

David A. Coulter

CONTACT INFORMATION

Space Telescope Science Institute
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Baltimore, MD 21218, USA

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EDUCATION

Ph.D., Astronomy & Astrophysics, UC Santa Cruz, CA September 2023
Advisor: Ryan J. Foley
Thesis: *Unlocking Time-Domain & Multimessenger Astrophysics and the Discovery of the First Optical Counterpart to a Gravitational Wave Source*
M.Sc., Astronomy & Astrophysics, UC Santa Cruz, CA June 2019
B.Sc., Physics, Portland State University, OR December 2015
Degree conferred *summa cum laude*
B.A., History, Lewis & Clark College, OR May 2003

EXPERIENCE

Associate Research Scientist, Johns Hopkins University, MD 2025 – Present
Postdoctoral Fellow, Space Telescope Science Institute, MD 2023 – 2025
Graduate Student, UC Santa Cruz, CA 2016 – 2023
Universities Space Research Association Summer Researcher, NASA GSFC, MD 2015
OR Space Grant Consortium (OSGC) Summer Researcher, NASA JPL, CA 2014
OSGC Summer Researcher, NASA Wallops, VA 2013

AWARDS

Lasker Fellowship[†], Space Telescope Science Institute, MD 2025
The High-z Menagerie: A Rare Chance to Study the Early and Exotic Transient Universe
McWilliams Fellowship[†], Carnegie Mellon University, PA 2023
Fulfilling the Promise of Multi-Messenger Astronomy
ARCS Foundation Fellow, UC Santa Cruz, CA 2020
Physical and Biological Sciences Dean's Award, UC Santa Cruz, CA 2018
National Science Foundation GRFP Fellow, UC Santa Cruz, CA 2016
Regents Fellowship, UC Santa Cruz, CA 2016
Post-Baccalaureate of the Year, Portland State University, OR 2014
OSCG 4-Year Institution Scholarship, Portland State University, OR 2014

[†]Declined

SCIENTIFIC EXPERIENCE & TECHNICAL LEADERSHIP

JWST* NIRC*am* + *HST* WFC3/*IR

I specialize in full-stack, high-*z* transient detection pipelines and transient analysis. This involves reductions from level 2 files including alignment, drizzling, difference imaging, source detection and transient vetting, aperture/PSF photometry, light curve fitting, host analysis, and follow-up observation design.

Electromagnetic Follow-up of Gravitational Wave Sources

I have deep experience in search, follow-up, and analysis of GW events. I have built geo-enabled databases, designed networked telescope scheduling software, and built real-time photometric data processing pipelines. I have designed and implemented a novel analysis framework to homogeneously combine and analyze photometric data and compute model detection efficiencies.

Large Scale Transient Database – Design & Implementation: YSE-PZ

I maintain, extend, and manage the software development life-cycle of YSE-PZ. This involves managing a team of 11 developers, and I am responsible for deploying this software, performing back-ups, and restoring of mission critical data and infrastructure for multiple time-domain surveys.

System Administration: UCSC Transients Research Server

I built, maintain, and administer a research server with 50 user accounts. I am responsible for maintaining high-availability of ~60 TB of research data.

SOFTWARE

Teglon, Pixel-level gravitational wave search optimization and analysis code.

User-base: 1-Meter, 2-Hemisphere Collaboration / Gravity Collective (GW follow-up and analysis), and Las Cumbres Observatory (2023).

<https://github.com/davecouler/teglon>

YSE-PZ, General Target and Observation Management platform.

User-base: 194 active users; Young Supernova Experiment (YSE), Keck Infrared Transient Survey (KITS), UCSC K2 Campaign 16 & 17 Supernova Experiment. System of record for: >100,000 transients, ~3.4 million photometric data points, and ~13k spectra.

https://github.com/davecouler/YSE_PZ

UCSC Observation Scheduler, Photometric observation scheduler.

User-base: 15 active users; Swope Supernova Survey, 1-Meter, 2-Hemisphere Collaboration / Gravity Collective (GW follow-up). ~10,000 observations scheduled to date.

<https://github.com/davecouler/Scheduler>

RELEVANT INDUSTRY EXPERIENCE

Nike, Inc., Beaverton, OR 2/2016–8/2016
Built a scalable and performant synthetic data pipeline for Nike’s internal testing purposes. Focused on dev ops, managed source code in an enterprise environment, built, tested, deployed, scaled, and versioned our proprietary tool across multiple Linux-based virtual machines in the AWS cloud.

Pollinate Media Group, Portland, OR 7/2010–2/2016
Built dozens of applications ranging from content management systems and complex workflows to data services and mobile websites. Specialized in full-stack web application development, enterprise database programming and management, microservices and RESTful APIs. Instrumental in securing over \$2 million in renewed contracts over 6 years.

Viewpoint Construction Software, Portland, OR 10/2008-7/2010
Published Viewpoint’s internal core API, co-led a new feature team, and helped to implement a company-wide adoption of Agile development methodologies.

FIRST AUTHOR & MAJOR CONTRIBUTION PUBLICATIONS

First Author: 4 (970 citations)

- 72 **Coulter D. A.**, et al., (2025), Discovery of a likely Type II SN at $z=3.6$ with *JWST*, (*submitted to ApJ*), [arXiv](#), [arXiv:2501.05513](#)
- 71 **Coulter D. A.**, et al., (2025), The Gravity Collective: A Comprehensive Analysis of the Electromagnetic Search for the Binary Neutron Star Merger GW190425, (*submitted to ApJ*), [arXiv](#), [arXiv:2404.15441](#)
- 70 **Coulter D. A.**, et al., (2023), YSE-PZ: A Transient Survey Management Platform that Empowers the Human-in-the-loop, *PASP*, **135**, 064501
- 69 **Coulter D. A.**, et al., (2017), Swope Supernova Survey 2017a (SSS17a), the optical counterpart to a gravitational wave source, *Sci*, **358**, 1556
- 68 **Coulter D. A.**, et al., (2017), Testing the Universality of the Stellar IMF with Chandra and HST, *ApJ*, **835**, 183
- 67 Kilpatrick C. D., **Coulter D. A.**, et al., (2021), The Gravity Collective: A Search for the Electromagnetic Counterpart to the Neutron Star-Black Hole Merger GW190814, *ApJ*, **923**, 258

- 66 Foley R. J., **Coulter D. A.**, et al., (2020), Updated parameter estimates for GW190425 using astrophysical arguments and implications for the electromagnetic counterpart, *MNRAS*, **494**, 190
- 65 Law-Smith J. A. P., **Coulter D. A.**, et al., (2020), Stellar Tidal Disruption Events with Abundances and Realistic Structures (STARS): Library of Fallback Rates, *ApJ*, **905**, 141
- 64 Jones D. O., **including Coulter D. A.**, et al., (2021), The Young Supernova Experiment: Survey Goals, Overview, and Operations, *ApJ*, **908**, 143
- 63 Coughlin M. W., **Coulter D. A.**, et al., (2019), Optimizing multitelescope observations of gravitational-wave counterparts, *MNRAS*, **489**, 5775

ACCEPTED
PROPOSALS (PI)

NEWFIRM, Finding and Characterizing Distant and Red Kilonovae with NEWFIRM (PI), 1.67 nights, 2024B.

JWST, The High- z Menagerie: A Rare Chance to Study the Early and Exotic Transient Universe (PI), 8.9 hours, 2024.

NEWFIRM, Finding and Characterizing Red and Distant Kilonovae with NEWFIRM (PI), 1.67 nights, 2024A.

ANDICAM, Gravitational Wave Follow-up with ANDICAM (PI), 74 hours, 2018–2019.

OBSERVING
EXPERIENCE

NEWFIRM - NIR Imaging (3 nights)
Keck - Optical Spectroscopy (ESI, 1 night; LRIS, 1 night)
Lick Shane - Optical Spectroscopy (Kast, 9 nights)
SOAR - Optical Spectroscopy (Goodman, 4 nights)
KPNO Mayall - Optical Spectroscopy (KOSMOS, 4 nights)
LCO Swope - Direct Imaging (13 nights)
Lick Nickel - Direct Imaging (2 nights)

MENTORSHIP

Postdoctoral Researchers

Dr. David Jones, UC Santa Cruz Fall 2017 – 2023
 Full-stack web application development

Dr. Peter McGill, UC Santa Cruz Fall 2021 – 2023
 Docker virtualization, relational database programming, and full-stack web application development on Blast (<https://github.com/astrophpeter/blast>)

Graduate Students

Rodrigo Angulo, Johns Hopkins University 2023-present
 Difference imaging to search for light echoes

Christa Noel DeCoursey, University of Arizona 2023-present
 Difference imaging, light curve fitting, analysis of high- z SNe with *JWST*

Undergraduate Students

Pedro Jesus Quiñonez^{†‡}, Lamat Scholar, UC Santa Cruz Summer 2021
 “A Statistical Dark Siren Measurement of the Hubble Constant”
 “Candidate Analysis Pipeline for GW190425” Summer 2022

Dragon Reed[†], UC Santa Cruz (now graduate student at University of Minnesota) Winter 2016 - Winter 2018
 Galaxy-targeted gravitational wave follow-up algorithms
 Taught elementary Python programming

Mileena Garcia, Koret Scholar, UC Santa Cruz Winter 2016 - Winter 2018
 EM follow-up observation scheduling algorithms
 Taught elementary Python programming

† in graduate school

‡ won NSF GFRP

TALKS
(invited[†])

STScI “Hot Sci”	August 2024
COSMOS-Web Team Meeting	July 2024
NOIRLab Windows on the Universe[†]	Oct 2023
Transient and Variable Universe	June 2023
NASA TDAMM O4 Hackathon	August 2022
NOIRLab FLASH[†]	May 2022
Rose City Astronomers	June 2021
ARCS Forward[†]	May 2021
ARCS 50th Anniversary Celebration	April 2021
ARCS Scholar Symposium	April 2021
STScI MMA Workshop	April 2019
UC Santa Cruz FLASH[†]	June 2018
Astronomy On Tap	October 2018
Graduate Student Research Symposium, UC Santa Cruz	April 2018
APS	April 2018
Original Thinkers, LA Central Library[†]	April 2018
Santa Cruz Cruzio November[†]	November 2017
227th AAS	December 2016

CO-AUTHOR
PUBLICATIONS

Total papers: 72 (9509 citations), h-index: 33 [ADS]

- 62 Angus C. R., et al., **including Coulter D. A.**, (2024), Double “acct”: a distinct double-peaked supernova matching pulsational pair-instability models, (*Submitted*), [arXiv](#), [arXiv:2409.02174](#)
- 61 Yadavalli S. K., et al., **including Coulter D. A.**, (2024), SN 2022oqm: A Bright and Multi-peaked Calcium-rich Transient, [ApJ](#), **972**, 194
- 60 Jacobson-Galán W. V., et al., **including Coulter D. A.**, (2024), SN 2024ggi in NGC 3621: Rising Ionization in a Nearby, Circumstellar-material-interacting Type II Supernova, [ApJ](#), **972**, 177
- 59 Farias D., et al., **including Coulter D. A.**, (2024), SN 2021foa: The “Flip-Flop” Type II_n / Ibn supernova, (*Submitted*), [arXiv](#), [arXiv:2409.01359](#)
- 58 Siebert M. R., et al., **including Coulter D. A.**, (2024), Discovery of a Relativistic Stripped-envelope Type Ic-BL Supernova at $z = 2.83$ with JWST, [ApJL](#), **972**, L13
- 57 Pierel J. D. R., et al., **including Coulter D. A.**, (2024), Discovery of an Apparent Red, High-velocity Type Ia Supernova at $z = 2.9$ with JWST, [ApJL](#), **971**, L32
- 56 Jacobson-Galán W. V., et al., **including Coulter D. A.**, (2024), Final Moments. II. Observational Properties and Physical Modeling of Circumstellar-material-interacting Type II Supernovae, [ApJ](#), **970**, 189
- 55 Pierel J. D. R., et al., **including Coulter D. A.**, (2024), Lensed Type Ia Supernova “Encore” at $z = 2$: The First Instance of Two Multiply Imaged Supernovae in the Same Host Galaxy, [ApJL](#), **967**, L37
- 54 Wang Q., et al., **including Coulter D. A.**, (2024), A low-mass helium star progenitor model for the Type Ibn SN 2020nxt, [MNRAS](#), **530**, 3906
- 53 Pierel J. D. R., et al., **including Coulter D. A.**, (2024), JWST Photometric Time-delay and Magnification Measurements for the Triply Imaged Type Ia “SN H0pe” at $z = 1.78$, [ApJ](#), **967**, 50
- 52 Kwok L. A., et al., **including Coulter D. A.**, (2024), Ground-based and JWST Observations of SN 2022pul. II. Evidence from Nebular Spectroscopy for a Violent Merger in a Peculiar Type Ia Supernova, [ApJ](#), **966**, 135
- 51 Padilla Gonzalez E., et al., **including Coulter D. A.**, (2024), SN 2022joj: A Potential Double Detonation with a Thin Helium Shell, [ApJ](#), **964**, 196

- 50 Ransome C. L., et al., **including Coulter D. A.**, (2024), SN 2023ixf in Messier 101: The Twilight Years of the Progenitor as Seen by Pan-STARRS, [ApJ](#), **965**, 93
- 49 Wang Q., et al., **including Coulter D. A.**, (2024), Flight of the Bumblebee: the Early Excess Flux of Type Ia Supernova 2023bee Revealed by TESS, Swift, and Young Supernova Experiment Observations, [ApJ](#), **962**, 17
- 48 Siebert M. R., et al., **including Coulter D. A.**, (2024), Ground-based and JWST Observations of SN 2022pul. I. Unusual Signatures of Carbon, Oxygen, and Circumstellar Interaction in a Peculiar Type Ia Supernova, [ApJ](#), **960**, 88
- 47 Pearson J., et al., **including Coulter D. A.**, (2024), Strong Carbon Features and a Red Early Color in the Underluminous Type Ia SN 2022xxkq, [ApJ](#), **960**, 29
- 46 Tinyanont S., et al., **including Coulter D. A.**, (2024), Keck Infrared Transient Survey. I. Survey Description and Data Release 1, [PASP](#), **136**, 014201
- 45 Ward S. M., et al., **including Coulter D. A.**, (2023), Relative Intrinsic Scatter in Hierarchical Type Ia Supernova Sibling Analyses: Application to SNe 2021hpr, 1997bq, and 2008fv in NGC 3147, [ApJ](#), **956**, 111
- 44 Jacobson-Galán W. V., et al., **including Coulter D. A.**, (2023), SN 2023ixf in Messier 101: Photo-ionization of Dense, Close-in Circumstellar Material in a Nearby Type II Supernova, [ApJL](#), **954**, L42
- 43 Davis K. W., et al., **including Coulter D. A.**, (2023), SN 2022ann: a Type Icn supernova from a dwarf galaxy that reveals helium in its circumstellar environment, [MNRAS](#), **523**, 2530
- 42 Kilpatrick C. D., et al., **including Coulter D. A.**, (2023), SN 2023ixf in Messier 101: A Variable Red Supergiant as the Progenitor Candidate to a Type II Supernova, [ApJL](#), **952**, L23
- 41 Aleo P. D., et al., **including Coulter D. A.**, (2023), The Young Supernova Experiment Data Release 1 (YSE DR1): Light Curves and Photometric Classification of 1975 Supernovae, [ApJS](#), **266**, 9
- 40 Fulton M. D., et al., **including Coulter D. A.**, (2023), The Optical Light Curve of GRB 221009A: The Afterglow and the Emerging Supernova, [ApJL](#), **946**, L22
- 39 Scolnic D., et al., **including Coulter D. A.**, (2022), The Pantheon+ Analysis: The Full Data Set and Light-curve Release, [ApJ](#), **938**, 113
- 38 Brout D., et al., **including Coulter D. A.**, (2022), The Pantheon+ Analysis: Cosmological Constraints, [ApJ](#), **938**, 110
- 37 Kilpatrick C. D., et al., **including Coulter D. A.**, (2022), Updated Photometry of the Yellow Supergiant Progenitor and Late-time Observations of the Type IIb Supernova SN 2016gkg, [ApJ](#), **936**, 111
- 36 Jacobson-Galán W. V., et al., **including Coulter D. A.**, (2022), The Circumstellar Environments of Double-peaked, Calcium-strong Transients 2021gno and 2021inl, [ApJ](#), **932**, 58
- 35 Tinyanont S., et al., **including Coulter D. A.**, (2022), Progenitor and close-in circumstellar medium of type II supernova 2020fqv from high-cadence photometry and ultra-rapid UV spectroscopy, [MNRAS](#), **512**, 2777
- 34 Dimitriadis G., et al., **including Coulter D. A.**, (2022), A Carbon/Oxygen-dominated Atmosphere Days after Explosion for the "Super-Chandrasekhar" Type Ia SN 2020esm, [ApJ](#), **927**, 78
- 33 Jacobson-Galán W. V., et al., **including Coulter D. A.**, (2022), Final Moments. I. Precursor Emission, Envelope Inflation, and Enhanced Mass Loss Preceding the Luminous Type II Supernova 2020tlf, [ApJ](#), **924**, 15
- 32 Gagliano A., et al., **including Coulter D. A.**, (2022), An Early-time Optical and Ultraviolet Excess in the Type-Ic SN 2020oi, [ApJ](#), **924**, 55
- 31 Wang Q., et al., **including Coulter D. A.**, (2021), SN 2018agk: A Prototypical Type Ia Supernova with a Smooth Power-law Rise in Kepler (K2), [ApJ](#), **923**, 167

- 30 Dettman K. G., et al., **including Coulter D. A.**, (2021), The Foundation Supernova Survey: Photospheric Velocity Correlations in Type Ia Supernovae, [ApJ](#), **923**, 267
- 29 Armstrong P., et al., **including Coulter D. A.**, (2021), SN2017jgh: a high-cadence complete shock cooling light curve of a SN IIb with the Kepler telescope, [MNRAS](#), **507**, 3125
- 28 Jencson J. E., et al., **including Coulter D. A.**, (2021), AT 2019qyl in NGC 300: Internal Collisions in the Early Outflow from a Very Fast Nova in a Symbiotic Binary, [ApJ](#), **920**, 127
- 27 Heinzel J., et al., **including Coulter D. A.**, (2021), Comparing inclination-dependent analyses of kilonova transients, [MNRAS](#), **502**, 3057
- 26 Barna B., et al., **including Coulter D. A.**, (2021), SN 2019muj - a well-observed Type Iax supernova that bridges the luminosity gap of the class, [MNRAS](#), **501**, 1078
- 25 Hinkle J. T., et al., **including Coulter D. A.**, (2021), Discovery and follow-up of ASASSN-19dj: an X-ray and UV luminous TDE in an extreme post-starburst galaxy, [MNRAS](#), **500**, 1673
- 24 Hung T., et al., **including Coulter D. A.**, (2020), Double-peaked Balmer Emission Indicating Prompt Accretion Disk Formation in an X-Ray Faint Tidal Disruption Event, [ApJ](#), **903**, 31
- 23 Holoien T. W.-S., et al., **including Coulter D. A.**, (2020), The Rise and Fall of ASASSN-18pg: Following a TDE from Early to Late Times, [ApJ](#), **898**, 161
- 22 Coughlin M. W., et al., **including Coulter D. A.**, (2020), Measuring the Hubble constant with a sample of kilonovae, [NatCo](#), **11**, 4129
- 21 Jacobson-Galán W. V., et al., **including Coulter D. A.**, (2020), SN 2019ehk: A Double-peaked Ca-rich Transient with Luminous X-Ray Emission and Shock-ionized Spectral Features, [ApJ](#), **898**, 166
- 20 Jacobson-Galán W. V., et al., **including Coulter D. A.**, (2020), Ca hnk: The Calcium-rich Transient Supernova 2016hnk from a Helium Shell Detonation of a Sub-Chandrasekhar White Dwarf, [ApJ](#), **896**, 165
- 19 Neustadt J. M. M., et al., **including Coulter D. A.**, (2020), To TDE or not to TDE: the luminous transient ASASSN-18jd with TDE-like and AGN-like qualities, [MNRAS](#), **494**, 2538
- 18 Coughlin M. W., et al., **including Coulter D. A.**, (2020), Standardizing kilonovae and their use as standard candles to measure the Hubble constant, [PhRvR](#), **2**, 022006
- 17 Jones D. O., et al., **including Coulter D. A.**, (2019), The Foundation Supernova Survey: Measuring Cosmological Parameters with Supernovae from a Single Telescope, [ApJ](#), **881**, 19
- 16 Dimitriadis G., et al., **including Coulter D. A.**, (2019), K2 Observations of SN 2018oh Reveal a Two-component Rising Light Curve for a Type Ia Supernova, [ApJL](#), **870**, L1
- 15 Li W., et al., **including Coulter D. A.**, (2019), Photometric and Spectroscopic Properties of Type Ia Supernova 2018oh with Early Excess Emission from the Kepler 2 Observations, [ApJ](#), **870**, 12
- 14 Kilpatrick C. D., et al., **including Coulter D. A.**, (2018), X-ray limits on the progenitor system of the Type Ia supernova 2017ejb, [MNRAS](#), **481**, 4123
- 13 Jones D. O., et al., **including Coulter D. A.**, (2018), Should Type Ia Supernova Distances Be Corrected for Their Local Environments?, [ApJ](#), **867**, 108
- 12 Foley R. J., et al., **including Coulter D. A.**, (2018), The Foundation Supernova Survey: motivation, design, implementation, and first data release, [MNRAS](#), **475**, 193
- 11 Kilpatrick C. D., et al., **including Coulter D. A.**, (2018), Connecting the progenitors, pre-explosion variability and giant outbursts of luminous blue variables with Gaia16cfr, [MNRAS](#), **473**, 4805
- 10 Tartaglia L., et al., **including Coulter D. A.**, (2018), The Early Detection and Follow-up of the Highly Obscured Type II Supernova 2016ija/DLT16am, [ApJ](#), **853**, 62
- 9 Drout M. R., et al., **including Coulter D. A.**, (2017), Light curves of the neutron star merger GW170817/SSS17a: Implications for r-process nucleosynthesis, [Sci](#), **358**, 1570

- 8 Shappee B. J., et al., **including Coulter D. A.**, (2017), Early spectra of the gravitational wave source GW170817: Evolution of a neutron star merger, *Sci*, **358**, 1574
- 7 Kilpatrick C. D., et al., **including Coulter D. A.**, (2017), Electromagnetic evidence that SSS17a is the result of a binary neutron star merger, *Sci*, **358**, 1583
- 6 Abbott B. P., et al., **including Coulter D. A.**, (2017), A gravitational-wave standard siren measurement of the Hubble constant, *Natur*, **551**, 85
- 5 Murguia-Berthier A., et al., **including Coulter D. A.**, (2017), A Neutron Star Binary Merger Model for GW170817/GRB 170817A/SSS17a, *ApJL*, **848**, L34
- 4 Siebert M. R., et al., **including Coulter D. A.**, (2017), The Unprecedented Properties of the First Electromagnetic Counterpart to a Gravitational-wave Source, *ApJL*, **848**, L26
- 3 Pan Y.-C., et al., **including Coulter D. A.**, (2017), The Old Host-galaxy Environment of SSS17a, the First Electromagnetic Counterpart to a Gravitational-wave Source, *ApJL*, **848**, L30
- 2 Abbott B. P., et al., **including Coulter D. A.**, (2017), Multi-messenger Observations of a Binary Neutron Star Merger, *ApJL*, **848**, L12
- 1 Peacock M. B., et al., **including Coulter D. A.**, (2017), Further Constraints on Variations in the Initial Mass Function from Low-mass X-ray Binary Populations, *ApJ*, **841**, 28

TRANSIENT
ALERTS

443 TNS Discovery Reports, 25 Astronomer's Telegrams, 18 Gamma-ray Coordinates Network Reports

ACCEPTED
PROPOSALS (Co-I)

JWST, Do Pass $z = 2$, Do Collect Type Ia Supernovae: Breaking Out of Redshift Jail with *JWST* (Co-I), 75.6 hours, Cycle 3.

JWST, Observing Molecule and Dust Formation in the Nearby SN 2024ggi (Co-I), 4.4 hours, Cycle 3.

JWST, A Bonanza of Dusty, Old Supernovae in Archival Observations (Co-I), Archival, Cycle 3.

NEWFIRM, The NEWFIRM Infrared Survey for Transients (Co-I), 6.0 nights, 2024A.

SOAR, SOAR Spectroscopy of LIGO/Virgo/KAGRA O4 Kilonovae (Co-I), 1.0 night, 2024A.

DECam, GW-MMADS: Gravitational Wave Multi-Messenger Astronomy DECam Survey (Co-I), 7.0 nights, 2023B.

SOAR, The Spectroscopic Sample of Astrophysical Transients Needed for the Next Generation of Time-Domain Surveys (Co-I), 4.5 nights, 2023B.

LCO, The Physical Properties of Supernovae with Progenitor Star Detections with Las Cumbres Observatory (Co-I), 2.44 nights, 2023B.

LCO, The Physical Properties of Supernovae with Progenitor Star Detections with Las Cumbres Observatory (Co-I), 2.49 nights, 2023A.

LCO, Extremely Young Transients (Co-I), 16.6 nights, 2023A.

LCO, The Physical Properties of Supernovae with Progenitor Star Detections with Las Cumbres Observatory (Co-I), 2.49 nights, 2022B.

LCO, Extremely Young Transients (Co-I), 0.4 nights, 2022B.

LCO, Young Supernova Experiment (Co-I), 13.0 nights, 2022A.

JWST, Lensed Supernova Encore at $z = 2!$ The First Galaxy to Host Two Multiply-Imaged Supernovae (Co-I), 7.3 hours, Cycle 2.

JWST, Observing Molecule and Dust Formation in the Nearby SN 2024ggi (Co-I), 1.9 hours, Cycle 2.

JWST, Detecting the Synthesis of the Heaviest Elements with Photometry of a Kilonova in the

Optically Thin Phase (Co-I), 12.8 hours, Cycle 2.

JWST, Nucleosynthesis, Astrophysics, and Cosmology with IR Observations of a Gravitational Wave Counterpart (Co-I), 17.2 hours, Cycle 1.

JWST, Nebular Spectroscopy of a Kilonova with JWST (Co-I), 14.9 hours, Cycle 1.

JWST, Detecting the Synthesis of the Heaviest Elements with Photometry of a Kilonova in the Optically Thin Phase (Co-I), 10.1 hours, Cycle 1.

HST, Snapshot Observations of Nearby, Recent Transients and Their Environments (Co-I), 75 orbits, 2021.

HST, Snapshot Observations of Nearby, Recent Supernovae and Their Environments (Co-I), 97 orbits, 2020.

Gemini North, Ultra-Rapid UV Spectroscopy of an Interacting Supernova Discovered by TESS (Co-I), 18 hours, 2020.

Gemini South, Optical to IR Observations of the Next Kilonovae (Co-I), 97.7 hours, 2019–2020.

HST, Ultra-Rapid UV Spectroscopy of an Interacting Supernova Discovered by TESS (Co-I), 19 orbits, 2019.

SOAR, SOAR spectroscopy for a sample of YSE-discovered SNe (Co-I), 8 nights, 2018–2019.

Gemini South, Identifying the Progenitors of Astrophysical Transients (Co-I), 5.7 hours, 2018/2021.

Gemini North, Ultra-Rapid UV Spectroscopy of an Interacting Supernova Discovered by K2 (Co-I), 9 hours, 2018.

KP-4m, SOAR, LCO, The Next Generation Low-z Type Ia Supernova Sample for Cosmology (Co-I), 31.4 nights, 2017–2018.

OUTREACH

Astronomy On Tap, Santa Cruz 2017–2020

Original co-founder. Produced over 25 public shows reaching > 2000 people

PI of Osterbrock Mini-grant (2020) to grow AoT's reach. Over the course of the grant period we nearly doubled the number of younger attendees, persons of color, and women attending the event for the first time.

Lick Observatory Summer Series 2017–2022

Guest lecturer for the Nickel 40" Reflector Telescope Control Room

Engaged with > 500 diverse members of the public

PRESS

The Slack Chat That Changed Astronomy, The Atlantic October 2017

In a First, Gravitational Waves Linked to Neutron Star Crash, Nat Geo December 2017

Neutron Star Collision AMA, Carnegie Observatories Reddit "Ask Me Anything" October 2017

REFERENCES

Available upon request