

# Peter Boorman

📍 Czech Academy of Sciences, Spořilov, 14100

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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](https://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/](https://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](http://www.phys.soton.ac.uk/news/6711)
- 2017 **£4,500 prize funding to organize a conference** - [sites.google.com/site/broadbandlook/home](http://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](http://www.phys.soton.ac.uk/news/4744)

## ★ Skills

- Developer** Python, L<sup>A</sup>T<sub>E</sub>X, 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 4 Ms NuLANDS Survey** with *NuSTAR*, *Swift*, *XMM-Newton*, *Chandra* & *Suzaku*
- 2017–2020 **XMM-Newton PI time:** 400 ks accepted time (150 ks Priority A)
- 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.