David J. Setton

Curriculum Vitae

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davidjsetton.github.io

Research focus: observational galaxy formation and evolution through cosmic time

Education

2019– Present **University of Pittsburgh**, Ph.D Candidate in Physics.
Advisor: Professor Rachel Bezanson

May 2019 **University of Pittsburgh**, M.S. in Physics.

May 2017 **University of Arizona**, B.S. in Physics and Astronomy.
Advisor: Professor Gurtina Besla
Thesis: Characterizing the Bow Shock of the Large Magellanic Cloud

Research Experience

May 2018-Present **Studying the Spatially Resolved Stellar Populations of Post Starburst Galaxies**.
Studying a population of z∼0.6 post-starburst galaxies in the SQuIGG$\vec{L}$E survey using spatially resolved GMOS spectroscopy and Hyper-Suprime Cam imaging.
Advisor: Professor Rachel Bezanson

Jan 2016-Present **Characterizing the Large Magellanic Cloud Bow Shock**.
Used high resolution infall simulations to characterize the size, shape, and observability of the a predicted bow shock that should precede the LMC's infall.
Advisor: Professor Gurtina Besla

July-November 2016 **Separating AGN and Starburst Activity using Spatially Resolved Spectroscopy**.
Created a pipeline to spatial pixels of galaxies in the SAMI survey by their spectral line ratios to characterize emission sources.
Advisor: Professor Lisa Kewley

Sep. 2014 - May 2015 **High-z Galaxies in the Hubble Frontier Fields**.
Created a software pipeline to photometrically identify high-z galaxies in the Hubble Frontier Fields.
Advisor: Dr. Christopher Willmer

Talks and Presentations

Nov 2021 **KooGiG-Junior Workshop**, *Speaker*, Kavli Institute for Astronomy and Astrophysics.
"Understanding Quenching with Multi-Wavelength Studies of Post-Starburst Galaxies"

May 2021 **STSci Multi-Object Spectroscopy Workshop**, *Speaker*, Space Telescope Institute.
"Galaxies in Transition: Studying Quenching using Post-Starburst Galaxies"

April 2021 **Galaxy Lunch**, *Invited Speaker*, UMass Amherst.
"Galaxies in Transition: Studying Quenching using Post-Starburst Galaxies"

March 2021 **McWilliams Computing Seminar**, *Invited Speaker*, Carnegie Mellon University.
"MCMC Methods in Astronomy"

October 2020 **Intro to Astronomy Seminar Series**, *Invited Speaker* , Bridgewater State University.
"Galaxies in Transition: Studying Quenching Using Post-Starburst Galaxies"

June 2020 **AstroPGH Data Science Bootcamp**, *Guest Lecture*, University of Pittsburgh.
"MCMC Methods in Astronomy"

May 2020 **AstroPGH Data Science Bootcamp**, *Guest Lecture*, University of Pittsburgh.
"Linear Regression & Error Resampling"

Feb. 2020 **Aspen Galaxy Quenching Workshop**, *Poster*, Aspen Center for Physics.
"Flat Age Gradients in Massive z∼0.6 Post-Starburst Galaxies"
Awarded "Martin and Beate Block Winter Award for Promising Young Physicists"

Feb. 2020 **3 Minute Thesis Competition**, *Talk*, University of Pittsburgh.
"How do galaxies transform from blue, star-forming disks to red, dead ellipticals?"
Department Competition Winner

Jan. 2017 **229th Meeting of the American Astronomical Society**, *Poster*, Grapevine, TX.
"Characterizing the Bow Shock of the Large Magellanic Cloud"

May 2016 **Lucy Engal Undergraduate Physics Symposium**, *Talk*, University of Arizona.
"Characterizing the Bow Shock of the Large Magellanic Cloud"

Mar. 2016 **2nd Magellanic Clouds Workshop**, *Talk*, University of Arizona.
"Characterizing the Bow Shock of the Large Magellanic Cloud"

May 2015 **Lucy Engal Undergraduate Physics Symposium**, *Talk*, University of Arizona.
"Creating a Software Pipeline to Identify and Classify High Redshift Galaxies in the Deep Fields"
Awarded "Best Undergraduate Talk"

Apr. 2015 **Arizona Space Grant Symposium**, *Talk*, Arizona State University.
"Measuring the UV Luminosity Function of High Redshift Galaxies"

Accepted Telescope Programs

Atacama Large Millimeter/submillimeter Array

Principle Investigator **37.6 hours**, Cycle 8: 2021.1.01535.S.
"Timing the Disappearance of Molecular Gas in Post-Starburst Galaxies"

Principle Investigator **14.4 hours**, Cycle 8: 2021.1.00988.S.
"Tracing the molecular gas in tidal tails of recently quenched galaxies"

Co- Investigator **14,5 hours**, Cycle 8: 2021.1.00761.S.
"Quantifying the molecular gas reservoirs of post-starburst AGN hosts"

Scholarships, Honors, and Grants

Fall 2022 **ALMA Student Observing Support**, ∼ $35000.

Fall 2021 **PITT PACC Graduate Fellow**, ∼ $12000.

Mar. 2021 **Thomas-Lain Fund Scholarship Essay Competition**, $2000.

Feb. 2020 **Martin and Beate Block Winter Award**, $500.

Acad. Year 16-17 **Cubic Corporation Scholarship**, ∼ $2000.

Acad. Year 16-17 **Krane Scholarship**, ∼ $2000.

Acad. Year 16-17 **Phi Beta Kappa Travel Grant**, ∼ $1000.

Acad. Year 16-17 **Glenn C. Purviance Scholarship**, ∼ $3500.

Acad. Year 15-16 & 16-17 **Galileo Circle Scholarship**, ∼ $5000.
Highest Honor Awarded by University of Arizona College of Science

Fall 2016 **Honors College Study Abroad Scholarship**, ∼ $1000.

Fall 2016 **Donna Swaim Travel Abroad Scholarship**, ∼ $500.
Awarded to 2 of 83 Applicants

Acad. Year 14-15 **Angelos C. Langadas Scholarship**, ∼ $2000.

Acad. Year 14-15 **Arizona Space Grant Internship**, ∼ $3500.

Teaching Experience

Acad. Year 19-20 **AP Physics C: Mechanics + Electricity & Magnetism**, *Tutor*.

Acad. Year 18-19 **Deitrich School of Arts and Sciences Teaching Assistant Mentor**, *Pitt*.

Spring 2018 **ASTRON 0089: Stars, Galaxies, and Cosmos**, *Teaching Assistant*, Pitt.
Received Myron P. Garfunkel Excellence in Graduate Student Teaching Award

Fall 2017 **ASTRON 0088: Stonehenge to Hubble**, *Teaching Assistant*.
University of Pittsburgh

Fall 2017 **ASTRON 0087: Basics of Spaceflight**, *Teaching Assistant*, Pitt.

Spring 2017 **PHYS 141: Introduction to Mechanics**, *Preceptor*, U.Arizona.

Spring 2017 **PHYS 241: Introduction to Electricity & Magnetism**, *Preceptor*, U.Arizona.

Students Supervised

Mar. 2020-Present **Maggie Verrico**, *University of Pittsburgh Undergraduate*.
Studying the Sizes and Structures of z∼0.6 Post-Starburst Galaxies

Service

Referee: **ALMA Distributed TAC**, *Proposal Reviewer*.

Astrophysical Journal, *Referee*.

Aug. 2019-July 2021 **Association of Physics and Astronomy Graduate Students**, *Co-President*.

Summers 19, 20, 21 **Pitt Galaxy Journal Club**, *Founding Organizer*.
Graduate student led journal club focused on seminal galaxy papers

Outreach

Apr. 2019 & 2020 **Pittsburgh Public School Research Symposium Judge**, *Taylor Allderdice High School*.
2020: Chair of Judging Committee

Nov. 2018 **Astronomy on Tap Pittsburgh**, *Franktuary*, Speaker.
"The Puzzling Counter Intuitiveness of Special Relativity"

Aug. 2015 - May 2017 **College of Science Ambassador**, *University of Arizona*.
Recruitment and outreach events to recruit STEM undergraduates from Arizona high schools

Sep. 2014 - May 2017 **Steward Observatory Telescope Operator**, *University of Arizona*.
Operated the 21" telescope on campus for undergraduate classes and public visit nights

References

Graduate Thesis Advisor **Rachel Bezanson**, *Assistant Professor, University of Pittsburgh*.
rachel.bezanson@pitt.edu

Graduate Thesis Committee Member **Jenny Greene**, *Professor, Princeton University*.
jgreene@astro.princeton.edu

Collaborator **Mariska Kriek**, *Associate Professor, University of California, Berkeley*.
mkriek@berkeley.edu

Undergradutate Thesis Advisor **Gurtina Besla**, *Associate Professor, University of Arizona*.
gbesla@email.arizona.edu

Publications

Papers led by a student under close supervision by D.S. indicated with an asterisk (*****)

6. ***** Bright Young Things: Tidal features are common but not universal in the SQuIGG$\vec{L}$E sample of z∼0.7 post-starburst galaxies
Verrico, Margaret; **Setton, David J.**; Bezanson, R.; and the SQuIGG$\vec{L}$E Team
In Preparation

5. The Origin and Evolution of Compact Massive $z \sim 0.7$ Post-Starburst Galaxies in the SQuIGG$\vec{L}$E Survey
Setton, David J.; Verrico, Margaret; Bezanson, R.; and the SQuIGG$\vec{L}$E Team
In Preparation

4. Now you see it, now you don't: H_2 in massive post-starburst galaxies at $z \sim 0.6$
Bezanson, R.; Spilker, Justin S.; Suess, Katherine A.; **Setton, David J.**; Feldmann, Robert; Greene, Jenny E.; Kriek, Mariska; Narayanan, Desika; Verrico, Margaret
Submitted to ApJ

3. SQuIGG$\vec{L}$E: Studying Quenching in Intermediate-z Galaxies: Gas, Angular Momentum, and Evolution
Suess, Katherine A.; Kriek, Mariska; Bezanson, Rachel; Greene, Jenny E.; **Setton, David J.**; Spilker, Justin S.; Feldmann, Robert F.; Goulding, Andy D.; Johnson, Benjamin D.; Leja, Joel; Narayanan, Desika; Hall-Hooper, Khalil; Hunt, Qiana; Lower, Sidney; Verrico, Margaret
Submitted to ApJ

2. SQuIGG$\vec{L}$E Survey: Massive z$\sim$0.6 Post-Starburst Galaxies Exhibit Flat Age Gradients
Setton, David J.; Bezanson, Rachel; Suess, Katherine A.; Hunt, Qiana; Greene, Jenny E.; Kriek, Mariska; Spilker, Justin S.; Feldmann, Robert; Narayanan, Desika
The Astrophysical Journal, 905, 79

1. The Role of Active Galactic Nuclei in the Quenching of Massive Galaxies in the SQuIGG$\vec{L}$E Survey
Greene, Jenny E.; **Setton, David J.**; Bezanson, Rachel; Suess, Katherine A.; Kriek, Mariska; Spilker, Justin S.; Goulding, Andy D.; Feldmann, Robert
The Astrophysical Journal, 899, L9

Updated: November 3, 2021