

Curriculum Vitae

STEPHEN CHI-YUNG NG

Department of Physics
McGill University
3600 University Street
Montreal QC H3A 2T8

Phone: +1 (514) 398-6520
Fax: +1 (514) 398-8434

stephen.ng@gmail.com

Research Interests

High energy processes in astrophysics.

Multi-wavelength studies of pulsar wind nebulae and supernova remnants.

Three-dimensional modeling of astrophysical objects.

Research Experience

2007–2009 Postdoctoral Fellow, The University of Sydney (supervisor: Prof. Bryan M. Gaensler)
3D Modeling of pulsar wind termination shocks and supernova remnants.

2001–2006 Research Assistant, Stanford University (supervisor: Prof. Roger W. Romani)
Modeling and simulation of pulsar birth kicks using optical and X-ray data.

1999–2001 Research Assistant, The University of Hong Kong (supervisor: Prof. K. S. Cheng)
Theoretical studies of strange stars with numerical simulations.

1998–1999 Undergraduate Research, The University of Hong Kong
Experimental studies of superconducting thin films.

Education

2001–2006 Ph.D. in Physics, Stanford University

1999–2001 M.Phil. in Physics, The University of Hong Kong

1996–1999 B.Sc. (1st class honors) in Maths/Physics, The University of Hong Kong

Teaching Experience

2003–2006 Teaching Assistant, Stanford University
Courses: Introduction to Observational and Laboratory Astronomy,
Astronomy Laboratory and Observational Astronomy
Hands-on experience in operating 0.61m and 0.4m telescopes with long-slit spectrograph. Assisted students in data analysis using MaxIm and IRAF software.

2002–2003 Teaching Assistant, Stanford University
Course: Intermediate Mechanics
Led discussion classes.

1999–2001 Teaching Assistant, The University of Hong Kong
Course: Advanced Quantum Mechanics
Led discussion classes.

Awards

2009–2010 Richard H. Tomlinson Postdoctoral Fellowship
2009–2010 Centre for Research in Astrophysics of Quebec (CRAQ) Postdoctoral Fellowship
1999 Vice-Chancellor’s Outstanding Graduates
1999 William Faid Memorial Prize in Physics
1998 Lam Fang Kwong Prize in Physics
1998–1999 Li Po Kwai Scholarships (2 separate awards)
1997–1999 Dean’s Honors List (3 separate awards)
1997 Alan John Ellis Prizes in Mathematics

Observing Experience

PI on *Chandra*, *Swift* and ATCA observations
Co-PI on *Chandra*, *HST* and ATCA observations

Professional Activities and Affiliation

Peer Reviewer, *Chandra X-ray Observatory* (cycle 11)
Peer Reviewer for MNRAS
Member, American Astronomical Society

Refereed Publications

Ng, C.-Y., Gaensler, B. M., Chatterjee, S., & Johnston, S. 2009, “Radio Polarization Observations of G319.9–0.7: A Bow-shock Nebula with an Azimuthal Magnetic Field Powered by Pulsar J1509–5850”, *ApJ*, submitted

Ng, C.-Y., Gaensler, B. M., Murray, S. S., Slane, P. O., Park, S., Staveley-Smith, L., Manchester, R. N., & Burrows, D. N. 2009, “High-Resolution X-Ray Imaging of Supernova Remnant 1987A”, *ApJL*, 706, L100

Potter, T. M., Staveley-Smith, L., **Ng, C.-Y.**, Ball, L., Gaensler, B. M., Kesteven, M. J., Manchester, R. N., Tzioumis, A. K., Zanardo, G 2009, “High Resolution 36 GHz Imaging of the Supernova Remnant of SN 1987A”, *ApJ*, 705, 261

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

Ng, C.-Y., Slane, P. O, Gaensler, B. M., & Hughes, J. P. 2008, “Deep Chandra Observation of the Pulsar Wind Nebula Powered by the Pulsar J1846–0258 in the Supernova Remnant Kes 75”, *ApJ*, 686, 508

Ng, C.-Y., Gaensler, B. M., Staveley-Smith, L., Manchester, R. N., Kesteven, M. J., Ball, L., & Tzioumis, A. K. 2008, “Fourier Modeling of the Radio Torus Surrounding SN 1987A”, *ApJ*, 684, 481

Gaensler, B. M., Tanna, A., Slane, P. O., Brogan, C. L., Gelfand, J. D., McClure-Griffiths, N. M., Camilo, F., **Ng, C.-Y.**, & Miller, J. M. 2008, “The (Re-)Discovery of G350.1–0.3: A Young, Luminous Supernova Remnant and Its Neutron Star”, *ApJ*, 680, L37

Van Etten, A., Romani, R. W., & **Ng, C.-Y.** 2008, “Rings and Jets around PSR J2021+3651: The ‘Dragonfly Nebula’ ” *ApJ*, 680, 1417

- Ng, C.-Y., & Romani, R. W. 2008, "Fitting Pulsar Wind Tori. II. Error Analysis and Applications" ApJ, 673, 411
- Ng, C.-Y., & Romani, R. W. 2007, "Birth Kick Distributions and the Spin-Kick Correlation of Young Pulsars", ApJ, 660, 1357
- Ng, C.-Y., Romani, R. W., Brisken, W. F., Chatterjee, S., & Kramer, M. 2007, "The Origin and Motion of PSR J0538+2817 in S147", ApJ, 654, 487
- Ng, C.-Y., & Romani, R. W. 2006, "Proper Motion of the Crab Pulsar Revisited", ApJ, 644, 445
- Romani, R. W., Ng, C.-Y., Dodson, R., & Brisken, W. 2005, "The Complex Wind Torus and Jets of PSR B1706-44", ApJ, 631, 480
- Ng, C.-Y., Roberts, M. S. E., & Romani, R. W. 2005, "Two Pulsar Wind Nebulae: Chandra/XMM-Newton Imaging of GeV J1417-6100", ApJ, 627, 904
- Roberts, M. S. E., Brogan, C. L., Gaensler, B. M., Hessels, J., W. T., Ng, C.-Y., & Romani, R. W. 2005, "Pulsar Wind Nebulae in Egret Error Boxes", Ap&SS, 297, 93
- 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 PSR J2021+3651 and its X-Ray Pulsar Wind Nebula G75.2+0.1", ApJ, 612, 389
- Ng, C.-Y., & Romani, R. W. 2004, "Fitting Pulsar Wind Tori", ApJ, 601, 479
- Romani, R. W., & Ng, C.-Y. 2003, "The Pulsar Wind Nebula Torus of PSR J0538+2817 and the Origin of Pulsar Velocities", ApJ, 585, L41
- Ng, C.-Y., Cheng, K. S., & Chu, M. C. 2003, "Cooling Properties of Cloudy Bag Strange Stars", Astropart. Phys., 19, 171

Theses

- Ng, C.-Y. 2007, "Pulsar Wind Tori and the Spin-kick Connection", Ph.D Thesis, Stanford University
- Ng, C.-Y. 2001, "Theories of Strange Stars", M.Phil Thesis, The University of Hong Kong

Conference Papers

- Ng, C.-Y., et al. 2009, "A Tale of Two Long Tails: the Bow Shock Nebulae Associated with Pulsars J1747-2958 and J1509-5850", 212nd American Astronomical Society Meeting, BAAS, 41, 307
- Romani, R. W., & Ng, C.-Y. 2009, "Crab Pulsar Astrometry and Spin-Velocity Alignment", 212nd American Astronomical Society Meeting, BAAS, 41, 307
- Harvey-Smith, L., Gaensler, B. M., Ng, C.-Y., & Green, A. J. 2008, "Spectropolarimetry of SNR G296.5+10.0", IAU Symposium 259, Cosmic Magnetic Fields: From Planets, to Stars and Galaxies, 141
- Ng, C.-Y., Slane, P. O., Gaensler, B. M., & Hughes, J. P. 2008, "Deep Chandra Observation of the Pulsar Wind Nebula in Kes 75", 10th HEAD Meeting of the American Astronomical Society,

BAAS, 40, 80

Ng, C.-Y., Gaensler, B. M., Staveley-Smith, L., Manchester, R. N., Kesteven, M. J., Ball, L., & Tzioumis, A. K. 2008, "Modeling the Radio Morphology of Supernova 1987A", 211st American Astronomical Society Meeting, BAAS, 39, 914

Van Etten, A., Romani, R. W., & **Ng, C.-Y.** 2007, "Rings and Jets around PSR J2021+3651: The 'Dragonfly Nebula', 211st American Astronomical Society Meeting, BAAS, 39, 918

Ng, C.-Y., Gaensler, B. M., Staveley-Smith, L., Manchester, R. N., Kesteven, M. J., Ball, L., & Tzioumis, A. K. 2007, "Modeling the Radio Morphology of Supernova 1987A", The International Conference on Astrophysics of Compact Objects

Ng, C.-Y., & Romani, R. W. 2006, "Probing Pulsar Kicks with Velocity and Spin Vectors", 9th HEAD Meeting of the American Astronomical Society, BAAS, 38 332

Briskin, W. F., Romani, R. W., & **Ng, C.-Y.** 2005, "X-ray Spins and Radio Speeds: Probing Pulsar Birth Kinematics with CXO and the VLBA", in X-Ray and Radio Connections, ed. L. O. Sjouwerman & K. K. Dyer (Santa Fe: NRAO), 5.4

Ng, C.-Y., Cheng, K. S., & Chu, M. C. 2003, "Properties of Cloudy Bag Strange Stars", in Stellar Astrophysics - a tribute to Helmut A. Abt., ed K. S. Cheng, K. C. Leung, & T. P. Li (Dordrecht: Kluwer Academic Publishers), 83

Ng, C.-Y., & Romani, R. W. 2004, "Pulsar Wind Tori and the Spin-Kick Connection", 8th HEAD Meeting of the American Astronomical Society, BAAS, 36, 919

Ng, C.-Y., & Romani, R. 2002, "Pulsar Tori and the Spin-Kick Story", 201st American Astronomical Society Meeting, BAAS, 34, 1298

Ng, C.-Y., Cheng, K. S., & Pei, S. Y. 2001, "The Cloudy Bag Model of Strange Stars", April Meeting of the American Physical Society, BAPS, 46, No. 2