

DAVID VANCE MARTIN

Curriculum Vitae

Astronomer & Astrophysicist

Fellow of the Swiss National Science Foundation

University of Chicago · 5640 South Ellis Avenue · IL 606037 · USA

www.davidvmartin.com · davidmartin@uchicago.edu

May 2019

Research interests

Celestial mechanics	Exoplanet architectures
Multi-star systems	Tidal interactions
Circumbinary planets	Hot-Jupiter discovery and formation
Close binary formation	Numerical and hydrodynamical simulations
Radial velocity and photometric surveys	Student development and public outreach

Research positions

University of Chicago	2017 - Present
Fellow of the Swiss National Science Foundation	
Université de Genève	2017
Postdoctoral researcher in extra-solar planets	
Monash University	2010 - 2011
Research scholarship on Brownian motion on 3D topologies	
Monash Centre for Synchrotron Science	2009 - 2010
Research scholarship on optimal gamma ray medical imaging design	

Education

Université de Genève, Switzerland	2013 - 2017
PhD in Astronomy & Astrophysics	
Advisor: Prof. Stéphane Udry	
Thesis title: <i>“Orbital Dynamics in the Analysis and Observation of Circumbinary Planets”</i>	
Monash University, Australia	2012
First Class Honours in Astrophysics	
Advisor: Dr. Rosemary Mardling	
Thesis title: <i>“A Modern Study of Exoplanets: Transit Timing, Misaligned Circumbinary Planets and Numerical Tools”</i>	
Monash astrophysics award	
Monash University, Australia	2008 - 2011
Bachelor of Science Advanced	
Double major in pure mathematics	
Minors in physics and astrophysics	
GPA: 4.0/4.0	

Languages

English:	mother tongue	French:	intermediate proficiency
----------	---------------	---------	--------------------------

Telescope time awarded - 391 nights total, 60 as PI

CORALIE @ Swiss 1.2 m, La Silla, Chile	60 nights	2013 - 2017
BEBOP radial velocity survey for circumbinary planets		
Principal investigator		
HARPS @ ESO 3.6 m, La Silla, Chile	80 nights	2018 - 2020
BEBOP radial velocity survey for circumbinary planets		
SOPHIE @ French 1.9 m, OHP, France	240 nights	2018 - 2022
BEBOP radial velocity survey for circumbinary planets		
HARPS @ ESO 3.6 m, La Silla, Chile	7 nights	2017
BEBOP pilot survey of high-precision radial velocities on single-lined binaries		
CARMENES @ Spanish 3.5 m, Calar Alto, Spain	4 nights	2017 - Present
Follow-up of Kepler exoplanet discoveries		
SOPHIE @ French 1.9 m, OHP, France	8 nights	2017 - Present
Follow-up of Kepler exoplanet discoveries		
CORALIE @ Swiss 1.2 m, La Silla, Chile	35 nights	2013 - 2018
EBLM survey for low mass eclipsing binaries		

Invited colloquia, seminars and conference oral presentations

1. The Ohio State University, Columbus, USA, February 2019
2. American Astronomical Society, Seattle, USA, January 2019
3. Triple Evolution & Dynamics 2, Leiden, The Netherlands, September 2018
4. University of Geneva, Switzerland, July 2018
5. Exoplanets 2, Cambridge, UK, July 2018
6. Chicago & Northwestern exoplanet workshop, Chicago, USA, December 2017
7. Planets in binaries workshop, Bern, Switzerland, March 2017
8. University of Cambridge, UK, June, 2016
9. Monash University, Australia, March, 2016
10. Cerro Tololo Inter-American Observatory, Chile, August, 2015
11. European Week of Space Science, Tenerife, Spain, June, 2015
12. Triple Evolution & Dynamics, Haifa, Israel, May - June, 2015
13. University of Geneva, Switzerland, April, 2015
14. University of Toronto, Canada, February 2015
15. Planet-S Kick-off conference, Geneva, Switzerland, October, 2014
16. Living together: planets, host stars and binaries, Litomysl, Czech Republic, September, 2014
17. European Week of Space Science, Geneva, Switzerland, June - July, 2014
18. University of Geneva, Switzerland, September, 2013

Academic service

- Member of the TESS and PLATO circumbinary planets working groups
- 5 months on site observing at La Silla (Chile), OHP (France) and La Palma (Spain)
- Instructor and supervisor of new observers at the Swiss Telescope at La Silla
- Referee for ApJ, AJ, MNRAS, PASA, New Astron. Reviews
- Reviewer for Opticon observing proposals
- Organised introductory seminars given by new exoplanet students at Geneva
- Organised the "Planets in binaries" workshop in Bern, Switzerland in March 2017
- Geneva public outreach: observatory tour guide and school special visitor
- Chicago public outreach: Astro on Tap and senior citizen learning center presenter
- Organiser of Exoplanet Journal Club and seminars at the University of Chicago
- Guest lecturer for AST133 course at the University of Chicago

List of papers published and under review - h-index of 8

First author

1. "The BEBOP radial-velocity survey for circumbinary planets I. Eight years of CORALIE observations of 47 single-lined eclipsing binaries and abundance constraints on the masses of circumbinary planets," **Martin, D. V.**, Triaud, A. H. M. J., Udry, S., et al., A&A, 624, A68
2. "Transit Phenomena of Inclined Exomoons - Hide and Seek and an Application to Kepler-1625," **Martin, D. V.**, Fabrycky, D. C & Montet, B. T., ApJL, accepted, arXiv:1901.06366
3. "The binary mass ratios of circumbinary planet hosts," **Martin, D. V.**, MNRAS, accepted, arXiv:1904.04832
4. "Populations of planets in multiple star systems," **Martin, D. V.**, invited review chapter in Handbook of Exoplanets, arXiv:1802.08693, editors: Deeg, H, Belmonte, J. A., Batalha, N.
5. "Transit probability of precessing circumstellar planets in binaries and exomoons," **Martin, D. V.**, 2017, MNRAS, 467, 1694
6. "Circumbinary planets - II. when transits come and go," **Martin, D. V.**, 2017, MNRAS, 465, 3235
7. "Kozai-Lidov cycles towards the limit of circumbinary planets," **Martin, D. V.**, Triaud, A. H. M. J., 2016, MNRAS, 455, L46
8. "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
9. "Circumbinary planets - why they are so likely to transit," **Martin, D. V.**, Triaud, A. H. M. J., 2015, MNRAS, 449, 781
10. "Planets transiting non-eclipsing binaries," **Martin, D. V.**, Triaud, A. H. M. J., 2014, A&A, 570, A91

Other author

1. "The CORALIE survey for southern extrasolar planets XVIII. Three new massive planets and two low mass brown dwarfs at separation larger than 5 AU," Rickman, E. L., et al. incl **Martin, D. V.**, A&A, accepted, arXiv:1904.01573
2. "The EBLM Project VI. The mass and radius of five low-mass stars in F+M binaries discovered by the WASP survey," Gill, S., et al. incl **Martin, D. V.**, A&A, accepted, arXiv:1904.12695
3. "The EBLM Project V. Masses and radii of 10 fully convective, very-low-mass stars," von Boetticher, A. et al. incl **Martin, D. V.**, A&A, accepted, arXiv:1903.10808
4. "The EBLM Project IV. Spectroscopic orbits of over 100 eclipsing M dwarfs masquerading as transiting hot Jupiters," Triaud, A. H. M. J., **Martin, D. V.**, et al., 2017, A&A, 608, A129
5. "The EBLM project III. A Saturn-size low-mass star at the hydrogen-burning limit," von Boetticher, A. et al. incl **Martin, D. V.**, 2017, A&A, 604, L6
6. "GAIA's potential for the discovery of circumbinary planets," Sahlmann, J., Triaud, A. H. M. J., **Martin, D. V.**, 2015, MNRAS, 447, 287
7. "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
8. "Placing limits on the transit timing variations of circumbinary exoplanets," Armstrong, D., **Martin, D. V.**, et al., 2013, MNRAS, 434, 3047
9. "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

1. "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

2. *“Detecting Circumbinary Exoplanets: Understanding Transit Timing,”* Armstrong, D. J., **Martin, D. V.**, Pollacco, D., 2013, IAU Symposium No. 299
3. *“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