Tyrone E. **Woods**

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Citizenship	Canadian
Languages	English *(fluent)*, French *(proficient)*
Current position	Research Fellow at Monash University
Research interests	Stars, supernovae, ISM, compact objects, stellar populations, binary stellar evolution, galaxies
Publication stats	16 refereed journal articles (7 first-author, 7 second-author), 266 citations, h-index 9

Education & Research Positions

08.2015–present	**Research Fellow**, Monash University	Melbourne, AUS
09.2011–06.2015	**PhD Physics** *(magna cum laude)*, Max Planck Institute for Astrophysics / LMU Munich • Supervisors: Profs. Marat Gilfanov and Rashid Sunyaev	Garching, DEU
09.2009–09.2011	**MSc Physics**, University of Alberta • Supervisor: Prof. Natalia Ivanova	Edmonton, CAN
09.2005–04.2009	**BSc Honours Astrophysics**, University of Alberta	Edmonton, CAN

Awards, Grants, & Observing Time

2017	**Lorentz Center Workshop Grant**, Principal Applicant	€25,000
2017	**JINA-CEE Conference Grant**, Principal Applicant	$5,000
2017	**ANU 2.3m Telescope Observing Time**, Co-Investigator, ID: 2170118	1 night
2016	**XMM-Newton Observing Time**, Co-Investigator, ID: 080346	52 ksec
2015	**Magellan (Baade) Telescope Observing Time**, Co-Investigator, ID: CN2015B-100	1 night
2014	**Rudolf Kippenhahn Prize**, Max Planck Institute for Astrophysics • Institutional award for best student publication in 2013	€2,000
2013	**Gemini Telescope Observing Time**, Co-Investigator, ID: GN-2013B-Q-92	8 hours
2011	**Profiling Alberta's Graduate Students Award**, University of Alberta • Institutional award to support research-related travel	$1,100
2009, 2008, 2007	**Natural Sciences and Engineering Research Council of Canada Undergraduate Student Research Award**, Athabasca University ('09, '08) / National Institute for Nanotechnology ('07) • Competitive national award to fund a summer research term	$4,500 + organization contribution (×3)
2008	**Jason Lang Scholarship**, University of Alberta • Provincial scholarship for academic achievement	$1,000

Teaching Experience

Lecturer, Monash University

03.2017–05.2017, 10.2016, 2018, 2017, 2016

- The Interstellar Medium *(4th-year undergraduate course)*
- Computational Astrophysics: High Energy Unit *(week-long unit of 3rd-year undergraduate course)*
- Introduction to Scientific Computing: LaTeX *(half-day session of 4th-year undergraduate workshop)*

09.2009–04.2011 **Teaching Assistant**, University of Alberta

- Particles & Waves / Fluids, Fields, & Radiation *(lab component of 1st-year undergraduate course)*

Supervisory Experience

01.2017–02.2017 **Jake King**, Monash University

- 3rd-year undergraduate research project on He II nebulae in M33

11.2015–01.2016 **Kieran Hirsh**, Monash University

- Undergraduate summer research project on He II emission in low-ionization nebulae

01.2013–06.2015 **Hailiang Chen**, Max Planck Institute for Astrophysics

- PhD project on populations of accreting WD binaries *(co-supervised with Gilfanov, Yungelson, & Han)*

01.2011–04.2011 **David McBean**, University of Alberta

- 4th-year undergraduate research project on X-ray binaries *(co-supervised with Ivanova)*

Service & Public Outreach

since 2015 **Expert Reviewer** *(invited)*

- Refereed for several academic journals including *Monthly Notices of the Royal Astronomical Society* (main journal and *Letters*), *Physical Review D*, *The Astrophysical Journal*, and *Publications of the Astronomical Society of Australia*, as well as the Czech Science Foundation

05.2017 **Interviewee** *(invited)*, University of Alberta

- Discussed black holes and careers in science for an online astro course

03.2017, 10.2016, 08.2016 **Guest Expert** *(invited)*, John Monash Science School (Melbourne, Australia)

- Spoke to / helped evaluate 10th grade students in the “Quarks to Quasars” class

01.2016–12.2016 **Seminar Coordinator** *(invited)*, Monash Centre for Astrophysics

- Organized the seminar visits of 50 guest lecturers from Australia and abroad

11.2016 **Public Lecturer** *(volunteer)*, Monash Centre for Astrophysics

- Presented a public-level talk on Tycho’s Supernova

03.2010–09.2011 **Academic Coordinator** *(elected)*, Graduate Physics Student Association (GPSA), University of Alberta

- Co-chair of the Second Annual Symposium for Graduate Physics Research

06.2011 **Space & Astronomy Panellist** *(volunteer)*, Grandview Heights School (Edmonton, Canada)

- Answered 8th grade students’ questions about space and astronomy

09.2009–09.2010 **Focus Area Representative (Astrophysics)** *(elected)*, GPSA, University of Alberta

- Consulted on new faculty hires and courses as a representative of astrophysics grad students

Talks

Invited Talks & Colloquia

02.2018	**Research Institute in Astrophysics and Planetology Seminar** *(institutional colloquium)*	Toulouse, FRA
12.2017	**Canadian Institute for Theoretical Astrophysics Seminar** *(institutional colloquium)*	Toronto, CAN
12.2017	**Max Planck Institute for Astrophysics High Energy Seminar** *(institutional colloquium)*	Garching, DEU
11.2017	**Titans of the Early Universe** *(international conference)*	Prato, ITA
02.2017	**Australian National University RSAA Colloquium** *(institutional colloquium)*	Canberra, AUS
06.2016	**University of Athens Astrophysics Seminar** *(institutional colloquium)*	Athens, GRC
06.2016	**National Observatory of Athens IAASARS Seminar** *(institutional colloquium)*	Athens, GRC
09.2015	**Monash Centre for Astrophysics Seminar** *(institutional colloquium)*	Melbourne, AUS
01.2015	**Max Planck Institute for Astrophysics Institute Seminar** *(institutional colloquium)*	Garching, DEU
09.2014	**Harvard-Smithsonian Center for Astrophysics HEA Lunch Talk** *(institutional colloquium)*	Cambridge, USA
09.2014	**University of Alberta Astro Seminar** *(institutional colloquium)*	Edmonton, CAN
07.2014	**Quenching and Quiescence** *(international conference)*	Heidelberg, DEU
03.2013	**Max Planck Institute for Astrophysics High Energy Seminar** *(institutional colloquium)*	Garching, DEU
12.2011	**Max Planck Institute for Astrophysics High Energy Seminar** *(institutional colloquium)*	Garching, DEU

Contributed Talks

12.2017	**Deciphering the Violent Universe** *(international conference)*	Playacar, MEX
11.2017	**With One Hand Waving Free** *(international conference)*	Port Douglas, AUS
06.2017	**Forging Connections: From Nuclei to the Cosmic Web** *(international conference)*	Lansing, USA
06.2017	**Fifty-One Erg** *(international conference)*	Corvallis, USA
05.2017	**CASCA 2017** *(national conference)*	Edmonton, CAN
03.2017	**The AGB-Supernovae Mass Transition** *(international conference)*	Rome, ITA
02.2017	**11th ANITA Theory Workshop** *(national conference)*	Hobart, AUS
08.2016	**Astrophysics from LIGO's First Black Holes** *(international workshop, invitation only)*	Sta. Barbara, USA
07.2016	**ASA Annual Scientific Meeting 2016** *(national conference)*	Sydney, AUS
06.2016	**Supernova Remnants: An Odyssey in Space After Stellar Death** *(international conference)*	Crete, GRC
02.2016	**10th ANITA Theory Workshop** *(national conference)*	Melbourne, AUS
06.2014	**The X-ray Universe 2014** *(international conference)*	Dublin, IRL
10.2013	**ESO / NUVA / IAG Workshop on Challenges in UV Astronomy** *(international conference)*	Garching, DEU
09.2013	**Observational Signatures of SN Ia Progenitors II** *(international conference, invitation only)*	Leiden, NLD
09.2012	**Half a Century of X-ray Astronomy** *(international conference)*	Mykonos, GRC
05.2011	**CASCA 2011** *(national conference)*	London, CAN
03.2011	**Evolution of Compact Binaries** *(international conference)*	Viña del Mar, CHL

Publications

* = *students I have co-supervised* | *SAO / NASA ADS citation count =* ***266****, h-index =* ***9***

Refereed Journal Articles

16. Haemmerlé, L., **Woods, T. E.**, Klessen, R. S., Heger, A., & Whalen, D. J. (2018). On the rotation of supermassive stars. *The Astrophysical Journal Letters, 853*, L3. doi:10.3847/2041-8213/aaa462
15. Haemmerlé, L., **Woods, T. E.**, Klessen, R. S., Heger, A., & Whalen, D. J. (2018). The evolution of supermassive Population III stars. *Monthly Notices of the Royal Astronomical Society, 474*, 2757–2773. doi:10.1093/mnras/stx2919
14. **Woods, T. E.**, Ghavamian, P., Badenes, C., & Gilfanov, M. (2017). No hot and luminous progenitor for Tycho's supernova. *Nature Astronomy, 1*, 800–804. doi:10.1038/s41550-017-0263-5
13. **Woods, T. E.**, Heger, A., Whalen, D. J., Haemmerlé, L., & Klessen, R. S. (2017). On the maximum mass of accreting primordial supermassive stars. *The Astrophysical Journal Letters, 842*, L6. doi:10.3847/2041-8213/aa7412
12. Johansson, J., **Woods, T. E.**, Gilfanov, M., Sarzi, M., Chen, Y.-M., & Oh, K. (2016). Diffuse gas in retired galaxies: nebular emission templates and constraints on the sources of ionization. *Monthly Notices of the Royal Astronomical Society, 461*, 4505–4516. doi:10.1093/mnras/stw1668
11. *Chen, H.-L., **Woods, T. E.**, Yungelson, L. R., Gilfanov, M., & Han, Z. (2016). Modelling nova populations in galaxies. *Monthly Notices of the Royal Astronomical Society, 458*, 2916–2927. doi:10.1093/mnras/stw458
10. **Woods, T. E.**, & Gilfanov, M. (2016). Where are all of the nebulae ionized by supersoft X-ray sources? *Monthly Notices of the Royal Astronomical Society, 455*, 1770–1781. doi:10.1093/mnras/stv2423
9. *Chen, H.-L., **Woods, T. E.**, Yungelson, L. R., Gilfanov, M., & Han, Z. (2015). Population synthesis of accreting white dwarfs – II. X-ray and UV emission. *Monthly Notices of the Royal Astronomical Society, 453*, 3024–3034. doi:10.1093/mnras/stv1865
8. *Chen, H.-L., **Woods, T. E.**, Yungelson, L. R., Gilfanov, M., & Han, Z. (2014). Next generation population synthesis of accreting white dwarfs – I. Hybrid calculations using BSE + MESA. *Monthly Notices of the Royal Astronomical Society, 445*, 1912–1923. doi:10.1093/mnras/stu1884
7. Nielsen, M. T. B., Gilfanov, M., Bogdán, Á., **Woods, T. E.**, & Nelemans, G. (2014). Upper limits on the luminosity of the progenitor of Type Ia supernova SN 2014J. *Monthly Notices of the Royal Astronomical Society, 442*, 3400–3406. doi:10.1093/mnras/stu913
6. Johansson, J., **Woods, T. E.**, Gilfanov, M., Sarzi, M., Chen, Y.-M., & Oh, K. (2014). Diffuse gas in galaxies sheds new light on the origin of Type Ia supernovae. *Monthly Notices of the Royal Astronomical Society, 442*, 1079–1089. doi:10.1093/mnras/stu907
5. **Woods, T. E.**, & Gilfanov, M. (2014). Emission-line diagnostics to constrain high-temperature populations in early-type galaxies. *Monthly Notices of the Royal Astronomical Society, 439*, 2351–2363. doi:10.1093/mnras/stu072
4. **Woods, T. E.**, & Gilfanov, M. (2013). He II recombination lines as a test of the nature of SN Ia progenitors in elliptical galaxies. *Monthly Notices of the Royal Astronomical Society, 432*, 1640–1650. doi:10.1093/mnras/stt586
3. **Woods, T. E.**, Ivanova, N., van der Sluys, M. V., & Chaichenets, S. (2012). On the formation of double white dwarfs through stable mass transfer and a common envelope. *The Astrophysical Journal, 744*, 12. doi:10.1088/0004-637X/744/1/12
2. **Woods, T. E.**, & Ivanova, N. (2011). Can we trust models for adiabatic mass loss? *The Astrophysical Journal Letters, 739*, L48. doi:10.1088/2041-8205/739/2/L48
1. Ivanova, N., Chaichenets, S., Fregeau, J., Heinke, C. O., Lombardi, J. C., Jr., & **Woods, T. E.** (2010). Formation of black

hole X-ray binaries in globular clusters. *The Astrophysical Journal, 717*, 948–957. doi:10.1088/0004-637X/717/2/948

Conference Proceedings

3. **Woods, T. E.**, & Gilfanov, M. (2014). UV emission lines in passively evolving galaxies can reveal the progenitors of type Ia supernovae. *Astrophysics and Space Science, 354*, 69–74. doi:10.1007/s10509-014-2070-0
2. **Woods, T. E.**, Ivanova, N., van der Sluys, M., & Chaichenets, S. (2011). On the formation of double white dwarfs: Reevaluating how we parametrise the common envelope phase. *ASP Conference Series, 447*, 127–132.
1. **Woods, T. E.**, Ivanova, N., van der Sluys, M., & Chaichenets, S. (2010). The formation of low-mass double white dwarfs through an initial phase of stable non-conservative mass transfer. *AIP Conference Proceedings, 1314*, 24–25. doi:10.1063/1.3536378