

LISA DANG, Ph.D.

BANTING SCHOLAR | ASTROPHYSICIST

CONTACT DETAILS

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Canadian Nationality
FR/EN proficiency

RESEARCH INTERESTS

Atmospheric Characterization: infrared astronomy, exoplanet mapping, Hot Jupiters and USP, space-based observations, detector systematics characterization

Planetary Gravitational Microlensing: detector systematics characterization, exoplanets demographics

PROFESSIONAL APPOINTMENT

2022 - 2024 Banting Postdoctoral Scholar, Université de Montréal
2016 - 2022 Graduate Researcher at McGill University, Montreal
2017 Visiting Graduate Researcher Fellow at Caltech/IPAC, Pasadena
2015 Research Assistant, Leiden University, Netherlands
2011 - 2015 Sales Associates, American Eagle Outfitters, Montreal

EDUCATION

2022 PhD in Physics, McGill University, Montreal
Advisor: Nicolas Cowan
Fast-tracked to PhD in 2018 from masters degree
2016 B.Sc, Honours Physics, McGill University, Montreal
Thesis Advisor: Andrew Cumming

SELECTED AWARDS & RECOGNITIONS

2024 - 2025 Trottier Postdoctoral Fellowship, Institut de Recherche sur les Exoplanètes (\$70k)
2022 - 2024 Banting Postdoctoral Fellowship, NSERC (\$140k)
2021 - 2022 Canada Graduate Scholarships - Doctoral, NSERC (\$35k/yr)
2019 - 2021 Post-Graduate Scholarships - Doctoral, NSERC (\$21K/yr)
2019 Principal Prize for Public Engagement (Special Recognition), McGill University
2018 - 2022 PhD Trainee Fellowship, Technologies in Exo-Planetary Sciences (\$10k/yr)
2018 Mary Louise Taylor Award, Department of Physics, McGill University (\$12k)
2018 Relève Étoile Louis-Berlinguet Award, Fonds de Recherche du Québec (\$1k)
2017 Visiting Graduate Research Fellowship, California Institute of Technology (\$18k)

PUBLICATIONS

1st-2nd AUTHOR

Revisiting the Iconic Spitzer Phase Curve of 55 Cancri e: Hotter Dayside, Cooler Nightside and Smaller Phase Offset

Mercier S., Dang L., et al. submitted

Thermal Phase Curves of XO-3b: an Eccentric Hot Jupiter at the Deuterium Burning Limit

Dang L., Bell T. J., Cowan N. B., et al. 2022, *AJ*, in press

A Comprehensive Reanalysis of Spitzer's 4.5 μ m Phase Curves and the Phase Variation of the Ultra-Hot Jupiters MASCARA-1b and KELT-16b

Bell T. J., Dang L., Cowan N. B., et al., 2021, *MNRAS*, 504, 3316-3337

Pixel Level Decorrelation in Service of the Microlensing Parallax Spitzer Campaign

Dang L., Calchi Novati S., Carey S., et al., 2020, *MNRAS*, 497, 5309-5317

Detection of a Westward Hotspot Offset in the Atmosphere of a Hot Gas Giant CoRoT-2b

Dang L., Cowan N. B., Schwartz, J. C., et al., 2018, *Nature Astronomy*, 2, 220

How Astronomer View Education and Public Outreach

Dang L., Russo P., 2015, *Communicating Astronomy with the Public Journal*, 18, 16

Nth AUTHOR

ATOCA: an algorithm to treat order contamination. Application to the NIRISS SOSS mode

Darveau-Bernier, A., Albert, L., Talens, G. J., et al., submitted

Hot Jupiter Population Trends: A New Analysis of 8 Spitzer Phase Curves: QATAR-1b, QATAR-2b, WASP-52b, WASP-34b, and WASP-140b

May E., Stevenson K., Bean, J., et al., 2022, *AJ*, 163, 6, 18

K2 and Spitzer phase curves of the rocky ultra-short-period planet K2-141 b hint at a tenuous rock vapor atmosphere

Zieba S., Zilinskas M., Kreidberg L., et al., *A&A*, accepted

Smaller than Expected Bright-spot Offsets in Spitzer Phase Curves of the Hot Jupiter Qatar-1b

Keating D., Stevenson K., Cowan, N. B., et al., 2020, *AJ*, 159, 225

Evidence for H₂ Dissociation and Recombination Heat Transport in the Atmosphere of KELT-9b

Mansfield M., Bean J., Stevenson, K., 2020, *ApJL*, 888, L15

Mass loss from the exoplanet WASP-12b inferred from Spitzer phase curves

Bell T. J., Zhang M., Cubillos P., et al., 2019, *MNRAS*, 489, 1995-2003

Uniformly Hot Nightside Temperature on Short-Period Gas Giants

Keating D. Cowan, N. B, Dang, L., 2019, *Nature Astronomy*, 3, 1092-1098

Non-Refereed

Exoplanet instrumentation in the 2020s: Canada's pathway towards searching for life on potential- ly Earth-like exoplanets

Benneke B., Cowan N. B., et al., 2019, *Canadian Long Range Plan for Astronomy and Astrophysics White Papers*, 2020, 65

What do you think of Public Outreach in Astronomy?

Dang L., Russo P., Entradas M., 2015, *KAI'ALELEIAKA: Newspaper of the IAU XXIX General Assembly*

SCIENTIFIC AND PUBLIC TALKS

Selected Invited Talks, Seminars and Lunch Talks

2021	University of Toronto Astro-ph, Toronto, Ontario
2021	University of Washington Astrophysics Series, Virtually in Seattle, WA (<i>invited</i>)
2021	University of Michigan Stars & Planets Seminar, Ann Arbor, MI (<i>invited</i>)
2021	Harvard CfA Seminar, Virtually in Cambridge, MA (<i>invited</i>)
2021	Leiden Observatory Lunch Talk, Virtually in Leiden, Netherlands
2021	Ohio State University Exoplanets Talk Series, Virtually in Columbus, OH
2021	Caltech IPAC Seminar, Virtually in Pasadena, CA (<i>invited</i>)
2020	NASA JPL Astrophysics Seminar, Pasadena, CA (<i>invited</i>)
2018	Institut de Recherche sur les Exoplanètes Annual Meeting, Montreal, QC (<i>invited</i>)

Selected Contributed Talks

2022	240th AAS Meeting, Pasadena, California
2022	Consortium on Habitability and Atmospheres of M-dwarf Planets ECR Highlight, Online
2021	Ariel Mission Consortium, Online
2021	237th AAS Meeting, Online
2020	236 AAS Meeting, Online
2019	Canadian Astronomical Society, Montreal, CA
2019	Technologies in Exo-Planetary Sciences, York University, Toronto, CA
2019	Centre de Research en Astrophysics du Quebec, St-Alexis-des-Monts, CA
2018	Women in Physics Canada Conference, Universite de Sherbrooke, CA
2018	Technologies in Exo-Planetary Sciences, UBC, Vancouver, CA
2017	Greater IPAC Science Symposium, Caltech, Pasadena, California

Selected Public Talks

2022	International Day of Women and Girls in Science, NSERC, virtual
2022	Panel Parlons-Lunaire, Let's Talk Science & Canadian Space Agency, virtual
2022	NASA's Universe of Learning Science Briefing, NASA, virtual
2021	An Evening with Webb Panel, McGill Space Institute and iREx, virtual
2020	Sun and Science: Why Physics Matters?, McGill University, virtual
2020	Celebrating the Legacy of the Spitzer Space Telescope, Dawson College, MTL, QC
2019	Fantastic Planets and Where to Find Them, Vanier College, Montreal, QC
2019	La Chasse aux MACHOS, Astrolab, Mont-Megantic, QC
2019	STEM Support Group Panelist, McGill University, Montreal, QC
2018	Exoplanet Hunting 101, Marianopolis College, Montreal, QC
2018	Les petits MACHOs: à la recherche de planètes invisibles, Astronomie en Fût, MTL, QC

SUCCESSFUL OBSERVING PROPOSALS & GRANTS

2021	Mapping of the Surface and Atmosphere of a Lava Planet Canadian Space Agency JWST Cycle 1 Funding (\$30K) PI: L. Dang
2021	A Hell of a Phase Curve: Mapping the Surface and Atmosphere of a Lava Planet James Webb Space Telescope, 24.9 hours, PI: L. Dang
2021	Inside out: detecting a rock vapor atmosphere on the lava world TOI-2431 b Hubble Space Telescope, 11 orbits, PI: S. Quinn, Co-I include L. Dang
2021	Real Time Exoplanet Meteorology James Webb Space Telescope, 25 hours, PI: J. Sikora Co-I includes L. Dang
2021	Roasting Marshmallows: Disentangling Composition & Climate in Hot Jupiter Gemini Observatory, 14.5 hrs, PI: M. Line, Co-I L. Dang
2020	The Life and Death of Ultra-Hot Jupiters WASP-12b Hubble Space Telescope, 44 orbits, PI: T. J. Bell, Co-I includes L. Dang
2018	A Test of the Fundamental Physics Underlying Exoplanet Climate Models Spitzer Space Telescope, 44.2 hours, PI. T. Beatty, Co-I includes L. Dang
2018	Revealing Fact or Fiction in Spitzer Exoplanet Phase Curve Trends Spitzer Space Telescope, 620 hours, PI. J. Bean, Co-I includes L. Dang

STUDENT RESEARCH ADVISING

2022	Tarik Bouchoutrouch-Ku (undergraduate) - McGill University High Precision Photometry for Spitzer Microlensing
2021 - 2022	Samson Mercier (undergraduate) - McGill University Re-analysis of the Spitzer/IRAC Phase Curve of 55 Cnc e
2021	Alex Gass (undergraduate) - McGill University Re-analysis of the Spitzer/IRAC Phase Curve of 55 Cnc e
2016	Sudarsan Sundararajan (undergraduate) - Google Summer of Code High-Precision Photometry with the Spitzer Space Telescope

SERVICES & COMMITTEES

2020 - 2021	VP Professional Development, McGill Graduate Association of Physics Stud.
2020 - 2021	Referee, Astronomical Journal, MNRAS
2016 - 2020	Co-Founder and Organizer, McGill Physics Hackathon
2018 - 2019	Conference LOC Member, Women in Physics Canada Conference
2016	LOC Volunteer, Exoclimes IV

TEACHING ROLES

2017 - 2020	Guest Lecturer (PHYS 182), McGill University
2018 - 2020	CEGEP (pre-university college) Seminar Speaker
2016 - 2020	Teaching Assistant and Lab Instructor, McGill University
2014 - 2015	Tutor, School Success

SELECTED OUTREACH AND SCI-COM ROLES

2020 - Curr. Volunteer Science Communicator, iREx at Université de Montréal
2018 - 2021 AstroMcGill Chair Member, McGill Space Institute
2018 - 2020 Physics Outreach Coordinator, Department of Physics at McGill University
2018 Scientific Consultant, Kurzgesagt - In a Nutshell Youtube Channel
2017 Volunteer at the Spitzer Space Telescope at Explore JPL, NASA JPL
2017 Science Fair Coordinator, Montreal Science Center & Eureka Festival

SELECTED MEDIA COVERAGE & INTERVIEW

TV INTERVIEW & VIDEOS

[What the first images from JWST show us](#), Seeker by The Verge
[Journée internationale des femmes et des filles de science](#), NSERC & EBTSOYP
[Research offers new insights into planets outside our solar system](#), Global News Live
[AAS 239 Press Conference: Exoplanets & Their Atmospheres](#), American Astronomical Society
[Le Projet Neptune: Chers Futurs Scientifiques](#), Fondation Bleu Metropolis
[Two key contributions to the James Webb space telescope](#), CTV News
[Canada's crucial role in the creation of James Webb telescope](#), Global News
[Exobouchée: Terre 2.0](#), Institut de Recherche sur les Exoplanètes

PODCASTS & RADIO INTERVIEWS

[Into the World of Lisa Dang](#), SPACEpod with Dawson College Students
[Moteur de Recherche - Taille de l'univers](#), Jun 10 2022, Radio-Canada
[Moteur de Recherche - Microlentilles Gravitationnelles](#), Feb 18 2022, Radio-Canada
[Exoplanètes et galaxies lointains dans le mire du James Webb](#), Radio-Canada
[Finding Exoplanets in Montreal](#), Plateau_Astro Splashdown Podcast
[Exoplanets & Telescopes](#), Abstract: Future of Science Podcast
[The James Webb Space Telescope](#), Vox Unexplainable Podcast

NEWS ARTICLES

[Landmark Webb telescope releases first science image — astronomers are in awe](#), Nature
[XO-3b: what the enormous 'hot Jupiter' could tell us about our universe](#), CTV News
[Scorching alien planet takes seasons to an extreme](#), Space.com
[NASA's Spitzer Illuminates Exoplanets in Astronomical Society Briefing](#), NASA.gov
[Opening the Universe with the James Webb Space Telescope](#), Skynews.ca
[This Canadian astronomer will be among its first users](#), Toronto Star
[The \\$11-billion Webb telescope aims to probe the early Universe](#), Nature News Feature
[This tiny iron-rich world is extraordinarily metal](#), Nature News
[Cinq chercheurs québécois qui pourront utiliser le télescope James-Webb](#), Quebec Science
[A McGill Astronomer Will Be One Of The First People Ever To Map A 'Lava Planet'](#), MTLblog
[The largest space telescope in History is about to blow our minds](#), Voxdotcom
[Overture to Exoplanets](#), Eos: Science News by the American Geophysical Union
[James Webb Space Telescope: Scientists in Canada will be among the first to peer into the universe with this telescope](#), Canadian Space Agency
[Des vents défient nos théories sur l'exoplanète CoRoT-2b](#), Radio-Canada
["Wrong-way" Winds on CoRoT-2b](#), NASA Jet Propulsion Lab
[Dynamical theory driven west on CoRoT-2b](#), Nature News and Views
[Weird Winds Blow the 'Wrong Way' on Scorching Hot Exoplanet](#), Space.com