

Peter Boorman

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✍ 15 papers 👍 179 citations 📈 h-index: 9 💬 37 presentations

>_ Research Interests.....

Extragalactic astrophysics

- Classifying obscured Active Galactic Nuclei (AGN)
- AGN obscured fraction
- AGN evolution and feedback

Theoretical & computation

- Cosmic X-ray Background population synthesis
- Monte Carlo radiative transfer modelling
- Big data analysis and machine learning methods

Observational

- X-ray imaging and spectroscopy
- Optical spectroscopy and modelling
- Infrared photometric surveys



🎓 Education.....

10/2015–07/2019 **Ph.D.** in Astrophysics, Advisor: Dr. Poshak Gandhi, University of Southampton

10/2011–07/2015 **Bachelors + Masters** in Physics, University of Southampton
Result: 1st Class Honours & top of year

🏢 Employment History.....

09/2019–01/2020 **Postdoctoral researcher:** at the Astronomical Institute of the Czech Academy of Sciences

06/2019–09/2019 **MoleGazer Data Analyst:** > £21,000 funding awarded by the STFC Impact Acceleration Accounts to analyse the temporal evolution of naevi into melanoma in medical images using astronomical photometric techniques and machine learning algorithms

💡 Notable Activities.....

June 2020 **Textbook co-author:** wrote the X-ray imaging section of *Tutorial Guide to X-ray and Gamma-ray Astronomy* - link.springer.com/book/10.1007/978-981-15-6337-9

Aug 2020 **Team Leader for the Lindau online Sciathon:** led efforts to nourish a mutually respectful publishing process with researchers - sciathon.org/project/group-su/

July 2019 **Lindau Nobel Laureate Attendee:** Nominated & Selected 1/580 young researchers from 89 countries to attend the 69th Lindau Nobel Laureate Meeting in July 2019 with 39 Nobel Laureates of physics

July 2019 **Max Planck Visitor:** Selected to visit the Max Planck Institute for Extraterrestrial Physics in Munich following the Lindau Nobel laureate meeting.

Jan 2016 **Press Release:** American Astronomical Society Winter Meeting
 2016 **Finalist:** Nationwide I'm a Scientist competition
 2017 & 2018 **Two-time nominee:** University of Southampton Doctoral College Citizen & Community Award

Grants & Awards

2020 **Springer Thesis Award** - www.phys.soton.ac.uk/news/6711
 2017 **£4,500 prize funding to organize a conference** - sites.google.com/site/broadbandlook/home
 2016–2018 **£1,500 of Travel Grants** from Royal Astronomical Society to present contributed talks in Zürich & Chile
 2018 **£200 Bursary** from the Institute of Physics to collaborate in Chile
 July 2015 **Most Outstanding Performance:** Ranked top of 127 physics masters students at the University of Southampton - www.phys.soton.ac.uk/news/4744

★ Skills

Developer Python, L^AT_EX, tcl
Expert Xspec, PyXspec, Sherpa, tcsh, Mac, unix, Topcat, git, Windows
Experienced Fortran, Aladin, DS9, bash, HTML
Languages English (native), French (intermediate), Spanish (basic), Czech (basic)

Observational Experience

2016–present **Lead-analyst for the 4Ms NuLANDS Survey** with *NuSTAR*, *Swift*, *XMM-Newton*, *Chandra* & *Suzaku*
 2017–2020 **XMM-Newton PI time:** 400 ks accepted time (150 ks Priority B)
 2020 **NuSTAR PI time:** 300 ks accepted Priority A & B time
 2019–2020 **SALT PI time:** > 7.5 hours of accepted SALT time
 2016–2017 **Observing:** Keck/LRIS & Palomar/DBSpec; 3 nights total

International Collaborations & Memberships

2019–present **Member of the SHIVA Team:** Searching for a Holistic Interpretation of Variable Accretion
 2019 **Lindau Nobel Laureate Alumni**
 2015–present **Member of the NuSTAR AGN Science team:** worldwide collaboration for AGN-related research using the *NuSTAR* satellite
 2019–present **Member of the GATOS Team:** Galaxy Activity, Torus, and Outflows Survey.
 2016–present **Founded:** Southampton Accretion Group
 2016–present **Memberships:** Royal Astronomical Society & Institute of Physics

Teaching Experience.....

- Nov 2019 **NuSTAR Data Analysis workshop:** led a week-long data analysis workshop delivered to the Slovakia Institute of Technology for *NuSTAR* data analysis and products extraction
- 2016–2018 **Demonstrator:** University of Southampton undergraduate Python Computer Labs & Electromagnetism courses

Academic Service & Outreach.....

- April 2020 **Skype a Scientist:** Answered questions with members of the public about black holes and space.
- July 2019 **Video Interviewee:** Interview available worldwide about my research at the 69th Nobel Laureate Lindau Meeting
- 2015, 2019 **Conference local organiser:** XCalibur 2019 international high-resolution X-ray spectroscopy workshop - July 2019 & TORUS 2015 international conference - Sep 2015
- 2018 **Academic paper referee:** Astrophysical Journal, Astrophysics & Space Science, MDPI
- Sep 2018 **Charity work:** Led efforts for DataDive hosted by DataKind UK - Southampton
- 2016–present **Departmental organiser:** Accretion meetings, Journal Clubs & weekly seminars
- July 2018 **Nature Community writer:** Nature Community article about *NuSTAR*

Presentations, Seminars & Press Releases 37 Total.....

Press Releases

- American Astronomical Society Winter Meeting* (featured in global media outlets;
Jan 2016 NASA/JPL, The Guardian, The Independent, The Daily Mail, University of Southampton, Durham University)

Invited

- Mar 2018 **Contributed** *ESO Headquarters Chile - Local hard X-ray selected AGN across the multi-wavelength spectrum*
- Jun 2017 **Seminar** *Sussex University Astronomy Department, UK*

Contributed & Seminars

- Jun 2020 **Seminar** *SPI-MAX, University of Oxford, UK*
- Mar 2020 **Seminar** *Charles University, Prague*
- Mar 2020 **Seminar** *Masaryk University, Brno, Czechia*
- Feb 2020 **Seminar** *European Space Agency Center, Madrid, Spain*

Mar 2020 *Ondřejov Astronomical Institute of the Czech Academy of Sciences, Czechia*
Contributed

Nov 2019 *AGN Spectral States workshop, Vila Lanna*
Contributed

Nov 2019 *Cologne–Prague Meeting, Prague Astronomical Institute, Czechia*
Seminar

Nov 2019 *High Energy Kaffeerunde, Max Planck Institute for Extraterrestrial Physics, Garching, Germany*
Talk

July 2019 *Max Planck Institute for Extraterrestrial Physics Infrared Group, Garching, Germany*
Talk

July 2019 *XCalibur High-resolution X-ray Spectroscopy Meeting, Winchester, UK*
Poster

July 2019 *69th Lindau Nobel Laureate Meeting, Germany*
Poster

Jun 2019 *Prague Relativistic Astrophysics Group, Prague Astronomical Institute, Czechia*
Seminar

Dec 2018 *TORUS2018 meeting, Puerto Varas, Chile*
Contributed

Dec 2018 *Universidad Diego Portales, Santiago, Chile*
Seminar

Oct 2018 *Harvard Centre for Astrophysics Quasar Tea, Cambridge, Boston*
Talk

Oct 2018 *Harvard Black Hole Initiative, Cambridge, Boston*
Seminar

Oct 2018 *MIT High Energy Group Meeting, Cambridge, Boston*
Seminar

July 2018 *University of Hertfordshire, UK*
Seminar

May 2018 *Institute for Cosmology & Gravitation, University of Portsmouth, UK*
Seminar

Mar 2018 *Pontificia Universidad Católica, Santiago, Chile*
Seminar

Apr 2018 *From Micrometres to Megaparsecs, University of Southampton, UK*
Contributed

Oct 2017 *Bun Club Talk, Institute of Astronomy, University of Cambridge, UK*
Talk

Sep 2017 *New Results in X-ray Astronomy & Athena Consortium Meeting, University of Durham, UK*
Contributed

- Sep 2017
Poster *New Results in X-ray Astronomy & Athena Consortium Meeting*, University of Durham, UK
- Feb 2017
Poster *Timing and Spectroscopy in the New Era of X-ray Astronomy*, Royal Astronomical Society Specialist Discussion Meeting, Burlington House, UK
- Nov 2016
Seminar *AstroGrav Seminar*, University of Southampton, UK
- Nov 2016
Seminar *NuSTAR group*, Caltech, USA
- Nov 2016
Poster *HEX-P Concept & NuSTAR Science Meeting*, Caltech, USA
- Oct 2016
Poster *David Gross Nobel Lecture*, University of Southampton, UK
- Sep 2016
Contributed *New Results in X-ray Astronomy*, Mullard Space Science Laboratory, UK
- Feb 2016
Contributed *X-ray View of Black Hole Activity in the Local Universe*, ETH, Zürich

Outreach

- Mar 2019
Outreach Talk *Three-Minute Thesis*, University of Southampton, UK
- Feb 2019
Outreach Talk *Basingstoke Astronomy Society*, UK
- 2016–present
Planetarium Shows > 20 *University of Southampton Astrodome shows*, University of Southampton, UK

Publication List

15 Total, 179 Citations, h-index: 9

1. *IC 3639 – A New Bona Fide Compton-Thick AGN Unveiled by NuSTAR*
Boorman, P., Gandhi, P. Harrison, F., Ricci, C., Stern, D. *et al.* 2016, ApJ, 833, 245.
2. *An Iwasawa-Taniguchi effect for Compton-thick AGN*
Boorman P., Gandhi P., Baloković M., Brightman M. *et al.* 2018, MNRAS, 477, 3775.
3. *NuSTAR Uncovers an Extremely Local Compton-thick AGN in NGC 4968*
LaMassa, S., Yaqoob, T., **Boorman, P.** *et al.* 2019, ApJ, 887, 173.
4. *Chandra Reveals Heavy Obscuration and Circumnuclear Star Formation in Seyfert 2 Galaxy NGC 4968*
LaMassa, S., Yaqoob, T., Levenson, N., **Boorman, P.** *et al.* 2017, ApJ, 835, 91.
5. *The NuSTAR Extragalactic Surveys: Source Catalog and the Compton-thick Fraction in the UDS Field*
Masini, A., Civano, F., Comastri, A., Fornasini, F., Ballantyne, D. R., Lansbury, G., Treister, E., Alexander, D., **Boorman, P.** *et al.* 2018, ApJ, 235, 17.

6. *X-Ray Bolometric Corrections for Compton-thick AGN*
Brightman, M., Baloković, M., Ballantyne, D., Bauer, F., **Boorman, P.** et al. 2017, ApJ, 844, 10.
7. *The weak Fe fluorescence line and long-term X-ray evolution of the Compton-thick active galactic nucleus in NGC 7674*
Gandhi, P., Annuar, A., Lansbury, G., Stern, D., Alexander, D., Bauer, F., Bianchi, S., Boggs, S., **Boorman, P. G.** et al. 2017, MNRAS, 467, 4606.
8. *The X-Ray Reflection Spectrum of the Radio-loud Quasar 4C 74.26*
Lohfink, A., Fabian, A., Ballantyne, D., Boggs, S., **Boorman, P.** et al. 2017, ApJ, 841, 80.
9. *Broad-band X-ray spectral analysis of the Seyfert 1 galaxy GRS 1734-292*
Tortosa, A., Marinucci, A., Matt, G., Bianchi, S., La Franca, F., Ballantyne, D., **Boorman, P.** et al. 2017, MNRAS, 466, 4193.
10. *A New Compton-thick AGN in our Cosmic Backyard: Unveiling the Buried Nucleus in NGC 1448 with NuSTAR*
Annuar, A., Alexander, D., Gandhi, P., Lansbury, G., Asmus, D., Ballantyne, D., Bauer, F., Boggs, S., **Boorman, P.** et al. 2017, ApJ, 836, 165.
11. *NuSTAR Observations of WISE J1036+0449, a Galaxy at $z \sim 1$ Obscured by Hot Dust*
Ricci, C., Assef, R., Stern, D., Nikutta, R., Alexander, D., Asmus, D., Ballantyne, D., Bauer, F., Blain, A., Boggs, S., **Boorman, P.** et al. 2017, ApJ, 835, 105.
12. *The Phoenix galaxy as seen by NuSTAR*
Masini, A., Comastri, A., Puccetti, S., Baloković, M., Gandhi, P., Guainazzi, M., Bauer, F., Boggs, S., **Boorman, P.** et al. 2017, A&A, 597, 100.
13. *Unveiling the 100 pc scale nuclear radio structure of NGC 6217 with e-MERLIN and the VLA*
Williams, D., McHardy, I., Baldi, R., Beswick, R., Argo, M., Beri, A., **Boorman, P.** et al. 2019, MNRAS, 486, 4962.
14. *Local AGN survey (LASr): I. Galaxy sample, infrared colour selection, and predictions for AGN within 100 Mpc*
Asmus, D., Greenwell, C. L., Gandhi, P., **Boorman, P.** et al. 2020 MNRAS, 494, 1784.
15. *NuSTAR Observations of Four Nearby X-ray Faint AGN: Low Luminosity or Heavy Obscuration?*
Annuar, A., Alexander, D. M., Gandhi, P., Lansbury, G. B., Asmus, D., Balokovic, M., Ballantyne, D. R., Bauer, F. E., **Boorman, P.** et al. 2020 MNRAS, 497, 229.