

Mark J. Veyette

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Education	Doctor of Philosophy in Astronomy – Boston University	Expected: 2018
	Master of Arts in Astronomy – Boston University	2015
	Bachelor of Science – University of Washington Majors: Astronomy*, Physics Minor: Mathematics *Departmental Honors	2012
Research Experience	Graduate Research Assistant – Boston University Advisor: Philip Muirhead Developing empirical methods to determine chemical abundances and ages of M dwarf stars from high-resolution near-infrared spectroscopy. Developing the optical and mechanical design for NEWS, a high-resolution near-infrared spectrograph for the Discovery Channel Telescope.	2014-
	Research Assistant – MIT Kavli Institute Advisor: Roland Vanderspek Performed focus calibration and verification testing for the Transiting Exoplanet Survey Satellite camera assemblies.	2017
	Student Researcher – University of Washington Advisor: Julianne Dalcanton Identified and characterized 467 planetary nebulae in M31 from the Panchromatic Hubble Andromeda Treasury. Provided six-filter spectral energy distributions over 0.3-1.6 μm for 130 planetary nebulae.	2011-2013
	Student Researcher – University of Washington Advisor: Željko Ivezić Performed follow-up observations of SX Phoenicis stars identified in the LINEAR photometric catalog. Analyzed light curves and compared with LINEAR results.	2011-2012
Honors & Awards	NASA Keck PI Data Award (\$11,750)	2018
	Ages ² Conference Registration Fee Waiver (€300)	2017
	NASA Keck PI Data Award (\$10,850)	2017
	Massachusetts Space Grant Consortium Summer Fellowship (\$2,750)	2016
	Cool Stars 19 Best Graduate Student Poster Runner-up	2016
	Cool Stars 19 Registration Fee Waiver (\$493)	2016
	AAS International Travel Grant (\$1,400)	2016
	NASA Keck PI Data Award (\$12,500)	2016
	SETI and NASA Astrobiology Institute IAU Travel Grant (\$1,500)	2015
	AAS International Travel Grant (\$983)	2015

	BU Graduate Student Organization Travel Grant (\$500)	2015
Talks	Invited Talk – AAS #231 Special Session: Understanding Stellar Abundances in the Solar Neighborhood Using Large Online Catalogs	Jan. 2018
	Invited Seminar – Harvard-Smithsonian CfA Exoplanet Lunch	Nov. 2017
	Contributed Talk – Know Thy Star - Know Thy Planet, Pasadena, CA	Oct. 2017
Teaching, Mentoring, & Outreach	Teaching Fellow – Boston University	2013-2016
	Five semesters as a teaching assistant for undergraduate astronomy courses. Led labs and discussion sections for both physical sciences and non-science majors.	
	Mentor – Jack Lichtman, NSF REU Student	Sum. 2016
	Oversaw mechanical design of cryostat for the NEWS spectrograph.	
	Co-organizer & Photographer – The Art of Astrophysics Competition	Feb. 2016
	Mentor – Jia Ye, NSF REU Student	Sum. 2015
	Oversaw optomechanical design for the NEWS spectrograph.	
	Volunteer – Boston University Public Open Night	2014-
	Volunteer – University of Washington Public Open Night	2011-2012
Professional Service	LOC Member – Cool Stars 20	2017-2018
	Executive Secretary – NASA Program Mission Science Review Panel	
Professional Societies	American Astronomical Society	
	SPIE - The International Society for Optical Engineering	
Courses & Workshops	BU Science Instrument Facility: Mechanical Design and Machining	
	Zemax Training Course: Optical System Design Using OpticStudio	
	Dunlap Institute Summer School 2014: Intro to Astronomical Instrumentation	
Software	Languages – Python, IDL, Bash, Java, Android Mobile OS	
	Cluster Computing – BU Shared Computing Cluster at MGHPC	
	Markup Languages – HTML, CSS, LaTeX	
	Reduction/Analysis Software – IRAF/PyRAF, Source Extractor, DS9 (XPA)	
	CAD Software – SolidWorks, AutoCAD	
	Optical System Design – Zemax OpticStudio	
Telescope Time Awarded	MKO 10-meter Keck II (5 nights) – NIR spectroscopy with NIRSPEC	
	MKO 3-meter NASA IRTF (6 nights) – NIR spectroscopy with iSHELL & SpeX	
	Lowell Observatory 4.3-meter DCT (5 nights) – NIR spectroscopy with IGRINS	
	Manastash Ridge Observatory 0.8-meter (10 nights) – optical photometry	
Selected Media Appearances	<i>Searching for Life around the Stars</i> – BU Today	
	http://www.bu.edu/today/2017/m-dwarf-stars/	

Small Stars, Smaller Planets, Big Computing – MGHPCC Newsletter
<http://www.mghpcc.org/small-stars-smaller-planets-big-computing/>

TRAPPIST-1 discovery holds promise for BU astronomers – The Daily Free Press
<http://dailyfreepress.com/2017/03/02/trappist-1-discovery-holds-promise-bu-astronomers/>

**Refereed
Publications
([ADS Link](#))**

Veyette & Muirhead (2018). Chemo-kinematic ages of eccentric-planet-hosting M dwarf stars. *ApJ*, 863, 166

Veyette, + 5 co-authors (2017). A Physically Motivated and Empirically Calibrated Method to Measure the Effective Temperature, Metallicity, and Ti Abundance of M Dwarfs. *ApJ*, 851, 26

Kesseli, + 5 co-authors incl. **Veyette** (2017). An Empirical Template Library of Stellar Spectra for a Wide Range of Spectral Classes, Luminosity Classes, and Metallicities Using SDSS BOSS Spectra. *ApJS*, 230, 16

Veyette, + 3 co-authors (2016). The Physical Mechanism Behind M Dwarf Metallicity Indicators and the Role of C and O Abundances. *ApJ*, 828, 95

Dalba, + 5 co-authors incl. **Veyette** (2015). The Transit Transmission Spectrum of a Cold Gas Giant Planet. *ApJ*, 814, 154

Veyette, + 10 co-authors (2014). Panchromatic Hubble Andromeda Treasury IX: A Photometric Survey of Planetary Nebulae in M31. *ApJ*, 792, 121

Proceedings

Veyette, + 4 co-authors (2016). NEWS: the near-infrared Echelle for wideband spectroscopy. Proceedings of the SPIE, 9908, 99086M

Girardi, + 16 co-authors incl. **Veyette** (2015). TP-AGB stars in M31: Results from PHAT. ASP Conference Series, 497, 413

Muirhead, Hall, & **Veyette** (2014). HiJaK: the High-resolution J, H and K spectrometer. Proceedings of the SPIE, 9147, 91477T

**Conference
Abstracts**

Veyette, et al. (2018). Calibrating Detailed Chemical Analysis of M dwarfs. AAS Meeting Abstracts, 231, 120.03

Muirhead & **Veyette** (2018). Ages of M Dwarf Stars from their Alpha Enhancement. AAS Meeting Abstracts, 231, 120.04

Kesseli, + 4 co-authors incl. **Veyette** (2017). PyHammer: An Automatic and Visual Suite for Spectral Typing Stars. AAS Meeting Abstracts, 229, 240.35

Muirhead, + 6 co-authors incl. **Veyette** (2017). The Puzzling Atmospheres of Low-mass Stars, Brown Dwarfs and Exoplanets Revealed by the Discovery Channel Telescope. AAS Meeting Abstracts, 229, 126.07

Veyette, et al. (2016). The Physical Mechanism Behind M Dwarf Metallicity Indicators And The Role Of C and O Abundances. *Cool Stars* 19, 59

Dalba, + 5 co-authors incl. **Veyette** (2015). Saturn as a Transiting Exoplanet.

AAS/Division for Planetary Sciences Meeting Abstracts, 47, 504.01

Veyette, et al. (2015). Testing the origin of compact exoplanetary systems around M dwarfs. IAU General Assembly, 22, 57462

Veyette, et al. (2015). Accurate Alpha Abundance and C/O of Low-mass Stars. AAS Meeting Abstracts, 225, B8.11

Veyette, et al. (2012). The LINEAR Photometric Database: Time Domain Information for SDSS Objects. AAS Meeting Abstracts, 219, 348.19