

Steve K. Choi

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Academic Appointments

University of California, Riverside	Assistant Professor of Physics (2024 –)
Cornell University	NSF Astronomy and Astrophysics Postdoctoral Fellow (2020 – 2023)
Cornell University	Cornell Presidential Postdoctoral Fellow (2018 – 2020)
Princeton University	Postdoctoral Research Associate (2018, 3 months)

Education

Princeton University	2012 – 2018
Ph.D. in Physics	
Advisor: Prof. Lyman Page	
University of California, San Diego	2008 – 2012
B.S. in Physics, Magna Cum Laude	

Awards

IOP Publishing Top Cited Paper Award	2023
NSF Astronomy and Astrophysics Postdoctoral Fellowship	2020
Cornell Presidential Postdoctoral Fellowship	2018
Princeton Physics Department Teaching Award	2014
UCSD Division of Physical Sciences Dean's Undergraduate Award for Excellence	2011

Service and Leadership

CCAT Leader for Prime-Cam Calibration and Commissioning (Level 3)	2023 – present
Simons Observatory Publication Panel member	2022 – present
CCAT Deputy Leader of the CMB foregrounds science working group	2019 – present
Referee for publications in:	
Monthly Notices of the Royal Astronomical Society	
Journal of Low Temperature Physics	
Journal of Astronomical Telescopes, Instruments, and Systems	
Review panel member for:	
NASA – Astrophysics Research and Analysis and Strategic Astrophysics Technology programs	
NSF – Advanced Technologies and Instrumentation for the Astronomical Sciences program	

Invited Talks

Korea Astronomy and Space Science Institute (KASI)	2023
Nanyang Technological University	2023
Cornell University	2023
Penn State University	2023
University of California, Riverside	2023
University of British Columbia	2023
Lawrence Berkeley National Laboratory	2023
Korea Advanced Institute of Science & Technology (KAIST)	2022
University of Cologne	2022
Rencontres de Blois	2022

Growth of Structure webinar series (CMB session)	2021
Paris IJCLab seminar	2021
Cornell LEPP seminar	2021
University of British Columbia astronomy colloquium	2020
Kavli IPMU seminar	2020
Stanford KIPAC cosmology group meeting	2020

Publications

Lead author or main science team member

1. CCAT-Prime Collaboration, Aravena, M., Austermann, J. E., et al., CCAT-prime Collaboration: Science Goals and Forecasts with Prime-Cam on the Fred Young Submillimeter Telescope. 2023, *ApJS*, 264, 7
2. **Choi**, S. K., Duell, C. J., Austermann, J., et al., CCAT-Prime: Characterization of the First 280 GHz MKID Array for Prime-Cam. 2022, *Journal of Low Temperature Physics*, 209, 849
3. Zhu, Y., Beringue, B., **Choi**, S. K., et al., Estimating the impact of foregrounds on the future detection of Rayleigh scattering. 2022, *JCAP*, 2022, 048
4. Hensley, B. S., Clark, S. E., Fanfani, V., et al., The Simons Observatory: Galactic Science Goals and Forecasts. 2022, *ApJ*, 929, 166
5. Ebina, H., Keskitalo, R., Borrill, J., et al. 2022, Wide field high cadence CMB survey designs for Chilean telescopes, in *Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series*, Vol. 12190, Millimeter, Submillimeter, and Far-Infrared Detectors and Instrumentation for Astronomy XI, ed. J. Zmuidzinas & J.-R. Gao, 121902R
6. Li, Y., Austermann, J. E., Beall, J. A., et al., In Situ Performance of the Low Frequency Array for Advanced ACTPol. 2021, *IEEE Transactions on Applied Superconductivity*, 31, 3063334
7. **Choi**, S. K., Hasselfield, M., Ho, S.-P. P., et al., The Atacama Cosmology Telescope: a measurement of the Cosmic Microwave Background power spectra at 98 and 150 GHz. 2020b, *JCAP*, 2020, 045
8. **Choi**, S. K., Austermann, J., Basu, K., et al., Sensitivity of the Prime-Cam Instrument on the CCAT-Prime Telescope. 2020a, *Journal of Low Temperature Physics*, 199, 1089
9. Aiola, S., Calabrese, E., Maurin, L., et al., The Atacama Cosmology Telescope: DR4 maps and cosmological parameters. 2020, *JCAP*, 2020, 047
10. Kim, C.-G., **Choi**, S. K., & Flauger, R., Dust Polarization Maps from TIGRESS: E/B Power Asymmetry and TE Correlation. 2019, *ApJ*, 880, 106
11. **Choi**, S. K., Austermann, J., Beall, J. A., et al., Characterization of the Mid-Frequency Arrays for Advanced ACTPol. 2018, *Journal of Low Temperature Physics*, 193, 267
12. Kusaka, A., Appel, J., Essinger-Hileman, T., et al., Results from the Atacama B-mode Search (ABS) experiment. 2018, *JCAP*, 2018, 005
13. Munson, C. D., **Choi**, S. K., Coughlin, K. P., et al., Composite reflective/absorptive IR-blocking filters embedded in metamaterial antireflection-coated silicon. 2017, *Appl. Opt.*, 56, 5349
14. Ho, S.-P. P., Austermann, J., Beall, J. A., et al. 2017, Highly uniform 150 mm diameter multichroic polarimeter array deployed for CMB detection, in *Millimeter, Submillimeter, and Far-Infrared Detectors and Instrumentation for Astronomy VIII*, ed. W. S. Holland & J. Zmuidzinas, Vol. 9914, *International Society for Optics and Photonics (SPIE)*, 301
15. Crowley, K. T., **Choi**, S. K., Kuan, J., et al. 2016, Characterization of AlMn TES impedance, noise, and optical efficiency in the first 150 mm multichroic array for Advanced ACTPol, in *Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series*, Vol. 9914, *Millimeter, Submillimeter, and Far-Infrared Detectors and Instrumentation for Astronomy VIII*, ed. W. S. Holland & J. Zmuidzinas, 991431
16. Li, Y., **Choi**, S., Ho, S.-P., et al. 2016, Assembly and integration process of the first high density detector array for the Atacama Cosmology Telescope, in *Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series*, Vol. 9914, *Millimeter, Submillimeter, and Far-Infrared Detectors and Instrumentation for Astronomy VIII*, ed. W. S. Holland & J. Zmuidzinas, 991435

17. **Choi**, S. K., & Page, L. A., Polarized galactic synchrotron and dust emission and their correlation. 2015, JCAP, 2015, 020

Collaboration member

1. Farren, G. S., Krolewski, A., MacCrann, N., et al., The Atacama Cosmology Telescope: Cosmology from cross-correlations of unWISE galaxies and ACT DR6 CMB lensing. 2023, arXiv e-prints, arXiv:2309.05659
2. Shaikh, S., Harrison, I., van Engelen, A., et al., Cosmology from Cross-Correlation of ACT-DR4 CMB Lensing and DES-Y3 Cosmic Shear. 2023, arXiv e-prints, arXiv:2309.04412
3. Li, Y., Biermann, E., Naess, S., et al., The Atacama Cosmology Telescope: Systematic Transient Search of 3-Day Maps. 2023a, arXiv e-prints, arXiv:2303.04767
4. —, The Atacama Cosmology Telescope: Map-Based Noise Simulations for DR6. 2023b, arXiv e-prints, arXiv:2303.04180
5. Coulton, W. R., Madhavacheril, M. S., Duivenvoorden, A. J., et al., The Atacama Cosmology Telescope: High-resolution component-separated maps across one-third of the sky. 2023, arXiv e-prints, arXiv:2307.01258
6. Córdova Rosado, R., Hensley, B. S., Clark, S. E., et al., The Atacama Cosmology Telescope: Galactic Dust Structure and the Cosmic PAH Background in Cross-correlation with WISE. 2023, arXiv e-prints, arXiv:2307.06352
7. Qu, F. J., Sherwin, B. D., Madhavacheril, M. S., et al., The Atacama Cosmology Telescope: A Measurement of the DR6 CMB Lensing Power Spectrum and its Implications for Structure Growth. 2023, arXiv e-prints, arXiv:2304.05202
8. Madhavacheril, M. S., Qu, F. J., Sherwin, B. D., et al., The Atacama Cosmology Telescope: DR6 Gravitational Lensing Map and Cosmological Parameters. 2023, arXiv e-prints, arXiv:2304.05203
9. Li, Z., Louis, T., Calabrese, E., et al., The Simons Observatory: a new open-source power spectrum pipeline applied to the Planck legacy data. 2023b, JCAP, 2023, 048
10. Atkins, Z., Duivenvoorden, A. J., Coulton, W. R., et al. 2023a, mnms: Map-based Noise ModelS, Astrophysics Source Code Library, record ascl:2307.012
11. Wang, Y., Bhandarkar, T., **Choi**, S. K., et al. 2022a, Simons Observatory focal-plane module: detector re-biasing with bias-step measurements, in Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, Vol. 12190, Millimeter, Submillimeter, and Far-Infrared Detectors and Instrumentation for Astronomy XI, ed. J. Zmuidzinas & J.-R. Gao, 121901I
12. Healy, E., Dutcher, D., Atkins, Z., et al., The Simons Observatory 220 and 280 GHz Focal-Plane Module: Design and Initial Characterization. 2022, Journal of Low Temperature Physics, 209, 815
13. Zou, B., **Choi**, S. K., Cothard, N. F., et al. 2022, CCAT-prime: the design and characterization of the silicon mirrors for the Fabry-Perot interferometer in the Epoch of reionization spectrometer, in Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, Vol. 12190, Millimeter, Submillimeter, and Far-Infrared Detectors and Instrumentation for Astronomy XI, ed. J. Zmuidzinas & J.-R. Gao, 121902B
14. Huber, A. I., Chapman, S. C., Sinclair, A. K., et al. 2022a, CCAT-prime: optical and cryogenic design of the 850 GHz module for Prime-Cam, in Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, Vol. 12190, Millimeter, Submillimeter, and Far-Infrared Detectors and Instrumentation for Astronomy XI, ed. J. Zmuidzinas & J.-R. Gao, 121901D
15. Sinclair, A. K., Stephenson, R. C., Roberson, C. A., et al. 2022, CCAT-prime: RFSoc based readout for frequency multiplexed kinetic inductance detectors, in Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, Vol. 12190, Millimeter, Submillimeter, and Far-Infrared Detectors and Instrumentation for Astronomy XI, ed. J. Zmuidzinas & J.-R. Gao, 121900W
16. Wang, Y., Zheng, K., Atkins, Z., et al., Simons Observatory Focal-Plane Module: In-lab Testing and Characterization Program. 2022b, Journal of Low Temperature Physics, 209, 944
17. Vavagiakis, E. M., Duell, C. J., Austermann, J., et al. 2022, CCAT-prime: design of the Mod-Cam receiver and 280 GHz MKID instrument module, in Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, Vol. 12190, Millimeter, Submillimeter, and Far-Infrared Detectors and Instrumentation for Astronomy XI, ed. J. Zmuidzinas & J.-R. Gao, 1219004

18. Nikola, T., **Choi**, S. K., Duell, C. J., et al. 2022, CCAT-prime: the epoch reionization spectrometer for primecam on FYST, in Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, Vol. 12190, Millimeter, Submillimeter, and Far-Infrared Detectors and Instrumentation for Astronomy XI, ed. J. Zmuidzinas & J.-R. Gao, 121900G
19. Chapman, S. C., Huber, A. I., Sinclair, A. K., et al. 2022, CCAT-prime: the 850 GHz camera for primecam on FYST, in Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, Vol. 12190, Millimeter, Submillimeter, and Far-Infrared Detectors and Instrumentation for Astronomy XI, ed. J. Zmuidzinas & J.-R. Gao, 1219005
20. Huber, Z. B., **Choi**, S. K., Duell, C. J., et al. 2022b, CCAT-prime: the optical design for the Epoch of reionization spectrometer, in Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, Vol. 12190, Millimeter, Submillimeter, and Far-Infrared Detectors and Instrumentation for Astronomy XI, ed. J. Zmuidzinas & J.-R. Gao, 121902H
21. Hill, J. C., Calabrese, E., Aiola, S., et al., Atacama Cosmology Telescope: Constraints on prerecombination early dark energy. 2022, Phys. Rev. D, 105, 123536
22. Lungu, M., Storer, E. R., Hasselfield, M., et al., The Atacama Cosmology Telescope: measurement and analysis of 1D beams for DR4. 2022, JCAP, 2022, 044
23. Abazajian, K., Abdulghafour, A., Addison, G. E., et al., Snowmass 2021 CMB-S4 White Paper. 2022, arXiv e-prints, arXiv:2203.08024
24. Morris, T. W., Bustos, R., Calabrese, E., et al., The Atacama Cosmology Telescope: Modeling bulk atmospheric motion. 2022, Phys. Rev. D, 105, 042004
25. Naess, S., Aiola, S., Battaglia, N., et al., The Atacama Cosmology Telescope: A Search for Planet 9. 2021a, ApJ, 923, 224
26. Adhikari, S., Shin, T.-h., Jain, B., et al., Probing Galaxy Evolution in Massive Clusters Using ACT and DES: Splashback as a Cosmic Clock. 2021, ApJ, 923, 37
27. McCarrick, H., Healy, E., Ahmed, Z., et al., The Simons Observatory Microwave SQUID Multiplexing Detector Module Design. 2021, ApJ, 922, 38
28. Guan, Y., Clark, S. E., Hensley, B. S., et al., The Atacama Cosmology Telescope: Microwave Intensity and Polarization Maps of the Galactic Center. 2021, ApJ, 920, 6
29. Orłowski-Scherer, J., Di Mascolo, L., Bhandarkar, T., et al., Atacama Cosmology Telescope measurements of a large sample of candidates from the Massive and Distant Clusters of WISE Survey. Sunyaev-Zeldovich effect confirmation of MaDCoWS candidates using ACT. 2021, AA, 653, A135
30. Zhu, N., Bhandarkar, T., Coppi, G., et al., The Simons Observatory Large Aperture Telescope Receiver. 2021, ApJS, 256, 23
31. Vavagiakis, E. M., Ahmed, Z., Ali, A., et al., The Simons Observatory: Magnetic Sensitivity Measurements of Microwave SQUID Multiplexers. 2021b, IEEE Transactions on Applied Superconductivity, 31, 3069294
32. Vavagiakis, E. M., Gallardo, P. A., Calafut, V., et al., The Atacama Cosmology Telescope: Probing the baryon content of SDSS DR15 galaxies with the thermal and kinematic Sunyaev-Zel'dovich effects. 2021a, Phys. Rev. D, 104, 043503
33. Calafut, V., Gallardo, P. A., Vavagiakis, E. M., et al., The Atacama Cosmology Telescope: Detection of the pairwise kinematic Sunyaev-Zel'dovich effect with SDSS DR15 galaxies. 2021, Phys. Rev. D, 104, 043502
34. Naess, S., Battaglia, N., Richard Bond, J., et al., The Atacama Cosmology Telescope: Detection of Millimeter-wave Transient Sources. 2021b, ApJ, 915, 14
35. Mallaby-Kay, M., Atkins, Z., Aiola, S., et al., The Atacama Cosmology Telescope: Summary of DR4 and DR5 Data Products and Data Access. 2021, ApJS, 255, 11
36. Robertson, N. C., Alonso, D., Harnois-Déraps, J., et al., Strong detection of the CMB lensing and galaxy weak lensing cross-correlation from ACT-DR4, Planck Legacy, and KiDS-1000. 2021, AA, 649, A146
37. Xu, Z., Adachi, S., Ade, P., et al., The Simons Observatory: The Large Aperture Telescope (LAT). 2021, Research Notes of the American Astronomical Society, 5, 100

38. Amodeo, S., Battaglia, N., Schaan, E., et al., Atacama Cosmology Telescope: Modeling the gas thermodynamics in BOSS CMASS galaxies from kinematic and thermal Sunyaev-Zel'dovich measurements. 2021, *Phys. Rev. D*, 103, 063514
39. Schaan, E., Ferraro, S., Amodeo, S., et al., Atacama Cosmology Telescope: Combined kinematic and thermal Sunyaev-Zel'dovich measurements from BOSS CMASS and LOWZ halos. 2021, *Phys. Rev. D*, 103, 063513
40. Hilton, M., Sifón, C., Naess, S., et al., The Atacama Cosmology Telescope: A Catalog of ~ 4000 Sunyaev-Zel'dovich Galaxy Clusters. 2021, *ApJS*, 253, 3
41. Harrington, K., Sierra, C., Chesmore, G., et al., The Integration and Testing Program for the Simons Observatory Large Aperture Telescope Optics Tubes. 2021, arXiv e-prints, arXiv:2102.02129
42. Han, D., Sehgal, N., MacInnis, A., et al., The Atacama Cosmology Telescope: delensed power spectra and parameters. 2021, *JCAP*, 2021, 031
43. Darwish, O., Madhavacheril, M. S., Sherwin, B. D., et al., The Atacama Cosmology Telescope: a CMB lensing mass map over 2100 square degrees of sky and its cross-correlation with BOSS-CMASS galaxies. 2021, *MNRAS*, 500, 2250
44. Koopman, B. J., Lashner, J., Saunders, L. J., et al. 2020, The Simons Observatory: overview of data acquisition, control, monitoring, and computer infrastructure, in *Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series*, Vol. 11452, *Software and Cyberinfrastructure for Astronomy VI*, ed. J. C. Guzman & J. Ibsen, 1145208
45. Henke, D., Johnstone, D., Knee, L. B. G., et al. 2020, Optical design study for the 860 GHz first-light camera module of CCAT-p, in *Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series*, Vol. 11453, *Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series*, 114532K
46. Xu, Z., Bhandarkar, T., Coppi, G., et al. 2020, The Simons Observatory: the Large Aperture Telescope Receiver (LATR) integration and validation results, in *Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series*, Vol. 11453, *Millimeter, Submillimeter, and Far-Infrared Detectors and Instrumentation for Astronomy X*, ed. J. Zmuidzinas & J.-R. Gao, 1145315
47. Duell, C. J., Vavagiakis, E. M., Austermann, J., et al. 2020, CCAT-prime: Designs and status of the first light 280 GHz MKID array and mod-cam receiver, in *Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series*, Vol. 11453, *Millimeter, Submillimeter, and Far-Infrared Detectors and Instrumentation for Astronomy X*, ed. J. Zmuidzinas & J.-R. Gao, 114531F
48. Cothard, N. F., Ali, A. M., Austermann, J. E., et al. 2020a, Comparing complex impedance and bias step measurements of Simons Observatory transition edge sensors, in *Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series*, Vol. 11453, *Millimeter, Submillimeter, and Far-Infrared Detectors and Instrumentation for Astronomy X*, ed. J. Zmuidzinas & J.-R. Gao, 1145325
49. Naess, S., Aiola, S., Austermann, J. E., et al., The Atacama Cosmology Telescope: arcminute-resolution maps of 18 000 square degrees of the microwave sky from ACT 2008-2018 data combined with Planck. 2020, *JCAP*, 2020, 046
50. Madhavacheril, M. S., Sifón, C., Battaglia, N., et al., The Atacama Cosmology Telescope: Weighing Distant Clusters with the Most Ancient Light. 2020b, *ApJ*, 903, L13
51. Li, Z., Naess, S., Aiola, S., et al., The cross correlation of the ABS and ACT maps. 2020, *JCAP*, 2020, 010
52. Madhavacheril, M. S., Hill, J. C., Naess, S., et al., Atacama Cosmology Telescope: Component-separated maps of CMB temperature and the thermal Sunyaev-Zel'dovich effect. 2020a, *Phys. Rev. D*, 102, 023534
53. Namikawa, T., Guan, Y., Darwish, O., et al., Atacama Cosmology Telescope: Constraints on cosmic birefringence. 2020, *Phys. Rev. D*, 101, 083527
54. Stevens, J. R., Cothard, N. F., Vavagiakis, E. M., et al., Characterization of Transition Edge Sensors for the Simons Observatory. 2020, *Journal of Low Temperature Physics*, 199, 672
55. Cothard, N. F., **Choi**, S. K., Duell, C. J., et al., The Design of the CCAT-prime Epoch of Reionization Spectrometer Instrument. 2020b, *Journal of Low Temperature Physics*, 199, 898
56. Terry, H., Battaglia, N., Basu, K., et al. 2019, The CCAT-Prime Submillimeter Observatory, in *Bulletin of the American Astronomical Society*, Vol. 51, 213

57. Lee, A., Abitbol, M. H., Adachi, S., et al. 2019, The Simons Observatory, in *Bulletin of the American Astronomical Society*, Vol. 51, 147
58. Salatino, M., Austermann, J., Beall, J. A., et al., Machine Learning, Markov Chain Monte Carlo, and Optimal Algorithms to Characterize the AdvACT Kilopixel Transition-Edge Sensor Arrays. 2019, *IEEE Transactions on Applied Superconductivity*, 29, 2910542
59. Shin, T., Adhikari, S., Baxter, E. J., et al., Measurement of the splashback feature around SZ-selected Galaxy clusters with DES, SPT, and ACT. 2019, *MNRAS*, 487, 2900
60. Datta, R., Aiola, S., **Choi**, S. K., et al., The Atacama Cosmology Telescope: two-season ACTPol extragalactic point sources and their polarization properties. 2019, *MNRAS*, 486, 5239
61. Miyatake, H., Battaglia, N., Hilton, M., et al., Weak-lensing Mass Calibration of ACTPol Sunyaev-Zel'dovich Clusters with the Hyper Suprime-Cam Survey. 2019, *ApJ*, 875, 63
62. Ade, P., Aguirre, J., Ahmed, Z., et al., The Simons Observatory: science goals and forecasts. 2019, *JCAP*, 2019, 056
63. Koopman, B. J., Cothard, N. F., **Choi**, S. K., et al., Advanced ACTPol Low-Frequency Array: Readout and Characterization of Prototype 27 and 39 GHz Transition Edge Sensors. 2018, *Journal of Low Temperature Physics*, 193, 1103
64. Crowley, K. T., Austermann, J. E., **Choi**, S. K., et al., Advanced ACTPol TES Device Parameters and Noise Performance in Fielded Arrays. 2018, *Journal of Low Temperature Physics*, 193, 328
65. Coulton, W. R., Aiola, S., Battaglia, N., et al., Non-Gaussianity of secondary anisotropies from ACTPol and Planck. 2018, *JCAP*, 2018, 022
66. Li, Y., Austermann, J. E., Beall, J. A., et al. 2018, Performance of the advanced ACTPol low frequency array, in *Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series*, Vol. 10708, Millimeter, Submillimeter, and Far-Infrared Detectors and Instrumentation for Astronomy IX, ed. J. Zmuidzinas & J.-R. Gao, 107080A
67. Simon, S. M., Golec, J. E., Ali, A., et al. 2018, Feedhorn development and scalability for Simons Observatory and beyond, in *Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series*, Vol. 10708, Millimeter, Submillimeter, and Far-Infrared Detectors and Instrumentation for Astronomy IX, ed. J. Zmuidzinas & J.-R. Gao, 107084B
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69. Hilton, M., Hasselfield, M., Sifón, C., et al., The Atacama Cosmology Telescope: The Two-season ACTPol Sunyaev-Zel'dovich Effect Selected Cluster Catalog. 2018, *ApJS*, 235, 20
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71. Thornton, R. J., Ade, P. A. R., Aiola, S., et al., The Atacama Cosmology Telescope: The Polarization-sensitive ACTPol Instrument. 2016, *ApJS*, 227, 21
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74. Ho, S. P., Pappas, C. G., Austermann, J., et al., The First Multichroic Polarimeter Array on the Atacama Cosmology Telescope: Characterization and Performance. 2016, *Journal of Low Temperature Physics*, 184, 559
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- 9910, *Observatory Operations: Strategies, Processes, and Systems VI*, ed. A. B. Peck, R. L. Seaman, & C. R. Benn, 991014
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