Neil M. Nagar

Astronomy Department
Universidad de Concepción
Concepción, Chile

Ph. +56 41-2207171
Fax. +56 41-2224520
E-mail: nagar@astro-udec.cl

Education:

Ph.D. Astronomy, 2000.
University of Maryland, College Park, MD., U.S.A., 1994 - 2000.

M.Sc. Mathematics, 1993, with distinction.
Birla Institute of Technology & Science, Pilani, India, 1987 - 1993.

B.E. Electrical & Electronics Engineering, 1993, with distinction.
Birla Institute of Technology & Science, Pilani, India, 1987 - 1993.

Honors:

NWO Postdoctoral Fellowship, 2003 - 2004, Kapteyn Institute, U. of Groningen, Netherlands.

Postdoctoral Fellowship, 2000 - 2002, Arcetri Observatory, Italy.

Graduate School Fellowship, 1994 - 1996, University of Maryland.

Best Graduating Student (Electronics & Electrical Engineering), 1993,
Birla Institute of Technology & Science.

Deans Outstanding Student (top 2% in a class of 500), 1987 - 1990,
Birla Institute of Technology & Science.

Professional Experience:

2007- Associate Professor, Univ. de Concepción, Chile.

2004 - 2006 Visiting Assistant Professor, Univ. de Concepción, Chile.

2003 - 2004 Postdoctoral Fellow, Kapteyn Institute, The Netherlands.

2000 - 2002 Postdoctoral Fellow, Arcetri Observatory, Italy.

1996 - 2000 Research Assistant, University of Maryland, College Park, USA.
Supervisor: Prof. Andrew S. Wilson
Central engines and accretion models in low-luminosity Active Galactic Nuclei.

1995 - 1996 Graduate Fellow, University of Maryland, College Park, USA.
Supervisor: Prof. Stuart N. Vogel
Interaction between jets and molecular outflows in Young Stellar Objects.

1995 - 1996 Open-house Coordinator, University of Maryland, College Park.
In charge of public nights at the Astronomy department observatory.

1994 - 1995 Teaching Assistant, University of Maryland, College Park.
Professors: Virginia Trimble & Roger Bell. *Introductory Astronomy.*

1993 - 1994 R&D Engineer, Tata Elxsi India Ltd., Bangalore, India.
Design of the electronics motherboard for a video-teleconferencing system using Digital Signal Processors from Analog Devices.
Engineering testing of an Ethernet/FDDI termserver.

1992 - 1993 R&D Engineer, Central Scientific Instruments Organization, Chandigarh, India.
Design of electronics modules for combat aircraft displays.

Instrumentation

1. Founded a Radioastronomy Laboratory at the Astronomy Department with a current staff of one half-time engineer (Ph.D.) and three Masters Engineering students.
2. Project 1: Refurbishment of ALMA Testbed 183GHz Water Vapor Radiometers
3. Project 2: Design and Prototype Development of dual 22GHz/50GHz digital backend radiometers
4. Project 3: Participation in the mm-VLBI network

Refereed Papers in ISI Journals

1. Riffel, R., Storchi-Bergmann, T. & **Nagar, N. M.**, *Near-IR dust and line emission from the central region of Mrk 1066: Constraints from Gemini NIFS*, 2010, to appear in Monthly Notices of the Royal Astronomical Society
2. **Nagar, N. M.** & Matulich, J., *Ultra-High Energy Cosmic Rays Detected by Auger and AGASA: Corrections for Galactic Magnetic Field Deflections, Source Populations, and Arguments for Multiple-Components*, 2010, to appear in Astronomy & Astrophysics
3. Mundell, C., Ferruit, P., **Nagar, N. M.** & Wilson, A. S., *Radio Variability in Seyfert Nuclei*, 2009, Astrophysical Journal, 703, 802
4. **Nagar, N. M.** & Matulich, J., *Ultra-High Energy Cosmic Rays Detected by the Pierre Auger Observatory: First Direct Evidence, and its Implications, that a Subset Originate in Nearby Radiogalaxies*, 2008, Astronomy & Astrophysics, 488, 879
5. Teng, S., Wilson, A. S., Veilleux, S., Young, A. J., Sanders, D. B., & **Nagar, N. M.**, *XMM-Newton Detection of a Compton-thick AGN in the 1Jy ULIRG/LINER F04103-2838*, 2008, Astrophysical Journal, 674, 133
6. Dumas, G., Mundell, C. G., Emsellem, E., & **Nagar, N. M.**, *The Central Kiloparsec of Seyfert and Inactive Host Galaxies: a Comparison of Two-Dimensional Stellar and Gaseous Kinematics*, 2007, Monthly Notices of the Royal Astronomy Society, 379, 1249
7. Mundell, C. G., Dumas, G., Schinnerer, E., **Nagar, N. M.**, et al. *3D studies of neutral and ionised gas and stars in seyfert and inactive galaxies*, 2007, New Astronomy Reviews, 51, 34
8. Zhang, J. S., Henkel, C., Kadler, M., Greenhill, L. J.,**Nagar, N.**, Wilson, A. S., & Braatz, J. A., *Extragalactic H_2O masers and X-ray absorbing column densities*, 2006, Astronomy & Astrophysics, 450, 933
9. Teng, S., Wilson, A. S., Veilleux, S., Young, A. J., Sanders, D. B., & **Nagar, N. M.**, *Chandra X-ray Survey of Ultraluminous Infrared Galaxies*, 2005, Astrophysical Journal, 633, 664
10. Maoz, D., **Nagar, N. M.**, Falcke, H., & Wilson, A. S., *The Murmur of the Sleeping Black Hole: Detection of Nuclear Ultraviolet Variability in LINER Galaxies*, 2005, Astrophysical Journal, 625, 699
11. Henkel, C., Peck, A. B., Tarchi, A., **Nagar, N. M.**, Braatz, J. A. Castangia, P., & Moscadelli, L., *New H_2O masers in Seyfert and FIR bright galaxies*, 2005, Astronomy & Astrophysics, 436, 75
12. **Nagar, N. M.**, Falcke, H., & Wilson, A. S., *Radio Sources in Low-Luminosity Active Galactic Nuclei. IV. Radio Luminosity Function, Importance of Jet Power, and Radio Properties, of the Complete Palomar Sample*, 2005, Astronomy & Astrophysics, 435, 521

13. Ferruit, P., Mundell, C. G., **Nagar, N. M.**, Emsellem, E., Pecontal, E., Wilson, A. S., & Schinnerer, E., *Ionized gas and stars in the central kiloparsec of the Seyfert 2 galaxy NGC 2110 – I. The data*, 2004, Monthly Notices of the Royal Astronomical Society, 352, 1180

14. Filho, M., Fratenali, F., Markoff, S., **Nagar, N. M.**, Barthel, P. D., Ho, L. C., & Yuan, F. *Further Clues to the Nature of Composite LINER/HII Galaxies* 2004, Astronomy & Astrophysics, 418, 429

15. Middelberg, E., Roy, A., **Nagar, N. M.**, et al. *Motion and Properties of Nuclear Radio Components in Seyfert Galaxies seen with VLBI*, 2003, Astronomy & Astrophysics, 417, 925

16. Storchi-Bergmann, T. et al., including **Nagar, N. M.**, *Evolution of the nuclear accretion disk emission in NGC1097: getting closer to the black hole*, 2003, Astrophysical Journal, 598, 956

17. Maiolino, R., et al., including **Nagar, N. M.**, *Elusive AGN*, 2003, Monthly Notices of the Royal Astronomical Society, 344L, 59

18. Maiolino, R., Juarez, Y., Mujica, R., **Nagar, N. M.**, & Oliva, E., *Early Star Formation Traced by the Highest Redshift Quasars*, 2003, Astrophysical Journal Letters, 596, L155

19. **Nagar, N. M.**, Wilson, A. S., Falcke, H., Veilleux, S., & Maiolino, R., *The AGN Content of Ultraluminous IR Galaxies: High Resolution VLA Imaging of the IRAS 1 Jy ULIRG Sample*, 2003, Astronomy & Astrophysics, 409, 115

20. Mannucci, F., Maiolino, R., Cresci, G., Della Valle, M., Vanzi, L., Ghinassi, F., Ivanov, V. D., **Nagar, N. M.**, & Alonso-Herrero, A. *The infrared supernova rate in starburst galaxies*, 2003, Astronomy & Astrophysics, 401, 519

21. Zappacosta, L., Mannucci, F., Maiolino, R., Gilli, R., Ferrara, A., Finoguenov, A., **Nagar, N. M.**, & Axon, D. J. *Warm-hot intergalactic baryons revealed*, 2002, Astronomy & Astrophysics, 394, 7

22. **Nagar, N. M.**, Falcke, H., Wilson, A. S., & Ulvestad, J. S., *Radio Sources in Low-Luminosity Active Galactic Nuclei. III. Isolating the "AGN" in "LLAGNs"*, 2002, Astronomy & Astrophysics, 392, 53

23. **Nagar, N. M.**, Oliva, E., Marconi, A., & Maiolino, R., *NGC 5506 unmasked as a Narrow Line Seyfert 1:. A direct view of the broad line region using near-IR spectroscopy*, 2002, Astronomy & Astrophysics, 391, L21

24. **Nagar, N. M.**, Wilson, A. S., & Falcke, H., *Evidence for Jet Domination of the Nuclear Radio Emission in Low-Luminosity Active Galactic Nuclei*, 2001, Astrophysical Journal Letters, 559, L87

25. Testi, L. et al., including **Nagar, N. M.**, *NICS-TNG Low-Resolution 0.85-2.45 micron Spectra of L Dwarfs: A Near-Infrared Spectral Classification Scheme for Faint Dwarfs* 2001, Astrophysical Journal Letters, 552, L147

26. **Nagar, N. M.**, Falcke, H., Wilson, A. S., & Ho, L. C., *Radio Emission in Low-Luminosity Active Galactic Nuclei. I. VLA Detections of Compact, Flat-Spectrum Cores*, 2000, Astrophysical Journal, 542, 186

27. Falcke, H., **Nagar, N. M.**, Wilson, A. S., & Ulvestad, J. S., *Radio Emission in Low-Luminosity Active Galactic Nuclei. II. VLBI Detections of Compact Radio Cores and Jets*, 2000, Astrophysical Journal, 542, 197

28. Cavallo, R. & **Nagar, N. M.** 1999, *Chemical Abundances in the Giants of M 3 and M 13 I: Proton-Capture and Alpha Elements*, 2000, Astronomical Journal, 120, 1364

29. Cecil, G., DePree, C. G., Greenhill, L. J., **Nagar, N. M.**, Wilson, A. S., Perez-Fournon, I., Argon, A. L., Dopita, M. A., & Moran, J. M., 1999, *The Active Jet in NGC 4258 and its Associated Oblique Shocks*, 2000, Astrophysical Journal, 536, 675

30. **Nagar, N. M.**, & Wilson, A. S., 1999, *The Relative Orientation of Nuclear Accretion and Galaxy Stellar Disks in Seyfert Galaxies,* Astrophysical Journal, 516, 93.

31. **Nagar, N. M.**, Wilson, A. S., Mulchaey, J. S., & Gallimore, J. F. 1999, *Radio Structures of Seyfert Galaxies. VIII. A Distance and Magnitude Limited Sample of Early-Type Galaxies*, Astrophysical Journal Supplements, 120, 209

32. **Nagar, N. M.**, Vogel, S. N, Stone, J. M., & Ostriker, E. C. 1997, *Kinematics of the Molecular Sheath of the HH 111 Optical Jet,* Astrophysical Journal Letters, 482, L195

Selected Recent Presentations & Conference Proceedings:

Nagar, N. M., *The Origin of Ultra High Energy Cosmic Rays*, invited presentation at the UHECR Meeting, Trondheim, Norway, June 2009.

Nagar, N. M., *Understanding Sub-Millimeter Galaxies via Ultraluminous Infrared Galaxies*, invited talk at the 'ASTE Science Meeting', Santiago, Chile, Dec. 2007

Nagar, N. M., *Radioastronomy at Chilean Universities*, 'ALMA Community Meeting and ALMA Surveys', Munich, Germany, Sept. 2007

Nagar, N. M., *A Potential Chilean Contribution to a Global millimeter-VLBI Array*, invited talk at the 'ASTE Science Meeting', Mitaka, Japan, March, 2006

Nagar, N. M., *Agujeros negros supermasivos en núcleos galácticos activos*, invited review talk at the annual meeting of the Argentinian Astronomical Society, La Plata, Argentina, September 2005

Nagar, N. M., et al. *Multiple Black Holes in Merging Galaxies*, invited talk at the 'AGN Super-unification' conference, Elba, Italy, May 2005 (also member of the Scientific Organizing Committee of this meeting)

Falcke, H., Körding, E., & **Nagar, N. M.** *Compact radio cores: from the first black holes to the last*, a chapter of 'The science case for the Square Kilometer Array', eds. C. Carilli & S. Rawlings, New Astronomy Reviews, Volume 48, Issue 11-12, p. 1157-1171

Nagar, N. M., et al. *The Near-IR [Fe II/P II] Ratio as a Shock Tracer in AGNs*, invited talk; to appear in the proceedings of the '7th Italian AGN meeting', Volterra, Italy, June 2004

Nagar, N. M., et al. *Radio Properties of Local AGN*, invited talk; to appear in the proceedings of the 'AGN Surveys' conference, Cozumel, Mexico, Dec. 2003

Nagar, N. M., Wilson, A. S., & Falcke, H. *Unveiling hidden AGNs in ULIRGs and low-luminosity AGNs through high-frequency radio observations*, 2002, in the proceedings of the AGN conference, Meudon, August 2002

Co-editor of conference proceedings *Issues in Unification of AGNs*, Elba Island, Italy, May 2001, eds. R. Maiolino, A. Marconi, & **N. Nagar**, ASP conference series, 2002, Vol. 258

Nagar, N. M., Falcke, H., Wilson, A. S., Ho, L. C., & Ulvestad, J. S. 2000, *Central Engines & Accretion Mechanisms in low-luminosity AGN*, press conference and press release at the meeting of the American Astronomical Society, Atlanta, January 2000.

Nagar, N. M., Vogel, S. N., & Stone, J. M. 1997, *Kinematics of the Molecular Sheath of the HH 111 Optical Jet*, press release at the meeting of the American Astronomical Society, Toronto, January 1997

Services

- Referee for Astronomy & Astrophysics, Astrophysical Journal, Astronomical Journal
- Referee for various CONICYT proposals
- Chilean Representative in the ALMA Science Advisory Committee (ASAC; 2007-)
- Member of ESO Time Allocation Committee (2007-)
- Member of Chilean APEX Time Allocation Committee (2007-)
- Member of Chilean National Time Allocation Committee (CNTAC; 2005,2007-)
- Member of Chilean Gemini Time Allocation Committee (2007-2009)
- Member of Chandra X-ray Telescope Time Allocation Committee (2006)
- Referee for NRAO (U.S.A.) Time Allocation Committee (2003-2004)

Current and Recent Grants

- EXPLORA EST1/017 U.S.$ 30,000 for period 2007 - 2008 (P.I. Nagar)
- Fondecyt U.S.$ 60,000 for period 2007 - 2010 (P.I. Nagar)
- ALMA 31090024: U.S.$ 36,000 for period 2009 - 2010 (P.I. Nagar)
- ALMA 31080022: U.S.$ 44,000 for period 2008 - 2010 (P.I. Nagar)
- ALMA 31070015: U.S.$ 60,000 for period 2007 - 2009 (P.I. Nagar)
- ALMA 31060013 U.S.$ 14,400 for period 2006 - 2008 (P.I. Nagar)
- ALMA 31060012 U.S.$ 24.400 for period 2006 - 2008 (P.I. Nagar)
- ALMA 3105000: U.S.$ 150,000 for period 2005 - 2007 (P.I. Nagar)
- Co-I in the FONDAP Center for Astronomy
- Co-I in the BASAL Center of Astronomy and Related Techonologies
- Co-I on various ESO Comite-Mixto and Gemini Fund grants

Teaching & Outreach

- Professor for various courses for advanced undergraduate and graduate students at U. de Concepción.
- Advisor to one Ph.D. thesis, one masters thesis, and several undergraduate student projects at U. de Concepción
- Co-organizer and lecturer of summer school on 'Interferometry in the Epoch of ALMA and VLT-I', Santiago, December 2006.

- Coordinator of the Astronomy Outreach and Education at the U. de Concepción, including public nights at the 30" telescope.
- Various Astronomy Education presentations at at U. Concepcion and in the Concepcion area.
- Teaching Assistant for introductory astronomy classes, U. of Maryland, College Park (1995-1996).
- Co-ordinator of the Observatory 'Open-House' program, U. of Maryland, College Park (1996-1997)

Languages: English (native), Spanish, Italian (working knowledge), Hindi

Observing Experience:

- Radio: Interferometric and Single Dish continuum and spectroscopic observations from 21 cm to 0.6 mm, with the VLBA, VLA, BIMA, Effelsberg 100 m, JCMT 15 m, APEX 12 m, ASTE 10 m.
- InfraRed Imaging and Spectroscopy: with the 8m VLT, 8m Gemini, 3.5m TNG, 3.5m NTT, Palomar 60"
- Optical Imaging and Spectroscopy: with HST, HST/ACS, 6.5 m Magellan, 4m CTIO, 3.9m AAT, 4.2m WHT, 3.5m NTT, 3.5m TNG, 4m KPNO, 2.5m LCO.
- Integral Field Spectroscopy: WHT/SAURON, Magellan-Baade/IMACS, Gemini G-MOS.

Related Software Skills:

Familiar with AIPS, CLASS, IRAF, CLASS/GILDAS, NEWSTAR, MIRIAD.

Familiar with LINUX, UNIX, IDL, C, Fortran.