

Dr Johanna M. Vos

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Education and Training	Institute for Astronomy, University of Edinburgh, UK <i>PhD in Astronomy</i> Thesis: “Characterising Weather and Rotation on Substellar Worlds” Advisor: Dr Beth A. Biller	2014-2018
	Trinity College Dublin, Ireland <i>BA (Mod) Physics with Astrophysics</i> Graduated with First Class Honours	2010-2014
Professional Appointments	American Museum of Natural History <i>Postdoctoral Fellow</i>	2018 – Present
Research Support Grants & Awards	Hubble Space Telescope General Observer Grant, <i>STSci</i>	2019
	Cool Stars Travel Grant,	2018
	Principal’s Go Abroad Fund, <i>University of Edinburgh</i>	2018
	Exoclipse Travel Grant	2017
	Principal’s Career Development Scholarship, <i>University of Edinburgh</i>	2014
	First-Class Book Prize, <i>Trinity College Dublin</i>	2011, 2012, 2013
Selected Telescope Time	A case study for JWST: Disentangling auroral and cloud variability in early L dwarfs <i>Hubble Space Telescope (16 orbits) & Very Large Array (27.6 hr), PI</i>	2019
	Mapping Atmospheric Structures in Brown Dwarfs <i>Gemini/IGRINS, 20.2 hr, PI</i>	2019
	Spatial Cloud Map of a Planetary-Mass Companion <i>Spitzer Space Telescope Director’s Discretionary Time, 33.1 hr, PI</i>	2019
	Weather and Rotation of Young Brown Dwarfs <i>Spitzer Space Telescope Medium Program, 70 hr, PI</i>	2018
	Rotational Velocities of Exoplanet Analogs <i>NASA Gemini/GNIRS and IRTF/iSHELL program, 10 nights, PI</i>	2016-2018
	Wind Speeds on Extrasolar Worlds <i>Spitzer Space Telescope (30.8 hr) & 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) & Spitzer Space Telescope (17.6 hr), Co-I</i>	2016
	The First Search for Exoplanet Weather <i>ESO New Technology Telescope, 29 nights, PI</i>	2014-2017

Selected Invited / Conference Talks	Characterising Cool Atmospheres with Variability Monitoring <i>Seminar, NASA/Goddard Space Flight Center, MD, USA</i>	2020
	Young L Dwarf Variability in the Mid-IR <i>Contributed talk, American Astronomical Society Meeting 235, Honolulu, HI, USA</i>	2020
	Probing the Turbulent Atmospheres of Young Giant Planet Analogs <i>Invited Talk, BDEXOCN, University of Delaware, USA</i>	2019
	Weather and Rotation on 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>Dissertation Talk, American Astronomical Society Meeting 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
Teaching & Mentoring	NSF Research Experiences for Undergraduates (REU), AMNH <i>Advised: Allison McCarthy (University of Alabama)</i> <i>Co-advised: Afra Ashraf (Barnard College) and Claire Mechman (Lehman College)</i>	2019
	Science Research Mentoring Program, AMNH <i>Research mentor for three high-school students each year</i>	2019-Present
	After School Program, AMNH <i>Astronomy Instructor</i>	2019-Present
	University of Edinburgh <i>Head Teaching Assistant</i>	2014-2018
	Maths for Physics, Introductory Astrophysics, Physics Experimental Lab, Observational Astronomy Lab	
Refereed Publications	1. Allers, K. N.; Vos, J. M. ; Biller, B. A.; Williams, P. K.G. “ <i>The First Measurement of Windspeed on a Brown Dwarf.</i> ” under review, Science, 2019.	
	2. Vos, J. M. ; Biller, B. A.; Allers, K. N.; Faherty, J. K.; Liu, Michael C.; Eriksson, S.; Best, W. M. J.; Metchev, S.; Radigan, J.; Allers, K. N.; Janson, M.; Buenzli, E.; Dupuy, T. J.; Bonnefoy, M.; Manjavacas, E.; Brandner, W.; Crossfield, I.; Deacon, N.; Henning, T.; Homeier, D.; Schlieder, J. “ <i>Spitzer Variability Properties of Young Giant Planet Analogs</i> ” in prep.	

3. **Vos, J. M.**; Biller, B. A.; Bonavita, M.; Eriksson, S.; Liu, Michael C.; Best, W. M. J.; Metchev, S.; Radigan, J.; Allers, K. N.; Janson, M.; Buenzli, E.; Dupuy, T. J.; Bonnefoy, M.; Manjavacas, E.; Brandner, W.; Crossfield, I.; Deacon, N.; Henning, T.; Homeier, D.; Kopytova, T. Schlieder, J. “*A Search for Variability in Exoplanet Analogues and Low-Gravity Brown Dwarfs.*” *Monthly Notices of the Royal Astronomical Society*, 483:480-502, 2019.
4. **Vos, J. M.**; Allers, K. N.; Biller, B. A.; Liu, M. C.; Dupuy, T. J.; Gallimore, J. F.; Adenuga, I. J.; Best, W. M. J. “*Variability of the lowest mass objects in the AB Doradus moving group.*” *Monthly Notices of the Royal Astronomical Society*, 474(1):10411053, 2018.
5. Biller, B. A.; **Vos, J. M.**; Buenzli, E.; Allers, K.; Bonnefoy, M.; Charnay, B.; Bézard, B.; Allard, F.; Homeier, D.; Bonavita, M.; Brandner, W.; Crossfield, I.; Dupuy, T.; Henning, T.; Kopytova, T.; Liu, M. C.; Manjavacas, E.; Schlieder, J. “*Simultaneous Multiwavelength Variability Characterization of the Free-floating Planetary-mass Object PSO J318.5–22.*” *The Astronomical Journal*, 155(2):95, 2018.
6. **Vos, J. M.**; Allers, K. N.; Biller, B. A. “*The Viewing Geometry of Brown Dwarfs Influences Their Observed Colors and Variability Amplitudes.*” *The Astrophysical Journal*, 842(2):78, 2017.
7. Biller, B. A.; **Vos, J. M.**; Bonavita, M.; Buenzli, E.; Baxter, C.; Crossfield, I. J. M.; Allers, K.; Liu, M. C.; Bonnefoy, M.; Deacon, N.; Brandner, W.; Schlieder, J. E.; Dupuy, T.; Kopytova, T.; Manjavacas, E.; Allard, F.; Homeier, D.; Henning, T. “*Variability in a young, L/T transition planetary-mass object.*” *Astrophysical Journal Letters*, 813(2):16, 2015.

**Selected White
Papers &
Research Notes**

1. **Vos, J. M.**; Allers, K.; Apai, D.; Biller, B.; Burgasser, A. J.; Faherty, J.; Gagne, J.; Helling, C.; Morley, C.; Radigan, J.; Showman, A.; Tan, .; Tremblin, P. “*Astro2020 Science White Paper: The L/T Transition*”, *Bulletins of the American Astronomical Society*, 2019.
2. Williams, P. K. G.; Allers, K. N.; Biller, B. A.; **Vos, J. M.** “*A Tool and Workflow for Radio Astronomical Peeling in CASA*” *Research Notes of the American Astronomical Society*, 3, 110, 2019.
3. Apai, D.; Biller, B.; Burgasser, A.; Girard, J. H.; Gizis, J. E.; Karalidi, T.; Kraus, Ad. L.; Lew, B. W. P.; Manjavacas, E.; Marley, M.; Miles-Paez, P. A.; Morley, C. V.; Radigan, J.; **Vos, J. M.**; Zhou, Y. “*Astro2020 Science White Paper: Mapping Ultracool Atmospheres: Time-domain Observations of Brown Dwarfs and Exoplanets*”, 2019.
4. Faherty, J.; Allers, Katelyn; Bardalez Gagliuffi, D.; Burgasser, A. J.; Gagne, J.; Gizis, J.; Kirkpatrick, J. D.; Riedel, A.; Schneider, A.; **Vos, J. M.** “*Astro2020 Science White Paper: Brown Dwarfs and Directly Imaged Exoplanets in Young Associations*”, 2019.