

## Dr Johanna M. Vos

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Postdoctoral Fellow  
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<b>Current Position</b>	American Museum of Natural History <i>Postdoctoral Fellow</i>	2018 – Present
<b>Education</b>	Institute for Astronomy, University of Edinburgh <i>PhD in Astronomy</i> Thesis: “Characterising Weather and Rotation on Substellar Worlds” Advisor: Dr Beth A. Biller	2014-2018
	Trinity College Dublin <i>BA (Mod) Physics with Astrophysics</i> Graduated with First Class Honours	2010-2014
<b>Research Interests</b>	Atmospheres of brown dwarf and giant exoplanets Cloud-driven variability Young brown dwarfs as exoplanet analogs	
<b>Awards</b>	Cool Stars Travel Grant <i>August 2018</i> Principal’s Go Abroad Fund <i>University of Edinburgh, June 2018</i> Exoclipse Travel Grant <i>August 2017</i> Principal’s Career Development Scholarship <i>University of Edinburgh, 2014–2018</i> First-Class Book Prize <i>Trinity College Dublin, 2011, 2012, 2013</i>	
<b>Telescope Time Awarded</b>	A case study for JWST: Disentangling auroral and cloud variability in early L dwarfs <i>Hubble Space Telescope (16 orbits) &amp; Very Large Array (27.6 hr), <b>PI</b>.</i>	2019
	Spatial Cloud Map of a Planetary-Mass Companion <i>Spitzer Space Telescope Director’s Discretionary Time, 33.1 hr, <b>PI</b>.</i>	2019
	Weather and Rotation of Young Brown Dwarfs <i>Spitzer Space Telescope Medium Program, 70 hr, <b>PI</b></i>	2018
	Rotational Velocities of Exoplanet Analogs <i>NASA Gemini/GNIRS and IRTF/iSHELL program, 10 nights, <b>PI</b></i>	2016-2018
	Wind Speeds on Extrasolar Worlds <i>Spitzer Space Telescope (30.8 hr) &amp; Very Large Array (33 hr), Co-I</i>	2016-2018
	Exometeorology: Characterising Weather on a Young, Free-Floating Planet <i>Hubble Space Telescope (5 orbits) &amp; Spitzer Space Telescope (17.6 hr), Co-I</i>	2016
	The First Search for Exoplanet Weather <i>ESO New Technology Telescope, 29 nights, <b>PI</b></i>	2014-2017

<b>Presentations</b>	Probing the Turbulent Atmospheres of Substellar Worlds <i>Seminar, Dublin Institute for Advanced Studies, Ireland.</i>	2019
	Variability on Young Brown Dwarfs <i>Contributed Talk, Other Worlds Laboratory, UC Santa Cruz, CA, USA</i>	2019
	Weather and Rotation on Substellar Worlds <i>Seminar, American Museum of Natural History, NY, USA</i>	2019
	Detecting Weather Patterns on Low-Gravity Brown Dwarfs <i>Oral Presentation, AAS 233, Seattle, WA, USA</i>	2019
	Weather Patterns on Exoplanet Analogs <i>Plenary Talk, Cool Stars 20, Boston, MA, USA</i>	2018
	The Viewing Angle of Exoplanet Analogues Influences Their Observed Colours and Amplitudes <i>Contributed Talk, Exoclipe, Boise, ID, USA</i>	2017
	Testing the Effect of Viewing Angle on the Observed Properties of Brown Dwarfs and Exoplanet Analogues <i>Contributed Talk, Scottish Exoplanet and Brown Dwarf Meeting, University of Edinburgh, UK</i>	2017
	The First Search for Weather Patterns on Exoplanet Analogues <i>Invited Talk, European Southern Observatories, Santiago, Chile</i>	2017
	The First Search for Exoplanet Weather <i>Poster, UK Exoplanet Meeting, University of Exeter, UK</i> <i>Poster, Cool Stars 19, Uppsala University, Sweden</i>	2016
	The First Search for Exoplanet Weather <i>Contributed Talk, Scottish Exoplanet and Brown Dwarf Meeting, St Andrews, UK</i>	2015
<b>Workshops Attended</b>	Other Worlds Laboratory <i>University of California, Santa Cruz, July 2019</i>	
	Multi-Dimensional Characterization of Distant Worlds <i>University of Michigan, October 2018</i>	
<b>Teaching Experience</b>	<b>Student Research Mentoring Program, AMNH</b> <i>Mentor</i>	2018-Present
	<b>After School Program, AMNH</b> <i>Instructor</i>	2019-Present
	<b>University of Edinburgh</b> <i>Teaching Assistant</i>	2014-2018 2014-2015
	Maths for Physics	
	Introductory Astrophysics	
	<i>Head Teaching Assistant</i> Physics Experimental Lab Observational Astronomy Lab	2015-2018

<b>Service</b>	<i>Time Allocation Committee Member</i> NASA	2019
	<i>Referee</i> The Astrophysical Journal	2018
	<i>Astrophysics Seminar Organizer</i> American Museum of Natural History	2018-present
	<i>Astronomy Representative</i> Postgraduate Forum, The University of Edinburgh	2017-2018
	<i>Astronomy Postgraduate Committee Member</i> The University of Edinburgh	2015-2016
<b>Selected Outreach Activities</b>	Westport Astronomical Society <i>Speaker</i> , “The Brown Dwarf - Exoplanet Connection”	2019
	BridgeUP: STEM <i>Speaker</i> , “Weather and Rotation on Extrasolar Worlds”	2019
	StemEast, UK & Ireland <i>STEM Ambassador</i>	2014-2018
	Royal Observatory of Edinburgh Winter Talk Series <i>Speaker</i> , “The Exoplanet-Brown Dwarf Connection”	2018
	Women are Boring <i>Contributor</i> , “Searching for Weather Patterns on Free-Floating Worlds”	2018
	Pint of Science Festival <i>Speaker</i> , “Whatever the Weather”	2017
	Edinburgh University Science Magazine <i>Contributor</i> , “Fingerprints From the Birth of the Universe”	2017
	Kickstart Summer Programme <i>Workshop Leader</i>	2015-2016
	Edinburgh International Science Festival <i>Event Assistant</i>	2015
<b>Refereed Publications</b>	<b>Johanna M. Vos</b> , Beth A. Biller, Mariangela Bonavita, Simon Eriksson, Michael C. Liu, William M. J. Best, Stanimir Metchev, Jacqueline Radigan, Katelyn N. Allers, Markus Janson, Esther Buenzli, Trent J. Dupuy, Mickaël Bonnefoy, Elena Manjavacas, Wolfgang Brandner, Ian Crossfield, and Joshua Schlieder. “ <i>A Search for Variability in Exoplanet Analogues and Low-Gravity Brown Dwarfs.</i> ” <i>Monthly Notices of the Royal Astronomical Society</i> , 483:480-502, 2019.	
	<b>Johanna M. Vos</b> , Katelyn N. Allers, Beth A. Biller, Michael C. Liu, Trent J. Dupuy, Jack F. Gallimore, Iyadunni J. Adenuga, and William M. J. Best. “ <i>Variability of the lowest mass objects in the AB Doradus moving group.</i> ” <i>Monthly Notices of the Royal Astronomical Society</i> , 474(1):10411053, 2018.	
	Beth A. Biller, <b>Johanna M. Vos</b> , Esther Buenzli, Katelyn Allers, Mickaël Bonnefoy, Benjamin Charnay, Bruno Bézard, France Allard, Derek Homeier, Mariangela Bonavita, Wolfgang Brandner, Ian Crossfield, Trent Dupuy, Thomas Henning, Taisiya Kopytova, Michael C. Liu, Elena Manjavacas, and Joshua Schlieder. “ <i>Simultaneous</i>	

*Multiwavelength Variability Characterization of the Free-floating Planetary-mass Object PSO J318.5–22.* *The Astronomical Journal*, 155(2):95, 2018.

**Johanna M. Vos**, Katelyn N. Allers, and Beth A. Biller. “*The Viewing Geometry of Brown Dwarfs Influences Their Observed Colors and Variability Amplitudes.*” *The Astrophysical Journal*, 842(2):78, 2017.

Beth A. Biller, **Johanna M. Vos**, Mariangela Bonavita, Esther Buenzli, Claire Baxter, Ian J.M. Crossfield, Katelyn Allers, Michael C. Liu, Mickaël Bonnefoy, Niall Deacon, Wolfgang Brandner, Joshua E. Schlieder, Trent Dupuy, Taisiya Kopytova, Elena Manjavacas, France Allard, Derek Homeier, and Thomas Henning. “*Variability in a young, L/T transition planetary-mass object.*” *Astrophysical Journal Letters*, 813(2):16, 2015.

#### **Selected White Papers**

**Johanna M. Vos**, Katelyn Allers, Daniel Apai, Beth Biller, Adam Burgasser, Jacqueline Faherty, Jonathan Gagné, Christiane Helling, Caroline Morley, Jacqueline Radigan, Adam Showman, Xianyu Tan, Pascal Tremblin. “*Astro2020 Science White Paper: The L/T Transition*”, 2019.

Daniel Apai, Beth Biller, Adam Burgasser, Julien Girard, John E. Gizis, Theodora Karalidi, Adam L. Kraus, Ben W. P. Lew, Elena Manjavacas, Mark Marley, Paulo A. Miles-Paez, Caroline V. Morley, Jacqueline Radigan, **Johanna M. Vos**, Yifan Zhou. “*Astro2020 Science White Paper: Mapping Ultracool Atmospheres: Time-domain Observations of Brown Dwarfs and Exoplanets*”, 2019.

Adam Burgasser, Daniel Apai, Daniella Bardalez Gagliuffi, Cullen Blake, Jonathan Gagné, Quinn Konapacky, Emily Martin, Stanimir Metchev, Peter Plavchan, Ansgar Reiners, Everett Schlawin, Clara Sousa-Silva, **Johanna M. Vos**. “*Astro2020 Science White Paper: High-Resolution Spectroscopic Surveys of Ultracool Dwarf Stars & Brown Dwarfs*”, 2019.

Jacqueline Faherty, Katelyn Allers, Daniella Bardalez Gagliuffi, Adam Burgasser, Jonathan Gagné, John Gizis, J. Davy Kirkpatrick, Adric Riedel, Adam Schneider, **Johanna M. Vos**. “*Astro2020 Science White Paper: Brown Dwarfs and Directly Imaged Exoplanets in Young Associations*”, 2019.