Alison Crocker

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Professional Preparation

2014–present	**Assistant professor**, Reed College
2012–2014	**Postdoctoral researcher**, University of Toledo
2009–2012	**Postdoctoral researcher**, UMass Amherst
2009	**DPhil Astrophysics**, University of Oxford *Star formation in elliptical and S0 galaxies* Adviser: Martin Bureau
2006	**B. A. Mathematics, B. A. Physics**, summa cum laude, Dartmouth College

Successful Proposals

2017	**Atacama Millimeter Telescope Array**, 12h, co-I *Molecular line diagnostics in two early-type galaxies*
2016	**Discovery Channel Telescope**, 2 half nights, co-I *Planetary nebulae in early-type galaxies*
2013	**Discovery Channel Telescope**, 1 night, PI *Scattered Hα emission in local galaxies*
2013	**Discovery Channel Telescope**, 1 night, PI *Young star cluster populations in XUV galaxy disks*
2012	**IRAM 30m Telescope**, 40 hours, PI *The physical state of dense molecular gas in early-type galaxies*
2011	**CTIO Blanco 4m Telescope**, 6 nights, co-I *The golden standard for star formation rate indicators*
2011	**Canada-France-Hawaii Telescope**, 60 hours, co-I *The golden standard for star formation rate indicators*
2010	**Herschel Space Telescope**, 24 hours, PI *Origin of massive outer gas reservoirs in early-type galaxies*
2009-2010	**IRAM 30m Telescope**, 75 hours, PI *The molecular gas properties of early-type galaxies*
2009	**IRAM Plateau de Bure Interferometer**, 24 hours, PI *Molecular gas and star formaiton in E/S0 galaxies*
2008-2009	**Calar Alto 3.5m Telescope**, 9 nights, PI *Disk formation in early-type galaxies*
2008	**IRAM 30m Telescope**, 40 hours, co-I *Searching for dense molecular gas in four gas-rich lenticular galaxies from the SAURON sample*

Honors and Awards

2009	Abbey-Santander Travel Grant
2008	Royal Astronomical Society Travel Grant
2007	ASTRON Summer Studentship
2006	Rhodes Scholarship
2006	Dartmouth College Senior Physics Prize
2004	Dartmouth College Francis L. Town Prize for Physics

Publications

First and second author refereed

11	Lapham, R. C., Young L. M., & Crocker, A. F., 2017, *Herschel Spectroscopy of Early-Type Galaxies, ApJ, 840, 51*
10	Alatalo K., Crocker A. F., et al. 2015, *Evidence of boosted $^{13}CO/^{12}CO$ ratio in early-type galaxies in dense environments*, MNRAS, 450, 3874
9	Crocker A. F., Chandar R., Calzetti D., Holwerda B. W., Leitherer C., Popescu C., Tuffs R. J., 2015, *Origin of the Diffuse, Far Ultraviolet Emission in the Interarm Regions of M101*, ApJ, 808, 76
8	Martig M., Crocker A., F., et al., 2013, *The ATLAS3D project - XXII. Low-efficiency star formation in early-type galaxies: hydrodynamic models and observations*, MNRAS, 432, 1914
7	Li, Y., Crocker A. F., et al., *Star Formation Rates in Resolved Galaxies: Calibrations with Near- and Far-infrared Data for NGC 5055 and NGC 6946*, ApJ, 768, 180
6	Crocker A. F. et al., 2013, *Quantifying non-star-formation-associated 8 μm dust emission in NGC 628*, ApJ, 762, 79
5	Crocker A. F. et al., 2012, *The ATLAS^{3D} Project – XI. Dense molecular gas properties of CO-luminous early-type galaxies*, MNRAS, 421, 1298
4	Crocker A. F., Bureau M., Young L. M., & Combes F., 2011, *Molecular gas and star formation in early-type galaxies*, MNRAS, 410, 1197
3	Krips M., Crocker A. F., Bureau M., Combes F., & Young L. M., 2010, *Molecular gas in SAURON early-type galaxies: detection of ^{13}CO and HCN emission*, MNRAS, 407, 2261
2	Crocker A. F., Komugi S., Jeong H., Combes F., Bureau M., Young L. M. & Yi, S., 2009, *Molecular gas and star formation in the red-sequence counterrotating disc galaxy NGC 4550*, MNRAS, 393, 1255
1	Crocker A. F., Bureau M., Young L. M. & Combes F., 2008, *The molecular polar disc in NGC 2768*, MNRAS, 386, 1811

Refereed

52 Herrera-Camus, R., et al., 2017, *Thermal Pressure in the Cold Neutral Medium of Nearby Galaxies*, ApJ, 835, 201

51 Nyland, K., et al., 2017, *Star formation in nearby early-type galaxies: the radio continuum perspective*, MNRAS, 464, 1029

50 Smith, J. D. T., et al., 2017, *The Spatially Resolved [CII] Cooling Line Deficit in Galaxies*, ApJ, 834, 5

49 Topal, S., et al., 2016, *Molecular gas kinematics and line diagnostics in early-type galaxies: NGC 4710 and NGC 5866*, MNRAS, 463, 412

48 Herrera-Camus, R., et al., 2016, *The Ionized Gas in Nearby Galaxies as Traced by the [NII] 122 and 205 μm Transitions*, ApJ, 826, 175

47 de Blok, W. J. G., et al., 2016, *Comparing [CII], HI and CO Dynamics of Nearby Galaxies*, AJ, 152, 51

46 Nyland, K., et al., 2016, *The ATLAS3D Project - XXXI. Nuclear radio emission in nearby early-type galaxies*, MNRAS, 458, 2221

45 McDermid, R. M., et al., 2015, *The ATLAS3D Project - XXX. Star formation histories and stellar population scaling relations of early-type galaxies*, MNRAS, 448, 3484

44 Duc, P.-A., et al., 2015, *The ATLAS3D project - XXIX. The new look of early-type galaxies and surrounding fields disclosed by extremely deep optical images*, MNRAS, 446, 120

43 Davis T., et al., 2014, *The ATLAS3D Project - XXVIII. Dynamically driven star formation suppression in early-type galaxies*, MNRAS, 444, 3427

42 Young L. M., et al., 2014, *The ATLAS3D project - XXVII. Cold gas and the colours and ages of early-type galaxies*, MNRAS, 444, 3408

41 Serra P., et al., 2014, *The ATLAS3D project - XXVI. H I discs in real and simulated fast and slow rotators*, MNRAS, 444, 3388

40 Naab T., et al., 2014, *The ATLAS3D project - XXV. Two-dimensional kinematic analysis of simulated galaxies and the cosmological origin of fast and slow rotators*, MNRAS, 444, 3357

39 Weijmans A-M., et al., 2014, *The ATLAS 3D project - XXIV. The intrinsic shape distribution of early-type galaxies*, MNRAS, 444, 3340

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38 Ueda, J., et al., 2014, *Cold Molecular Gas in Merger Remnants. I. Formation of Molecular Gas Disks*, ApJS, 214, 1

37 McDermid R. M., et al., 2014, *Connection between Dynamically Derived Initial Mass Function Normalization and Stellar Population Parameters*, ApJ, 792, 37

36 Alatalo K., 2014, *NGC 1266 as a Local Candidate for Rapid Cessation of Star Formation*, ApJ, 780, 186

35 Pellegrini E. W., 2013, *Shock Excited Molecules in NGC 1266: ULIRG Conditions at the Center of a Bulge-dominated Galaxy*,ApJ, 779, 19

34 Kirkpatrick A., 2013, *Investigating the Presence of 500 μm Submillimeter Excess Emission in Local Star Forming Galaxies*, ApJ, 778, 51

33 Sandstrom K. M., 2013, *The CO-to-H_2 Conversion Factor and Dust-to-gas Ratio on Kiloparsec Scales in Nearby Galaxies*, ApJ, 777, 5

32 Krajnović D., 2013, *The ATLAS3D Project - XXIII. Angular momentum and nuclear surface brightness profiles*, MNRAS, 433, 2812

31 Davis T., 2013, *ISM chemistry in metal-rich environments: molecular tracers of metallicity*, MNRAS, 433, 1659

30 Scott N., et al., 2013, *The ATLAS3D project - XXI. Correlations between gradients of local escape velocity and stellar populations in early-type galaxies*, MNRAS, 432, 1894

29 Cappellari M., et al., 2013, *The ATLAS3D project - XX. Mass-size and mass-σ distributions of early-type galaxies: bulge fraction drives kinematics, mass-to-light ratio, molecular gas fraction and stellar initial mass function*, MNRAS, 432, 1862

28 Sarzi M., et al., 2013, *The ATLAS3D project - XIX. The hot gas content of early-type galaxies: fast versus slow rotators*, MNRAS, 432, 1845

27 Alatalo K., et al., 2013, *The ATLAS3D project - XVIII. CARMA CO imaging survey of early-type galaxies*, MNRAS, 432, 1796

26 Bayet E., et al., 2013, *The ATLAS3D project - XVI. Physical parameters and spectral line energy distributions of the molecular gas in gas-rich early-type galaxies*, MNRAS, 432, 1742

25 Cappellari M., et al., 2013, *The ATLAS3D project - XV. Benchmark for early-type galaxies scaling relations from 260 dynamical models: mass-to-light ratio, dark matter, Fundamental Plane and Mass Plane*, MNRAS, 432, 1709

24 Kreckel, K., et al., 2013, *Mapping Dust through Emission and Absorption in Nearby Galaxies*, ApJ, 771, 62

23 Tabatabaei, F. S., et al. 2013, *A detailed study of the radio-FIR correlation in NGC 6946 with Herschel-PACS/SPIRE from KINGFISH*, A&A, 552, A19

22 Davis T., et al., 2013, *The ATLAS3D Project - XIV. The extent and kinematics of the molecular gas in early-type galaxies*, MNRAS, 429, 534

21 Serra P. et al., 2013, *Discovery of a giant HI tail in the galaxy group HCG 44*, MNRAS, 428, 370

20 Davis T., et al., 2012, *Gemini GMOS and WHT SAURON integral-field spectrograph observations of the AGN-driven outflow in NGC 1266*, MNRAS, 426, 1574

19 Galametz M., et al., 2012, *Mapping the cold dust temperatures and masses of nearby KINGFISH galaxies with Herschel*, MNRAS, 425, 763

18 Aniano G., et al., 2012, *Modeling Dust and Starlight in Galaxies Observed by Spitzer and Herschel: NGC 628 and NGC 6946*, 756, 138

17 Hinz J. L., et al., 2012, *Cool Dust in the Outer Ring of NGC 1291*, ApJ, 756, 75

16 Beirão P., et al., 2012, *A Study of Heating and Cooling of the ISM in NGC 1097 with Herschel-PACS and Spitzer-IRS*, 751, 144

15 Serra P., et al., 2012, *The ATLAS3D project - XIII. Mass and morphology of H I in early-type galaxies as a function of environment*, MNRAS, 422, 1835

14 Cappellari M., et al., 2012, *Systematic variation of the stellar initial mass function in early-type galaxies*, Nature, 484, 485

13 Croxall K. V., et al., *Resolving the Far-IR Line Deficit: Photoelectric Heating and Far-IR Line Cooling in NGC 1097 and NGC 4559*, ApJ, 747, 81

12 Dale D. A., et al., *Herschel Far-infrared and Submillimeter Photometry for the KINGFISH Sample of nearby Galaxies*, ApJ, 745, 95

11 Kennicutt R. C., et al., *KINGFISH – Key Insights on Nearby Galaxies: A Far-Infrared Survey with Herschel: Survey Description and Image Atlas*, 2011, PASP, 123, 1347

10 Davis T., et al., 2011, *The ATLAS3D project - X. On the origin of the molecular and ionized gas in early-type galaxies*, MNRAS, 417, 882

9 Skibba R., et al., 2011, *The Emission by Dust and Stars of Nearby Galaxies in the Herschel KINGFISH Survey*, ApJ, 738, 89

8 Alatalo K., et al. 2011, *Discovery of an Active Galactic Nucleus Driven Molecular Outflow in the Local Early-type Galaxy NGC 1266*, ApJ, 735, 88

7 Walter F., et al., 2011, *The Displaced Dusty Interstellar Medium of NGC 3077: Tidal Stripping in the M 81 Triplet*, ApJ, 726, 11

6 Oosterloo T., et al., 2010, *Early-type galaxies in different environments: an HI view*, MNRAS, 409, 500

5	Beirão P., et al., 2010, *Far-infrared line imaging of the starburst ring in NGC 1097 with the Herschel/PACS spectrometer*, A&A, 518L, 60
4	Sandstrom K., et al., 2010, *Mapping far-IR emission from the central kiloparsec of NGC 1097*, A&A, 518L, 59
3	Engelbracht C. W., et al., 2010, *Enhanced dust heating in the bulges of early-type spiral galaxies*, A&A, 518L, 58
2	Bennett D. P., et al., 2010, *Masses and Orbital Constraints for the OGLE-2006-BLG-109Lb,c Jupiter/Saturn Analog Planetary System*, ApJ, 713, 837
1	Gaudi B. S. et al., 2008, *Discovery of a Jupiter/Saturn Analog with Gravitational Microlensing*, Science, 319, 927

Student Research Supervision

Thesis students

2014-2015	E. Grace, A. Nuxoll, R. Peterson
2015-2016	A. Deich, S. Vetens, J. Meadows
Spring-Fall 2017	M. McCarthy (spring only), E. Arellano

Summer students

2015	L. Arellano, A. Furman, S. Moreland, K. Chaturvedi
2016	Sabbatical
2017	F. Hasan, H. Zhang

Postbac researchers

2017	A. Leibman-Pelaez

Teaching

Courses taught

PHYS 202	**Modern Physics**: S2016
PHYS 351	**Thermal Physics**: S2015, F2015
PHYS 364	**Topics in Astrophysics**: F2014, S2017
ASTR 2340	**New Frontiers In Astronomy**: S2014 (University of Toledo)
PHYS 2100	**Physics With Calculus**: F2013 (University of Toledo)

Labs and conferences

S2017	**PHYS 102**: 2 conferences, **PHYS 202**: 0.5 lab
S2016	**PHYS 102**: 1 conference, **PHYS 202**: 1 lab
F2015	**PHYS 101**: 3 conferences
S2015	**PHYS 102**: 2 conferences
F2014	**PHYS 101**: 1 conference
F2009	**Computer Lab demonstrator** (University of Oxford)

Presentations

Invited seminars or colloquia

2017	Whitman College
2017	San Diego State University
2016	Northern Arizona University
2016	National Radio Astronomy Observatory, Soccoro
2016	Dartmouth College
2016	Oregon State University
2015	Willamette University
2015	Lowell Observatory
2014	Lewis and Clark College
2014	National Radio Astronomy Observatory, Green Bank
2014	University of Portland
2014	Michigan State University
2014	Amherst College
2013	Reed College
2013	UMass Amherst
2012	National Radio Astronomy Observatory, Charlottesville
2012	University of Toledo
2011	Centre de Études Atomique, Saclay, France
2010	Stony Brook University
2010	Yale University
2010	Dartmouth College
2009	UMass Amherst
2008	ASTRON/JIVE, The Netherlands
2008	Oxford University, UK
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2007	Oxford University, UK

Conference talks

2016	GalPath2016, Catalina Island, CA
2014	3D2014: Gas and stars in galaxies, Garching, Germany
2013	American Astronomical Society (AAS) Meeting, Indianapolis, IN
2013	Star formation jamboree, Hamilton, ON, Canada
2011	UMass ALMA Community Day, Amherst, MA
2011	AAS Meeting, Seattle, WA
2010	Molecules in galaxies, Oxford, UK
2010	Extragalactic star formation, Windsor, UK
2010	Infrared, ISM and star formation, Heidelberg, Germany
2010	Assembly, gas content and star formation history of galaxies, Charlottesville, VA
2009	AAS Meeting, Long Beach, CA
2008	3D2008: Gas and stars in galaxies, Garching, Germany

Public talks

2017	OMSI Science Pub, "The astronomical evidence for dark matter"
2016	OMSI After Dark: Space, "How to make a galaxy"
2015	OMSI After Dark: Explosions, "Supernovae"
2015	Rose City Astronomers
2013	Ritter Planetarium (Toledo, OH) Astronomy Day
2010	St. Paul's School (Concord, NH)

Conference posters

2016	AAS meeting, Kissimmee, FL
2015	Star and planet formation in the Southwest, Oracle, AZ
2015	AAS meeting, Seattle, WA
2014	AAS meeting, National Harbor, MD
2013	Infrared and submillimeter probes of gas in galaxies, Pasadena, CA
2012	AAS meeting, Austin TX
2011	From dust to galaxies, Paris, France
2010	Stormy cosmos, Pasadena, CA
2010	AAS meeting, Washington, DC

Service

Astronomy

Peer Review	Astronomical Journal, Astrophysical Journal, Monthly Notices of the Royal Astronomical Society
Panelist	Hubble Space Telescope Time Allocation Committee: 2014, 2016, 2017
Panelist	SOFIA Telescope Time Allocation Committee: 2016
Poster Judge	American Astronomical Society Meeting: 2015, 2016

Reed

S2017	Physics Visitor Search Committee
S2017	Biology Visitor Search Committee
S2017	Fellowships & Awards Committee
S2015-ongoing	AstroBites discussion group
S2016	Interviewer for Quantitative Skills Coordinator
S2016	Physics Visitor Search Committee
F2015-S2016	Computer Science Search Committee
F2015-S2016	Physics Lab Coordinator Search Committee
F2014-S2016	Administration Committee
F2015	Physics seminar organizer