

David V. Martin

NASA SAGAN FELLOW

The Ohio State University

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Summary

Students Supervised 4 PhD · 1 Masters · 3 Undergrad · 1 Post-Bacc/Undergrad
Papers 39 total (h-index 17) · 15 first author (h-index 11) · 9 with supervised students
Observing 14 ground prog. (460+ nights) · 12 space prog. · BEBOP founder · EBLM leader
Funding \$190,000 as PI · \$360,000 total
Talks 27 invited colloquia · 20 conference talks · 30+ teaching/outreach

Employment

2021 - 2024 **NASA Sagan Fellow** The Ohio State University *Columbus, OH*
2020 - 2021 **Fellow of the Swiss National Science Foundation & Buckeye Fellow** The Ohio State University *Columbus, OH*
2017 - 2019 **Fellow of the Swiss National Science Foundation** University of Chicago *Chicago, IL*

Education

2013 - 2017 **PhD in Astronomy & Astrophysics** Université de Genève *Geneva, CH*
2012 **Honours in Astronomy** Monash University *Melbourne, AUS*
2008 - 2011 **Bachelor of Science Advanced** Monash University *Melbourne, AUS*

Students

GRADUATE

Alison Duck *Ohio State, OH*
PHD (PRIMARY ADVISOR B. SCOTT GAUDI) *2020 - 2023*

- M-dwarf fundamental parameters · Eclipsing binaries
- Duck, Martin+ (2023) · Martin, Armitage, Duck+ (2022)

Romy Rodríguez Martínez *Ohio State, OH*
PHD (PRIMARY ADVISOR B. SCOTT GAUDI) *2022 - 2023*

- White dwarfs · Flares · M-dwarfs
- Martin+ incl Rodríguez Martínez (2022) · Duck+ incl Rodríguez Martínez (2023) · Fitzmaurice, Martin, Rodríguez Martínez+ (2023) · Martin+ incl Rodríguez Martínez (2023)

Kiersten Boley *Ohio State, OH*
PHD (PRIMARY ADVISOR JI WANG) *2022 - 2023*

- Transiting exoplanets · White dwarfs
- Fitzmaurice+ incl Boley (2022)

Ritika Sethi *IISER Berthampur, India*
MASTERS · ACCEPTED TO PHD PROGRAMS FOR 2023 *2022 - 2023*

- Stellar rotation and ages · Tidal physics · Flares
- Martin+ incl Sethi (2022) · Duck+ incl Sethi (2023) · Martin, Sethi, Armitage+ (2023)

Vedad Kunovac Hodžić *Chicago, IL*
PHD (FULLBRIGHT SCHOLAR, PRIMARY ADVISOR AMAURY TRIAUD) · NOW A POSTDOC AT LOWELL OBSERVATORY *2019 - 2020*

- Spin-orbit obliquity · Exoplanet discovery/confirmation
- Kunovac Hodžić, Triaud, Martin+ (2020) · Martin, El-Badry, Kunovac Hodžić+ (2021)

UNDERGRADUATE

Tayt Armitage

UNDERGRADUATE (CO-ADVISOR ROMY RODRÍGUEZ MARTÍNEZ) · ACCEPTED TO PHD PROGRAMS FOR 2023

- Flares · M-dwarf fundamental parameters
- Martin, Armitage+ (2022) · Duck, Martin, Armitage+ (2023) · Martin, Sethi, Armitage+ (2023)

Ohio State, OH

2022 - 2023

Andrew Miller

UNDERGRADUATE (CO-ADVISOR ALEXANDER STEPHAN)

- Binary stellar evolution · Population synthesis · Gravitational wave progenitors
- Miller, Stephan & Martin (2023)

Ohio State, OH

2022 - 2023

Evan Fitzmaurice

UNDERGRADUATE/POST-BACC · NOW A PHD STUDENT AT PENN STATE

- Planet formation · Celestial mechanics · Circumbinary planets · White dwarfs
- Martin & Fitzmaurice (2022) · Fitzmaurice, Martin & Fabrycky (2022) · Fitzmaurice, Martin+ (2023)

Ohio State, OH

2020 - 2022

Hannah Parsons

UNDERGRADUATE

- Circumbinary planets · Kepler photometry

Ohio State, OH

2021

Grants

2022	EBLM M-dwarf Fundamental Parameters	TESS Cycle 5 (GO5024) · Principal Investigator	\$70,000
2021	EBLM M-dwarf Fundamental Parameters	TESS Cycle 4 (GO4157) · Principal Investigator	\$70,000
2021	Circumbinary Planets	TESS Cycle 4 (GO4058) · Collaborator (PI: Kostov)	\$70,000
2020	Circumbinary Planets	TESS Cycle 3 (GO3195) · Collaborator (PI: Kostov)	\$50,000
2019	EBLM M-dwarf Fundamental Parameters	TESS Cycle 2 (GO22253) · Principal Investigator	\$50,000

Leadership, Service & DEI

2022	Great Lakes Area Exoplanet Meeting	Lead Organiser · ~ 90 Attendees · ~ \$20,000 Budget	Ohio State
2022	51 Peg Fellowship Recruitment		Ohio State
2022 -	Hubble Fellowship Mentor		
2022 -	Diversity Journal Club	Organiser · Presenter · Moderator	Ohio State
2021 -	Diversity, Equity & Inclusion Committee	Postdoc Representative	Ohio State
2021 -	Graduate Student Admissions Interviews		Ohio State
2021 -	Exoplanet Group Meeting	Organiser · Moderator · Coordinating Visitors	Ohio State
2018 - 2019	Exoplanet Group Meeting	Organiser · Moderator · Coordinating Visitors	Chicago
2019 -	Proposal Referee	5x · FINNEST · NSF Grad Fellowship · Opticon TAC	
2017	Planets in Binaries Workshop	~ 60 attendees · Organiser (local & scientific committees)	Bern · CH
2016 -	Journal Referee	14x · Nature · ApJ · A&A · MNRAS · PASA · New Astronomy Review	
	Membership	AAS · TESS CBP Working Group · PLATO CBP Working Group · BEBOP Collaboration (founder) · EBLM Collaboration (co-leader)	

Teaching

2023	AAS Preparation Workshop	Slide design · Poster design · Networking skills	Ohio State
2022	PhD Student Presentation Workshop	Slide design · Presentation skills · Peer review	Ohio State
2022	Soft Skills Workshops	3x · Poster creation · Website building · CVs	Ohio State
2021 - 2022	AST 2825 Guest Lecturer	2x	Ohio State
2018	AST 133 Guest Lecturer		Chicago
2014 -	Telescope Operating Instructor	7 students	ESO La Silla

Observing

BEBOP (Binaries Escorted By Orbiting Planets) Founder (2013) · 4 Papers

EBLM (Eclipsing Binaries Low Mass) Leader (Since 2013) · 8 Papers

12 Space Proposals Accepted

2022 - 2023	EBLM M-dwarf Fundamental Parameters	TESS Cycle 5 (GO5024) · Principal Investigator	200 targets
2022 - 2023	M-dwarf Flare Geometry in Eclipsing Binaries	TESS Cycle 5 (GO5073) · Principal Investigator	2 targets
2022 - 2023	White Dwarfs in Binaries	TESS Cycle 5 (GO5071) · Principal Investigator	800 targets
2019 - 2023	EBLM M-dwarf Fundamental Parameters	CHEOPS GTO · Co-Investigator (PI: Pierre Maxted)	25 targets
2021 - 2022	EBLM M-dwarf Fundamental Parameters	TESS Cycle 4 (GO4157) · Principal Investigator	200 targets
2021 - 2022	Circumbinary Planets	TESS Cycle 4 (GO4058) · Collaborator	Full Frame Images
2021 - 2022	White Dwarfs in Binaries	TESS Cycle 4 (GO4209) · Principal Investigator	7,000 targets
2021 - 2022	M-dwarf Flare Phases	TESS Cycle 4 (GO4229) · Co-Investigator (PI: Emily Gilbert)	24 targets
2020 - 2021	Circumbinary Planets	TESS Cycle 3 (GO3195) · Collaborator	Full Frame Images
2020 - 2021	EBLM M-dwarf Fundamental Parameters	TESS Cycle 3 (GO3195) · Collaborator	200 targets
2020 - 2021	Planets Around Halo Stars	TESS Cycle 3 (GO3120) · Collaborator (PI: Ji Wang)	900 targets
2019 - 2020	EBLM M-dwarf Fundamental Parameters	TESS Cycle 2 (GO22253) · Principal Investigator	200 targets

14 Ground Proposals Accepted > 460 nights awarded · ~140+ Personal Observing Nights on Site · ~30 Nights Remote · 7 Students Trained

2018 - 2024	BEBOP North Large Program	SOPHIE Spectrograph (France) · Co-I (PI: Alexander Santerne)	208 nights
2023	Asteroseismology - WD Age Calibration	LBT/MODS Spectrograph (AZ) · Principal Investigator	1 night
2022 - 2023	TESS WD Planet Candidates	CHIRON Spectrograph (Chile) · Principal Investigator	6 nights
2022 - 2023	TOI-700 Habitable Zone Exoplanets	ESPRESSO Spectrograph (Chile) · Co-I (PI: Emily Gilbert)	8 nights
2020 - 2023	Non-Interacting Black Holes in Binaries	CHIRON Spectrograph (Chile) · Co-I (PI: ASAS-SN Team)	13 nights
2022	4 Candidates WD Spectroscopy	LBT/MODS Spectrograph (AZ) · Co-I (PI: Romy Rodríguez)	1 night
2021	TOI-1259 WD Spectroscopy	LBT/MODS Spectrograph (AZ) · Principal Investigator	1/2 night
2022 - 2023	BEBOP-1 First RV Discovery	ESPRESSO Spectrograph (Chile) · Co-I (PI: Matthew Standing)	8 nights
2021 - 2023	BEBOP South Large Program 3	HARPS Spectrograph (Chile) · Co-I (PI: Amaury Triaud)	78 nights
2018 - 2020	BEBOP South Large Program 2	HARPS Spectrograph (Chile) · Co-I (PI: Amaury Triaud)	54 nights
2017	Kepler-1660 Confirmation	CARMENES Spectrograph (Spain) · Co-I (PI: Hans Deeg)	4 nights
2017	BEBOP High Resolution Pilot	HARPS Spectrograph (Chile) · Co-I (PI: Amaury Triaud)	5 nights
2013 - 2019	BEBOP South Large Program 1	CORALIE Spectrograph (Chile) · Principal Investigator	60 nights
2013 - 2019	EBLM Survey	CORALIE Spectrograph (Chile) · Co-I (PI: Amaury Triaud)	20 nights

Selected Press

2022	The Future of Astronomy Starts Here - 25 Rising Stars in Astronomy		<i>Astronomy Mag.</i>
2022	Welcome to Kepler-16b, A 'Tatooine' Planet Newly Spotted From Earth	Triaud et al. (2022)	<i>Forbes Mag.</i>
2020	How's Your Internship Going? This Teen Found a Planet	Kostov et al. (2020)	<i>New York Times</i>
2017	This is the Tiniest Star Scientists Have Ever Seen	von Boetticher et al. (2017)	<i>NBC News</i>
2016	Exoplanet hunters are missing 75 per cent of two-star worlds	Martin (2017)	<i>New Scientist</i>

References

B. Scott Gaudi	Postdoc Host · gaudi.1@osu.edu	Ohio State, OH
Dan Fabrycky	Postdoc Host · fabrycky@uchicago.edu	Chicago, IL
Stéphane Udry	PhD Advisor · stephane.udry@unige.ch	Geneva, CH
Amaury Triaud	Collaborator · a.triaud@bham.ac.uk	Birmingham, UK
Rosemary Mardling	Honours Advisor · rosemary.mardling@monash.edu	Monash, AUS

INVITED COLLOQUIA (27 TOTAL)

2023	University of Hawaii	Honolulu, HI
2023	Tufts University	Boston, MA
2023	Virginia	Charlottesville, VA
2023	Southern Methodist University	Dallas, TX
2023	Michigan State University	East Lansing, MI
2023	Texas Tech University	Lubbock, TX
2023	Wayne State University	Detroit, MI
2022	University of Southern Queensland	Virtual
2022	University of New South Wales	Sydney, AUS
2022	Monash University	Melbourne, AUS
2022	Vanderbilt University	Nashville, TN
2022	Flatiron CCA	New York, NY
2022	IPAC/Caltech	Virtual
2022	Yale	Virtual
2022	Penn State University	Virtual
2021	Arizona	Virtual
2021	McGill University	Virtual
2021	University of Birmingham	Virtual
2020	The Ohio State University	Virtual
2019	The Ohio State University	Columbus, OH
2018	University of Geneva	Geneva, CH
2016	University of Cambridge	Cambridge, UK
2016	Monash University	Melbourne, AUS
2016	CTIO	La Serena, CHILE
2015	University of Geneva	Geneva, CH
2015	University of Toronto	Toronto, CAN
2013	University of Geneva	Geneva, CH

CONFERENCE TALKS (20 TOTAL)

2022	Great Lakes Area Exoplanet Meeting	Organiser	Columbus, OH
2022	CCAPP Fellow Symposium		Columbus, OH
2022	NASA Hubble Symposium		Virtual
2022	Exoplanets IV		Las Vegas, NV
2021	Great Lakes Area Exoplanet Meeting		Ann Arbor, MI
2021	CCAPP Fellow Symposium		Columbus, OH
2021	NASA Hubble Symposium		Virtual
2021	Triple Evolution & Dynamics 3		Virtual
2020	NASA Hubble Symposium		Virtual
2019	Lake Michigan Exoplanets Meeting		Chicago, IL
2019	TESS Science Conference I	Poster Award Winner	Cambridge, MA
2019	Universe of Binaries	Invited Review	Telc, CZECH
2018	Triple Evolution & Dynamics 2	Invited	Leiden, NETH
2017	Exoplanets II		Cambridge, UK
2017	Planets in Binaries	Organiser	Bern, CH
2015	European Week of Science	Invited	Tenerife, SPAIN
2015	Triple Evolution & Dynamics		Haifa, ISRAEL
2014	Planet-S Kick-off		Geneva, CH
2014	Living together: planets, hosts & binaries		Litomysl, CZECH
2014	European Week of Space Science		Geneva, CH

OUTREACH EVENTS (25 TOTAL)

2022	Suds ‘n’ Science		<i>Columbus, OH</i>
2022	Ohio State Astronomy Society		<i>Columbus, OH</i>
2020 - 2022	Ohio State Movie Night	3x	<i>Virtual</i>
2021 - 2022	Perkins Observatory	2x	<i>Delaware, OH</i>
2020	Ask an Astronomer		<i>Virtual</i>
2018 - 2019	Senior Citizen Science	2x	<i>Chicago, IL</i>
2018 - 2019	Astro on Tap	2x	<i>Chicago, IL</i>
2018	Sulzer Library		<i>Chicago, IL</i>
2016 - 2017	Geneva Elementary School	2x	<i>Geneva, CH</i>
2013 - 2017	Geneva Observatory Tour Guide	10x · Bilingual (French/English) · ages ~5-80 · Planetarium	<i>Geneva, CH</i>

Publications

39 peer reviewed papers h-index = 17

15 first author papers h-index = 11

9 supervised student papers **highlighted in pink** · 5 with student first author

1 textbook review chapter (Handbook of Exoplanets)

800+ citations 100+ max citations

All papers listed are published, accepted or under review (none are “in prep”)

SUPERVISED STUDENT FIRST AUTHOR (5 TOTAL)

True and False Unicorns: Simulated Rates of Dark Massive Companions to Bright Stars

MILLER, A · STEPHAN, A · MARTIN, D V

MNRAS (under review)

2023

The EBLM project X - Benchmark masses, radii and temperatures for two fully convective M-dwarfs using K2

DUCK, A · MARTIN, D V · GILL, S · ARMITAGE, T · RODRÍGUEZ MARTÍNEZ, R · ET AL.

MNRAS

2023

Spectroscopy of TOI-1259 - an unpolluted white dwarf companion to a transiting inflated warm Saturn

FITZMAURICE, E · MARTIN, D V · RODRÍGUEZ MARTÍNEZ, R · VALLELY, P · STEPHAN, A · BOLEY, K · ET AL.

MNRAS

2023

Sculpting the circumbinary planet size distribution through resonant interactions with companion planets

FITZMAURICE, E · MARTIN, D V · FABRYCKY, D

MNRAS

2022

The EBLM project. VII - Spin-orbit alignment for the circumbinary planet host EBLM J0608-59/TOI-1338

HODŽIĆ KUNOVAC, V · TRIAUD, A · MARTIN, D V · ET AL.

MNRAS

2020

FIRST AUTHOR (15 TOTAL)

The Benchmark M-Dwarf Eclipsing Binary CM Draconis With TESS: Spots, Flares and Ultra-Precise Parameters

MARTIN, D V · SETHI, R · ARMITAGE, T · GILBERT, G · RODRÍGUEZ MARTÍNEZ, R · GILBERT, E.

MNRAS (under review, arXiv)

2023

Revised Temperatures for Two Benchmark M-dwarfs - Outliers No More

MARTIN, D V · ARMITAGE, T · DUCK, A · SWAYNE, M · RODRÍGUEZ MARTÍNEZ, R · SETHI, R · ET AL.

MNRAS (under review, arXiv)

2022

Running the Gauntlet - Survival of Small Circumbinary Planets Migrating Through Destabilising Resonances MNRAS
MARTIN, D V · FITZMAURICE, E 2022

TOI-1259AB - a gas giant with 2.6% deep transits and a bound white dwarf companion MNRAS
MARTIN, D V · EL-BADRY, K · KUNOVAC HODŽIĆ, V · ET AL. 2021

Searching for Small Circumbinary Planets I. The STANLEY Automated Algorithm and No New Planets in Existing Systems AJ
MARTIN, D V · FABRYCKY, D 2021

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 A&A
MARTIN, D V · ET AL. 2019

Transit Phenomena of Inclined Exomoons - Hide and Seek and an Application to Kepler-1625 MNRAS
MARTIN, D V · FABRYCKY, D · MONTET, B 2019

The binary mass ratios of circumbinary planet hosts MNRAS
MARTIN, D V 2019

Populations of planets in multiple star systems *Handbook of Exoplanets*
MARTIN, D V 2018

Transit probability of precessing circumstellar planets in binaries and exomoons MNRAS
MARTIN, D V 2017

Circumbinary planets - II. When transits come and go MNRAS
MARTIN, D V 2017

Kozai-Lidov cycles towards the limit of circumbinary planets MNRAS
MARTIN, D V · TRIAUD, A 2016

No circumbinary planets transiting the tightest Kepler binaries - a possible fingerprint of a third star MNRAS
MARTIN, D V · MAZEH, T · FABRYCKY, D 2015

Circumbinary planets - why they are so likely to transit MNRAS
MARTIN, D V · TRIAUD, A 2015

Planets transiting non-eclipsing binaries A&A
MARTIN, D V · TRIAUD, A 2014

SECOND OR LATER AUTHOR (19 TOTAL)

The First Circumbinary Planet Discovered With Radial Velocities *Nature Astronomy*
STANDING, M · SAIRAM, L · MARTIN, D V · ET AL. 2023

The EBLM Project IX. Five fully convective M-dwarfs, precisely measured with CHEOPS and TESS light curves	MNRAS
SEBASTIAN, D · ET AL. (INCL MARTIN, D V)	2023
The Giraffe: Discovery of a stripped red giant in an interacting binary with a $\sim 2M_{\odot}$ lower giant	MNRAS
JAYASINGHE, T · ET AL. (INCL MARTIN, D V)	2022
BEBOP III. Observations and an independent mass measurement of Kepler-16 (AB) b - the first circumbinary planet detected in radial velocities	MNRAS
TRIAUD, A · STANDING, M · HEIDARI, N · MARTIN, D V	2022
BEBOP II. Sensitivity to sub-Saturn circumbinary planets using radial velocities	MNRAS
STANDING, M · TRIAUD, A · FARIA, J · MARTIN, D V	2022
TIC 172900988: A Transiting Circumbinary Planet Detected in One Sector of TESS Data	AJ
KOSTOV, V · ET AL. (INCL MARTIN, D V)	2021
The EBLM Project VIII. First results for M-dwarf mass, radius and effective temperature measurements using CHEOPS light curves	MNRAS
SWAYNE, M · ET AL. (INCL MARTIN, D V)	2021
A unicorn in the Monoceros: the 3 Msun dark companion to the bright, nearby red giant V723 is a non-interacting, mass-gap black hole candidate	AJ
JAYASINGHE, T · ET AL. (INCL MARTIN, D V)	2021
Multiple Transits during a Single Conjunction: Identifying Transiting Circumbinary Planetary Candidates from TESS	AJ
KOSTOV, V · ET AL. (INCL MARTIN, D V)	2021
TOI-1338: TESS' First Transiting Circumbinary Planets	AJ
KOSTOV, V · ET AL. (INCL MARTIN, D V)	2020
The EBLM Project. VI. Mass and radius of five low-mass stars in F+M binaries discovered by the WASP survey	A&A
GILL, S · ET AL. (INCL MARTIN, D V)	2019
The EBLM Project. V. Physical properties of ten fully convective, very-low-mass stars	A&A
VON BOETTICHER, A · ET AL. (INCL MARTIN, D V)	2019
The CORALIE survey for southern extrasolar planets. XVIII. 3 new massive planets and two low-mass brown dwarfs at greater than 5 AU separation	A&A
RICKMAN, E · ET AL. (INCL MARTIN, D V)	2019
The EBLM Project. IV. Spectroscopic orbits of over 100 eclipsing M dwarfs masquerading as transiting hot Jupiters	A&A
TRIAUD, A · MARTIN, D V · ET AL.	2017
The EBLM Project. III A Saturn-size low-mass star at the hydrogen-burning limit	A&A
VON BOETTICHER, A · ET AL. (INCL MARTIN, D V)	2017

Gaia's potential for the discovery of circumbinary planets

SAHLMANN, J · TRIAUD, A · **MARTIN, D V**

MNRAS

2015

On the abundance of circumbinary planets

ARMSTRONG, D · OSBORN, H · BROWN, D · FAEDI, F · GÓMEZ MAQUEO CHEW, Y · **MARTIN, D V** · ET AL.

MNRAS

2014

Placing limits on the transit timing variations of circumbinary exoplanets

ARMSTRONG, D · **MARTIN, D V** · ET AL.

MNRAS

2014

Towards Optimal Colimator Design for the PEDRO Hybrid Imager

NGUYEN, C · GILLAM, J · BROWN, J · **MARTIN, D V** · ET AL.

*IEEE Transactions on Nuclear
Science*

2011