

**Tucker Jones**  
**Curriculum Vitae**  
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**RESEARCH INTERESTS**

Galaxy formation and evolution; feedback and outflows; physical structure of high redshift galaxies  
Reionization; production and escape of ionizing photons in high redshift galaxies  
Chemical evolution; metallicity indicators  
Instrumentation and observing capabilities, primarily in high spatial resolution imaging and spectroscopy

**EDUCATION**

Ph.D., Astrophysics, California Institute of Technology, August 2012

Thesis: *Detailed properties of high redshift galaxies*

Advisor: Richard Ellis

M.S., Astrophysics, California Institute of Technology, May 2008

B.S., Physics, Massachusetts Institute of Technology, June 2007

Thesis: *Small trans-neptunian objects*

Advisors: Saul Rappaport and Alan Levine

Recipient of the Alan H. Barrett prize for best astrophysics thesis

**RESEARCH POSITIONS**

|                                                                        |                |
|------------------------------------------------------------------------|----------------|
| Assistant Professor, UC Davis                                          | 2016 – present |
| Hubble Fellow, University of Hawaii Institute for Astronomy & UC Davis | 2015 – 2017    |
| CGE Fellow, UCSB / Southern California Center for Galaxy Evolution     | 2012 – 2015    |
| Graduate Research Assistant, Caltech                                   | 2007 – 2012    |
| Undergraduate Research Assistant, MIT Center for Space Research        | 2006 – 2007    |
| Undergraduate Research Assistant, MIT Planetary Astronomy Lab          | 2004 – 2006    |

**TEACHING AND MENTORING**

ASTRO 1 *Basic astronomy*, substitute lecturer, UCSB, Fall 2014  
PHYS 133 *Extragalactic astronomy and cosmology*, substitute lecturer, UCSB, Winter 2014  
AY 105 *Optical astronomy instrumentation lab*, teaching assistant, Caltech, Winter 2009 and Spring 2009  
PHYS 5 *Analog electronics lab*, lab instructor, Caltech, Fall 2008  
Xin Wang, graduate student at UCSB/UCLA with Prof. Tommaso Treu, 2014-present  
Nicha Leethochawalit, graduate student at Caltech with Prof. Richard Ellis, 2013-2016  
Sirio Belli, graduate student at Caltech with Prof. Richard Ellis, 2010-2013

**PROFESSIONAL SERVICE**

Time Allocation Committee member for the University of California, 2017 (Keck Observatory)  
Time Allocation Committee member for the University of Hawaii, 2016 (all Mauna Kea telescopes)  
Reviewer for Hubble Space Telescope proposals (cycle 24 mid-cycle rounds 1 and 2)  
Referee for *The Astrophysical Journal*, *Monthly Notices of the Royal Astronomical Society*, and *Nature*  
Science team member for Keck/OSIRIS detector upgrade (completed March 2016)  
Science team member for development of multi-conjugate adaptive optics at Keck Observatory  
Lead organizer for 2-day workshop *Outflows @ UCSB*, August 2013  
Organizer of UCSB astronomy lunch seminar and daily tea, 2013-2015  
Organizer of Friday Extragalactic Discussion at IfA, 2016

**SELECT COLLOQUIA, SEMINARS, AND CONFERENCE PRESENTATIONS**

CASS seminar, San Diego, February 2017  
 Colloquium, University of Michigan, December 2016  
 Invited talk, *In situ view of galaxy formation*, Ringberg, November 2016  
 Colloquium, Stanford University, October 2016  
 Invited review talk, *Discs in galaxies*, Garching, July 2016  
 Colloquium, UC Davis, February 2016  
 Colloquium, University of Hawaii Institute for Astronomy, January 2016  
 Invited talk, *Census, evolution, physics*, New Haven, November 2015  
 Invited talk, *New horizons in astronomy* (Frank N. Bash symposium), Austin, October 2015  
 Talk, Keck science meeting, Los Angeles, September 2015  
 Invited talk, IAU general assembly focus meeting: *The Frontier Fields*, Honolulu, August 2015  
 Invited talk, *Understanding nebular emission in high redshift galaxies*, Carnegie Observatories, July 2015  
 Astronomy colloquium, UCLA, March 2015  
 Invited talk, *Science from the Frontier Fields*, Sexten, February 2015  
 Physics colloquium, Santa Barbara, January 2015  
 Talk, Yale Frontier Fields workshop, New Haven, November 2014  
 Astronomy colloquium, Carnegie Observatories, October 2014  
 Invited review talk, *Lyman continuum leakage and cosmic reionization*, Stockholm, August 2014  
 Talk, IAU symposium #309: *Galaxies in 3D across the universe*, Vienna, July 2014  
 Invited cosmology seminar, Santa Cruz, May 2014  
 Invited panelist, Dark Matter in Southern California (DaMaSC) symposium, April 2014  
 Invited CASS seminar, San Diego, April 2014  
 Invited talk, *The near field – deep field connection*, Irvine, February 2014  
 Talk, *The emergence of disk galaxies*, Waterval, South Africa, November 2013  
 Invited talk, *Outflows @ UCSB*, Santa Barbara, August 2013  
 Invited review talk, *Dissecting galaxies with 2D wide-field spectroscopy*, Lijiang, March 2013  
 Invited astronomy seminar, Irvine, February 2013  
 Invited astronomy seminar, Riverside, November 2012  
 Invited talk, *Metals in Tuscany*, Spineto, June 2012  
 Talk, *The baryon cycle*, Irvine, June 2012  
 Invited seminar, MPE Garching, January 2012  
 Dissertation talk, 219<sup>th</sup> American Astronomical Society meeting, Austin, January 2012  
 Extragalactic seminar, Hawaii IfA, October 2011  
 Extragalactic seminar, Berkeley, October 2011  
 Lunch talk, Durham/ICC, June 2011  
 Lunch talk, Arizona/Steward Observatory, February 2011  
 Talk, IFUs in the era of JWST, STScI, October 2010  
 Talk, Keck science meeting, Berkeley, October 2010  
 Talk, Oort workshop: *From reionization to the emergence of the Hubble sequence*, Leiden, June 2010

**PUBLIC TALKS AND OUTREACH**

Public talk at Keck Observatory's *Evenings with Astronomers*, January 2017  
 Public talk in Waimea, HI, January 2017  
 Public talk at UH Physics and Astronomy open house, November 2015  
 Public talk at the *Lucidity: Universe* festival, April 2014  
 Public talk at the Ventura County Astronomical Society monthly meeting, March 2014  
 Public talk at the Ventura County Astronomical Society monthly meeting, May 2013  
 Public observing of the transit of Venus at Caltech, ~1500 people, June 2012  
 Public observing of type Ia supernova SN 2011fe at Caltech, ~1500 people, September 2011

**OBSERVING EXPERIENCE (as PI or lead observer)**

Keck Observatory: >40 nights on the Keck I and Keck II telescopes  
 Palomar / Hale 200-inch telescope: 13 nights  
 Lick / Shane 3-meter telescope: 7 nights  
 ALMA: 19 hours awarded in service mode  
 JCMT: 40 hours awarded in service mode, 8 nights observing experience

**REFEREED JOURNAL PUBLICATIONS**

28. Agnello, A., Grillo, C., **Jones, T.**, et al. *Discovery and first models of the quadruply lensed quasar SDSS J1433+6007*. 2017, MNRAS submitted, arXiv:1702.03942
27. Schmidt, K. B., et al. *The Grism Lens-Amplified Survey from Space (GLASS). XI. Detection of C IV in Multiple Images of  $z=6.11$  Ly $\alpha$  Emitter Behind RXCJ2248.7-4431*. 2017, ApJ submitted
26. Mason, C., et al. *First Results from the KMOS Lens-Amplified Spectroscopic Survey (KLASS): Kinematics of Lensed Galaxies at Cosmic Noon*. 2017, ApJ accepted, arXiv:1610.03075
25. Wang, X., **Jones, T.**, Treu, T., et al. *The Grism Lens-Amplified Survey from Space (GLASS). X. Sub-kpc resolution gas-phase metallicity maps at cosmic noon behind the Hubble Frontier Fields cluster MACS 1149.6+2223*. 2017, ApJ accepted, arXiv:1610.07558
24. Bradac, M., et al. *ALMA [C II] 158 micron Detection of a Redshift 7 Lensed Galaxy behind RXJ1347.1-1145*. 2017, ApJ, 836, 2
23. Leethochawalit, N., **Jones, T.**, Ellis, R. S., et al. *Absorption-line Spectroscopy of Gravitationally Lensed Galaxies: Further Constraints on the Escape Fraction of Ionizing Photons at High Redshift*. 2016, ApJ, 831, 152
22. Leethochawalit, N., **Jones, T.**, Ellis, R. S., et al. *A Keck Adaptive Optics Survey of a Representative Sample of Gravitationally-Lensed Star-Forming Galaxies: High Spatial Resolution Studies of Kinematics and Metallicity Gradients*. 2016, ApJ, 820, 84
21. Schmidt, K. B., et al. *The Grism Lens-Amplified Survey from Space (GLASS). III. A Census of Ly $\alpha$  Emission at  $z>7$  from HST Spectroscopy*. 2016, ApJ, 818, 38
- 20. Jones, T.**, Martin, C., Cooper, M. C. *Temperature-Based Metallicity Measurements at  $z=0.8$ : Direct Calibration of Strong-Line Diagnostics at Intermediate Redshift*. 2015, ApJ, 813, 126
19. Treu, T., et al. *The Grism Lens-Amplified Survey from Space (GLASS). I. Survey overview and first data release*. 2015, ApJ, 812, 114.
18. Wang, X., et al. *The Grism Lens-Amplified Survey from Space (GLASS). IV. Mass Reconstruction of the Lensing Cluster Abell 2744 from Frontier Field Imaging and GLASS Spectroscopy*. 2015, ApJ, 811, 29.
17. Livermore, R. C., **Jones, T.**, Richard, J, et al. *Resolved spectroscopy of gravitationally lensed galaxies: global dynamics and star-forming clumps on  $\sim 100$  pc scales at  $1<z<4$* . 2015, MNRAS, 450, 1812.
16. Schaerer, D., Boone, F., **Jones, T.**, et al. *ALMA detection of [C II] 158 micron emission from a strongly lensed  $z=2.013$  star-forming galaxy*. 2015, A&A, 576, 2.
15. Kelly, P. L., et al. *Multiple Images of a Highly Magnified Supernova Formed by an Early-Type Cluster Galaxy Lens*. 2015, Science, 347, 1123.
- 14. Jones, T.**, et al. *The Grism Lens-Amplified Survey from Space (GLASS). II. Gas-Phase Metallicity and Radial Gradients in an Interacting System at  $z\sim 2$* . 2015, AJ, 149, 107.
13. Schmidt, K. B., et al. *Through the Looking GLASS: HST Spectroscopy of Faint Galaxies Lensed by the Frontier Fields Cluster MACSJ0717.5+3745*. 2014, ApJ, 782, 36.
12. Rawle, T. D., et al. *[CII] and  $^{12}\text{CO}(1-0)$  Emission Maps in HLSJ091828.6+514223: A Strongly*

*Lensed Interacting System at  $z = 5.24$ .* 2013, ApJ 783, 59.

11. Stark, D. P., Auger, M., Belokurov, V., **Jones, T.**, Robertson, B. E., Ellis, R. S., Sand, D. J., Moiseev, A., Eagle, W., Myers, T. *The CASSOWARY spectroscopy survey: A new sample of gravitationally lensed galaxies in SDSS.* 2013, MNRAS, 436, 1040.

**10. Jones, T.**; Ellis, R. S.; Schenker, M. A.; Stark, D. P. *Keck Spectroscopy of Gravitationally Lensed  $z=4$  Galaxies: Improved Constraints on the Escape Fraction of Ionizing Photons.* 2013, ApJ, 779, 52.

\*9. Belli, S.; **Jones, T.**; Ellis, R. S.; Richard, J. *Testing the Universality of the Fundamental Metallicity Relation at High Redshift Using Low-Mass Gravitationally Lensed Galaxies.* 2013, ApJ, 772, 141.

**8. Jones, T.**; Ellis, R. S.; Richard, J.; Jullo, E. *The Origin and Evolution of Metallicity Gradients: Probing the Mode of Mass Assembly at  $z \sim 2$ .* 2013, ApJ, 765, 48.

7. Livermore, R. C., **Jones, T.**, Bower, R. G. et al. *Hubble Space Telescope H $\alpha$  imaging of star-forming galaxies at  $z \simeq 1-1.5$ : evolution in the size and luminosity of giant H II regions.* 2012, MNRAS, 427, 688.

**6. Jones, T.**, Stark, D., & Ellis, R. *Keck spectroscopy of faint  $3 < z < 7$  Lyman break galaxies: III. The mean ultraviolet spectrum at  $z=4$ .* 2012, ApJ, 751, 51.

5. Richard, J., **Jones, T.**, Ellis, R., Stark, D. P., Livermore, R., & Swinbank, M. *The emission line properties of gravitationally lensed  $1.5 < z < 5$  galaxies.* 2011, MNRAS, 413, 643.

**4. Jones, T.**, Ellis, R., Jullo, E., Richard, J. *Measurement of a Metallicity Gradient in a  $z=2$  Galaxy: Implications for Inside-out Assembly Histories.* 2010, ApJ, 725, L126.

**3. Jones, T.**, Swinbank, A. M., Ellis, R. S., Richard, J., & Stark, D. P. *Resolved spectroscopy of gravitationally lensed galaxies: recovering coherent velocity fields in subluminal  $z \sim 2-3$  galaxies.* 2010, MNRAS, 404, 1247.

2. Swinbank, A. M., et al. *A spatially resolved map of the kinematics, star formation and stellar mass assembly in a star-forming galaxy at  $z=4.9$ .* 2009, MNRAS, 300, 1121.

**1. Jones, T.**, Levine, A. M., Morgan, E. H., & Rappaport, S. *Production of Millisecond Dips in Sco X-1 Count Rates by Dead Time Effects.* 2008, ApJ, 677, 1241.