

Marc Kamionkowski

William R. Kenan Jr. Professor
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Personal

Born on 27 July 1965.

United States Citizen.

Education

B.A. (*summa cum laude*) Physics, Washington University in St. Louis, 1987

Ph.D. Physics, University of Chicago, 1991

Professional History

William R. Kenan, Jr. Professor of Physics and Astronomy, Johns Hopkins University, 2016–

Professor of Physics and Astronomy, Johns Hopkins University, 2011–2015

Robinson Professor of Theoretical Physics and Astrophysics, California Institute of Technology, 2006–2012

Miller Visiting Research Professor, Department of Physics, University of California, Berkeley, Fall 2010

Founding Director, Moore Center for Theoretical Cosmology and Physics, Caltech, 2006–2011

Professor of Theoretical Physics and Astrophysics, California Institute of Technology, 1999–2006

Associate Professor, Department of Physics, Columbia University, 1998–1999

Assistant Professor, Department of Physics, Columbia University, 1994–1998

Long-Term Member, Institute for Advanced Study, 1994

Member, Institute for Advanced Study, 1991–1994

Awards and Honors

Fellow, International Society of General Relativity and Gravitation, 2016

Dannie Heineman Prize for Astrophysics, AAS/AIP, 2015

Distinguished Fellow, Kosciuszko Foundation Collegium of Eminent Scientists, 2014

Simons Foundation Investigator, 2014–2019

Rosenblum Lecturer, Hebrew University, March 2014
Member, American Academy of Arts and Sciences, 2013
Shaker Heights High School Hall of Fame, Elected 2013
Fellow, American Physical Society, 2008
DoE Ernest O. Lawrence Award (High Energy and Nuclear Physics), 2006
DoE Outstanding Junior Investigator, 1998–1999
Helen B. Warner Prize, American Astronomical Society, 1998
Alfred P. Sloan Foundation Fellow, 1996–1998
SSC National Fellow, 1991–1993
NASA GSRP Fellow, July 1989–Sept 1991
Phi Beta Kappa, May 1986
National Merit Scholar, 1983–1987

Professional Societies:

American Academy of Arts and Sciences
Astronomical Society of the Pacific
American Association for the Advancement of Science
American Physical Society
American Astronomical Society
International Society of General Relativity and Gravitation

Professional Service

Editor in Chief, *Physics Reports*, 2008–present
Astrophysics and Cosmology Editor, *Physics Reports*, 1998–present
Five-Year Expert Panel Review Committee, Canadian Institute for Advanced Research “Cosmology & Gravity” program, 2016
2017 APS Hans A. Bethe Prize Selection Committee
CERN-TH Advisory Committee on Cosmology, 2016
NSF/DoE Nuclear Science Advisory Committee Subcommittee on Neutrino-less Double Beta Decay, 2015
Member-at-Large, Division of Astrophysics Executive Committee of the American Physical Society, 2015–2017
Trustee, Aspen Center for Physics, 2010–2016

Search Committee Member for Director, Oskar Klein Centre, Stockholm University, 2015

DoE HEP INSPIRE Review Panel, 2015

Member, NSF MPS AC Subcommittee on NSF Response to the P5 Strategic Plan, 2014–2015

Member, Nominations Committee for arXiv Scientific Advisory Board, 2014

Member, Advisory Board, The Buchalter Cosmology Prize, 2014–

Advisor, Simons Foundation Physics Programs, 2011–2012

Member, Nominating Committee, Division of Astrophysics, American Physical Society, 2009

Member, Particle Astrophysics Scientific Assessment Group (PASAG), 2009

Member, Cosmology and Fundamental Physics Panel of Astro2010 (Astronomy and Astrophysics Decadal Survey), 2009–2010

Co-organizer, “New Horizons for Modern Cosmology,” a workshop at the Galileo Galilei Institute for Theoretical Physics, Florence, January–March 2009

Co-organizer, “Understanding the Dark Sector: Dark Matter and Dark Energy,” Aspen Winter Workshop, January 2009

Co-organizer, Aspen Winter Workshop on the CMB, January 2008

Fermilab Research Alliance Visiting Committee, 2008–2011

Member, Advisory Board, *Journal of Cosmology and Astroparticle Physics*, 2005–

Scientific Secretary (2009) and Assistant Scientific Secretary (20008), Aspen Center for Physics

Member, Aspen Center for Physics, 2004–2013

Annual Program Review Committee, Fermilab, 2007

Receiving Editor, *Journal of Cosmology and Astroparticle Physics*, 2002–2005

Receiving Editor, *Journal of High Energy Physics*, 1997–2003

External Advisory Committee, Physics Division, Lawrence Berkeley Laboratory, 2004–2005

Member, Dark Energy Task Force, 2005–2006

External Advisory Committee, VERITAS, 2003–2004

Advisory Committee, NSF Center for Cosmological Physics (University of Chicago), 2002–2004.

Particle Physics Project Prioritization Panel (P5), 2002–2004.

Co-organizer, 15th Annual Beckman U.S. Frontiers of Science Symposium, November 2003, Irvine, CA

Co-convenor, Working Group P4 on Astro/Cosmo/Particle Physics for the workshop, Snowmass 2001: The Future of Particle Physics

Referee for the reports of the Committee on Physics of the Universe, 2000, 2002

Theory and Computation Panel, NAS Astronomy and Astrophysics Survey Committee, 1998–2000

Internal Referee for the report of the Astronomy and Astrophysics Survey Committee, 1999–2000

NASA/NSF/DoE Cosmic Genesis and Fundamental Physics Working Group, 1999–2000

NASA Structure and Evolution of the Universe Subcommittee, 1998–2002

NASA Science Working Group and Facilities Science Team for the Gamma Ray Large Area Space Telescope, 1996–1999

NASA Ad Hoc Committee on Future Cosmic Microwave Background Missions 1998–1999

Co-organizers, “Theoretical Astrophysics in Southern California (TASC),” a workshop held at Caltech, October 26, 2001

Coordinator, “The New Cosmology Confronts Observation: The Cosmic Microwave Background, Dark Matter, Dark Energy, and Brane Worlds,” an ITP (Santa Barbara) workshop held August–December 2002

Coordinator, “Probing the Universe with the Cosmic Microwave Background,” an ITP (Santa Barbara) mini-workshop, July 2000.

Co-organizer, Aspen workshop on “The Dark Side of the Universe,” Aspen, CO, June 2000.

Co-organizer, “Energy Densities in the Universe,” Les Arcs, France, January 2000.

Super-convener for “Origin of the Universe” session of the Workshop on Cosmic Genesis and Fundamental Physics, Sonoma State University, October 28–30, 1999.

Advising

Ph.D. Students

Current Students

Patrick Breysse (Ph.D. 2016)

Julian Muñoz (Ph.D. 2017)

Tanvi Karwal (Ph.D. 2018)

Daniel Pfeffer (Ph.D. 2018)

Past Students

Liang Dai Ph.D. 2015 (Einstein Fellow, IAS)

Vera Gluscevic, Ph.D. 2013 (Postdoc, IAS)

Samuel Lee, Ph.D. 2012 (Computational Scientist, MIT/Harvard Broad Institute)

Laura Book, Ph.D. 2012 (Junior Developer, Malachi Arts, Los Angeles)

Anthony Pullen, Ph.D. 2011 (assistant professor, New York University)

Daniel Grin, Ph.D. 2010 (assistant professor, Haverford College)

Adrienne Erickcek, Ph.D 2009 (assistant professor, U. of North Carolina)

Tristan L. Smith, Ph.D. 2008 (assistant professor, Swarthmore College)

Jonathan Pritchard, Ph.D. 2007 (senior lecturer, Imperial College)
Kris R. Sigurdson, Ph.D. 2005 (associate professor, University of British Columbia)
Nevin N. Weinberg, Ph.D. 2005 (assistant professor, MIT)
Michael H. Kesden, Ph.D. 2005 (assistant professor, UT Dallas)
Michael R. Santos, Ph.D. 2004 (Deputy Director, Bill and Melinda Gates Foundation)
Alexandre Refregier, Ph.D. 1997 (Professor, Zurich)
Catherine Cress, Ph.D. 1998 (Professor, University of the Western Cape, South Africa)
Xuelei Chen, Ph.D. 1999 (Professor, National Astronomical Observatories, China)
Ari Buchalter, Ph.D. 1999 (CoO, MediaMath)

Postdocs

Current Postdocs

Ely Kovetz 2014–
Yacine Ali-Haïmoud, 2014–
Simeon Bird, 2015–
Ilias Cholis, 2015–
Tomohiro Nakama, 2016–

Past Postdocs

Alvise Raccanelli, 2014–2016 (Marie Curie Fellow, Barcelona)
Jennifer Siegal-Gaskins, 2011–2014 (GRAPPA, Amsterdam)
Jens Chluba, 2012–2014 (Royal Society Fellow, Manchester)
Donghui Jeong, 2010–2014 (assistant professor, Penn State)
Josef Pradler, 2012–2014 (assistant professor, Vienna)
Matthew Kistler, 2010–2011 (postdoc, Stanford)
Fabian Schmidt, 2009–2012 (jr faculty, Max Planck Institute Garching)
Shin'ichiro Ando, 2006–2011 (associate professor, U. of Amsterdam)
Daniel Babich, 2006–2008 (Fortelus Capital Management)
Annika Peter, 2007–2010 (assistant professor, Ohio State U.)
Daisuke Nagai, 2005–2008 (associate professor, Yale University)
Stefano Profumo, 2005–2007 (professor, University of California, Santa Cruz)
Nicole Bell, 2004–2006 (associate professor, University of Melbourne)

Elena Pierpaoli, 2004–2006 (professor, University of Southern California)
 Steven Furlanetto 2003–2006 (associate professor, UCLA)
 Eric Agol, 2000–2003 (professor, University of Washington)
 Andriy Kurylov, 2002–2004 (JP Morgan Chase)
 Lara Arielle Phillips, 2002–2005 (research assistant professor, Notre Dame University)
 Milos Milosavljevic, 2002–2006 (associate professor, University of Texas, Austin)
 Asantha Cooray, 2001–2004 (professor, UC Irvine)
 Andrew Benson, 2000–2003 (Scientist, Carnegie Observatories)
 Paolo Catelan, 2000–2001
 Siang-Peng Oh, 2000–2003 (professor, UC Santa Barbara)
 Kenneth Nollett, 2000–2002 (physicist, Argonne National Laboratory)
 Limin Wang, 1998–2000 (SMG Quantitative)
 Piero Ullio, 1999–2000 (professor, SISSA, Trieste)
 Frank J. Summers, July 1996–March 1998 (scientist, Space Telescope Science Institute)

Publications

Submitted Articles

5. **“Towards a measurement of the spectral runnings,”** J. B. Muñoz, E. D. Kovetz, A. Raccanelli, M. Kamionkowski and J. Silk, arXiv:1611.05883 [astro-ph.CO]. Submitted to Phys. Rev. D.
4. **“The Black Hole Mass Function from Gravitational Wave Measurements,”** E. D. Kovetz, I. Cholis, P. C. Breyse and M. Kamionkowski, arXiv:1611.01157 [astro-ph.CO]. Submitted to Phys. Rev. D.
3. **“Insights from probability distribution functions of intensity maps,”** P. C. Breyse, E. D. Kovetz, P. S. Behroozi, L. Dai and M. Kamionkowski, arXiv:1609.01728 [astro-ph.CO]. Submitted to Mon. Not. R. Astron. Soc.
2. **“Dust polarization and ISM turbulence,”** R. R. Caldwell, C. Hirata and M. Kamionkowski, arXiv:1608.08138 [astro-ph.GA]. Submitted to Astrophys. J.
1. **“Ultra-high-energy-cosmic-ray hot spots from tidal disruption events,”** D. N. Pfeffer, E. D. Kovetz and M. Kamionkowski, arXiv:1512.04959 [astro-ph.HE]. Submitted to Mon. Not. R. Astron. Soc.

Refereed Journal Articles

210. **“Evolution of CMB spectral distortion anisotropies and tests of primordial non-Gaussianity,”** J. Chluba, E. Dimastrogiovanni, M. A. Amin and M. Kamionkowski, arXiv:1610.08711 [astro-ph.CO]. To appear in Mon. Not. R. Astron. Soc.
209. **“Early dark energy, the Hubble-parameter tension, and the string axiverse,”** T. Karwal and M. Kamionkowski, Phys. Rev. D **94**, no. 10, 103523 (2016) [arXiv:1608.01309 [astro-ph.CO]].
208. **“Orbital eccentricities in primordial black holes binaries,”** I. Cholis, E. D. Kovetz, Y. Ali-Haïmoud, S. Bird, M. Kamionkowski, J. B. Muñoz and A. Raccanelli, Phys. Rev. D **94**, no. 8, 084013 (2016) [arXiv:1606.07437 [astro-ph.HE]].
207. **“Cross-correlation between thermal Sunyaev-Zeldovich effect and the integrated Sachs-Wolfe effect,”** C. Creque-Sarbinowski, S. Bird and M. Kamionkowski, Phys. Rev. D **94**, 063519 [arXiv:1606.00839 [astro-ph.CO]].
206. **“Lensing of Fast Radio Bursts as a Probe of Compact Dark Matter,”** J. B. Muñoz, E. D. Kovetz, L. Dai and M. Kamionkowski, Phys. Rev. Lett. **117**, 091301 (2016) (Editor’s Suggestion) [arXiv:1605.00008 [astro-ph.CO]].
205. **“Curvature constraints from Large Scale Structure,”** E. Di Dio, F. Montanari, A. Raccanelli, R. Durrer, M. Kamionkowski and J. Lesgourgues, JCAP **1606**, no. 06, 013 (2016) [arXiv:1603.09073 [astro-ph.CO]].
204. **“Violation of statistical isotropy and homogeneity in the 21-cm power spectrum,”** M. Shiraishi, J. B. Muñoz, M. Kamionkowski and A. Raccanelli, Phys. Rev. D **93**, no. 10, 103506 (2016) [arXiv:1603.01206 [astro-ph.CO]].
203. **“Did LIGO detect dark matter?”** S. Bird, I. Cholis, J. B. Muñoz, Y. Ali-Haïmoud, M. Kamionkowski, E. D. Kovetz, A. Raccanelli and A. G. Riess, Phys. Rev. Lett. **116**, 201301 (2016) (Featured as a *Physics* Synopsis) [arXiv:1603.00464 [astro-ph.CO]].
202. **“Cosmological tests of an axiverse-inspired quintessence field,”** R. Emami, D. Grin, J. Pradler, A. Raccanelli and M. Kamionkowski, Phys. Rev. D **93**, no. 12, 123005 (2016) [arXiv:1603.04851 [astro-ph.CO]]. (Mar 15, 2016)
201. **“Search for Compensated Isocurvature Perturbations with Planck Power Spectra,”** J. B. Muñoz, D. Grin, L. Dai, M. Kamionkowski and E. D. Kovetz, Phys. Rev. D **93**, 043008 (2016) [arXiv:1511.04441 [astro-ph.CO]].
200. **“The high redshift star-formation history from carbon-monoxide intensity maps,”** P. C. Breysse, E. D. Kovetz and M. Kamionkowski, Mon. Not. Roy. Astron. Soc. **457**, L127 (2016) [arXiv:1507.06304 [astro-ph.CO]].
199. **“Antisymmetric galaxy cross-correlations as a cosmological probe,”** L. Dai, M. Kamionkowski, E. D. Kovetz, A. Raccanelli and M. Shiraishi, Phys. Rev. D **93**, 023507 (2016) [arXiv:1507.05618 [astro-ph.CO]].
198. **“Constraints on Dark Matter Interactions with Standard Model Particles from Cosmic Microwave Background Spectral Distortions,”** Y. Ali-Haïmoud, J. Chluba and M. Kamionkowski, Phys. Rev. Lett. **115**, 071304 (2015) [arXiv:1506.04745 [astro-ph.CO]].
197. **“Primordial non-gaussianity from the bispectrum of 21-cm fluctuations in the dark ages,”** J. B. Muñoz, Y. Ali-Haïmoud and M. Kamionkowski, Phys. Rev. D **92**, 083508 (2015) (Editor’s Suggestion) [arXiv:1506.04152 [astro-ph.CO]].

196. **"Imprints of Massive Primordial Fields on Large-Scale Structure,"** E. Dimastrogiovanni, M. Fasiello and M. Kamionkowski, JCAP **1602**, 017 (2016) [arXiv:1504.05993 [astro-ph.CO]].
195. **"Probing the scale dependence of non-Gaussianity with spectral distortions of the cosmic microwave background,"** R. Emami, E. Dimastrogiovanni, J. Chluba and M. Kamionkowski, Phys. Rev. D **91**, 123531 (2015) [arXiv:1504.00675 [astro-ph.CO]].
194. **"Masking line foregrounds in intensity mapping surveys,"** P. C. Breysse, E. D. Kovetz and M. Kamionkowski, Mon. Not. Roy. Astron. Soc. **452**, 3408 (2015) [arXiv:1503.05202 [astro-ph.CO]].
193. **"Detecting the integrated Sachs-Wolfe effect with high-redshift 21-cm surveys,"** A. Raccanelli, E. Kovetz, L. Dai and M. Kamionkowski, Phys. Rev. D **93**, 083512 (2016) [arXiv:1502.03107 [astro-ph.CO]].
192. **"Strategy to minimize dust foregrounds in B-mode searches,"** E. D. Kovetz and M. Kamionkowski, Phys. Rev. D **91**, 081303 (2015) [arXiv:1502.00625 [astro-ph.CO]].
191. **"An Ultimate Target for Dark Matter Searches,"** K. Blum, Y. Cui and M. Kamionkowski, Phys. Rev. D **92**, 023528 (2015) [arXiv:1412.3463 [hep-ph]].
190. **"Equation-of-State Parameter for Reheating,"** J. B. Muñoz and M. Kamionkowski, Phys. Rev. D **91**, 043521 (2015) [arXiv:1412.0656 [astro-ph.CO]].
189. **"Dark energy from the string axiverse,"** M. Kamionkowski, J. Pradler and D. G. E. Walker, Phys. Rev. Lett. **113**, 251302 (2014) [arXiv:1409.0549 [hep-ph]].
188. **"The redshift-space galaxy two-point correlation function and baryon acoustic oscillations,"** D. Jeong, L. Dai, M. Kamionkowski and A. S. Szalay, Mon. Not. Roy. Astron. Soc. **449**, 3312 (2015) [arXiv:1408.4648 [astro-ph.CO]].
187. **"Statistical diagnostics to identify Galactic foregrounds in B-mode maps,"** M. Kamionkowski and E. D. Kovetz, Phys. Rev. Lett. **113**, 191303 (2014) (Featured as a *Physics* Synopsis) [arXiv:1408.4125 [astro-ph.CO]].
186. **"Inflationary tensor fossils in large-scale structure,"** E. Dimastrogiovanni, M. Fasiello, D. Jeong and M. Kamionkowski, JCAP **1412**, 050 (2014) [arXiv:1407.8204 [astro-ph.CO]].
185. **"Spectral distortions from the dissipation of tensor perturbations,"** J. Chluba, L. Dai, D. Grin, M. Amin and M. Kamionkowski, Mon. Not. Roy. Astron. Soc. **446**, 2871 (2015) [arXiv:1407.3653 [astro-ph.CO]].
184. **"Carbon Monoxide Intensity Mapping at Moderate Redshifts,"** P. C. Breysse, E. D. Kovetz and M. Kamionkowski, Mon. Not. Roy. Astron. Soc. **443**, 3506 (2014) [arXiv:1405.0489 [astro-ph.CO]].
183. **"Reheating constraints to inflationary models,"** L. Dai, M. Kamionkowski and J. Wang, Phys. Rev. Lett. **113**, 041302 (2014) [arXiv:1404.6704 [astro-ph.CO]].
182. **"Tensor-induced B modes with no temperature fluctuations,"** M. Kamionkowski, L. Dai and D. Jeong, Phys. Rev. D **89**, 107302 (2014) [arXiv:1404.3730 [astro-ph.CO]].
181. **"Linking the BICEP2 result and the hemispherical power asymmetry through spatial variation of r ,"** J. Chluba, L. Dai, D. Jeong, M. Kamionkowski and A. Yoho, Mon. Not. Roy. Astron. Soc. **442**, 670 (2014) [arXiv:1404.2798 [astro-ph.CO]].
180. **"Silk damping at a redshift of a billion: a new limit on small-scale adiabatic perturbations,"** D. Jeong, J. Pradler, J. Chluba and M. Kamionkowski, Phys. Rev. Lett. **113**, 061301 (2014) [arXiv:1403.3697 [astro-ph.CO]].

179. **“Constraining Dark Matter-Baryon Scattering with Linear Cosmology,”** C. Dvorkin, K. Blum and M. Kamionkowski, *Phys. Rev. D* **89**, 023519 (2014) [arXiv:1311.2937 [astro-ph.CO]].
178. **“The effect of aberration on partial-sky measurements of the cosmic microwave background temperature power spectrum,”** D. Jeong, J. Chluba, L. Dai, M. Kamionkowski and X. Wang, *Phys. Rev. D* **89**, 023003 (2014) [arXiv:1309.2285 [astro-ph.CO]].
177. **“Multiple scattering Sunyaev-Zeldovich signal I: lowest order effect,”** J. Chluba, L. Dai and M. Kamionkowski, *Mon. Not. Roy. Astron. Soc.* **437**, 67 (2014) [arXiv:1308.5969 [astro-ph.CO]].
176. **“Cosmic Bandits: Exploration versus Exploitation in CMB B-Mode Experiments,”** E. D. Kovetz and M. Kamionkowski, *New Astron.* **43**, 26 (2016) [arXiv:1308.1404 [astro-ph.IM]].
175. **“Baryons do trace dark matter 380,000 years after the big bang: Search for compensated isocurvature perturbations with WMAP 9-year data,”** D. Grin, D. Hanson, G. P. Holder, O. DorÅ’ and M. Kamionkowski, *Phys. Rev. D* **89**, 023006 (2014) [arXiv:1306.4319 [astro-ph.CO]].
174. **“Anisotropic imprint of long-wavelength tensor perturbations on cosmic structure,”** L. Dai, D. Jeong and M. Kamionkowski, *Phys. Rev. D* **88**, 043507 (2013) [arXiv:1306.3985 [astro-ph.CO]].
173. **“Oscillations and stability of polytropic filaments,”** P. C. Breysse, M. Kamionkowski and A. Benson, *Mon. Not. Roy. Astron. Soc.* **437**, 2675 (2014) [arXiv:1305.2198 [astro-ph.CO]].
172. **“The Pesky Power Asymmetry,”** L. Dai, D. Jeong, M. Kamionkowski and J. Chluba, *Phys. Rev. D* **87**, 123005 (2013) [arXiv:1303.6949 [astro-ph.CO]].
171. **“Seeking Inflation Fossils in the Cosmic Microwave Background,”** L. Dai, D. Jeong and M. Kamionkowski, *Phys. Rev. D* **87**, 103006 (2013) [arXiv:1302.1868 [astro-ph.CO]].
170. **“What if Planck’s Universe isn’t flat?”** P. Bull and M. Kamionkowski, *Phys. Rev. D* **87**, 081301 (2013), Erratum: [*Phys. Rev. D* **87**, 129901 (2013)] [arXiv:1302.1617 [astro-ph.CO]].
169. **“Wigner-Eckart theorem in cosmology: Bispectra for total-angular-momentum waves,”** L. Dai, D. Jeong and M. Kamionkowski, *Phys. Rev. D* **87**, 043504 (2013) [arXiv:1211.6110 [astro-ph.CO]].
168. **“21-cm Lensing and the Cold Spot in the Cosmic Microwave Background,”** E. D. Kovetz and M. Kamionkowski, *Phys. Rev. Lett.* **110**, 171301 (2013) [arXiv:1211.4610 [astro-ph.CO]].
167. **“Improved estimator for non-Gaussianity in cosmic microwave background observations,”** T. L. Smith, D. Grin and M. Kamionkowski, *Phys. Rev. D* **87**, 063003 (2013) [arXiv:1211.3417 [astro-ph.CO]].
166. **“Patchy Screening of the Cosmic Microwave Background by Inhomogeneous Reionization,”** V. Gluscevic, M. Kamionkowski and D. Hanson, *Phys. Rev. D* **87**, 047303 (2013) [arXiv:1210.5507 [astro-ph.CO]].
165. **“Galaxy-Cluster Masses via 21st-Century Measurements of Lensing of 21-cm Fluctuations,”** E. D. Kovetz and M. Kamionkowski, *Phys. Rev. D* **87**, 063516 (2013) [arXiv:1210.3041 [astro-ph.CO]].
164. **“Total Angular Momentum Waves for Scalar, Vector, and Tensor Fields,”** L. Dai, M. Kamionkowski and D. Jeong, *Phys. Rev. D* **86**, 125013 (2012) [arXiv:1209.0761 [astro-ph.CO]].
163. **“Vacuum Instability in Chern-Simons Gravity,”** S. Dyda, E. E. Flanagan and M. Kamionkowski, *Phys. Rev. D* **86**, 124031 (2012) [arXiv:1208.4871 [gr-qc]].
162. **“First CMB Constraints on Direction-Dependent Cosmological Birefringence from WMAP-7,”** V. Gluscevic, D. Hanson, M. Kamionkowski and C. M. Hirata, *Phys. Rev. D* **86**, 103529 (2012) [arXiv:1206.5546 [astro-ph.CO]].

161. **"The probability distribution for non-Gaussianity estimators constructed from the CMB trispectrum,"** T. L. Smith and M. Kamionkowski, Phys. Rev. D **86**, 063009 (2012) [arXiv:1203.6654 [astro-ph.CO]].
160. **"Clustering Fossils from the Early Universe,"** D. Jeong and M. Kamionkowski, Phys. Rev. Lett. **108**, 251301 (2012) [arXiv:1203.0302 [astro-ph.CO]].
159. **"Dark Matter Detection with Polarized Detectors,"** C. T. Chiang, M. Kamionkowski and G. Z. Krnjaic, Phys. Dark Univ. **1**, 109 (2012) [arXiv:1202.1807 [astro-ph.CO]].
158. **"Improved constraints on the expansion rate of the Universe up to z 1.1 from the spectroscopic evolution of cosmic chronometers,"** M. Moresco *et al.*, JCAP **1208**, 006 (2012) [arXiv:1201.3609 [astro-ph.CO]].
157. **"Lensing of 21-cm Fluctuations by Primordial Gravitational Waves,"** L. Book, M. Kamionkowski and F. Schmidt, Phys. Rev. Lett. **108**, 211301 (2012) [arXiv:1112.0567 [astro-ph.CO]].
156. **"Charged Particle Decay at Finite Temperature,"** A. Czarnecki, M. Kamionkowski, S. K. Lee and K. Melnikov, Phys. Rev. D **85**, 025018 (2012) [arXiv:1110.2171 [hep-ph]].
155. **"Correlation of inflation-produced magnetic fields with scalar fluctuations,"** R. R. Caldwell, L. Motta and M. Kamionkowski, Phys. Rev. D **84**, 123525 (2011) [arXiv:1109.4415 [astro-ph.CO]].
154. **"Odd-Parity Bipolar Spherical Harmonics,"** L. G. Book, M. Kamionkowski and T. Souradeep, Phys. Rev. D **85**, 023010 (2012) [arXiv:1109.2910 [astro-ph.CO]].
153. **"Compensated Isocurvature Perturbations and the Cosmic Microwave Background,"** D. Grin, O. Dore and M. Kamionkowski, Phys. Rev. D **84**, 123003 (2011) [arXiv:1107.5047 [astro-ph.CO]].
152. **"Do baryons trace dark matter in the early universe?"** D. Grin, O. Dore and M. Kamionkowski, Phys. Rev. Lett. **107**, 261301 (2011) [arXiv:1107.1716 [astro-ph.CO]].
151. **"Cross-Correlation of Cosmological Birefringence with CMB Temperature,"** R. R. Caldwell, V. Gluscevic and M. Kamionkowski, Phys. Rev. D **84**, 043504 (2011) [arXiv:1104.1634 [astro-ph.CO]].
150. **"The Probability Distribution for Non-Gaussianity Estimators,"** T. L. Smith, M. Kamionkowski and B. D. Wandelt, Phys. Rev. D **84**, 063013 (2011) [arXiv:1104.0930 [astro-ph.CO]].
149. **"Metals at the surface of last scatter,"** Y. Ali-Haïmoud, C. M. Hirata and M. Kamionkowski, Phys. Rev. D **83**, 083508 (2011) [arXiv:1102.0004 [astro-ph.CO]].
148. **"The Odd-Parity CMB Bispectrum,"** M. Kamionkowski and T. Souradeep, Phys. Rev. D **83**, 027301 (2011) [arXiv:1010.4304 [astro-ph.CO]].
147. **"The CMB Bispectrum, Trispectrum, non-Gaussianity, and the Cramer-Rao Bound,"** M. Kamionkowski, T. L. Smith and A. Heavens, Phys. Rev. D **83**, 023007 (2011) [arXiv:1010.0251 [astro-ph.CO]].
146. **"Halo Clustering with Non-Local Non-Gaussianity,"** F. Schmidt and M. Kamionkowski, Phys. Rev. D **82**, 103002 (2010) [arXiv:1008.0638 [astro-ph.CO]].
145. **"Light Gravitinos at Colliders and Implications for Cosmology,"** J. L. Feng, M. Kamionkowski and S. K. Lee, Phys. Rev. D **82**, 015012 (2010) [arXiv:1004.4213 [hep-ph]].
144. **"Non-Uniform Cosmological Birefringence and Active Galactic Nuclei,"** M. Kamionkowski, Phys. Rev. D **82**, 047302 (2010) [arXiv:1004.3544 [astro-ph.CO]].
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“Did LIGO Detect Dark Matter?” talk at Quarknet 2016, Johns Hopkins University, July 26, 2016.

Interviewed on Voice of America’s “Press Conference US,” 8 July 2016, about black holes and dark matter.

Interviewed about LIGO on ABC2 News “In Focus,” 23 February 2016.

“Secrets from the Early Universe,” interview on *StarSpot* podcast, 19 April 2015.

“A Telegram from the Early Universe?” public lecture at the Origins Institute, McMaster University, Hamilton, Ontario, 2 December 2014.

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“Dark matter and the equivalence principle,” a discussion for physics students at Shaker Heights High School, 14 November 2014.

"A Telegram from the Early Universe?" public lecture at the Space Telescope Science Institute, 11 November 2014.

"A Telegram from the Early Universe?" invited talk at *New Horizons in Science*, sponsored by the Council for the Advancement of Science Writing, Columbus, OH, 20 October 2014.

Interviewed for NHK Japan TV documentary series, "Cosmic Front," episode to be aired 27 November 2014.

Interviewed about inflation for Russian TV channel LIFENEWS, 22 August 2014.

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Distinguished Outside Expert for Harvard-Smithsonian Center for Astrophysics press conference announcing new results from the BICEP2 collaboration, 17 March 2014.

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Interviewed for Aspen Physics Previews, Grassroots TV, Aspen, CO, 14 Aug 2013.

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Distinguished Outside Expert for NASA's news teleconference on Planck cosmology findings, 21 March 2013.

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