Shamibrata Chatterjee

Research Associate
Department of Astronomy and NAIC
Cornell University
Ithaca, NY 14853, USA

Phone: 1 (607) 255 0612
Fax: 1 (607) 255 8803
Email: shami@astro.cornell.edu
http://www.astro.cornell.edu/~shami

Research Interests:

- The Radio Transient Sky
- Compact Objects: Neutron Stars and Black Holes
- High Precision Astrometry: Neutron Star Proper Motions and Parallaxes

Education:

2003	Ph.D. (Astronomy), Cornell University
2000	M.S. (Astronomy), Cornell University
1996	B.Tech. (Electrical Engineering), Indian Institute of Technology, Madras

Research Experience:

2009 –	Research Associate Department of Astronomy and NAIC, Cornell University
2008 – 2009	Research Scientist *and* Queen Elizabeth II Fellow CSIRO Australia Telescope National Facility
2006 – 2008	University Postdoctoral Research Fellow School of Physics, The University of Sydney
2003 – 2006	Jansky Fellow Harvard-Smithsonian Center for Astrophysics, Cambridge, MA *and* National Radio Astronomy Observatory, Socorro, NM
1999 – 2003	Graduate Research Assistant Department of Astronomy, Cornell University, Ithaca, NY *Pulsar Parallaxes, Bow Shock Nebulae and the Interstellar Medium*
1998 – 1999	Junior Research Associate National Radio Astronomy Observatory, Socorro, NM *Techniques for Sub-milliarcsecond Pulsar Astrometry*
1995 – 1996	Undergraduate Thesis Research Project Electrical Engineering, Indian Institute of Technology, Madras *Solid State Device Fabrication*

Teaching Experience:

2008 – 2009	ATNF Summer Student Program mentor Sarah Traine, The University of Melbourne
2008	Lecturer, Physics 1500, "Introduction to Astronomy" The University of Sydney
2006 – 2007	Laboratory Supervisor, Physics 1001 and 1003, "Physics 1" The University of Sydney
2007	Honours Thesis Co-supervisor Christopher Hales, The University of Sydney

2006	Vacation Scholarship Program student mentor Christopher Hales, The University of Sydney
2005	Co-supervisor, Visiting Graduate Student, Harvard University Matthias Vigelius, University of Melbourne, Australia *PSR J2124−3358: A Bow Shock Nebula with an X-ray Tail* Poster at the AAS Meeting 207, Washington D.C., 2006
2004	Research Experience for Undergraduates: Summer Student Mentor *The Proper Motion of PSR B1951+32 and Its Interaction With CTB80* Poster by Benjamin Zeiger at the AAS Meeting 205, San Diego, 2005
1997 – 1998	Graduate Teaching Assistant Department of Astronomy, Cornell University
1996 – 1997	Graduate Teaching Assistant Applied and Engineering Physics, Cornell University
1996	Certificate of Merit, Graduate Teaching Development Program

Honors and Awards:

2008	Queen Elizabeth II Fellowship, Australian Research Council
2002	Cranson W. and Edna B. Shelley Award for Graduate Research in Astronomy Department of Astronomy, Cornell University
2001	Eleanor Norton York Prize in Astronomy Department of Astronomy, Cornell University
1996	Dr. Shankar Dayal Sharma, President of India Prize for All Round Proficiency in Curricular and Extracurricular Activities
1996	Motorola Prize (Certificate of Academic Distinction) Indian Institute of Technology, Madras
1996	Indian Institute of Technology Certificate of Merit for Excellence in Cultural Activities and Organizational Abilities

Professional Activities and Organizations:

2003 –	Peer Reviewer for the Astrophysical Journal and ApJ Letters Peer Reviewer for Astronomy & Astrophysics
2003 –	Member, American Astronomical Society
2008 – 2009	Member, Science Council, Murchison Widefield Array project
2006 – 2008	Peer Reviewer, NRAO *VLA, VLBA, GBT* proposals
2005	Guest Editor (with Cara Rakowski) Advances in Space Research, Volume 35, Issue 6, 2005 "Young Neutron Stars and Supernova Remnants" Proceedings of the 35th COSPAR Scientific Assembly, E1.4, Paris, July 2004
2004, 2010	Peer Reviewer, *Chandra X-ray Observatory* Cycle 6, Cycle 14

Shamibrata Chatterjee: Publications

Research Associate
Department of Astronomy and NAIC
Cornell University
Ithaca, NY 14853, USA

Phone: 1 (607) 255 0612
Fax: 1 (607) 255 8803
Email: shami@astro.cornell.edu
http://www.astro.cornell.edu/~shami

Refereed Publications[1]**:**

44. ***** Spitler, L., Cordes, J., **Chatterjee, S.**, & Stone, J., "Multimoment Radio Transient Detection" *ApJ* submitted, arXiv:1109.6677, 2011

43. Ng, C.-Y., Bucciantini, N., Gaensler, B. M., Camilo, F., **Chatterjee, S.**, & Bouchard, A., "An Extreme Pulsar Tail Protruding from the Frying Pan Supernova Remnant" *ApJ* submitted, arXiv:1109.2233, 2011

42. Knispel, B., et al. (38 authors, including **Chatterjee, S.**), "Arecibo PALFA Survey and Einstein@Home: Binary Pulsar Discovery by Volunteer Computing", *ApJL*, **732**, L1–L5, 2011

41. ***** Bannister, K. W., Murphy, T., Gaensler, B. M., Hunstead, R. W., & **Chatterjee, S.**, "A 22-yr southern sky survey for transient and variable radio sources using the Molonglo Observatory Synthesis Telescope" *MNRAS*, **412**, 634–664, 2011

40. Göğüş, E., Woods, P. M., Kouveliotou, C., Kaneko, Y., Gaensler, B. M., & **Chatterjee, S.**, "Spatial, Temporal, and Spectral Properties of X-ray Emission from the Magnetar SGR 0501+4516" *ApJ*, **722**, 899–908, 2010

39. Knispel, B. et al. (41 authors, including **Chatterjee, S.**), "Pulsar Discovery by Global Volunteer Computing", *Science*, **329**, 1305, 2010

38. Macquart, J.-P. et al. (38 authors, including **Chatterjee, S.**), "The Commensal Real-Time ASKAP Fast-Transients (CRAFT) Survey", *PASA*, **27**, 272–282, 2010

37. Ng, C.-Y., Gaensler, B. M., **Chatterjee, S.**, & Johnston, S., "Radio Polarization Observations of G319.9−0.7: A Bow-Shock Nebula with an Azimuthal Magnetic Field Powered by Pulsar J1509−5850", *ApJ*, **712**, 596–603, 2010

36. Kaplan, D. L., Esposito, P., **Chatterjee, S.**, Possenti, A., McLaughlin, M. A., Camilo, F., Chakrabarty, D., & Slane, P. O., "Upper Limits on X-ray Emission from Two Rotating Radio Transients", *MNRAS*, **400**, 1445–1450, 2009

35. ***** Hales, C. A., Gaensler, B. M., **Chatterjee, S.**, van der Swaluw, E., & Camilo, F., "A Proper Motion for the Pulsar Wind Nebula G359.23−0.82, the 'Mouse', Associated with the Energetic Radio Pulsar J1747−2958", *ApJ*, **706**, 1316–1322, 2009

34. Camilo, F., Ng, C.-Y., Gaensler, B. M., Ransom, S. M., **Chatterjee, S.**, Reynolds, J., & Sarkissian, J. "Out of the Frying Pan: A Young Pulsar with a Long Radio Trail Emerging from SNR G315.9−0.0", *ApJL*, **703**, L55–L58, 2009

[1]Papers marked with * indicate student first-authors whose work I co-supervised

33. Rea, N., McLaughlin, M. A., Gaensler, B. M., Slane, P. O., Stella, L., Reynolds, S. P., Burgay, M., Israel, G. L., Possenti, A., & **Chatterjee, S.**, "Discovery of Extended X-Ray Emission Around the Highly Magnetic RRAT J1819−1458", *ApJL*, **703**, L41–L45, 2009

32. **Chatterjee, S.**, Brisken, W. F., Vlemmings, W. H. T., Goss, W. M., Lazio, T. J. W., Cordes, J. M., Thorsett, S. E., Fomalont, E. B., Lyne, A. G., & Kramer, M., "Precision Astrometry with the Very Long Baseline Array: Parallaxes and Proper Motions for 14 Pulsars", *ApJ*, **698**, 250–265, 2009

31. Kaplan, D. L., **Chatterjee, S.**, Hales, C. A., Gaensler, B. M., & Slane, P. O., "Constraining the Proper Motions of Two Magnetars", *AJ*, **137**, 354, 2009

30. Johnston, S. et al. (50 authors, including **Chatterjee, S.**), "Science with ASKAP. The Australian square-kilometre-array pathfinder", *Experimental Astronomy*, **22**, 151–273, 2008

29. Gaensler, B. M., Madsen, G. J., **Chatterjee, S.**, & Mao, S. A. "The Vertical Structure of Warm Ionised Gas in the Milky Way", *PASA*, **25**, 184, 2008

28. Murphy, T., Gaensler, B. M., & **Chatterjee, S.**, "A 20 Year Radio Light Curve for the Young Supernova Remnant G1.9+0.3", *MNRAS*, **389**, L23, 2008

27. Champion, D. J. et al. (31 authors, including **Chatterjee, S.**), "An eccentric binary millisecond pulsar in the Galactic Plane", *Science*, **320**, 1309, 2008

26. Kaplan, D. L., **Chatterjee, S.**, Gaensler, B. M., & Anderson, J., "A Precise Proper Motion for the Crab Pulsar, and the Difficulty of Testing Spin-Kick Alignment for Young Neutron Stars", *ApJ*, **677**, 1201, 2008

25. ***** Zeiger, B. R., Brisken, W. F., **Chatterjee, S.**, & Goss, W. M., "Proper Motions of PSRs B1757−24 and B1951+32: Implications for Ages and Associations", *ApJ*, **674**, 271, 2008

24. Johnston, S. et al. (50 authors, including **Chatterjee, S.**), "Science with the Australian Square Kilometre Array Pathfinder", *PASA*, **24**, 174, 2007

23. **Chatterjee, S.**, Gaensler, B. M., Melatos, A., Brisken, W. F., & Stappers, B. W., "Pulsed X-ray Emission from Pulsar A in the Double Pulsar System J0737−3039", *ApJ*, **670**, 1301, 2007

22. McLaughlin, M. A., Rea, N., Gaensler, B. M., **Chatterjee, S.**, Camilo, F., Kramer, M., Lorimer, D. R., Lyne, A. G., Israel, G. L., & Possenti, A., "Discovery of Pulsations and a Possible Spectral Feature in the X-ray Emission from Rotating Radio Transient J1819−1458", *ApJ*, **670**, 1307, 2007

21. Helfand, D. J., **Chatterjee, S.**, Brisken, W. F., Camilo, F., Reynolds, J., van Kerkwijk, M. H., Halpern, J. P., & Ransom, S. M., "VLBA measurement of the transverse velocity of the magnetar XTE J1810−197", *ApJ*, **662**, 1198, 2007

20. Ng, C.-Y., Romani, R. W., Brisken, W. F., **Chatterjee, S.**, & Kramer, M., "The Origin and Motion of PSR J0538+2817 in S147", *ApJ*, **654**, 487, 2007

19. * Vigelius, M., Melatos, A., **Chatterjee, S.**, Gaensler, B. M., & Ghavamian, P., "Three-dimensional hydrodynamic simulations of asymmetric pulsar wind bow shocks", *MNRAS*, **374**, 793, 2007

18. * Blazek, J. A., Gaensler, B. M., **Chatterjee, S.**, van der Swaluw, E., Camilo, F., & Stappers, B. W., "The Duck Redux: An Improved Proper-Motion Upper Limit for the Pulsar B1757–24 near the Supernova Remnant G5.4–1.2", *ApJ*, **652**, 1523, 2006

17. Gaensler, B. M., **Chatterjee, S.**, Slane, P. O., van der Swaluw, E., Camilo, F., & Hughes, J. P., "The X-ray Structure of the Pulsar Bow Shock G189.22+2.90 in the Supernova Remnant IC 443", *ApJ*, **648**, 1037, 2006

16. Lorimer, D. R. et al. (36 authors, including **Chatterjee, S.**), "Arecibo Pulsar Survey Using ALFA. II. The Young, Highly Relativistic Binary Pulsar J1906+07", *ApJ*, **640**, 428, 2006.

15. Reynolds, S. P., Borkowski, K. J., Gaensler, B. M., Rea, N., McLaughlin, M., Possenti, A., Israel, G., Burgay, M., Camilo, F., **Chatterjee, S.**, Kramer, M., Lyne, A. G. & Stairs, I., "Discovery of the X-ray Counterpart to the Rotating Radio Transient J1819−1458", *ApJL*, **639**, L71, 2006.

14. Cordes, J. M. et al. (24 authors, including **Chatterjee, S.**), "Arecibo Pulsar Survey Using ALFA. I. Survey Strategy and First Discoveries", *ApJ*, **637**, 446, 2006.

13. **Chatterjee, S.**, Goss, W. M., & Brisken, W. F., "Radio Emission from the Double Pulsar System J0737−3039 Revisited", *ApJL*, **634**, L101, 2005.

12. **Chatterjee, S.**, Vlemmings, W. H. T., Brisken, W. F., Lazio, T. J. W., Cordes, J. M., Goss, W. M., Thorsett, S. E., Fomalont, E. B., Lyne, A. G., & Kramer, M., "Getting its Kicks: A VLBA Parallax for the Hyperfast Pulsar B1508+55", *ApJL*, **630**, L61, 2005.

11. Moon, D.-S., Lee, J.-J., Eikenberry, S. S., Koo, B.-C., **Chatterjee, S.**, Kaplan, D. L., Hester, J. J., Cordes, J. M., Gallant, Y. A., & Koch-Miramond, L., "PSR B1951+32: A Bow Shock-confined X-Ray Nebula, a Synchrotron Knot, and an Optical Counterpart Candidate", *ApJL*, **610**, L33, 2004.

10. Vlemmings, W. H. T., Cordes, J. M., & **Chatterjee, S.**, "Separated at Birth: The Origin of the Pulsars B2020+28 and B2021+51 in the Cygnus Superbubble", *ApJ*, **610**, 402, 2004.

9. **Chatterjee, S.**, Cordes, J. M., Vlemmings, W. H. T., Arzoumanian, Z., Goss, W. M., & Lazio, T. J. W., "Pulsar Parallaxes at 5 GHz with the Very Long Baseline Array", *ApJ*, **604**, 339, 2004.

8. **Chatterjee, S.** & Cordes, J. M., "Smashing the Guitar: An Evolving Neutron Star Bow Shock", *ApJL*, **600**, L51, 2004.

7. Bhat, N. D. R., Cordes, J. M., & **Chatterjee, S.**, "A CLEAN-based Method for Deconvolving Interstellar Pulse Broadening from Radio Pulses", *ApJ*, **584**, 782, 2003.

6. Rothstein, D. M., Eikenberry, S. S., **Chatterjee, S.**, Egami, E., Djorgovski, S. G., & Heindl, W. A., "The Infrared Counterpart of the Microquasar GRS1758−258", *ApJL*, **580**, L61, 2002.

5. **Chatterjee, S.** & Cordes, J. M., "Bow Shocks from Neutron Stars: Scaling Laws and HST Observations of the Guitar Nebula", *ApJ*, **575**, 408, 2002.

4. **Chatterjee, S.**, Cordes, J. M., Lazio, T. J. W., Goss, W. M., Fomalont, E. B., & Benson, J. M., "Parallax and Kinematics of PSR B0919+06 from VLBA Astrometry and Interstellar Scintillometry", *ApJ*, **550**, 287, 2001.

3. Gaensler, B. M., Stappers, B. W., Frail, D. A., Moffett, D. A., Johnston, S., & **Chatterjee, S.**, "Limits on Radio Emission from Pulsar Wind Nebulae", *MNRAS*, **318**, 58, 2000.

2. Fomalont, E. B., Goss, W. M., Beasley, A. J., & **Chatterjee, S.**, "Sub-Milliarcsecond Precision of Pulsar Motions: Using In-Beam Calibrators with the VLBA", *AJ*, **117**, 3025, 1999.

1. **Chatterjee, S.**, Bhat, K. N., & Rao, P. R. S., "The Effect of a Cap Layer on the Diffusion of Zinc from Doped Silica Films in Gallium Arsenide", *Solid State Electronics*, **41**, 496, 1997.

VLBA Scientific Memos[2]:

- Walker, R. C. & **Chatterjee, S.**, "Ionospheric Corrections using GPS-based Models", VLBA Scientific Memo 23, NRAO, 1999.
- **Chatterjee, S.**, "Recipes for low frequency VLBI Phase-Referencing and GPS Ionospheric Correction", VLBA Scientific Memo 22, NRAO, 1999.
- **Chatterjee, S.**, "How Accurate is Phase Referencing at L-band? An Assessment", VLBA Scientific Memo 18, NRAO, 1999.

Selected Colloquia and Conference Talks:

[2] `http://www.aoc.nrao.edu/vlba/html/MEMOS/scimemos.html`

2009 Astronomy Colloquium, Cornell University
2009 Astronomy Colloquium, Mt. Stromlo Observatory, The Australian National University
2008 Astronomy Colloquium, CSIRO Australia Telescope National Facility.
2007 Invited Review on Neutron Star Astrometry, IAU Symposium 248, Shanghai, China
2007 Physics Colloquium, The University of Sydney, Australia.
2007 Astronomy Colloquium, Australia Telescope National Facility, Sydney, Australia.
2006 27th Texas Symposium on Relativistic Astrophysics, Melbourne, Australia
2006 36th COSPAR Scientific Assembly, Beijing, China
2006 Astronomy Colloquium, Northwestern University, Chicago, IL
2005 Astronomy Seminar, Rice University, Houston, TX
2005 "A Life with Stars", Amsterdam, the Netherlands
2005 Radio & Geo-astronomy Seminar, Harvard-Smithsonian Center for Astrophysics
2005 Astronomy Lunch, Massachusetts Institute of Technology
2005 Jansky Fellows Symposium, NRAO, Charlottesville, Virginia
2004 35th COSPAR Scientific Assembly, Paris, France
2003 Astronomy Colloquium, NRAO, Green Bank, West Virginia
2003 Astronomy Colloquium, NRAO, Socorro, New Mexico
2002 NS/SNR Seminar, Harvard-Smithsonian Center for Astrophysics
2002 Astronomy Colloquium, Cornell University
2002 "Radio Pulsars: Crete 2002", Greece
2002 TAPiR Group Seminar, California Institute of Technology
2002 Astronomy Colloquium, NAIC, Arecibo, Puerto Rico
2001 Radio Astronomy Seminar, University of California, Berkeley
2001 Astrophysics Seminar, Raman Research Institute, Bangalore, India
2001 Astronomy Seminar, National Center for Radio Astronomy, Pune, India
2001 URSI Meeting, University of Colorado, Boulder
1999 Gravity Group Seminar, Princeton University