

Dr. Khaled Said

Contact Information	Postdoctoral Research Fellow School of Mathematics and Physics, The University Of Queensland St Lucia, Brisbane, QLD 4072, Australia	+61 426 774 794 k.saidahmedsoliman@uq.edu.au ksaid-1.github.io/Khaled-Said
Research Appointments	The University Of Queensland, St Lucia, Brisbane, QLD 4072, Australia <ul style="list-style-type: none">• Postdoctoral Research Fellow with Prof. Tamara Davis. May 2020 – present The Australian National University, Canberra ACT, Australia <ul style="list-style-type: none">• The 2017 Gruber Foundation IAU Fellow• Taipan Postdoctoral Research Fellow with Prof. Matthew Colless. July 2017 – May 2020	
Teaching Appointments	The University of Queensland, Brisbane, Australia <ul style="list-style-type: none">• Invited lecturer: Frontiers in Astrophysics PHYS4080 - <i>Galaxy Surveys. BAO. Peculiar velocities. Correlation functions</i> Second Semester 2020 & 2021 The Australian National University, Canberra ACT, Australia <ul style="list-style-type: none">• Invited lecturer: Astronomy ASTR3002 - <i>Galaxies and Cosmology</i> Second Semester 2019 University of Cape Town, Rondebosch, Cape Town, South Africa <ul style="list-style-type: none">• Teaching Assistant<ul style="list-style-type: none">• Astronomy 2002H - <i>Introduction to Modern Astrophysics</i>. Fall 2013 & 2014• Physics 1012F - <i>Mechanics for Engineers</i>. First semester 2014, 2015 & 2016• Physics 1013S - <i>Electromagnetism for Engineers</i>. Second semester 2014, 2015 & 2016	
Education	University of Cape Town PhD, Department of Astronomy, University of Cape Town, July 2017 <ul style="list-style-type: none">• Topic: <i>Peculiar Flow Fields in the Zone of Avoidance from the NIR Tully-Fisher relation</i>• Adviser: Prof. Renée C. Kraan-Korteweg M.Sc., National Astrophysics and Space Science Programme, December 2013 <ul style="list-style-type: none">• Topic: <i>The NIR isophotal Tully-Fisher relation and its cosmological applications in the Zone of Avoidance.</i>• Adviser: Prof. Renée C. Kraan-Korteweg B.Sc. (Honours), National Astrophysics and Space Science Programme, December 2011 <ul style="list-style-type: none">• Essay Topic: <i>Bulge and Disk Profiles of THINGS Galaxies.</i>• Adviser: Prof. Erwin de Blok	
Honors and Awards	<ul style="list-style-type: none">• 2017 winner of the Gruber Foundation and IAU Fellowship (50 000 USD)• Science Faculty PhD Fellowship at UCT, 2014 – 2016 (320 000 ZAR)• NRF Fellowship for M.Sc. at UCT, Jan 2012 – Dec 2013 (190 000 ZAR)• NRF Fellowship for Honours at UCT, Jan 2011 – Dec 2011 (95 000 ZAR)	

Professional Society Membership

- Junior Member of the International Astronomical Union
- Member of Astronomical Society of Australia
- Member of the DESI survey (600 members)
- Member of the WALLABY survey team (150 members)
- Member of the 4MOST Hemisphere Survey (100 members)

Committees, Administrative tasks

- Member of the SOC of the ASA Annual Science Meeting 2021
- [Regular refereeing for the MNRAS](#)
- Regular refereeing (expert/non-expert) for students theses at UQ

Postgraduate Supervision

- **Paula Boubel:** Testing gravity with the peculiar velocities of galaxies, Australian National University (PhD, Ongoing)
- **Raff Rabbani:** Peculiar velocities from 6dFGS, SDSS, and LAMOST, Institut Teknologi Bandung (MSc, Graduated with Class I)
- **Rianna Bell:** Calibration of WISE W1 and W2 Tully-Fisher relation, University of Queensland (Honours, Graduated with Class I)
- **Swarnim Shirke:** Cosmological parameters from the 6dF galaxy survey, Australian National University (Future Research Talent at ANU, currently PhD student at the Research institute in Pune, India)

Publications

The Pantheon+ Analysis: Cosmological Constraints

Brout, Dillon, Dan Scolnic, Brodie Popovic, Adam G. Riess, Joe Zuntz, Rick Kessler, Anthony Carr, Tamara M. Davis, Samuel Hinton, David Jones, W. D’Arcy Kenworthy, Erik R. Peterson, **Khaled Said**, Georgie Taylor, Noor Ali, Patrick Armstrong, Pranav Charvu, Arianna Dwomoh, Antonella Palmese, Helen Qu, Benjamin M. Rose, Christopher W. Stubbs, Maria Vincenzi, Charlotte M. Wood, 8 Feb 2022, *submitted to ApJ*, [arXiv:2202.04077](https://arxiv.org/abs/2202.04077)

WALLABY Pre-Pilot and Pilot Survey: the Tully Fisher Relation in Eridanus, Hydra, Norma and NGC4636 fields

Hélène M. Courtois, **Khaled Said**, Jeremy Mould, T.H. Jarrett, Daniel Pomarède, Tobias Westmeier, Lister Staveley-Smith, Alexandra Dupuy, Tao Hong, Daniel Guinet, Cullan Howlett, Barbara Catinella, Nathan Deg, Bi-Qing For, Dane Kleiner, Bärbel Koribalski, Karen Lee-Waddell, Kristine Spekkens, Jing Wang, O.I. Wong, Franck Bigiel, Albert Bosma, Matthew Colless, Tamara Davis, Benne Holwerda, Igor Karachentsev, Renée C. Kraan-Korteweg, Kristen B.W. McQuinn, Gerhardt Meurer, Danail Obreschkow, Edward Taylor, 28 Jan 2022, *submitted to MNRAS: MN-22-0310-MJ*

The Sloan Digital Sky Survey Peculiar Velocity Catalogue

Cullan Howlett, **Khaled Said**, John R. Lucey, Matthew Colless, Fei Qin, Yan Lai, R. Brent Tully, Tamara M. Davis, 9 Jan 2022, *submitted to MNRAS: MN-21-4739-MJ*, [arXiv:2201.03112](https://arxiv.org/abs/2201.03112)

Galaxy And Mass Assembly (GAMA): Data Release 4 and the $z < 0.1$ total and $z < 0.08$ morphological galaxy stellar mass functions

Simon P. Driver (+69 co-authors including **Khaled Said**) 2022, , *submitted to MNRAS: MN-21-2448-MJ.R1*

The Pantheon+ Analysis: Improving the Redshifts and Peculiar Velocities of Type Ia Supernovae Used in Cosmological Analyses

Anthony Carr, Tamara M. Davis, Dan Scolnic, **Khaled Said**, Dillon Brout, Erik R. Peterson, Richard Kessler, 2 Dec 2021, *submitted to ApJ*, [arXiv:2112.01471](https://arxiv.org/abs/2112.01471)

The Pantheon+ Analysis: Evaluating Peculiar Velocity Corrections in Cosmological Analyses with Nearby Type Ia Supernovae

Erik R. Peterson, W. D'Arcy Kenworthy, Daniel Scolnic, Adam G. Riess, Dillon Brout, Anthony Carr, Hélène Courtois, Tamara Davis, David O. Jones, Brodie Popovic, Benjamin M. Rose, **Khaled Said**, 7 Oct 2021, *accepted for publication in ApJ*, [arXiv:2110.03487](#)

Cosmic Flow Measurement and Mock Sampling Algorithm of Cosmicflows-4 Tully-Fisher Catalog

Fei Qin, David Parkinson, Cullan Howlett & **Khaled Said**, 30 Sep 2021, *The Astrophysical Journal*, vol. 922, no. 1, pp. 59, [doi:10.3847/1538-4357/ac249d](#)

Joint analysis of 6dFGS and SDSS peculiar velocities for the growth rate of cosmic structure and tests of gravity

Khaled Said, Matthew Colless, Christina Magoulas, John R. Lucey, and Michael J. Hudson, 2020 *MNRAS*, 497, 1275S

A near-infrared study of the obscured 3C129 galaxy cluster

Ramatsoku, M., Verheijen, M. A. W., Kraan-Korteweg, R. C., Jarrett, T. H., **Khaled Said**, Schröder, A. C., 2020, *Astronomy & Astrophysics*, Volume 644, [id.A107](#), 24 pp.

WiFeS follow-up observations of the naked-eye nova associated to MGAB-V207

Anthony Carr, **Khaled Said**, Tamara M. Davis, Lidman, C., Tucker, B. E., 2020, *2020ATel13874....1C*

A Search for Extragalactic Diffuse Interstellar Bands: SAMI Data

Puspitarini, L., Premadi, P. W., Colless, M., Oh, S., Hidayat, T., Putra, M., Barone, T. M., **Khaled Said**, Barat, D., , 2019 *JPhCS1245a2013P*

The HI mass function in the Parkes HI Zone of Avoidance survey

Khaled Said, Renée C. Kraan-Korteweg, and Lister Staveley-Smith, 2019 *MNRAS*, 486, 1796S

NIR Tully-Fisher in the Zone of Avoidance. – III. Deep NIR catalog of the HIZoA galaxies

Khaled Said, Renée C. Kraan-Korteweg, T. H. Jarrett, Lister Staveley-Smith and Wendy L. Williams, 2016, *MNRAS*, 462, 3386

NIR Tully-Fisher in the Zone of Avoidance. – II. 21 cm H I-line spectra of southern ZOA galaxies

Khaled Said, Renée C. Kraan-Korteweg, Lister Staveley-Smith, Wendy L. Williams, T. H. Jarrett and Christopher M. Springob, 2016, *MNRAS*, 457, 2366

On how to extend the NIR Tully Fisher relation to be truly all-sky

Khaled Said, Renée C. Kraan-Korteweg and T. H. Jarrett, 2015, *MNRAS*, 447, 1618

Galaxy peculiar velocities in the Zone of Avoidance

Khaled Said, Renée C. Kraan-Korteweg and T. H. Jarrett, *Proceedings of the 58th Annual Conference of the SA Institute of Physics, 8-12 July 2013. Durban, South Africa*,

**Observing
Proposals as PI**

- Over the last five years, I have been awarded more than \$500,000 in observing time: 39 nights as a chief investigator on the Parkes radio telescope (Australia); 93 nights on the Nancay radio telescope (France); and 37 nights on the Japanese Near-Infrared Telescope at the South Africa Astronomical Observatory (South Africa).

Selected Invited Talks

- **Invited Talk:** A new Era of cosmology with peculiar velocity, Cosmology Seminar Cambridge, DAMTP, University of Cambridge, **Cambridge, UK**, 14 March 2022.
- **Invited Talk:** The DESI Peculiar Velocity Survey: The Fundamental Plane Relation, Virtual Collaboration Meeting, 07 Dec 2021.
- **Invited Talk:** First DESI peculiar velocity measurements with Denali data at the Summer DESI Collaboration Meeting, **Berkeley, California, USA**, 18 June 2021.
- **Invited Talk:** [Cosmology with Peculiar Velocities: Present and Future](#) at the Korea Astronomy and Space Science Institute, **Daejeon, South Korea**, 15 April 2021.
- **Invited Talk:** Cosmology with Peculiar Velocities: Present and Future, Centre for Astrophysics, University of Southern Queensland **Queensland, Australia**, 21 April 2021.
- **Invited Talk:** Constraining the cosmological parameters with peculiar velocities, the Centre of Astrophysics and Supercomputing at Swinburne University of Technology. **Melbourne, Australia**, 10 September 2020.
- **Invited Talk:** The growth rate of cosmic structure and tests of gravity, Cosmic Flows, Large-scale Structure & Visualisation, **Cape Town, South Africa**, 17 – 21 February 2020.
- **Invited Talk:** The Taipan galaxy survey, Studying the Universe with GALaxy suRveys - Revealing the Unlimited in ShangHai (SUGAR-RUSH), **Shanghai, China**, 11 – 15 June 2018.
- **Invited Talk:** The Taipan galaxy survey, Cosmic Visions Dark Energy Workshop, **Berkeley, California, USA**, 14 – 15 November 2017.

References

Prof. Renée C. Kraan-Korteweg (e-mail: kraan@ast.uct.ac.za)

- Professor, Astronomy Department, University of Cape Town (UCT),
- ◊ Department of Astronomy, University of Cape Town, Private Bag X3, Rondebosch 7701, South Africa.
- ★ *Working relation: PhD adviser.*

Prof. Matthew Colless (e-mail: matthew.colless@anu.edu.au)

- Director, Research School of Astronomy & Astrophysics,
- ◊ The Australian National University, Mt Stromlo Observatory, Cotter Rd, Weston Creek, ACT 2611, Australia

Prof. Tamara Davis (e-mail: tamarad@physics.uq.edu.au)

- ARC Laureate Fellow, School of Mathematics and Physics,
- ◊ The University Of Queensland, St Lucia, Brisbane, QLD 4072, Australia

Prof. Lister Staveley-Smith (e-mail: lister.staveley-smith@uwa.edu.au)

- Professor, ICRAR, International Centre for Radio Astronomy Research
- ◊ ICRAR M468, The University of Western Australia, Crawley, Western Australia, 6009, Australia.