Table of Contents

The beginnings of VLBI at the 100-m radio telescope
Preuß E. 1

Geodesy

Measuring Crustal Deformation in Europe by High Precision Geodetic VLBI
Campbell J., Nothnagel A., Vennebusch M. 5

Improved Positions of Non-geodetic EVN Telescopes
Charlot P., Campbell R.M., Alef W., Borkowski K., Conway J.E., Foley T., Garrington S.T., Kraus A., Nothnagel A., Sovers O.J., Trigilio C., Venturi T., Xinyong H. 9

Telescopes

The Active Surface System of the Noto Radio Telescope
Orfei A., Morsiani M., Zacchiroli G., Maccaferri G., Roda J., Fiocchi F. 13

32 Meter Radio Telescopes in the Arabian Region
Shaltout M. 17

Goals and results of the ad-hoc VLBI activity with Russian antennas
Molotov I., Likhachev S., Chuprikov A., Lipatov B., Dementiev A., Gorshenkov Yu., Kovalenko A., Konovalenko A., Stanghellini C., Tuccari G., Hong X.Y., Dougherty S., Shanks R., Liu X., Zhang J., Kus A., Borowski K., Quick J., Nicolson G., Anantakrishnan S., Sankararaman M., Shmeld I., Bervalds E. 19

Two-year program to upgrade Bear Lakes RT-64 for EVN membership
Molotov I. 21

LOPES - Detecting Radio Emission from Cosmic Ray Air Showers
Horneffer A., Falcke H., Kampert K.H. 23

Radio-Emission from Cosmic Ray Air-Showers - A Theoretical Perspective for LOPES
Huege T., Falcke H. 25

Software and hardware

An imaging software project Astro Space Locator (ASL for Windows): New methods and software abilities
Chuprikov A. 27

The new Bonn Mk IV - AIPS Data Export Path
Alef W., Graham D.A. 31

Status of the EVN MkIV Data Processor at JIVE
van Langevelde H.J. 33

Operational Issues of the Improved EVN Station Positions
Campbell R.M. 37

Mark 5 Disc-Based Gbps VLBI Data System
Whitney A.R. 41

New Methods

Radar VLBI activity with participation of Noto
Tuccari G., Molotov I., Buttaccio S., Kus A., Hong X.Y., Liu X. 45

General relativistic model for experimental measurement of the speed of propagation of gravity by VLBI
Kopeikin S., Fomalont E.B. 49

Phase Referencing Using Several Calibrator Sources
Fomalont E.B., Kopeikin S. 53

VLBI observations in Cluster-Cluster mode at 1.6 GHz
Rioja M.J., Porcas R.W., Desmurs J.-F., Alef W., Gurvits L.I., Schilizzi R.T. 57

Higher Resolution VLBI Imaging with Fast Frequency Switching
Middelberg E., Roy A.L., Walker R.C., Falcke H., Krichbaum T.P. 61

VLBI phase-reference investigations at 86 GHz
Porcas R.W., Rioja M.J. 65

1st Global mm-VLBI at 512 Mbit/s
Graham D.A., Alef W., Krichbaum T.P., Kraus A., Greve A., Conway J.E., Attridge J.M., Buretta T.A., Shute P.A., Titus M.A. 67

AGN and variability

Multi-frequency Study of Intraday Variable Sources
Cimò G., Fuhrmann L., Krichbaum T.P., Beckert T., Kraus A., Witzel A., Zensus J.A. 69

Compact Intraday Variable Radio Cores: New Observational Approaches
Fuhrmann L., Krichbaum T.P., Cimò G., Kraus A., Beckert T., Witzel A., Zensus J.A. 73

EVN and RATAN-600 study of AGN undergoing strong radio flares
Kovalev Y.Y. 77

Understanding Scintillation of Intraday Variables
Beckert T., Fuhrmann L., Cimò G., Krichbaum T.P., Witzel A., Zensus J.A. 79

New VSOP Polarization Images of BL Lac Objects
Gabuzda D.C. 83

Evidence of Non-Uniform Parsec-Scale Faraday Rotation in 2007+777
Gabuzda D.C., Pashchenko I.N. 87

Space VLBI observations of the quasar 1351-018: tentative detection of apparent superluminal motion at z=3.707
Frey S., Gurvits L.I., Lobanov A.P., Schilizzi R.T., Kawaguchi N., Gabány K. 89

Space VLBI monitoring of AO 0235+164
Frey S., Gurvits L.I., Gabuzda D.C., Salter C.J., Altschuler D.R., Perillat P., Aller M.F., Aller H.D., Hirabayashi H., Davis M.M. 91

Models of the brightness temperature distributions in compact, extragalactic radio jets
Medici A., Lobanov A.P. 93

1546+027: Space VLBI observations of a compact quasar
Mosoni L., Frey S., Paragi Z., Fejes I., Edwards P.G., Fomalont E.B., Gurvits L.I., Scott W.K. 97

The soft X-ray properties and the VLBI properties of AGN from the CJF sample. A search for correlations.
Britzen S., Brinkmann W., Vermeulen R.C., Gliozzi M., Campbell R.M., Taylor G.B., Browne I.W.A., Wilkinson P.N., Pearson T.J., Readhead A.C.S. 99

Nuclear structures in γ-ray loud blazars
Hong X.Y., Jiang D.R., Venturi T., Wang W.H., Tao A., Schilizzi R.T. 103

Kinematics of parsec-scale structures in AGN: the 2cm VLBA Survey
Ros E., Kellermann K.I., Lister M.L., Zensus J.A., Cohen M.H., Vermeulen R.C., Kadler M., Homan D.C. 105

Internal structure of compact relativistic jets
Lobanov A.P., Zensus J.A. 107

Oblique Polarization Structures in AGN and QSO Radio Jets
Aller H.D., Aller M.F., Hughes P.A. 111

Multi-frequency VLBI observations of the BL Lac object 0735+178
Agudo I., Gómez J.L., Gabuzda D.C., Alberdi A., Marscher A.P., Jorstad S.G. 115

Is 0716+714 a superluminal quasar ?
Bach U., Krichbaum T.P., Ros E., Britzen S., Witzel A., Zensus J.A. 119

Supermassive binary black hole system in the quasar 3C 345
Lobanov A.P., Roland J. 121

Structure changes in two BL Lac objects: ON 231 and OQ 530
Massaro E., Mantovani F., Fanti R., Nesci R., Tosti G., Venturi T. 123

VLBI observations at 147 GHz: first detection of transatlantic fringes in bright AGN
Krichbaum T.P., Graham D.A., Alef W., Polatidis A.G., Bach U., Witzel A., Zensus J.A., Greve A., Grewing M., Doeleman S.S., Phillips R.B., Rogers A.E.E., Titus M., Fagg H., Strittmatter P., Wilson T.L., Ziurys L., Freund R., Könönen P., Peltonen J., Urpo S., Rantakyrö F., Conway J.E., Booth R.S. 125

86 GHz VLBI surveys of compact radio sources
Lobanov A.P., Krichbaum T.P., Graham D.A., Medici A., Kraus A., Witzel A., Zensus J.A. 129

AGN and their environment

Centimeter-band Variability in GPS Sources
Aller M.F., Aller H.D., Hughes P.A., Plotkin R.M. 131

The Diverse Properties of GPS Sources
Lister M.L., Kellermann K.I., Pauliny-Toth I.I.K. 135

Proper Motions in Compact Symmetric Objects
Polatidis A.G., Conway J.E., Owsianik I. 139

III Zw 2: Evolution of a radio galaxy in a nutshell
Brunthaler A., Falcke H., Bower G.C., Aller M.F., Aller H.D., Teräsranta H., Krichbaum T.P. 143

SCP-α diagram analysis of CSS sources
Sohn B.W., Mack K.-H., Klein U. 145

Radio galaxies in cooling clusters. The milliarcsecond properties of 3C 317
Stefanachi F., Venturi T., Dallacasa D. 147

Global and EVN Observatoins of the CSS 2147+145
Mantovani F., Junor W., Cotton W.D., Padrielli L. 149

Parsec Scale Properties of Low Power Radio Sources
Giovannini G., Giroletti M., Taylor G.B., Cotton W.D., Lara L., Venturi T. 151

Proper motion in Cyg A
Bach U., Krichbaum T.P., Alef W., Witzel A., Zensus J.A. 155

3C 310 and Hercules A: The pc-scale Study
Gizani N., Garrett M.A. 159

The Multi Wavelength Study of the two Unique Radio Galaxies Hercules A and 3C 310 - The story so far.
Gizani N., Garrett M.A., Morganti R., Cohen A., Kassim N., González-Serrano J.I., Leahy J.P. 163

The accretion process in the nucleus of the radio galaxy PKS 1333-33
Venturi T., Pellegrini S., Comastri A., Morganti R., Vignali C. 165

Constraints on the circumnuclear absorber in NGC 1052 from Radio and X-Ray Observtions
Kadler M., Ros E., Kerp J., Lobanov A.P., Falcke H., Zensus J.A. 167

Thin disks and HI absorption in the centre of low power radio galaxies
Morganti R., Peck A.B., Oosterloo T.A., Capetti A., Parma P., de Ruiter H., Fanti R., van Moorsel G. 171

The Treasure Chamber in the OH Megamaser Mrk 273
Klöckner H.-R., Baan W.A. 175

Observations of the OH Megamaser galaxies Arp 220 and IRAS 10039−3338
Rovilos E., Diamond P.J., Lonsdale C.J., Smith H.E. 179

High-resolution study of two extragalactic H_2O masers
Hagiwara Y., Diamond P.J., Miyoshi M. 183

Distant star forming galaxies, next generation radio telescopes and the radio universe before re-ionisation
Garrett M.A. 185

Towards proper motions in the Local Group
Brunthaler A., Reid M., Falcke H., Greenhill L., Henkel C. 189

Gravitational lenses

Multi-frequency VLBI observations of the lens system B0128+437
Biggs A.D., Browne I.W.A. 193

EVN-MERLIN/Global observations of the gravitational lens MG 2016+112
Porcas R.W., Garrett M.A., Nair S. 197

EVN/Global observations of the Gravitational Lens JVAS B 0218+357 at 8.4 GHz
Biggs A.D., Wucknitz O., Porcas R.W., Browne I.W.A., Jackson N., Mao S., Patnaik A.R., Wilkinson P.N. 199

Extraction of relative magnification matrices from VLBI observations of gravitational lens systems
Bähren L., Schneider P., King L.J. 201

Using VLBI Data to Investigate the Galaxy Structure in the Gravitationally Lensed System B 1422+231
Bradač M., Schneider P., Steinmetz M., Lombardi M., King L.J., Porcas R.W. 203

Circumstellar masers and star-forming regions

Methanol masers and the earliest stages of massive star formation
Minier V., Booth R.S., Burton M.G., Pestalozzi M.R. 205

Methanol masers at high resolution
Pestalozzi M.R., Booth R.S., Conway J.E., Minier V. 209

EVN observations of 6.7 GHz methanol masers from Medicina survey
Voronkov M.A., Slysh V.I., Palagi F., Tofani G. 213

A collimated jet of molecular gas from the AGB star W43A
Imai H., Obara K., Diamond P.J., Omodaka T., Sasao T. 215

Towards determination of the Outer Galactic rotation curve
Hachisuka K. 217

A study of OH and H_2O masers in the circumstellar envelopes around Miras
Murakawa K., Yates J.A.,, Richards A.M.S., Cohen R.J., van Langevelde H.J. 219

The Relative Spatial Distribution of SiO Masers in AGB Stars at 43 and 86 GHz
Desmurs J.-F., Soria-Ruiz R., Colomer F., Marvel K.B., Bujarrabal V., Alcolea J., Diamond P.J., Boboltz D., Kemball A.J. 221

2mm Wavelength VLBI of SiO Masers and AGN
Doeleman S.S., Phillips R.B., Rogers A.E.E., Attridge J.A., Titus M.A., Smythe D., Cappallo R., Buretta T., Whitney A.R., Krichbaum T.P., Graham D.A., Alef W., Polatidis A.G., Bach U., Witzel A., Zensus J.A., Greve A., Grewing M., Freund R., Strittmatter P., Ziurys L., Wilson T.L., Fagg H., Gay G. 223

The 43 GHz SiO maser emission around the Mira variable TX Cam. 62 epoch movie of the v=1, J=1→0 transition.
Gonidakis I., Diamond P.J., Kemball A.J. 227

Simultaneous 3mm and 7mm Observations of SiO Masers Around R Cassiopeiae: The Maser Line Ratios
Phillips R.B., Straughn A.H., Lonsdale C.J., Doeleman S.S. 231

Multi-epoch VLBA observations of 7 mm SiO masers
Yi J., Booth R.S., Conway J.E. 235

The life and death of stars

How is really decelerating the expansion of SN1993J ?
Marcaide J.M., Alberdi A., Pérez-Torres M.A., Guirado J.C., Lara L., Ros E., Diamond P.J., Mantovani F., Shapiro I.I., Weiler K.W., Preston R.A., Schilizzi R.T., Sramek R.A., Trigilio C., Van Dyk S.D., Whitney A.R. . 239

5-GHz Global VLBI Observations of SN 1986J in NGC 891
Pérez-Torres M.A., Alberdi A., Marcaide J.M., Guirado J.C., Lara L., Mantovani F., Ros E., Weiler K.W. 243

Pulsar VLBI observations
Rodin A.E., Sekido M. 247

Research for interstellar scattering of pulsar B0329+54 with VLBI
Semenkov K.V., Popov M.V., Soglasnov V.A. 251

Searching for very low mass objects around nearby dMe radio stars
Guirado J.C., Ros E., Jones D.L., Alef W., Marcaide J.M., Preston R.A. 255

MERLIN and Global VLBI Observations of θ^1 Orionis A
Garrington S.T., van Langevelde H.J., Campbell R.M., Gunn A. 259

The Equatorial Outflow of SS433
Paragi Z., Fejes I., Vermeulen R.C., Schilizzi R.T., Spencer R.E., Stirling A.M. 263

Are Ultra Luminous X-ray Sources Microblazars ?
Körding E., Falcke H., Markoff S. 267

EVN+MERLIN observations of microquasar candidates
Ribó M., Ros E., Paredes J.M., Massi M., Martí J. 271

Investigation of magnetic loop structures in the corona of UX Arietis
Massi M., Ros E. 275

EVN and MERLIN confirmation of the LS 5039 jets
Paredes J.M., Ribó M., Ros E., Martí J., Massi M. 277

Sub-arcsecond Jets in the High-Mass X-ray Binary LS I +61°303
Massi M., Ribó M., Paredes J.M., Peracaula M., Martí J., Garrington S.T. 279