

Scott M. Ransom

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Experience

National Radio Astronomy Observatory, Associate Astronomer, 2006–present
University of Virginia, Research Professor of Astronomy, 2005–present
National Radio Astronomy Observatory, Assistant Astronomer, 2004–2006
McGill University / Massachusetts Institute of Technology, Post-Doctoral Fellow, 2001–2004
Harvard University, Research Asst, Teaching Fellow, Beowulf SysAdmin, 1992–1994, 1999–2001
U.S. Army, Artillery Officer and Instructor, 1992–1999
Los Alamos National Laboratory, Army Research Officer, 1991, 1992

Teaching

University of Virginia, Astro 534: Radio Astronomy (co-taught with Jim Condon), Fall 2006, 2008

Education

Harvard University, Cambridge, MA: PhD, Astronomy, 2001
Thesis: “New Search Techniques for Binary Pulsars”, Advisor: G. G. Fazio
Harvard University, Cambridge, MA: AM, Astronomy, 1994
United States Military Academy, West Point, NY: BS, Engineering Physics, 1992

Honors

Bart J. Bok Prize, 2006 *Awarded annually in recognition of distinguished research by a Harvard Astronomy Ph.D. recipient under age 35.*
Tomlinson Fellowship, 2001–2003 *For newly accepted post-doctoral fellows accepted into any department at McGill University.*
Fireman Fellowship, 2001 *Awarded annually to one graduate student in the Dept. of Astronomy at Harvard by a vote of the faculty.*
Harvard University Teaching Award, 1993, 1999, 2000
Hertz Foundation Graduate Fellowship, 1992–1994 *For graduate work leading to award of the Ph.D. degree in applications of the physical sciences.*

Professional Committees

Arecibo Users and Scientific Advisory Committee, 2007–present
International SKA Science Working Group, 2007–present
GLAST Users Group, 2007–present

Works Submitted or Nearly Submitted

- Hessels, J. W. T. and the Pulsar-ALFA Consortium “PSR J1856+0245: Arecibo Discovery of a Young, Energetic Pulsar Coincident with the TeV γ -ray Source HESS J1857+026”, soon to be submitted to ApJ
- Smith, D. A. and the GLAST Pulsar Timing Collaboration “Pulsar Timing for the GLAST Large Area Telescope”, soon to be submitted to MNRAS
- Breton, R. P., Kaspi, V. M., Kramer, M., McLaughlin, M. A., Lyutikov, M., **Ransom, S. M.**, Stairs, I. H., Ferdman, R. D., Camilo, F., & Possenti, A. “Relativistic Spin Precession in the Double Pulsar”, submitted to Science
- Cocozza, G., Ferraro, F. R., Possenti, A., Beccari, G., Lanzoni, B., **Ransom, S. M.**, Rood, R. T., & D’Amico, N. “A puzzling millisecond pulsar companion in NGC 6266”, submitted to ApJ

Refereed Publications

- Champion, D., **Ransom, S. M.** and the Pulsar-ALFA Consortium 2008, “An Eccentric Binary Millisecond Pulsar in the Galactic Plane”, Science in press
- Trenti, M., **Ransom, S. M.**, Hut, P., & HEGGIE, D. C. 2008, “Predictions for Triple Stars with and without a Pulsar in Star Clusters”, MNRAS in press
- Minter, A. H., Camilo, F., **Ransom, S. M.**, Halpern, J. P., & Zimmerman, N. 2008, “Neutral Hydrogen Absorption Toward XTE J1810–197: the Distance to a Radio-Emitting Magnetar”, ApJ, 676, 1189
- Halpern, J. P., Gotthelf, E. V., Reynolds, J., **Ransom, S. M.**, & Camilo, F. 2008, “Outburst of the 2 S Anomalous X-ray Pulsar 1E 1547.0–5408”, ApJ, 676, 1178
- Freire, P. C. C., **Ransom, S. M.**, Bégin, S., Stairs, I. H., Hessels, J. W. T., Frey, L. H., & Camilo, F. 2008, “Eight New Millisecond Pulsars in NGC 6440 and NGC 6441”, ApJ, 675, 670
- Hessels, J. W. T., **Ransom, S. M.**, Stairs, I. H., Kaspi, V. M., & Freire, P. C. C. 2007, “A 1.4-GHz Arecibo Survey for Pulsars in Globular Clusters”, ApJ, 670, 363
- Camilo, F., **Ransom, S. M.**, et al. 2007, “The Variable Radio-to-X-ray Spectrum of the Magnetar XTE J1810–197”, ApJ, 669, 561
- Camilo, F., **Ransom, S. M.**, Halpern, J. P., & Reynolds, J. 2007, “1E 1547.0–5408: A Radio-Emitting Magnetar with a Rotation Period of 2 Seconds”, ApJ, 666, L93
- Camilo, F., Cognard, I., **Ransom, S. M.**, et al. 2007, “The Magnetar XTE J1810–197: Variations in Torque, Radio Flux Density and Pulse Profile Morphology”, ApJ, 663, 497
- Helfand, D. J., Chatterjee, S., Brisken, W. F., Camilo, F., Reynolds, J., van Kerkwijk, M. H., Halpern, J. P., & **Ransom, S. M.** 2007, “VLBA measurement of the transverse velocity of the magnetar XTE J1810–197”, ApJ, 662, 1198
- Freire, P. C. C., **Ransom, S. M.**, & Gupta, Y. 2007, “Timing the Eccentric Binary Millisecond Pulsar in NGC 1851”, ApJ, 662, 1177
- Breton, R. P., Roberts, M. S. E., **Ransom, S. M.**, Kaspi, V. M., Durant, M., Bergeron, P., & Faulkner, A. 2007, “The Unusual Binary Pulsar PSR J1744–3922: Radio Flux Variability, Near-Infrared Observation, and Evolution”, ApJ, 661, 1073
- McSwain, M. V., **Ransom, S. M.**, Boyajian, T. S., Grundstrom, E. D., & Roberts, M. S. E. 2007, “Runaway Massive Binaries and Cluster Ejection Scenarios”, ApJ, 660, 740
- Cameron, P. B., Rutledge, R. E., Camilo, F., Bildsten, L., **Ransom, S. M.**, & Kulkarni, S. R. 2007, “Variability of 19 Millisecond Pulsars in 47 Tucanae with *CHANDRA* HRC-S”, ApJ, 660, 587
- Camilo, F., Reynolds, J., Johnston, S., Halpern, J. P., **Ransom, S. M.**, & van Straten, W. 2007, “Polarized Radio Emission from the Magnetar XTE J1810–197”, ApJ, 659, L37

- Crawford, F., Roberts, M. S. E., Hessels, J. W. T., **Ransom, S. M.**, Livingstone, M., Tam, C. R., & Kaspi, V. M. 2006, “A Survey of 56 Mid-latitude EGRET Error Boxes for Radio Pulsars”, *ApJ*, 652, 1499
- Camilo, F., **Ransom, S. M.**, Halpern, J., Reynolds, J., Helfand, D., Zimmerman, N., & Sarkissian, J. 2006, “Transient pulsed radio emission from a magnetar”, *Nature*, 442, 892
- Hessels, J. W. T., **Ransom, S. M.**, Stairs, I. H., Freire, P. C. C., Kaspi, V. M., & Camilo, F. 2006, “A Radio Pulsar Spinning at 716 Hz”, *Science*, 311, 1901
- Lorimer, D. R. and the Pulsar-ALFA Consortium 2006, “Arecibo Pulsar Survey Using ALFA. II. The Young, Highly Relativistic Binary Pulsar J1906+0746”, *ApJ*, 640, L428
- Camilo, F., **Ransom, S. M.**, Gaensler, B. M., Slane, P. O., Lorimer, D. R., Reynolds, J., Manchester, R. N., & Murray, S. S. 2006, “PSR J1833–1034: Discovery of the Central Young Pulsar in the Supernova Remnant G21.5–0.9”, *ApJ*, 637, 456
- Cordes, J. M. and the Pulsar-ALFA Consortium 2006, “Arecibo Pulsar Survey Using ALFA. I. Survey Strategy and First Discoveries”, *ApJ*, 637, 446
- McGarry, M. B., Gaensler, B. M., **Ransom, S. M.**, Kaspi, V. M., & Veljkovic, S. 2005, “X-Ray Timing, Spectroscopy, and Photometry of the Anomalous X-Ray Pulsar Candidate CXOU J010043.1–721134”, *ApJ*, 627, L137
- Kaplan, D. L., et al. 2005, “The Green Bank Telescope Pulsar Spigot”, *PASP*, 117, 643
- Lorimer, D. R., et al. 2005, “Discovery of 10 pulsars in an Arecibo drift-scan survey”, *MNRAS*, 359, 1524
- Dib, R., **Ransom, S. M.**, Ray, P. S., Kaspi, V. M., & Archibald, A. M. 2005, “An RXTE Archival Search for Coherent X-Ray Pulsations in the Low-Mass X-Ray Binary 4U 1820–30”, *ApJ*, 626, 333
- Freire, P. C. C., Hessels, J. W. T., Nice, D. J., **Ransom, S. M.**, Lorimer, D. R., & Stairs, I. H. 2005, “The Millisecond Pulsars in NGC 6760”, *ApJ*, 621, 959
- Ransom, S. M.**, Hessels, J. W. T., Stairs, I. H., Freire, P. C. C., Camilo, F., Kaspi, V. M., & Kaplan, D. L. 2005, “Twenty-One Millisecond Pulsars in Terzan 5 Using the Green Bank Telescope”, *Science*, 307, 892
- Demorest, P., Ramachandran, R., Backer, D. C., **Ransom, S. M.**, Kaspi, V., Arons, J., & Spitkovsky, A. 2004, “Orientations of Spin and Magnetic Dipole Axes of Pulsars in the J0737–3039 Binary Based on Polarimetry Observations at the Green Bank Telescope”, *ApJ*, 615, L137
- Kaspi, V. M., **Ransom, S. M.**, Backer, D. C., Ramachandran, R., Demorest, P., Arons, J., & Spitkovsky, A. 2004, “Green Bank Telescope Observations of the Eclipse of Pulsar “A” in the Double Pulsar Binary PSR J0737–3039”, *ApJ*, 613, L137
- Halpern, J. P., Gotthelf, E. V., Camilo, F., Helfand, D. J., & **Ransom, S. M.** 2004, “X-Ray, Radio, and Optical Observations of the Putative Pulsar in the Supernova Remnant CTA 1”, *ApJ*, 612, 398
- Hessels, J. W. T., Roberts, M. S. E., **Ransom, S. M.**, Kaspi, V. M., Romani, R. W., Ng, C.-Y., Freire, P. C. C., & Gaensler, B. M. 2004, “Observations of PSRJ2021+3651 and its X-Ray Pulsar Wind Nebula G75.2+0.1”, *ApJ*, 612, 389
- Ransom, S. M.**, Kaspi, V. M., Ramachandran, R., Demorest, P., Backer, D. C., Pfahl, E. D., Ghigo, F. D., & Kaplan, D. L. 2004, “Green Bank Telescope Measurement of the Systemic Velocity of the Double Pulsar Binary J0737–3039 and Implications for Its Formation”, *ApJ*, 609, L71
- Ibrahim, A. I., et al. 2004, “Discovery of a Transient Magnetar: XTE J1810–197”, *ApJ*, 609, L21
- Freire, P. C., Gupta, Y., **Ransom, S. M.**, & Ishwara-Chandra, C. H. 2004, “Giant Metrewave Radio Telescope Discovery of a Millisecond Pulsar in a Very Eccentric Binary System”, *ApJ*, 606, L53
- Jenet, F. A., & **Ransom, S. M.** 2004, “The geometry of the double-pulsar system J0737–3039 from systematic intensity variations”, *Nature*, 428, 919

- Ransom, S. M.**, Stairs, I. H., Backer, D. C., Greenhill, L. J., Bassa, C. G., Hessels, J. W. T., & Kaspi, V. M. 2004, “Green Bank Telescope Discovery of Two Binary Millisecond Pulsars in the Globular Cluster M30”, *ApJ*, 604, 328
- Roberts, M. S. E., Hessels, J. W. T., **Ransom, S. M.**, Kaspi, V. M., Freire, P. C. C., Crawford, F., & Lorimer, D. R. 2004, “PSR J2021+3651: a new γ -ray pulsar candidate”, *Advances in Space Research*, 33, 577
- Markwardt, C. B., **Ransom, S.**, Woods, P., Ibrahim, A., Kaspi, V., Kouveliotou, C., Roberts, M., & Swank, J. 2003, “XTE J1810–197 is Likely an Anomalous X-ray Pulsar”, *The Astronomer’s Telegram*, 188, 1
- Gotthelf, E. V., Halpern, J. P., Markwardt, C., Ibrahim, A. I., Roberts, M., **Ransom, S. M.**, & Woods, P. 2003, “CXOU J180951.1–194351 = RXTE J1810–197”, *IAU Circ.*, 8190, 2
- Ransom, S. M.**, Cordes, J. M., & Eikenberry, S. S. 2003, “A New Search Technique for Short Orbital Period Binary Pulsars”, *ApJ*, 589, 911
- Gavriil, F., **Ransom, S. M.**, Roberts, M. S. E., Kaspi, V. M., Gaensler, B. M., Murray, S. S., & Slane, P. O. 2003, “RXTE monitoring of the 65-ms X-ray pulsars PSR J1811–1925 in G11.2-0.3 and PSR J0205+6559 in 3C 58”, *JRASC*, 97, 213
- Roberts, M. S. E., Hessels, J. W. T., **Ransom, S. M.**, Kaspi, V. M., Freire, P. C. C., Crawford, F., & Lorimer, D. R. 2002, “PSR J2021+3651: A Young Radio Pulsar Coincident with an Unidentified EGRET γ -Ray Source”, *ApJ*, 577, L19
- Ransom, S. M.**, Eikenberry, S. S., & Middleditch, J. 2002, “Fourier Techniques for Very Long Astrophysical Time-Series Analysis”, *AJ*, 124, 1788
- Camilo, F., et al. 2002, “Discovery of Radio Pulsations from the X-Ray Pulsar J0205+6449 in Supernova Remnant 3C 58 with the Green Bank Telescope”, *ApJ*, 571, L41
- Ransom, S. M.**, Gaensler, B. M., & Slane, P. O. 2002, “A Deep Search for Pulsations from the Nearby Isolated Neutron Star RX J1856.5–3754”, *ApJ*, 570, L75
- Murray, S. S., Slane, P. O., Seward, F. D., **Ransom, S. M.**, & Gaensler, B. M. 2002, “Discovery of X-Ray Pulsations from the Compact Central Source in the Supernova Remnant 3C 58”, *ApJ*, 568, 226
- Murray, S. S., **Ransom, S. M.**, Juda, M., Hwang, U., & Holt, S. S. 2002, “Is the Compact Source at the Center of Cassiopeia A Pulsed?”, *ApJ*, 566, 1039
- Ransom, S. M.**, Greenhill, L. J., Herrnstein, J. R., Manchester, R. N., Camilo, F., Eikenberry, S. S., & Lyne, A. G. 2001, “A Binary Millisecond Pulsar in Globular Cluster NGC 6544”, *ApJ*, 546, L25
- Ransom, CPT S. M.**, & Grand, LTC F. J. 1999, “Un-masking the Q-36 Mask Angle: Finding Mortars in the Woods”, *Field Artillery*, Jan-Feb, 34
- Eikenberry, S. S., Fazio, G. G., & **Ransom, S. M.** 1998, “ROSAT Timing of the LMC Pulsar 0540–69”, *ApJ*, 492, 754
- Eikenberry, S. S., Fazio, G. G., **Ransom, S. M.**, Middleditch, J., Kristian, J., & Pennypacker, C. R. 1997, “High Time Resolution Infrared Observations of the Crab Nebula Pulsar and the Pulsar Emission Mechanism”, *ApJ*, 477, 465
- Eikenberry, S. S., Fazio, G. G., & **Ransom, S. M.** 1996, “An SSPM-Based High-Speed Near-Infrared Photometer for Astronomy”, *PASP*, 108, 939
- Eikenberry, S. S., Fazio, G. G., **Ransom, S. M.**, Middleditch, J., Kristian, J., & Pennypacker, C. R. 1996, “Infrared-to-Ultraviolet Wavelength-dependent Variations within the Pulse Profile Peaks of the Crab Nebula Pulsar”, *ApJ*, 467, L85
- Eikenberry, S. S., Fazio, G. G., & **Ransom, S. M.** 1995, “SSPM-based high-speed infrared photometer for astronomy”, *Proc. SPIE*, 2475, 210

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Selected Recent Conference Proceedings

Ransom, S. M. 2008, “Pulsars in Globular Clusters”, *Procs of IAU Symp.* 246, in press

Ransom, S. M. 2008, “Twenty Years of Search For (and Finding) Globular Cluster Pulsars”, *AIP Conf. Proc.* 983, 415

Rasio, F. A., et al. 2007, “Neutron Stars and Black Holes in Star Clusters”, *Procs of IAU JD06*, *Highlights of Astronomy*, 14, 215

Ransom, S. M. 2007, “Finding (or not) New Gamma-ray Pulsars with *GLAST*”, *AIP Conf. Proc.* 921, 54

Ransom, S. M. 2007, “Parsec-scale Constraints on the Ionized Interstellar Medium with the Terzan 5 Pulsars”, *ASP Conv. Ser.*, 365, 265

Lazio, J., et al. 2006, “Radio Pulsars and Transients in the Galactic Center”, *J. Phys. Conf. Ser.*, 54, 110

Recent Invited Talks

2008 Apr, NAOC Seminar, Beijing, China, “Recent Surprises from the Pulsar World and Potential for the Future”

2008 Feb, DRAO Seminar, Penticton, BC, Canada, “Recent Surprises from the Pulsar World and Potential for the Future (with SKA?)”

2008 Feb, Univ of British Columbia Physics Dept. Astrophysics Seminar, Vancouver, BC, Canada “Exotica in Globular Clusters: Weirdo Millisecond Pulsars and Basic Physics”

2008 Jan, AAS Meeting SKA Session, Austin, TX, USA, “Searching for Pulsars with the SKA”

2007 Sep, Dynamical Evolution of Dense Stellar Systems Conference, Capri, Italy, “Millisecond Pulsars in Globular Clusters” (Invited Review)

2007 Aug, 40 Years of Pulsars Conference, Montreal, QC, Canada, “20 Years of Searching for (and Finding) Globular Cluster Pulsars” (Invited Review)

2007 May, NASA Goddard Space Flight Center, Astrophysics Colloq., USA, “Detecting nHz Gravitational Waves with Millisecond Pulsars”

2007 May, Neutron Star Populations Workshop, Green Bank, WV, USA, “Recycled Pulsars and Binaries: Unanswered Questions”

2007 April, Univ of Texas Astronomy Dept. Colloq., USA, “A Millisecond Pulsar (and Basic Physics) Bonanza with the GBT”

2007 March, Pulsar Searching and Thai-ming, Thailand, “The Radio-loud Magnetar XTE J1810–197”

2007 March, Arizona State Univ Physics Dept. Colloq., USA, “A Millisecond Pulsar (and Basic Physics) Bonanza with the GBT”

2007 February, McGill Univ. Astrophysics Seminar, Canada, “XTE J1810–197: The Amazing ”Radio” Magnetar”

2007 February, UCLA Physics and Astronomy Dept. Colloq., USA, “A Millisecond Pulsar (and Basic Physics) Bonanza with the GBT”

2007 January, Naval Research Laboratory Astrophysics Colloq., USA, “A Millisecond Pulsar (and Basic Physics) Bonanza with the GBT”