I: PERSONAL DETAILS

Name (Last, First)	Groot, Paul Joseph	
Unique researcher identifier(s)	ORCID:	0000-0002-4488-726X
	Researcher-ID:	K-4391-2016
	ADS Library:	Publications_PaulGroot

Education

1999	PhD (cum laude), University of Amsterdam, NL (*Sup.* Van Paradijs & Rutten)	
1995	Master of Science, University of Amsterdam, NL	

Current Positions

2006 –	Professor of Astronomy (joint position with UCT/SAAO)	Radboud University, NL
2018 –	SARChI Chair and Professor of Astronomy (joint with Radboud) UCT/SAAO, ZA	

Previous Positions

2011	Visiting Professor	Caltech,USA
2003 – 2006	Associate Professor	Radboud University, NL
2002 – 2003	Assistant Professor	Radboud University, NL

Brief Curriculum Vitae

Career: I am professor of astronomy at Radboud University and the NRF SALT SARChI Chair in Gravitational wave astrophysics and Fast Transients at the University of Cape Town and the South African Astronomical Observatory. I obtained my PhD *Cum Laude* at the University of Amsterdam in 1999. After a stay at the Harvard-Smithsonian Center for Astrophysics as a CfA fellow I returned to the Netherlands in 2002 to co-found the Department of Astrophysics at Radboud University. I served as chair of the Department of Astrophysics from 2006 – 2016, during which the Department grew from 4 to 10 permanent staff. I was chair of the Netherlands Research School for Astronomy (NOVA) from 2012 - 2016. In this capacity I played a very active role in setting the research and instrumentation agenda for Dutch astronomy. As of 2018 I hold the SALT SARChI chair at the University of Cape Town and the South African Astronomical Observatory, funded by the South African National Research Foundation.

Research: My research is focused on compact binary systems, transients in the Universe, and gravitational wave astrophysics. I am the discoverer of optical afterglows from gamma-ray bursts, proofing their extragalactic nature (1997). I was part of the LIGO/Virgo teams that first detected gravitational waves (2015) and that found the first electromagnetic signatures of gravitational wave merger events (2017). I started with wide-field optical synoptic surveys in 1999 and with electromagnetic studies of gravitational wave sources in 2001, initially focused on low-frequency LISA sources (ultracompact binaries) and since 2012 also on higher frequency binary mergers. My interests lie in the understanding of gravitational wave source populations in the context of stellar/binary evolution and their relation to other astrophysical transients.

Instrumentation: I am an expert in astronomical instrumentation. I was Project Scientist on the VLT X-Shooter spectrograph (2002-2010) and I am Principal Investigator on both the MeerLICHT telescope (ZA, operational since 2017) and the BlackGEM array for the detection of gravitational wave counterparts (ESO La Silla, operational since 2023). I Am Principal Investigator on the Flash high-speed survey telescope, the PI on the SALT ReSAC project and interim PI on the Time Domain Telescope for ESO Next/Broadening Horizons. I am the Dutch scientific delegate on the ESO Council and I serve on the Science and Technology committee of the SALT telescope.

Teaching: At Radboud I taught 81 lecture series on 17 different topics and served as Director of Education in Physics, Mathematics and Astronomy in 2012/2013. My lectures are generally evaluated by the students to be of exceptional quality.

II: RESEARCH ACHIEVEMENTS

Research is using time-domain astronomy, large scale surveys, astronomical instrumentation and novel data reduction and analysis techniques to understand compact binaries, explosive transients and the physics of accretion.

Publication Record (16/08/25)	**ADS**	**Google Scholar**
Total number of publications:	1004	739
Total refereed publications	345	N/A
Total citations	84528	110372
h-index:	94	108

I choose to list ten different aspects of my research and main publications associated to these that highlight the achievements. First are my PhD students, who I consider to be the best achievement of my career.

[1] Twenty-one finished **PhD graduates** since 2002, most recently P. Tahina Ranaivomanana (2025) and S. De Wet (2024). Theses topics included ultracompact binaries, extragalactic transients, transient surveys, gravitational wave sources and populations and machine learning.

[2] Astronomical Instrumentation, including[1]
The BlackGEM array and MeerLICHT telescope, Groot et al., 2024, PASP 136, 5003, where I am the PI &
The X-Shooter spectrograph for the ESO-VLT, 2011 A&A 536, 105, as Project Scientist and national co-PI.

[3] Direct detections of gravitational waves and their EM counterparts, including
Abbott et al., incl. Groot; 2016; PhysRevLett 116, 061102 ; 2017 PhysRevLetters 119, 1101; 2021 A&A 649 72, as a member of the Virgo Consortium, where Radboud was the only astronomy department.

[4] The OmegaWhite survey for short-period variables, including
Macfarlane, Groot, Ramsay, Toma et al., 2015 MNRAS 454, 507; MNRAS 463, 1099; MNRAS 465, 434 ; MNRAS 470, 732; ApJ 851, 28; MNRAS 513, 468; MNRAS 513, 2215, where I was PI of the VST+Omegacam survey conducted in the Dutch GTO time. This was a precursor to the BlackGEM Fast Synoptic Survey

[5] The European Galactic Plane Surveys: IPHAS, UVEX and VPHAS+, including
Drew, Groot, et al., MNRAS 362, 753; MNRAS 399, 323; MNRAS 440, 2036 ; MNRAS 518, 3137, where I was PI on the UVEX survey and Co-PI (with Janet Drew) on IPHAS and VPHAS+ as an ESO Public Survey.

[6] The Galactic Population of LISA binaries, including
Groot, Nelemans, Steeghs, Korol, Kupfer, Van Roestel et al.; 2024 ApJ 963, 100 ; 2018 A&A 620, 141; 2018 MNRAS 480, 302 ; 2017 MNRAS 470, 1894 ; 2013 MNRAS 429; 2143; 2015 MNRAS 446, 391 (PhD supervisor and senior group member), a long standing collaboration focused on the Radboud/Warwick groups where we have developed the fields over a 20+ years collaboration.

[7] Accretion Physics onto White dwarfs, including
Groot, Scaringi, Körding et al; 2024 MNRAS 534, 3087 ; 2022, Nature 604, 447 ; 2022 MNRAS 514, L11 ; 2022, Nature Ast., 6, 98 ; 2017 Nature 552, 210; 2012 MNRAS 421, 2854 (Senior group member), where we discovered novel accretion phenomena, such as micronovae, fast magnetic gating and fourier lags in white dwarf systems that show their similarity to neutron star/black hole binaries.

[8] Machine-learning for optical data reduction at high data rates, with Stoppa; AutoSource-ID, including, 2024 A&A 692, 199 ; 2023 A&A 680, 109; 2023 A&A 680, 108; 2022 A&A 662, 109 (Senior group member), where we are tackling the challenge to speed-up and improve data reduction techniques to cope with the increase technical possibilities in cadence enable by large-format CMOS detectors.

[9] Novel optical detection techniques: Satellite Shadows and Rotational Doppler Beaming, including 2024 A&A 667, 45 ; 2012 ApJ 745 55 (Sole author), where I showed to novel observational signatures in locating and tracking satellites through stellar occultations and the special relativistic beaming effect due to the individual rotation of stars in an eclipsing binary/star+exoplanet setting.

[10] Optical Counterparts to Gamma-Ray Bursts, incl. discovery
2024 ApJ 974, 279 ; 2023 A&A 677, 32 ; 1997 Nature 386, 686 (Discoverer and later PhD Supervisor), where I was the discoverer of optical counterparts to gamma-ray bursts and where we have, more recently, used robotic low-latency multi-wavelength observations to investigate the physics of very early-time GRB shocks and afterglows.

1 *References are hyperlinks*

III: PEER RECOGNITION

Peer recognition is highlighted in the form of research awards, commissions of trust, and the role in major collaborations, entrusted to me by my direct colleagues and peers.

Fellowships and Awards

2018 –	SALT SARChI chair, NRF, ZA	laureat
2018	Beatrice Tinsley Lecturer, New Zealand Astronomical Society, NZ	laureat
2017	Erskine Fellow, University of Canterbury, NZ	laureat
2017 –	Royal Holland Academy of the Sciences (KMHW)	member
2016	Special Breakthrough Prize in Fundamental Physics	co-laureat
2016	Gruber Prize in Cosmology	co-laureat
2009 – 2014	Young Academy, Royal Netherlands Academy of Sciences (KNAW)	member
2002	EU Descartes Prize (Gamma-Ray Bursts)	co-laureat
2002	NWO VIDI award	laureat
1999 – 2002	CfA Fellowship, Harvard-Smithsonian Center for Astrophysics	laureat

Commissions of Trust

2025 –	NL delegate Council, European Southern Observatory, ESO	Delegate
2025	Review panel TOS, SET and NLP chairs HITS, Heidelberg, DE	Member
2023 – 2025	NWO Time Allocation Committee, La Palma Telescopes, NL	Chair
2020 –	Royal Holland Society of Sciences, ET Awards Committee	Member
2018 –	SALT Science & Technology Committee, ZA	Member
2018 – 2019	Virgo Steering Committee, Virgo Consortium	Member
2016 –	Supervisory Board, NSF GROWTH program (PI Kasliwal), USA	Member
2012, ‘13, ‘18	NWO VIDI Evaluation Board Exact Sciences, NL	Chair
2010	Evaluation Board NWO Free Competition Exact Sciences, NL	Member
2009 – 2014	Scientific Advisory Board, Isaac Newton Group of Telescopes, ES	Member
2006 – 2016	NOVA Board of Directors, NL	Member
2006, 2008	NWO VIDI Evaluation Board Exact Sciences, NL	Member
2008	FWO Panel, International Facilities, NL	Member
2006	NWO Stare committee, NL	NL
2002 – 2006	NOVA Instrument Steering Committee	Member

Memberships of Scientific Organisations

Astronomical Society of The Netherlands (NAC), International Astronomical Union (IAU), South African Institute of Physics (SAIP); Royal Holland Society of Sciences (KHMW), Royal Netherlands Academy of Sciences (KNAW) Young Academy (2009-2014)

Major Collaborations

2025 –	SALT ReSAC project (replacing the SALT Spherical Abberation Corrector)	PI
2024 –	Time Domain Telescope for ESO Next/Broading Horizons	Int. PI
2024 –	*Flash* wide-field CMOS-detector survey telescope (ZA)	PI
2012 –	BlackGEM Array (NL, B, UK, US, ISR, D, DK, E, CL; 17 institutions)	PI
2012 –	MeerLICHT telescope project (NL, ZA, UK; 6 institutions)	PI
2012 – 2020	OmegaWhite Survey at VST Paranal (NL, ZA, UK, US):	PI
2012 –	ThunderKAT collaboration (ZA, UK, NL, AUS)	Member
2012 –	Virgo Collaboration Gravitational wave detections (I, F, NL, Hu)	Member
2005 –	European Galactic Plane Surveys (IPHAS, UVEX, VPHAS+; UK, NL, ES)	Co-PI
2002 – 2010	X-Shooter Spectrograph ESO/VLT (I, F, DK, NL);	PS, NL-CoPI

Research Funding

Since arriving at Radboud University (2002) >10 M€ was raised in direct research funding, including PhD and postdoc funding, the X-Shooter spectrograph and the BlackGEM/MeerLICHT telescopes. As Department and NOVA Chair a further ~30 M€ in research funding for both organizations was (co-)raised. The SALT SARChI chair position includes 2.5 MZAR/annum research funding. At UCT 400 000 Rands were allocated in 2023 for a new wide-field telescope, *Flash*.

IV: ADDITIONAL INFORMATION

Supervision of PhD Students and Postdocs, *since 2002*

• 30 PhD students: **S. Macfarlane, D. Coppejans, Th. Kupfer, S. Wykes, D. Levitan, K. Verbeek, L. van Haaften, S. Toonen, R. Hijmering, G. Roelofs, E. van den Besselaar, Th. Wijnen**, *W. van Ham, T. Pijloo,* **K. Paterson**, **J. van Roestel**, **R. Ruiz-Carmona**, **V. Korol**, **S. Hernandez**, **E. Aranzana, D. Modiano,** A. Genade, J. Kersten, **P. Tahina Ranaivomanana**, **S. de Wet**, O. Mogawana, D. Egbo, *F. Yende*, M. Mlangeni, K. Hanmer (**bold** = finished, ***italic*** = unfinished, roman = ongoing); 16 male, 14 female; 20 at Radboud, 1 at Caltech, 7 at UCT/SAAO; 1 at Leiden; 1 at UvA; 16 as daily supervisor; 14 as co-supervisor, 9 on permanent positions in academia (Macfarlane: IDIA, ZA; Coppejans: Warwick; Kupfer: Hamburg; Toonen: Amsterdam; Wijnen: NOVA; Ruiz-Carmona: NoirLab; Korol: MPE; Aranzana: NOVA; Hernandez: STScI)

• 15 PDRA: **Nelemans**, Morales-Rueda, **Deacon**, **Scaringi**, **Nissanke**, **Ribeiro**, **Bloemen**, Titus, Stoppa, **Cavellaro**, **Blagorodnova**, **Laskar**, Chrimes, Johnston, Tampo (4F / 10M, **bold** = perm. positions)

Teaching activities

2002 – 2025 Radboud University
- Lecturer BSc/MSc level in 17 courses in Physics & Astronomy, including *Classical Mechanics (I&II),Optics, Galaxies, Nuclear Evolution of the Universe, Cosmology, The Solar System, Accreting Compact Objects, Stellar Evolution, Observational Astrophysics, Kaleidoscope Astronomy, Telescope Observing, Space Astronomy, Astronomical Instrumentation.*
- Lecturer Honours program (top-class @Radboud): *Birth, Life, Death of Stars* (6 years)
- General public lecturer (HOVO): *Compact Objects, Stellar Evolution, Solar System, Galaxies and Cosmology, Stellar Clusters, Cosmic Evolution, Stellar Remnants, Astronomical Instrumentation*

2017, 2021 UCT, South Africa
- MSc course: *Cataclysmic Variables (w/ Warner), Compact Binaries (w/ Buckley)*

2017 University of Canterbury, NZ
- BSc course: *Observational Astronomy (w/ Scaringi)*

Institutional Responsibilities

2020 – 2021	Acting Head of Department, Astronomy, University of Cape Town (UCT)	ZA
2012 – 2016	Chair, Board of Directors, Netherlands Research School for Astronomy (NOVA)	NL
2006 – 2016	Head of Department, Department of Astrophyiscs, Radboud University	NL
2012 – 2013	Director of Education MSc/BSc Mathematics, Physics & Astronomy, Radboud U.	NL
2006 – 2012	Member, Board of Directors, Netherlands Research School for Astronomy (NOVA)	NL
2008 – 2011	President, Astronomical Society of The Netherlands (NAC)	NL
2002	Co-founder, Department of Astrophysics, Radboud University	NL

Organisation of Meetings

2024	Kick-Off meeting, *Time Domain Telescope*, Dec 2024, The Hague, NL, 100+ partic.	Chair
2024	IAU Symposium *Gravitational Wave Astronomy*, Aug 2024, Cape Town, 300+ partic.	Chair
2020	IAU Workshop *Coordinating Time Domain Astronomy*, Feb 2020, Cape Town, ZA	SOC
2019	Copenhagen workshop on Double White dwarfs, 35 participants	SOC
2017	Dutch Astronomy Conference, Lent, NL, 250 participants	SOC
2016	Aspen Center for Physics, US, *Universal Accretion*, 20 participants	Chair
2015	Aspen Center for Physics, US, *The Dynamic Universe*, 35 participants	Chair
2014	Aspen Center for Physics, US, *Ultra-compact Binaries*, 35 participants	SOC
2006	Dutch Astronomy Conference, Kleve, D, 150+ participants	Chair
2005	Radboud University, NL, *1st AM CVn workshop*, 25 participants	Chair