

Brad E. Tucker

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Scientific Experience

- **Research Fellow** Mt. Stromlo Observatory, Australian National University 2015 -
- **Outreach Manager** Mt. Stromlo Observatory, Australian National University 2013 -
- **Research Fellow** Dept. of Astronomy, University of California, Berkeley 2013 - 2015
- **Research Assistant** Dept. of Physics, University of Notre Dame 2004 - 2007
- **Research Assistant** Cerro Tololo Inter-American Observatory 2006

Education

- **The Australian National University** 2012
The Research School of Astronomy and Astrophysics
Ph.D. In Pursuit of Dark Energy: Improving Measurements in Supernova Cosmology
- **University of Notre Dame** 2007
Department of Physics, Department of Philosophy, Department of Theology
B.Sc. Physics, B.A. Philosophy, B.A. Theology

Research Interests and Current Projects

- Dark Energy; Supernova Cosmology; Type Ia Supernova Progenitors; Supernova Shock Break-Out; Type Ia Supernova Host Galaxies; UV Excess; UV Observations and Instrumentation
- PI - GLUV (Atmospheric Ultraviolet Telescopes)
- PI - Kepler Extra-Galactic Survey (KEGS)
- Member - Australian Dark Energy Survey (OzDES)
- Member - SkyMapper Supernova Survey
- Member - ESSENCE Project

Grants

- **NASA - Kepler Cycle 5 Guest Investigator** \$105,000, PI 2014, *Cancelled*
- **NASA - Herschel Cycle 2 Open Time** \$206,663, PI 2013, *Cancelled*
- **NASA - Kepler Cycle 4 Guest Investigator** \$105,000, CI 2012 - 2013
- **NASA - Kepler Cycle 3 Guest Investigator** \$75,000, CI 2011 - 2013
- **NASA - GalEx Cycle 6 Guest Investigator** \$60,000, PI 2010 - 2011

Awards, Honors & Scholarships

- **Outreach Award** Australian National University 2015
- **Innovative Communications Award** Australian National University 2015
- **Emerging Talent Award** Australian National University 2015
- **Best On-Screen Talent Award** Australian National University 2015
- **24/7 Award** Australian National University 2015
- **ACT Tall Poppy** Australian Institute of Policy and Science 2015
- **Organizer** Guinness World Record for Most People Stargazing at a Single Site 2015
- **Organizer** Guinness World Record - Most People Stargazing - Multiple Sites in a Country 2015
- **Winner, I'm a Scientist, Get Me Out of Here!** Australia 2012
- **Stipend Scholarship** Australian National University 2007 - 2012

- **Top-Up Scholarship** Mt. Stromlo Observatory 2007 - 2012
- **Vice Chancellor's Outreach Award (Group)** Australian National University 2011
- **Vice Chancellor's Special Award (Group)** Australian National University 2007
- **AAS Chambliss Student Medal** Runner-Up 2007
- **Physics Department Award** University of Notre Dame 2007
- **Fellows Full Tuition Scholarship** University of Notre Dame 2005 - 2007
- **Special Directors Award** Nanovic Institute for European Studies 2006
- **Old College Full Tuition Scholarship** University of Notre Dame 2003 - 2005

Positions, Committees, and Professional Service

- **Local Organizing Committee** Diving into the Dark: Bridging Theory & Observation 2016
- **Expert Witness** New South Wales Police 2015 -
- **Member** ACT Australian Science Communicators Committee 2015 -
- **Member** ACT National Science Week Committee 2015 -
- **Member** RSAA Workplace Giving Committee 2015 -
- **Expert Witness** Australian Federal Police 2014 -
- **Convener** RSAA Winter School 2012 -
- **Convener** RSAA Work Experience Program 2011 -
- **Scientific Organizing Committee** K2SciCon 2015
- **Member** Australian Decadal Plan - Working Group 3.2 2014
- **Local Organizing Committee** Supernova in the Local Universe 2014
- **Local Organizing Committee** Fireworks 2014 2014
- **Colloquium Committee** Mt. Stromlo Observatory 2007 - 2012
- **Student Representative** Astronomical Society of Australia Council 2009 - 2010
- **Scientific Organizing Committee** Harley Wood Winter School 2009
- **Local Organizing Committee** Murchison Widefield Array Meeting 2009
- **Local Organizing Committee** Science with the Giant Magellan Telescope Meeting 2008

Students Supervised

- **Natalia Eire Sommer** Australian National University - PhD 2016 -
- **Ryan Ridden-Harper** Australian National University - PhD 2016 -
- **Daniel Muthukrishna** University of Queensland - Honours (Co-Supervisor) 2016 -
- **Tony Le** Australian National University - Undergrad and Honours 2013 -
- **Caitlin Adams** Australian National University - Summer Scholar 2014

Public Outreach

- **Regular on TV** The Morning Show on Channel 7 2015 -
- **Regular on Radio** ABC 666 Canberra, FM 104.7, FM106.3, 2CC, and 2CA Canberra, and 2EC and PowerFM Bega 2014 -
- **Guest Appearances on TV** ABC 24, ABC 7:30 Report, National Geographic Channel Specials, and NewsAsia 2013 -
- **Guest Appearances on Radio** Over 60 radio stations across Australia, New Zealand, UK, the US, and the UK 2010 -
- **Speaker** Amateur Astronomy Clubs, Primary and Secondary Schools, and Clubs (i.e. Rotary, Probus, Lions) 2009 -

Teaching Experience

- **Are We Alone? (MOOC)** Australian National University 2015 -

- **Astronomy for Fun (Adult Ed. Course)** Australian National University 2013 -
- **Observatory Assistant** University of Notre Dame 2005 - 2007
- **Asst. Manager of Instructional Resources** University of Notre Dame 2004 - 2007
- **Tutor** University of Notre Dame 2005

Publications

- *Hydrogen and Helium Recombination in a Core-Collapse Supernova Detect By Kepler*, **Tucker, B. E.**; Kasen, D.; Shaya, E.; Olling, R. P.; Garnavich, P. M.; Rest, A.; Margheim, S.; Filippenko, A. V. Nature, to be submitted
- *Improving the Precision of Dark Energy Measurements through Type Ia Supernova Host Galaxies*, **Tucker, B. E.**; Garnavich, P. M.; Narayan, G.; Rest, A.; Schmidt, B. P.; Challis, P.; Filippenko, A. V.; Foley, R. J.; Silverman, J. M.; Wood-Vasey, W. M.; Aguilera, C.; Becker, A. C.; Blondin, S.; Clocchiatti, A.; Damke, G.; Davis, T. M.; Ganeshalingham, M.; Garg, A.; Hicken, M.; Jha, S. W.; Kirshner, R. P.; Krisciunas, K.; Leibundgut, B.; Li, W.; Matheson, T.; Miknaitis, Pignata, G.; Prieto, J.L.; Riess, A. G.; Smith, R. C.; Sollerman, J.; Spyromilio, J.; Stubbs, C. W.; Suntzeff, N. B.; Tonry, J. L.; Zenteno, A., ApJ, submitted
- *High-Cadence Lightcurves of Type Ia Supernovae Discovered by the Kepler Satellite: Constraints on Companion Stars*, Olling, R. P. ; Mushotzky, R; Shaya, E. J.; Rest, A.; Garnavich, P. M.; **Tucker, B. E.**; Kasen, D.; Margheim, S.; Filippenko, A. V., Nature, accepted
- *Multiple Images of a Highly Magnified Supernova Formed by an Early-Type Cluster Galaxy Lens* Kelly, Patrick L. et al. including **Tucker, B. E.**, 2015, Science, 347, 1123
- *Early ultraviolet emission in the Type Ia supernova LSQ12gdj: No evidence for ongoing shock interaction*, Scalzo, R. A.; Childress, M. J.; **Tucker, B. E.**; Yuan, F.; Schmidt, B. P.; Brown, P. J.; Contreras, C.; Morrell, N.; Hsiao, E. Y.; Burns, C.; Phillips, M.; Campillay, A.; Gonzalez, C.; Krisciunas, K.; Stritzinger, M.; Graham, M. L.; Parrent, J.; Valenti, S.; Lidman, C.; Schaefer, B. E.; Scott, N.; Fraser, M.; Gal-Yam, A.; Inserra, C.; Maguire, K.; Smartt, S.; Sollerman, J.; Sullivan, M.; Taddia, F.; Yaron, O.; Young, D.R.; Tauenberger, S.; Baltay, C.; Ellman, N.; Feindt, U.; Hadjiyska, E.; McKinnon, R.; Nugent, P.E.; Rabinowitz, D.; Walkers, E.S., 2014, MNRAS, 445, 30
- *Constraints on the Progenitor System of the Type Ia Supernova 2014J from Pre-explosion Hubble Space Telescope Imaging*, Kelly, P. L.; Fox, O. D.; Filippenko, A. V.; Cenko, S. B.; Prato, L.; Schaefer, G.; Shen, K.; Zheng, W.; Graham, M.L.; **Tucker, B. E.**, 2014, ApJ, 790, 3
- *SN 2009ip la PESSTO: no evidence for core collapse yet*, Fraser, M.; Inserra, C; Jerkstand, A.; Kotak, R.; Pignata, G.; Benetti, S.; Botticella, M.-T.; Bufano, F.; Childress, M. J.; Matila, S.; Pastorello, A.; Smartt, S.; Turatto, M.; Yuan, F.; Anderson, J. P.; Bayliss, D.D.R.; Bauer, F.E.; Chen, T.-W.; Forster, B. F.; Gal-Yam, A.; Haislip, J.B.; Knopic, C.; Le Guillou, L.; Marchi, S.; Mazzali, P.; Molinaro, M.; Moore, J.P.; Reichart, D.; Smareglia, R.; Smith, K.W.; Sternberg, A.; Sullivan, M.; Tarkats, K.; **Tucker, B. E.**; Valenti, S.; Yaron, O.; Young, D.R.; Zhou, G., 2013, MNRAS, 433, 1312
- *Spectroscopic Observations of SN 2012fr: A Luminous Normal Type Ia Supernova with Early High Velocity Features and Late Velocity Plateau*, Childress, M. J.; Scalzo, R. A.; Sim, S. A.; **Tucker, B. E.**; Yuan, F.; Schmidt, B. P.; Cenko, S. B.; Silverman, J. M.; Contreras, C.; Hsiao, E. Y.; Phillips, M.; Morrell, N.; Jha, S. W.; McCully, C.; Filippenko, A. V.; Benetti, S.; Bufano, F.; de Jager, T.; Forster, F.; Gal-Yam, A.; Le Guillou, L.; Maguire, K.; Maund, J.; Mazzali, P. A.; Pignata, G.; Smartt, S.; Spyromilio, J.; Sullivan, M.; Taddia, F.; Valenti, S.; Bayliss, D. D. R.; Bessell, M.; Carson, D. J.; Clubb, K. I.; de Burgh-Day, C.; Desjardins, T. D.; Fang, J. J.; Fox, O. D.; Gates, E. L.; Ho, I-T.; Keller, S.; Kelly, P. L.; Lidman, C.; Loaring, N. S.; Mould, J. R.; Owers, M.; Ozbilgen, S.; Pei, L.; Pracy, M. B.; Schaefer, B. E.; Scott, N.; Stritzinger, M.; Vogt, F. P. A.; Zhou, G., 2013, ApJ, 770, 29
- *The Very Young Type-Ia SN 2012cg: Discovery and Pre-Maximum Brightness Follow-Up*, Silverman, Jeffrey M.; Ganeshalingam, Mohan; Cenko, S. Bradley; Filippenko, Alexei V.; Li, Weidong; Barth, Aaron J.; Carson, Daniel J.; Childress, Michael; Clubb, Kelsey I.; Cucchiara, Antonino; Graham, Melissa L.; Marion, G. H.; Nguyen, My L.; Pei, Liuyi; **Tucker, Brad E.**; Vinko, Jozsef; Wheeler, J. Craig; Worsack, Gabor; 2012, ApJ, 756L, 7

- *Testing the gravitational lensing explanation for the MgII problem in GRBs*, Rapoport, Sharon; Onken, Christopher A.; Schmidt, Brian P.; Wyithe, Stuart J.; **Tucker, Brad E.**; Levan, Andrew J., 2012, ApJ, 754, 139
- *UV Properties of Type Ia Supernova and their Host Galaxies*, **Tucker, Brad E.**, 2011 Ap&SS, 32, 266
- *The HI gas content of galaxies around Abell 370, a galaxy cluster at $z = 0.37$* , Lah, Philip; Pracy, Michael B.; Chengalur, Jayaram N.; Briggs, Frank H.; Colless, Matthew; de Propris, Roberto; Ferris, Shaun; Schmidt, Brian P.; **Tucker, Bradley E.**, 2009, MNRAS, 399, 1447
- *Spectroscopy of High-Redshift Supernovae from the Essence Project: The First Four Years*, Foley, R. J.; Matheson, T.; Blondin, S.; Chornock, R.; Silverman, J. M.; Challis, P.; Clocchiatti, A.; Filippenko, A. V.; Kirshner, R. P.; Leibundgut, B.; Sollerman, J.; Spyromilio, J.; Tonry, J. L.; Davis, T. M.; Garnavich, P. M.; Jha, S. W.; Krisciunas, K.; Li, W.; Pignata, G.; Rest, A.; Riess, A. G.; Schmidt, B. P.; Smith, R. C.; Stubbs, C. W.; **Tucker, B. E.**; Wood-Vasey, W. M., 2009, ApJ, 137, 3731
- *Time Dilation in Type Ia Supernova Spectra at High Redshift*, Blondin, S.; Davis, T. M.; Krisciunas, K.; Schmidt, B. P.; Sollerman, J.; Wood-Vasey, W. M.; Becker, A. C.; Challis, P.; Clocchiatti, A.; Damke, G.; Filippenko, A. V.; Foley, R. J.; Garnavich, P. M.; Jha, S. W.; Kirshner, R. P.; Leibundgut, B.; Li, W.; Matheson, T.; Miknaitis, G.; Narayan, G.; Pignata, G.; Rest, A.; Riess, A. G.; Silverman, J. M.; Smith, R. C.; Spyromilio, J.; Stritzinger, M.; Stubbs, C. W.; Suntzeff, N. B.; Tonry, J. L.; **Tucker, B. E.**; Zenteno, A., 2008, ApJ, 682, 724

References

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