Marion I. Dierickx

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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).