STEVEN A. RODNEY — CURRICULUM VITAE

CONTACT INFORMATION		
University of South Carolina		Phone: (803) 777-2599
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EDUCATION

2010	Ph.D. Astronomy, Institute for Astronomy, University of Hawai'i at Mānoa Dissertation: "Thermonuclear Supernova Light Curves : Progenitors and Cosmology" Advisor: John L. Tonry
2005	M.S. Astronomy, Institute for Astronomy, University of Hawai'i at Mānoa
2003	B.S. Physics & Astronomy, Case Western Reserve University

PROFESSIONAL HISTORY

2015	Assistant Professor, University of South Carolina
2012	Hubble Postdoctoral Research Fellow, Johns Hopkins University
2010	Assistant Research Scientist (Postdoc), Johns Hopkins University
2003	NSF Graduate Research Fellow, Institute for Astronomy, Univ. of Hawai'i at Mānoa

HONORS, AWARDS AND FELLOWSHIPS

2019	Teaching Associate, Teaching Innovation Incubator, USC College of Arts & Sciences
2018	McCausland Faculty Fellowship, USC College of Arts & Sciences
2018	Garnet Apple Award, USC Center for Teaching Excellence
2012	Hubble Postdoctoral Research Fellowship, Johns Hopkins University
2012	Einstein Postdoctoral Research Fellowship (declined)

RESEARCH & TEACHING GRANTS

2020-2023	*LensWatch: Time Delay Measurement of a Multiply-Imaged Supernova* HST Target of Opportunity Program (PI)
2019-2022	*SALT3: Taking the Type Ia Supernova Cosmology Workhorse to Longer Wavelengths* HST Archival Program (Co-PI with USC grad student J. Pierel)
2019-2021	*Optimizing WFIRST Surveys: Precision Cosmology with Gravitationally Lensed SNe* (PI; NASA FINESST Award with grad student J. Pierel as "Future Investigator")
2018-2019	*Teaching Students How to Help Students Learn*, SC Space Grant Consortium Education Program (PI)
2017-2020	*Turning Gravitationally Lensed Supernovae into Cosmological Probes*, HST Archival Program (Co-PI with USC grad student J. Pierel)
2017-2018	*Transforming Introductory Astronomy at USC*, SC Space Grant Consortium & the USC Center for Teaching Excellence (Co-PI)
2017-2018	*Rare and Peculiar Stellar Explosions*, SC Space Grant Consortium
2016-2021	*WFIRST Preparatory Science*, NASA contract (Co-I)
2015	*Refsdal Redux*, HST GO program (Co-PI)
2013-2017	*Frontier Field Supernova Search*, Multi-cycle HST GO program (PI)

TEACHING	2020	PHYS 731: Extragalactic Astrophysics (graduate elective)
	2016-2019	ASTR 101: Intro. to Astronomy and ASTR 201: The Dark Universe
	2016-2018	Course transformation: ASTR 101 *Intro. Astronomy*
	2015	New course developed: ASTR 201 *The Dark Universe*
	2016-	Graduate Students Mentored at USC
		· Justin Roberts-Pierel (Physics)
		· Kyle O'Connor (Physics)
		· Fawad Kirmani (Computer Science)
	2011-2015	Graduate Students Mentored at JHU
		· Caroline Huang, Johns Hopkins University
		· David O. Jones (now at UC Santa Cruz)
		· Teddy Frederiksen, Univ. of Copenhagen (@JHU)
PROFESSIONAL	...	Referee for ApJ, AJ, A&A
SERVICE	2018	Hubble Space Telescope Cycle 26 Panel Member
	2016	Hubble Space Telescope Cycle 24 External Reviewer
	2016	Hubble Space Telescope Director's Discretionary Time Proposal Review
	2015	Hubble Space Telescope Cycle 23 Panel Member
	2015	NSF Panel Review Member
	2015	NASA Earth and Space Science Fellowship Reviewer
	2014	Hubble Space Telescope Cycle 22 Panel Member
	2014	NSF Panel Review Member
SIGNIFICANT	2019-2020	*Intro to Python for STEM* Summer Workshop
OUTREACH	2017	Lead Organizer for Campus-wide Total Solar Eclipse Programs
INITIATIVES	2016	Launched the USC Distinguished Lecture Series in Physics & Astronomy
SELECTED	2019	**Invited Public Lecture:** Colby College, Waterville, Maine
SCIENTIFIC	2019	**Colloquium:** MIFA, University of Minnesota, Minneapolis, MN
TALKS &	2019	Tensions between the Early and the Late Universe, KITP, UCSB (available online)
COLLOQUIA	2018	The Universe as a Telescope, Milan, Italy
	2017	**Invited talk:** European Week of Astronomy and Space Science (EWASS), Prague, Czech Republic
	2016	**Colloquium:** Clemson University, Clemson, SC
	2016	GravLens2016 Conference, Leiden, the Netherlands
	2016	**Invited talk:** Kavli Institute for Cosmological Physics, Chicago, IL
	2015	**Invited talk:** Hubble2020 Symposium, Baltimore, MD
	2015	**Invited talk:** Science from the Frontier Fields, Sesto, Italy
	2014	**Invited talk:** Wide Field Infrared Surveys Meeting, Pasadena, CA
	2014	**Invited talk:** KICP Type Ia Supernovae Conference, Chicago, IL

STEVEN A. RODNEY - BIBLIOGRAPHY

* - Authors who were students working directly with S.R. on a given publication have their names underlined.

A. Primary Journal Articles

(Publications for which S.R. is among the top three authors.)

A24. *Delay Time Distributions of Type Ia Supernovae from Galaxy and Cosmic Star Formation Histories.*
Strolger, L.-G.; **Rodney, S.A.**; Pacifici, C.; Narayan, G.; and Graur, O. 2020, ApJ, 890, 140

A23. *Turning Gravitationally Lensed Supernovae into Cosmological Probes*
Pierel & **Rodney** 2019, ApJ, 876, 107

A22. *Extending Supernova Spectral Templates for Next-Generation Space Telescope Observations*
Pierel, **Rodney**, Avelino (+13 authors) 2018, PASP, 130, 114504

A21. *Two Peculiar Fast Transients in a Strongly Lensed Host Galaxy*
Rodney, Balestra, Bradac, (+32 authors) 2018, Nature Astronomy, 2, 324

A20. *Extreme Magnification of an Individual Star at Redshift 1.5 by a galaxy-cluster lens.*
Kelly, Diego, **Rodney** (+42 authors) 2018, Nature Astronomy, 2, 334

A19. *Type Ia Supernova Distances at $z > 1.5$ from the HST Multi Cycle Treasury Programs: The Early Expansion Rate.*
Riess, **Rodney**, Scolnic (+31 authors) 2018, ApJ, 853, 126

A18. *SN Refsdal: Photometry and Time Delay Measurements of the First Einstein Cross Supernova*
Rodney, Strolger, Kelly (+16 authors) 2016, ApJ, 820, 50

A17. *Deja Vu All Over Again: The Reappearance of Supernova Refsdal*
Kelly, **Rodney**, Treu (+19 authors) 2016, ApJ, 819, 8

A16. *Two Type Ia Supernovae at z∼2: Improved Classification and Redshift Determination with Medium-band IR Imaging*
Rodney, Riess, Scolnic (+9 authors) 2015, AJ, 150, 156

A15. *Illuminating a Dark Lens : A Type Ia Supernova Magnified by the Frontier Fields Galaxy Cluster Abell 2744*
Rodney, Patel, Scolnic (+27 authors) 2015, ApJ, 811, 70

A14. *Multiple Images of a Highly Magnified Supernova Formed by an Early-Type Cluster Galaxy Lens*
Kelly, **Rodney**, Treu (+28 authors) 2015, Science, 347, 1123

A13. *The Rate of Core Collapse Supernovae to Redshift 2.5 From The CANDELS and CLASH Supernova Surveys*
Strolger, Dahlen, **Rodney** (+6 authors) 2015, ApJ, 813, 93

A12. *Type Ia Supernova Rate to Redshift 2.5 from CANDELS: Searching for Prompt Explosions in the Early Universe*
Rodney, Riess, Strolger (+35 authors) 2014, AJ, 148, 13

A11. *Type Ia Supernova Rates to Redshift 2.4 from CLASH: the Cluster Lensing and Supernova Survey with Hubble*
Graur, **Rodney**, Maoz (+38 authors) 2014, ApJ, 783, 28

A10. *Improving Dark Energy Constraints with High-redshift Type Ia Supernovae from CANDELS and CLASH*
Salzano, **Rodney**, Sendra, Lazkoz, (+5 authors) 2013, A&A, 557, 64

A9. *The Discovery of the Most Distant Known Type Ia Supernova at Redshift 1.914*
Jones, **Rodney**, Riess (+22 authors) 2013, ApJ, 768, 166

A8. *A Type Ia Supernova at Redshift 1.55 in the Infrared from the CANDELS Hubble Treasury Program*
Rodney, Riess, Dahlen et al. 2012, ApJ, 746, 5

A7. *Revised Supernova Rates from the IfA Deep Survey*
Rodney and Tonry 2010, ApJ, 723, 47

A6. *Fuzzy Supernova Templates. II. Parameter Estimation*
Rodney and Tonry 2010, ApJ, 715, 323

A5. *A Cluster of Compact Radio Sources in W40*
Rodriguez, **Rodney** and Reipurth 2010, AJ, 140, 968

A4. *Fuzzy Supernova Templates. I. Classification*
Rodney and Tonry 2009, ApJ, 707, 1064

A3. *The W40 Cloud Complex*
Rodney and Reipurth 2008, in *Handbook of Star Forming Regions Vol. II: The Southern Sky*, ed. B. Reipurth (San Francisco, CA: ASP), 683

A2. *Star Formation in Sagittarius: The Lynds 291 Cloud*
Reipurth, **Rodney**, and Heathcote 2008, in *Handbook of Star Forming Regions Vol. II: The Southern Sky*, ed. B. Reipurth. (San Francisco, CA: ASP), 578

A1. *Characterizing Charge Diffusion in CCDs with X-Rays*
Rodney and Tonry 2006, PASP, 118, 866

B. Contributing Author Articles (Publications for which S.R. is fourth author or later.)

B42. *The BUFFALO HST Survey*
Steinhardt, C. L., Jauzac, M., Acebron, A., et al. [including **Rodney**] 2020, ApJS, 247, 64.

B41. *RELICS:TheReionizationLensingCluster Survey and the Brightest High-z Galaxies.*
Salmon,B., Coe,D., Bradley,L., et al.[including **Rodney**] 2020, ApJ, 889, 189.

B40. *RELICS: Reionization Lensing Cluster Survey.*
Coe, D., Salmon, B., Bradač, M., et al. [including **Rodney**] 2019, ApJ, 884, 85.

B39. *Models and Simulations for the Photometric LSST Astronomical Time Series Classification Challenge (PLAsTiCC)*
Kessler, Narayan, Avelino (+26 authors, incl. **Rodney** + LSST DESC + TVSSC) 2019, PASP, 131, 4501

B38. *Simulations of the WFIRST Supernova Survey and Forecasts of Cosmological Constraints*
Hounsell, Scolnic, Foley (+14 authors, incl. **Rodney**) 2018, ApJ, 867, 23

B37. *RELICS: A Candidate $z \sim 10$ Galaxy Strongly Lensed into a Spatially Resolved Arc*
Salmon, Coe, Bradley (+25 authors, incl. **Rodney**) 2018, ApJ, 864, 22

B36. *Measuring the value of the Hubble constant "à la Refsdal"*
Grillo, Rosati, Suyu, (+8 authors, incl. **Rodney**) 2018, ApJ, 860, 94

B35. *RELICS: Strong Lens Models for Five Galaxy Clusters From the Reionization Lensing Cluster Survey*
Cerny, Sharon, Coe, (+32 authors, incl. **Rodney**) 2018, ApJ, 859, 159

B34. *The Complete Light-curve Sample of Spectroscopically Confirmed Type Ia Supernovae from Pan-STARRS1 and Cosmological Constraints from The Combined Pantheon Sample*
Scolnic, Jones, Rest (+36 authors, incl. **Rodney**) 2018, ApJ, 859, 101

B33. *Dark Matter under the Microscope: Constraining Compact Dark Matter with Caustic Crossing Events*
Diego, Kaiser, Broadhurst (+12 authors, incl. **Rodney**) 2018, ApJ, 857, 25

B32. *The Reionization Lensing Cluster Survey (RELICS) and the Brightest High-z Galaxies*
Salmon, Coe, Bradley, (+18 authors, incl. **Rodney**) 2017, submitted to ApJ, arXiv:1710.08930

B31. *CLASH: accurate photometric redshifts with 14 HST bands in massive galaxy cluster cores*
Molino, Benitez, Ascaso, (+41 authors, incl. **Rodney**) 2017, MNRAS, 470, 95

B30. *Lens Models Under the Microscope: Comparison of Hubble Frontier Field Cluster Magnification Maps*
Priewe, Williams, Liesenborgs, Coe & **Rodney** 2017, MNRAS, 465, 1030

B29. *SN Refsdal: Classification as a Luminous and Blue SN 1987A-like Type II Supernova*
Kelly, Brammer, Selsing (+20 authors, incl. **Rodney**) 2016, ApJ, 831, 205

B28. *The Story of Supernova "Refsdal" Told by Muse*
Grillo, Karman, Suyu (+10 authors, incl. **Rodney**) 2016, ApJ, 822, 78

B27. *"Refsdal" Meets Popper: Comparing Predictions of the Re-appearance of the Multiply Imaged Supernova Behind MACSJ1149.5+2223*
Treu, Brammer, Diego (+25 authors, incl. **Rodney**) 2016, ApJ, 817, 60

B26. *A highly-ionized region surrounding SN Refsdal revealed by MUSE*
Karman, Grillo, Balestra (+9 authors, incl. **Rodney**) 2016, A&A, 585, 27

B25. *Hubble Frontier Fields: a high-precision strong-lensing analysis of the massive galaxy cluster Abell 2744 using ∼180 multiple images*
Jauzac, Richard, Jullo (+11 authors, incl. **Rodney**) 2015, MNRAS, 452, 1437

B24. *Selecting superluminous supernovae in faint galaxies from the first year of the Pan-STARRS1 Medium Deep Survey*
McCrum, Smartt, Rest (+36 authors, incl. **Rodney**) 2015, MNRAS, 448, 1206

B23. *Systematic Uncertainties Associated with the Cosmological Analysis of the First Pan-STARRS1 SN Ia Sample*
Scolnic, Rest, Riess (+48 authors, incl. **Rodney**) 2014, ApJ, 795, 45

B22. *Cosmological Constraints from Measurements of SN Ia Discovered During the First 1.5 yr of the Pan-STARRS1 Survey*
Rest, Scolnic, Foley (+46 authors, incl. **Rodney**) 2014, ApJ, 795, 44

B21. *Three Gravitationally Lensed Supernovae behind CLASH Galaxy Clusters*
Patel, McCully, Jha, **Rodney** (+41 authors) 2014, ApJ, 786, 9

B20. *Color Dispersion and Milky Way Reddening Among Type Ia Supernovae*
Scolnic, Riess, Foley, Rest, **Rodney**, Brout, & Jones 2014, ApJ, 780, 37

B19. *The Superluminous Supernova PS1-11ap: Bridging the Gap Between Low and High Redshift"*
McCrum, Smartt, Kotak (+38 authors, incl. **Rodney**) 2014, MNRAS, 437, 656

B18. *Slowly Fading Super-Luminous Supernovae that are not Pair-Instability Explosions*
Nicholl, Smartt, Jerkstrand (+57 authors, incl. **Rodney**) 2013, Nature, 502, 346

B17. *CLASH: Three Strongly Lensed Images of a Candidate z∼11 Galaxy*
Coe, Zitrin, Carrasco (+20 authors, incl. **Rodney**) 2013, ApJ, 762, 32

B16. *The Dwarf Starburst Host Galaxy of a Type Ia Supernova at z = 1.55 from CANDELS*
Frederiksen, Hjorth, Maund, **Rodney**, Riess, Dahlen, and Mobasher 2012, ApJ, 769, 125

B15. *CLASH: Precise New Constraints on the Mass Profile of the Galaxy Cluster A2261*
Coe et al. (+45 authors, incl. **Rodney**) 2012, ApJ, 757, 22

B14. *Cluster Lensing And Supernova survey with Hubble (CLASH): An Overview*
Postman et al. (+44 authors, incl. **Rodney**) 2011, ApJS, 199, 25

B13. *CLASH: New Multiple-Images Constraining the Inner Mass Profile of MACS J1206.2-0847*
Zitrin et al. (+47 authors, incl. **Rodney**) 2011, ApJ, 749, 97

B12. *CANDELS: The Cosmic Assembly Near-infrared Deep Extragalactic Legacy Survey The Hubble Space Telescope Observations, Imaging Data Products and Mosaics*
Koekemoer et al. (+123 authors, incl. **Rodney**) 2011, ApJS, 197, 36

B11. *CANDELS: The Cosmic Assembly Near-infrared Deep Extragalactic Legacy Survey*
Grogin et al. (+106 co-authors incl. **Rodney**) 2011, ApJS, 197, 35

B10. *A CANDELS WFC3 Grism Study of Emission-Line Galaxies at z∼2: A Mix of Nuclear Activity and Low-Metallicity Star Formation*
Trump et al. (+28 authors, incl. **Rodney**) 2011, ApJ, 743, 144

B9. *Pan-STARRS1 Discovery of Two Ultra-Luminous Supernovae at z ∼ 0.9*
Chomiuk et al. (+31 authors, incl. **Rodney**) 2011, ApJ, 743, 114

B8. *The Cluster Lensing and Supernova Survey with Hubble (CLASH): Strong Lensing Analysis of Abell 383 from 16-Band HST WFC3/ACS Imaging*
Zitrin et al. (+40 authors, incl. **Rodney**) 2011, AJ, 742, 117

B7. *Extreme Emission Line Galaxies in CANDELS: Broadband-selected, Starbursting Dwarf Galaxies at z>1*
van der Wel et al. (+31 authors, incl. **Rodney**) 2011, ApJ, 742, 111

B6. *Results from the Supernova Photometric Classification Challenge*
Kessler et al. (+26 authors, incl. **Rodney**) 2010, PASP, 122, 1415

B5. *A Chandra Observation of the Obscured Star-Forming Complex W40*
Kuhn, Getman, Feigelson, Reipurth, **Rodney** and Garmire 2010, ApJ, 725, 2485

B4. *Supernova 2009kf: An Ultraviolet Bright Type IIP Supernova Discovered with Pan-STARRS 1 and GALEX*
Botticella, Trundle, Pastorello, **Rodney**, (+42 authors) 2010, ApJ, 717, L52

B3. *Preliminary Results from Detector-Based Throughput Calibration of the CTIO Mosaic Imager and Blanco Telescope Using a Tunable Laser*
Stubbs et al. (+9 authors, incl. **Rodney**) 2007, in ASP Conf. Ser. 364, The Future of Photometric, Spectrophotometric and Polarimetric Standardization, ed. C. Sterken, (San Francisco, CA: ASP), 373

B2. *A Search for Variable Stars and Planetary Occultations in NGC 2301. I. Techniques*
Tonry, Howell, Everett, **Rodney**, Willman and Van Outryve 2005, PASP, 117, 281

B1. *Deep CCD Surface Photometry of Galaxy Clusters. I. Methods and Initial Studies of Intracluster Starlight*
Feldmeier, Mihos, Morrison, **Rodney** and Harding 2002, ApJ, 575, 779

C. Selected Recent Unrefereed Products (White Papers, Software, Posters, etc.)

- *Probing the Time Domain with High Spatial Resolution.*
  Blakeslee, J., **Rodney, S. A.**, Lotz, J. M., et al. 2019, Astro2020 White Paper, arxiv:1903.08184
- *WFIRST: Enhancing Transient Science and Multi-Messenger Astronomy.*
  Foley, R., Bloom, J. S., Cenko, S. B., et al. 2019, Astro2020 White Paper, arXiv:1903.04582
- *The Next Generation of Cosmological Measurements with Type Ia Supernovae.*
  Scolnic, D., Perlmutter, S., Aldering, G., et al. 2019, Astro 2020 White Paper, arXiv:1903.05128
- *SNTD: Supernova Time Delays.*
  Pierel, J. R., & **Rodney, S. A.** 2019, Software, ascl:1902.001
- *The Wide Field Infrared Survey Telescope: 100 Hubbles for the 2020s.*
  Akeson, R., Armus, L., Bachelet, E., et al. 2019, pre-Astro2020 White Paper, arXiv:1902.05569
- *UV-Visible observations with HST in the JWST North Ecliptic Pole Time-Domain Field.*
  Jansen, R. A., Grogin, N., Ashcraft, T., et al. 2019, AAS, 233, 363.14
- *SNSEDextend: SuperNova Spectral Energy Distributions extrapolation toolkit.*
  Pierel, J. D. R., **Rodney, S. A.**, Avelino, A., et al. 2018, Software, ascl:1805.017