

Samir Dhurde

Award-winning Science and Astronomy Communicator

Date of birth: 11/OCT/1979 **Nationality:** Indian **Based in:** Pune, India **Married**

Phone: +91 8983336912 **Email:** samir.dhurde@gmail.com **Web:** www.iucaa.in/~samir

Passionate and creative, Science & Astronomy communicator, with **sixteen years of experience** in efficiently **managing teams for education and public outreach** (EPO) activities, at various capacities **in India and internationally**. Also has experience in public and media **communication, partnership building, fund raising** and **Astrophysics research**.

Work History

2005 - Current **Scientific Officer In-charge – Public Outreach Programmes**

Inter-University Centre for Astronomy and Astrophysics (IUCAA), India

- Lead "IUCAA SciPOP" - one of the most effective outreach efforts in an Indian research institute, with a team of staff and interns selected & trained by me.
- Arrange inspiring interactions with ~25,000 visitors every year, at our hands-on, Science & Astronomy Exploration Centre (*Muktangan Vidnyan Shodhika*).
- Lead resource production, publications, as well as online and social media outreach related to astronomy and related megaprojects hosted at IUCAA.
- Run rural outreach and educator training programmes in the vicinity of astronomical observatory sites in the state of Maharashtra.
- Execute outreach events across the country, tying up with various schools, colleges, universities, amateur astronomy groups and NGOs.
- Represent IUCAA in various national and international EPO organisations & events, working to establish and maintain connections between the various stakeholders.

(Please find more details Page 3 onwards)

Education

2001 **Bachelor of Science - Physics (Astronomy Major)**

Fergusson College, University of Pune

2014 **Master of Science - Physics (with Astronomy research project)**

Department of Physics, University of Pune

Highlights

2021 **ASI Zubin Kumbhavi Award for Public Outreach and Education in Astronomy and Allied fields** (joint awardee)

2019 **Guinness World Record - "Largest Astrophysics Lecture"** (IISF, Kolkata)

Affiliations

- 2013 - Current** Outreach coordinator & Member representative from India to the **Thirty Meter Telescope (TMT)** international observatory's **Workforce, Education, Public Outreach and Communications (WEPOC)** advisory board
- 2014 - Current** Founder Member and Secretary of the **Public Outreach & Education Committee** of the **Astronomical Society of India (ASI-POEC)**
- 2015 - Current** Member of the Training and Outreach Team (TOT) of the **Indian Space Research Organisation (ISRO)**
- 2016 - Current** Founder Member and Convenor of the Indian **Laser Interferometer Gravitational-Wave Observatory (LIGO India)** EPO committee
- 2018 - Current** Associate member of **International Astronomical Union (IAU)** and **National Outreach Coordinator (NOC) for India** (deputy NOC since 2011)

Relevant Skills

- ❖ Optimistic & Analytical Thinking
- ❖ Active Listening & Communication
- ❖ Moving Discussion to Action
- ❖ Practical Astronomy knowledge
- ❖ Multicultural Teamwork
- ❖ Management of Large Scale Events
- ❖ Working in a Government Setup
- ❖ Willingness to learn new skills

Software

- ❖ OS: Windows, Linux, Mac
- ❖ Google Workspace
- ❖ Adobe Creative Suite, Inkscape
- ❖ OBS, Shotcut, Premiere
- ❖ Zoom, Meet, Teams, Hopin
- ❖ Wordpress, Joomla, Drupal
- ❖ HTML5, CSS, Shell scripts

Languages

- ❖ English
- ❖ Hindi
- ❖ Marathi
- ❖ Bengali
- ❖ Japanese (learning)

Additional Information

Trained in radio astronomy with the Giant Meterwave Radio Telescope (GMRT)

Also interested in Environmental activism, Gardening, Cooking, Cycling, Photography and Music

Work Details (past 10 years)

Furthering IUCAA's mandate for outreach

- Built up the now very well known and respected presence of "IUCAA SciPOP" as a "brand" for science and astronomy EPO.
- Setup one of the first (in 2011) effective Indian effort to live cast outreach events online, with an engagement of over 10,000 / month.
- Set up and administered web presences, for LIGO India, ASI-POEC, and for the highly acclaimed "Science Toys" project by award winning educationist Mr. Arvind Gupta. It has more than 2 million visitors till now.
- Effectively run the popular 2nd Saturday Lecture series and other public lectures at IUCAA by in-house or visiting Scientists (including Nobel prize winners) with an attendance by ~8000 people per year.
- Ensured high edutainment value for the National Science Day events at IUCAA, which now attracts over 10,000 people every year.
- Started the autumn Science festival called "Pulastya Week" which sees a turnout of ~5,000 students and members of public every year.
- Introduced the new concept of Summer Astronomy Camps (2012) and till now taught more than 1000 students for 6 weeks every summer.
- Worked with more than 30 bright students on various summer projects in IUCAA, some of whom are joining PhD positions now.
- Created resources under projects like "Measure the Universe" and "Here comes the Sun" and published a research study about learning methods of young students based on the former.
- Run a telescope making programme in IUCAA with ~ 500 people trained in making their own reflecting scopes over the past decade.
- Tied up with various city based organisations from time to time to conduct events that tie science and astronomy with culture and society.
- Run popular workshops, sky watches and other interactive programmes making for extensive work contact with rural and urban school students (~12,000 average/year) and enabling teachers (~500 average/year).
- Designed a travelling mobile planetarium programme and conducted heavily attended outreach events in many districts of the state. Associated with schools and NGOs to train teachers and volunteers in using them, thus leading to the making of a lot of new astronomy communicators.
- Co-proposed and got funds worth 100 million Rupees for the "Astronomy Center for Educators" at IUCAA, providing support to University and College teachers in setting up astronomy labs in their departments.

Presence at National level

- Provided support for seeding of astronomy clubs at many educational institutions across India and coordinated Astronomy EPO at several universities and colleges - about 3-4 per year with ~200 undergraduate students each. Many of them have joined research.
- Developed and implemented outreach and media communication plans around major astronomy events and meetings across India (~40 since 2014).
- Co-organised over ten successful national campaigns and designed resources like open source booklets, posters, videos etc. Themes include "Eyes On Ison", "Zero Shadow Day", and sky events like transits, eclipses etc.
- Travelled widely to conduct formal and informal educators' trainings and meetings during national and regional level workshops for the above events.
- Designed and run seven national level online outreach competitions (writing, astrophotography etc.) in the past five years, each with an average reach of 100,000.

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- Ran the "IAU Name ExoWorlds (India)" online competition 2019 that was appreciated for its quality and handling of the senior level team behind it. The contest itself recorded direct participation from around 8000 people and reached many thousands more, since it led to the deserved glorification of the unsung Indian woman scientist Dr. Bibha Chowdhuri.
- Maintained activities with the best networks of stakeholders in astronomy outreach like Vigyan Prasar, National Council for Science Museums, All India Peoples' Science Network, major Planetaria etc., in all regions of India.
- Delivered the "Largest Astrophysics Lecture" for a successful Guinness World Record, engaging ~1600 students, who made ~2500 CD spectroscopes.
- Conducted or was part of media interactions for milestone events including discovery of Gravitational Waves, *Chandrayaan* and *Astrosat* missions etc.
- Created a widely used poster set for ASTROSAT Science and helped run the series called AstroSat Picture of the Month
- Partly coordinated exhibition and outreach for the *Vigyan Samagam* Mega-Science exhibition, reaching about 500,000 people in 4 cities during 2019-20.
- Ran six online series during the pandemic lockdown viz. GW@Home, Moon challenge, Stories of Science, Awesome Astronomy etc.
- Webcast the 2020 Annular Solar Eclipse with many scientists sharing their experience live and in vernacular (more than 200,000 views on Youtube).

Support for Amateur Astronomy

- Provided support to nationwide amateur astronomy activities, including arranging hands-on training with specialised equipment like optical telescopes of 8", 10" and 14" aperture, photometers, CCDs and DSLRs.
- Made the most populous database of amateur astronomers and telescope owners in India.
- Organised various Pro-Am events including a meeting in Mumbai, attended by around 150 amateurs from across the country.
- Reformatted and run a successful programme for serious amateurs to get trained and later conduct observations and sky surveys.

Efforts with equity and inclusion in mind

- Highlighted the issues faced by "Women in Astronomy" by creating a short film, which also provided inspiring examples for everyone to join the field.
- Led a team to work with students of various ages, having various levels of visual impairments, along with their teachers, to come up with some low-cost resources to teach geography and astronomy concepts.
- Publicised the use of the "Inspiring Stars" astronomy outreach resources in India, and also designed new ones like the DIY tactile planetarium & galaxy images for use by VI and sighted students alike.
- Undertook a few events with Deaf and Mute learners and used role-play activities to explain the basics of astronomy.
- Localised softwares like Stellarium (to Hindi - 2010) & WorldWide Telescope (to Hindi, Marathi and Bengali - 2012).
- Worked on popular books specifically written in local languages.
- In collaboration with Vigyan Prasar, organised eight telescope making workshops especially in tribal regions.
- Started the "Vigyan Tarang" lab running 3-month programmes called "Srujan", to encourage and change the viewpoint of more than a hundred students whose parents are below poverty level.
- Supported several groups in proposing for the IAU Telescopes for all project.

Work at International level and with the IAU

- Presented a workshop at the 3rd Symposium on Universal Design for Astronomy Education at NAOJ, Mitaka in 2016
- Presented open data efforts by IUCAA at the United Nations Headquarters, Vienna for the Workshop on the "Open Universe Initiative" in 2017
- Work as Indian national contact for the TMT Early-Career Initiative (TECI)
- Co-conducted a workshop for "Organizing Frameworks for Communicating Science in Large, International Science Collaborations" at IAU CAP 2018
- Co-developed storyline for planetarium short films being made by Imilioa Science Centre, Hawaii showcasing astronomy in cultures of TMT partners
- Established MoU for partnership between IUCAA and IAU OAD in 2017
- Supported hosting of the "Dark Skies for All" website as part of IUCAA partnership with IAU OAO in 2018
- Diligently performed duties as SOC for IAU events like FM-14 at IAU GA in 2018, CAP Virtual meeting in 2021 and 3rd Shaw-IAU AfE workshop in 2021
- Helped organise the Light Pollution photo e-exhibition in Vienna in 2018
- Regularly publicise and conduct IAU global events as the IAU NOC India and frequently contribute ideas and inputs to enhance the NOC network
- Regularly help review proposals and article submissions for IAU OAD & OAO.

Astronomy Academics

Main research interests

- Jets in Active Galactic Nuclei (AGN) esp. relativistic Blazar jets
- Variability in AGN

Publications in refereed journals

- 1) *"Radio Emission and the Optical Isophotal Twist of Radio-loud Ellipticals"*
Astronomy & Astrophysics, vol. 410, page 139 (10/2003)
Authors: Gopal-Krishna; Dhakulkar, A. R.; Wiita, Paul. J.; Dhurde, Samir
- 2) *"Do the Mildly Superluminal VLBI Knots Exclude Ultrarelativistic Blazar Jets?"*
The Astrophysical Journal, vol. 615, page 81 (11/2004)
Authors: Gopal-Krishna; Dhurde, Samir; Wiita, Paul J.
- 3) *"Bulk motion of ultrarelativistic conical blazar jets"*
Monthly Notices of the Royal Astronomical Society, vol. 369, page 1287 (07/2006) Authors: Gopal-Krishna; Wiita, Paul J.; Dhurde, Samir
- 4) *"Kinematical Diagrams for Conical Relativistic Jets"*
Journal of Astronomy and Astrophysics, vol. 28, page 29 (03/2007)
Authors: Gopal-Krishna; Sircar, Pronoy; Dhurde, Samir
- 5) *"Influence of the Jet Opening Angle on the Derived Kinematical Parameters of Blazar Jets having Uniform and Stratified Bulk Motion"*
Monthly Notices of the Royal Astronomical Society, vol. 377, page 446 (05/2007)
Authors: Gopal-Krishna; Dhurde, Samir; Sircar, Pronoy; Wiita, Paul J.
- 6) *"Zwicky's Nonet: a compact merging ensemble of nine galaxies and 4C 35.06, a peculiar radio galaxy with dancing radio jets"*
Monthly Notices of the Royal Astronomical Society, vol. 471, page 617 (10/2017)
Authors: Biju K.G, Joydeep Bagchi, Samir Dhurde et.al