

# Sthabile Kolwa

## Curriculum Vitae

### Employment

- 2021-present** Lecturer and Postdoctoral Astronomer  
*The University of Johannesburg*
- 2020** Postdoctoral Fellow  
*The University of Cape Town /*  
*The Inter-University Institute for Data-Intensive Astronomy (IDIA)*
- 2013** Astronomy Tutor  
*The University of Cape Town*

### Education

- 2016**  
**2019** **Dr. rer. nat. Physics**, Faculty of Physics, Ludwig Maximilian University of Munich (LMU), Munich, Germany,  
Thesis: *The kinematic nature of baryons in the multi-phase circumgalactic media of high-redshift radio galaxies*
- 2014**  
**2015** **MSc Physics**, University of the Western Cape (UWC), Cape Town, South Africa,  
Thesis: *The effects of environment on radio-loud AGN activity in Stripe 82*
- 2010**  
**2013** **BSc Physics and Astronomy**, The University of Cape Town (UCT), Cape Town, South Africa,  
Thesis: *The Effects of Ionospheric Scintillation on the Dilution of GPS Positioning*

### First-Authored Papers

- Kolwa, S.** ; Jarvis, M. J. ; McAlpine, K. ; Heywood, I. (2019), MNRAS, 482, 5156
- Kolwa, S.** ; Vernet, J. ; De Breuck, C. ; Villar-Martín, M. ; ... ; Man, A (2019), A&A, 625, 102

### Co-authored Papers

- Hale, C. L. ; Whittam, I. H. ; Jarvis, M. J. ; ... **Kolwa, S.**; ... Taylor, A. R. (2023), MNRAS, 520, 2668
- De Breuck, C. ; Lundgren, A. ; Emonts, B. ; **Kolwa, S.** ; Dannerbauer, H. ; Lehnert, M. (2022), A&A, 658, L2

W. Wang, et al (2021), A&A, 654, 88

Falkendal, T; De Breuck, C. ; Lehnert, M.D. ; ... **Kolwa, S**; Gullberg, B. ; Wylezalek, D. (2019), A&A, 621, 27

Vernet, J. ; Lehnert, M. D. ; De Breuck, C. ; ... **Kolwa, S.** ; ... Boulanger, F. (2017), A&A, 602, 6

Jarvis, M. ; Taylor, R. ; Agudo, I. ; ... **Kolwa, S.** ; ... ; Smith, D. J. B (2016) PoS(MeerKAT2016)006

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## Invited Talks and Scientific Contributions

- 2023 *Space Telescope Science Institute (STScI)/Johns Hopkins University Journal Club Seminar* (April 2023)  
*African Astronomical Society (AfAS) Meeting 2023* (Mar 2023)
- 2022 *Brno High Energy Astrophysics Journal Club, Brno, Czech Republic* (Nov 2022)  
*Max Planck Institute for Radio Astronomy (MPfIR) Colloquium, Bonn, Germany* (Nov 2022)  
*BRICS Collaboration Astronomy Working Group Seminar (virtual)* (Oct 2022)
- 2021 *University College London Astronomy Seminar (virtual)* (Oct 2021)  
*The European Astronomical Society (EAS) Meeting (virtual)* (June 2021)  
*Southampton Astronomy Online Seminar* (July 2021)  
*South African Astronomical Society (SAAO) Colloquium (virtual)* (May 2021)
- 2019 *ETH Astrophysics Seminar, Zurich, Switzerland* (Nov 2019)  
*OPINAS (Optical Near Interpretive Astronomy) Seminar, Max Planck Institute for Extraterrestrial Physics (MPE), Garching, Germany* (Nov 2019)  
*Modeling Meerkats Workshop* (July 2019), Hazyview, Mpumalanga, South Africa  
*Multi-messenger Astronomy with SKA precursors and pathfinders Workshop* (May 2019), Aveiro, Portugal  
*Australia-ESO Conference* (Feb 2019), Sydney, Australia  
*ESO Gas Matters Seminar* (Feb 2019), ESO Garching, Germany
- 2018 *Walking the Line Meeting* (Mar 2018), Goldwater Centre, Arizona State University, USA  
*ESO AGN Club Seminar* (Feb 2018), ESO Garching, Germany
- 2017 *What Matters Around Galaxies? Conference* (Jul 2017), Durham University, United Kingdom  
*Dawn of Galaxies Conference* (Jan 2017), Obergurgl, Austria
- 2016 *SKA Conference* (Dec 2016), Cape Town, South Africa
- 2015 *SKA Conference* (Dec 2015), Stellenbosch, South Africa  
*SKA Pathfinders and Radio Continuum Surveys (SPARCS)* (July 2015), Hazyview, South Africa  
*SKA Conference* (Dec 2014), Stellenbosch, South Africa

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## Teaching & Student Supervision

**2021-** *Engineering Physics for 2nd year undergraduates*

**2021-** *Radiative Processes in Astrophysics for 4th year students*

- Students**
- Thando Mothogoane (supervision of PhD; 2022-)
  - Tshepang Siteo (co-supervision of MSc; 2022-)

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## Observing Experience

- 2017** ESO Period 100 observing on the Atacama Pathfinder Experiment Telescope (APEX), San Pedro de Atacama, Chile
- 2012** Optical observing on the Radcliffe 1.9-m Telescope at the South African Astronomical Observatory (SAAO), Sutherland, South Africa

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## Skills

Programming	Python, SQL, HTML5, Erlang
Computational tools	SciPy, NumPy, AstroPy & Pandas
Visualisation tools	Matplotlib, Seaborn, Plotly & Pillow
Development tools	Git & Docker
Documentation tools	Jupyter Notebook, L <sup>A</sup> T <sub>E</sub> X & Microsoft Word

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## Professional Activities

- Academic mentor in the *Supernova Foundation* (2022-)
- Executive Committee official in the African Astronomical Society (AfAS) (2022-)
- Chair of the AfAS early-career science sub-committee (2022-)
- Organiser of monthly talks at the *ESO Wine & Cheese Seminar* series (2017-18)

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## Outreach

- Member of the *African Network for Women in Astronomy (AfNWA)* organisation (2021-)
- Organiser in the *Astronomy in Colour (AiC)* collective (2021-)
- Fundraiser for the *Astro Molo Mhlaba* project (2019-)
- Volunteer at the *ESO Open Panel Committee* meetings for periods 109, 100 and 101 (2017-18)
- Organiser for monthly talks at the *ESO Wine & Cheese Seminar* series (2017-18)
- Co-ordinator for astronomy outreach at Elsie's Rivier High School (2015-16)
- Tutor for SHAWCO, UCT (2011-14)

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## Media & Press

- International Astronomy Union (IAU) *Women in Astronomy Working Group* Seminar (2022)
- Scientific comments featured in *WIRED* magazine (2021); Click here for a link to the article
- Session chair in the *AiC Speaker Series: Trailblazers* (2020); Click for a link to the video
- Public talk on radio galaxies for the *SAAO Open Night* series (2020); Click for a link to the video
- Popular science writer on *Medium* (2020-)
- Interview featured in *ESOCast* Episode 149: *Fast Track Your Career with the ESO Studentship Programmes* (2017); Click for a link to the episode
- Popular science article published *Mail & Guardian* (South Africa) titled *Power answer in black-holes?*; Click for a link to the article (2015)

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## Achievements

- 2023 Recipient of BAAP NRF funding
- 2016 - 2019 Awarded ESO Ph.D. Studentship funding
- 2016 Selected for the International Max Planck Research School (IMPRS), Astrophysics Ph.D. program
- 2011-2015 Recipient of NRF-SKA (National Research Foundation - Square Kilometer Array) B.Sc. and M.Sc. Scholarships

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## References

### Prof Dr. Russ Taylor

Professor  
Astronomy Department, UCT  
Cape Town, South Africa  
✉ russ@idia.ac.za

### Prof Dr. Soebur Razzaque

Professor  
Physics Department, UJ  
Johannesburg, South Africa  
✉ srazzaque@uj.ac.za

### Dr. Carlos de Breuck

Staff Astronomer  
The European Southern Observatory  
Garching bei München, Germany  
✉ cdebreuc@eso.org

### Prof Dr. Matt Jarvis

Professor  
Astrophysics Department, Oxford Uni.  
Oxford, The United Kingdom  
✉ matt.jarvis@physics.ox.ac.uk

### Dr. Jarita Holbrook

Cultural Astronomer  
The University of Edinburgh  
Edinburgh, Scotland  
✉ jc.holbrook@ed.ac.uk

### Dr Michelle Cluver

Staff Astronomer  
Centre for Astrophysics and Supercomputing  
Melbourne, Australia  
✉ mcluver@swin.edu.au