

VALÉRIE VAN GROOTEL

Curriculum Vitae – July 2022

Date and place of birth 23/08/1981, Verviers (Belgium)
Work Address Space sciences, Technologies and Astrophysics Research (STAR)
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Marital Status Married, 3 children (born in 2015, 2018, and 2021)



WORK EXPERIENCE

Since Oct. 2014 **Fonds National de la Recherche Scientifique (FNRS)**, Belgium
Research Associate at Université de Liège (ULiège).
Oct. 2010-Sept. 2014 **Fonds National de la Recherche Scientifique (FNRS)**, Belgium
Postdoctoral Researcher at ULiège. Promoter: Pr. M.-A. Dupret (ULiège).
Oct. – Nov. 2011 **Kavli Institute for Theoretical Physics, University of California, Santa Barbara (USA)**
Participation to the programme “*Asteroseismology in the Space Age*”
2008 – 2010 **Centre National d’Etudes Spatiales (CNES), the French Space Agency**
Postdoctoral researcher at Astrophysics Laboratory of Toulouse
2005 – 2008 **Université de Montréal (Canada) and Université de Toulouse (France)**
PhD in Astrophysics (double degree). Supervisors: Dr S. Charpinet and Pr. G. Fontaine
2004 (10 months) **Liège Space Center (CSL), Belgium**
Junior Engineer (master studies project): “*Thermal modeling of EUV SWAP telescope onboard PROBA-2 satellite*”. Supervisor: Dr P. Rochus
2003 (2 months) **Amos S.A., Liège, Belgium**: engineer training in optics and mechanics
1997 – 2004 **Detry S.A., Aubel, Belgium**: student summer job (1 month per year)

STUDIES

Oct. 2005 – Sept. 2008 **Université de Montréal (Canada) and Université de Toulouse (France)**
• PhD in Astrophysics (double degree). Supervisors: Dr S. Charpinet and Pr. G. Fontaine
Thesis: Study of Extreme Horizontal Branch Stars by Asteroseismology
Oct. 1999 – June 2005 **ISAE - Supaéro (the French school of Aeronautics and Space), Toulouse, France**
• DEA (prerequisite master degree to PhD program) in Astrophysics, with high honors.
Ranking: 1/10
University of Liège and ISAE – Supaero, Toulouse
• Double Degree in Aerospace Engineering, with the highest honors
1993–1999 **Collège Saint-François-Xavier 1, Verviers, Belgium**

SCIENTIFIC PRIZES AND AWARDS

2018 **NASA Group Achievement Award** for the discovery of TRAPPIST-1
2015 **Université de Liège – Prix des Amis de l’ULg**
2012 **Académie Royale de Belgique – Prix Agathon de Potter, triennal 2009-2011**
For an original work in asteroseismology of evolved stars
2009 **Académie des Sciences de Toulouse – Prix Pierre Maury**
For the best PhD thesis in Space Sciences, Astronomy and Astrophysics
2005 **Senate of Belgium, Prix Odissea**
One of the 5 finalists for the best Master thesis in Space Sciences

RESEARCH TOPICS

- Evolved stars (Extreme Horizontal Branch Stars and White Dwarfs): structure, dynamics, formation and evolution through asteroseismology. Ground and space-based observations. Theoretical modeling.
- Solar-like Planet-Hosting Stars: structure and evolution through asteroseismology and stellar evolution modeling. Ground and space-based observations. Theoretical modeling, including for exoplanet studies.
- Ultracool dwarfs: structure and evolution modeling, characterization for exoplanet studies.

FUND RAISING

External funding – PI of the ESA/PRODEX “**CHEOPS Data Exploitation**”, 1/1/2020-31/12/2022, 344k€ (2 FTE postdocs: Dr L. Delrez and Dr F. Pozuelos); “**Cheops Science Development**”, 1/1/2017-31/12/2019, 375 k€ for (two FTE postdocs: Sébastien Salmon & Andrea Bonfanti), and 1/9/14-31/12/16, 95 k€ (one computer scientist: Sandrine Sohy)

- Concerted Research Action (with M. Gillon & E. Jehin) from ULiège. 800 k€ in total, 300 k€ for me for 1 PhD thesis (Catarina Silva Fernandes) and 1 postdoc (Sébastien Salmon/A. Bonfanti)
- Postdoctoral fellowships**
- CNES postdoctoral grant for “evolved stars asteroseismology with CoRoT and Kepler”, from 01.10.2008 to 30.09.2010
 - FNRS postdoctoral mandate for “structure, dynamics and evolution of stars by asteroseismology”, from 01.10.2010 to 30.09.2014

MENTORING AND TEACHING

Supervision

PhD

- Since Sep. 2020** Supervisor of the PhD thesis of Antoine Thuillier (ULiège funding, to 31/12/2021)
- Dec. 2015-May 2020** Supervisor of the PhD thesis of Catarina Silva Fernandes (CRA funding, Speculoos project) (PhD on hold because of health problems)

Postdoc

- Since 2020** Supervisor of the Postdoctoral research of Dr Francisco Pozuelos
- Jan. 2020-Apr. 2021** Supervisor of the Postdoctoral research of Dr Laetitia Delrez (now FNRS Chargé de recherches)
- 2015 – 2019** Supervisor of the Postdoctoral research of Dr Sébastien Salmon (now U. Geneva)
- 2017 – 2019** Supervisor of the Postdoctoral research of Dr Andrea Bonfanti (now U. Graz)

Master

- May – Aug. 2021** Supervisor of the Master 1 training of Niels Fardeau (Ecole Centrale de Lyon, France)
- March-June 2020** Supervisor of the Master 2 thesis of Antoine Thuillier (Master Sciences of the Universe and Spatial Technologies, Obs. Paris, France)
- May – Aug. 2019** Supervisor of the Master 1 training of Clément Panais (Ecole Centrale de Lyon, France)
- 2018 – 2019** Supervisor of the Master 2 thesis of Sébastien Faes (Master in Space Sciences at ULiège)
- 2014 – 2015** Supervisor of the Master 2 thesis of Nicolas Kindermans (Master in Space Sciences at ULiège)
- 2013 – 2014** Supervisor of the Master 2 thesis of Marie-Julie Péters (Master in Space Sciences at ULg)
- 2012 – 2013** Supervisor of the Master 2 thesis of Mathieu da Silva-Pirès (Master in Space Sciences at ULg)
- May – Aug. 2012** Supervisor of the Master 1 training of Pierre Lapouge (Ecole Centrale de Lyon, France)

Teaching

- Since 2021** **Université de Liège**
- 2019 – 2020** **Université de Liège**
- Teacher of the course “Interstellar Medium” (20h+10h) for the Master in Space Sciences
 - Teacher of the courses “The Sun & stars” (20h) and “Exoplanets” (20h) for the Master “Cosmos Exploration”
- 2012 – 2014** **Université de Liège**
- Practical Work for the course “Astrophysics” of Pr. Dupret (Bac 3, 20h/year)
- 2005 – 2010** **ENAC (the French Civil Aviation school), Toulouse, France**
- Lecturer in Aerodynamics and Aircraft Flight Mechanics (1st year in Engineering, 150h)
- 2007** **Université de Montréal, Canada**
- Assistant of Pr. St-Louis for the course “General Physics” (Bac 1, 45h)
 - Assistant of Pr. Fontaine for the course “Statistical Mechanics” (Bac 3, 30h)
- 2002 – 2004** **University of Liège**
- Assistant of Pr. Beckers for the course “External Ballistics” (Bac 2, 45h)
 - Assistant of Pr. Jeukenne for the course “Theoretical Physics” (Bac 2, 45h)

SCIENTIFIC ACTIVITIES

- Membership**
- Member of the International Astronomical Union (IAU)
 - Member of HELAS Board (European HELio and Asteroseismology network)
 - Member of the Core Science Team of CHEOPS (Characterizing Exoplanet Satellite), the first ESA small mission. One of the two scientific Co-Investigators for Belgium. Member of the Board.
 - Member of the KASC, the Kepler Asteroseismic Science Consortium and TASC, the TESS Asteroseismic Science Consortium (chair of WG 8.3)
 - Member of the SPECULOOS consortium (Search for Planets Eclipsing ULtra-cool Stars, PI M. Gillon)
 - Member of the PLATO (PLANetary Transits and Oscillations of stars) consortium
 - Member of the “Collège des Alumni” of the Royal Academy of Belgium

- Peer-review**
- Regular referee for Astronomy & Astrophysics (A&A), The Astrophysical Journal (ApJ), Monthly Notices of the Royal Astronomical Society (MNRAS), and Publications of the Astronomical Society of the Pacific (PASP).
 - Referee for ERC Starting Grant call 2017-2018
 - External evaluator for proposals submitted to ANR (Agence Nationale de la Recherche, France), DFG (Deutsche Forschungsgemeinschaft - German Research Foundation), NSC (National Science Center, Poland), and CSF (Czech Science Foundation, Czech Republic)
 - External reviewer for the PhD thesis of Holly Preece (University of Cambridge, supervisors Pr. C. Tout & Pr. S. Jeffery, defended 1.10.2019), Charlotte Gehan (Obs. Paris, supervisors E. Michel & B. Mosser, defended 21.9.2018), and Andrea Bonfanti (University of Padova, supervisor S. Ortolani, defended 14.04.2016)
 - Jury Member of the PhD thesis of Martin Farnir (ULiège, supervisor M.-A. Dupret, defended on 14.7.2021), Artem Burdanov (ULiège, supervisor M. Gillon, defended 6.9.2019), Gaël Buldgen (ULiège, supervisor M.-A. Dupret, defended 13.9.2017), Mattia Libralato (University of Padova, supervisor G. Piotto, defended 14.04.2016), and Mathieu Grosjean (ULg, supervisor M.-A. Dupret, defended 12.11.2015).
 - Jury Member for the Master thesis (ULiège) of Jakob Snoeink (2022), Mathieu Van der Donckt (2021), Adrien Houge (2020), Irène Pardo-Cantos (2019), Amandine de Spiegeleire (2019), Grégoire Verhulst (2019), Martin Farnir (2017), Nicolas Berckmans (Engineer master, 2017)

PARTICIPATION TO SCIENTIFIC CONFERENCES

Organization of international conferences

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| 13-17/06/2022 | 10th Meeting on Hot Subdwarfs and Related Objects
Chair of the SOC and of the LOC (solo organizer – almost). |
| 11-14/06/2019 | TRAPPIST-1 2019: “Towards the comparative study of temperate terrestrial worlds”
Chair of the LOC, member of the SOC |
| 10-12/9/2018 | Liège Asteroseismology workshop: “How much do we trust stellar models ?”
Member of the LOC and the SOC |
| 20-24/05/2013 | 6th Meeting on Hot Subdwarf Stars and Related Objects , Tucson, Arizona
Member of the LOC |
| 9-13/07/2012 | First Editor of the proceedings Volume, published in ASP Conference Series (April 2014)
40th Liege International Astrophysical Colloquium (LIAC) , ULg
Conference title: “ <i>Ageing low mass stars: from red giants to white dwarfs</i> ”.
Chair of the LOC and the SOC, Editor of the proceedings Volume, published in EPJ Web of Conferences (March 2013) |

Organization of consortium meetings

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| 13-15/12/2017 | CHEOPS Core Science Team meeting in Liège |
| 9-10/4/2015 | CHEOPS Core Science Team meeting in Liège |

Organization of national events

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|------------|---|
| 13/12/2019 | CHEOPS pre-launch event at Planetarium, Brussels (BELSPO event) |
| 4/2/2019 | Second workshop of the STAR Research Unit |
| 15/9/2017 | First workshop of the STAR Research Unit |

Scientific Organizing Committee (SOC) Membership

- 10th Meeting on Hot Subdwarf Stars and Related Objects, Liège (Belgium), 13-17 June 2022 (Chair)
- TRAPPIST-1 2019: Towards the comparative study of temperate terrestrial worlds, Liège, 11-14 June 2019
- 9th Meeting on Hot Subdwarf Stars and Related Objects, Hendaye (France), 24-28 June 2019
- Workshop “How much do we trust stellar models”, Liège, 10-12 September 2018
- 8th Meeting on Hot Subdwarf Stars and Related Objects, Cracow (Poland), 10-14 July 2017
- 6th Meeting on Hot Subdwarf Stars and Related Objects, Tucson (USA), 20-24/5/13
- 40th Liege International Astrophysical Colloquium, Liège, 9-13/7/12 (Chair of the SOC)

Invited talks in international conferences

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| 19-23/08/19 | Conference “Stars and their variability, observed from space”, Vienna (Austria)
Review talk on “Asteroseismology of hot subdwarf and white dwarf stars” |
| 12-16/06/17 | Conference “Current challenges in the physics of white dwarfs”, Santa Fe (USA)
Review talk on “Pulsations in white dwarf stars” |
| 22-26/09/14 | German Astronomical Society General Assembly , Bamberg (Germany)
Invited talk on asteroseismology of compact pulsators (EHB stars and white dwarfs) |
| 20-31/08/12 | International Astronomical Union General Assembly , Beijing (China) |

- Review talk on Extreme Horizontal Branch stars
- 9-13/07/12** **40th Liege International Astrophysical Colloquium**, Université de Liège
Review talk on Extreme Horizontal Branch stars
- 7-11/02/11** **Ecole de Physique des Houches**, Les Houches (France)
Invited talk at the conference “*Geophysical and Astrophysical Internal Waves*”

Invited talks declined for ecological reasons (too far travels):

- 21-25/10/19** **International Astronomical Union Symposium 357**, Hilo, Hawaii (USA)
Review talk on « White Dwarfs as probes of fundamental physics and tracers of planetary, stellar and galactic evolution »
- 3-14/08/15** **International Astronomical Union General Assembly**, Honolulu, Hawaii (USA)
Review talk on "Precision studies of the internal structure of hot subdwarfs"

Contributed talks in international conferences

More than 25 contributed talks at various international conferences since 2007.

OBSERVATIONAL ASTRONOMY

- Stays**
- 75 nights at Steward Observatory Mt Bigelow Station, University of Arizona (1.6-m telescope with no technical operator, the astronomer has to do everything by himself), Mont4k photometer, spread in 6 two-week stays from March 2007 to November 2013.
 - 4 nights on the ESO Very Large Telescope (8.2-m), Chile, FORS-2 spectrometer, in May 2008
 - 10 nights on the ESO New Technology Telescope (3.6-m), Chile, ULTRACAM and EFOSC2 instruments, in May 2010 and May 2013.
 - 12 nights on the French Bernard Lyot Telescope (2-m), NARVAL spectropolarimeter, in January and July 2009.
 - 10 nights on the French Observatoire de Haute-Provence (1.93-m) telescope, SOPHIE spectrometer, in May 2009.
- Proposals accepted**
- As PI:**
- SAAO 1m telescope, observations of Trappist-1, June-July 2016.
 - K2 observations of solar-like planet-hosting stars, starting March 2014.
 - One-year campaign at Mt Bigelow telescope on the hot B subdwarf PB5450, from August 2013 to August 2014.
 - Observations of hot B subdwarfs in spectropolarimetry, with ESPADONS at the 3.6-m Canada-France-Hawaii Telescope, from December 2009 to June 2010.
 - Observations of hot B subdwarfs in spectropolarimetry, with NARVAL at the 2.0-m Telescope Bernard Lyot, from January to December 2009.
- As Co-I:**
- Various proposals for hot subdwarfs and white dwarfs, with space missions (Kepler GO programs, MOST and CoRoT programs) and ground-based telescopes (ESO telescopes, Steward Observatory telescopes).
 - Various proposals for solar-like stars, for asteroseismology and magnetic fields.
 - Various proposals for transiting exoplanets and TRAPPIST-1 (HST, Spitzer, VLT, etc.).

SERVICES FOR THE COMMUNITY

- At ULiège**
- Vice-President of the STAR Research Unit (2016-2020)
 - Vice-President of the Collège Doctorat en Sciences Spatiales (2017-2019; 2022-)
 - Member of the ULiège “Commission Permanente Facultaire à la Recherche (CPFM)” and “Commission Permanente Facultaire Mixte (CPFR) (2016-2019 ; 2022-)
 - Member of the selection committee for hiring a “Logisticien de recherches” (2017-2018)
 - Secretary of the AGO Department council (2014-2017)
 - Member of the Scientific Advisory Committee of Centre Spatial de Liège (2014-2016)
- Outreach activities (selection)**
- General public conferences: 13/5/2019 (Verviers), 8/5/2017 (Verviers), 27/3/17 (Louvain-la-Neuve), 9/7/2016 (Euro Space Center Redu), 4/12/2015 (Liège), 7/5/2015 (Liège), 26/11/2014 (Liège), 18/11/2014 (Académie Royale de Belgique, Brussels)
 - Presentation of astrophysics studies and career in high schools: 10/5/2019 (Arlon), 27/4/2018 (Arlon), 26/3/2015 (Ganshoren Brussels)
 - Various interviews for press and television media, including 1-hr interview for La Méthode Scientifique (France Culture) in May 2022.