

Joel Meyers

CONTACT INFORMATION	Department of Physics Southern Methodist University 3215 Daniel Ave. Rm 102 Dallas, TX 75205-1437	<i>Phone:</i> (682) 240-3874 <i>E-mail:</i> jrmeyers@smu.edu <i>Website:</i> https://joelmeyers.github.io <i>Citizenship:</i> U.S. Citizen
RESEARCH INTERESTS	Theoretical Cosmology, Cosmic Microwave Background, Fundamental Physics	
RESEARCH EXPERIENCE	Southern Methodist University (SMU) Department of Physics, 2018 - Present Associate Professor, 2024 - Present Assistant Professor, 2018 - 2024 Canadian Institute for Theoretical Astrophysics (CITA) University of Toronto, 2012 - 2018 Senior Research Associate, Theoretical Cosmology Weinberg Theory Group and Texas Cosmology Center University of Texas at Austin, 2006 - 2012 Theoretical Cosmology, Dissertation research conducted with Prof. Steven Weinberg	
EDUCATION	The University of Texas at Austin , Austin, Texas, USA Ph.D. in Physics, August 2012 <ul style="list-style-type: none">Dissertation Topic: <i>Inflation: Connecting Theory to Observation</i>Advisor: Professor Steven Weinberg University of Wisconsin , Madison, Wisconsin, USA B.S. in Physics and Mathematics, May 2006	
COLLABORATIONS	<ul style="list-style-type: none">CMB-S4, 2015 - present<ul style="list-style-type: none">Science Council Co-Chair 2020 - 2024Light Relics Working Group Co-Lead 2018 - 2019Simons Observatory, 2016 - presentPICO, 2016 - presentCCAT-Prime, 2016 - present	
FUNDING AND AWARDS	<ul style="list-style-type: none">Department of Energy High Energy Theory Grant, 2019 - presentNASA Astrophysics Data Analysis Program Grant, 2024 - presentRobert S. Hyer Award for Undergraduate Research (Faculty Supervisor), 2020Beatrice and Vincent Tremaine Fellowship, 2016 - 2017	

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- POSTDOCS
- **Victor Chan**, SMU, January 2024 - Present
- SUPERVISED
- **Joseph Ryan**, SMU, September 2021 - July 2024; (Instructor at University of South Carolina)
 - **Cynthia Trendafilova**, SMU, September 2019 - August 2022; (CAPS Fellow at UIUC)
- GRADUATE STUDENTS SUPERVISED
- **Ana Segovia**, Ph.D. Student, SMU, May 2024 - present
 - **Joshua Perez**, Ph.D. Student, SMU, May 2024 - present
 - **Alvin Leluc**, Ph.D. Student, SMU, May 2023 - present
 - **Brandon Stevenson**, Ph.D. Student, SMU, May 2020 - present
 - **Jasmine Liu**, (Co-supervisor), Ph.D. Student, SMU, August 2022 - August 2024
 - **Antone Amalbert**, Ph.D. Student, SMU, May 2023 - May 2024
 - **Michael Litke**, (Co-supervisor), M.S. Student, SMU, August 2022 - August 2023
 - **Ishwita Saikia**, (Co-supervisor), Ph.D. Student, SMU, August 2022 - July 2023
 - **Eric Guzman**, Ph.D. Student, SMU, October 2018 - May 2023
 - **Victor Chan**, (Co-supervisor), Ph.D. Student, University of Toronto, Summer 2018 - Fall 2023
 - **Alex Laguë**, Ph.D. Student, University of Toronto, Summer 2018 - Fall 2019
 - **Selim Hotinli**, (Co-supervisor), Ph.D. Student, Imperial College London, October 2016 - May 2020
 - **Matthew Wilson**, (Co-supervisor), M.S. student, University of Toronto, January - August 2016
 - **Derek Inman**, (Co-supervisor), Ph.D. Student, CITA, September 2013 - August 2014
- UNDERGRADUATE STUDENTS SUPERVISED
- **Christopher Cook**, SMU, May 2024 - present
 - **Joshua Ange**, SMU, August 2022 - present
 - **Noah Pearson**, SMU, May 2019 - August 2021
 - **Connor Sheere**, (Co-supervisor), CITA, Summer 2016 - Summer 2018
 - **Brayden Mon**, (Co-supervisor), CITA, Summer 2017
 - **Harrison Winch**, (Co-supervisor), CITA, Summer 2016
 - **Vivian Britto**, CITA, Summer 2014
 - **Shenglin Jing**, (Co-supervisor), CITA, September 2012 - August 2013
- INVITED TALKS
- Seminar / Colloquium: 34
 - Conference / Workshop Plenary Talk: 35
 - Selected Invited Talks:
 - Perimeter Institute, Cosmology Seminar, December 2024
 - *Texas Section APS Meeting*, Southern Methodist University, October 2024
 - *N3AS Seminar*, University of California, San Diego (Remote), September 2024
 - *Collider, Dark Matter, and Neutrino Physics 2022*, Texas A&M University, May 2024
 - University of Texas at Dallas, Physics Colloquium, April 2024
 - Canadian Institute for Theoretical Astrophysics, Seminar, March 2024
 - Perimeter Institute, Cosmology Seminar, January 2024
 - Stony Brook University, C.N. Yang Institute Seminar, November 2023
 - University of Texas at Arlington, Physics Colloquium, March 2023
 - University of Illinois, CAPS Seminar, October 2022

- *Cosmological Probes of New Physics*, University of Maryland, September 2022
- *Collider, Dark Matter, and Neutrino Physics 2022*, Texas A&M University, May 2022
- AAS 240, CMB Special Session, June 2022
- APS April Meeting, Neutrino Mini-Symposium, April 2022
- *CosmoPalooza*, Virtual, January 2022
- Illinois Institute of Technology, Physics Colloquium, November 2020
- Michigan State University, High Energy Physics Seminar, November 2020
- *Topics in Cosmic Neutrino Physics*, Fermilab, October 2019
- Institute for Advanced Study (Princeton), Astrophysics Seminar, May 2019
- *nu Physics in the CMB*, University of California, San Diego, November 2018

- SUMMER SCHOOL LECTURER
- International Neutrino Summer School 2023, Fermilab, August 2023
 - Michigan Cosmology Summer School 2023, University of Michigan, June 2023
 - SLAC Summer Institute 2017, SLAC, August 2017

- WORKSHOPS ORGANIZED
- *Theoretical Astroparticle and Cosmology Symposium in Texas*, UT Austin, October 2024
 - *CMB-S4 Spring 2024 Collaboration Meeting*, Virtual, March 2024
 - *Theoretical Astroparticle and Cosmology Symposium in Texas*, Rice U., October 2023
 - *CMB-S4 Spring 2023 Collaboration Meeting*, Virtual, April 2023
 - *Theoretical Astroparticle and Cosmology Symposium in Texas*, SMU, October 2022
 - *CMB-S4 Summer 2022 Collaboration Meeting*, U. Chicago, August 2022
 - *13th CMB-S4 Workshop: 2021 Summer Collaboration Meeting*, August 2021
 - *11th CMB-S4 Workshop: Cosmology and Astrophysics in the Next Decade*, July 2020
 - *CMB in HD*, Flatiron Institute, December 2018
 - *Neutrinos and (G)astrophysics in Large-Scale Structure*, CITA, December 2016

- TEXTBOOKS WRITTEN
- Instructor's Solution Manual for *Lectures on Quantum Mechanics* by Steven Weinberg, Cambridge University Press, 2015

- TEACHING EXPERIENCE
- Instructor**
- **SMU Courses:**
 - Foundations of Modern Cosmology - PHYS 4368/6368
 - Quantum Field Theory II - PHYS 7315
 - Quantum Mechanics II - PHYS 6336
 - Foundations of Physics - PHYS 6160
 - Modern Physics - PHYS 3305
 - General Physics - PHYS 1307
 - Astro-eXtraordinary - SCI 4301
 - International Neutrino Summer School 2023, Fermilab, August 2023
 - Michigan Cosmology Summer School 2023, University of Michigan, June 2023
 - SLAC Summer Institute 2017, SLAC, August 2017
 - Scientific Computing - Symbolic Computing, May 2016 and May 2017, CITA

SERVICE AND
LEADERSHIP

- **SMU Physics Department Committees:**
 - Seminar Series: Co-organizer, 2022 - present
 - Faculty Hiring Committee: Chair, 2022 - 2023; Member, 2018 - 2019, 2023 - present
 - Graduate Committee: Member, 2018 - 2020, 2023 - present
 - Undergraduate Committee: Member, 2020 - 2023
 - Graduate Curriculum Task Force: Member, Fall 2020 - Spring 2021
 - Astrophysics Discussion: Co-organizer, 2019 - present
 - Theoretical HEP Discussion: Co-organizer, 2018 - 2020
- **SMU University Service:**
 - Guild of Marshals: August 2020 - present
- **CMB-S4 Leadership:**
 - Science Council Co-Chair: 2020 - 2024
 - Executive Team Member: 2020 - 2024
 - Light Relics Working Group Co-Lead: 2018 - 2019
 - Workshop Organizer: 2020 - 2024
- **CCAT-prime Leadership :**
 - Rayleigh Scattering Working Group Deputy Lead: 2020 - present
- **CITA Committees:**
 - Cosmology Discussion: Co-organizer, 2012 - 2018
 - Blackboard Discussion: Co-organizer, 2013 - 2018
 - Postdoc Hiring Committee: Member, 2013 - 2018
 - Jamboree: Co-organizer, 2014 - 2015
- **Funding Review Panels:**
 - NASA
 - Department of Energy
 - European Research Council
 - US-Israel Binational Science Foundation
 - Royal Society
- **Textbook Reviews:**
 - Elsevier
 - Cambridge University Press
- **Journal Referee:**
 - Physical Review Letters
 - Physical Review D
 - Physical Review X
 - Journal of Cosmology and Astroparticle Physics

PUBLICATIONS

Note: Conventions for author ordering vary significantly within the field of cosmology. The typical practice for researchers with a background in high energy theory (including me) is to use alphabetical author lists by default. Exceptions are often made to boost visibility of students or junior researchers by placing them first in the list. In this section, author lists are alphabetical except those labeled with an asterisk (*).

1. B. Li, J. Meyers and P. Shaprio,
Multimodality in the search for new physics in pulsar timing data: the case of kination-amplified gravitational-wave background from inflation,
Submitted to ApJ Letters.
2. V. C. Chan, R. Hložek, J. Meyers and A. van Engelen,
SCALE at Scale: Cosmological applications of small-scale CMB lensing,
arXiv:2409.05326 [astro-ph.CO].
3. D. Green and J. Meyers,
The Cosmological Preference for Negative Neutrino Mass,
arXiv:2407.07878 [astro-ph.CO], Submitted to PRD.
4. N. Craig, D. Green, J. Meyers and S. Rajendran,
No ν s is Good News,
JHEP **09**, 097 (2024) arXiv:2405.00836 [astro-ph.CO].
5. J. R. Bond, G. M. Fuller, E. Grohs, J. Meyers and M. J. Wilson,
Cosmic Neutrino Decoupling and its Observable Imprints: Insights from Entropic-Dual Transport,
JCAP **09**, 014 (2024) arXiv:2403.19038 [astro-ph.CO].
6. (*) C. Trendafilova, S. C. Hotinli and J. Meyers,
Improving Constraints on Inflation with CMB Delensing,
JCAP **06**, 017 (2024) arXiv:2312.02954 [astro-ph.CO].
7. J. Ange and J. Meyers,
Improving Constraints on Models Addressing the Hubble Tension with CMB Delensing,
JCAP **10**, 045 (2023) arXiv:2307.01662 [astro-ph.CO].
8. V. C. Chan, R. Hložek, J. Meyers and A. van Engelen,
Small-correlated-against-large estimator for the lensing of the cosmic microwave background,
Phys. Rev. D **109**, no.4, 043527 (2024) arXiv:2302.13350 [astro-ph.CO].
9. (*) J. Ryan, B. Stevenson, C. Trendafilova and J. Meyers,
Beyond Fisher Forecasting for Cosmology,
Phys. Rev. D **105**, no.4, 044005 (2022) arXiv:2211.06534 [astro-ph.CO].
10. (*) Y. Zhu, B. Beringue, S. K. Choi, N. Battaglia, P. D. Meerburg and J. Meyers,
Estimating the Impact of foregrounds on the Future Detection of Rayleigh scattering,
JCAP **09** (2022), 048 arXiv:2205.04496 [astro-ph.CO].
11. (*) S. C. Hotinli, J. Meyers, C. Trendafilova, D. Green and A. van Engelen,
The Benefits of CMB Delensing,
JCAP **04**, no.04, 020 (2022) arXiv:2111.15036 [astro-ph.CO].

12. D. Green and J. Meyers,
Cosmological Implications of a Neutrino Mass Detection,
arXiv:2111.01096 [astro-ph.CO].
13. (*) T. Namikawa, A. B. Lizancos, N. Robertson, B. D. Sherwin, A. Challinor, D. Alonso, S. Azzoni, C. Baccigalupi, E. Calabrese and J. Carron, *et al.*
The Simons Observatory: Constraining inflationary gravitational waves with multi-tracer B-mode delensing,
Phys. Rev. D **105**, no.2, 023511 (2022) arXiv:2110.09730 [astro-ph.CO].
14. E. Guzman and J. Meyers,
Reconstructing Cosmic Polarization Rotation with ResUNet-CMB,
JCAP **01**, no.01, 030 (2022) arXiv:2109.09715 [astro-ph.CO].
15. M. Aravena *et al.* [CCAT-Prime],
CCAT-prime Collaboration: Science Goals and Forecasts with Prime-Cam on the Fred Young Submillimeter Telescope,
Astrophys. J. Suppl. **264**, no.1, 7 (2023) arXiv:2107.10364 [astro-ph.CO]
16. M. J. Bustamante-Rosell, J. Meyers, N. Pearson, C. Trendafilova and A. Zimmerman,
Gravitational Wave Timing Array,
Phys. Rev. D **105**, no.4, 044005 (2022) arXiv:2107.02788 [gr-qc].
17. P. C. Breysse, S. Foreman, L. C. Keating, J. Meyers and N. Murray,
Mapping the Universe in HD,
Phys. Rev. D **105**, no.8, 083009 (2022), **Editor's Suggestion** arXiv:2104.06422 [astro-ph.CO].
18. E. Guzman and J. Meyers,
Reconstructing Patchy Reionization with Deep Learning,
Phys. Rev. D **104**, no.4, 043529 (2021) arXiv:2101.01214 [astro-ph.CO].
19. (*) N. Pearson, C. Trendafilova and J. Meyers,
Searching for Gravitational Waves with Strongly Lensed Repeating Fast Radio Bursts,
Phys. Rev. D **103**, no.6, 063017 (2021) arXiv:2009.11252 [astro-ph.CO].
20. K. Abazajian *et al.* [CMB-S4 Collaboration],
CMB-S4: Forecasting Constraints on Primordial Gravitational Waves,
Astrophys. J. **926**, no.1, 54 (2022) arXiv:2008.12619 [astro-ph.CO].
21. (*) B. Beringue, P. D. Meerburg, J. Meyers and N. Battaglia,
Cosmology with Rayleigh Scattering of the Cosmic Microwave Background,
JCAP **01**, 060 (2021) arXiv:2008.11688 [astro-ph.CO].
22. S. C. Hotinli, M. C. Johnson and J. Meyers,
Optimal filters for the moving lens effect,
Phys. Rev. D **103**, no.4, 043536 (2021) arXiv:2006.03060 [astro-ph.CO].
23. A. Laguë and J. Meyers,
Prospects and Limitations for Constraining Light Relics with Primordial Abundance Measurements,
Phys. Rev. D **101** (2020) no.4, 043509 arXiv:1908.05291 [astro-ph.CO].

24. K. Abazajian *et al.* [CMB-S4 Collaboration],
CMB-S4 Science Case, Reference Design, and Project Plan,
arXiv:1907.04473 [astro-ph.IM].
25. (*) S. Hanany *et al.* [NASA PICO Collaboration],
PICO: Probe of Inflation and Cosmic Origins,
arXiv:1902.10541 [astro-ph.IM].
26. (*) S. C. Hotinli *et al.*,
Transverse Velocities with the Moving Lens Effect,
Phys. Rev. Lett. **123**, no. 6, 061301 (2019) arXiv:1812.03167 [astro-ph.CO].
27. (*) S. Foreman, P. D. Meerburg, J. Meyers and A. van Engelen,
Cosmic variance mitigation in measurements of the integrated Sachs-Wolfe effect,
Phys. Rev. D **99**, 083506 (2019) arXiv:1811.00529 [astro-ph.CO].
28. J. Aguirre *et al.* [Simons Observatory Collaboration],
The Simons Observatory: Science goals and forecasts,
JCAP **1902**, 056 (2019) arXiv:1808.07445 [astro-ph.CO].
29. (*) G. J. Stacey *et al.*,
CCAT-prime: Science with an Ultra-widefield Submillimeter Observatory at Cerro Chajnantor,
arXiv:1807.04354 [astro-ph.GA].
30. R. de Putter, O. Doré, J. Gleyzes, D. Green and J. Meyers,
Dark Matter Interactions, Helium, and the CMB,
Phys. Rev. Lett. **122**, 041301, (2018) arXiv:1805.11616 [astro-ph.CO].
31. D. Green, P. D. Meerburg and J. Meyers,
Aspects of Dark Matter Annihilation in Cosmology,
JCAP **1904**, 025 (2019) arXiv:1804.01055 [astro-ph.CO].
32. (*) S. Foreman, P. D. Meerburg, A. van Engelen and J. Meyers,
Lensing reconstruction from line intensity maps: the impact of gravitational nonlinearity,
JCAP **1807**, no. 07, 046 (2018) arXiv:1803.04975 [astro-ph.CO].
33. (*) S. C. Hotinli, J. Frazer, A. H. Jaffe, J. Meyers, L. C. Price and E. R. M. Tarrant,
Effect of reheating on predictions following multiple-field inflation,
Phys. Rev. D **97**, no. 2, 023511 (2018) arXiv:1710.08913 [astro-ph.CO].
34. (*) J. Meyers, P. D. Meerburg, A. van Engelen and N. Battaglia,
Beyond CMB Cosmic Variance Limits on Reionization with the Polarized SZ effect,
Phys. Rev. D **97**, no. 10, 103505 (2018), **Editor's Suggestion** arXiv:1710.01708 [astro-ph.CO].
35. P. D. Meerburg, J. Meyers and A. van Engelen,
Reconstructing the Primary CMB Dipole,
Phys. Rev. D **96**, no. 8, 083519 (2017) arXiv:1704.00718 [astro-ph.CO].
36. P. D. Meerburg, J. Meyers, K. M. Smith and A. van Engelen,
Reconstructing CMB Fluctuations and the Mean Reionization Optical

- Depth**,
Phys. Rev. D **95**, no. 12, 123538 (2017) arXiv:1701.06992 [astro-ph.CO].
37. (*) C. Sheere, A. van Engelen, P. D. Meerburg and J. Meyers,
Establishing the Origin of CMB B-mode Polarization,
Phys. Rev. D **96**, no. 6, 063508 (2017) arXiv:1610.09365 [astro-ph.CO].
 38. K. N. Abazajian *et al.* [CMB-S4 Collaboration],
CMB-S4 Science Book, First Edition,
arXiv:1610.02743 [astro-ph.CO].
 39. R. de Putter, O. Doré, D. Green and J. Meyers,
Single-Field Inflation and the Local Ansatz: Distinguishability and Consistency,
Phys. Rev. D **95**, no. 6, 063501 (2017) arXiv:1610.00785 [hep-th].
 40. D. Green, J. Meyers and A. van Engelen,
CMB Delensing Beyond the B Modes,
JCAP **1712** (2017) no.12, 005 arXiv:1609.08143 [astro-ph.CO].
 41. (*) P. D. Meerburg, J. Meyers, A. van Engelen and Y. Ali-Haïmoud,
CMB B-Mode Non-Gaussianity,
Phys. Rev. D **93**, 123511 (2016) arXiv:1603.02243 [astro-ph.CO].
 42. D. Baumann, D. Green, J. Meyers and B. Wallisch,
Phases of New Physics in the CMB,
JCAP **1601**, 007 (2016) arXiv:1508.06342 [astro-ph.CO].
 43. (*) P. D. Meerburg, R. Hložek, B. Hadzhiyska and J. Meyers,
Multiwavelength Constraints on the Inflationary Consistency Relation,
Phys. Rev. D **91**, no. 10, 103505 (2015) arXiv:1502.00302 [astro-ph.CO].
 44. M. Alvarez *et al.*,
Testing Inflation with Large Scale Structure: Connecting Hopes with Reality,
arXiv:1412.4671 [astro-ph.CO].
 45. V. Britto and J. Meyers,
Monthly Modulation in Dark Matter Direct-Detection Experiments,
JCAP **1511**, 006 (2015) arXiv:1409.2858 [astro-ph.CO].
 46. J. Meyers and E. R. M. Tarrant,
Perturbative Reheating After Multiple-Field Inflation: The Impact on Primordial Observables,
Phys. Rev. D **89**, no. 6, 063535 (2014) arXiv:1311.3972 [astro-ph.CO].
 47. J. Meyers,
Non-Gaussian Correlations Outside the Horizon in Local Thermal Equilibrium,
arXiv:1212.4438 [astro-ph.CO].
 48. J. Meyers and N. Sivanandam,
Adiabaticity and the Fate of Non-Gaussianities: The Trispectrum and Beyond,
Phys. Rev. D **84**, 063522 (2011) arXiv:1104.5238 [astro-ph.CO].

49. J. Meyers and N. Sivanandam,
Non-Gaussianities in Multifield Inflation: Superhorizon Evolution, Adiabaticity, and the Fate of fnl,
 Phys. Rev. D **83**, 103517 (2011) arXiv:1011.4934 [astro-ph.CO].
50. W. Fischler and J. Meyers,
Dark Radiation Emerging After Big Bang Nucleosynthesis?,
 Phys. Rev. D **83**, 063520 (2011) arXiv:1011.3501 [astro-ph.CO].

Snowmass 2021 Papers

The papers in this section were written for the Snowmass 2021 DPF Community Planning Exercise. Papers in this section do not have alphabetical authors lists. Those which I co-led are indicated by (‡), and those for which I was among the primary authors are indicated by (†).

51. R. X. Adhikari, *et al.*
Report of the Topical Group on Cosmic Probes of Fundamental Physics for for Snowmass 2021,
 arXiv:2209.11726 [hep-ph].
52. B. Flaugher, V. Miranda, D. J. Schlegel *et al.*
Report of the Topical Group on Dark Energy and Cosmic Acceleration: Complementarity of Probes and New Facilities for Snowmass 2021,
 arXiv:2209.08654 [astro-ph.CO].
53. A. Drlica-Wagner, C. Prescod-Weinstein, H. B. Yu *et al.* **Report of the Topical Group on Cosmic Probes of Dark Matter for Snowmass 2021**,
 arXiv:2209.08215 [hep-ph].
54. D. Green, J. T. Ruderman, B. R. Safdi, J. Shelton *et al.* **Snowmass Theory Frontier: Astrophysics and Cosmology**,
 arXiv:2209.06854 [hep-ph].
55. J. A. Blazek *et al.*
Snowmass2021 Cosmic Frontier White Paper: Enabling Flagship Dark Energy Experiments to Reach their Full Potential,
 arXiv:2204.01992 [astro-ph.CO].
56. (†) R. Brito *et al.*
Snowmass2021 Cosmic Frontier White Paper: Probing dark matter with small-scale astrophysical observations,
 arXiv:2203.15954 [hep-ph].
57. (†) C. L. Chang, K. M. Huffenberger *et al.*
Snowmass2021 Cosmic Frontier: Cosmic Microwave Background Measurements White Paper,
 arXiv:2203.07638 [astro-ph.CO].

58. (†) K. Abazajian *et al.* [CMB-S4 Collaboration],
Snowmass 2021 CMB-S4 White Paper,
arXiv:2203.08024 [astro-ph.CO].
59. (‡)(†) C. Dvorkin, J. Meyers *et al.*
The Physics of Light Relics,
arXiv:2203.07943 [hep-ph].
60. (†) C. Dvorkin, R. Hlozek, *et al.*
Dark Matter Physics from the CMB-S4 Experiment,
arXiv:2203.07064 [hep-ph].
61. (†) K. N. Abazajian *et al.*
Synergy between cosmological and laboratory searches in neutrino physics: a white paper,
arXiv:2203.07377 [hep-ph].
62. (†) E. J. Baxter, C. Chang, A. Hearin *et al.*
Snowmass2021: Opportunities from Cross-survey Analyses of Static Probes,
arXiv:2203.06795 [hep-ex].
63. S. Aiola *et al.* [CMB-HD],
Snowmass2021 CMB-HD White Paper,
arXiv:2203.05728 [astro-ph.CO].

Astro2020 Decadal Survey White Papers

The papers in this section were written for the Astro2020 Decadal Survey of Astronomy and Astrophysics. Papers in this section do not have alphabetical authors lists, and those for which I was among the primary authors are indicated by (†).

64. N. Sehgal, *et al.*,
CMB-HD: Astro2020 RFI Response,
arXiv:2002.12714 [astro-ph.CO].
65. T. Herter *et al.*,
The CCAT-Prime Submillimeter Observatory,
Bull. Am. Astron. Soc. **51**, no. 7, 213 (2019) arXiv:1909.02587 [astro-ph.IM].
66. S. Hanany *et al.*,
PICO: Probe of Inflation and Cosmic Origins,
Bull. Am. Astron. Soc. **51**, no. 7, 194 (2019) arXiv:1908.07495 [astro-ph.IM].
67. J. Carlstrom *et al.*,
CMB-S4,
Bull. Am. Astron. Soc. **51**, no. 7, 209 (2019) arXiv:1908.01062 [astro-ph.IM].
68. A. Lee *et al.* [Simons Observatory Collaboration],
The Simons Observatory,
Bull. Am. Astron. Soc. **51**, no. 7, 147 (2019) arXiv:1907.08284 [astro-ph.IM].

69. N. Sehgal *et al.*,
CMB-HD: An Ultra-Deep, High-Resolution Millimeter-Wave Survey Over Half the Sky,
Bull. Am. Astron. Soc. **51**, no. 7, 6 (2019) arXiv:1906.10134 [astro-ph.CO].
70. (†) E. B. Grohs, J. R. Bond, R. J. Cooke, G. M. Fuller, J. Meyers and M. W. Paris,
Big Bang Nucleosynthesis and Neutrino Cosmology,
Bull. Am. Astron. Soc. **51**, no. 3, 412 (2019) arXiv:1903.09187 [astro-ph.CO].
71. (†) D. Green *et al.*,
Messengers from the Early Universe: Cosmic Neutrinos and Other Light Relics,
Bull. Am. Astron. Soc. **51**, no. 3, 159 (2019) arXiv:1903.04763 [astro-ph.CO].
72. S. Shandera *et al.*,
Probing the origin of our Universe through cosmic microwave background constraints on gravitational waves,
Bull. Am. Astron. Soc. **51**, no. 3, 338 (2019) arXiv:1903.04700 [astro-ph.CO].
73. P. D. Meerburg *et al.*,
Primordial Non-Gaussianity,
Bull. Am. Astron. Soc. **51**, no. 3, 107 (2019) arXiv:1903.04409 [astro-ph.CO].
74. N. Sehgal *et al.*,
Science from an Ultra-Deep, High-Resolution Millimeter-Wave Survey,
Bull. Am. Astron. Soc. **51**, no. 3, 43 (2019) arXiv:1903.03263 [astro-ph.CO].

Conference Proceedings

75. J. Meyers,
Cosmic Neutrinos and Other Light Relics,
arXiv:1605.05575 [astro-ph.CO].