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**THOMAS M. CRAWFORD**  
**University of Chicago**

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## **DEGREES**

- PhD University of Chicago. Astronomy & Astrophysics. 2003.
- MS University of Chicago. Astronomy & Astrophysics. 1997.
- BS DePaul University. Physics. 1996.
- BA Columbia University. German Language & Literature. 1992.

## **DISSERTATION**

Title: Mapping the Southern Polar Cap with a Balloon-borne Millimeter-wave Telescope.  
Advisor: Stephan Meyer.

## **HONORS**

- Breakthrough Prize Winner. 2020.
- National Academy of Sciences Kavli Fellow. 2014.
- NASA Center of Excellence Award. 2002.
- NASA Graduate Student Research Fellowship. 1999–2002.
- B.S. conferred With Highest Honors.
- B.A. conferred Magna Cum Laude.

## **ACADEMIC POSITIONS**

- University of Chicago: Research Professor, Department of Astronomy & Astrophysics.  
2019–Present.
- University of Chicago: Senior Researcher, Kavli Institute for Cosmological Physics. 2009–Present.
- University of Chicago: Research Associate Professor, Department of Astronomy & Astrophysics.  
2017–2019.
- University of Chicago: Senior Research Associate, Department of Astronomy & Astrophysics.  
2009–2017.
- University of Chicago: Research Scientist, Department of Astronomy & Astrophysics. 2006–2009.
- University of Chicago: Associate Fellow, Kavli Institute for Cosmological Physics. 2003–2009.
- University of Chicago: Research Associate, Department of Astronomy & Astrophysics. 2003–2006.

## RECENT SYNERGISTIC ACTIVITIES

Member, CMB-S4 Collaboration Governing Board, 2018 – 2023

Member, NASA Legacy Archive for Microwave Background Data Analysis (LAMBDA) Users' Group, 2016 – present

Referee, Physical Review D, Physical Review Letters, Astrophysical Journal, Nature, Journal of Cosmology and Astroparticle Physics, and others, 2008 – present

DOE, NASA, and NSF review panel member, 2013 – present

## RECENT INVITED COLLOQUIA AND SEMINARS

University of Chicago: Astronomy Colloquium. June, 2018.

DePaul University: Physics Colloquium. January, 2016.

University of Texas: LHC Results Forum. February, 2015.

## RECENT CONFERENCE PRESENTATIONS

Rochester Institute of Technology: Great Lakes Cosmology Workshop. August, 2019. (Invited talk)

Texas A&M University – Corpus Christi: XI International Conference on Interconnections between Particle Physics and Cosmology. May, 2017. (Invited talk)

National Academy of Sciences: 2014 U.S. Kavli Frontiers of Science Symposium. November, 2014. (Invited talk)

## RECENT PUBLIC OUTREACH

South Side Science Festival. Presenter. September 17, 2022; September 30, 2023.

CMB-S4 Saturday Science Lecture Series (virtual). Presenter. April 17 & 24, 2021; October 29, 2022.

CMB-S4 Data School (virtual). Instructor. August 16–18, 2021.

The Hideout, Chicago, IL: A Scientist Walks Into A Bar: Black Holes. June, 2019.

## POPULAR ARTICLES

“Particle Physics and the Cosmic Microwave Background.” John E. Carlstrom, Thomas M. Crawford, and Lloyd Knox. *Physics Today*, March, 2015.

## REFEREED PUBLICATIONS

“Measuring  $\mu$  distortions from the thermal Sunyaev-Zeldovich effect.” D. Zegeye, T. Crawford, and W. Hu. *Physical Review D*, **109**, 3503 (2024).

“Galaxy Clusters Discovered via the Thermal Sunyaev-Zel’dovich Effect in the 500-square-degree SPTpol Survey.” L. Bleem, M. Klein, et al. *The Open Journal of Astrophysics*, **7E**, 13 (2024).

“Cosmological shocks around galaxy clusters: a coherent investigation with DES, SPT, and ACT.” D. Anbajagane, C. Chang, et al. *Monthly Notices of the Royal Astronomical Society*, **527**, 9378 (2024).

- "The persistent shadow of the supermassive black hole of M 87. I. Observations, calibration, imaging, and analysis." Event Horizon Telescope Collaboration. *Astronomy & Astrophysics*, **681A**, 79 (2024).
- "Measurement of gravitational lensing of the cosmic microwave background using SPT-3G 2018 data." Z. Pan, F. Bianchini, et al. *Physical Review D*, **108**, 2005 (2023).
- "CMB-S4 forecasts for constraints on fNL through  $\mu$ -distortion anisotropy." D. Zegeye, F. Bianchini, et al. *Physical Review D*, **108**, 3536 (2023).
- "Dissecting the Thermal SZ Power Spectrum by Halo Mass and Redshift in SPT-SZ Data and Simulations." J. Hernandez, L. Bleem, et al. *The Open Journal of Astrophysics*, **6E**, 41 (2023).
- "Polarimetric Geometric Modeling for mm-VLBI Observations of Black Holes." F. Roelofs, M. Johnson, et al. *The Astrophysical Journal Letters*, **957**, 21 (2023).
- "First M87 Event Horizon Telescope Results. IX. Detection of Near-horizon Circular Polarization." Event Horizon Telescope Collaboration. *The Astrophysical Journal Letters*, **957**, 20 (2023).
- "Measurement of the CMB temperature power spectrum and constraints on cosmology from the SPT-3G 2018 TT, TE, and EE dataset." L. Balkenhol, D. Dutcher, et al. *Physical Review D*, **108**, 3510 (2023).
- "Mapping gas around massive galaxies: cross-correlation of DES Y3 galaxies and Compton-y maps from SPT and Planck." J. Sánchez, Y. Omori, et al. *Monthly Notices of the Royal Astronomical Society*, **522**, 3163 (2023).
- "Comparison of Polarized Radiative Transfer Codes Used by the EHT Collaboration." B. Prather, J. Dexter, et al. *The Astrophysical Journal*, **950**, 35 (2023).
- "Simultaneous Millimeter-wave, Gamma-Ray, and Optical Monitoring of the Blazar PKS 2326-502 during a Flaring State." J. Hood, A. Simpson, et al. *The Astrophysical Journal Letters*, **945**, 23 (2023).
- "Measurement of the mean central optical depth of galaxy clusters via the pairwise kinematic Sunyaev-Zel'dovich effect with SPT-3G and DES." E. Schiappucci, F. Bianchini, et al. *Physical Review D*, **107**, 2004 (2023).
- "The Event Horizon Telescope Image of the Quasar NRAO 530." S. Jorstad, M. Wielgus, et al. *The Astrophysical Journal*, **943**, 170 (2023).
- "Joint analysis of Dark Energy Survey Year 3 data and CMB lensing from SPT and Planck. III. Combined cosmological constraints." T. Abbott, M. Aguena, et al. *Physical Review D*, **107**, 3531 (2023).
- "Joint analysis of Dark Energy Survey Year 3 data and CMB lensing from SPT and Planck. II. Cross-correlation measurements and cosmological constraints." C. Chang, Y. Omori, et al. *Physical Review D*, **107**, 3530 (2023).
- "Joint analysis of Dark Energy Survey Year 3 data and CMB lensing from SPT and Planck. I. Construction of CMB lensing maps and modeling choices." Y. Omori, E. Baxter, et al. *Physical*

- Review D*, **107**, 3529 (2023).
- “Forecasting ground-based sensitivity to the Rayleigh scattering of the CMB in the presence of astrophysical foregrounds.” K. Dibert, A. Anderson, et al. *Physical Review D*, **106**, 3502 (2022).
- “Asteroid Measurements at Millimeter Wavelengths with the South Pole Telescope.” P. Chichura, A. Foster, et al. *The Astrophysical Journal*, **936**, 173 (2022).
- “Searching for axionlike time-dependent cosmic birefringence with data from SPT-3G.” K. Ferguson, A. Anderson, et al. *Physical Review D*, **106**, 2011 (2022).
- “Shocks in the stacked Sunyaev-Zel’dovich profiles of clusters II: Measurements from SPT-SZ + Planck Compton- $\gamma$  map.” D. Anbajagane, C. Chang, et al. *Monthly Notices of the Royal Astronomical Society*, **514**, 1645 (2022).
- “Resolving the Inner Parsec of the Blazar J1924-2914 with the Event Horizon Telescope.” S. Issaoun, M. Wielgus, et al. *The Astrophysical Journal*, **934**, 145 (2022).
- “Improving Cosmological Constraints from Galaxy Cluster Number Counts with CMB-cluster-lensing Data: Results from the SPT-SZ Survey and Forecasts for the Future.” P. Chabul, C. Reichardt, et al. *The Astrophysical Journal*, **931**, 139 (2022).
- “Characterizing and Mitigating Intraday Variability: Reconstructing Source Structure in Accreting Black Holes with mm-VLBI.” A. Broderick, R. Gold, et al. *The Astrophysical Journal Letters*, **930**, 21 (2022).
- “A Universal Power-law Prescription for Variability from Synthetic Images of Black Hole Accretion Flows.” B. Georgiev, D. Pesce, et al. *The Astrophysical Journal Letters*, **930**, 20 (2022).
- “Millimeter Light Curves of Sagittarius A\* Observed during the 2017 Event Horizon Telescope Campaign.” M. Wielgus, N. Marchili, et al. *The Astrophysical Journal Letters*, **930**, 19 (2022).
- “Selective Dynamical Imaging of Interferometric Data.” J. Farah, P. Galison, et al. *The Astrophysical Journal Letters*, **930**, 18 (2022).
- “First Sagittarius A\* Event Horizon Telescope Results. VI. Testing the Black Hole Metric.” Event Horizon Telescope Collaboration. *The Astrophysical Journal Letters*, **930**, 17 (2022).
- “First Sagittarius A\* Event Horizon Telescope Results. V. Testing Astrophysical Models of the Galactic Center Black Hole.” Event Horizon Telescope Collaboration. *The Astrophysical Journal Letters*, **930**, 16 (2022).
- “First Sagittarius A\* Event Horizon Telescope Results. IV. Variability, Morphology, and Black Hole Mass.” Event Horizon Telescope Collaboration. *The Astrophysical Journal Letters*, **930**, 15 (2022).
- “First Sagittarius A\* Event Horizon Telescope Results. III. Imaging of the Galactic Center Supermassive Black Hole.” Event Horizon Telescope Collaboration. *The Astrophysical Journal Letters*, **930**, 14 (2022).
- “First Sagittarius A\* Event Horizon Telescope Results. II. EHT and Multiwavelength Observations, Data Processing, and Calibration.” Event Horizon Telescope Collaboration. *The*

- Astrophysical Journal Letters*, **930**, 13 (2022).
- “First Sagittarius A\* Event Horizon Telescope Results. I. The Shadow of the Supermassive Black Hole in the Center of the Milky Way.” Event Horizon Telescope Collaboration. *The Astrophysical Journal Letters*, **930**, 12 (2022).
- “The Design and Integrated Performance of SPT-3G.” J. Sobrin, A. Anderson, et al. *The Astrophysical Journal Supplement*, **258**, 42 (2022).
- “CMB-S4: Forecasting Constraints on Primordial Gravitational Waves.” K. Abazajian, G. Addison, et al. *The Astrophysical Journal*, **926**, 54 (2022).
- “CMB/kSZ and Compton-y Maps from 2500 deg<sup>2</sup> of SPT-SZ and Planck Survey Data.” L. Bleem, T. Crawford, et al. *The Astrophysical Journal Supplement*, **258**, 36 (2022).
- “Performance and characterization of the SPT-3G digital frequency-domain multiplexed readout system using an improved noise and crosstalk model.” J. Montgomery, P. Ade, et al. *Journal of Astronomical Telescopes, Instruments, and Systems*, **8**, 4001 (2022).
- “The Variability of the Black Hole Image in M87 at the Dynamical Timescale.” K. Satopathy, D. Psaltis, et al. *The Astrophysical Journal*, **925**, 13 (2022).
- “Optimal Cosmic Microwave Background Lensing Reconstruction and Parameter Estimation with SPTpol Data.” M. Millea, C. Daley, et al. *The Astrophysical Journal*, **922**, 259 (2021).
- “Constraints on  $\Lambda$ CDM extensions from the SPT-3G 2018 E E and T E power spectra.” L. Balkenhol, D. Dutcher, et al. *Physical Review D*, **104**, 3509 (2021).
- “Detection of Galactic and Extragalactic Millimeter-wavelength Transient Sources with SPT-3G.” S. Guns, A. Foster, et al. *The Astrophysical Journal*, **916**, 98 (2021).
- “Breaking the degeneracy between polarization efficiency and cosmological parameters in CMB experiments.” S. Galli, W. Wu, et al., *Physical Review D*, **104**, 023518 (2021).
- “Measurements of the E -mode polarization and temperature-E -mode correlation of the CMB from SPT-3G 2018 data.” D. Dutcher, L. Balkenhol, et al., *Physical Review D*, **104**, 022003 (2021).
- “Event Horizon Telescope observations of the jet launching and collimation in Centaurus A.” M. Janssen, H. Falcke, et al. *Nature Astronomy*, **tmp**, 139 (2021).
- “The cold dust content of the nearby galaxies IC 5325, NGC 7496, NGC 7590, and NGC 7599.” S. Singh, M. Ashby, et al. *Monthly Notices of the Royal Astronomical Society*, **504**, 4143 (2021).
- “Constraints on black-hole charges with the 2017 EHT observations of M87\*.” P. Kocherlakota, L. Rezzolla, et al., *Physical Review D*, **103**, 104047 (2021).
- “The Polarized Image of a Synchrotron-emitting Ring of Gas Orbiting a Black Hole.” R. Narayan, D. Palumbo, et al. *The Astrophysical Journal*, **912**, 35 (2021).
- “Broadband Multi-wavelength Properties of M87 during the 2017 Event Horizon Telescope Campaign.” EHT MWL Science Working Group, *The Astrophysical Journal*, **911**, 11 (2021).
- “Polarimetric Properties of Event Horizon Telescope Targets from ALMA.” C. Goddi, I.

- Martí-Vidal, et al. *The Astrophysical Journal*, **910**, 14 (2021).
- “First M87 Event Horizon Telescope Results. VIII. Magnetic Field Structure near The Event Horizon.” The Event Horizon Telescope Collaboration, *The Astrophysical Journal*, **910**, 13 (2021).
- “First M87 Event Horizon Telescope Results. VII. Polarization of the Ring.” The Event Horizon Telescope Collaboration, *The Astrophysical Journal*, **910**, 12 (2021).
- “An Improved Measurement of the Secondary Cosmic Microwave Background Anisotropies from the SPT-SZ + SPTpol Surveys.” C. Reichardt, S. Patil, et al. *The Astrophysical Journal*, **908**, 199 (2021).
- “A demonstration of improved constraints on primordial gravitational waves with delensing.” BICEP/Keck and SPTpol collaborations, *Physical Review D*, **103**, 022004 (2021).
- “Searching for anisotropic cosmic birefringence with polarization data from SPTpol.” F. Bianchini, W. Wu, et al. *Physical Review D*, **102**, 083504 (2020).
- “Millimeter-wave Point Sources from the 2500-square-degree SPT-SZ Survey: Catalog and Population Statistics.” W. Everett, L. Zhang, et al. *The Astrophysical Journal*, **888**, 119 (2020).
- “Constraints on Cosmological Parameters from the 500 deg<sup>2</sup> SPTpol Lensing Power Spectrum.” F. Bianchini, W. Wu, et al. *The Astrophysical Journal*, **888**, 119 (2020).
- “Measurements of B-mode Polarization of the Cosmic Microwave Background from 500 Square Degrees of SPTpol Data.” J. Sayre, C. Reichardt, et al. *Physical Review D*, **101**, 122003 (2020).
- “The SPTpol Extended Cluster Survey.” L. Bleem, S. Bocquet, et al. *The Astrophysical Journal Supplement*, **247**, 25 (2020).
- “Galaxy Clusters Selected via the Sunyaev-Zel’dovich Effect in the SPTpol 100-Square-Degree Survey.” N. Huang, L. Bleem, et al. *The Astronomical Journal*, **159**, 110 (2020).
- “A Detection of CMB-Cluster Lensing using Polarization Data from SPTpol.” S. Raghunathan, S. Patil, et al. *Physical Review Letters*, **123**, 181301 (2019).
- “Fractional Polarisation of Extragalactic Sources in the 500-square-degree SPTpol Survey.” N. Gupta, C. Reichardt, et al. *Monthly Notices of the Royal Astronomical Society*, **490**, 5712 (2019).
- “A Measurement of the Cosmic Microwave Background Lensing Potential and Power Spectrum from 500 deg<sup>2</sup> of SPTpol Temperature and Polarization Data.” W. Wu, L. Mocanu, et al. *The Astrophysical Journal*, **884**, 70 (2019).
- “Dark Energy Survey Year 1 Results: Cross-correlation between Dark Energy Survey Y1 galaxy weak lensing and South Pole Telescope + Planck CMB weak lensing.” Y. Omori, E. Baxter, et al. *Physical Review D*, **100**, 043517 (2019).
- “Dark Energy Survey Year 1 Results: Tomographic cross-correlations between Dark Energy Survey galaxies and CMB lensing from South Pole Telescope + Planck.” Y. Omori, T. Giannantonio, et al. *Physical Review D*, **100**, 043501 (2019).
- “Dark Energy Survey year 1 results: Joint analysis of galaxy clustering, galaxy lensing, and CMB

- lensing two-point functions." T. Abbott, F. Abdalla, et al. *Physical Review D*, **100**, 023541 (2019).
- "Measurements of the Cross-spectra of the Cosmic Infrared and Microwave Backgrounds from 95 to 1200 GHz." M. Viero, C. Reichardt, et al. *The Astrophysical Journal*, **881**, 96 (2019).
- "Consistency of cosmic microwave background temperature measurements in three frequency bands in the 2500-square-degree SPT-SZ survey." L. Mocanu, T. Crawford, et al. *Journal of Cosmology and Astroparticle Physics*, **7**, 038 (2019).
- "Measurement of the splashback feature around SZ-selected Galaxy clusters with DES, SPT, and ACT." T. Shin, S. Adhikari, et al. *Monthly Notices of the Royal Astronomical Society*, **487**, 2900 (2019).
- "Cosmological lensing ratios with DES Y1, SPT, and Planck." J. Prat, E. Baxter, et al. *Monthly Notices of the Royal Astronomical Society*, **487**, 1363 (2019).
- "Cluster Cosmology Constraints from the 2500 deg<sup>2</sup> SPT-SZ Survey: Inclusion of Weak Gravitational Lensing Data from Magellan and the Hubble Space Telescope." S. Bocquet, J. Dietrich, et al. *The Astrophysical Journal*, **878**, 55 (2019).
- "First M87 Event Horizon Telescope Results. II. Array and Instrumentation." The Event Horizon Telescope Collaboration. *The Astrophysical Journal Letters*, **875**, L2 (2019).
- "First M87 Event Horizon Telescope Results. I. The Shadow of the Supermassive Black Hole." The Event Horizon Telescope Collaboration. *The Astrophysical Journal Letters*, **875**, L1 (2019).
- "Sunyaev-Zel'dovich effect and X-ray scaling relations from weak lensing mass calibration of 32 South Pole Telescope selected galaxy clusters." J. Dietrich, S. Bocquet, et al. *Monthly Notices of the Royal Astronomical Society*, **483**, 2871 (2019).
- "Mass Calibration of Optically Selected DES Clusters Using a Measurement of CMB-cluster Lensing with SPTpol Data." S. Raghunathan, S. Patil, et al. *The Astrophysical Journal*, **872**, 170 (2019).
- "Dark Energy Survey Year 1 results: Methodology and projections for joint analysis of galaxy clustering, galaxy lensing, and CMB lensing two-point functions." E. Baxter, Y. Omori, et al. *Physical Review D*, **99**, 023508 (2019).
- "Sunyaev-Zel'dovich effect and X-ray scaling relations from weak lensing mass calibration of 32 South Pole Telescope selected galaxy clusters." J. Dietrich, S. Bocquet, et al. *Monthly Notices of the Royal Astronomical Society*, **483**, 2871 (2019).
- "Spectroscopic Confirmation of Five Galaxy Clusters at  $z > 1.25$  in the 2500 deg<sup>2</sup> SPT-SZ Survey." G. Khullar, L. Bleem, et al. *The Astrophysical Journal*, **870**, 7 (2019).
- "SPT-3G: A Multichroic Receiver for the South Pole Telescope." A. Anderson, P. Ade, et al. *Journal of Low Temperature Physics*, **193**, 1057 (2019).
- "Dark Energy Survey Year 1 Results: A Precise H<sub>0</sub> Estimate from DES Y1, BAO, and D/H Data." T. Abbott, F. Abdalla, et al. *Monthly Notices of the Royal Astronomical Society*, **480**, 3879 (2018).

- "Maps of the Southern Millimeter-wave Sky from Combined 2500 deg<sup>2</sup> SPT-SZ and Planck Temperature Data." R. Chown, Y. Omori, et al. *The Astrophysical Journal Supplement*, **239**, 10 (2018).
- "The 1.4 mm Core of Centaurus A: First VLBI Results with the South Pole Telescope." J. Kim, D. Marrone, et al. *The Astrophysical Journal*, **861**, 129 (2018).
- "Constraints on Cosmological Parameters from the Angular Power Spectrum of a Combined 2500 deg<sup>2</sup> SPT-SZ and Planck Gravitational Lensing Map." G. Simard, Y. Omori, et al. *The Astrophysical Journal*, **853**, 3 (2018).
- "A measurement of CMB cluster lensing with SPT and DES year 1 data." E. Baxter, S. Raghunathan, et al. *Monthly Notices of the Royal Astronomical Society*, **476**, 2674 (2018).
- "Galaxy growth in a massive halo in the first billion years of cosmic history." D. Marrone, J. Spilker, et al. *Nature*, **476**, 2674 (2018).
- "A Comparison of Maps and Power Spectra Determined from South Pole Telescope and Planck Data." Z. Hou, K. Aylor, et al. *The Astrophysical Journal*, **853**, 3 (2018).
- "Measurements of the Temperature and E-mode Polarization of the CMB from 500 Square Degrees of SPTpol Data." J. Henning, J. Sayre, et al. *The Astrophysical Journal*, **852**, 97 (2018).
- "A Comparison of Cosmological Parameters Determined from CMB Temperature Power Spectra from the South Pole Telescope and the Planck Satellite." K. Aylor, Z. Hou, et al. *The Astrophysical Journal*, **850**, 101 (2017).
- "A 2500 deg<sup>2</sup> CMB Lensing Map from Combined South Pole Telescope and Planck Data." Y. Omori, R. Chown, et al. *The Astrophysical Journal*, **849**, 124 (2017).
- "CMB Polarization B-mode Delensing with SPTpol and Herschel." A. Manzotti, K. Story, et al. *The Astrophysical Journal*, **846**, 45 (2017).
- "Measuring galaxy cluster masses with CMB lensing using a Maximum Likelihood estimator: statistical and systematic error budgets for future experiments." S. Raghunathan, S. Patil, et al. *Journal of Cosmology and Astroparticle Physics*, **8**, 030 (2017).
- "Optical-SZE scaling relations for DES optically selected clusters within the SPT-SZ Survey." A. Saro, S. Bocquet, et al. *Monthly Notices of the Royal Astronomical Society*, **468**, 3347 (2017).
- "High-frequency cluster radio galaxies: luminosity functions and implications for SZE-selected cluster samples." N. Gupta, A. Saro, et al. *Monthly Notices of the Royal Astronomical Society*, **467**, 3737 (2017).
- "Maps of the Magellanic Clouds from Combined South Pole Telescope and Planck Data." T. Crawford, R. Chown, et al. *The Astrophysical Journal Supplement*, **227**, 3 (2016).
- "SPT-GMOS: A Gemini/GMOS-South Spectroscopic Survey of Galaxy Clusters in the SPT-SZ Survey." M. Bayliss, J. Ruel, et al. *The Astrophysical Journal Supplement*, **227**, 3 (2016).
- "Cosmological Constraints from Galaxy Clusters in the 2500 Square-degree SPT-SZ Survey." T. de



- Haan, B. Benson, et al. *The Astrophysical Journal*, **832**, 95 (2016).
- "Millimeter Transient Point Sources in the SPTpol 100 Square Degree Survey." N. Whitehorn, T. Natoli, et al. *The Astrophysical Journal*, **830**, 143 (2016).
- "Joint measurement of lensing-galaxy correlations using SPT and DES SV data." E. Baxter, J. Clampitt, et al. *Monthly Notices of the Royal Astronomical Society*, **461**, 4099 (2016).
- "Detection of the kinematic Sunyaev-Zel'dovich effect with DES Year 1 and SPT." B. Soergel, S. Flender, et al. *Monthly Notices of the Royal Astronomical Society*, **461**, 3172 (2016).
- "ALMA Imaging and Gravitational Lens Models of South Pole Telescope-Selected Dusty, Star-Forming Galaxies at High Redshifts." J. Spilker, D. Marrone, et al. *The Astrophysical Journal*, **826**, 112 (2016).
- "CMB lensing tomography with the DES Science Verification galaxies." T. Giannantonio, P. Fosalba, et al. *Monthly Notices of the Royal Astronomical Society*, **456**, 3213 (2016).
- "Cross-correlation of gravitational lensing from DES Science Verification data with SPT and Planck lensing." D. Kirk, Y. Omori, et al. *Monthly Notices of the Royal Astronomical Society*, **459**, 21 (2016).
- "The Redshift Distribution of Dusty Star-forming Galaxies from the SPT Survey." M. Strandet, A. Weiß, et al. *The Astrophysical Journal*, **826**, 112 (2016).
- "Probing star formation in the dense environments of  $z \sim 1$  lensing haloes aligned with dusty star-forming galaxies detected with the South Pole Telescope." N. Welikala, M. Béthermin, et al. *Monthly Notices of the Royal Astronomical Society*, **455**, 1629 (2016).
- "Constraints on the richness-mass relation and the optical-SZE positional offset distribution for SZE-selected clusters." A. Saro, S. Bocquet, et al. *Monthly Notices of the Royal Astronomical Society*, **454**, 2305 (2015).
- "Fabrication of large dual-polarized multichroic TES bolometer arrays for CMB measurements with the SPT-3G camera." C. Posada, P. Ade, et al. *Superconductor Science and Technology*, **28**, 9 (2015).
- "A Measurement of the Cosmic Microwave Background Gravitational Lensing Potential from 100 Square Degrees of SPTpol Data." K. Story, D. Hanson, et al. *The Astrophysical Journal*, **810**, 50 (2015).
- "Measurements of Sub-degree B-mode Polarization in the Cosmic Microwave Background from 100 Square Degrees of SPTpol Data." R. Keisler, S. Hoover, et al. *The Astrophysical Journal*, **807**, 151 (2015).
- "A Measurement of Gravitational Lensing of the Cosmic Microwave Background by Galaxy Clusters Using Data from the South Pole Telescope." E. Baxter, R. Keisler, et al. *The Astrophysical Journal*, **806**, 247 (2015).
- "Measurements of E-Mode Polarization and Temperature-E-Mode Correlation in the Cosmic Microwave Background from 100 Square Degrees of SPTpol Data." A. Crites, J. Henning, et al. *The Astrophysical Journal*, **805**, 36 (2015).

- “Analysis of Sunyaev-Zel’dovich effect mass-observable relations using South Pole Telescope observations of an X-ray selected sample of low-mass galaxy clusters and groups.” J. Liu, J. Mohr, et al. *Monthly Notices of the Royal Astronomical Society*, **448**, 2085 (2015).
- “Inflation Physics from the Cosmic Microwave Background and Large Scale Structure.” Report from the “Dark Energy and CMB” working group for the American Physical Society’s Division of Particles and Fields long-term planning exercise (“Snowmass”). K. Abazajian, K. Arnold, et al. *Astroparticle Physics*, **63**, 55 (2015)
- “Neutrino Physics from the Cosmic Microwave Background and Large Scale Structure.” Report from the “Dark Energy and CMB” working group for the American Physical Society’s Division of Particles and Fields long-term planning exercise (“Snowmass”). K. Abazajian, K. Arnold, et al. *Astroparticle Physics*, **63**, 66 (2015)
- “Galaxy Clusters Discovered via the Sunyaev-Zel’dovich Effect in the 2500-Square-Degree SPT-SZ Survey.” L. Bleem, B. Stalder, et al. *The Astrophysical Journal Supplement*, **216**, 27 (2015).
- “Mass Calibration and Cosmological Analysis of the SPT-SZ Galaxy Cluster Sample Using Velocity Dispersion  $\sigma_v$  and X-Ray  $Y_X$  Measurements.” S. Bocquet, A. Saro, et al. *The Astrophysical Journal*, **799**, 214 (2015).
- “A Measurement of Secondary Cosmic Microwave Background Anisotropies from the 2500 Square-degree SPT-SZ Survey.” E. George, C. Reichardt, et al. *The Astrophysical Journal*, **799**, 177 (2015).
- “Measurement of Galaxy Cluster Integrated Comptonization and Mass Scaling Relations with the South Pole Telescope.” B. Saliwanchik, T. Montroy, et al. *The Astrophysical Journal*, **799**, 137 (2015).
- “Detection of B-mode Polarization in the Cosmic Microwave Background with Data from the South Pole Telescope.” D. Hanson, S. Hoover, et al. *Physical Review Letters*, **111**, 141301 (2013).
- “SPT-3G: a next-generation cosmic microwave background polarization experiment on the South Pole telescope.” B. Benson, P. Ade, et al. *Proceedings of the SPIE*, **9153** (2013).
- “A measurement of the secondary-CMB and millimeter-wave-foreground bispectrum using 800 square degrees of South Pole Telescope data.” T. Crawford, K. Schaffer, et al. *The Astrophysical Journal*, **784**, 143 (2014).
- “Constraints on the CMB Temperature Evolution using Multi-Band Measurements of the Sunyaev Zel’dovich Effect with the South Pole Telescope.” A. Saro, J. Liu, et al. *Monthly Notices of the Royal Astronomical Society Letters*, **440**, 2610 (2014).
- “The Redshift Evolution of the Mean Temperature, Pressure, and Entropy Profiles in 80 SPT-Selected Galaxy Clusters.” M. McDonald, B. Benson, et al. *The Astrophysical Journal*, **794**, 67 (2014).
- “SPT-CL J2040-4451: An SZ-selected Galaxy Cluster at  $z = 1.478$  with Significant Ongoing Star Formation.” M. Bayliss, M. Ashby, et al. *The Astrophysical Journal*, **794**, 12 (2014).

- “Optical Spectroscopy and Velocity Dispersions of Galaxy Clusters from the SPT-SZ Survey.” J. Ruel, G. Bazin, et al. *The Astrophysical Journal*, **792**, 45 (2014).
- “The Rest-Frame Submillimeter Spectrum of High-Redshift, Dusty, Star-Forming Galaxies.” J. Spilker, D. Marrone, et al. *The Astrophysical Journal*, **785**, 149 (2014).
- “The Spitzer South Pole Telescope Deep Field: Survey Design and Infrared Array Camera Catalogs.” M. Ashby, S. Stanford, et al. *The Astrophysical Journal Supplement*, **209**, 22 (2013).
- “The Growth of Cool Cores and Evolution of Cooling Properties in a Sample of 83 Galaxy Clusters at  $0.3 < z < 1.2$  Selected from the SPT-SZ Survey.” M. McDonald, B. Benson, et al. *The Astrophysical Journal*, **774**, 23 (2013).
- “Large gas reservoirs and free-free emission in two lensed star-forming galaxies at  $z = 2.7$ .” M. Aravena, E. Murphy, et al. *Monthly Notices of the Royal Astronomical Society*, **433**, 498 (2013).
- “A direct measurement of the linear bias of mid-infrared-selected quasars at  $z \sim 1$  using cosmic microwave background lensing.” J. Geach, R. Hickox, et al. *The Astrophysical Journal Letters*, **776**, L41 (2013).
- “A Cosmic Microwave Background Lensing Mass Map and Its Correlation with the Cosmic Infrared Background.” G. Holder, M. Viero, et al. *The Astrophysical Journal Letters*, **771**, L16 (2013).
- “Extragalactic millimeter-wave point source catalog, number counts and statistics from 771 square degrees of the SPT-SZ Survey.” L. Mocanu, T. Crawford, et al. *The Astrophysical Journal*, **779**, 61 (2013).
- “SPT 0538-50: Physical Conditions in the Interstellar Medium of a Strongly Lensed Dusty Star-forming Galaxy at  $z = 2.8$ .” M. Bothwell, J. Aguirre, et al. *The Astrophysical Journal*, **779**, 67 (2013).
- “Dusty starburst galaxies in the early Universe as revealed by gravitational lensing.” J. Vieira, D. Marrone, et al. *Nature*, **495**, 344 (2013).
- “ALMA Observations of SPT-discovered, Strongly Lensed, Dusty, Star-forming Galaxies.” Y. Hezaveh, D. Marrone, et al. *The Astrophysical Journal*, **767**, 132 (2013).
- “ALMA Redshifts of Millimeter-selected Galaxies from the SPT Survey: The Redshift Distribution of Dusty Star-forming Galaxies.” A. Weiß, C. de Breuck, et al. *The Astrophysical Journal*, **767**, 88 (2013).
- “Constraints on Cosmology from the Cosmic Microwave Background Power Spectrum of the 2500-square degree SPT-SZ Survey.” Z. Hou, C. Reichardt, et al. *The Astrophysical Journal*, **782**, 74 (2014).
- “A Measurement of the Cosmic Microwave Background Damping Tail from the 2500-square-degree SPT-SZ survey.” K. Story, C. Reichardt, et al. *The Astrophysical Journal*, **779**, 86 (2013).
- “Bispectrum of the Sunyaev-Zel’dovich Effect.” S. Bhattacharya, D. Nagai, L. Shaw, T. Crawford,

- and G. Holder. *The Astrophysical Journal*, **760**, 5 (2012).
- “High-Redshift Cool-Core Galaxy Clusters Detected via the Sunyaev-Zel’dovich Effect in the South Pole Telescope Survey.” D. Semler, R. Šuhada, et al. *The Astrophysical Journal*, **761**, 183 (2012).
- “A Massive, Cooling-Flow-Induced Starburst in the Core of a Highly Luminous Galaxy Cluster.” M. McDonald, M. Bayliss, et al. *Nature*, **488**, 349, (2012).
- “Redshifts, Sample Purity, and BCG Positions for the Galaxy Cluster Catalog from the first 720 Square Degrees of the South Pole Telescope Survey.” J. Song, A. Zenteno, et al. *The Astrophysical Journal*, **761**, 22 (2012).
- “Submillimeter Observations of Millimeter Bright Galaxies Discovered by the South Pole Telescope.” T. Greve, J. Vieira, et al. *The Astrophysical Journal*, **756**, 101 (2012).
- “SPT-CL J0205-5829: A  $z = 1.32$  evolved massive galaxy cluster in the South Pole Telescope Sunyaev-Zel’dovich effect survey.” B. Stalder, J. Ruel, et al. *The Astrophysical Journal*, **763**, 93 (2013).
- “Weak-Lensing Mass Measurements of Five Galaxy Clusters in the South Pole Telescope Survey Using Magellan/Megacam.” F. High, H. Hoekstra, et al. *The Astrophysical Journal*, **758**, 68 (2012).
- “Galaxy clusters discovered via the Sunyaev-Zel’dovich effect in the first 720 square degrees of the South Pole Telescope survey.” C. Reichardt, B. Stalder, et al. *The Astrophysical Journal*, **763**, 127 (2013).
- “A measurement of gravitational lensing of the microwave background using South Pole Telescope data.” A. van Engelen, R. Keisler, et al. *The Astrophysical Journal*, **756**, 142 (2012).
- “A Measurement of the Correlation of Galaxy Surveys with CMB Lensing Convergence Maps from the South Pole Telescope.” L. Bleem, A. van Engelen, et al. *The Astrophysical Journal Letters*, **753**, L9 (2012).
- “Cosmological Constraints from Sunyaev-Zel’dovich-Selected Clusters with X-ray Observations in the First 178 Square Degrees of the South Pole Telescope Survey.” B.. Benson, T. de Haan, et al. *The Astrophysical Journal*, **763**, 147 (2013).
- “Frequency Multiplexed SQUID Readout of Large Bolometer Arrays for Cosmic Microwave Background Measurements.” M. Dobbs, M. Lueker, et al. *Review of Scientific Instruments*, **83**, 073113 (2012).
- “Optical and thermal properties of ANL/KICP polarization sensitive bolometers for SPTpol.” C. Chang, P. Ade, et al. *Journal of Low Temperature Physics*, **167**, 865 (2012).
- “An overview of the SPTpol experiment.” L. Bleem, P. Ade, et al. *Journal of Low Temperature Physics*, **167**, 859 (2012).
- “Cosmic microwave background constraints on the duration and timing of reionization from the South Pole Telescope.” O. Zahn, C. Reichardt, et al. *The Astrophysical Journal*, **756**, 65 (2012).

- "A measurement of secondary cosmic microwave background anisotropies with two years of South Pole Telescope observations." C. Reichardt, L. Shaw, et al. *The Astrophysical Journal*, **755**, 70 (2012).
- "The First Public Release of South Pole Telescope Data: Maps of a 95 deg<sup>2</sup> Field from 2008 Observations." K. Schaffer, T. Crawford, et al. *The Astrophysical Journal*, **743**, 90 (2011).
- "A Measurement of the Damping Tail of the Cosmic Microwave Background Power Spectrum with the South Pole Telescope." R. Keisler, C. Reichardt, et al. *The Astrophysical Journal*, **743**, 28 (2011).
- "South Pole Telescope Detections of the Previously Unconfirmed Planck Early SZ Clusters in the Southern Hemisphere." K. Story, K. Aird, et al. *The Astrophysical Journal Letters*, **735**, L36 (2011).
- "An SZ-selected Sample of the Most Massive Galaxy Clusters in the 2500-square-degree South Pole Telescope Survey." R. Williamson, B. Benson, et al. *The Astrophysical Journal*, **738**, 139 (2011).
- "Discovery and Cosmological Implications of SPT-CL J2106-5844, the Most Massive Known Cluster at  $z > 1$ ." R. Foley, K. Andersson, et al. *The Astrophysical Journal*, **731**, 86 (2011).
- "Improved Constraints on Cosmic Microwave Background Secondary Anisotropies from the Complete 2008 South Pole Telescope Data." E. Shirokoff, C. Reichardt, et al. *The Astrophysical Journal*, **736**, 61 (2011).
- "SPT-CL J0546-5345: A Massive  $z > 1$  Galaxy Cluster Selected Via the Sunyaev-Zel'dovich Effect with the South Pole Telescope." M. Brodwin, J. Ruel, et al. *The Astrophysical Journal*, **721**, 90 (2010).
- "X-ray Properties of the First SZE-selected Galaxy Cluster Sample from the South Pole Telescope." K. Andersson, B. Benson, et al. *The Astrophysical Journal*, **738**, 48 (2011).
- "Optical Redshift and Richness Estimates for Galaxy Clusters Selected with the Sunyaev-Zel'dovich Effect from 2008 South Pole Telescope Observations." F. High, B. Stalder, et al. *The Astrophysical Journal*, **723**, 1736 (2010).
- "Galaxy Clusters Selected with the Sunyaev-Zel'dovich Effect from 2008 South Pole Telescope Observations." K. Vanderlinde, T. Crawford, et al. *The Astrophysical Journal*, **722**, 1180 (2010).
- "A Method for Individual Source Brightness Estimation in Single- and Multi-band Data." T. Crawford, E. Switzer, W. Holzzapfel, C. Reichardt, D. Marrone, and J. Vieira. *The Astrophysical Journal*, **718**, 513 (2010).
- "Extragalactic Millimeter-wave Sources in South Pole Telescope Survey Data: Source Counts, Catalog, and Statistics for an 87 Square-degree Field." J. Vieira, T. Crawford, et al. *The Astrophysical Journal*, **719**, 763 (2010).
- "Measurements of Secondary Cosmic Microwave Background Anisotropies with the South Pole Telescope." M. Lueker, C. Reichardt, et al. *The Astrophysical Journal*, **719**, 1045 (2010).
- "Angular Power Spectra of the Millimeter Wavelength Background Light from Dusty Star-forming Galaxies with the South Pole Telescope." N. Hall, L. Knox, et al. *The Astrophysical*

- Journal*, **718**, 632 (2010).
- “Sunyaev-Zel’dovich Cluster Profiles Measured with the South Pole Telescope.” T. Plagge, B. Benson, et al. *The Astrophysical Journal*, **716**, 1118 (2010).
- “The South Pole Telescope.” J. Carlstrom, P. Ade, et al. *Proceedings of the Astronomical Society of the Pacific*, **123**, 568 (2011).
- “Galaxy Clusters Discovered with a Sunyaev-Zel’dovich Effect Survey.” Z. Staniszewski, P. Ade, et al. *The Astrophysical Journal*, **701**, 32 (2009).
- “South Pole Telescope Optics.” S. Padin, Z. Staniszewski, et al. *Applied Optics*, **47**, 4418 (2008).
- “Design and Fabrication of Absorber Coupled TES Microbolometers on Continuous Silicon-Nitride Windows.” C. Chang, J. Carlstrom, et al. *Journal of Low Temperature Physics*, **151**, 245 (2008).
- “Power Spectrum Sensitivity of Raster-scanned CMB Experiments in the Presence of  $1/f$  Noise.” T. Crawford. *Physical Review D*, **76**, 063008 (2007).
- “The Optical Performance of Frequency Selective Bolometers.” T. Perera, T. Chen, et al. *Applied Optics*, **45**, 7643 (2006).
- “Spontaneous Isotropy Breaking: A Mechanism for CMB Multipole Alignments.” C. Gordon, W. Hu, D. Huterer, and T. Crawford. *Physical Review D*, **72**, 103002 (2005).
- “The TopHat Experiment: A Balloon-borne Instrument for Mapping Millimeter and Submillimeter Emission.” R. Silverberg, E. Cheng, et al. *The Astrophysical Journal Supplement*, **160**, 59 (2005).
- “A Bolometer Array for the Spectral Energy Distribution (SPEED) Camera.” R. Silverberg, S. Ali, et al. *Nuclear Instruments and Methods in Physics Research Section A*, **520**, 421 (2004).
- “The Spectrum of Integrated Millimeter Flux of the Magellanic Clouds and 30 Doradus from TopHat and DIRBE Data.” J. Aguirre, J. Bezaire, et al. *The Astrophysical Journal*, **596**, 273 (2003).
- “Lightweight Long-hold-time Dewar.” D. J. Fixsen, E. S. Cheng, T. Crawford, S. Meyer, G. Wilson, E. Oh, and E. Sharp. *Review of Scientific Instruments*, **72**, 3112 (2001).
- “Prelase Stabilization of Polarization State and Frequency in a Q-switched, Diode-Pumped, Nd:YAG Laser.” T. Crawford, C. Lowrie, and J. Thompson. *Applied Optics*, **35**, 5861 (1996).