

# BEN JAMES SUTLIEFF

CURRICULUM VITAE - 9TH DECEMBER 2021

Anton Pannekoek Institute for Astronomy,  
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## EDUCATION

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**PhD in Astronomy** - Anton Pannekoek Institute for Astronomy, University of Amsterdam 2018 - present  
Preliminary thesis title: “*Photometric and Spectrophotometric Variability of Exoplanet Atmospheres*”  
Supervised by Prof Jayne Birkby, co-supervised by Dr Matthew Kenworthy.

**MPhys Physics with Astrophysics** - University of Exeter 2014-2018  
Thesis project: “*Direct Imaging and Spectroscopy of Exoplanets*”  
Supervised by Prof Sasha Hinkley.

## RESEARCH EXPERIENCE

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**PhD Researcher** - Anton Pannekoek Institute for Astronomy, University of Amsterdam 2018-present  
PhD research focused on characterising exoplanets and brown dwarfs through direct imaging campaigns, in particular the use of novel photometric and spectrophotometric monitoring techniques to measure their atmospheric variability. Reduction and analysis of direct imaging data, developing observing & data processing techniques for vector Apodizing Phase Plate coronagraphs (vAPPs). Supervised by Prof Jayne Birkby, co-supervised by Dr Matthew Kenworthy.

**Undergraduate Researcher** - University of Exeter 2016-2018  
An ongoing high-contrast imaging survey exploring the link between circumstellar debris disks and giant exoplanetary companions in wide-separation orbits, using observational data collected at the W.M. Keck Observatory. Supervised by Prof Sasha Hinkley.

**Undergraduate Researcher** - University of Exeter 2016  
Pre-processing of data using ESO’s Common Pipeline Library, for high-contrast imaging targets observed with the SPHERE instrument on the VLT. Identification of planet candidates and astrometry. Supervised by Dr Elisabeth Matthews.

**XRT-C Science & Procurement** - University of Exeter 2014-2016  
A student-led project to construct the eXeter Radio Telescope at Caradon (XRT-C), a new 4.5m radio telescope in Caradon, Cornwall, with the initial goal of conducting a neutral hydrogen survey of the galactic plane.

**Data Collection** - Lockyer Technology Centre, Norman Lockyer Observatory 2012-2015  
Utilising a forward-scatter radar setup to monitor the daily, seasonal and annual variation in radio meteor flux.

## TEACHING

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**Teaching Assistant** - University of Amsterdam 2019-2020  
- Open Problems in Modern Astrophysics, Masters course (2020)  
- Outreach Activities Module, (2019 - 2020)  
- Open Problems in Modern Astrophysics, Masters course (2019)  
- Project Natuur & Sterrenkunde (Bachelors project module), Bachelors course (2019)

**Mentor** - Space School & Senior Space School UK, University of Leicester 2015 & 2018  
Assisting with the operation of the school, teaching physics and astronomy topics to students aged 13-18. Guest lecturer on exoplanets.

## AWARDS & PRIZES

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Leids Kerkhoven-Bosscha Fonds (LKBF) grant - €400 2020  
Leids Kerkhoven-Bosscha Fonds (LKBF) grant - €1000 2019  
UKSEDS Best Project Award Winner - for XRT-C, a student-led radio telescope project 2015

## OBSERVATIONAL AND TECHNICAL SKILLS

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<b>Science Co-Principle Investigator</b> - LBT (8.4m)/NALES + 360-vAPP (2 nights), Arizona, USA <i>“A new ground-based technique for mapping exoplanets”</i>	Sep 2020
<b>Co-Investigator</b> - Magellan (6.5m)/MagAO + vAPP (1 night), Las Campanas Observatory, Chile <i>“The stormy nature of a young giant exoplanet”</i>	Nov 2019
<b>On-site observing experience:</b> Magellan (6.5m)/MagAO + vAPP (1 night), Las Campanas Observatory, Chile <i>“The stormy nature of a young giant exoplanet”</i>	Nov 2019
WHT (4.2m)/ISIS + ACAM observing run (5 nights), La Palma <i>“The M-dwarf Radius Anomaly: model-independent masses and radii from low-mass eclipsing binaries”</i>	May 2019
<b>Data reduction and analysis expertise related to:</b> Direct imaging datasets (180- and 360-vAPP coronagraphs, Magellan/MagAO, LBT/NALES, VLT/SPHERE, Keck/NIRC2), low-resolution spectroscopy, and time-resolved photometry and spectrophotometry.	

## SERVICE TO ACADEMIA

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<b>Borrel Committee &amp; Social Committee</b> - Anton Pannekoek Institute, University of Amsterdam	2019-2021
<b>Social Media Assistant</b> - Anton Pannekoek Institute, University of Amsterdam	2019-2020
<b>Session chair</b> × 2 - vAPP Data Hackathon, Leiden Observatory, NL Chair of the <i>“Data Pre-processing”</i> and <i>“Photometric Variability with vAPPs”</i> sessions during the workshop.	2019
<b>Co-founder and SOC/LOC</b> - Space:Exe Conference, University of Exeter Launched the first edition of a now annually occurring conference bringing together speakers and delegates from both academia and industry, with a focus on space science and astronomy research in South West England.	2018
<b>Student-Staff Liason Committee</b> - Physics & Astronomy, University of Exeter Working with departmental staff to deliver academic representation at the subject level, solving problems connected with teaching and student support.	2016-2018
<b>Outreach &amp; Publicity Officer, Secretary</b> - Space:Exe, University of Exeter A university society promoting science communication and supporting several multi-discipline physics & engineering projects, such as XRT-C and a high-altitude balloon.	2015-2018
<b>Campaign Team Member</b> - University of Exeter Student’s Guild 2016 DVP International Campaign Team - successful. 2017 Guild President Campaign Team - successful.	2016-2017
<b>UKSEDS Assistant Outreach &amp; Publicity Officer</b> - UKSEDS UK Students for the Exploration & Development of Space. Contributed to the organisation and promotion of outreach events on a national level, including regional science festivals and the National Student Space Conference.	2015-16

## SCHOOLS AND CONFERENCES

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Contributed Talk - NOVA Network 2 meeting, Leiden, NL (moved to online)	Nov 2021
Poster + video - European Astronomical Society Annual Meeting, Leiden, NL (moved to online)	Jun 2021
Poster + video - STScI Spring Symposium 2021, STScI, Baltimore, USA (moved to online)	Apr 2021
Poster + video - Exoplanets III, Heidelberg, Germany (moved to online)	Jul 2020
Lorentz Center workshop: Tackling the Complexities of Substellar Objects, Leiden, NL	Feb 2020
Contributed Talk - High-Contrast Imaging post-processing (HCipp) workshop, Berlin, Germany	Jan 2020
Poster + poster pop - In the Spirit of Lyot, Tokyo, Japan	Oct 2019
Poster - Netherlands Astronomy Conference, Groningen, NL	May 2019
Session chair × 2 - vAPP Data Hackathon, Leiden Observatory, NL	April 2019
Contributed Talk - NOVA Fall School, ASTRON, Dwingeloo, NL	Oct 2018
Co-founder and Organising Committee - Space:Exe Conference, University of Exeter, UK	May 2018
Contributed Talk - National Student Space Conference, University of Surrey, UK	Mar 2018
National Student Space Conference, University of Exeter, UK	Mar 2017
National Student Space Conference, University of Surrey, UK	Feb 2015
UKSEDS Comets and Asteroids Workshop, University of Oxford, UK	Feb 2015

## PUBLIC OUTREACH

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Sidewalk Astronomy - Partial Solar Eclipse, Anton Pannekoek Observatory, Amsterdam, NL	Jun 2021
Public talk on Exoplanets - Wells & Mendip Astronomers, Wells, UK (online)	Feb 2021
Observatory tour guide - Sterrenkijkavonden, Anton Pannekoek Observatory, Amsterdam, NL	Apr 2019 - Jul 2020
Outreach team member - Partial Lunar Eclipse Event, Anton Pannekoek Observatory, Amsterdam, NL	Jul 2019
Sidewalk Astronomy - Imagine Film Festival, Amsterdam, NL	Apr 2019
Outreach team member - Total Lunar Eclipse Event, Anton Pannekoek Observatory, Amsterdam, NL	Jan 2019
Outreach team member - Science Park Open Day, University of Amsterdam, Amsterdam, NL	Oct 2018
Public talk on XRT-C/Radio Astronomy - Mid-Somerset Amateur Radio Club, Shepton Mallet, UK	Jun 2018
Invited article; <i>“Imaging Exoplanets”</i> - <i>The Nightly Observer</i> astronomy magazine, UK	Apr 2018
Outreach team member - Sidmouth Science Festival, Sidmouth, UK	Oct 2015
Outreach team member - Wells & Mendip Astronomers Open Day, Wells, UK	Aug 2015
Outreach team member - Solar Eclipse Viewing Event (1500 attended), University of Exeter, UK	Mar 2015
Public talk on Radio Meteor Observations - Wells & Mendip Astronomers, Cheddar, UK	Aug 2014
Sidewalk Astronomy - Wells & Mendip Astronomers with Waitrose & Partners, Wells, UK	Mar 2014
BBC Points West television interview on Radio Meteor Detection - BBC Stargazing Live week, UK	Jan 2014
BBC Radio Somerset interview on Radio Meteor Detection - BBC Stargazing Live week, UK	Jan 2014
Outreach team member - BBC Stargazing Live week, Wells & Mendip Astronomers, Wells, UK	Jan 2014

## LANGUAGES

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**Computing:** Experienced in PYTHON, proficient in HTML, and working knowledge of C, IDL and VISUAL BASIC.

**Spoken:** English (native), Dutch (A2 level), German (Elementary Proficiency - ILR scale).

## MEMBERSHIPS OF PROFESSIONAL BODIES

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Elected Fellow, Royal Astronomical Society 2017 - present

## PUBLICATIONS

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5. *“High-contrast observations of brown dwarf companion HR 2562 B with the vector Apodizing Phase Plate coronagraph”*, 2021, MNRAS  
**B. J. Sutcliffe**; A. J. Bohn; J. L. Birkby; M. A. Kenworthy; K. M. Morzinski; D. S. Doelman; J. R. Males; F. Snik; L. M. Close; P. M. Hinz; D. Charbonneau
4. *“The vector-apodizing phase plate coronagraph: design, current performance, and future development”*, 2021, Applied Optics  
D. S. Doelman; F. Snik; E. H. Por; S. P. Bos; G. P. P. L. Otten; M. Kenworthy; S. Y. Haffert; M. Wilby; A. J. Bohn; **B. J. Sutcliffe**; K. Miller; M. Ouellet; J. de Boer; C. U. Keller; M. J. Escuti; S. Shi; N. Z. Warriner; K. Hornburg; J. L. Birkby; J. Males; K. M. Morzinski; L. M. Close; J. Codona; J. Long; L. Schatz; J. Lumbres; A. Rodack; K. Van Gorkom; A. Hedglen; O. Guyon; J. Lozi; T. Groff; J. Chilcote; N. Jovanovic; S. Thibault; C. de Jonge; G. Allain; C. Vallée; D. Patel; O. Côté; C. Marois; P. Hinz; J. Stone; A. Skemer; Z. Briesemeister; A. Boehle; A. M. Glauser; W. Taylor; P. Baudoz; E. Huby; O. Absil; B. Carlomagno; and C. Delacroix
3. *“Discovery of an Edge-on Circumstellar Debris Disk around BD+45° 598: A Newly Identified Member of the  $\beta$  Pictoris Moving Group”*, 2021, The Astrophysical Journal  
S. Hinkley; E. C. Matthews; C. Lefevre; J-F. Lestrade; G. Kennedy; D. Mawet; K. R. Stapelfeldt; S. Ray; E. Mamajek; B. P. Bowler; D. Wilner; J. Williams; M. Ansdell; M. Wyatt; A. Lau; M. W. Phillips; J. Fernandez; J. Gagné; E. Bubb; **B. J. Sutcliffe**; T. J. G. Wilson; B. Matthews; H. Ngo; D. Piskorz; J. R. Crepp; E. Gonzalez; A. W. Mann; G. Mace
2. *“Assessing the Impact of Space School UK”*, 2019, Proceedings of the 3rd Symposium on Space Educational Activities  
D. Robson; H. Lau; Á. O’Brien; L. Williams; **B. Sutcliffe**; H. Thiemann; L. McCaul; G. Weaver; T. Dickens
1. *“Constraining the presence of giant planets in two-belt debris disc systems with VLT/SPHERE direct imaging and dynamical arguments”*, 2018, MNRAS  
E. Matthews; S. Hinkley; A. Vigan; G. Kennedy; **B. Sutcliffe**; D. Wickenden; S. Treves; T. David; T. Meshkat; D. Mawet; F. Morales; A. Shannon; K. Stapelfeldt