

# SUK YEE YONG

## *Curriculum Vitae*

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School of Physics  
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## RESEARCH INTERESTS

Model kinematical disk-winds of quasars. Employ statistical data analytics and machine learning algorithms. Explore the observable characteristics of quasar broad emission lines. Constrain the structure and geometry of quasars. Estimate black hole mass using disk-wind model. Test the unification paradigm of quasars.

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## EDUCATION

03/2016–present	<b>PhD-Science (Physics)</b> <i>The University of Melbourne, Parkville, VIC, Australia</i> Supervisor: Prof. Rachel Webster Co-supervisor: Dr. Anthea King
07/2013–07/2015	<b>Master of Science (Physics) with Distinction</b> <i>The University of Melbourne, Parkville, VIC, Australia</i> Thesis title: Quasar Disk Wind Models and Emission Line Profiles Supervisor: Prof. Rachel Webster
07/2010–12/2012	<b>Bachelor of Science (Physics)</b> <i>The Pennsylvania State University, University Park, PA, United States</i> Major in Physics with Distinction and minor in Mathematics

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## RESEARCH EXPERIENCE

03/2016–present	<b>Postgraduate Student</b> , <i>School of Physics, University of Melbourne</i> ★ PhD-Science (Physics) research project
12/2013–06/2015	<b>Postgraduate Student</b> , <i>School of Physics, University of Melbourne</i> ★ Master of Science (Physics) research project
08/2012–11/2012	<b>Research Assistant</b> , <i>Physics Department, Pennsylvania State University</i> ★ Supervisor: Dr. Stephane Coutu ★ Analysed data from simulation of Cosmic Ray Energetics and Mass (CREAM) boronated scintillator detector (BSD) ★ Investigated the neutron energy response within a specific time range
05/2012–08/2012	<b>Research for Undergraduate Experience (REU) Internship</b> , <i>Physics Department, Pennsylvania State University</i>

	<ul style="list-style-type: none"> <li>★ Supervisor: Dr. Stephane Coutu</li> <li>★ Built a physic simulation of CREAM BSD with a Californium-252 as a neutron source using GEANT4 software</li> <li>★ Explored the properties of cosmic-ray electrons via neutron signals in CREAM's calorimeter</li> </ul>
05/2011–08/2011	<b>Research Assistant</b> , <i>Astronomy and Astrophysics Department, Pennsylvania State University</i> <ul style="list-style-type: none"> <li>★ Supervisor: Prof. David Burrows</li> <li>★ Gathered and analysed light curves of short gamma ray bursts</li> </ul>

## TEACHING AND SUPERVISING EXPERIENCES

07/2013–present	<b>Laboratory Demonstrator</b> , <i>School of Physics, University of Melbourne</i> <ul style="list-style-type: none"> <li>★ MULT10011 Introduction to Life, Earth, and the Universe, Semester 1, 2016–present</li> <li>★ PHYC10003 Physics 1: Standard, Semester 1, 2015</li> <li>★ PHYC10004 Physics 2: Physical Science and Technology, Semester 2, 2015</li> <li>★ PHYC10005 Physics 1: Fundamentals, Semester 1, 2014, 2016</li> <li>★ PHYC10006 Physics 2: Life Sciences and Environment, Semester 2, 2013–2014</li> <li>★ PHYC10008 From the Solar System to the Cosmos, Semester 2, 2015–present</li> <li>★ PHYC20013 Laboratory and Computational Physics 2, Semester 1, 2017–present</li> <li>★ PHYC30014/15 Laboratory Work A/B (Computational and Observational Astrophysics), 2014–2016</li> <li>★ PHYC30021 Laboratory and Computational Physics 3 (N-body Simulation and Observational Astrophysics), 2017–present</li> </ul>
2016–2017	<b>Co-Supervising Undergraduate Student for SCIE30001</b> , <i>School of Physics, University of Melbourne</i>

## AWARDS AND ACHIEVEMENTS

2016–2020	Melbourne Research Scholarship, <i>University of Melbourne</i>
2018	Science Abroad Travelling Scholarship, <i>University of Melbourne</i>
2015	Ramm Prize in Experimental Physics, <i>University of Melbourne</i>
2014	Coursework Studentship, <i>University of Melbourne</i>
2012	Donald and Barbara Weyenberg Graduate Fellowship, <i>Pennsylvania State University</i>
2011–2012	Bert Elsbach Scholarship in Physics, <i>Pennsylvania State University</i>
2010–2012	Dean's List for every semester, <i>Pennsylvania State University</i>
2008–2012	Public Service Department of Malaysia Scholarship

## PROFESSIONAL MEMBERSHIPS

2011	Sigma Pi Sigma National Physics Honor Society
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## PUBLICATIONS

- 2018 Bate, N. F., Vernardos, G., O'Dowd, M. J., Neri-Larios, D. M., Webster, R. L., Floyd, D. J. E., Barone-Nugent, R. L., Labrie, K., King, A. L., and **Yong, S.-Y.** (2018). HST imaging of four gravitationally lensed quasars. *MNRAS*, 479:4796–4814 [[ADS](#) | [arXiv](#)]
- 2018 **Yong, S. Y.**, King, A. L., Webster, R. L., Bate, N. F., O'Dowd, M. J., and Labrie, K. (2018). Using the Properties of Broad Absorption Line Quasars to Illuminate Quasar Structure. *MNRAS*, 479:4153–4171 [[ADS](#) | [arXiv](#)]
- 2018 O'Dowd, M., Bate, N. F., Webster, R. L., Labrie, K., King, A. L., and **Yong, S. Y.** (2018). The intrinsic far-UV spectrum of the high-redshift quasar B1422+231. *MNRAS*, 473:4722–4730 [[ADS](#) | [arXiv](#)]
- 2017 **Yong, S. Y.**, Webster, R. L., King, A. L., Bate, N. F., O'Dowd, M. J., and Labrie, K. (2017). The Kinematics of Quasar Broad Emission Line Regions Using a Disk-Wind Model. *PASA*, 34:e042 [[ADS](#) | [arXiv](#)]
- 2016 **Yong, S. Y.**, Webster, R. L., and King, A. L. (2016). Black Hole Mass Estimation: How Good is the Virial Estimate? *PASA*, 33:e009 [[ADS](#) | [arXiv](#)]
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## SEMINARS, COLLOQUIA, AND INVITED TALKS

- 07/2018 **Research Visitor**, *University of Southampton, Winchester, United Kingdom*  
 ★ Talk: Quasar Disk Winds
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## CONFERENCES

- 07/2018 **PhD Summer Schools: Supermassive Black Holes and their Host Galaxies**, *Asiago Astrophysical Observatory, Asiago, Italy*  
 ★ Talk: An Update on Black Hole Mass Estimation: How good is the virial estimation?
- 06/2018 **Astronomical Society of Australia Annual Scientific Meeting 2018**, *Swinburne University of Technology, VIC, Australia*  
 ★ Talk: [Infer Structure of Quasar with Machine Learning](#)
- 02/2018 **Research Bazaar**, *University of Melbourne, VIC, Australia*  
 ★ Helper: Python  
 ★ Poster: Digital research tools used
- 08/2017 **Student Writing Workshop**, *University of Melbourne, VIC, Australia*
- 07/2017 **Tech Savvy Astronomer Workshop**, *University of Melbourne, VIC, Australia*
- 07/2017 **Astronomical Society of Australia Annual Scientific Meeting 2017**, *Australian National University, ACT, Australia*  
 ★ Talk: Using Broad Absorption Lines to Illuminate Quasar Structure  
 ★ Workshop: ADACS Introduction to Machine Learning
- 06/2017 **AMSI Winter School 2017 on Computational Foundations of Data Science**, *Queensland University of Technology, QLD, Australia*  
 ★ Talk: Kinematical Model of the Quasar Broad Emission Line Region
- 05/2017 **Manhattan Microlensing 2017**, *American Museum of Natural History, NY, United States*

	★ Talk: <a href="#">Modelling the Kinematics of Quasar Disk-winds</a>
02/2017	<b>Research Bazaar</b> , <i>University of Melbourne, VIC, Australia</i> ★ Helper: Python ★ Poster: Digital research tools used
07/2016	<b>From theory to applications: celebrating a century of gravitational lensing</b> , <i>Universiteit Leiden, Leiden, Netherlands</i> ★ Poster: Single Object Weak Lensing
04/2016	<b>SciCoder Workshop 2016</b> , <i>University of Melbourne, VIC, Australia</i> ★ Local organising committee
02/2016	<b>Research Bazaar: Visualising Data on the Web using D3</b> , <i>University of Melbourne, VIC, Australia</i> ★ Helper: D3 Stream ★ Poster: Digital research tools used
11/2015	<b>.Astronomy 7</b> , <i>University of Sydney and Justice &amp; Police Museum, NSW, Australia</i>
09/2015	<b>TORUS 2015</b> , <i>University of Southampton, Winchester, United Kingdom</i> ★ Poster: <a href="#">Black Hole Mass Estimation: How good is the virial estimate?</a>
04/2015	<b>OzSKA: radio astronomy in the next decade</b> , <i>University of Melbourne, VIC, Australia</i>
02/2015	<b>Research Bazaar: Programming and Data Analysis with Python</b> , <i>University of Melbourne, VIC, Australia</i>
02/2015	<b>Astroinformatics Summer School</b> , <i>Australian National University, ACT, Australia</i>
11/2014	<b>Mount Stromlo Christmas Seminar</b> , <i>Mount Stromlo Observatory, ACT, Australia</i> ★ Talk: Exploring the Broad Line Region
07/2014	<b>Astronomical Society of Australia Annual Scientific Meeting</b> , <i>Macquarie University, NSW, Australia</i>
07/2014	<b>Harley Wood Winter School</b> , <i>Collaroy Surf Lifesaving Club, NSW, Australia</i>
04/2014	<b>AusGO/AAO Observational Technical Workshop</b> , <i>AAO Headquarters, NSW, Australia</i>

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## PUBLIC OUTREACH AND INVOLVEMENT

02/2018–present	Research Platform Service Python Team Lead, <i>University of Melbourne</i>
08/2016–present	Telescopes in Schools, <i>University of Melbourne</i>
08/2014–2018	University Open Day, <i>University of Melbourne</i>
09/2016	Astronomy and Light Festival, <i>Scienceworks</i>
06/2016	Astrophysics Work Experience, <i>University of Melbourne</i>
08/2015	Astronomy and Light Festival, <i>Scienceworks</i>
08/2015	Science Festival, <i>University of Melbourne</i>
07/2012	Art Fest Science Outreach, <i>Pennsylvania State University</i>

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## EXTRACURRICULAR ACTIVITIES

2013–present	Member, Postgraduate Physics Students' Society, <i>University of Melbourne</i>
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2010–2012	Member, Society of Physics Students, <i>Pennsylvania State University</i>
2010–2012	Member, Physics for Astronomy and Women Society, <i>Pennsylvania State University</i>

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## SKILLS

Languages	English, Malay (fluent); Chinese, Japanese (basic)
Programming	Python (fluent); C++ (basic)

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## INTERESTS

Musical	Piano, guitar
Sport and fitness	Boxing, muay thai, cycling

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## REFERENCES

Prof. Rachel Webster	<i>School of Physics, University of Melbourne, Parkville, VIC 3010, Australia</i> ☎ +61 (0)3 8344 5450      ✉ r.webster@unimelb.edu.au
Dr. Anthea King	<i>School of Physics, University of Melbourne, Parkville, VIC 3010, Australia</i> ☎ +61 (0)3 8344 6303      ✉ anthea.king@unimelb.edu.au