

Scott L. Nutter

Refereed Publications

1. Developing a silica aerogel radiator for the HELIX ring-imaging Cherenkov system, Makoto Tabata, Patrick Allison, James J. Beatty, Stephane Coutu, Mark Gebhard, Noah Green, David Hanna, Brandon Kunkler, Mike Lang, Keith McBride, Samuel I. Mognet, Dietrich Müller, James Musser, Scott Nutter, Nahee Park, Michael Schubnell, Gregory Tarlé, Andrew Tomasch, Gerard Visser, Scott P. Wakely, Ian Wisher. Nucl. Instr. and Methods A (2020), Volume 952, 1 February 2020, 161879 DOI <https://doi.org/10.1016/j.nima.2019.02.006>.
2. The boronated scintillator detector of the ISS-CREAM experiment, Y. Amare et al. Nucl. Inst. and Methods A 943 (2019) 162413.
3. Measurement of delayed fluorescence in plastic scintillator from 1 to 10 μ s. S. Nutter et al. Nucl. Inst. and Methods A 942 (2019) 162368.
4. Gated-Dynode photomultiplier tube assembly for the boronated scintillator detector of the ISS-CREAM experiment, T. Anderson, Y. Chen, S. Coutu, S. Im, T. LaBree, J.T. Link, J. Mitchell, S. Mognet, S. Nutter, K. Wallace, Z. Yin, M. Yu. Nucl. Inst. and Methods A 942 (2019) 162343.
5. The ISS-CREAM Silicon Charge Detector for identification of the charge of cosmic rays up to $Z = 26$: Design, fabrication and ground-test performance, J. Lee, et al. Astroparticle Physics 112 (2019) 8–15.
6. On-orbit Performance of the Top and Bottom Counting Detectors for the ISS-CREAM Experiment on the International Space Station, S.C. Kang, et al. Adv. in Space Research 64 (2019) 2564-2569.
7. A simulation study of Top and Bottom Counting Detectors in ISS-CREAM experiment for cosmic ray electron physics, J.M. Park et al. Advances in Space Research 62 (2018) 2939–2944.
8. Secondary Cosmic Rays, S. Nutter. Physics of the Cosmos Newsletter, December 2017 (Invited). <https://pcos.gsfc.nasa.gov/newsletters/>
9. Proton and Helium Spectra from the CREAM-III Flight, Y.S. Yoon et al., Astrophys. J. , 839:5, 2017.
10. Performances of photodiode detectors for top and bottom counting detectors of ISS-CREAM experiment, H. J. Hyun et al, [NUCL. INST. METH.](#), 787, 134-139, 2015. doi:10.1016/j.nima.2014.11.075.
11. Construction and Testing of a Top Counting Detector and a Bottom Counting Detector for the Cosmic Ray Energetics And Mass Experiment on the International Space Station, Y. S. Hwang et al., [J. INST.](#), 10 (07), P07018, 2015.
12. “Cosmic Ray Energetics And Mass for the International Space Station (ISS-CREAM).” E.S. Seo, T. Anderson, D. Angelaszek, S.J. Baek, J. Baylon, M. Buénerd, M. Copley, S. Coutu, L. Derome, B. Fields, M. Gupta, J.H. Han, I.J. Howley, H.G. Huh, Y.S. Hwang, H.J. Hyun, I.S. Jeong, D.H. Kah, K.H. Kang, D.Y. Kim, H.J. Kim, K.C. Kim, M.H. Kim, K. Kwashnak, J. Lee, M.H. Lee, J.T. Link, L. Lutz, A. Malinin, A. Menchaca-Rocha, J.W. Mitchell, S. Nutter, O. Ofoha, H. Park, I.H. Park, J.M. Park, P. Patterson, J.R. Smith, J. Wu, Y.S. Yoon . Advances in Space Research 53 (2014) 1451 – 1455.

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18. "Approaching the Spectral Knee in High Energy Cosmic Rays with CREAM." E. S. Seo *et al.*, *Journal of the Physical Society of Japan, Suppl. A*, 78, 63-67, 2009.
19. "Measurements of cosmic-ray secondary nuclei at high energies with the first flight of the CREAM balloon-borne experiment." H.S. Ahn *et al.* (CREAM collaboration), *Astroparticle Physics*, Vol. 30, Issue 3, pp. 133-141, 2008.
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28. "Performance of CREAM Calorimeter: Results of Beam Tests." H. S. Ahn *et al.*, *Nuclear Physics B(Proc. Suppl.)*, 150, 272-275, 2006.
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Conference Proceedings

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Time profile of fluorescence in organic scintillator out to 10 microseconds. S. Nutter, T. Anderson, Y.H. Chen, S. Coutu, T. LaBree, J. Link, J.W. Mitchell, S.I. Mognet, K. Wallace and M. Yu. Proc. 36th Int. Cosmic Ray Conf., Madison, WI USA. Proc. Of Science (pos.sissa.it/358/), PoS(ICRC2019)115.

Production of Silica Aerogel Radiator Tiles for the HELIX RICH Detector. P. Allison, J. Beatty, L. Beaufore, Y. Chen, S. Coutu, E. Ellingwood, M. Gebhard, N. Green, D. Hanna, B. Kunkler, S.I. Mognet, R. Mbarek, K. McBride, K. Michaels, D. Muller, J. Musser, S. Nutter, S. O'Brien, N. Park, T. Rosin, E. Schreyer, G. Tarle, M. Tabata, A. Tomasch, G. Visser, S. Wakely, T. Werner, I. Wisher and M. Yu. Proc. 36th Int. Cosmic Ray Conf., Madison, WI USA. Proc. Of Science (pos.sissa.it/358/), PoS(ICRC2019)139.

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- "Bore paddle for HELIX."* HELIX Collaboration meeting, Indiana University, 8 July, 2016.
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- "ISS-CREAM GEANT4 Simulation Status."* CREAM collaboration meeting, University of Maryland, 2 February, 2016.
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- "CREST Signal Studies."* CREST Collaboration meeting, University of Michigan, 6 December, 2014.
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- "The search for TeV cosmic ray electrons with the CREST experiment."* TeV Particle Astrophysics (TeVPA), Stockholm, Aug 1-5, 2011.
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- "The Cosmic Ray Electron Synchrotron Telescope (CREST)"* 31st International Cosmic Ray Conference, Łódź, Poland, 2009.
- "CREST - A Balloon-borne Instrument to Measure Cosmic-ray Electrons Above TeV Energies."* American Physical Society April Meeting (Denver, CO) May 2009.
- "NKU CREST Simulations Status"* CREST Simulations Review meeting, Indiana University, February 2009.
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"The Art of Scientific Ballooning." Friends of the Observatory (FOTO) invited speaker (Cincinnati Observatory), Cincinnati, OH, 16 December 2009.

"The Best Journey in the World: Antarctic High Energy Physics, Biological Diversity and Dessert!" NKU Biology Department Seminar co-presented with Hazel Barton. December 12, 2008.

"Veto status" presented at CREST collaboration meeting at Northern Kentucky University, December 6-7, 2008.

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"Using the Earth's Magnetic Field to Detect Cosmic Ray Electrons." Kentucky Academy of Science Annual Meeting, November 2008.

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"Synchrotron radiation from primary cosmic ray electrons: Monte Carlo studies of event topologies and potential backgrounds at balloon altitudes" Poster session at the International Cosmic Ray Conference, Merida (June 2007).

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"CREST Detector GEANT4 Monte Carlo" CREST collaboration meeting, Northern Kentucky University, August 19, 2006.

"Atmospheric showers GEANT4 Simulation" CREST collaboration meeting, Northern Kentucky University, August 19, 2006.

"Searching for high energy cosmic ray electrons using the Earth's magnetic field" April APS meeting, Dallas, TX April 24, 2006.

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"Photonic component of atmospheric showers a la GEANT4" CREST collaboration meeting, Chicago IL, Jan 14, 2006.

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"Astroparticle Physics at Northern Kentucky University." Presented at Kentucky Space Grant/NASA EPSCoR Conference, Lexington, Kentucky, May, 2004.

"The antimatter abundance ratios in the cosmic rays from 5 to 50 GeV." Presented at the Ohio Section of the American Physical Society meeting, Athens, Ohio, April 2004.

"Cosmic Rays: An Alternative Eye on the Sky." Presented at Cincinnati Observatory, Cincinnati, Ohio, January, 2004.

"From There to Here." Talk given at the University of Minnesota to Research Experience for Undergraduates (REU) students about a career as a professor at a four year school, July, 2003.

"Progress and Status of the HEAT Instrument Paper." Presentation at HEAT Collaboration meeting, Ann Arbor, MI, February, 2003.

"Balloons, cosmic rays, antiprotons, and Antarctica." Talk at Northern Kentucky University Sigma Xi meeting, March 6, 2002.

"The HEAT Cosmic Ray Antiproton Detector." Talk at Miami University Department of Physics, February 2002.

"Detection of cosmic-ray antiprotons with the HEAT-pbar instrument." Poster presentation at the 27th International Cosmic Ray Conference, Hamburg, August 2001.

"HEAT PBAR Analysis" at the HEAT--pbar collaboration at The University of Michigan, Ann Arbor, Michigan, May 21-22, 2001.

"The HEAT Cosmic Ray Antiproton Detector." Talk at Wittenberg University Department of Physics, February 2001.

"CREAM TCD Progress Report" at the CREAM collaboration meeting at the University of Maryland, February 2-3, 2001.

"The HEAT Cosmic Ray Antiproton Experiment." Talk at Pennsylvania State University Mont-Alto campus, January 2001.

"Cosmic Rays: High Energy Mysteries." Talk at Humboldt State University Department of Physics, December 2000.

"PSU HEAT Analysis Results" at the HEAT-pbar collaboration at Indiana University, Bloomington, Indiana, September 16, 2000.

"Current status of the CREAM charge detector" given at the CREAM collaboration meeting at the University of Maryland, July 10, 2000.

"A cross-discipline study of the pedagogical impact of item analysis technology." Presented at the New Mexico Higher Education Assessment Conference, February 24-26, 2000, Las Cruces NM.

"NASA Educational Materials and Opportunities on the Web." Workshop presented at the New Mexico Science Teachers Association Fall 1999 meeting, Hobbs, New Mexico, October 21, 1999.

"Antiprotons in the Cosmic Rays" Annual meeting of the Four Corners Section of the American Physical Society, Tucson, Arizona, Oct 1-2, 1999.

"K-12 Education Materials and Opportunities at NASA." Workshop presented at Eastern New Mexico University through Extended Learning, April, 1999.

"The HEAT Frame: Fabrication and Design Issues" given at the HEAT collaboration meeting in Ann Arbor, July, 1997.

"Design and status of the HEAT ToF" given at the HEAT collaboration meeting in Chicago, Illinois, May 4-5, 1997.

"Current status of the HEAT Time of Flight detector" given at the HEAT collaboration meeting in Ann Arbor, Michigan, Nov. 8-9, 1996.

"The HEAT Frame: Fabrication and Design Issues" given at the HEAT collaboration meeting in Ann Arbor, July, 1997.

"Design and status of the HEAT ToF" given at the HEAT collaboration meeting in Chicago, Illinois, May 4-5, 1997.

"Current status of the HEAT Time of Flight detector" given at the HEAT collaboration meeting in Ann Arbor, Michigan, Nov. 8-9, 1996.

"Examples of Technology Use in Teaching and Learning Applications at Eastern New Mexico University." Scott Nutter, Calvin DeWitt, and Ed Kinley. American Association of Higher Education 2nd Annual Teaching and Learning Technology Roundtable (TLTR) Summer Institute, Scottsdale, Arizona, July 12-16, 1996.

"Best Case Practices of Technology at Eastern New Mexico University." Calvin DeWitt, Scott Nutter, Mary Ayala, and Debra Hall. Mid-South Instructional Technology Conference, Middle Tennessee State University, Murfreesboro, Tennessee, April 6-8, 1997.

"SMILI: Superconducting Magnet Instrument for Light Isotopes: Design and Measurements." California Institute of Technology Space Sciences seminar, May 1992.

"A Measurement of the $^3\text{He}/^4\text{He}$ Ratio in the Cosmic Radiation from 500 MeV/amu to 1100 MeV/amu" At The 22nd International Cosmic Ray Conference, Dublin, Ireland. July, 1991.

Conferences Attended

American Astronomical Society 235th Meeting Honolulu, HI USA (January 3-8 2020)

TeV Astrophysics (TeVPA), Sydney, Australia (December 2-8 2019)

International Cosmic Ray Conference, Madison, Wisconsin USA (July 23 – August 2, 2019)

Kentucky Academy of Sciences Fall 2018 Meeting, November 1-3, 2018

2nd World Summit on Exploring the Dark Side of the Universe, Guadeloupe Islands. (June 25-29, 2018)

Kentucky Academy of Sciences Fall 2017 Meeting, November 2017

International Cosmic Ray Conference, Den Hague, Netherlands (July 30 – August 6, 2015)

International Cosmic Ray Conference, Rio de Janeiro, Brazil (July 2-9, 2013)

Ohio Section of the American Physical Society, Athens OH (March 29-30, 2013)

Centenary Symposium 2012: Discovery of Cosmic Rays, University of Denver, Denver, CO, June 26-28, 2012.

TeV Particle Astrophysics (TeVPA), Stockholm, Aug 1-5, 2011.

Kentucky Academy of Sciences Fall 2009 Meeting, November 2009

International Cosmic Ray Conference, Lodz, Poland (July 2009)

American Physical Society April Meeting (Denver, CO) May 2009

Kentucky Academy of Sciences Fall 2008 Meeting, November 2008

International Cosmic Ray Conference, Merida Mexico (June 2007)

Kentucky Academy of Sciences Fall 2006 Meeting, November 2006

American Physical Society April Meeting, Dallas, April, 2006.

GEANT4 Tutorial, SLAC, Stanford, California, March, 2006.

Kentucky Academy of Sciences Fall 2005 Meeting, Kentucky, November 2005.

Kentucky Academy of Sciences Fall 2004 Meeting, Murray, Kentucky, November 2004.

Ohio Section of the American Physical Society Spring 2004 Meeting, Athens, Ohio, April 2004.

Kentucky Space Grant Consortium/NASA EPSCoR Conference, Lexington, Kentucky, May 2004.

Northern Kentucky University Education/Arts & Sciences mini-conference "Linking Content and Pedagogy: Strengthening Teacher Education." NKU, May 2004

Kentucky Association of Science Teachers Spring 2004 Meeting, Campbellsville, Kentucky, March 6, 2004.

Kentucky Academy of Sciences Fall 2003 Meeting, Bowling Green, Kentucky, November 2003.

Ohio Section of the American Physical Society Fall 2002 Meeting, October 2002.

Ohio Section of the American Physical Society Fall 2001 Meeting "Novel Techniques in Physics Pedagogy," October 2001.

International Cosmic Ray Conference, Hamburg, Germany, August 2001.

New Mexico Higher Education Assessment Conference, Las Cruces NM, February 2000.

New Mexico Collaboration for Excellence in Teacher Preparation, Albuquerque NM, November 1999.

New Mexico Science Teachers Association Annual meeting, Hobbs, NM, October 1999.

Four Corners Section of the APS Sectional meeting, University of Arizona, Tucson, AZ, October 1999.

4th Annual Mid-South Instructional Technology Conference, Middle Tennessee State University, Murfreesboro, Tennessee, March 28-30, 1999.

2nd Annual Mid-South Instructional Technology Conference, Middle Tennessee State University, Murfreesboro, Tennessee, April 6-8, 1997.

American Association of Higher Education 2nd Annual Teaching and Learning Technology Roundtable Summer Institute, Scottsdale, Arizona, July 12-16, 1996.

Four Corners Section of the APS Sectional meeting, University of New Mexico, Albuquerque, N.M., Spring 1998.

Mini-Conference on Technology & Learning in Large Classrooms. Portland State University, June 25-28, 1998.

National Symposium on Teaching Astronomy to Non-Science Majors. 110th meeting of the Astronomical Society of the Pacific, Albuquerque, NM, June 29-30 1998.

American Association of Higher Education Teaching and Learning Technology Roundtable, Washington DC 1995.

Vulcano Workshop 1992: Frontier Objects in Astrophysics and Particle Physics. Vulcano, Italy, May 1992.

22nd International Cosmic Ray Conference, Dublin, Ireland. July, 1991.

International School of Astroparticle Physics, Houston, January, 1991.

Sixth NATO Advanced Study Institute on Techniques and Concepts of High Energy Physics, St. Croix, US Virgin Islands, June, 1990.

Seventh NATO Advanced Study Institute on Cosmic Rays, Supernovae, and the Interstellar Medium, Erice, Italy, July-August, 1990.