Sedona Price

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Research Interests

Galaxy evolution, high redshift galaxies, galaxy structure, gas and stellar kinematics

Education

2017	**Ph.D. Astrophysics**, *University of California, Berkeley*
	Dissertation: Galaxies in the Young Universe: Structures, Masses, and Composition of Star-Forming Galaxies at $z \sim 1.5 - 3$
	Advisor: Mariska Kriek
2013	**M.A. Astrophysics**, *University of California, Berkeley*
2011	**B.S. Physics**, *with honors*, *California Institute of Technology*

Research Positions

2017-present	Postdoctoral Scholar, Max-Planck-Institut für extraterrestrische Physik, Garching, Germany
2011-2017	Graduate Student, UC Berkeley, CA, USA
2008-2010	Summer Undergraduate Research Fellow; undergrad. researcher, Caltech, Pasadena, CA, USA

Fellowships & Awards

2014	Outstanding Graduate Student Instructor Award, UC Berkeley
2012	NSF Graduate Research Fellowship, UC Berkeley
2009	Margie Lauritsen Leighton Prize, Caltech

Observing Experience

European Southern Observatory, VLT, SINFONI (3 nights)
W. M. Keck Observatory, Keck I 10 m telescope, MOSFIRE (10.5 nights), OSIRIS (3.5 nights), LRIS (0.5 night)

Teaching

2013	Astro C10, *Co-head GSI, Introductory course for non-majors*, UC Berkeley
2012	Astro 7b, *GSI, Introductory course for majors*, UC Berkeley
2011	Astro C10, *GSI, Introductory course for non-majors*, UC Berkeley
2010, 2011	Physics 6, *TA, Sophomore physics major lab*, Caltech

Service

——	Referee, *The Astrophysical Journal (ApJ)*
2013-2016	Mentor Master, *co-head of grad student mentoring program*, UC Berkeley
2014-2015	Co-supervisor, *undergraduate student Meng Luo*, UC Berkeley
2013-2015	Mentor, *mentoring junior graduate student*, UC Berkeley
2012-2015	Graduate Student Representative, *Astronomy Department*, UC Berkeley

Outreach

2017 April	Solar Activities, *Marin Elementary STEAM day*, UC Berkeley
2012-2017	Annual Cal Day, *Astronomy Department exposition*, UC Berkeley
2014-2017	Mentoring Group, *Society of Women in Physical Sciences*, UC Berkeley
2016 May	Solar Viewing, *Ecology Center Festival*, UC Berkeley
2011-2015	Annual Bay Area Science Festival, *Science@Cal*, UC Berkeley
2013-2015	Annual Astronomy Demo Day, *Meher School 5th grade class*, UC Berkeley
2012-2014	Mentor, *Berkeley Compass Project*, UC Berkeley
2012 Mar	Expanding Your Horizons workshop, *for middle school girls*, UC Berkeley

Presentations

Conferences:

2020 Mar	Invited Talk, IAU Symposium 359, *GALFEED*, Bento Gonçalves, RS, Brazil
2019 Oct	Invited participant, Lorentz Center, *Revolutionary Spectroscopy of Today as a Springboard to Webb*, Leiden, the Netherlands
2019 Sep	Invited Talk, KIAA, *Second Forum on Gas in Galaxies*, Beijing, China
2019 Mar	Invited Talk, Universität Heidelberg, *MOSAIC 2019 Science meeting*, Heidelberg, Germany
2018 Dec	Talk, ESO Workshop, *KMOS@5*, Garching, Germany
2018 Aug	Talk, Santa Cruz Galaxy Workshop, Santa Cruz, CA, USA
2017 Jun	Talk, Conf, *Advances in Galaxy Evolution*, Ringberg, Germany
2016 Sep	Talk, Keck Science Meeting, Pasadena, CA, USA
2016 Aug	Talk, Santa Cruz Galaxy Workshop, Santa Cruz, CA, USA
2016 Jul	Talk, Munich Joint Conference, *Discs in Galaxies*, Garching, Germany
2016 Apr	Poster, STScI Spring Symposium, *What Shapes Galaxies?*, Baltimore, MD, USA
2015 Aug	Talk, IAU Symposium 319, *Galaxies at High Redshift and Their Evolution over Cosmic Time*, Honololu, HI, USA
2013 May	Talk, Lorentz Center, *Galaxy formation from z=5 to z=0*, Leiden, the Netherlands

Seminars:

2017 Jun	Invited Cosmology seminar, UC Davis, CA, USA
2016 Nov	Tea talk, Caltech, Pasadena, CA, USA
2016 Nov	Lunch seminar, Carnegie Observatories, Pasadena, CA, USA
2016 Nov	Invited seminar, CfA/Harvard, Cambridge, MA, USA
2016 Nov	Invited lunch talk, MIT, Cambridge, MA, USA
2015 Nov	Lunch talk, UC Berkeley, CA, USA
2013 Oct	Lunch talk, UC Berkeley, CA, USA

First Author Publications

1. **Price, S. H.**, Kriek, M., Barro, G., et al., *"The MOSDEF Survey: Kinematic and Structural Evolution of Star-forming Galaxies at 1.4 $\leq$ z $\leq$ 3.8,"* 2020, ApJ, 894, 91
2. **Price, S. H.**, Kriek, M., Feldmann, R., et al., *"Testing the Recovery of Intrinsic Galaxy Sizes and Masses of z∼2 Massive Galaxies Using Cosmological Simulations,"* 2017, ApJL, 844, L6
3. **Price, S. H.**, Kriek, M., Shapley, A. E., et al., *"The MOSDEF Survey: Dynamical and Baryonic Masses and Kinematic Structures of Star-Forming Galaxies at 1.4 $\leq$ z $\leq$ 2.6,"* 2016, ApJ, 819, 80
4. **Price, S. H.**, Kriek, M., Brammer, G. B., et al., *"Direct Measurements of Dust Attenuation in z $\sim$ 1.5 Star-Forming Galaxies from 3D-HST: Implications for Dust Geometry and Star Formation Rates,"* 2014, ApJ, 788, 86

Contributing Author Publications

1. Reddy, N. A., Shapley, A. E., Kriek, M., et al., including **SHP**, *"The MOSDEF Survey: The First Direct Measurements of the Nebular Dust Attenuation Curve at High Redshift,"* 2020, ApJ, 902, 123
2. Genzel, R., **Price, S. H.**, Übler, H., et al., *"Rotation Curves in z∼1-2 Star-forming Disks: Evidence for Cored Dark Matter Distributions,"* 2020, ApJ, 902, 98
3. Jeong, M.-S., Shapley, A. E., Sanders, R. L., et al., including **SHP**, *"The MOSDEF Survey: Neon as a Probe of ISM Physical Conditions at High Redshift,"* 2020, ApJL, 902, L16
4. Fetherolf, T., Reddy, N. A., Shapley, A. E., et al., including **SHP**, *"The MOSDEF survey: an improved Voronoi binning technique on spatially resolved stellar populations at z∼2,"* 2020, MNRAS, 498, 5009-5029
5. Sanders, R. L., Shapley, A. E., Jones, T., et al., including **SHP**, *"The MOSDEF Survey: The Evolution of the Mass-Metallicity Relation from z = 0 to z $\sim$ 3.3,"* 2020, arXiv:2009.07292

6. Suess, K. A., Kriek, M., **Price, S. H.**, & Barro, G., *"Color Gradients along the Quiescent Galaxy Sequence: Clues to Quenching and Structural Growth,"* 2020, ApJL, 899, L26

7. Übler, H., Genel, S., Sternberg, A., et al., including **SHP**, *"The Kinematics and Dark Matter Fractions of TNG50 Galaxies at $z = 2$ from an Observational Perspective,"* 2020, arXiv:2008.05486

8. Runco, J. N., Shapley, A. E., Sanders, R. L., et al., including **SHP**, *"The MOSDEF Survey: Untangling the Emission-line Properties of $z \sim 2.3$ Star-forming Galaxies,"* 2020, arXiv:2008.04924

9. Horstman, K., Shapley, A. E., Sanders, R. L., et al., including **SHP**, *"The MOSDEF Survey: Differences in SFR and Metallicity for Morphologically-Selected Mergers at $z \sim 2$,"* 2020, arXiv:2008.04327

10. Davies, R. L., Schreiber, N. M. F., Lutz, D., et al., including **SHP**, *"From Nuclear to Circumgalactic: Zooming in on AGN-driven Outflows at z∼2.2 with SINFONI,"* 2020, ApJ, 894, 28

11. Shivaei, I., Reddy, N., Rieke, G., et al., including **SHP**, *"The MOSDEF Survey: The Variation of the Dust Attenuation Curve with Metallicity,"* 2020, ApJ, 899, 117

12. Johansson, J., Goobar, A., **Price, S. H.**, et al., *"Spectroscopy of the first resolved strongly lensed Type Ia supernova iPTF16geu,"* 2020, arXiv:2004.10164

13. Wilman, D. J., Fossati, M., Mendel, J. T., et al., including **SHP**, *"The Regulation of Galaxy Growth along the Size-Mass Relation by Star Formation, as Traced by Hα in KMOS^{3D} Galaxies at $0.7 \lesssim z \lesssim 2.7$,"* 2020, ApJ, 892, 1

14. Sanders, R. L., Shapley, A. E., Reddy, N. A., et al., including **SHP**, *"The MOSDEF Survey: Direct-Method Metallicities and ISM Conditions at $z \sim 1.5 - 3.5$,"* 2020, MNRAS, 491, 1427

15. Sanders, R. L., Jones, T., Shapley, A. E., et al., including **SHP**, *"The MOSDEF Survey: [S III] as a New Probe of Evolving Interstellar Medium Conditions,"* 2020, ApJL, 888, L11

16. Wisnioski, E., Förster Schreiber, N. M., Fossati, M., et al., including **SHP**, *"The KMOS^{3D} Survey: data release and final survey paper,"* 2019, ApJ, 886, 124

17. Leung, G. C. K., Coil, A. L., Aird, J., et al., including **SHP**, *"The MOSDEF survey: a census of AGN-driven ionized outflows at $z = 1.4 – 3.8$,"* 2019, ApJ, 886, 11

18. Suess, K. A., Kriek, M., **Price, S. H.**, & Barro, G., *"Half-mass radii of quiescent and star-forming galaxies evolve slowly from $0 < z < 2.5$: implications for galaxy assembly histories,"* 2019, ApJL, 885, L22

19. Shimizu, T. T., Davies, R. I., Lutz, D., et al., including **SHP**, *"The multiphase gas structure and kinematics in the circumnuclear region of NGC 5728,"* 2019, MNRAS, 490, 5860

20. Fornasini, F. M., Kriek, M., Sanders, R. L., et al., including **SHP**, *"The MOSDEF Survey: The Metallicity Dependence of X-ray Binary Populations at $z \sim 2$,"* 2019, ApJ, 885, 65

21. Shapley, A. E., Sanders, R. L., Shao, P., et al., including **SHP**, *"The MOSDEF Survey: Sulfur Emission-line Ratios Provide New Insights into Evolving Interstellar Medium Conditions at High Redshift,"* 2019, ApJL, 881, L35

22. Kriek, M., **Price, S. H.**, Conroy, C., et al., *"Stellar Metallicities and Elemental Abundance Ratios of $z \sim 1.4$ Massive Quiescent Galaxies,"* 2019, ApJL, 880, L31

23. Übler, H., Genzel, R., Wisnioski, E., et al., including **SHP**, *"The Evolution and Origin of Ionized Gas Velocity Dispersion from $z \sim 2.6$ to $z \sim 0.6$ with KMOS^{3D},"* 2019, ApJ, 880, 48

24. Suess, K. A., Kriek, M., **Price, S. H.**, & Barro, G., *"Half-mass Radii for ∼7000 Galaxies at $1.0 \leq z \leq 2.5$: Most of the Evolution in the Mass-Size Relation Is Due to Color Gradients,"* 2019, ApJ, 877, 103

25. Förster Schreiber, N. M., Übler, H., Davies, R. L., et al., including **SHP**, *"The KMOS^{3D} Survey: Demographics and Properties of Galactic Outflows at $z = 0.6 – 2.7$,"* 2019, ApJ, 875, 21

26. Wilson, T. J., Shapley, A. E., Sanders, R. L., et al., including **SHP**, *"The MOSDEF Survey: No Significant Enhancement in Star Formation or Deficit in Metallicity in Merging Galaxy Pairs at $1.5 \lesssim z \lesssim 3.5$,"* 2019, ApJ, 874, 18

27. Davies, R. L., Förster Schreiber, N. M., Übler, H., et al., including **SHP**, *"Kiloparsec Scale Properties of Star-Formation Driven Outflows at z∼2.3 in the SINS/zC-SINF AO Survey,"* 2019, ApJ, 873, 122

28. Freeman, W. R., Siana, B., Kriek, M., et al., including **SHP**, *"The MOSDEF Survey: Broad Emission Lines at z = 1.4-3.8,"* 2019, ApJ, 873, 102

29. Nelson, E. J., Tadaki, K.-I., Tacconi, L. J., et al., including **SHP**, *"Millimeter Mapping at z∼1: Dust-obscured Bulge Building and Disk Growth,"* 2019, ApJ, 870, 130

30. Reddy, N. A., Shapley, A. E., Sanders, R. L., et al., including **SHP**, *"The MOSDEF Survey: Significant Evolution in the Rest-frame Optical Emission Line Equivalent Widths of Star-forming Galaxies at z = 1.4–3.8,"* 2018, ApJ, 869, 92

31. Zick, T. O., Kriek, M., Shapley, A. E., et al., including **SHP**, *"The MOSDEF Survey: Stellar Continuum Spectra and Star Formation Histories of Active, Transitional, and Quiescent Galaxies at 1.4<z<2.6,"* 2018, ApJL, 867, L16

32. Azadi, M., Coil, A., Aird, J., et al., including **SHP**, *"The MOSDEF Survey: The Nature of Mid-infrared Excess Galaxies and a Comparison of IR and UV Star Formation Tracers at z ∼ 2,"* 2018, ApJ, 866, 63

33. Sanders, R. L., Shapley, A. E., Kriek, M., et al., including **SHP**, *"The MOSDEF Survey: A Stellar Mass-SFR-Metallicity Relation Exists at z ∼ 2.3,"* 2018, ApJ, 858, 99

34. Shivaei, I., Reddy, N. A., Siana, B., et al., including **SHP**, *"The MOSDEF Survey: Direct Observational Constraints on the Ionizing Photon Production Efficiency, $\xi_{\rm ion}$, at z ∼ 2,"* 2018, ApJ, 855, 42

35. Übler, H., Genzel, R., Tacconi, L. J., et al., including **SHP**, *"Ionized and Molecular Gas Kinematics in a z = 1.4 Star-forming Galaxy,"* 2018, ApJL, 854, L24

36. Barro, G., Kriek, M., Pérez-González, P. G., et al., including **SHP**, *"Spatially Resolved Kinematics in the Central 1 kpc of a Compact Star-forming Galaxy at z∼2.3 from ALMA CO Observations,"* 2017, ApJL, 851, L40

37. Leung, G. C. K., Coil, A. L., Azadi, M., et al., including **SHP**, *"The MOSDEF Survey: The Prevalence and Properties of Galaxy-wide AGN-driven Outflows at z ∼ 2,"* 2017, ApJ, 849, 48

38. Shapley, A. E., Sanders, R. L., Reddy, N. A., et al., including **SHP**, *"The MOSDEF Survey: First Measurement of Nebular Oxygen Abundance at z>4,"* 2017, ApJL, 846, L30

39. Shivaei, I., Reddy, N. A., Shapley, A. E., et al., including **SHP**, *"The MOSDEF Survey: Metallicity dependence of the PAH emission at High Redshift and Implications for 24 micron-inferred IR luminosities and star formation rates at z∼2,"* 2017, ApJ, 837, 157

40. Azadi, M., Coil, A. L., Aird, J., et al., including **SHP**, *"The MOSDEF survey: AGN multi-wavelength identification, selection biases and host galaxy properties,"* 2017, ApJ, 835, 27

41. Momcheva, I. G., Brammer, G. B., van Dokkum, P. G., et al., including **SHP**, *"The 3D-HST Survey: Hubble Space Telescope WFC3/G141 Grism Spectra, Redshifts, and Emission Line Measurements for ∼100,000 Galaxies,"* 2016, ApJS, 225, 27

42. Sanders, R. L., Shapley, A. E., Kriek, M., et al., including **SHP**, *"The MOSDEF Survey: Detection of [OIII]λ4363 and the Direct-method Oxygen Abundance of a Star-forming Galaxy at z = 3.08,"* 2016, ApJL, 825, L23

43. Shivaei, I., Kriek, M., Reddy, N. A., et al., including **SHP**, *"The MOSDEF Survey: The Strong Agreement between Hα and UV-to-FIR Star Formation Rates for z ∼ 2 Star-forming Galaxies,"* 2016, ApJL, 820, L23

44. Sanders, R. L., Shapley, A. E., Kriek, M., et al., including **SHP**, *"The MOSDEF Survey: Electron Density and Ionization Parameter at z ∼ 2.3,"* 2016, ApJ, 816, 23

45. Shivaei, I., Reddy, N. A., Shapley, A. E., et al., including **SHP**, *"The MOSDEF Survey: Dissecting the Star Formation Rate versus Stellar Mass Relation Using Hα and Hβ Emission Lines at z ∼ 2,"* 2015, ApJ, 815, 98

46. Kriek, M., Shapley, A. E., Reddy, N. A., et al., including **SHP**, *"The MOSFIRE Deep Evolution Field (MOSDEF) Survey: Rest-frame Optical Spectroscopy for ∼1500 H-selected Galaxies at 1.37 < z < 3.8,"* 2015, ApJS, 218, 15

47. Reddy, N. A., Kriek, M., Shapley, A. E., et al., including **SHP**, *"The MOSDEF Survey: Measurements of Balmer Decrements and the Dust Attenuation Curve at Redshifts z ∼ 1.4-2.6,"* 2015, ApJ, 806, 259

48. Shapley, A. E., Reddy, N. A., Kriek, M., et al., including **SHP**, *"The MOSDEF Survey: Excitation Properties of z ∼ 2.3 Star-forming Galaxies,"* 2015, ApJ, 801, 88

49. Coil, A. L., Aird, J., Reddy, N., et al., including **SHP**, *"The MOSDEF Survey: Optical Active Galactic Nucleus Diagnostics at z ∼ 2.3,"* 2015, ApJ, 801, 35

50. Sanders, R. L., Shapley, A. E., Kriek, M., et al., including **SHP**, *"The MOSDEF Survey: Mass, Metallicity, and Star-formation Rate at z ∼ 2.3,"* 2015, ApJ, 799, 138

51. Skelton, R. E., Whitaker, K. E., Momcheva, I. G., et al., including **SHP**, *"3D-HST WFC3-selected Photometric Catalogs in the Five CANDELS/3D-HST Fields: Photometry, Photometric Redshifts, and Stellar Masses,"* 2014, ApJS, 214, 24

52. Bergé, J., **Price, S.**, Amara, A., & Rhodes, J., *"On point spread function modelling: towards optimal interpolation,"* 2012, MNRAS, 419, 2356

Grants

2016	AAS International Travel Grant, Munich Joint Conference
2015	AAS International Travel Grant, IAU Symposium 319
2012	NSF Graduate Research Fellowship, UC Berkeley