# Bibliography of VLBI observations of Gravitational Lenses

R. W. Porcas
*Max-Planck-Institut fuer Radioastronomie, Bonn, Germany*

## References

Campbell, R.M., Corey, B.E., Falco, E.E., Shapiro, I.I., Gorenstein, M.V., Elosegui, P., Marcaide, J.M. & Alvi, K., 1994, "Towards estimations of Ho from VLBI observations of the gravitational lens system 0957+561", *ApJ*, **426**, 486–492

Campbell, R.M., Lehar, J., Corey, B.E., Shapiro, I.I. & Falco, E.E., 1995, "VLBI Observations of the Gravitational Lens System 0957+561", *AJ*, **110**, 2566–2569

Falco, E.E., Lehar, J. & Shapiro, I.I., 1997, "HST Observations and Models of the Gravitational Lens System MG0414+0534", *AJ*, **113**, 540–549

Garrett, M.A., Calder, R.J., Porcas, R.W., King, L.J., Walsh, D. & Wilkinson, P.N., 1994a, "Global VLBI observations of the gravitational lens system 0957+561 A,B ", *MNRAS*, **270**, 457–464

Garrett, M.A., Patnaik, A.R. & Porcas, R.W., 1994b, "Wide-field VLBI Observations of Gravitational Lenses", in *Proc. 2nd EVN/JIVE Symposium*, eds. A.J.Kus, R.T.Schilizzi, K.M.Borkowski & L.I.Gurvits (Torun, TRAO),73–77

Garrett, M.A., Porcas, R.W., Nair, S. & Patnaik, A.R., 1996a, "Wide-field EVN observations of the gravitational lens system 2016+112", *MNRAS*, **279**, L7–L11

Garrett, M.A., Nair, S., Porcas, R.W. & Patnaik, A.R., 1996b, "A search for dark matter in the halos of lensing galaxies using VLBI", in *IAU Symp. 173: Astrophysical Applications of Gravitational Lensing*. eds.C. Kochanek & J. Hewitt (Dordrecht: Kluwer), 189–190

Garrett, M.A., Nair, S., Porcas, R.W. & Patnaik, A.R., 1997, "Multi-epoch VLBA 15 and 43 GHz observations of the Gravitational Lens PKS 1830-211: Extending VLBI towards the micro-arcsecond scale", *Vistas in Astronomy* (eds. M.A.Garrett & F. Colomer), **41**, 281–285

Gorenstein, M.V., Shapiro, I.I., Cohen, N.L., Corey, B.E., Falco, E.E., Marcaide, J.M., Rogers, A.E.E., Whitney, A.R., Porcas, R.W., Preston, R.A. & Rius, A., 1983, "Detection of a compact radio source near the center of a gravitational lens: Quasar image or galactic core ?", *Science*, **219**, 54–56

Gorenstein, M.V., Shapiro, I.I., Rogers, A.E.E., Cohen, N.L., Corey, B.E., Porcas, R.W., Falco, E.E., Bonometti, R.J., Preston, R.A., Rius, A. & Whitney, A.R., 1984, "The milli-arcsecond images of 0957+561", *ApJ*, **287**, 538–548

Gorenstein, M.V., Cohen, N.L., Shapiro, I.I., Rogers, A.E.E., Bonometti, R.J., Falco, E.E., Bartel, N. & Marcaide, J.M., 1988, "VLBI observations of the gravitational lens system 0957+561: Structure and relative magnification of the A and B images", *ApJ*, **334**, 42–58

Grogin, N.A. & Narayan, R., 1996, "A new model of the gravitational lens 0957+561 and a limit on the Hubble constant", *ApJ*, **464**, 92–113

Haschick, A.D., Moran, J.M., Reid, M.J., Davis, M. & Lilley, A.E., 1981, " VLBI observations of the double quasar 0957+561", *ApJ*, **243**, L57–L59

Heflin, M.B., Gorenstein, M.V., Lawrence, C.R. & Burke, B.F., 1991, "First- and second-epoch VLBI observations of the gravitational lens system 2016+112", *ApJ*, **378**, 519–536

Jauncey, D.L. et al, 1991, "An unusually strong Einstein ring in the radio source PKS1830-211", *Nature*, **352**, 132–134

Jones, D.L., 1994, "5-GHz VLBI imaging of the gravitational lens PKS 1830-211", in *Compact Extragalactic Radio Sources*, eds. J. A. Zensus & K. I. Kellermann (Green Bank: NRAO), 135–140

Jones, D.L., Preston, R.A., Murphy, D.W., Jauncey, D.L., Reynolds, J.E., Tzioumis, A.K., King, E.A., McCulloch, P.M., Lovell, J.E.J., Costa, M.E. & van Ommen, T.D., 1996, "Interstellar broadening of images in the gravitational lens PKS 1830-211 ", *ApJ*, **470**, L23–L25

King, L.J., Browne, I.W.A., Muxlow, T.W.B., Narasimha, D., Patnaik, A.R., Porcas, R.W. & Wilkinson, P.N., 1997, "Multi-frequency radio observations of the gravitational lens system 1938+666", *MNRAS*, (submitted)

Kochanek, C.S., Kolatt, T.S. & Bartelmann, M., 1996, "Proper motions of VLBI lenses, inertial frames, and the evolution of peculiar velocities" *ApJ*, **473**, 610–619

Lovell, J.E.J., Reynolds, J.E., Jauncey, D.L., Backus, P.R., McCulloch, P.M., Sinclair, M.W., Wilson, W.E., Tzioumis, A.K., King, E.A., Gough, R.G., Ellingsen, S.P., Phillips, C.J., Preston, R.A. & Jones, D.L., 1996, "PKS 1830-211: A possible compound gravitational lens", *ApJ*, **472**, L5–L7

Nair, S., 1996, "A lens model for B0218+357", in *IAU Symp. 173: Astrophysical Applications of Gravitational Lensing*. eds.C. Kochanek & J. Hewitt (Dordrecht: Kluwer), 197–198

Nair, S & Garrett, M.A., 1997, "Gravitational lens models for 2016+112", *MNRAS*, **284**, 58–72

Patnaik, A.R. & Porcas, R.W., 1996, "Milliarcsecond structures in gravitationally lensed systems", in *IAU Symp. 173: Astrophysical Applications of Gravitational Lensing*. eds.C. Kochanek & J. Hewitt (Dordrecht: Kluwer), 305–310

Patnaik, A.R., Browne, I.W.A., King, L.J., Muxlow, T.W.B., Walsh, D. & Wilkinson, P.N., 1993, "B0218+35.7: a gravitationally lensed system with the smallest separation", *MNRAS*, **261**, 435–444

Patnaik, A.R., Porcas, R.W., Browne, I.W.A., Muxlow, T.W.B. & Narasimha, D., 1994, "Global VLBI observations of the gravitational lens B0218+357", in *Compact Extragalactic Radio Sources*, eds. J. A. Zensus & K. I. Kellermann (Green Bank: NRAO), 129–131

Patnaik, A.R., Porcas, R.W. & Browne, I.W.A., 1995, "VLBA observations of the gravitational lens system B0218+357", *MNRAS*, **274**, L5–L7

Patnaik, A.R., Garrett, M.A., Polatides, A. & Bagri, D., 1996, "A VLBA 15 GHz small separation gravitational lens survey", in *IAU Symp. 173: Astrophysical Applications of Gravitational Lensing*. eds.C. Kochanek & J. Hewitt (Dordrecht: Kluwer), 405–406

Porcas, R.W., 1994, "VLBI mapping of gravitational lens images: a wide-field imaging problem", in *Compact Extragalactic Radio Sources*, eds. J. A. Zensus & K. I. Kellermann (Green Bank: NRAO), 125–128

Porcas, R.W., Booth, R.S., Browne, I.W.A., Walsh, D. & Wilkinson, P.N., 1979, "VLBI observations of the double QSO, 0957+561 A,B", *Nature*, **282**, 385–386

Porcas, R.W., Booth, R.S., Browne, I.W.A., Walsh, D. & Wilkinson, P.N., 1981, "VLBI structures of the images of the double QSO 0957+561", *Nature*, **289**, 758–762

Porcas, R.W. & Patnaik, A.R., 1995, "Gravitational lens image astrometry", in *Proc. 10th Working Meeting on European VLBI for Geodesy & Astrometry* , eds. R.Lanotte & G. Bianco (Matera:ASI), 188–192

Porcas, R.W. & Patnaik, A.R., 1996a, "Multi-frequency VLBI observations of B0218+357", in *IAU Symp. 173: Astrophysical Applications of Gravitational Lensing*. eds.C. Kochanek & J. Hewitt (Dordrecht: Kluwer), 311–316

Porcas, R.W. & Patnaik, A.R., 1996b, "Multi-frequency VLBI observations of the gravitational lens B0218+357", in *IAU Symp. 175: Extragalactic Radio Sources*, eds. R. Ekers, C. Fanti, & L. Padrielli (Dordrecht: Kluwer), 115–117

Rogers, A.E.E., 1989, "VLBI phase-reference mapping techniques and the search for the third image of 0957+561", *Lecture Notes in Physics 330: Gravitational Lenses*, eds. J.M.Moran, J.N.Hewitt & K.Y.Lo, (Berlin: Springer), 77–81

Shaffer, D.B., 1994, "VLBI observations of 0218+357 at 18 cm", in *Compact Extragalactic Radio Sources*, eds. J. A. Zensus & K. I. Kellermann (Green Bank: NRAO), 132–134

Wambsganss, J. & Paczynski, B., 1992, "A direct gravitational lensing test for $10^6$ $M_\odot$ black holes in halos of galaxies", *ApJ*, **397**, L1–L4

Wilkinson, P.N., Henstock, D.R., Browne, I.W.A., Readhead, A.C.S., Taylor, G.B., Vermeulen, R.C., Pearson, T.J. & Xu, W., 1996, " A search for gravitational milli-lenses", in *IAU Symp. 333: Examining the Big Bang and Diffuse Background Radiations*, eds. M. Kafatos & Y. Kondo (Dordrecht: Kluwer), 95–98