

Jesse Robb Feddersen

CONTACT INFORMATION 46 Hillhouse, Office 206 *Phone:* (812) 272-3386
Department of Astronomy, Yale University *E-mail:* jesse.feddersen@yale.edu
New Haven, CT 06511 USA *Website:* <https://jessefeddersen.com>

EDUCATION **Yale University**, New Haven, Connecticut, USA
M.S., M.Phil. Astronomy **December, 2015**
PhD, Astronomy **expected August, 2019**

Indiana University, Bloomington, Indiana, USA
B.S., Astronomy/Astrophysics **May, 2013**
B.S., Physics **May, 2013**

RESEARCH EXPERIENCE **Department of Astronomy, Yale University**, New Haven, CT USA
Thesis Research **2015 - present**
Advisor: Dr. Héctor Arce

Studied the impact of stellar feedback on the structure of molecular gas in the Orion Molecular Cloud using multiwavelength observations as part of the CARMA-NRO Orion collaboration.

Theoretical second year project **2014**
Advisor: Dr. Marla Geha

Studied the effect of the random sampling of stellar initial mass functions on the stellar populations of ultra-faint dwarf galaxies around the Milky Way and investigated the possibility of using pulsar observations to constrain the initial mass function in these systems.

Observational first year project **2013**
Advisor: Dr. Pieter van Dokkum

Studied the evolution of the median mass galaxy from redshift of 2 to present, using galaxy catalogs from the 3D-HST survey.

Space Telescope Science Institute, Baltimore, MD USA
Space Astronomy Summer Program Research Intern **June, 2012 - August, 2012**
Advisors: Dr. Janice C. Lee, Dr. Chun Ly

Investigated the relations between stellar mass, gas-phase oxygen abundance, and star-formation rate in galaxies at $z \approx 0.8$ Used IDL extensively for both analysis and plotting tasks.

Department of Astronomy, Indiana University, Bloomington, IN USA
Research Assistant **2009 - present**
Advisor: Dr. John J. Salzer

Lead a study of nearly unresolved emission-line galaxies in $H\alpha$ images of the local universe and carried out image reduction/photometry and optical spectral reduction/measurement in order to determine their nature. Measured star-formation and metallicity properties to constrain scaling relations.

TEACHING
EXPERIENCE

Yale Summer Program in Astrophysics, New Haven, CT USA
Residential intensive research program for high school students at the Leitner Family Observatory and Planetarium.

Teaching Fellow **2016, 2017**
Supervisor: Dr. Michael Faison

Led programming tutorials and observing labs for 4-week intensive research program for high school students.

Department of Astronomy, Yale University, New Haven, CT USA

Teaching Fellow **2013 - 2015**

Led discussion sections, research labs, tutored, and graded for the following undergraduate astronomy courses:

ASTR 220 - Galaxies and Cosmology **Fall, 2013**
Supervisor: Dr. Louise Edwards

ASTR 160 - Frontiers and Controversies in Astrophysics **Spring, 2014**
Supervisor: Dr. Louise Edwards

ASTR 120 - Galaxies and the Universe **Summer, 2014**
Supervisor: Dr. Robert Zinn

ASTR 255 - Research Methods in Astrophysics **Fall, 2014**
Supervisor: Dr. Marla Geha

ASTR 170 - Introduction to Cosmology **Fall, 2015**
Supervisor: Dr. Louise Edwards

PUBLICATIONS

Refereed Publications

Feddersen, J. R., Arce, H. G., Kong, S., et al. 2019, *Astrophysical Journal*, Accepted

Feddersen, J. R., Arce, H. G., Kong, S., et al. 2018, *Astrophysical Journal*, 862, 121

Kong, S., Arce, H. G., **Feddersen, J.R.**, et al. 2018, *Astrophysical Journal Supplement*, 236, 25

de los Reyes, M. A., et al. 2015, *Astronomical Journal*, 149, 79

Popular Writing

<https://massivesci.com/people/jesse-feddersen/>

<https://astrobites.org/author/jfeddersen/>

VOLUNTEER AND
OUTREACH
EXPERIENCE

Astrobites Author **2014-2016**

Wrote summaries of recent astrophysics papers aimed at an audience of undergraduates interested in beginning their research career. Edited other authors' work, and served on admissions committee for new authors. My work for Astrobites can be found at: <https://astrobites.org/author/jfeddersen/>

Leitner Family Observatory and Planetarium Presenter **2014-Present**

Presented live planetarium shows to thousands of members of the public at Yale University's Leitner Family Observatory and Planetarium. <https://leitnerobservatory.yale.edu>

Yuri's Night at Yale **2015-2016**

Organized outreach event at Yale University's Leitner Family Observatory and Planetarium celebrat-

ing the anniversary of human spaceflight. Ran instructional tables, rocket launch demos, planetarium shows, and telescope viewing for several hundred members of the public.

Adler Planetarium Zooniverse Demonstration **2014**
 As part of two-week school on education and outreach at the Kavli Institute for Cosmological Physics, designed a floor experience for families at the Adler Planetarium in Chicago, Illinois. <https://blog.zooniverse.org/2014/07/07/demonstrating-citizen-science-at-adler-planetarium/>

Sidewalk Astronomy **2011-2013**
 Hosted telescope viewing in downtown Bloomington with Indiana University Astronomy Club, targeted towards unsuspecting passersby.

Physics and Astronomy Open House **2011-2012**
 Assisted with various educational astronomy activities at departmental open house, attended by several thousand members of the public annually.

Venus Transit Viewing **June, 2012**
 Organized and co-ran event hosted by Indiana Department of Natural Resources; set up telescopes and helped over a hundred members of the public view the transit of Venus safely.

Child's Elementary Telescope Night **February, 2012**
 Helped organize and run a telescope viewing at a local elementary school with Indiana University Astronomy Club.

Astronomy with the Stars **October, 2011**
 Assisted Bloomington Department of Parks and Recreation with event designed to orient interested members of the public to the night sky. Operated several telescopes and assisted with public viewing.

TECHNICAL SKILLS

- Programming Languages: Python, IDL, Fortran, Supermongo
- Specialized Software: MIRIAD, IRAF (primarily image and spectral reduction and measurement routines), SAOImage DS9, L^AT_EX
- Operating Systems: OS X, Unix/Linux, Windows.

OBSERVING EXPERIENCE	CARMA (2 weeks)	January, 2015
	Arecibo (1 night)	October, 2014
	WIYN 0.9m (6 nights)	October, 2012
	WIYN 0.9m (5 nights)	May, 2011
	WIYN 0.9m (4 nights)	June, 2010

HONORS AND AWARDS	Hutton Honors College Travel Grant (\$700)	2012
	Hollis and Greta Johnson Research Prize (\$300)	2012 & 2013
	McCreery Travel Award (\$700)	2012
	Hutton Honors College Research Partnership Grant (\$1000)	2011
	Cox Research Scholarship (\$20,000/yr)	2009-present
	National Merit Scholarship (\$1,000/yr)	2009-present
	Indiana University Dean's List	2009-present