Institute for Radio Astronomy, Bonn, Germany)

Summer internship: X-ray emission from the Active Galactic Nuclei: H1821+643 2013
Advisor: Prof. Dr. Gulab Chand Dewangan (Inter-University Centre for Astronomy and Astrophysics, Pune, India)

Bachelor Thesis: Exoplanet Transit Studies of WASP-12 b and HAT-P-7 b 2011 - 2012
Advisor: Dr. Firoza Sutaria (Indian Institute of Astrophysics, Bangalore, India)

EXPERTISE

- Numerical tools: PLUTO (radiation magneto-hydrodynamic code), N-body codes
- Programming: Python, C, C++, HTML
- Softwares and Tools: LATEX, git, Mathematica, IRAF, HEASOFT
- Operating Systems: Linux, macOS, Windows

PUBLICATIONS

- Rosen A. L., Offner S. S. R., Sadavoy S. I., **Bhandare A.**, Vzquez-Semadeni E., and Ginsburg A., *"Zooming in on Individual Star Formation: Low- and High-mass Stars"*, 2020, Space Science Reviews, 216, 62
- **Bhandare A.**, Kuiper R., Henning Th., Fendt C., Flock M., and Marleau G-D., *"Birth of convective low-mass to high-mass second Larson cores"*, 2020, A&A, arXiv:2004.12419

- Zhao B. et al. (including **Bhandare A.**), *"Formation and Evolution of Disks Around Young Stellar Objects"*, 2020, Space Science Reviews, 216, 43
- Gibbs A. et al. (including **Bhandare A.**), *"EDEN: Sensitivity Analysis and Transiting Planet Detection Limits for Nearby Late Red Dwarfs"*, 2020, The Astronomical Journal, 159, 169
- **Bhandare A.** and Pfalzner S., *"DESTINY: Database for the Effects of STellar encounters on dIsks and plaNetary sYstems"*, 2019, Computational Astrophysics and Cosmology, 6: 3
- The 'Oumuamua ISSI team, *"Natural History of Oumuamua"*, 2019, Nature Astronomy, 3, 594-602
- **Bhandare A.**, Kuiper R., Henning Th., Fendt C., Marleau G-D., and Kölligan A., *"First core properties: From low- to high-mass star formation"*, 2018, A&A, 618, A95
- Pfalzner S., **Bhandare A.**, Vincke K., and Lacerda P., *"Outer solar system possibly shaped by a stellar fly-by"*, 2018, ApJ, 863, 45
- Pfalzner S., **Bhandare A.**, and Vincke K., *"Did a stellar fly-by shape the planetary system around Pr 0211 in the cluster M 44?"*, 2017, A&A, 610, A33
- **Bhandare A.**, Breslau A., and Pfalzner S., *"Effects of inclined star-disc encounter on protoplanetary disc size"*, 2016, A&A, 594, A53
- Pfalzner S., Kirk H., Sills A., Urquhart J. S., Kauffmann J., Kuhn M., **Bhandare A.**, and Menten K. M., *"Observational constraints on star cluster formation theory. I. The mass-radius relation"*, 2016, A&A, 586, A68

TEACHING EXPERIENCE

- Tutor for the Advanced Laboratory Course on "CCD photometry in modern astronomy" SS 2018
- Tutor for the Advanced Laboratory Course on "Photometry of Star Clusters" SS 2014, WS 2015
- Tutor for the course on "The physics of dense stellar systems" by Prof. Pavel Kroupa SS 2014

OBSERVING EXPERIENCE

Exoplanet transit observations using:

- 1.23 m telescope, Calar Alto Observatory, Spain 10 nights
- MPG / ESO 2.2m, La Silla, Chile 5 nights
- 2m Himalayan Chandra Telescope, Indian Astronomical Observatory, Hanle, Ladakh 2 nights

TALKS AND POSTER PRESENTATIONS

- Talk: "Zooming in on star and disk formation"
  @ Astro-colloquium, Institute for Astronomy and Astrophysics, Tübingen, Germany January 2020
- Talk: "Zooming in on the early stages of star and disk formation"
  @ Stars, Planets, & ISM seminar, Department of Astronomy, UT Austin, USA November 2019
- Talk: "Zooming in on the early stages of star and disk formation"
  @ Stars & Planets seminar, CfA, Cambridge, MA, USA November 2019
- Poster: "Early stages of star and disk formation"
  @ Harvard-Heidelberg workshop on Star Formation: Linking Observations and Simulations,
  CfA, Cambridge, MA, USA November 2019
- Talk: "Zooming in on the early stages of star and disk formation"
  @ Fachbeirat 2019, MPIA, Heidelberg, Germany November 2019
- Talk: "Early stages of star and disk formation"
  @ ITA blackboard colloquium, Heidelberg, Germany July 2019
- Poster: "Early stages of star and disk formation"
  @ Zooming in on Star Formation, Nafplio, Greece June 2019

- Talk: "Earliest stages of star and disk formation"
  @ Star formation workshop, ISSI, Bern, Switzerland — May 2019
- Talk: "From molecular cores to hydrostatic cores"
  @ The physics of star formation: Gas flows from Milky Way cloud scales to protostellar disks, a Heidelberg-Harvard workshop, MPIA, Heidelberg, Germany — December 2018
- Talk: "From molecular cores to hydrostatic cores"
  @ Centre de Recherche Astrophysique de Lyon (CRAL), Lyon, France — November 2018
- Poster: "Early stages of low- to high-mass star formation"
  @ The Wonders of Star Formation, Edinburgh, Scotland — September 2018
- Poster: "First core properties: from low- to high-mass star formation"
  @ The Olympian Symposium 2018, Mount Olympus, Greece — May 2018
- Poster and Talk: "From molecular cloud cores to hydrostatic cores"
  @ The Early Phase of Star formation (EPoS) 2018: Archetypes, Ringberg, Germany — May 2018
- Talk: "From clouds to cores"
  @ PSF coffee, MPIA, Heidelberg, Germany — April 2018
- Poster: "First core lifetime from low-mass to high-mass star formation"
  @ SPF2: Star and Planet Formation in the Southwest, Oracle, Arizona, USA — March 2018
- Talk: "First core lifetime from low-mass to high-mass star formation"
  @ ISM day, Hamburg Observatory, Germany — February 2018
- Poster: "Numerical simulations of low-mass star formation"
  @ Star formation from cores to clusters, Santiago, Chile — March 2017
- Talk: "Effects of inclined star-disk encounter on protoplanetary disk size"
  @ PSF coffee, MPIA, Heidelberg, Germany — September 2016
- Poster: "Effects of star-disk encounters on protoplanetary disks"
  @ DGG conference, Münster, Germany — March 2016
- Poster: "Effects of star-disk encounters on protoplanetary disks"
  @ The Formation of the Solar System II, Berlin, Germany — June 2015
- Poster: "Study of Transiting Exoplanets WASP-12 b and HAT-P-7 b"
  @ National Student Symposium on Physics, Chandigarh, India — February 2013
- Poster: "Study of Transiting Exoplanet - WASP-12 b"
  @ The 17th National Space Science Symposium, Tirupati, India — February 2012

CONFERENCES, MEETINGS AND SUMMER SCHOOLS

- Invited "Young scientist" for a workshop on the interstellar object 1I/'Oumuamua
  @ ISSI in Bern, Switzerland — November 2018
- NBIA summer school on "Astrophysical plasmas - from planets to galaxies"
  @ Niels Bohr Institute, Copenhagen, Denmark — August 2017
- "Physics of star formation: Milky Way and Beyond", a Heidelberg-Harvard workshop
  @ Max Planck Institute for Astronomy, Heidelberg, Germany — November 2016
- "Exoplanets in Lund 2015"
  @ Lund Observatory, Sweden — May 2015
- "The Formation of the Solar System"
  @ Max Planck Institute for Radio Astronomy, Bonn, Germany — May 2014
- Vacation Students Programme
  @ Inter-University Centre for Astronomy and Astrophysics (IUCAA), Pune, India — Summer 2013
- Workshop on "The Astrophysics of Black Holes" organized by IUCAA, Pune in collaboration with Astro Club, Department of Physics, Fergusson College, Pune, India — September 2012

- Summer School organized by the Indian Institute of Astrophysics (IIA), Bangalore, India
  @ Kodaikanal Observatory — Summer 2012
- 12th PLANEX workshop on "Exploration of Asteroids and Comets" organized by PLANEX, Physical research laboratory (PRL), Ahmedabad, India
  @ Mt. Abu, Rajasthan, India — January 2012
- Summer Internship Programme
  @ Indian Institute of Astrophysics, Bangalore, India — Summers 2011 and 2012
- "Frontiers in Physics"
  @ Fergusson College, Pune, India — 2009 - 2013

ACHIEVEMENTS AND AWARDS

- Best poster prize at "The Early Phase of Star formation (EPoS) 2018: Archetypes", Ringberg, Germany — 2018
- Fellow of the International Max Planck Research School (IMPRS-HD) — 2016 - 2020
- First prize for a lecture competition organized by the Indian Physics Association — 2013
- Second best poster prize at the "17th National Space Science Symposium", Tirupati, India — 2012
- Successfully got over 10 follow-up observations of known near-Earth objects allowing further refinements to their orbit calculations as part of the "All India Asteroid Search Campaign (AIASC)", which was displayed on the website of International Asteroid Search Campaign — 2010
- Contributed to the International Meteor Organization (Visual Meteor shower observations), under an ISRO project — 2010 - 2012

ORGANIZATIONAL RESPONSIBILITIES

- Member of the LOC for "The Early Phase of Star formation (EPoS) 2020: Insights from Dynamics", Ringberg, Germany — 2020
- Organized a Mental health seminar — 2019
- MPIA Student Representative — 2017 - 2019
- IMPRS Student Representative — 2016 - 2019
- Member of the LOC/SOC for the Heidelberg-Harvard workshop — 2018
- Editorial Board Member for the monthly newsletter "Dimensions" published by the Astro Club at the Department of Physics, Fergusson College, Pune, India — 2010 - 2012
- Member of the LOC for "Frontiers in Physics", a yearly seminar at Fergusson College, Pune — 2009 - 2013

SCIENCE OUTREACH

- Organized the Max Planck Day Science Slam — 2018
- Organized and volunteered for several public outreach programs in India — 2007 - 2013