

Curriculum Vitae

Michael Perry Rupen

National Radio Astronomy Observatory
1003 Lopezville Road
Socorro, NM 87801

tel.: (505) 835-7248

FAX: (505) 835-7027

e-mail: mrupen@aoc.nrao.edu

<http://www.aoc.nrao.edu/~mrupen>

EDUCATION

Princeton University 1984-1989
Department of Astrophysical Sciences
Ph.D., Astrophysical Sciences, June 1989
Thesis: *Disk mass densities in edge-on spiral galaxies*
Advisors: G.R. Knapp, J.H. van Gorkom, & J.E. Gunn

University of North Carolina 1980-1984
Chapel Hill, North Carolina
B.Sc. (highest honors), Physics, August 1984

EMPLOYMENT

National Radio Astronomy Observatory
Socorro, New Mexico
Scientist 2002-present
Associate Scientist 1998-2001
Assistant Scientist 1995-1998
Jansky Postdoctoral Fellow 1992-1995

Harvard-Smithsonian Center for Astrophysics 1989-1991
Cambridge, MA
Smithsonian Postdoctoral Fellow in Radio-Geoastrometry Division

PROFESSIONAL SOCIETIES, FELLOWSHIPS, AND HONORS

American Astronomical Society 1986-present
AAS Committee on the Status of Women in Astronomy 2001-present
AAS High Energy Astrophysics Division 2002-present
National Science Foundation Graduate Fellowship 1984-1987
Princeton University Prize Fellowship 1984-1985

CURRENT RESEARCH INTERESTS

- **Transient sources**, especially at radio wavelengths
 - *X-ray binaries and microquasars*: weekly VLA radio monitoring program of known and new sources; VLA and VLBA imaging of strong sources including SS433 and Cygnus X-3; VLBA astrometry; simultaneous X-ray/radio/optical monitoring
 - *Supernovae*: radio light curves and imaging (SN 1993J, 1986J)
 - *Misc. others*: symbiotic stars, novae, etc.
- **Interstellar medium**: high-resolution HI, CO, FIR observations of the Milky Way and nearby spiral and elliptical galaxies
 - *High-altitude HI clouds* in our Galaxy: GBT+VLA mosaics
 - *Far infrared/radio correlation* (e.g., in M51)
- **Radio (cm and mm) interferometry**

STUDENTS

James Miller-Jones	2002-present
Ph.D. student at Oxford University (primary advisor: K.M. Blundell)	
Thesis topic: <i>The Radio Outbursts of Cygnus X-3</i>	
Andreea Petric	1999-2001
M.Sc. student at New Mexico Tech	
Thesis topic: <i>Strange Doings in Dull Galaxies: Velocity Dispersions in Face-on Spirals</i>	
Darrell Osgood	2000-2001
M.Sc. student at New Mexico Tech	
Thesis topic: <i>The Decelerating Jet in the Microquasar XTE J1748-288</i>	
Chris Stockdale	1999-2001
Ph.D. student at University of Oklahoma (primary advisor: J. Cowan)	
Thesis topic: <i>A radio and x-ray search for intermediate-age supernovae: Tuning into the oldies</i>	
Summer advisor to the following graduate students:	
Nathalie Drouin (Montréal)	1994
Pierre Levasse (Montréal)	1994
Andreea Petric (New Mexico Tech)	1998
Elena Gallo (Amsterdam)	2002
Simone Migliari (Amsterdam)	2002
James Miller-Jones (Oxford)	2002

Summer advisor to the following undergraduate (REU) students:

Robin Lewinter (Wesleyan)	1993
Jared Crossley (New Mexico Tech)	2002
Laura Spitler (Iowa)	2003

CURRENT OBSERVATORY DUTIES

- **Very Large Array**

- *Primary scientific responsibility for user support*
- *Primary contact for all spectral line experiments*

- **VLA Expansion Project**

- *Science case*: primary responsibility for overall science case for both Phase I and Phase II
- *Correlator*: primary NRAO scientific contact (with J. Romney) for EVLA WIDAR correlator
- Member, EVLA Scientific Software Requirements Committee

- **Very Long Baseline Array**

- Scientific liaison for various VLBA projects

REFERENCES

W. Miller Goss
 NRAO
 1003 Lopezville Road
 Socorro, NM 87801
 mgoss@aoc.nrao.edu

Juan Uson
 NRAO
 520 Edgemont Road
 Charlottesville, VA 22903
 juson@cv.nrao.edu

Frazer Owen
 NRAO
 1003 Lopezville Road
 Socorro, NM 87801
 fowen@aoc.nrao.edu

Katherine Blundell
 University of Oxford
 Astrophysics
 Keble Road
 Oxford OX1 3RH
 England, U.K.
 kmb@astro.ox.ac.uk

PUBLICATIONS

Refereed Publications

- R-1. M.P. Rupen, J.H. van Gorkom, G.R. Knapp, J.E. Gunn, & D.P. Schneider 1987. "Observations of SN 1986J in NGC 891," *AJ*, **94**, 61-70.
- R-2. J.B. Laird, M.P. Rupen, B.W. Carney, & D.W. Latham 1988. "A Survey of Proper Motion Stars VII: The Halo Metallicity Distribution Function," *AJ* **96**, 1908-1917.
- R-3. N. Bartel, I.I. Shapiro, & M.P. Rupen 1989. "VLBI Observations of SN 1986J: Deviations from Spherical Symmetry in its Radio Brightness Distribution," *ApJL* **337**, L85-L88.
- R-4. M.P. Rupen 1991. "Neutral Hydrogen Observations of NGC 4565 and NGC 891," *AJ* **102**, 48-106.
- R-5. B. Leibundgut, R.P. Kirshner, P.A. Pinto, M.P. Rupen, R.C. Smith, J.E. Gunn, & D.P. Schneider 1991. "Spectra of Two Very Old Supernovae: SN 1986J and SN 1980K," *ApJ* **372**, 531-544.
- R-6. J.F. Lees, G.R. Knapp, M.P. Rupen, & T.G. Phillips 1991. "Molecular Gas in Elliptical Galaxies," *ApJ* **379**, 177-215.
- R-7. N. Bartel, M.P. Rupen, & I.I. Shapiro 1991. "A High-Resolution Radio Image of a Young Supernova," *Nature* **350**, 212-214.
- R-8. C.L. Carilli, M.P. Rupen, & B. Yanny 1993. "Neutral Hydrogen 21 cm Absorption at Redshift 0.6847 Towards the 'Smallest Einstein Ring'," *ApJL* **412**, L59-L62.
- R-9. S.D. Van Dyk, K.W. Weiler, R.A. Sramek, M.P. Rupen, & N. Panagia 1994. "SN 1993J: The Early Radio Emission and Evidence for a Changing Presupernova Mass-loss Rate," *ApJL* **432**, L115-L118.
- R-10. N. Bartel, M. Bietenholz, M.P. Rupen, *et al.* 1994. "The Shape, Expansion Rate and Distance of Supernova 1993J from VLBI Measurements," *Nature* **368**, 610-.
- R-11. B.A. Harmon, C.A. Wilson, S.N. Zhang, W.S. Paciesas, G.J. Fishman, R.M. Hjellming, M.P. Rupen, D.M. Scott, M.S. Briggs, & B.C. Rubin 1995. "Correlations Between X-ray Outbursts and Relativistic Ejections in the X-ray Transient GRO J1655-40," *Nature* **374**, 403-.
- R-12. R.M. Hjellming & M.P. Rupen 1995. "Episodic Ejection of Relativistic Jets by the X-ray Transient GRO J1655-40," *Nature* **375**, 464-.
- R-13. G.R. Knapp, M.P. Rupen, M. Fich, D.A. Harper, & C.G. Wynn-Williams 1996. "ISO Observations of Hot Dust in the Nucleus of the S0 Galaxy NGC 3998," *A&A* **315**, L75-L78.
- R-14. M.F. Bietenholz, N. Bartel, M.P. Rupen, *et al.* 1996. "VLBI Observations of the Ultracompact Radio Nucleus of the Galaxy M81," *ApJ* **457**, 604-609.
- R-15. G.R. Knapp & M.P. Rupen 1996. "Molecular Gas in Elliptical Galaxies: CO Observations of an IRAS Flux-limited Sample," *ApJ* **460**, 271-283.
- R-16. R.M. Hjellming, M.P. Rupen, C.R. Shrader, D. Campbell-Wilson, R.W. Hunstead, & D.J. McKay 1996. "Radio and X-ray Flaring Events in X-ray Nova Ophiuchi 1993," *ApJL* **470**, L105-L107.
- R-17. M. Tavani, A. Fruchter, S.N. Zhang, B.A. Harmon, R.M. Hjellming, M.P. Rupen, C. Bailyn, and M. Livio 1996. "The Dual Nature of Hard X-ray Outbursts from the Superliminal X-ray Transient Source GRO J1655-40," *ApJL* **473**, L103-L106.

- R-18. C.L. Carilli, K.M. Menten, M.I. Reid, & M.P. Rupen 1997. "Neutral Hydrogen 21cm Absorption at Redshift 0.673 toward 1504+377," *ApJL* **474**, L89-L93.
- R-19. G.R. Knapp, M.P. Rupen, & A. Harper 1996. "The Submillimeter Continuum Spectrum and Interstellar Dust Content of Elliptical Galaxies," *ApJ*, in press.
- R-20. C.L. Carilli, K.M. Menten, M.I. Reid, M.P. Rupen, & M.S. Yun 1998. "Redshifted Neutral Hydrogen 21cm Absorption Towards Red Quasars," *ApJ* **494**, 175-182.
- R-21. M.L. McCollough *et al.* 1998. "RXTE observations of Cygnus X-3," *New Astronomy Reviews* **42**, Issue 9-10, 629-632.
- R-22. R.M. Hjellming, M.P. Rupen, *et al.* 1999. "Radio and X-Ray Observations of the 1998 Outburst of the Recurrent X-Ray Transient 4U 1630-47," *ApJ* **514**, 383-387.
- R-23. G.R. Knapp *et al.* 1999. "The light curve and evolutionary status of the carbon star V Hya," *A&Ap* **351**, 97-102.
- R-24. X. Fan *et al.* 1999. "The Discovery of a High-Redshift Quasar without Emission Lines from Sloan Digital Sky Survey Commissioning Data," *ApJL* **526**, L57-L60.
- R-26. N. Bartel, M.F. Bietenholz, M.P. Rupen, *et al.* 2000. "The Changing Morphology and Increasing Deceleration of Supernova 1993J in M81," *Science* **287**, pp. 112-116.
- R-27. M.F. Bietenholz, N. Bartel, & M.P. Rupen 2000. "A Stationary Core with a One-sided Jet in the Center of M81," *ApJ*, **532**, 895-908.
- R-28. C.L. Carilli, F. Bertoldi, K.M. Menten, M.P. Rupen, *et al.* 2000. "Dust Emission from High Redshift QSOs," *ApJL*, **533**, L13-L16.
- R-29. R.M. Hjellming, M.P. Rupen, *et al.* 2000. "Light Curves and Radio Structure of the 1999 September Transient Event in V4641 Sagittarii (=XTE J1819-254=SAX J1819.3-2525)," *ApJ*, **544**, 977-992.
- R-30. L. Testi, P. Hofner, S. Kurtz, & M.P. Rupen 2000. "Detection of the Thermal Radio Continuum Emission from the G9.62+0.19-F Hot Core," *A&A* **359**, L5-L8.
- R-31. A.J. Mioduszewski, M.P. Rupen, *et al.* 2001. "A One-sided, Highly Relativistic Jet from Cygnus X-3," *ApJ*, **553**, 766-775.
- R-33. C.L. Carilli, B.F. Bertoldi, M.P. Rupen, *et al.* 2001. "A 250 GHz Survey of High-Redshift Quasars from the Sloan Digital Sky Survey," *ApJ*, **555**, 625-632.
- R-34. M.F. Bietenholz, N. Bartel, & M.P. Rupen 2001. "SN 1993J VLBI. I. The Center of Explosion and a Limit on Anisotropic Expansion," *ApJ*, **557**, 770-781.
- R-35. K.M. Blundell, A.J. Mioduszewski, T.W.B. Muxlow, P. Podsiadlowski, & M.P. Rupen 2001. "Images of an Equatorial Outflow in SS 433," *ApJL*, **562**, L79-L82.
- R-36. C.J. Stockdale, M.P. Rupen, *et al.* 2001. "The Fading Radio Emission from SN 1961V: Evidence for a Type II Peculiar Supernova?," *AJ*, **122**, 283-287.
- R-37. A. Omar, K.R. Anantharamaiah, M.P. Rupen, & J. Rigby 2002. "VLA Detection of OH Absorption from the Elliptical Galaxy NGC 1052," *A&Ap*, **381**, L29-L32.
- R-38. A.P. Sarma, T.H. Troland, & M.P. Rupen 2002. "VLA HI Zeeman Observations of Centaurus A," *ApJ*, **564**, 696-703.
- R-39. C. Brocksopp, R.P. Fender, M. McCullough, G.G. Pooley, M.P. Rupen, *et al.* 2002. "Initial low/hard state, multiple jet ejections and X-ray/radio correlations during the outburst of XTE J1859+226," *M.N.R.A.S.*, **331**, 765-775.

- R-40. A. Omar, K.S. Dwarkanath, M.P. Rupen, & K.R. Anantharamaiah 2002. “GMRT and VLA observations of HI and OH from the Seyfert galaxy Mrk 1,” *A&Ap*, **394**, 405-414.
- R-41. N. Bartel, M.F. Bietenholz, M.P. Rupen, *et al.* 2002. “SN 1993J VLBI. II. Related Changes of the Deceleration, Flux Density Decay, and Spectrum,” *ApJ*, **581**, 404-426.
- R-42. M.F. Bietenholz, N. Bartel, & M.P. Rupen 2002. “SN 1986J VLBI: The Evolution and Deceleration of the Complex Source and a Search for a Pulsar Nebula,” *ApJ*, **581**, 1132-1147.
- R-43. Y. Butt *et al.* 2003. “CHANDRA/VLA Follow-up of TeV J2032+4131, the Only Unidentified TeV Gamma-ray Source,” *ApJ*, in press.
- R-44. M.F. Bietenholz, N. Bartel, & M.P. Rupen 2003. “SN 1993J VLBI (III): The Evolution of the Radio Shell,” *ApJ*, in press.
- R-45. S. Migliari, R.P. Fender, M.P. Rupen, *et al.* 2003. “Disc-jet coupling in an atoll-type neutron star X-ray binary: 4U 1728-34 (GX 354-0),” *MNRAS*, **342**, L67-L71.
- R-46. J.C.A. Miller-Jones, K.M. Blundell, M.P. Rupen, A.J. Mioduszewski, P. Duffy, & A.J. Beasley 2004. “Time-sequenced Multi-radio-frequency Observations of Cygnus X-3 in Flare,” *ApJ*, submitted.
- R-47. S.Q. Park, J.M. Miller, J.E. McClintock, R.A. Remillard, J.A. Orosz, C.R. Shrader, R.W. Hunstead, D. Campbell-Wilson, C.H. Ishwara-Chandra, A.P. Rao, & M.P. Rupen 2003. “Spectral and Timing Evolution of the Black Hole X-ray Nova 4U 1543-47 During its 2002 Outburst,” *ApJ*, submitted.
- R-48. J.A. Tomsick, S. Corbel, R. Fender, J.M. Miller, J.A. Orosz, M.P. Rupen, *et al.* 2003. “Chandra Detections of Two Quiescent Black Hole X-Ray Transients,” *ApJL*, in press.
- R-49. J. Homan, R. Wijnands, M.P. Rupen, *et al.* 2003. “Simultaneous radio and X-ray observations of the low-mass X-ray binary GX 13+1,” *A&Ap*, in press.
- R-50. S. Migliari, R.P. Fender, M.P. Rupen, *et al.* 2003. “Radio and optical counterparts of the neutron star X-ray binaries 4U 1820–30 and Ser X–1,” *MNRAS*, submitted.

Recent IAU Circulars and Astronomical Telegrams

- I-1. M.P. Rupen, C. Brocksopp, A.J. Mioduszewski, V. Dhawan, R. Sault, R. Fender, & S. Corbel 2003, “XTE J1720-318,” IAU 8054.
- I-2. M.P. Rupen, A.J. Mioduszewski, & V. Dhawan 2003, “Igr J17464-3213 = XTE J17464-3213”, IAU 8105.
- I-3. M.P. Rupen, A.J. Mioduszewski, & V. Dhawan 2003, “Igr J17464-3213 = XTE J17464-3213”, IAU 8112.
- I-4. M.P. Rupen, A.J. Mioduszewski, V. Dhawan, D. Campbell-Wilson, & R. Hunstead 2003, “V4641 Sagittarii,” IAU 8180.
- A-1. M.P. Rupen, A.J. Mioduszewski, & V. Dhawan 2003, “Radio counterpart to IGR J17464-3213 = XTE J17464-3213,” ATel 137.
- A-2. M.P. Rupen, A.J. Mioduszewski, & V. Dhawan 2003, “IGR J17464-3213 = XTE J17464-3213: Request for IR Observations,” ATel 139.
- A-3. D. Steeghs, J.M. Miller, D. Kaplan, & M.P. Rupen 2003, “IGR/XTE J17464-3213: Magellan optical upper limits,” ATel 141.

- A-4. M.P. Rupen, A.J. Mioduszewski, & V. Dhawan 2003, “Strong radio flare in XTE J1746-322 = IGR J17464-3213,” ATel 142.
- A-5. D. Steeghs, J.M. Miller, D. Kaplan, & M.P. Rupen 2003, “IGR/XTE J17464-3213: New radio position and optical counterpart,” ATel 146.
- A-6. M.P. Rupen, A.J. Mioduszewski, & V. Dhawan 2003, “Possible radio counterpart to IGR J17091-3624,” ATel 152.
- A-7. M.P. Rupen, A.J. Mioduszewski, & V. Dhawan 2003, “Strong radio flare in V4641 Sgr (= SAX J1819.3-2525),” ATel 172.
- A-8. M.P. Rupen, V. Dhawan, & A.J. Mioduszewski 2003, “Further radio observations of V4641 Sgr (= SAX J1819.3-2525),” ATel 175.
- A-9. M.P. Rupen, A.J. Mioduszewski, & V. Dhawan 2003, “Radio observations of XTE J1739-302/IGR J17391-3021,” ATel 184.
- G-1. M.P. Rupen & D.A. Frail 2003, “Radio observations of SGR1806-20,” GCB 2376.

Books

- B-1. J.E. Hibbard, M.P. Rupen, & J.H. van Gorkom 2001 (editors). “Gas and Galaxy Evolution: A Conference in Honor of the 20th Anniversary of the VLA,” *PASP*, volume 240.

Conference Articles & Reviews

- C-1. M.P. Rupen 1997, “Molecular Gas in Elliptical Galaxies,” in *The Nature of Elliptical Galaxies* (Second Stromlo Symposium; eds. da Costa & Arnaboldi), p. 322.
- C-2. M.P. Rupen 1999, “Spectral Line Imaging II: Calibration and Analysis,” in *Synthesis Imaging in Radio Astronomy* (eds. G.B. Taylor, C.L. Carilli, & R.A. Perley), pp.229-274.
- C-3. J.E. Hibbard, J.H. van Gorkom, M.P. Rupen, & D. Schiminovich 2001. “An HI Rogues Gallery,” in *Gas and Galaxy Evolution* (eds. J.E. Hibbard, M.P. Rupen, & J.H. van Gorkom), pp. 659–868.
(see also <http://www.nrao.edu/astrores/HIrogues/RoguesLiving.shtml>)
- C-4. J.C.A. Miller-Jones, K.M. Blundell, M.P. Rupen, A.J. Beasley, & A.J. Mioduszewski, “Post-outburst radio spectral evolution of Cygnus X-3,” in *New Views on Microquasars* (eds. Ph. Durouchoux, Y. Fuchs, & J. Rodriguez), p. 209.
- C-5. M.P. Rupen, A.J. Mioduszewski, & R.M. Hjellming, “CI Cam reconsidered,” in *New Views on Microquasars* (eds. Ph. Durouchoux, Y. Fuchs, & J. Rodriguez), p. 213.
- C-6. K.M. Blundell, M.P. Rupen, A.J. Mioduszewski, T.W.B. Muxlow, & P. Podsiadlowski, “The ruff of equatorial emission around the SS 433 jets: its spectral index and origin,” in *New Views on Microquasars* (eds. Ph. Durouchoux, Y. Fuchs, & J. Rodriguez), p. 249.
- C-7. M.P. Rupen 2002, “Microquasar fireworks,” *Science*, **298**, 73.
- C-8. M.P. Rupen 2002, “The Very Large Array Expansion Project,” *SPIE Proceedings*.

NRAO Memoranda and Related Documents

- M-1. M.P. Rupen 1987. “Multi-Array Mapping Using Uniform Weighting,” *VLA Memorandum*.
- M-2. M.A. Holdaway & M.P. Rupen 1994. “Source Counts at 90 GHz,” *MMA Memorandum No. 123*.

- M-3. M.P. Rupen 1995. "What Needs Doing at the VLA," *internal NRAO memorandum*.
- M-4. M. Holdaway, F. Owen, & M.P. Rupen 1995. "More VLA Calibrators at Q-Band," *VLA Test Memorandum No. 193*.
- M-5. M.A. Holdaway & M.P. Rupen 1995. "Sensitivity of the MMA in Wide-field Imaging," *MMA Memorandum No. 128*.
- M-6. M.P. Rupen 1997. "A Test of the CS (Shortened C) Configuration," *VLA Scientific Memorandum No. 172*.
- M-7. M.P. Rupen 1997. "Referenced Pointing at the VLA," *VLA Test Memorandum No. 202*.
- M-8. M.P. Rupen 1997. "The Astronomical Case for Short Integration Times on the Millimeter Array," *MMA Memorandum No. 192*.
- M-9. M.A. Holdaway, R.J. Sault, T.J. Cornwell, & M.P. Rupen 1997. "AIPS++ Mosacing Requirements," *AIPS++ Note 120*.
- M-9. M.P. Rupen & R. Escoffier 1998. "Astronomical Capabilities of the Current Design for the Millimeter Array Correlator," *MMA Memorandum No. 194*.
- M-10. M.P. Rupen, D. Shepherd, & M. Wright 1998. "Astronomical Requirements for the Millimeter Array Correlator," *MMA White Paper*.
- M-11. M.P. Rupen 1998. "Should CS Entirely Replace C Configuration?," *VLA Scientific Memorandum No. 175*.
- M-12. M.P. Rupen 2001 (editor). "EVLA Planning Workshop: Designing the Second Phase," NRAO internal volume.
(see also <http://www.aoc.nrao.edu/evla/geninfo/meetings/evla2plan/evla2plan.shtml>)