

STACEY ALBERTS

salberts@arizona.edu \diamond staceyalberts.com \diamond 413-230-0634

Research Professor \diamond Steward Observatory, U. Arizona

933 N Cherry Ave, Tucson, AZ 85719, USA

RESEARCH AND TECHNICAL INTERESTS

Galaxy evolution: cosmic noon, star formation, quenching, Active Galactic Nuclei, interacting galaxies
Overdense environments: galaxy groups, clusters, proto-clusters

My area of research and expertise is in galaxy evolution, specifically using large multi-wavelength (X-ray-radio) surveys to study the interplay between star formation, AGN, and environment in driving galaxy quenching. I specialize in infrared observations of obscured activity in galaxy (proto-)cluster and field galaxy populations.

My professional interest is in supporting observing facilities and community tool development. As a member of the JWST/Mid-Infrared Instrument (MIRI) instrument team, I have worked in infrared detector characterization, JWST testing campaigns and commissioning, and development of best practices guidelines (for JWST/MIRI and parallel instrument observations) and documentation ([JDox](#)) for JWST users.

ACADEMIC POSITIONS

Assistant Research Professor , University of Arizona	Jan 2020–present
Senior Research Associate , University of Arizona	Sept 2017–Jan 2020
Postdoctoral Research Associate , University of Arizona	Sept 2014–Sept 2017

EDUCATION

Ph.D., Astronomy , University of Massachusetts, Amherst	Received 2014
Thesis: <i>The Role of Environment in Dusty Star Formation</i> , Advisor: Dr. Alexandra Pope	
M.S., Astronomy , University of Illinois, Champaign-Urbana	Deferred for Ph.D. 2008
B.S., Astronomy and Physics , University of Illinois, Champaign-Urbana	Received 2007

ACADEMIC AND PROFESSIONAL MEMBERSHIP AND SERVICE

JWST/MIRI Instrument Team and Guaranteed Time Observations (GTO) Science Team	2014–present
JWST/Near-Infrared Instrument (NIRCam) GTO Science Team	2014–present
JWST Advanced Deep Extragalactic Survey (JADES) Collaboration	2014–present
Infrared Science and Technology Integration Group (IRSTIG) Leadership Council	2020–present
Single Aperture Large Telescope for Universe Studies (SALTUS)	
Extragalactic Working Group	2022–present
JWST/MIRI Ramps to Slopes Working Group	2014–present
JWST/MIRI Science Operations Working Group	2014–2022
JWST Testing Campaigns and Commissioning - <i>MIRI test operator and data analyst</i>	
JWST Commissioning	Jan–Jun 2022
Launch Readiness Exercise (LRE-6)	Oct 2021
JWST/MIRI Flight Performance Spare Test Runs 4-9, Jet Propulsion Lab	2015–2019
JWST OTIS Cryogenic Vacuum Test, Johnson Space Center	Jun–Aug 2017
JWST Cryo-vac 3 Thermal Testing, Goddard Space Flight Center	Dec 2015, Jan 2016
SOC, Astro2020 and IR Astrophysics: Planning for the Next Decade	Mar 2022

JCMT External Reviewer	May 2022
Faculty Liaison, Steward Observatory Diversity, Equity and Inclusion Initiative (SODEI)	2020–2021
SOC, University of Arizona JWST Proposal Planning Workshop	Mar–Apr 2021
Reviewer, Panel Chair, NASA ROSES grant review	2019–2020
Steward Observatory Optical/IR Time Allocation Committee	2018–2020
Conference Co-Chair, Dusting the Universe Tucson, AZ	Mar 4-8, 2019
<i>Sponsored by the U. of Arizona, Steward Observatory; NOAO in association with AURA; NRAO in association with the NSF; and the Origins Space Telescope</i>	
Large Millimeter Telescope Time Allocation Committee	2018–2020
Journal Referee: ApJ, MNRAS	

JWST OBSERVING PROGRAMS

‡Science and Observational Design Lead or Co-Lead

‡PI - [A CENSUS OF STAR FORMATION AND EARLY QUENCHING IN A HIGH-Z GALAXY CLUSTER](#); Cycle 2 GTO, PID 2775, 3.5 hr

‡CO-I - [DECIPHERING THE EXTENDED DUST AND GAS ENVIRONMENT OF THE ARCHETYPAL TYPE-1 AGN IN NGC 4151 WITH JWST](#); Cycle 2 GTO, PID 2773, 5.9 hr

CO-I - [THE ENVIRONMENT OF ULAS J1120+0641](#); Cycle 2 GTO, PID 2774, 8.1 hr

‡CO-I - [MIRI IN THE HUBBLE ULTRA-DEEP FIELD](#); Cycle 1 GTO, PID 1207, 80 hr

‡CO-I - [RAM PRESSURE STRIPPING IN ESO 137-001](#); Cycle 1 GTO, PID 1178, 16 hr

‡CO-I - [ARE THERE AGN EMBEDDED IN ALL ULTRALUMINOUS INFRARED GALAXIES \(ULIRGS\)?](#); Cycle 1 GTO, PID 1204, 19 hr

‡CO-I - [FORMATION HISTORIES AND STELLAR MASSES OF VERY HIGH-Z QUASARS](#); Cycle 1 GTO, PID 1205, 41 hr

CO-I - [NIRSPEC+MIRI IFU OBSERVATIONS OF ARP220](#); Cycle 1 GTO, PID 1267, 8 hr

CO-I - [HALFWAY TO THE PEAK: A BRIDGE PROGRAM TO MAP COEVAL STAR FORMATION AND SUPERMASSIVE BLACK HOLE GROWTH](#); Cycle 1 GO, PID 1762, 25 hr

CO-I - [UDF MEDIUM BAND SURVEY: USING H-ALPHA EMISSION TO RECONSTRUCT LY-ALPHA ESCAPE DURING THE EPOCH OF REIONIZATION](#); Cycle 1 GO, PID 1963, 20 hr

SELECT OBSERVING AND ARCHIVAL PROGRAMS

†Observing Experience

PI - [TRACING MOLECULAR GAS ACROSS THE STAGES OF ACCRETION ONTO A GALAXY CLUSTER](#), ALMA (2021.1.00992.S), 9 hrs, 2021

PI - [TRACING MOLECULAR GAS ACROSS THE STAGES OF ACCRETION ONTO A GALAXY CLUSTER](#), ALMA (2019.1.01010.S), 19 hrs, 2019

COLLABORATOR - [THE RISE AND FALL OF DUSTY STAR FORMATION IN CLUSTERS AND PROTO-CLUSTERS MEASURED BY HERSCHEL AND WISE](#), NASA Astrophysics Data Analysis Program, 18-ADAP18-0111

PI - [EXPLORING THE INFRARED-RADIO CORRELATION IN MASSIVE CLUSTERS AT \$z = 1 - 2\$](#) , VLA (16B-292), 21 hrs, 2016

PI - [FUELING STAR FORMATION IN EXTREME ENVIRONMENTS: DUST AND GAS IN CLUSTER GALAXIES AT \$z = 1 - 2\$](#) , ALMA (2015.1.00813.S), 8 hrs, 2016

‡PI - [EXPLORING THE ERA OF STAR FORMATION IN MASSIVE GALAXY CLUSTERS AT HIGH REDSHIFT](#), MMT/MMIRS, 2 nights, 2016

CO-I - A NEW FRONTIER FOR THE LMT: DUST OBSCURED ACTIVITY IN GALAXIES THAT DOMINATE THE COSMIC STAR FORMATION HISTORY, LMT Early Science 3, 46 hrs, 2014

†CO-I - DUST OBSCURED ACTIVITY IN THE HIGHEST REDSHIFT MASSIVE GALAXY CLUSTER, JCMT, 2 nights, 2012

CO-I - TRACING THE EVOLUTION OF STAR FORMATION ACTIVITY IN HIGH REDSHIFTS CLUSTERS, Herschel Space Observatory, 55 hrs, 2012

†PI - H α OBSERVATIONS OF STAR FORMING REGIONS IN XUV DISKS: BREAKING THE IMF-AGE DEGENERACY, KPNO Mayall 4 m, 2 nights, 2009

AWARDS

Rodger Doxsey Travel Prize, Runner-up, AAS (\$200)	2013
FGSA Travel Award for Excellence in Graduate Research, APS Physics (\$500)	2013
University Graduate School Fellowship, UMass-Amherst (\$17k)	2011–2012
Massachusetts Space Grant Consortium Fellowship, MSGC Fall Fellowship (\$5k)	2010
Massachusetts Space Grant Consortium Fellowship, MSGC Summer Fellowship (\$5k)	2009
Teachers Ranked as Excellent, University of Illinois, Champaign-Urbana (UIUC)	2008

ADVISING, OUTREACH, AND TEACHING

Vivian Carvajal, University of Arizona, Graduate Student Oct 2022–present
The morphologies of heavily obscured AGN at Cosmic Noon with JWST (primary advisor)

Nattida Samanso, Universidad Andres Bello, Santiago, Chile, Graduate Student Oct 2022–present
The radio-infrared correlation in massive cluster environments to high redshift (co-advising with Dr. Julie Nantais)

Meredith Stone, University of Arizona, Graduate Student Jun 2022–present
Extreme UV slopes at high redshift with JWST/NIRCam (mentor)

Steward Observatory Postdoc/Grad Mentoring Program 2015–2019

Starts With A Bang podcast #82: JWST and infrared astronomy June 2022

Speaker - Clark Planetarium Public Talk, *Unlocking Secrets of the Universe with JWST* Nov 2021

Speaker - Steward Public Lecture Series, *Into the Mid-Infrared with JWST* Nov 2021

Organizer and Host - Astronomy on Tap - Tucson (SpaceDrafts) 2017–2019

Speaker - Steward Public Lecture Series, *Countdown to JWST* Oct 2017

Speaker - Astronomy on Tap - Tucson, *To Boldly Look Where No One Has Looked Before: The Science of JWST* July 2016

Instructor, Astron 103: Observational Astronomy, UMass-Amherst Aug 2008–May 2009

Discussion Leader, Astron 121: The Solar System, UIUC Aug 2007–May 2008

SELECT REFEREED PUBLICATIONS

Total Refereed Publications: 33 [1257 citations, H-index:18] ****Complete List of Publications**

J. Lyu, S. Alberts, G. H. Rieke, W. Rujopakarn, 2022, *AGN Selection and Demographics in GOODS-S/HUDF from X-ray to Radio*, ApJ, accepted

[Invited Review - Universe Special Issue: Recent Advances in Infrared Galaxies] S. Alberts, A. Noble, 2022. *From Clusters to Proto-Clusters: The Infrared Perspective on Environmental Galaxy Evolution*, Universe 8, 554

- S. Alberts**, J. Adams, B. Gregg, et al., 2022, *Significant Molecular Gas Deficiencies in Star-forming Cluster Galaxies at $z \sim 1.4$* , ApJ, 927, 235
- C. C. Williams, **S. Alberts**, J. Spilker, et al., 2022, *ALMA Measures Molecular Gas Reservoirs Comparable to Field Galaxies in a Low-mass Galaxy Cluster at $z = 1.3$* , ApJ, 929, 35
- S. Alberts**, K.-S. Lee, A. Pope, et al., 2021, *Measuring the total infrared light from galaxy clusters at $z = 0.5-1.6$: connecting stellar populations to dusty star formation*, MNRAS, 501, 1970
- S. Alberts**, W. Rujoparkarn, G. H. Rieke, P. Jagannathan, K. Nyland, 2020, *Completing the Census of AGN in GOODS-S/HUDF: New Ultradeep Radio Imaging and Predictions for JWST*, ApJ, 901, 168
- A. Kirkpatrick, **S. Alberts**, A. Pope, et al. 2017, *The AGN-Star Formation Connection: Future Prospects with JWST*, ApJ, 849, 111
- S. Alberts**, A. Pope, M. Brodwin, et al., 2016, *Star Formation and AGN Activity in Galaxy Clusters from $z=1-2$: a Multi-Wavelength Analysis Featuring Herschel/PACS*, ApJ, 825, 72
- J. Lyu, G. H. Rieke, **S. Alberts**, 2016, *The Contribution of Host Galaxies to the Infrared Energy Output of $z > 5$ Quasars*, ApJ, 816, 85
- S. Alberts**, A. Pope, M. Brodwin, et al., 2014, *The Evolution of Dust-Obscured Star Formation Activity in Galaxy Clusters Relative to the Field Over the Last 9 Billion Years*, MNRAS, 437, 437
- C.-T. Chen, R. C. Hickox, **S. Alberts**, et al., 2013, *A Correlation between Star Formation Rate and Average Black Hole Accretion in Star-forming Galaxies*, ApJ, 773, 3
- S. Alberts**, G. Wilson, Y. Lu, et al., 2013, *Submm/mm Galaxy Counterpart Identification Using a Characteristic Density Distribution*, MNRAS, 431, 194
- K.-S. Lee, **S. Alberts**, D. Atlee, et al., 2012, *Herschel Detection of Dust Emission from UV-luminous Star-forming Galaxies at $3.3 < z < 4.3$* , ApJ, 758, 31
- J. Wagg, A. Pope, **S. Alberts**, et al., 2012, *CO $J=2-1$ Line Emission in Cluster Galaxies at $z \sim 1$: Fueling Star Formation in Dense Environments*, ApJ, 752, 91
- S. Alberts**, D. Calzetti, H. Dong, et al., 2011, *The Evolution of Stellar Populations in the Outer Disks of Spiral Galaxies*, ApJ, 731, 28

SELECT TECHNICAL AND NON-REFEREED PUBLICATIONS

-
- Alberts** et al. 2023, *A spatially resolved view of galaxy growth using JWST/NIRCam Medium-Band Imaging, JWST/MIRI, and ALMA*, in prep.
- S. Tacchella, B. D., Johnson, B. E. Robertson B. E., et al., 2022, *JWST NIRCam+NIRSpec: Interstellar medium and stellar populations of young galaxies with rising star formation and evolving gas reservoirs*, arXiv, arXiv:2208.03281
- B. E. Robertson, S. Tacchella, B. Johnson, et al., 2022, *Discovery and properties of the earliest galaxies with confirmed distances*, arXiv:2212.04480
- J. Rigby, et al., 2022, *The Science Performance of JWST as Characterized in Commissioning*, submitted to PASP, eprint arXiv:2207.05632
- A. Gaspar, G. H. Rieke, P. Guillard, D. Dicken, R. Gastaud, **S. Alberts**, et al., 2021, *The Quantum Efficiency and Diffractive Image Artifacts of Si:As IBC mid-IR Detector Arrays at 5-10 μm : Implications for the JWST/MIRI Detectors*, PASP, 133, 4504

G. Rieke, **S. Alberts**, I. Shivaee, et al., 2019, *JWST/MIRI Surveys in GOODS-S*, 2019, BAAS, 51, 11 ([link](#))

M. García Marín, G. H. Rieke, M. Ressler, D. Dicken, T. Greene, J. Morrison, S. Kendrew, **S. Alberts**, et al., 2018, *Observing recommendations for JWST MIRI users*, SPIE, 1-704, 1

M. García Marín, C. N. A. Willmer, A. Labiano-Ortega, **S. Alberts**, et al., 2016, *Optimizing Parallel Observations for the JWST/MIRI Instrument*, SPIE, 9910, 1

S. N. Bright, M. E. Ressler, **S. Alberts**, et al., 2016, *MIRI/JWST detector characterization*, SPIE, 9904, 41

N^{TH} AUTHOR PUBLICATIONS

J. McKinney, V. Ramakrishnan, K.-S. Lee, A. Pope, **S. Alberts**, et al., 2022, *Measuring the Total Ultraviolet Light from Galaxy Clusters at $z = 0.5-1.6$: The Balance of Obscured and Unobscured Star Formation*, ApJ, 928, 88

E. Moravec, A. H. Gonzalez, S. Dicker, **S. Alberts**, et al., 2020, *The Massive and Distant Clusters of WISE Survey. IX. High Radio Activity in a Merging Cluster*, ApJ, 898, 145

K. N. Hainline, R. E. Hviding, M. Rieke, I. Shivaee, R. Endsley, E. Curtis-Lake, R. Smit, C. C. Williams, **S. Alberts**, et al., 2020, *Simulating JWST/NIRCam Color Selection of High-redshift Galaxies*, ApJ, 892, 125

W. Rujopakarn, E. Daddi, G. H. Rieke, A., Puglisi, M. Schramm, P. G. Pérez-González, G. E. Magdis, **S. Alberts**, et al., 2019, *ALMA 200 pc Resolution Imaging of Smooth Cold Dusty Disks in Typical $z \sim 3$ Star-forming Galaxies*, ApJ, 882, 107

C. C. Williams, E. Curtis-Lake, K. Hainline, J. Chevallard, B. E. Robertson, S. Charlot, R. Endsley, D. P. Stark, C. N. A. Willmer, **S. Alberts**, et al., 2018, *The JWST Extragalactic Mock Catalog: Modeling Galaxy Populations from the UV through the Near-IR over 13 Billion Years of History*, ApJS, 236, 33

A. Pope, A. Montana, A. Battisti, M. Limousin, D. Marchesini, G. W. Wilson, **S. Alberts**, et al., 2016, *Early Science with the Large Millimeter Telescope: Detection of Dust Emission in Multiple Images of a Normal Galaxy at $z \sim 4$ Lensed by a Frontier Fields Cluster*, ApJ, 838, 137

C.-T. Chen, R. C. Hickox, K. N. Hainline, **S. Alberts**, et al., 2016, *The X-ray and Mid-Infrared Luminosities in Luminous Type 1 Quasars*, ApJ, 837, 145

C. R. Wagner, M. Brodwin, G. F. Snyder, A. H. Gonzalez, S. A. Stanford, **S. Alberts**, et al., 2015, *Star Formation in High-Redshift Cluster Ellipticals*, ApJ, 800, 107

M. Brodwin, S. A. Stanford, A. Gonzalez, G. R. Zeimann, G. F. Snyder, C. L. Mancone, A. Pope, P. R. M. Eisenhardt, D. Stern, **S. Alberts**, et al., 2013, *The Era of Star Formation in Galaxy Clusters*, ApJ, 779, 138

J. Melbourne, B. T. Soifer, V. Desai, A. Pope, L. Armus, A. Dey, R. S. Bussman, B. T. Jannuzi, **S. Alberts**, 2012, AJ, 143, 125

I. Aretxaga, G. Wilson, E. Aguilar, **S. Alberts**, et al., 2011, *AzTEC Millimeter Survey of the COSMOS field - III. Source catalogue over 0.72 deg^2 and Plausible Boosting by Large Scale Structure*, MNRAS, 415, 3831

N. M. Ball, R. J. Brunner, A. D. Myers, N. E. Strand, **S. L. Alberts**, D. Tchong, 2008, *Robust Machine Learning Applied to Astronomical Datasets III: Probabilistic Photometric Redshifts for Galaxies and Quasars in the SDSS and GALEX*, ApJ, 683, 12

N. M. Ball, R. J. Brunner, A. D. Myers, N. E. Strand, **S. L. Alberts**, et al., 2007, *Robust Machine Learning Applied to Astronomical Datasets III Quantifying Photometric Redshifts for Quasars Using Instance-Based Learning*, ApJ, 663, 774

SELECT PRESENTATIONS

‡Invited Talk, †Contributed Talk

‡Colloquium - University of Hertfordshire	Jan 12, 2022
‡AstroFest Featured Speaker - University of Illinois	Apr 23, 2021
‡Colloquium - University of Illinois	Apr 20, 2021
‡Colloquium - Czech Academy of the Sciences	Mar 4, 2021
‡Infrared Science Interest Group Webinar, <i>Measuring the Total Infrared Light in High Redshift Galaxy Clusters</i>	Oct 6, 2020
†Steward Observatory Early Career Scientist Series, <i>Measuring the Total Infrared Light in High Redshift Galaxy Clusters</i>	Oct 2, 2020
†Steward Observatory Early Career Scientist Series, <i>Completing the Census of AGN in GOODS-S/HUDF: New Ultra-Deep Radio Imaging and Predictions for JWST</i>	Jun 4, 2020
†IAU Symposium 352 - Uncovering early galaxy evolution in the ALMA and JWST era, Viana do Castelo, Portugal	Jun 3-7, 2019
†CANDELS/TolTEC Meeting - Past, Current and Future Galaxy Surveys, Amherst, MA	Oct 22–27, 2018
‡Seminar - Yale Center for Astronomy and Astrophysics, Yale University	Dec 12, 2017
†Mapping the Pathways of Galaxy Transformation Across Time and Space, Catalina Island, CA	Jul 21–Aug 5, 2016
†Workshop - New Frontiers in Far-Infrared and Sub-millimeter Astronomy, Aspen Center for Physics Summer Program	May 29–Jun 12, 2016
†Conference - Gas, Dust, and Star Formation in Galaxies from the Local to Far Universe, Chania, Crete	May 25–29, 2015
‡Optical and Infrared Astronomy Lunch Talk, Harvard CfA	Nov 20, 2013
†Conference - Galaxy Evolution Over Five Decades, Cavendish Astrophysics, University of Cambridge, England	Sept 3-6, 2013
†Conference - Tracing Cosmic Evolution with Clusters of Galaxies, Sexten Center for Astrophysics Italy	Jul 1-5, 2013
†Conference - Growing Up at High Redshift: from Proto-clusters to Galaxy Clusters, ESAC, Spain	Sept 10-13, 2012
†Workshop - AzTEC Data Analysis and Projects, Instituto Nacional de Astrofisica, Optica y Electronica, Mexico	May 2010