

# David Vance Martin - Curriculum Vitae

from Melbourne, Australia, born 1989

[www.davidvmartin.com](http://www.davidvmartin.com)

Fourth Year PhD student at the Université de Genève, Suisse  
51 Chemin des Maillettes, Sauverny, 1290, Switzerland, david.martin@unige.ch  
Work: +41223792465, Mobile: +41789215119

## Research Interests

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- Circumbinary planets
- Celestial mechanics of multi-body systems
- Radial velocity and photometric observational surveys
- Exoplanet architectures
- Formation of close binary systems
- Tidal interactions of close binaries and hot Jupiters
- Numerical simulations
- Student development and public outreach

## Education

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### February 2013 - March 2017

Université de Genève, Switzerland  
PhD in Astrophysics

Thesis: *"Orbital Dynamics in the Analysis and Observation of Circumbinary Planets"*  
Supervisor: Prof. Stéphane Udry

### February 2008 - December 2012

Monash University, Melbourne, Australia

Bachelor of Science Advanced with Honours

Double major in mathematics, minors in physics and astronomy

Grade Point Average (GPA): 4.0/4.0

Honours mark awarded: 95%, upper first class honours

Honours thesis: *"A Modern Study of Exoplanets: Transit Timing, Misaligned Circumbinary Planets and Numerical Tools"*

Honours Supervisor: Dr. Rosemary Mardling

### January 2002 - October 2007

Caulfield Grammar School, Melbourne, Australia

High School

University entrance score: 99.45 (top 0.55% of the state by definition)

## Languages

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- English: mother tongue
- French: elementary

## Research Positions

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### November 2010 - February 2011

Monash University School of Mathematics, Melbourne, Australia  
Summer Research Scholarship

Project: Modelling the behaviour of Brownian motion on various 3D geometries.

### November 2009 - February 2010 and June 2010 - July 2010

Monash Centre for Synchrotron Science, Monash, Australia  
Summer and Winter Research Scholarships

Project: Optimising the design of a hybrid gamma ray medical imager, used to image radioactive tracers within small animals.

## Observational Experience

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- Principal Investigator of BEBOP, a radial velocity survey for circumbinary planets around eclipsing binaries
- Co-Investigator of EBLM, a radial velocity and photometric survey of M dwarfs in binary stars
- Co-Investigator of radial velocity follow-up of Kepler-16
- Observer of long-term radial velocity programs and follow-up of photometric surveys e.g. WASP, Kepler, K2, KELT and NGTS
- Swiss Euler Telescope, La Silla, Chile: four months over eight visits
- Telescopio Nazionale Galileo, La Palma, Spain: two weeks
- Observatoire de Haute-Provence, France, one week

## Academic Service

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- Referee for The Astrophysical Journal (ApJ) and Publications of the Astronomical Society of Australia (PASA)
- Organiser of introductory seminars given by new exoplanet students at Geneva
- Public outreach tour guide at Geneva Observatory, on average four times per year between 2013 and 2016.

## Awards and Scholarships

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- Monash Honours Astrophysics Award
- Monash Abroad travel scholarship.
- Monash Jubilee Honours scholarship.
- Monash University Faculty of Science Dean's List 2008, 2009, 2010 and 2011.
- Highest university physics mark: 2008 semester 2, 2009 semesters 1 and 2 and 2010 semester 1.
- Monash Engineering Excellent Award
- Synchrotron Science Vacation Scholarship

## Invited Colloquia and Seminars

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- University of Cambridge, UK, June, 2016
- Monash University, Australia, March, 2016
- Cerro Tololo Inter-American Observatory, Chile, August, 2015
- University of Geneva, Switzerland, April, 2015
- University of Toronto, Canada, February 2015
- University of Geneva, Switzerland, September, 2013

## Conference Oral Presentations

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- European Week of Space Science, Tenerife, Spain, June, 2015
- Triple Evolution & Dynamics, Haifa, Israel, May - June, 2015
- Planet-S Kick-off conference, Geneva, Switzerland, October, 2014
- Living together: planets, host stars and binaries, Litomysl, Czech Republic, September, 2014
- European Week of Space Science, Geneva, Switzerland, June - July, 2014

## Conference Poster Presentations

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- Exoplanets 1, Davos, Switzerland, July, 2016
- Second Kepler Science Conference, NASA Ames Research Center, Mountain View, USA, November, 2013
- IAU Symposium 299, Exploring the formation and evolution of planetary systems, Victoria, Canada, June, 2013

## Community Service

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- September 2008 - March 2011: Under 13's volunteer cricket coach at the Glen Waverley Cricket Club, Melbourne, Australia

## Computer Skills

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- C#
- MATLAB
- Python
- Yorick
- VB.NET
- Unity3D
- Latex

## Peer-Reviewed Publications, First Author

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- “*Circumbinary planets II - when transits come and go*,” **Martin, D. V.**, 2016, arXiv: 1611.00526, accepted at MNRAS
- “*Kozai-Lidov cycles towards the limit of circumbinary planets*,” **Martin, D. V.**, Triaud, A. H. M. J., 2016, MNRAS, 455, L46
- “*No circumbinary planets transiting the tightest Kepler binaries - a possible fingerprint of a third star*,” **Martin, D. V.**, Mazeh, T., Fabrycky, D. C., 2015, MNRAS, 453, 3554
- “*Circumbinary planets - why they are so likely to transit*,” **Martin, D. V.**, Triaud, A. H. M. J., 2015, MNRAS, 449, 781
- “*Planets transiting non-eclipsing binaries*,” **Martin, D. V.**, Triaud, A. H. M. J., 2014, A&A, 570, A91

## Peer-Reviewed Publications, Other Author

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- “*GAIA’s potential for the discovery of circumbinary planets*,” Sahlmann, J., Triaud, A. H. M. J., **Martin, D. V.**, 2015, MNRAS, 447, 287
- “*On the abundance of circumbinary planets*”, Armstrong, D. J., Osborn, H., Brown, D., Faedi, F., Gómez Maqueo Chew, Y., **Martin, D. V.**, Pollacco, D., Udry, S., 2014, MNRAS, 444, 1873
- “*Placing limits on the transit timing variations of circumbinary exoplanets*,” Armstrong, D., **Martin, D. V.**, Brown, G., Faedi, F., Gómez Maqueo Chew, Y., Mardling, R., Pollacco, D., Triaud A. H. M. J., Udry, S., 2013, MNRAS, 434, 3047-3054
- “*Towards Optimal Collimator Design for the PEDRO Hybrid Imaging System*,” Nguyen, C. V., Gillam, J. E., Brown, J. M. C., **Martin, D. V.**, Nikulin, D. A., Dimmock, M. R., 2011, IEEE Transactions on Nuclear Science, 58, 3

## Conference Proceedings

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- “*The Prospects of Finding Planets Transiting Non-Eclipsing Binaries with Kepler*.” **Martin, D. V.**, Triaud, A. H. M. J., 2015, ASP Conference Series, Vol. 496
- “*Detecting Circumbinary Exoplanets: Understanding Transit Timing*,” Armstrong, D. J., **Martin, D. V.**, Pollacco, D., 2013, IAU Symposium No. 299
- “*Hybrid-collimator design for a small animal imager: PEDRO*,” Nguyen, C. V., Brown, J. M. C., Lewis, R. A., **Martin, D. V.**, Dimmock, M. R., Nikulin, D. A., Gillam, J. E., 2010, IEEE Nuclear Science Symposium & Medical Imaging Conference, 3042