

# 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](mailto: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 M<sub>33</sub>'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) - “Development of a Microwave Scatterometer and Investigation of Optical Properties of BICEP<sub>3</sub> Materials,” winner of 2019 Thomas T. Hoopes Prize.  
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).