

Marion I. Dierickx

Harvard-Smithsonian Center for Astrophysics
60 Garden St MS-42
Cambridge, M.A. 02138 U.S.A.

Phone: (617) 495-9501
Email: mdierickx@cfa.harvard.edu
URL: <https://mdierick.github.io>

Born: February 27, 1991—Fontainebleau, France
Nationality: Belgian/French

Current position

2017- *Postdoctoral Fellow*, J. Kovac Lab
Harvard-Smithsonian Center for Astrophysics, Cambridge, MA

Research interests

Experimental cosmology: Cosmic Microwave Background.
Millimeter-wave instrumentation: Optics; Field Deployment; Polar Operations.

Education

2017 Ph.D. in Astronomy and Astrophysics, Harvard University
Secondary Field in Computational Science and Engineering
Simulations of Local Group Galactic Interactions
Advisor: Abraham Loeb

2014 S.M. in Astrophysics, Harvard University

2012 B.A. in Astrophysics, *Summa Cum Laude* with Highest Honors, Harvard University
Constraining Local Group Dark Matter Using M33's Past Orbit
Advisor: Abraham Loeb

Honors and awards

2014-17 Three-time recipient of Derek Bok Center Certificate of Distinction in Teaching
2013-14 John P. and Carol J. Merrill Graduate Fellowship
2012 Leo Goldberg Prize
2012 Thomas T. Hoopes Prize
2012 Phi Beta Kappa
2010 Weissman International Internship Program Fellow

Lead author publications

- 2018 “Ultra-thin large-aperture vacuum windows for millimeter wavelengths receivers”
D. Barkats, **M. Dierickx**, J. Kovac et al. (78 authors) *Proceedings of the SPIE Conference Series 10708* 107082K
- 2017 “An Upper Limit on the Milky Way Mass from the Orbit of the Sagittarius Dwarf Satellite”
M. Dierickx and A. Loeb. *The Astrophysical Journal* 847:42
- 2017 “The >100 kpc Distant Spur of the Sagittarius Stream and the Outer Virgo Overdensity, as Seen in PS1 RR Lyrae Stars”
B. Sesar, N. Hernitschek, **M. Dierickx**, M. Fardal and H.-W. Rix. *The Astrophysical Journal Letters* 844:L4
- 2017 “Predicted Extension of the Sagittarius Stream to the Milky Way Virial Radius”
M. Dierickx and A. Loeb. *The Astrophysical Journal* 836:92
- 2015 “Submillimeter Array high-angular resolution observations of the Monoceros R2 star-forming cluster”
M. Dierickx, I. Jiménez-Serra, V. M. Rivilla and Q. Zhang. *The Astrophysical Journal* 803:89
- 2014 “Signatures of the M31-M32 galactic collision”
M. Dierickx, L. Blecha and A. Loeb. *The Astrophysical Journal Letters* 788:L38-L44
- 2013 “A new radio recombination line maser object toward the MonR2 HII region”
I. Jiménez-Serra, A. Báez-Rubio, V. M. Rivilla, J. Martín-Pintado, Q. Zhang, **M. Dierickx**, and N. Patel. *The Astrophysical Journal Letters* 763:L4-L10
- 2010 “Observational evidence from SDSS for a merger origin of the Milky Way’s thick disk”
M. Dierickx, R. Klement, H.-W. Rix and C. Liu. *The Astrophysical Journal Letters* 725:L186-L190

Selected invited talks

- 2018 “BICEP/Keck: Constraining primordial gravitational waves with CMB polarization observations from the South Pole”
Rencontres de Blois, Blois, France (June 6th 2018).
- 2018 “BICEP/Keck: Constraining primordial gravitational waves with CMB polarization observations from the South Pole”
APC Colloquium, Paris, France (June 1st 2018).
- 2016 “The Sun as a Gravitational Lens”
Breakthrough Discuss invited panelist, Stanford, CA (April 16th 2016).

Teaching and mentoring

STUDENT MENTORING

- 2018-19 Emilia Morgan (Harvey Mudd College) - Optics and calibration hardware
2017-19 Liam Corrigan (Harvard College) - BICEP3 optics characterization
2014-16 Eliot House (Harvard College) *Sophomore Advising Coordinator*

TEACHING

- 2015-19 Freshman Seminar 21G – “First Stars and Life in the Cosmos” *Teaching Fellow*
Cosmology seminar of 12 students. Responsible for 50% of in-class curriculum and 100% of course assignments.
Two-time teaching award recipient, student evaluation scores 4.5/5 (2015), 4.7/5 (2016), 4.6/5 (2017), 4.4/5 (2018).
- 2014 Astronomy 16 – “Stellar and Planetary Astrophysics” *Teaching Fellow*
Introductory undergraduate course of 40 students. Trained students in problem solving tutorials, lead lab sections for nocturnal astronomical observation sessions.
Teaching award recipient, student evaluation score 4.7/5.

Outreach and service

PROFESSIONAL SERVICE

- 2015-19 Breakthrough Starshot *Theory Advisory Group*
Evaluated practicality of propulsion methods for high speed interstellar mission.
- 2014-16 Harvard Astronomy Department *Committee on Academic Studies*
Elected Student Representative by graduate student body. Oversaw academic progress of graduate students, administered and redesigned format of qualifying exam.

INVITED LECTURES

- 2019 “Going Interstellar”
Harvard-MIT Belgian Society, MIT, Cambridge, USA (March 12th 2019).
- 2018 “BICEP curls, Inflating the Universe, and more”
Science Lecture, South Pole, Antarctica (December 16th 2018).
- 2018 “Galactic Collisions in the Local Group”
Cape Cod Astronomical Society, Yarmouth, MA (August 2nd 2018).
- 2018 “CMB Cosmology from the South Pole with BICEP/Keck”
Summer School Lecture, Harvard, Cambridge, MA (July 23rd 2018).
- 2018 “Working and Living in Antarctica”
Loeb group meeting, Harvard, Cambridge, MA (March 30th 2018).

All publications

JOURNAL ARTICLES

PROCEEDINGS

All talks

- 2019 “BICEP/Keck: Constraining primordial gravitational waves with CMB polarization observations from the South Pole”
Cosmology on Safari, Hluhluwe, South Africa (March 4th 2019). *Contributed*