

Robert A. Knop Jr.
Quest University Canada
3200 University Blvd.
Squamish, BC
Canada, V8B 0N8
(604)898-8023 — E-mail: robert.knop@questu.ca

Work Experience

- 2010–present **Quest University Canada.** Full-time faculty member. Teaching undergraduate Physics, Astronomy, Programming, and related subjects.
- 2010 **Belmont University.** Full-Time Adjunct Instructor of Physics.
- 2007–2009 **Linden Lab.** Production Operation Engineer (Aug. 2007–Sep. 2008), Server Release Manager (Oct. 2008–May 2009). Worked as a computer engineer in the operations team, and with the release team to develop and maintain the online virtual world Second Life, which runs on a cluster of 6,000 Linux Servers.
- 2001–2007 **Assistant Professor of Physics & Astronomy, Vanderbilt University.** Teaching undergraduate and graduate astronomy and astrophysics courses including introductory astronomy, galactic astrophysics, general relativity, and graduate nebular astrophysics. Performing research on starburst, active, and interacting galaxies; on Type-Ia supernova progenitors; and on supernova cosmology (in collaboration with the Supernova Cosmology Project).
- 1996–2001 **Postdoctoral Fellow with the Supernova Cosmology Project** at the Lawrence Berkeley National Laboratory, working with Saul Perlmutter. Led the software and data analysis effort for four years of successful supernova searches. Led analysis of photometric followup data, producing lightcurves for supernovae that allowed measurements of the cosmological parameters Ω and Λ and the discovery of the universe's acceleration (the discovery for which Perlmutter shared the 2011 Nobel Prize in Physics). Performed photometric and spectroscopic observations at world-class telescopes. Supervised graduate and undergraduate students. Developed software and maintained computers for scientific use.

Education

- 1997 **Ph.D., Physics, California Institute of Technology.**
Thesis Title: “Spatially Resolved Infrared Spectroscopy of Seyfert Galaxies”
Advisor: B. T. Soifer
- 1992 **M.S., Physics, California Institute of Technology.**
- 1990 **B.S., Physics, Harvey Mudd College.**

Additional Skills and Experience

- **Computer Programming:** Proficient in C, C++, Perl, Python, Java, PHP, Javascript, SQL. Have taught a University class in Object-Oriented Programming and another in 3D Computer Modelling and Animation. Adroit at picking up computer languages, libraries, and frameworks quickly.
- **Computer Administration:** Experience administering very large clusters of Linux machines. Proficient with Unix (primarily Linux). Experience creating and maintaining static and dynamic pages on for the World Wide Web. Experience with PostgreSQL, MySQL, Apache, and other standard systems.
- **Music:** Violinist since the age of five, violist since 1995.
- **Theatre:** Accomplished amateur actor. Numerous roles acting in, directing, stage managing, and producing community and university theater productions.

Honors and Awards

2007	Co-recipient, the Gruber Prize in Cosmology
2004	Chancellor's Award for Research, Vanderbilt University
1991-1994	Kodak Fellow, Caltech.
1990	Graduated with Honors in Physics and in Humanities/Social Sciences, Harvey Mudd College.
1990	Radley Prize in Humanities and Social Sciences, Harvey Mudd College.
1987	Platt Prize for outstanding Freshman, Harvey Mudd College.

References

- Saul Perlmutter, Professor, University of Berkeley and the Lawrence Berkeley National Lab
- David Weintraub, Professor of Physics & Astronomy, Vanderbilt University
- Glenn van Brummelen, Professor of Mathematics, Quest University
- Darcy Otto, Professor of Philosophy, Quest University

Students Advised

- Eric Ross, Quest University, 2013; Question: "What is order in the physical sciences?"
- Tucker Sherman, Quest University, 2013; Question: "How can intellectual property rights facilitate progress in the 21st century?"
- Easton Smith, Quest University, 2013; Question: "What are the barriers to energy sustainability?"
- Parker Thompson, Quest University, 2013; Question: "What is digital security?"
- Anna Wheeler, Quest University, 2013; Question: "What can we learn about Earth by studying other planets?"
- Chloe Wightman, Quest University; Question: "What is the Universe?"
- Claire Hatley, Quest University, 2012; Question: "How can we keep creativity alive?"

- Cameron Pittman, Undergraduate Honors Thesis, Vanderbilt University, 2009
- Anders Jensen, Undergraduate Honors Thesis, Vanderbilt University, 2008 (High Honors)
- Katie Chynoweth, Graduate Student, Vanderbilt University, 2005-2007
- Andrew Collazzi, Undergraduate Honors Thesis, Vanderbilt University, 2006
- Eric Smith, MS, Physics, Vanderbilt University, 2005
- Naved Mahmud, Undergraduate Honors Thesis, Vanderbilt University, 2005 (High Honors)
- Jonathan Stricker, Undergraduate Honors Thesis, Vanderbilt University, 2005 (High Honors)
- James Schlaerth, Undergraduate Honors Thesis, Vanderbilt University, 2004 (High Honors)
- René Ortmann, MS, Physics, Vanderbilt University, 2003
- Jessica Hodges, Undergraduate Research, Vanderbilt University, 2002
- K. Sterling Garmond, Summer Undergraduate Research, LBNL, 2000

Professional Activities and Society Memberships

2008–2012	The Meta-Institute of Computational Astronomy (www.mica-vw.org)
2007	Member, AAS Small Research Grants Panel (January)
2006–2007	AAS Shapley Lecturer
2005–2007	Member, Extragalactic Time Allocation Committee, NOAO
2004–2005	Referee for <i>The Astrophysical Journal</i>
1999	Referee for <i>The Astronomical Journal</i>
1990–Present	Member, The American Physical Society
1992–Present	Member, The American Astronomical Society
2002–Present	Member, The Astronomical Society of the Pacific

Invited Talks, Seminars, and Colloquia

- “The Discovery of the Accelerating Universe.” Reed College, March, 2012.
- “Dark Energy and the Accelerating Universe.” Belmont University, October, 2009.
- “Dark Energy: The Big Question in Modern Cosmology.” Colgate University physics colloquium, November, 2008.
- “The Discovery of the Accelerating Universe.” Keynote talk at the North Carolina section meeting of the American Association of Physics Teachers, October, 2007.
- “High-Velocity & Relativistic Gas Near Supermassive Black Holes at the Cores of Galaxies”:
 - East Carolina University, April, 2007.
 - The University of Missouri at Rolla, April, 2007.
 - Texas Tech, Lubbock, TX, March, 2007.
 - Western Kentucky University, February, 2007.
- “Galaxies in Collision”, High Point University, March, 2006.
- “Measuring Cosmology with Type Ia Supernovae”, Division of Particles and Fields, American Physical Society, UCLA, January, 1999.

- “Measuring the Expansion of the Universe with Supernovae”, Harvey Mudd College, November, 1998.

Invited AAS Shapley Lectures

- “The Power of the Dark Side: The Exotic Material That Makes Up Most Of Our Universe” :
 - East Carolina University, April, 2007
 - Univ. of Missouri at Rolla, April, 2007
- “A Modern View of the Expanding Universe”
 - Texas Tech, March, 2007
 - Guilford Technical Community College, March, 2006.
- “Galaxies in Collision”, Westfield State College, May, 2006.

Recent and Selected Outreach Activities

- Talks at the Whistler and Squamish public libraries, 2010-2012
 - “The Higgs Boson: Background, and the News from CERN”, October, 2012
 - “The Discovery of the Accelerating universe”, November, 2011
 - “Galaxies in Collision”, May, 2011
 - “The Birth and Fate of the Universe”, October, 2010
- “Dr. Knop Talks Astronomy,” a regular public outreach astronomy lecture series given in Second Life in association with MICA, the Meta-Institute of Computational Astronomy, 2008–2012. A list of talks given is here: http://www.mica-vw.org/wiki/index.php/Popular_Talks
- Podcasts for *365 Days of Astronomy*. 2009–2011.
- Talks at VCON (science fiction convention in Vancouver, BC)
 - September, 2012: “The Discovery of the Accelerating Universe”
 - September, 2011: “The Science Behind Larry Niven’s *Neutron Star*”
 - October, 2010: “Newtonian Physics in Science Fiction Movies and TV: the Good, the Bad, and the Ugly”
- Talks at Hypericon (science fiction convention in Nashville, TN)
 - “Parallel Universes”, June, 2010.
 - ‘How We Know That Dark Matter Exists’ and “Constructing a Space Combat Game That Obeys Newton’s Laws”, June, 2009.
 - “Quantum Teleportation: Entangled States and ‘Spooky Action at a Distance’ ”, June, 2008.
 - “Newtonian Physics in Science Fiction Movies and TV: the Good, the Bad, and the Ugly”, June, 2007.

- “Black Holes: Misconceptions, and the Even More Startling Truth” and “A Modern View of the Expanding Universe”, June, 2006.
- Presentation on the expanding Universe to over 700 high school students over four different sessions to three different schools in and near Greenville, NC, April, 2007.
- “Why ‘Was Einstein Wrong?’ Is the Wrong Question”, the Tennessee Spring Star Party, March, 2007.
- Leader, workshop on “active learning” techniques for introductory astronomy, High Point University, March, 2006.
- “Supermassive Black Holes at the Cores of Galaxies”, the Tennessee Spring Star Party, March, 2006.
- A three-part podcast on the expansion of the Universe as part of Dyer Observatory’s “Stellar Conversations” (http://www.vanderbilt.edu/news/stellar_conversations?archive_month=&archive_year=2006&archives=Go), Spring, 2006.
- Talk to the Tennessee Spring Star Party on March 12, 2005: “Interacting Galaxies, the Evolution of Galaxies, the Formation of the Elements, and How All of it Is Necessary for You”
- Featured talk at the Dyer Observatory 50th Anniversary Celebration, December 12, 2003: “From Seyfert Galaxies to the Expansion of the Universe.”

PUBLICATIONS

Refereed Journal Articles

1. D. Rubin, R. A. Knop, E. Rykoff, G. Aldering, R. Amanullah, K. Barbary, M. S. Burns, A. Conley, N. Connolly, S. Deustua, V. Fadeyev, H. K. Fakhouri, A. S. Fruchter, R. A. Gibbons, G. Goldhaber, A. Goobar, E. Y. Hsiao, X. Huang, M. Kowalski, C. Lidman, J. Meyers, J. Nordin, S. Perlmutter, C. Saunders, A. L. Spadafora, V. Stanishev, N. Suzuki, and L. Wang, “Precision Measurement of The Most Distant Spectroscopically Confirmed Supernova Ia with the Hubble Space Telescope.” *The Astrophysical Journal*, 2013, **763**, 35
2. X. Wang, L. Wang, A. V. Filippenko, E. Baron, M. Kromer, D. Jack, T. Zhang, G. Aldering, P. Antilogus, W. D. Arnett, D. Baade, B. J. Barris, S. Benetti, P. Bouchet, A. S. Burrows, R. Canal, E. Cappellaro, R. G. Carlberg, E. di Carlo, P. J. Challis, A. P. S. Crotts, J. I. Danziger, M. Della Valle, M. Fink, R. J. Foley, C. Fransson, A. Gal-Yam, P. M. Garnavich, C. L. Gerardy, G. Goldhaber, M. Hamuy, W. Hillebrandt, P. Höflich, S. T. Holland, D. E. Holz, J. P. Hughes, D. J. Jeffery, S. W. Jha, D. Kasen, A. M. Khokhlov, R. P. Kirshner, R. A. Knop, C. Kozma, K. Krisciunas, B. C. Lee, B. Leibundgut, E. J. Lentz, D. C. Leonard, W. H. G. Lewin, W. Li, M. Livio, P. Lundqvist, D. Maoz, T. Matheson, P. A. Mazzali, P. Meikle, G. Miknaitis, P. A. Milne, S. W. Mochnacki, K. Nomoto, P. E. Nugent, E. S. Oran, N. Panagia, S. Perlmutter, M. M. Phillips, P. Pinto, D. Poznanski, C. J. Pritchett, M. Reinecke, A. G. Riess, P. Ruiz-Lapuente, R. A. Scalzo, E. M. Schlegel, B. P. Schmidt, J. Siegrist, A. M. Soderberg, J. Sollerman, G. Sonneborn, A. Spadafora, J. Spyromilio, R. A. Sramek, S. G. Starrfield, L. G. Strolger, N. B. Suntzeff, R. C. Thomas, J. L. Tonry, A. Tornambe,

- J. W. Truran, M. Turatto, M. Turner, S. D. Van Dyk, K. W. Weiler, J. C. Wheeler, M. Wood-Vasey, S. E. Woosley, and H. Yamaoka, “Evidence for Type Ia Supernova Diversity from Ultraviolet Observations with the Hubble Space Telescope.” *The Astrophysical Journal*, 2012, **749**, 126
3. R. Amanullah, C. Lidman, D. Rubin, G. Aldering, P. Astier, K. Barbary, M. S. Burns, A. Conley, K. S. Dawson, S. E. Deustua, M. Doi, S. Fabbro, L. Faccioli, H. K. Fakhouri, G. Folatelli, A. S. Fruchter, H. Furusawa, G. Garavini, G. Goldhaber, A. Goobar, D. E. Groom, I. Hook, D. A. Howell, N. Kashikawa, A. G. Kim, R. A. Knop, M. Kowalski, E. Linder, J. Meyers, T. Morokuma, S. Nobili, J. Nordin, P. E. Nugent, L. Östman, R. Pain, N. Panagia, S. Perlmutter, J. Raux, P. Ruiz-Lapuente, A. L. Spadafora, M. Strovink, N. Suzuki, L. Wang, M. W. Wood-Vasey (The Supernova Cosmology Project), “Spectra and Hubble Space Telescope Light Curves of Six Type Ia Supernovae at $0.511 < z < 1.12$ and the Union2 Compilation.” *The Astrophysical Journal*, 2010, **716**, 712–738
 4. T. Morokuma, K. Tokita, C. Lidman, M. Doi, N. Yasuda, G. Aldering, Greg; R. Amanullah, K. Barbary, K. Dawson, V. Fadeyev, H. K. Fakhouri, G. Goldhaber, A. Goobar, T. Hattori, J. Hayano, I. M. Hook, D. A. Howell, H. Furusawa, Y. Ihara, N. Kashikawa, R. A. Knop, K. Konishi, J. Meyers, T. Oda, R. Pain, S. Perlmutter, D. Rubin, A. L. Spadafora, N. Suzuki, N. Takanashi, T. Totani, H. Tomonori, H. Utsunomiya, L. Wang, “Subaru FOCAS Spectroscopic Observations of High-Redshift Supernovae.” *Publications of the Astronomical Society of Japan*, 2010, **62**, 19
 5. S. Nobili, V. Fadeyev, G. Aldering, R. Amanullah, K. Barbary, M. S. Burns, K. S. Dawson, S. E. Deustua, L. Faccioli, A. S. Fruchter, G. Goldhaber, A. Goobar, I. Hook, D. A. Howell, A. G. Kim, R. A. Knop, C. Lidman, J. Meyers, P. E. Nugent, R. Pain, N. Panagia, S. Perlmutter, D. Rubin, A. L. Spadafora, M. Strovink, N. Suzuki, and H. Swift (The Supernova Cosmology Project), “Constraining dust and color variations of high- z SNe using NICMOS on HST.” *The Astrophysical Journal*, 2009, **700**, 1415–1427
 6. S. G. Djorgovski, P. Hut, S. McMillan, E. Vesperini, R. A. Knop, W. Farr, and M. J. Graham, “Exploring the Use of Virtual Worlds as a Scientific Research Platform: The Meta-Institute for Computational Astrophysics (MICA).” FaVE 2009; Lehmann-Grube, F., *et. al.*, eds., ICST Lecture Notes Ser., Berlin: Springer Verlag. astro-ph 0907.3520
 7. M. Kowalski, D. Rubin, G. Aldering, R. J. Agostinho, A. Amadon, R. Amanullah, C. Balland, K. Barbary, G. Blanc, P. J. Challis, A. Conley, N. V. Connolly, R. Covarrubias, K. S. Dawson, S. E. Deustua, R. Ellis, S. Fabbro, V. Fadeyev, X. Fan, B. Farris, G. Folatelli, B. L. Frye, G. Garavini, E. L. Gates, L. Germany, G. Goldhaber, B. Goldman, A. Goobar, D. E. Groom, J. Haissinski, D. Hardin, I. Hook, S. Kent, A. G. Kim, R. A. Knop, C. Lidman, E. V. Linder, J. Mendez, J. Meyers, G. J. Miller, M. Moniez, A. M. Mourão, H. Newberg, S. Nobili, P. E. Nugent, R. Pain, O. Perdureau, S. Perlmutter, M. M. Phillips, V. Prasad, R. Quimby, N. Regnault, J. Rich, E. P. Rubenstein, P. Ruiz-Lapuente, F. D. Santos, B. E. Schaefer, R. A. Schommer, R. C. Smith, A. M. Soderberg, A. L. Spadafora, L. G. Strolger, M. Strovink, N. B. Suntzeff, N. Suzuki, R. C. Thomas, N. A. Walton, L. Wang, M. M. Wood-Vasey, and J. L. Yun, “Improved Cosmological Constraints from New, Old, and Combined Supernova Data Sets.” *The Astrophysical Journal*, 2008, **686**, 749–778
 8. T. Morokuma, M. Doi, N. Yasuda, M. Akiyama, K. Sekiguchi, H. Furusawa, Y. Ueda, T. Totani, T. Oda, T. Nagao, N. Kashikawa, T. Murayama, M. Ouchi, M. G. Watson,

- M. W. Richmond, C. Lidman, S. Perlmutter, A. L. Spadafora, G. Aldering, L. Wang, I. M. Hook, and R. A. Knop, “The Subaru/XMM-Newton Deep Survey (SXDS). V. Optically Faint Variable Object Survey.” *The Astrophysical Journal*, 2008, **676**, 163–183.
9. N. Kuznetsova, K. Barbary, B. Connolly, A. G. Kim, R. Pain, N. A. Roe, G. Aldering, R. Amanullah, K. Dawson, M. Doi, V. Fadeyev, A. S. Fruchter, R. Gibbons, G. Goldhaber, A. Goobar, A. Gude, R. A. Knop, M. Kowalski, C. Lidman, T. Morokuma, J. Meyers, S. Perlmutter, D. Rubin, D. J. Schlegel, A. L. Spadafora, V. Stanishev, M. Strovink, N. Suzuki, L. Wang, L., and N. Yasuda, “A New Determination of the High-Redshift Type Ia Supernova Rates with the Hubble Space Telescope Advanced Camera for Surveys.” *The Astrophysical Journal*, 2008, **673**, 981–998.
 10. A. Conley, G. Goldhaber, L. Wang, G. Aldering, R. Amanullah, E. D. Commins, V. Fadeyev, G. Folatelli, G. Garavini, R. Gibbons, A. Goobar, D. E. Groom, I. Hook, D. A. Howell, A. G. Kim, R. A. Knop, M. Kowalski, N. Kuznetsova, C. Lidman, S. Nobili, P. E. Nugent, R. Pain, S. Perlmutter, E. Smith, A. L. Spadafora, V. Stanishev, M. Strovink, R. C. Thomas, W. M. Wood-Vasey, “Measurement of Ω_M , Ω_Λ from a Blind Analysis of Type Ia Supernovae with CMAGIC: Using Color Information to Verify the Acceleration of the Universe.” *The Astrophysical Journal*, 2006, **644**, 1–20.
 11. M. Sullivan, D. A. Howell, K. Perrett, P. E. Nugent, P. Astier, E. Aubourg, D. Balam, S. Basa, R. G. Carlberg, A. Conley, S. Fabbro, D. Fouchez, J. Guy, I. Hook, H. Lafoux, J. D. Neill, R. Pain, N. Palanque-Delabrouille, C. J. Pritchet, N. Regnault, J. Rich, R. Taillet, G. Aldering, S. Baumont, J. Bronder, M. Filiol, R. A. Knop, S. Perlmutter, C. Tao, “Photometric Selection of High-Redshift Type Ia Supernova Candidates.” *The Astronomical Journal*, 2006, **131**, 960–972.
 12. D. A. Howell, M. Sullivan, K. Perrett, T. J. Bronder, I. M. Hook, P. Astier, E. Aubourg, D. Balam, S. Basa, R. G. Carlberg, S. Fabbro, D. Fouchez, J. Guy, H. Lafoux, J. D. Neill, R. Pain, N. Palanque-Delabrouille, C. J. Pritchet, N. Regnault, J. Rich, R. Taillet, R. A. Knop, R. G. McMahon, S. Perlmutter, N. A. Walton, “Gemini Spectroscopy of Supernovae from the Supernova Legacy Survey: Improving High-Redshift Supernova Selection and Classification.” *The Astrophysical Journal*, 2005, **634**, 1190–1201.
 13. I. M. Hook, D. A. Howell, G. Aldering, R. Amanullah, M. S. Burns, A. Conley, S. E. Deustua, R. Ellis, S. Fabbro, V. Fadeyev, G. Folatelli, G. Garavini, R. Gibbons, G. Goldhaber, A. Goobar, D. E. Groom, A. G. Kim, R. A. Knop, M. Kowalski, C. Lidman, S. Nobili, P. E. Nugent, R. Pain, C. R. Pennypacker, S. Perlmutter, P. Ruiz-Lapuente, G. Sainton, B. E. Schaefer, E. Smith, A. L. Spadafora, V. Stanishev, R. C. Thomas, N. A. Walton, L. Wang, W. M. Wood-Vasey, “Spectra of High-Redshift Type Ia Supernovae and a Comparison with Their Low-Redshift Counterparts.” *The Astronomical Journal*, 2005, **130**, 2788–2803.
 14. G. Garavini, G. Aldering, A. Amadon, R. Amanullah, P. Astier, C. Balland, G. Blanc, A. Conley, T. Dahln, S. E. Deustua, R. Ellis, S. Fabbro, V. Fadeyev, X. Fan, G. Folatelli, B. Frye, E. L. Gates, R. Gibbons, G. Goldhaber, B. Goldman, A. Goobar, D. E. Groom, J. Haissinski, D. Hardin, I. Hook, D. A. Howell, S. Kent, A. G. Kim, R. A. Knop, M. Kowalski, N. Kuznetsova, B. C. Lee, C. Lidman, J. Mendez, G. J. Miller, M. Moniez, M. Mouchet, A. Mouro, H. Newberg, S. Nobili, P. E. Nugent, R. Pain, O. Perdureau, S. Perlmutter, R. Quimby, N. Regnault, J. Rich, G. T. Richards, P. Ruiz-Lapuente, B. E. Schaefer, K. Schahmaneche, E. Smith, A. L. Spadafora, V. Stanishev, R. C. Thomas, N. A. Walton, L. Wang,

- W. M. Wood-Vasey, “Spectroscopic Observations and Analysis of the Unusual Type Ia SN 1999ac.” *The Astronomical Journal*, 2005, **130**, 2278–2292.
15. S. Nobili, R. Amanullah, G. Garavini, A. Goobar, C. Lidman, V. Stanishev, G. Aldering, P. Antilogus, P. Astier, M. S. Burns, A. Conley, S. E. Deustua, R. Ellis, S. Fabbro, V. Fadeyev, G. Folatelli, R. Gibbons, G. Goldhaber, D. E. Groom, I. Hook, D. A. Howell, A. G. Kim, R. A. Knop, P. E. Nugent, R. Pain, S. Perlmutter, R. Quimby, J. Raux, N. Regnault, P. Ruiz-Lapuente, G. Sainton, K. Schahmaneche, E. Smith, A. L. Spadafora, R. C. Thomas, L. Wang, “Restframe I-band Hubble diagram for type Ia supernovae up to redshift $z \sim 0.5$.” *Astronomy & Astrophysics*, 2005, **437**, 789–804.
 16. C. Lidman, D. A. Howell, G. Folatelli, G. Garavini, S. Nobili, G. Aldering, R. Amanullah, P. Antilogus, P. Astier, G. Blanc, M. S. Burns, A. Conley, S. E. Deustua, M. Doi, R. Ellis, S. Fabbro, V. Fadeyev, R. Gibbons, G. Goldhaber, A. Goobar, D. E. Groom, I. Hook, N. Kashikawa, A. G. Kim, R. A. Knop, B. C. Lee, J. Mendez, T. Morokuma, K. Motohara, P. E. Nugent, R. Pain, S. Perlmutter, V. Prasad, R. Quimby, J. Raux, N. Regnault, P. Ruiz-Lapuente, G. Sainton, B. E. Schaefer, K. Schahmaneche, E. Smith, A. L. Spadafora, V. Stanishev, N. A. Walton, L. Wang, W. M. Wood-Vasey, and N. Yasuda, “Spectroscopic confirmation of high-redshift supernovae with the ESO VLT.” *Astronomy & Astrophysics*, 2005, **430**, 843–851.
 17. G. Garavini, G. Folatelli, A. Goobar, S. Nobili, G. Aldering, A. Amadon, R. Amanullah, P. Astier, C. Balland, G. Blanc, M. S. Burns, A. Conley, T. Dahlén, S. E. Deustua, R. Ellis, S. Fabbro, X. Fan, B. Frye, E. L. Gates, R. Gibbons, G. Goldhaber, B. Goldman, D. E. Groom, J. Haissinki, D. Hardin, I. M. Hook, D. A. Howell, D. Kasen, S. Kent, A. G. Kim, R. A. Knop, B. C. Lee, C. Lidman, J. Mendez, G. J. Miller, M. Moniez, A. Mourão, H. Newberg, P. E. Nugent, R. Pain, O. Perdureau, S. Perlmutter, V. Prasad, R. Quimby, J. Raux, N. Regnault, J. Rich, G. T. Richards, P. Ruiz-Lapuente, G. Sainton, B. E. Schaefer, K. Schahmaneche, E. Smith, A. L. Spadafora, V. Stanishev, N. A. Walton, L. Wang, and W. M. Wood-Vasey, “Spectroscopic Observations and Analysis of the Peculiar SN 1999aa.” *The Astronomical Journal*, 2004, **128**, 387–404.
 18. R. A. Knop, G. Aldering, R. Amanullah, P. Astier, G. Blanc, M. S. Burns, A. Conley, S. E. Deustua, M. Doi, R. Ellis, S. Fabbro, G. Folatelli, A. S. Fruchter, G. Garavini, S. Garmond, K. Garton, R. Gibbons, G. Goldhaber, A. Goobar, D. E. Groom, D. Hardin, I. Hook, D. A. Howell, A. G. Kim, B. C. Lee, C. Lidman, J. Mendez, S. Nobili, P. E. Nugent, R. Pain, N. Panagia, C. R. Pennypacker, S. Perlmutter, R. Quimby, J. Raux, N. Regnault, P. Ruiz-Lapuente, G. Sainton, B. Schaefer, K. Schahmaneche, E. Smith, A. L. Spadafora, V. Stanishev, M. Sullivan, N. A. Walton, L. Wang, W. M. Wood-Vasey, and N. Yasuda, “New Constraints on Ω_M and Ω_Λ , and w from an Independent Set of 11 High-Redshift Supernovae Observed with the Hubble Space Telescope.” *The Astrophysical Journal*, 2003, **598**, 102–137.
 19. S. Nobili, A. Goobar, R. A. Knop, and P. Nugent, “The intrinsic colour dispersion in Type Ia supernovae.” *Astronomy & Astrophysics*, 2003, **404**, 901–912.
 20. M. Sullivan, R. S. Ellis, G. Aldering, R. Amanullah, P. Astier, G. Blanc, M. S. Burns, A. Conley, S. E. Deustua, M. Doi, S. Fabbro, G. Folatelli, A. S. Fruchter, G. Garavini, R. Gibbons, G. Goldhaber, A. Goobar, D. E. Groom, D. Hardin, I. Hook, D. A. Howell, M. Irwin, A. G. Kim, R. A. Knop, C. Lidman, R. McMahon, J. Mendez, S. Nobili, P. E. Nugent, R. Pain, N. Panagia, C. R. Pennypacker, S. Perlmutter, R. Quimby, J. Raux, N. Regnault,

- P. Ruiz-Lapuente, B. Schaefer, K. Schahmaneche, A. L. Spadafora, N. A. Walton, L. Wang, W. M. Wood-Vasey, and N. Yasuda, “The Hubble diagram of type Ia supernovae as a function of host galaxy morphology.” *Monthly Notices of the Royal Astronomical Society*, 2003, **340**, 1057–1075.
21. L.-G. Strolger, R. C. Smith, N. B. Suntzeff, M. M. Phillips, G. Aldering, P. Nugent, R. A. Knop, S. Perlmutter, R. A. Schommer, L. C. Ho, M. Hamuy, K. Krisciunas, L. M. Germany, R. Covarrubias, P. Candia, A. Athey, G. Blanc, A. Bonacic, T. Bowers, A. Conley, T. Dahlen, W. Freedman, G. Galaz, E. Gates, G. Goldhaber, A. Goobar, D. Groom, I. M. Hook, R. Marzke, M. Mateo, P. McCarthy, J. Méndez, C. Muenza, S. E. Persson, R. Quimby, M. Roth, P. Ruiz-Lapuente, J. Seguel, A. Szentgyorgyi, von K. Braun, W. M. Wood-Vasey, and T. York, “The Type Ia Supernova 1999aw: A Probable 1999aa-like Event in a Low-Luminosity Host Galaxy.” *The Astronomical Journal*, 2002, **124**, 2905–2919.
 22. R. Pain, S. Fabbro, M. Sullivan, R. S. Ellis, G. Aldering, P. Astier, S. E. Deustua, A. Fruchter, G. Goldhaber, A. Goobar, D. E. Groom, D. Hardin, I. M. Hook, D. A. Howell, M. J. Irwin, A. G. Kim, M. Y. Kim, R. A. Knop, J. C. Lee, C. Lidman, R. G. McMahon, P. E. Nugent, N. Panagia, C. R. Pennypacker, S. Perlmutter, P. Ruiz-Lapuente, K. Schahmaneche, B. Schaefer, and N. A. Walton, “The Distant Type Ia Supernova Rate.” *The Astrophysical Journal*, 2002, **577**, 120–132.
 23. L. G. Strolger, R. C. Smith, N. B. Suntzeff, M. M. Phillips, G. Aldering, P. Nugent, R. A. Knop, S. Perlmutter, R. A. Schommer, L. C. Ho, M. Hamuy, K. Krisciunas, L. M. Germany, R. Covarrubias, P. Candia, A. Athey, G. Blanc, A. Bonacic, T. Bowers, A. Conley, T. Dahlen, W. Freedman, G. Galaz, E. Gates, G. Goldhaber, A. Goobar, D. Groom, I. M. Hook, R. Marzke, M. Mateo, P. McCarthy, J. Mendez, C. Muenza, S. E. Persson, R. Quimby, M. Roth, P. Ruiz-Lapuente, J. Seguel, A. Szentgyorgyi, K. von Braun, W. M. Wood-Vasey, and T. York, “The Ia supernova 1999aw: a probable 1999aa-like event in a low-luminosity host galaxy.” *The Astronomical Journal*, 2002, **124**, 2905–2919.
 24. G. Goldhaber, D. E. Groom, A. Kim, G. Aldering, P. Astier, A. Conley, S. E. Deustua, R. Ellis, S. Fabbro, A. S. Fruchter, A. Goobar, I. Hook, M. Irwin, M. Kim, R. A. Knop, C. Lidman, R. McMahon, P. E. Nugent, R. Pain, N. Panagia, C. R. Pennypacker, S. Perlmutter, P. Ruiz-Lapuente, B. Schaefer, N. A. Walton, and T. York, “Timescale Stretch Parametrization of Type Ia Supernova B-Band Light Curves”, *The Astrophysical Journal*, 2001, **558**, 359–368
 25. R. A. Knop, L. Armus, K. Matthews, T. W. Murphy, and B. T. Soifer, “Spatially Resolved Near-Infrared Spectroscopy of Seyfert 2 Galaxies Mk 1066, NGC 2110, NGC 4388, and Mk 3,” *The Astronomical *Journal*, 2001, **122**, 764–791
 26. J. A. Willick, K. L. Thompson, B. F. Mathiesen, S. Perlmutter, R. A. Knop, and G. J. Hill, “The Stanford Cluster Search: Scope, Method, and Preliminary Results.” *Publications of the Astronomical Society of the Pacific*, 2001, **784**, 658–676.
 27. G. Aldering, R. A. Knop, and P. E. Nugent, “The Rise-Times of High and Low Redshift Type Ia Supernovae Are Consistent,” *The Astronomical Journal*, 2000, **192**, 2110–2117.
 28. S. Perlmutter, G. Aldering, G. Goldhaber, R. A. Knop, P. E. Nugent, P. G. Castro, S. Deustua, S. Fabbro, A. Goobar, D. E. Groom, I. M. Hook, A. G. Kim, M. Y. Kim, J. C. Lee, N. J. Nunes, R. Pain, C. R. Pennypacker, R. Quimby, C. Lidman, R. S. Ellis, M. Irwin, R. G. McMahon, P. Ruiz-Lapuente, N. Walton, B. Schaefer, B. J. Boyle, A. V. Filippenko, T. Matheson,

- A. Fruchter, N. Panagia, H. J. M. Newberg, W. J. Couch, “Measurements of Ω_M and Ω_Λ from 42 High-Redshift Supernovae,” *The Astrophysical Journal*, 1999, **517**, 565–586.
29. S. R. Bloom, S. G. Djorgovski, A. C. Eichelberger, P. Cote, J. P. Blakeslee, S. C. Odewahn, F. A. Harrison, D. A. Frail, A. V. Filippenko, D. C. Leonard, A. G. Riess, H. Spinrad, D. Stern, A. Bunker, A. Dey, B. Grossan, S. Perlmutter, R. A. Knop, I. M. Hook, and M. Feroci, “The unusual afterglow of the gamma-ray burst of 26 March 1998 as evidence for a supernova connection.” *Nature*, 1999, **401**, 453–456.
 30. S. Perlmutter, G. Aldering, M. Della Valle, S. Deustua, R. S. Ellis, S. Fabbro, A. Fruchter, G. Goldhaber, A. Goobar, D. E. Groom, I. M. Hook, A. G. Kim, M. Y. Kim, R. A. Knop, C. Lidman, R. G. McMahon, P. E. Nugent, R. Pain, N. Panagia, C. R. Pennypacker, P. Ruiz-Lapuente, B. Schaefer and N. Walton, “Discovery of a Supernova Explosion at Half the Age of the Universe and its Cosmological Implications,” *Nature*, 1998, **391**, 51–54.
 31. D. L. Shupe, J. E. Larkin, R. A. Knop, L. Armus, K. Matthews, and B. T. Soifer, “The Kinematics and Excitation of Molecular Hydrogen Emission in the Planetary Nebula BD +30°3639,” *The Astrophysical Journal*, 1998, **498**, 267–277.
 32. J. E. Larkin, L. Armus, R. A. Knop, B. T. Soifer, and K. Matthews, “A Near-Infrared Spectroscopic Survey of LINER Galaxies”, *The Astrophysical Journal Supplement*, 1998, **114**, 59–72.
 33. R. A. Knop, L. Armus, J. E. Larkin, K. Matthews, D. L. Shupe, and B. T. Soifer, “Infrared Spectroscopy of Pa β and [FeII] Emission in NGC 4151,” *The Astronomical Journal*, 1996, **112**, 81–90.
 34. J. E. Larkin, R. A. Knop, S. Lin, K. Matthews, and B. T. Soifer, “A Near Infrared Spectrograph for the Hale 5 Meter Telescope,” *Publications of the Astronomical Society of the Pacific*, 1996, **108**, 211–217.
 35. J. E. Larkin, L. Armus, R. A. Knop, K. Matthews, and B. T. Soifer, “Near-Infrared Spectroscopy of the ARP 220 Nuclei: Measuring the Nuclear Rotation,” *The Astrophysical Journal*, 1995, **452**, 599–604.
 36. M. S. Yun, N. Z. Scoville, and R. A. Knop, “VV114: Making of an Ultraluminous Galaxy?”, *The Astrophysical Journal*, 1994, **430**, L109–L112.
 37. R. A. Knop, B. T. Soifer, J. R. Graham, K. Matthews, D. B. Sanders, and N. Z. Scoville, “VV114, a High Infrared Luminosity Interacting Galaxy System,” *The Astronomical Journal*, 1994, **107**, 920–929.
 38. J. Pouliot, Y. Chan, D. E. DiGregorio, B. A. Harmon, R. A. Knop, C. Moisan, R. Roy, and R. G. Stokstad, “Excitation and Multiple Dissociation of ^{12}C , ^{14}N , and ^{16}O Projectiles in Peripheral Collisions at 32.5 MeV/Nucleon,” *Physical Review C*, 1991, **43**, 735.

Contributed Articles and Chapters

- R. A. Knop, “Big Bang: a Terrible Name For a Great Theory,” in Zikovic, Bora, ed., *The Open Laboratory: The Best Writing on Science Blogs 2006*, (c) 2007, Bora Zikovic.

- R. A. Knop, “Textbooks as Intellectual Activity? Supporting Textbooks Without Outlawing Used Books.” *Astronomy Education Review*, 2006, vol. 5.

Selected Contributed Talks and Presentations

- S. G. Djorgovski, P. Hut, S. McMillan, R. A. Knop, E. Vesperini, M. Graham, S. Portegies Zwart, W. Farr, W., A. Mahabal, C. Donalek, G. Longo, “Immersive Virtual Reality Technologies as a New Platform for Science, Scholarship, and Education,” the American Astronomical Society, January, 2010 (BAAS 215.477.05)
- R. A. Knop, J. Ames, G. Djorgovski, W. Farr, P. Hut, A. Johnson, S. McMillan, A. Nakasone, E. Vesperini, “Visualization of N-body Simulations in Virtual Worlds,” the American Astronomical Society, January, 2010 (BAAS 215.438.06)
- K. M. Chynoweth, R. A. Knop, & R. A. Gibbons, “An Optical Datacube of Seyfert/Starburst Composite Galaxy NGC1365,” the American Astronomical Society, January, 2007 (BAAS 209.217.06)
- R. A. Knop, K. M. Chynoweth, R. A. Gibbons, N. Mahmud, & J. Stricker, “Optical Datacubes of Luminous Infrared Galaxies NGC 7130 and VV 114,” the American Astronomical Society, January, 2006.
- R. A. Knop, “Three-Dimensional Animations for Introductory Astronomy,” the American Astronomical Society, January, 2005 (BAAS 205.9507)
- R. A. Gibbons, R. A. Knop, N. Kuznetsova, & the Supernova Cosmology Project, “Supernovae at $z > 1.2$ Discovered with ACS on HST”
- R. A. Knop, “Application of Active Learning Techniques to an Advanced Course,” the American Astronomical Society, June, 2004 (BAAS 204.2602)
- J. A. Schlaerth, R. A. Knop, & the Supernova Cosmology Project, “High Redshift Type Ia Supernova Lightcurves,” the American Astronomical Society, June, 2004 (BAAS 204.6316) (J. Schlaerth was a senior undergraduate advisee of Robert Knop)
- E. Smith, *et al.*, “Optical Spectroscopy of High-Redshift Supernovae Used in Determination of Cosmological Parameters,” the American Astronomical Society, January, 2004 (BAAS 203.4505) (E. Smith is a graduate student advisee of Robert Knop)
- R.A. Knop, *et al.*, “A New High-Redshift SN Ia Dataset that Addresses Extinction Questions in Cosmology Measurements,” the American Astronomical Society, May, 2003 (BAAS 202.5403)
- R.A. Knop, *et al.*, “Measurements of the Cosmological Parameters Omega and Lambda from High-Redshift Supernova”, the American Astronomical Society, January, 1997 (BAAS 191.8504). (This was the SCP’s first public announcement of the results that ruled out the flat, matter-dominated universe and indicated the existence of a cosmological constant.)