Curriculum Vitae - Dr. Sthabile Kolwa

Email: sthabile.kolwa@gmail.com
LinkedIn: https://linkedin.com/in/sthabile-kolwa/
GitHub: https://github.com/thabsko

EMPLOYMENT

Mar 2020 - present **Postdoctoral Research Fellow,** Inter-University Institute for Data Intensive Astronomy (IDIA)
Processing GMRT and MeerKAT data
Research on the spectral signatures of radio galaxies

Aug 2016 - Dec 2019 **Doctoral Student Researcher,** European Southern Observatory (ESO)
Research on the gas surrounding distant radio galaxies
Processing astronomical datasets
Data analysis and visualisation for publication in peer-reviewed journals

Jan - Nov 2013 **Astronomy Tutor,** University of Cape Town (UCT)
Assisted teaching for the Introductory Astronomy (AST 1000F) course, University of Cape Town (UCT)

EDUCATION

2016 - 2019 **Dr. rer. nat. (Doctor rerum naturalium) or Ph.D. in Physics, cum laude**
Ludwig-Maximilians-Universität München (LMU)
ESO
Thesis: *The kinematic nature of baryons in the multi-phase circumgalactic media of high-redshift radio galaxies*
Advisor: Dr. Carlos de Breuck, co-advisor: Dr. Joël Vernet

2014-2015 **M.Sc. in Physics, cum laude**
University of the Western Cape (UWC)
Thesis: *The Effects of Environment on radio-loud AGN Activity in Stripe 82*
Advisor: Prof. Dr. Matt J. Jarvis, co-advisor: Dr. Kim McAlpine

2010-2013 **B.Sc. Honours in Astronomy and Physics**
UCT
Final-year Project: *The Effects of Ionospheric Scintillation on the Dilution of Precision in GPS Positioning*
Advisor: Dr PJ Cilliers

PUBLICATIONS

Refereed:

S. Kolwa, et al (2019) A&A, 625, 102
MUSE unravels the ionization and origin of metal enriched absorbers in the gas halo of a $z = 2.92$ radio galaxy

S. Kolwa, et al (2019) MNRAS, 482, 5156-5166
The relation between galaxy density and radio jet power for 1.4 GHz VLA selected AGN in Stripe 82

T. Falkendal, et al (2019) A&A, 621, 27
On the road to quenching massive galaxies: ALMA observations of powerful high redshift radio galaxies

J. Vernet, et al (2017) A&A, 602, 6
Are we seeing accretion flows in a 250 kpc-sized Lyα halo at $z = 3$

M.J. Jarvis, et al (2016) PoS(MeerKAT2016)006

The MeerKAT International GHz Tiered Extragalactic Exploration Survey (MIGHTEE)

In prep. **S. Kolwa**, et al (2019) - Web-link to current state of paper in preparation
Kinematically quiescent neutral carbon within the CGM gas of distant radio galaxies as exhibited by ALMA

GRANTS & AWARDS

- Granted ESO Ph.D. Studentship funding for 3.5 years (Aug 2016- Dec 2019)
- Selected as one of 400 for the International Max Planck Research School (IMPRS) in Astrophysics Ph.D. program (2016)
- Awarded SKA (Square Kilometer Array) Undergraduate and M.Sc. Scholarships (2011-2015)

OBSERVING RUNS

- Obtained Period 100 ESO observations over two-weeks with the Atacama Pathfinder Experiment Telescope (APEX) in San Pedro de Atacama, Chile (2017)
- Procured long-slit spectroscopic observations using the Radcliffe 1.9-m Telescope on two separate observing runs at the South African Astronomical Observatory (SAAO) in Sutherland, South Africa (2012)

COLLABORATIONS

- Active member of a GMRT science working group
- Part of a working group focussed on observational and theoretical studies of *High Redshift Radio Galaxies* led by Carlos de Breuck (ESO)
- Working member of the large MeerKAT extragalactic science team called *MIGHTEE* (MeerKAT International GigaHertz Tiered Extragalactic Exploration) led by M.J. Jarvis (Oxford University/UWC) and R. Taylor (UCT/IDIA)

MEDIA & PRESS

- Gave an public talk about radio galaxies for the *SAAO Open Night* series
  Web-link to the video
- Featured in an interview on *ESOCast* Episode 149: *Fast Track Your Career with the ESO Studentship Programmes*
  Web-link to the episode
- Authored a popular science article for the *Mail & Guardian* (South Africa) entitled *Power answer in black-holes?*"
  Web-link to the article

SCIENCE COMMUNICATION

- Astrophysics Seminar (Nov 2019)
  ETH, Zurich, Switzerland
  Title: *Peering into the Gaseous Nebulae of High-redshift Radio Galaxies with ALMA and MUSE*

- OPINAS (Optical Near Interpretive Astronomy) Seminar (Nov 2019)
  Max Planck Institute for Extraterrestrial Physics (MPE), Garching, Germany
  Title: *Peering into the Gaseous Nebulae of High-redshift Radio Galaxies with ALMA and MUSE*

- *Modeling Meerkats* Workshop (July 2019)
  Hazyview, Mpumalanga
  Title: *Observational constraints on radio-mode feedback combining MeerKAT with optical and mm/sub-mm data*

- *Multi-messenger Astronomy with SKA precursors and pathfinders* Workshop (May 2019)
  Aveiro, Portugal
  Title: *MUSE unravels the ionisation and origin of metal-enriched absorbers in the gas halo of a $z = 2.92$ radio galaxy*

- *Australia-ESO* Conference (Feb 2019)
  Sydney, Australia
  Title: *MUSE reveals metal-enriched absorbers in the circum-galactic medium (CGM) of a radio galaxy at $z = 2.92$*

- *ESO Gas Matters* Seminar (Feb 2019)
  ESO Garching, Germany
  Title: *MUSE reveals metal-enriched absorbers in the CGM of a radio galaxy at $z = 2.9$*

- *Walking the Line* Meeting (Mar 2018)
  Goldwater Centre, Arizona State University, USA
  Title: *Dissecting the multi-phase haloes of high redshift radio galaxies with ALMA and MUSE*

- *ESO AGN Club* Seminar (Feb 2018)
  ESO Garching, Germany
  Title: *Growing evidence for a merger within the extended halo of radio galaxy, MRC 0943-242*

- *What Matters Around Galaxies* Conference (Jul 2017)
  Durham University, United Kingdom
  Title: *Lyα and He II Emission in MRC 0943-242*

- *Dawn of Galaxies* Conference (Jan 2017)
  Obergurgl, Austria
  Title: *A z=2.92 radio galaxy from an ALMA & MUSE perspective*

- *SKA Conference* (Dec 2016)
  Cape Town, South Africa
  Title:*The Galaxy Density 1.4 GHz radio luminosity function of Stripe 82 AGN*

- *SKA Conference* (Dec 2015)
  Stellenbosch, South Africa
  Title: *The Causal Link Between Environment and AGN Accretion Efficiency*

- *SKA Pathfinders and Radio Continuum Surveys (SPARCS)* (July 2015)
  Hazyview, South Africa
  Title: *The Effect of Environment on Black-Hole Accretion Properties*

- *SKA Conference* (Dec 2014)
  Stellenbosch, South Africa
  Title: *Determining the Environmental Influence on AGN Accretion Modes*

PROFESSIONAL ACTIVITIES

- Lobbied funds for the *Astro Molo Mhlaba* project (2019 - present)
- Oversaw the voting process at the *ESO Open Panel Committee* meetings during proposal periods 109, 100 and 101 (2017-18)
- Coordinated the logistics for monthly talks at the *ESO Wine & Cheese Seminar* series (2017-18)
- Advocated for human capital development for the SKA through teaching introductory Astronomy to pupils at Elsies River High School, Cape Town (2015-16)

REFERENCES

Prof Dr. Russ Taylor
Advisor & Project Lead
Professor at IDIA
russ@idia.ac.za

Dr. Carlos de Breuck
Ph.D. Advisor
Senior Scientist at ESO
cdebreuc@eso.org

Prof. Dr. Matt Jarvis
Master's Advisor
Professor at Oxford University
matt.jarvis@physics.ox.ac.uk

Dr. Theresa Falkendal
Research Collaborator
Postdoc at Potsdam University
theresa.falkendal@pik-potsdam.de

Dr. Jarita Holbrook
Mentor during Ph.D.
Professor at UWC
jholbrook@uwc.ac.za

Dr. Michelle Cluver
Mentor during Master's
Swinburne University
mcluver@swin.edu.au