

Cover Page



Universiteit Leiden



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Curriculum Vitae

I was born on May 11, 1985 in Los Angeles, California (USA), but within a year of my birth my family moved to back Amsterdam (NL), where I spent my entire childhood. I attended the Buikslotermeerschool and the Barlaeus Gymnasium for primary school and high school, respectively. Without doubt, my favorite classes in high school were Physics and Art, which motivated me to pursue a degree in Architecture at Delft University of Technology in 2003. In 9 months time I reached the conclusion that my talents were wasted in Architecture and I missed the challenges that only my classes in Physics used to bring. I finally arrived in Leiden to embark upon a degree in Astronomy in 2004.

During the second year of my Astronomy bachelor course I was lucky enough to join an observing run on the Isaac Newton Telescope on La Palma, my first experience with real Astronomy. Despite my joy in the classes and coursework, I did not envision myself in the role of scientist. Preparing myself for a career in industry, with a particular interest in strategy consultancy, I took leave for a year to sit on the board of the student society *De Leidse Flesch*. Despite the many opportunities that year to talk to industry representatives about their core business and talent recruitment, I started to reconsider my ambition of working for a company with the single aim of profit. I found my love for science during my bachelor thesis, working under the supervision of Dr. Clovis Hopman on the disruption of binary stars by supermassive black holes.

During my Master in Astronomy at the Sterrewacht in Leiden, I had the opportunity to work with Prof. Paul van der Werf on the modeling of the black hole accretion disk in Centaurus A and with Dr. Henk Hoekstra on mass modeling of galaxy clusters. A highlight of my academic education was a 6 month studentship at the University of California, Berkeley, in the fall of 2009. In parallel with my participating in classes on star formation and particle physics I worked full time with astrophysicists Dr. Joanne Cohn and Prof. Martin White on mock observations of galaxy clusters using cosmological dark matter simulations.

After my Masters studies I was given the opportunity to enter the Leiden PhD program under the supervision of Dr. Rychard Bouwens, with Prof. Marijn Franx as my official promotor. My thesis work focused on observations of galaxies in the early Universe. I analyzed observations of the *Hubble Space Telescope* and the *Spitzer Space Telescope* and I observed with the Japanese *Subaru Telescope* on Mauna Kea, Hawaii (USA). I presented my work at conferences and meetings in Aix-en-Provence (France), Baltimore (USA), Bilbao (Spain), Cambridge (UK), Durham (UK), London (UK), Obergurgl (Austra) and Portsmouth (UK) and I attended the 2013 Jerusalem Winter School. I supervised master students Nicholas Rasappu and Mieke Paalvast in their Master thesis research projects. I have given public lectures to audiences from age 8 to 80 and organized the Dutch National Astronomy Olympiad in 2012.

In the next three years I will continue my career in Astronomy as a postdoctoral researcher at the Centre for Extragalactic Astronomy of Durham University (UK), working on integral field spectroscopy of distant galaxies with the European *Very Large Telescope*.

Nawoord

In the last four years I have grown as a person, astronomer and scientist. As I am writing this thesis I am more than ever aware that I could not have gotten here without the support of many people.

First of all, I want to thank the amazing organizational support structure of Leiden Observatory. The secretaries, computer group, educational, financial and scientific directors and all those people that contribute every day to make the Sterrewacht a smoothly-operated institute.

Though I was never truly part of a research group the presence of Marijn, Ivo, Adam, Shannon, Mattia, Jesse, Daniel, Caroline, Allison and Benne created an important intellectual and scientific environment for me in Leiden. From journal club to science discussion over coffee and lunch, to help and advise on thesis writing, proposal writing and the job market, it would not have been possible without your input. It is important to note that the science in this thesis could not have been possible without the software developed by Ivo Labbé and I am very grateful for his in-depth knowledge and technical expertise of the data that he was always willing to share.

I am grateful to have interacted with experienced and talented international collaborators Pascal Oesch, Garth Illingworth, Pieter van Dokkum and Valentino Gonzalez for their input on the writing of my thesis chapters.

I want to thank all members of CLASH and in particular Marc Postman and Dan Coe for their leadership of a collaboration that gave me the opportunity to interact with so many intelligent researchers from all over the world, each with a different science background and research goal.

I want to thank my former office mates Wendy, Koen and Ernst for the company over the years. Most importantly I want to thank the unofficial fourth officemate, who actually occupied the office next door: thank you so much for all the learning experiences, craziness, inspiration, energy, guidance and laughter. Could I have gone back I would not have opted for a different mentor in the world.

The years as a PhD student were for me and many before me a time of ups and downs. It was in many ways a time when I grew up - in a way that didn't quite happen as an undergraduate. I am grateful for so many people that I met during my PhD and for all the people that have had an impact on my life in a major or minor way. I do believe that all the adventures and beautiful memories helped me through the times of doubt and insecurity.

From the last four years I will always remember: a legendary beer bike trip with Shannon, Adam, Suzanne, Remco, Jayne, Edith, Rychard, Daniel, Jesse, Mattia, Rob - a weekend in Riga with Erica and Therese - Observing at Subaru with Larry Bradley - A visit in WWII history with Shannon, Adam, Suzanne, Rob - Copenhagen with Therese and Rachel - all the coffee breaks to complain about work or the lack of ice on the canals with Jesse - An icy road trip past the ancient temples and the deserts of Jordan with Mattia, Monica, Joel - Beautiful and sunny Provence with Mattia, Shannon, Rob - a Jerusalem winter school with Sarah - and the discussions on politics and feminism with Berenice.

Het eind van mijn PhD betekent ook (eindelijk?) een eind aan 10 jaar in Leiden. Ik kijk terug op mijn studententijd in Leiden en denk aan de beste huisgenootjes in de wereld: de hippe Oscar, de sterke Jelle en de leuke Pieter, maar ook bestuurs- en commissiegenootjes zoals Wendy, Marcel,

Eric en Kirsten. Oscar, ik hoop dat het altijd lukt om tijd te maken in onze drukke schema's om bij te praten en te roddelen - wie had ooit gedacht dat wij degenen zouden zijn die een PhD zouden ondernemen?!

Ik ben heel blij met de trouwe jaarclub die ik overhoud uit mijn tijd in Delft; Anne, Arjanna, Francien, Marjoleine, Matthias, Nadia, Rico en Wouter - onofficieel aangevuld door Koen en Maaïke. Arjanna, heel veel dank voor de af en toe zo essentiële zorgverlening die je zo makkelijk op je neemt, de huiskamerlezingen die inspiratie gaven en het organiseren van weekenden buitenkunst die me weghaalden uit mijn academische denkwereld. Francien, wat goed dat je me uiteindelijk toch achter mijn bureau naar het zwembad en de ijsbaan kreeg, na al die jaren zonder enige lichaamsbeweging. Ik houd het zwemmen nog steeds vol en hopelijk kan ik op een dag met je mee naar de Weissensee. Anne (mijn trotse paranimf!), ik denk met zo veel plezier terug aan onze gesprekken op vrijdagavond in Rotterdam wanneer we weer opnieuw een werkweek hadden overleefd en je me emotionele support gaf over de belangrijke zaken in het leven.

Marius, veel dank voor het persoonlijk (ver)bouwen van het huis dat ik jarenlang mijn thuis beschouwde in Rotterdam. Ik heb veel goede herinneringen aan die plek.

Sinds de kleuterschool, basisschool en middelbare school zijn Renee, Belle, Katharina en Suzan altijd mijn oude vriendinnetjes gebleven. Soms zie ik jullie met enige regelmaat, soms lange tijd niet, maar dan kom je elkaar toch weer tegen en dan is het zo fijn dat het net is alsof er geen dag voorbij is gegaan sinds we dagelijks samen naar school gingen.

Lieve mama en papa (of Dr. Bos en Prof. Dr. Smit), ik denk dat ik met zekerheid kan zeggen dat ik nooit wetenschapper in de sterrenkunde was geworden als ik niet een vader had gehad die me de liefde voor de wetenschap met de paplepel ingaf en een moeder die me altijd vertelde 's ik terug zou kunnen gaan zou ik misschien tóch natuurkunde hebben gestudeerd! Jullie zijn altijd een inspirerend en enigszins intimiderend voorbeeld geweest. En toch zijn jullie er dan altijd, zo rotsvast and onveranderd, wanneer het dak boven mijn hoofd er even niet meer is.

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My Rob, I don't think I will ever be able to explain how grateful I am that you picked me up, at a moment when I simply wasn't very happy with my life. Your warmth has made all the difference.

