

VLBA Utilization Report December 1998

Progm	Observer	Affiliation	Program Title	Stns	Bands cm	Observing Date	Sched Hours
BB101	Bower, G.C. Backer, D.C.	MPIFR Calif.-Berkeley	Gamma ray blazar NRAO 530		0.7, 1.3, 3.6	1	8.0
BC085	Charlot, P. Sol, H.	Bordeaux Paris Obs.	Multi-frequency monitoring of BL Lac object OJ287		1.3, 3.6, 6	12	10.0
BC087	Carilli, C. Menten, K. Reid, M.	NRAO-Socorro MPIFR CfA	Imaging the HC3N absorption in 1830-211		1.3, 2 With phased VLA	27	8.0
BD046	Diamond, P.J. Kemball, A.J. Boboltz, D.A.	NRAO-Socorro NRAO-Socorro USNO	Monitoring SiO masers through a cycle of Mira TX Cam		0.7 With VLA single antenna	6, 23	16.0
BF044	Falcke, H. Bower, G.C. Zensus, J.A. Aller, M. Aller, H.D. Terasranta, H.	MPIFR MPIFR MPIFR Michigan Michigan Metsahovi	Extremely variable spiral galaxy III Zw 2		0.7, 2	12	8.0
BF047	Fiebig, D. Diamond, P.J.	Heidelberg NRAO-Socorro	Polarization observations of circumstellar H2O masers		1.3	13	24.0
BG073	Gomez, J.L. Marscher, A.P. Alberdi, A.	IAA, Granada Boston IAA, Granada	3C 120 rapid variations		0.7, 1.3	3	12.0
BG077	Gurvits, L.I. Kellermann, K.I. Fomalont, E.B.	JIVE NRAO-CV NRAO-CV	Resolution matching survey of VSOP survey sources		2	5	24.0
BJ027	Johnston, K. Fey, A. Gaume, R. Eubanks, M. Kingham, K. Clark, T. Ma, C. Ryan, J. Vandenberg, N. Himwich, E. Shaffer, D. Gordon, D. Fomalont, E. Walker, C.	USNO USNO USNO USNO NASA-GFSC NASA-GSFC NASA-GSFC NVI-GSFC NVI-GSFC Radiometrics Hughes-GSFC NRAO-CV NRAO-Socorro	VLBA Geodesy/Astrometry observations for 1998		3.6 Scheduled as RDV12	21	25.0
BK061	Kameno, S. Wajima, K. Imai, M. Inoue, M.	NAO-Nobeyama Ibaraki NAO-Mitaka NAO-Nobeyama	Multi-frequency VSOP and VLBA survey for GPS sources		2, 3.6	15	24.0
BK062	Kukula, M.J. Ghosh, T. Pedlar, A. Baum, S. O'Dea, C. Xu, C.	STScI Arecibo Jodrell Bank STScI STScI Maryland	Detailed study of the radio jets in Seyfert 2 galaxy Mrk 3		3.6, 6, 18 With phased VLA	18	10.0
BL072	Lobanov, A.P. Vermeulen, R.C. Kellermann, K.I. Zensus, J.A.	MPIFR NFRA NRAO-CV MPIFR	Imaging the sub-parsec scale jets of NGC 1052		0.7, 1.3, 3.6	28	12.0
BM095	Marscher, A.P. Cawthorne, T.V. Gear, W.K. Stevens, J.A. Marchenko, S.G. Yurchenko, A.V. Gabuzda, D.C. Lister, M.L. Forster, J.R.	Boston Lancashire MRAO MRAO St. Petersburg St. Petersburg Lebedev JPL Calif.-Berkeley	Monitoring bright AGNs at 7mm		0.7	10	24.0
BM106	Mutel, R.L. Molnar, L.A.	Iowa Iowa	Astrometric mapping of HR 1099: test of polar emission model		3.6 With phased VLA	27, 31	13.5
BM107	Moscadelli, L. Menten, K.M. Patnaik, A. Reid, M.J.	MPIFR MPIFR MPIFR CfA	Proper motion of 12 GHz methanol masers in W3 (OH)		2	26	16.0
BM110	Mutel, R.L. Denn, G.R.	Iowa Iowa	Monitoring BL Lac		0.7, 1.3, 2	20	14.0

VLBA Utilization Report December 1998

Progm	Observer	Affiliation	Program Title	Stns	Bands cm	Observing Date	Sched Hours
BM112	Moran, J.M. Greenhill, L.J. Herrnstein, J.R. Diamond, P.J. Bragg, A. Trotter, A.S. Henkel, C.	CfA CfA NRAO-Socorro NRAO-Socorro Harvard CfA MPIFR	Next generation study of NGC 4258 accretion disk physics		1.3	24	12.0
BT038	Tingay, S.J. Preston, R.A. Jones, D.L. Murphy, D.W. Meier, D.L. Jauncey, D.L. Tzioumis, A.K. Reynolds, J.E.	JPL JPL JPL JPL JPL ATNF ATNF ATNF	Monitoring of Centaurus A, the closest active radio galaxy		3.6	19	8.0
GB033	Bartel, N. Rupen, M.P. Bietenholz, M.F. Beasley, A.J. Conway, J. Altunin, V. Graham, D. Venturi, T. Umara, G.	York NRAO-Socorro York NRAO-CV Onsala JPL MPIFR Bologna Noto	VLBI imaging of Supernova 1993J in M81		3.6, 6, 18 With Y27, EbRoGo McOn	7	12.5
GG038	Giovannini, G. Feretti, L. Venturi, T. Cotton, W.D. Lara, L. Taylor, G.B.	Bologna Bologna Bologna NRAO-CV IAA, Andalucia NRAO-Socorro	Symmetrically expanding FRI radio galaxy 3C338		2, 3.6 With phased VLA	2	11.0
	Staff	NRAO	Combined Millimeter VLBI Array VLA-PT real-time link tests Maintenance Pointing and other non-tape activities Resting-Comp. for observing at high bitrate Software	P	0.3	8, 9 1, 2, 18	64.0 10.0 109.5 8.0 10.5 24.0

The average downtime was 18 hours (5.0%)

Actual observing time was 342.0 hours

The VLBA was scheduled 79% of the time 562.0 hours of a possible (708 hours)

Astronomical Observations = 51% (360.0 hours)  
 Tests and Calibrations = 17% (123.0 hours)  
 Maintenance = 11% ( 79.0 hours)

Total Number of astronomical programs was 20

## VLBA Utilization Report November 1998

Progm	Observer	Affiliation	Program Title	Stns	Bands cm	Observing Date	Sched Hours
BB103	Blundell, K. Close, L. Leahy, P.	Oxford Oxford Jodrell Bank	Low frequency study of hotspots in powerful radio sources		90  8	8	24.0
BC086	Campbell, D. Black, G. Butler, B. Ostro, S.	Cornell Cornell NRAO-Socorro JPL	VLBA radar observations of Asteroid 1996 FG3			21	3.5
BC089	Claussen, M.J. Wootten, A. Marvel, K.B. Wilking, B.A.	NRAO-Socorro NRAO-CV Caltech Missouri	Proper motions of water masers in NGC 1333		1.3	14	10.0
BD046	Diamond, P.J. Kemball, A.J. Boboltz, D.A.	NRAO-Socorro NRAO-Socorro Haystack	Monitoring SiO masers through a cycle of Mira TX Cam		0.7	17	8.0
BD055	Doeleman, S. Barvainis, R. Lonsdale, C. Greenhill, L. Phillips, R.	Haystack Haystack Haystack CfA Haystack	SiO masers in Orion Nebula		0.7	2	10.0
BF043	Fey, A. Gaume, R. Eubanks, M. Johnston, K. Ma, C.	USNO USNO USNO USNO NASA-GSFC	Southern hemisphere astrometry for the celestial reference frame	FNS	3.6	2	25.0
BF046	Fomalont, E.B. Briskin, W.F. Benson, J. Beasley, A. Goss, M.	NRAO-CV NRAO/Princeton NRAO-Socorro NRAO-CV NRAO-Socorro	VLBA Pulsar astrometry of B0950+08		18	15	12.0
BH050	Hirofani, K. Wajima, K. Iguchi, S. Sato, S. Kimura, M. Imai, M. Asaki, Y. Fujisawa, K. Horiuchi, S. Kameno, S. Hirabayashi, H.	NAO ISAS NAO NAO NAO NAO NAO ISAS NAO NAO ISAS	The pc scale jet of 2021+614		1.3, 2, 3.6, 6, 18	6	14.0
BI010	Imai, H. Sasao, T. Kameya, O. Miyoshi, M. Horiuchi, S. Asaki, Y. Deguchi, S.	NAO NAO NAO NAO NAO NAO NAO	Water masers in W3 IRS 5		1.3	21	10.0
BK052	Kellermann, K. Zensus, J.A. Vermeulen, R. Cohen, M.	NRAO-CV MPIfR NFRA Caltech	Kinematics of quasars and AGN		2	1	24.0
BL066	Lobanov, A.P. Krichbaum, T.P. Kraus, A. Witzel, A. Otterbein, K.	MPIfR MPIfR MPIfR MPIfR Heidelberg	0836+710 jet kinematics related to the broad band activity		0.7, 1.3, 3.6	22	15.0
BM104	Minier, V. Booth, R. Conway, J. Phillips, C.	Onsala Onsala Onsala JIVE	12.2 GHz methanol masers in star forming regions		2	14	12.0
BM112	Moran, J.M. Greenhill, L.J. Herrnstein, J.R. Diamond, P.J. Bragg, A. Trotter, A.S. Henkel, C.	CfA CfA NRAO-Socorro NRAO-Socorro Harvard CfA MPIfR	Next generation study of NGC 4258 accretion disk physics		1.3	16	12.0
BP048	Perlman, E.S. Carilli, C. Minter, A. Langston, G. Ghigo, F. Stoeke, J. Conway, J.	STScI NRAO-Socorro NRAO-GB NRAO-GB NRAO-GB Colorado Onsala	Monitoring PKS 1413+135		0.7, 1.3, 2, 3.6	7	11.0

## VLBA Utilization Report November 1998

Progm	Observer	Affiliation	Program Title	Stns	Bands cm	Observing Date	Sched Hours
BR057	Roberts, D.H. Moellenbrock, G.A. Wardle, J.F.C. Gabuzda, D.C. Brown, L.F.	Brandeis ISAS/Brandeis Brandeis Lebedev Connecticut	Four 3C quasars with VSOP observations		0.7, 1.3, 2, 3.6	23	12.0
BS044	Satoh, S. Inoue, M. Nakai, N. Shibata, K.M. Migenes, V. Kameno, S. Fujisawa, K.	NAO NAO NAO NAO Guanajuato NAO ISAS	Monitoring of the continuum and H2O maser emission in NGC 3079		1.3, 2, 3.6	18	12.0
BW042	White, S. Beasley, T. Lim, J.	Maryland NRAO-CV Academia Sinica	An active giant star: Lambda Andromedae		3.6	27	6.0
GB031	Browne, I.W.A. Jackson, N.J.F. Wilkinson, P.N. Marlow, D.R. Garrett, M.A. Fassnacht, C.J. de Bruyn, A.G. Koopmans, L. Myers, S.	Jodrell Bank Jodrell Bank Jodrell Bank Jodrell Bank JIVE Caltech NFRA Groningen Pennsylvania	Structure of gravitational lens system 1933+503		18 With EVN	27	9.0
GB033	Bartel, N. Rupen, M.P. Bietenholz, M.F. Beasley, A.J. Conway, J. Altunin, V. Graham, D. Venturi, T. Umana, G.	York NRAO-Socorro York NRAO-Socorro Onsala JPL MPIFR Bologna Noto	VLBI imaging of Supernova 1993J in M81		3.6, 6, 18 with EVN	20	11.0
GC021	Campbell, R.M. deBruyn, A.G. Vermeulen, R.C. Galama, T. van den Heuvel, E.P. Verbunt, F. Lestrade, J.F. Schilizzi, R.T.	NFRA NFRA NFRA Amsterdam Amsterdam Utrecht Meudon JIVE	Pulsar parallax and proper motion determination		18 Correlation in Bonn	28, 29	20.0
GM035	Marcaide, J.M. Perez-Torres, M.A. Guirado, J.C. Alberdi, A. Ros, E. Diamond, P.J. Shapiro, I.I. Preston, R.A. Schilizzi, R.T. Mantovani, F. Trigilio, C. Van Dyk, S. Weiler, K.W. Sramek, R.A. Whitney, A.R.	Valencia Valencia Valencia IAA, Granada MPIFR NRAO CfA JPL JIVE Bologna Noto UCLA NRL NRAO-Socorro Haystack	Monitoring of the expansion of SN 1993J at 6 and 18cm		6, 18 With EVN	23, 30	22.5
GP018	Pedlar, A. Muxlow, T.W.B. Wills, K.A. Diamond, P.J. Wilkinson, P.N. Garrett, M. Alef, W.	Jodrell Bank Jodrell Bank Jodrell Bank NRAO Jodrell Bank JIVE MPIFR	Global VLBI observations of compact supernova remnants in M82		6, 18 With EVN	28	12.0
V026	Walker, R.C.	NRAO-Socorro	3C120 structure from 0.1 to 250 pc		6, 18 with EVN, GoRo, AtUdSh	19, 27	23.0
V032	Guirado, J.C.	Valencia	Quasar phase-reference mapping and astrometry with VSOP: 1342+662		6 with Gb	13	11.0
V053	Witzel, A.	MPIFR	Polarization variability of intraday variable sources: 0954+658		6 with Eb	9	7.5
V063	Bartel, N.	York	Core-jet in the nearby spiral galaxy M81		6, 18 with EVN, Ro, Go	21, 29	19.5

VLBA Utilization Report November 1998

Progm	Observer	Affiliation	Program Title	Stns	Bands cm	Observing Date	Sched Hours
V078	Charlot, P.	Bordeaux	Monitoring of the BL Lac object OJ287		18 with phased VLA	12	13.0
W014	Ulvestad, J.S. Vestrand, W.T. Stacy, J.G. Biretta, J.A.	NRAO-Socorro New Hampshire New Hampshire STScI	Flaring CGRO Blazar 2255-282		6	22	8.0
W041	Alberdi, A. Gomez, J.L. Marcaide, J.M. Perez-Torres, M.A. Marscher, A.P. Lobanov, A.	IAA, Granada IAA, Granada Valencia Valencia Boston MPIfR	Polarimetric observations of 4C39.25		6 With phased VLA	25	12.0
W058	King, E.A. Jauncey, D. Reynolds, J. Tzioumis, A. McCulloch, P.M. Costa, M.E. Lovell, J.E.J. Preston, R. Murphy, D.	ATNF ATNF ATNF ATNF Tasmania Tasmania ISAS JPL JPL	Imaging of strong GPS Sources: J2136+00		6 with At, Ud, Sh	19	8.0
	Staff	NRAO	Combined millimeter VLBI array Maintenance Pointing and other non-tape activities Tests on VLA-PT real-time interferometer Resting-Comp. for observing at high bitrat Software Thanksgiving Holiday	P		2 9, 15 20, 25, 30 19 26	97.0 78.0 9.0 15.5 52.5 6.0 24.0

The average downtime was 10.3 hours (2.6%)

Actual observing time was 359.2 hours

The VLBA was scheduled 77% of the time 527.5 hours of a possible  
(696 hours)

Astronomical Observations = 57% (396.5 hours)

Tests and Calibrations = 11% ( 74.5 hours)

Maintenance = 9% ( 57.0 hours)

Total Number of astronomical programs was 30

VLBA Utilization Report October 1998

Prog#	Observer	Affiliation	Program Title	Stns	Bands cm	Observing Date	Sched Hours
BA029	Alberdi, A. Gomez, J.L. Marcaide, J.M. Perez-Torres, M. Marscher, A.P.	IAA, Granada IAA, Granada Valencia Valencia Boston	Superluminal source 4C39.25		0.7, 1.3, 2	25	14.0
BC088	Chatterjee, S. Cordes, J. Arzoumanian, Z. Goss, M. Beasley, T. Benson, J. Lazio, T.J. Xilouris, K.	NRAO/Cornell Cornell Cornell NRAO-Socorro NRAO-CV NRAO-Socorro NRL NAIC	Neutron star kinematics: gated VLBA pulsar astronomy		18	11, 17	14.0
BC089	Claussen, M.J. Wootten, A. Marvel, K.B. Wilking, B.A.	NRAO-Socorro NRAO-CV Caltech Missouri	Proper motions of water masers in NGC 1333		1.3 With VLA single antenna	4, 27	20.0
BD050	Diamond, P.J. Lonsdale, C.J. Lonsdale, C.J. Smith, H.E.	NRAO-Socorro Haystack Caltech-IPAC Calif.-San Diego	VLBA Observations of two Southern OH Megamaser galaxies		18 With phased VLA	12	18.0
BD053	Desai, K. Fey, A.	NRAO-Socorro USNO	Scatter broadened image of 2023+336		2, 3.6, 6	2	10.0
BD054	Desai, K.M. Fey, A.L.	NRAO-Socorro USNO	Search for anisotropic scattering in the ISM		6, 18	9	10.0
BE017	Engels, D. Winnberg, A. Yie, J.	Hamburg Onsala Onsala	Structure of H2O masers in OH/IR stars		1.3 With VLA single antenna	8	9.0
BF042	Faison, M.D. Goss, M. Diamond, P.J. Taylor, G.B.	NRAO/Wisconsin NRAO-Socorro NRAO-Socorro NRAO-Socorro	Imaging small scale galactic HI structure		18 With phased VLA	12, 22	24.0
BG081	Gurvits, L.I. Schilizzi, R.T. Frey, S. Kellermann, K.I.	JIVE JIVE FOMISGO NRAO-CV	The most distant quasars		6 With Eb	3	16.0
BH051	Hough, D.H. Vermeulen, R.C. Readhead, A.C.S.	Trinity NFRA Caltech	Lobe-dominated quasars: 3C 9, 3C 14, 3C 432 and 4C16.49		3.6	7, 23	22.0
BH052	Hough, D.H. Readhead, A.C.S.	Trinity Caltech	Second epoch imaging of lobe dominated quasars 3C270.1 and 3C275.1		2, 3.6	31	12.0
BJ027	Johnston, K. Fey, A. Gaume, R. Eubanks, M. Kingham, K. Clark, T. Ma, C. Ryan, J. Vandenberg, N. Himwich, E. Shaffer, D. Gordon, D. Fomalont, E. Walker, C.	USNO USNO USNO USNO NASA-GSFC NASA-GSFC NASA-GSFC NVI-GSFC NVI-GSFC Radiometrics Hughes-GSFC NRAO-CV NRAO-Socorro	VLBA Geodesy/Astrometry observations for 1998		3.6 Scheduled as RDV11	1	25.0
BK052	Kellermann, K. Zensus, J.A. Vermeulen, R. Cohen, M.	NRAO-CV MPIfR NFRA Caltech	Kinematics of quasars and AGN		2	30	24.0
BL038	Lestrade, J.F. Phillips, R.B. Jones, D.I. Preston, R.A.	Meudon Haystack JPL JPL	Search for extra solar planets by VLBI astrometry		3.6 With phased VLA	16, 20, 23	18.0
BL068	Lane, W. Briggs, F.	Groningen Groningen	Two low redshift HI 21cm systems towards B0738+313		18 w/Wb	8	8.0
BM095	Marscher, A.P. Cawthorne, T.V. Gear, W.K. Stevens, J.A. Marchenko, S.G. Yurchenko, A.V. Gabuzda, D.C. Lister, M.L. Forster, J.R.	Boston Lancashire MRAO MRAO St. Petersburg St. Petersburg Lebedev Boston Calif.-Berkeley	Monitoring bright AGNs at 7mm		0.7	5	24.0

VLBA Utilization Report October 1998

Progm	Observer	Affiliation	Program Title	Stns	Bands cm	Observing Date	Sched Hours
BM099	Miyoshi, M. Imai, H. Ukita, N. Diamond, P.J. Hagiwara, Y. Morimoto, M.	NAO-Mizuzawa NAO-Mizusawa NAO-Nobeyama NRAO Graduate University Kogoshima	Astrometry with different transitions of SiO masers		0.7 With VLA single antenna	24	8.0
BM112	Moran, J.M. Greenhill, L.J. Herrnstein, J.R. Diamond, P.J. Bragg, A. Trotter, A.S. Henkel, C.	Cfa Cfa NRAO-Socorro NRAO Harvard Cfa MPIfr	Next generation study of NGC 425B accretion disk physics		1.3	18	12.0
BR052	Reid, M.J. Eubanks, M.	Cfa USNO	Trigonometric parallax to Sgr A*		0.7	10, 14, 16	33.0
BR065	Rupen, M. Hjellming, R.M. Mioduszewski, A.J.	NRAO-Socorro NRAO-Socorro JIVE/NRAO-Socorro	Observations of Galactic Jet Source XTE 1748-288		2	22	7
BS067	Schilizzi, R.T. de Bruyn, A.G. Snellen, I. Tschager, W. Miley, G.K. Rottgering, H. van Langevelde, H.J. Fanti, C. Fanti, R.	JIVE NFRA Cambridge Leiden Leiden Leiden JIVE Bologna Bologna	GPS galaxies and quasars: matched beam observations of HALCA objects		2 With Eb	9	14.0
BW041	Wilson, A.S. Ulvestad, J.S. Mundell, C. Roy, A. Staff	Maryland NRAO-Socorro Maryland NRAO-Socorro NRAO	Free-free absorption in megamaser galaxies  Maintenance Pointing and other non-tape activities Resting-Comp. for observing at high bitrate Software		2, 6, 18	6	8.0 123.5 18.5 57.0 15.0

The average downtime was 2.0%

Actual observing time was 367.0 hours

The VLBA was scheduled 85% of the time 641.5 hours of a possible  
(744 hours)

Astronomical Observations = 50% (374.5 hours)  
Tests and Calibrations = 23% (175.0 hours)  
Maintenance = 12% (92.0 hours)

Total Number of astronomical programs was 22

VLBA Utilization Report August 1998

Progm	Observer	Affiliation	Program Title	Stns	Bands cm	Observing Date	Sched Hours
BA030	Attridge, J.M. Roberts, D.H. Wardle, J.F.C.	Brandeis Brandeis Brandeis	Blazar 1055+018		2, 3.6, 6, 18	30	12.0
BB082	Blundell, K. Rawlings, S. Beasley, T.	Oxford Oxford NRAO-CV	Gravitational lens candidates		18	4	5.5
BB094	Boboltz, D.A. Marvel, K.B.	Haystack Caltech	Observations of the 43-GHz SiO masers towards NML cyg		0.7	23	8.0
BB097	Bradshaw, C. Geldzahler, B. Fomalont, E.B.	George Mason George Mason NRAO-CV	Radio Parallax of Sco X-1		6, 18	29	6.0
BC070	Charlot, P. Sol, H. Vicente, L.	Bordeaux Meudon Meudon	Multi-frequency monitoring of BL Lac object OJ287		1.3, 3.6, 6	7	8.0
BD046	Diamond, P.J. Kemball, A.J. Boboltz, D.A.	NRAO-Socorro NRAO-Socorro Haystack	Monitoring SiO masers through a cycle of Mira TX Cam		0.7 with VLA single antenna	9, 23	16.0
BF038	Falcke, H. Antonucci, R. Ulvestad, J. Barvainis, R. Krichbaum, T. Wilson, A.	MPIfR Calif.-Santa Barbara NRAO-Socorro Haystack MPIfR Maryland	Compact Seyfert galaxy Mrk 1210		18	6	10.0
BG073	Gomez, J.L. Marscher, A.P. Alberdi, A.	IAA, Andalucia Boston IAA, Andalucia	3C 120 rapid variations		0.7, 1.3	13	12.0
BH048	Herrnstein, J. Greenhill, L. Beasley, A. Loeb, A. Moran, J. Braatz, J.	NRAO-Socorro CfA NRAO-CV CfA CfA CfA	Search for very high redshift water maser emission		2, 3.6, 6	27	24.0
BI008	Imai, H. Shibata, K.M. Migenes, V. Inoue, M. Sasao, T. Miyoshi, M. Murata, Y. Marvel, K.B. Diamond, P.J.	NAO-Mizusawa NAO-Mitaka Guanajuato NAO-Nobeyama NAO-Mizusawa NAO-Mitzuzawa ISAS Caltech NRAO-Socorro	Monitoring of stellar water masers with the VLBA		1.3	1	4.0
BJ027	Johnston, K. Fey, A. Gaume, R. Eubanks, M. Kingham, K. Clark, T. Ma, C. Ryan, J. Vandenberg, N. Himwich, E. Shaffer, D. Gordon, D. Fomalont, E. Walker, C.	USNO USNO USNO USNO NASA-GFSC NASA-GSFC NASA-GSFC NVI-GSFC NVI-GSFC Radiometrics Hughes-GSFC NRAO-CV NRAO-Socorro	VLBA Geodesy/Astrometry observations for 1998		3.6 Scheduled as RDV10	10	25.0
BL038	Lestrade, J.F. Phillips, R.B. Jones, D.I. Preston, R.A.	Meudon Haystack JPL JPL	Search for extra solar planets by VLBI astrometry		3.6 with phased VLA	14	6.5
BL058	Lonsdale, C. Diamond, P. Smith, H. Lonsdale, C.	Haystack NRAO-Socorro Calif.-San Diego Caltech-IPAC	Radio supernovae in OH megamaser galaxy Arp220		3.6, 6, 18 with phased VLA	15	11.0
BM095	Marscher, A.P. Cawthorne, T.V. Gear, W.K. Stevens, J.A. Marchenko, S.G. Yurchenko, A.V. Gabuzda, D.C. Lister, M.L. Forster, J.R.	Boston Lancashire MRAO MRAO St. Petersburg St. Petersburg Lebedev Boston Calif.-Berkeley	Monitoring bright AGNs at 7mm		0.7	1	20.0



## VLBA Utilization Report August 1998

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BR053	Ratner, M.I. Bartel, N. Lebach, D.E. Lestrade, J-F. Shapiro, I.I.	CFA York CFA Meudon CFA	Astrometry of HR 8703 in 1998 for the gravity probe-b mission		3.6 with Ro, Go, Eb, Y27	8	18.5
BS060	Stirling, A. Spencer, R. Garrett, M. McKay, D. Fender, R. Ogley, R.	Jodrell Bank Jodrell Bank JIVE Jodrell Bank Sussex Open Univ.	Confirmation of milliarsecond scale radio jets in Cygnus X-1		2, 3.6 with phased VLA	10, 12, 14	15.5
BS065	Sasao, T. Miyoshi, M. Manabe, S. Kameya, O. Asaki, Y. Imai, H. Mochizuki, N. Omodaka, T. Yasuda, S. Okudaira, A.	NAO-Mizusawa NAO-Mitzuzawa NAO NAO-Mizusawa NAO NAO-Mizusawa Graduate University Kagoshima Kagoshima Kagoshima Keizai	Towards determination of outer rotation curve of the Milky Way Galaxy		1.3	7	10.0
BT034	Taylor, G. Beasley, T. Frail, D. Kulkarni, S.	NRAO-Socorro NRAO-CV NRAO-Socorro Caltech	VLBA observations of gamma ray bursters		3.6	2	5.5
BT038	Tingay, S.J. Preston, R.A. Jones, D.L. Murphy, D.W. Meier, D.L. Jauncey, D.L. Tzioumis, A.K. Reynolds, J.E.	JPL JPL JPL JPL JPL ATNF ATNF ATNF	Monitoring of Centaurus A, the closest active radio galaxy		3.6	8	8.0
BT039	Taylor, G.	NRAO-Socorro	Investigating extreme Faraday rotation measures in quasar cores		2, 3.6, 6	3	12.0
BW041	Wilson, A.S. Ulvestad, J.S. Mundell, C. Roy, A.	Maryland NRAO-Socorro Maryland NRAO-Socorro	Free-free absorption in megamaser galaxies		2, 6, 18	25	8.0
V015	Vestrand, W.T.	New Hampshire	Two epoch mapping of three variable CGRO blazars: 1633+382		6 polariz.w/ phased VLA	4	14.0
V021	Minter, A.	NRAO-GB	Orbiting VLBI observations of the pulsar 0329+54		18 with Ro, Go, Gb	22	12.0
V030	Preston, R.A.	JPL	Pearson-Readhead survey from space: 0133+476, 0153+744		6	12, 18	18.0
V044	Alef, W.	MPIFR	SVLBI of the nearby broad line radio galaxy 3C390.3		6 with Eb	5	14.0
V050	Kollgaard, R.I.	Fermilab	X-ray selected BL Lacertae objects: 2155-304	FMO	18 correlated in Mitaka	21	7.0
V057	Gabuzda, D.	Lebedev	Polarization monitoring of 4 BL lacertae objects: 2007+777		18 polariz. w/Ro, Go	16	15.0
V061	Romney, J.D.	NRAO-Socorro	Core of 3C84		18 with Ro, Go	26, 31	28.0
V064	Zensus, J.A.	MPIFR	Physics of the jet in quasar 3C345 at light year resolution		18 polariz. w/Eb, Y27	28	11.0
V077	Booth, R.	Onsala	W30H Observation		18, Y27	23, 24	12.5
V112	Reynolds, J.	ATNF	Nearby lobe-dominated radiogalaxies: Pictor A	M	6 correlated in Mitaka	14	6.5
V118	Iguchi, S.	NAO	BL lac object OT081 = 1749+096		6	20	9.0
V129	Inoue, M.	NAO-Nobeyama	Obscuring system in 3C84		6 with phased VLA	25	14.0
	Staff	NRAO	Maintenance Pointing and other non-tape activities Resting-comp.for observing at high bitrate Software				245.5 29.0 104.5 16.0

The average downtime was 3.0%  
Actual observing time was 393.5 hours  
The VLBA was scheduled 85% of the time 405.5 hours of a possible  
744 hours)  
Astronomical Observations = 55% (405.5 hours)  
Tests and Calibrations = 12% ( 88.5 hours)  
Maintenance = 18% (135.0 hours)  
Total Number of astronomical programs was 33

**Subject: Monthly Stats for August, 1998 - Part II.**

**Date:** Tue, 1 Sep 1998 18:22:19 -0600

**From:** "Phillip D. Hicks" <phicks@arana.aoc.NRAO.EDU>

**To:** lappel@arana.aoc.NRAO.EDU

**CC:** phicks@zia.aoc.NRAO.EDU

Progm	Observer	Obs. Date	Sch.Hrs	With
aa231			5.1	
ab863	becker, r.h.	30-Aug	0.4	
ab870				move/op
ab876			9.9	bd46
ab878			3.9	
ab879		3, 6, 8-12, 14, 16, 18, 21, 22, 24, 26, 29, 30	131.8	
ac507				bb82
adhoc	dhawan, v.	5-Aug	0.5	
adhoc	hjeilming, r.m.	5, 13, 26	3.1	
adhoc	desai, k.	24-Aug	0.9	
adhoc	saxton, r.	27-Aug	3.1	
af337			9.2	
af340		2, 5, 8, 14, 18, 20, 23, 25, 27, 30	10.5	
ag539				bb94
ah628		4, 8, 22, 24, 28, 29	9.7	bb94
ak452	*** not observed ***			
ak456		2, 6, 10, 21, 27	11.5	
as568			1.5	
as637			11.9	
at211			10.2	
ax4		3, 6, 11, 15, 20, 25, 31	7.0	
az106			1.2	
az107			36.6	
bb82		4-Aug	5.8	tests, ac507
bb94		22	10.0	
	ab879, ah628, bb94, ag539			
bd46		9, 15	9.5	ab876
bl38			6.1	

b158	10.8
br53	13.1
bs60	15.4
v129	13.2
v15	13.8
v64	10.1
v77	13.0

Phillip Hicks

National Radio Astronomy Observatory Socorro, New Mexico  
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"DOS computers, manufactured by million of companies, are  
by far the most popular, with about 70 million machines in  
use worldwide. Macintosh fans, on the other hand, may note  
that while cockroaches are far more numerous than humans,  
numbers alone do not denote a higher life form."

- The New York Times

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**Subject: Monthly Stats for August, 1998 - part 1.**

**Date:** Tue, 1 Sep 1998 17:40:52 -0600

**From:** "Phillip D. Hicks" <phicks@arana.aoc.NRAO.EDU>

**To:** lappel@arana.aoc.NRAO.EDU

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NRAO Staff	Maintenance	44.2
	Software	29.5
	General Test	42.9
	Operations	41.8
	Move/Operations	5.0
	Holiday	0.0
	Students	1.0

The average downtime for the month of August, 1998 was approximately 4.7 %.

The array was scheduled 100.0% (746.1 hours) of the time:

78.5% (585.6 hours) to astronomical programs,

11.6% (86.8 hours) to scheduled

test/calibration,

and the remaining 9.9% (73.7 hours) went to

scheduled maintenance.

The array was in the B config. from August 1 through August 31.

The total number of programs run for the month of August, 1998 was 59.

The following independant proposals shared simultaneous observing time (28.6 hours total simultaneous observing):

Projects	Hours	Projects	Hours
ab870/move/op	5.0		
ab876/bd46	8.0		
ab879/bb94	2.1		
ac507/bb82	4.7		
ag539/bb94	1.9		
ah628/bb94	2.0		
bb94/bb94	2.0		
tests/bb82	1.1		
tests/v64	1.8		

Phillip Hicks

## VLBA Utilization Report July 1998

Progm	Observer	Affiliation	Program Title	Stns	Bands cm	Observing Date	Sched Hours
BA034	Aaron, S. Lobanov, A. Ros, E. Wardle, J. Roberts, D.	MPIfR MPIfR MPIfR Brandeis Brandeis	Jet Opacity and properties of the BLR in 3C309.1		0.7, 1.3, 2, 3.6, 6, 18	19, 23	24.0
BC082	Cordes, J. Lazio, T.J.W. Spangler, S.R. Rickett, B.J. Hankins, T.H. Frail, D. Chatterjee, S. McLaughlin, M.	Cornell NRL Iowa Calif.-San Diego NMIMT NRAO-Socorro Cornell Cornell	Multistation dynamic spectra of pulsars		90 With phased VLA	24	6.0
BC083	Carilli, C. Perlman, E. Stocke, J. Conway, J.	NRAO-Socorro STScI Colorado Onsala	The HI absorbing cloud at z=0.2467 in PKS 1413+135		18	8	12.0
BD046	Diamond, P.J. Kemball, A.J. Boboltz, D.A.	NRAO/Jodrell Bank NRAO-Socorro Haystack	Monitoring SiO masers through a cycle of Mira TX Cam		0.7 With VLA single antenna	3, 23	16.0
BG073	Gomez, J.L. Marscher, A.P. Alberdi, A.	IAA, Granada Boston IAA, Granada	3C 120 rapid variations		0.7, 1.3	11	12.0
BH041	Harris, D.E. Silverman, J.D. Junor, W.	Cfa Cfa New Mexico	26W20, a radio/X-ray galaxy with no emission lines		18	10	10.0
BI008	Imai, H. Shibata, K.M. Migenes, V. Inoue, M. Sasao, T. Miyoshi, M. Murata, Y. Marvel, K.B. Diamond, P.J.	Tohoku NAO Guanajuato NAO-Nobeyama NAO-Mizusawa NAO-Mitzuzawa ISAS Caltech NRAO/Jodrell Bank	Monitoring of stellar water masers with the VLBA		1.3	12	4.0
BL066	Lobanov, A.P. Krichbaum, T.P. Kraus, A. Witzel, A. Otterbein, K.	MPIfR MPIfR MPIfR MPIfR Heidelberg	0836+710 jet kinematics related to the broad band activity		0.7, 1.3, 3.6	6	15.0
BL067	Lazio, J. Cordes, J.	NRL Cornell	G359.28-0.92, the Mouse			2	2.0
BM095	Marscher, A.P. Cawthorne, T.V. Gear, W.K. Stevens, J.A. Marchenko, S.G. Yurchenko, A.V. Gabuzda, D.C. Lister, M.L. Forster, J.R.	Boston Lancashire MRAO MRAO St. Petersburg St. Petersburg Lebedev Boston Calif.-Berkeley	Monitoring bright AGNs at 7mm		0.7	31	4.0
BM097	Migenes, V. Slysh, S. Fomalont, E. Horiuchi, S. Ludke, E. Altunin, V.	Guanajuato Lebedev NRAO-CV NAO Santa Maria JPL	Survey of OH maser regions		18	1	10.0
BM100	Marcha, M. Bondi, M. Dallacasa, D. Stanghellini, C. Polatidis, A.	Lisbon Bologna Bologna Noto Onsala	Structure of low luminosity BL Lac objects and flat spectrum RGs		6	25	24.0
BR053	Ratner, M.I. Bartel, N. Lebach, D.E. Lestrade, J-F. Shapiro, I.I.	Cfa York Cfa Meudon Cfa	Astrometry of HR 8703 in 1998 for the gravity probe-b mission		3.6 with Phased VLA, DSN	12	18.0
BR058	Rupen, M. Mioduszewski, A. Hjellming, R.	NRAO-Socorro JIVE-Socorro NRAO-Socorro	The radio afterglow of CI Cam		18, 6, 3.6, 2 w/VLA single antenna	2	12.0

## VLBA Utilization Report July 1998

Progrm	Observer	Affiliation	Program Title	Stns	Bands cm	Observing Date	Sched Hours
BS065	Sasao, T. Miyoshi, M. Manabe, S. Kameya, O. Asaki, Y. Imai, H. Mochizuki, N. Omodaka, T. Yasuda, S. Okudaira, A.	NAO-Mizusawa NAO-Mitzuzawa NAO NAO-Mizusawa NAO Tohoku Graduate University Kagoshima Kagoshima Kagoshima Keizai	Towards determination of outer rotation curve of the Milky Way Galaxy		1.3	8	10.0
BV031	Vermeulen, R.C. Kellermann, K.I. Cohen, M.H. Zensus, J.A. van Langevelde, H.J.	NFRA NRAO-CV Caltech MPIFR JIVE	Kinematics of HI absorbing gas towards the nucleus of NGC 1052		3.6, 6, 18 With phased VLA, Eb	19, 31	25.5
V034	Murphy, D.W.	JPL	Continuous monitoring of 1928+739		6 With Eb, Gb	9	16.0
V047	Gurvits, L.I.	JIVE	Extremely high redshift quasars: 2126-158		6 With phased VLA	13	8.0
V053	Witzel, A.	MPIFR	Polarization variability of intraday variable sources: 1803+784		6 With phased VLA, Eb	21	9.0
V057	Gabuzda, D.	Lebedev	Polarization monitoring of 4 BL lacertae objects: 1803+784		18 With phased VLA, Ro, Go	20	10.0
V064	Zensus, J.A.	MPIFR	Physics of the jet in quasar 3C345 at light year resolution		6 With phased VLA, Eb	28	14.0
V083	Langston, G.	NRAO-GB	High frequency variables: 1413+135		6	29	9.0
V085	Schilizzi, R.T.	JIVE	GPS galaxies and quasars: 1404+286, 1550+582		6 With Eb	1, 2	13.0
V103	Slysh, V.I.	Lebedev	Non-scattered OH masers: Cep A		18 with Ro, Go	7	11.0
V116	Kedziora-Chudczer,	Sydney Univ	Intraday variable source PKS 0405-385		18 With Go, Ti, Hh, Ho, Sh, Mp, Mc	26, 27, 28	32.0
V125	Kameno, S.	NAO-Nobeyama	Distribution of spectral index in the CSS 3C380		6, 18 With phased VLA (18), Eb (6)	4, 5	31.0
	Staff	NRAO	Maintenance Pointing and other non-tape activities Resting - compensation for observing at hi Software			6, 11, 26	201.0 27.5 52.5 18.0

The average downtime was 3.0%

Actual observing time was 338.0 hours

The VLBA was scheduled 82% of the time (615 hours of a possible  
744 hours)

Astronomical Observations = 45% (338.0 hours)

Tests and Calibrations = 13% (95.0 hours)

Maintenance = 24% (182.0 hours)

Total Number of astronomical programs was 26

## VLBA Utilization Report June 1998

Progm	Observer	Affiliation	Program Title	Stns	Bands cm	Observing Date	Sched Hours
BB093	Baan, W.A. Hofner, P.	Westerbork Arecibo	Emission structure of OH megamasers		18	21	12.0
BD045	Dhawan, V. Kellermann, K.I. Romney, J.D.	NRAO-Socorro NRAO-CV NRAO-Socorro	Monitoring the accelerating, bent jet in 3C84 at 7mm		0.7 With VLA single antenna	26	14.0
BD046	Diamond, P.J. Kemball, A.J. Boboltz, D.A.	NRAO/Jodrell Bank NRAO-Socorro Haystack	Monitoring SiO masers through a cycle of Mira TX Cam		0.7 With VLA single antenna	6, 18	16.0
BE017	Engels, D. Winnberg, A. Yie, J.	Hamburg Onsala Onsala	Structure of H2O masers in OH/IR stars		1.3 With VLA single antenna	28	8.0
BF039	Falcke, H. Bower, G.C. Zensus, J.A. Aller, M. Aller, H.D. Terasranta, H.	MPIfR MPIfR MPIfR Michigan Michigan Metsahovi	Extremely variable spiral galaxy III Zw 2		0.7 with Eb	13	9.0
BG073	Gomez, J.L. Marscher, A.P. Alberdi, A.	IAA, Granada Boston IAA, Granada	3C 120 rapid variations		0.7, 1.3	11	12.0
BG077	Gurvits, L.I. Kellermann, K.I. Fomalont, E.B.	JIVE NRAO-CV NRAO-CV	Resolution matching survey of VSOP survey sources		2	5	24.0
BG079	Gabuzda, D.C. Kochenov, P. Cawthorne, T.V.	Lebedev Lebedev Lancashire	Polarization observations of extraordinary intraday variable 0716+714		3.6, 6, 18 With phased VLA	7	24.0
BI008	Imai, H. Shibata, K.M. Migenes, V. Inoue, M. Sasao, T. Miyoshi, M. Murata, Y. Marvel, K.B. Diamond, P.J.	Tohoku NAO Guanajuato NAO-Nobeyama NAO-Mizusawa NAO-Mitzuzawa ISAS Caltech NRAO/Jodrell Bank	Monitoring of stellar water masers with the VLBA		1.3	19	4.0
BJ027	Johnston, K. Fey, A. Gaume, R. Eubanks, M. Kingham, K. Clark, T. Ma, C. Ryan, J. Vandenberg, N. Himwich, E. Shaffer, D. Gordon, D. Fomalont, E. Walker, C.	USNO USNO USNO USNO USNO NASA-GSFC NASA-GSFC NASA-GSFC NVI-GSFC NVI-GSFC Radiometrics Hughes-GSFC NRAO-CV NRAO-Socorro	VLBA Geodesy/Astrometry observations for 1998		3.6 Scheduled as RDV09	24	25.0
BK055	Kollgaard, R.I. Gabuzda, D.C. Laurent-Muehleisen,	Fermilab Lebedev Lawrence Livermore	Polarization study of ROSAT Green Bank BL lacertae objects		6	28	24.0
BL060	Lara, L. Alberdi, A. Marcaide, J.M.	IAA, Granada IAA, Granada Valencia	Polarimetric observations of 3C395		1.3, 2	30	14.0
BM095	Marscher, A.P. Cawthorne, T.V. Gear, W.K. Stevens, J.A. Marchenko, S.G. Yurchenko, A.V. Gabuzda, D.C. Lister, M.L. Forster, J.R.	Boston Lancashire MRAO MRAO St. Petersburg St. Petersburg Lebedev Boston Calif.-Berkeley	Monitoring bright AGNs at 7mm		0.7	1	7.0
BM102	Moore, C.B. Briggs, F.H. Vermeulen, R.C. de Bruyn, G. Carilli, C. Menten, K. Conway, J. Kus, A.	Groningen Groningen NFRA NFRA NRAO-Socorro MPIfR Onsala Torun	Sources with UHF spectral line absorption		18, 50	27	24.0



## VLBA Utilization Report June 1998

Progm	Observer	Affiliation	Program Title	Stns	Bands cm	Observing Date	Sched Hours
BP042	Paragi, Z. Fejes, I. Vermeulen, R. Schilizzi, R. Spencer, R. Stirling, A.	FOMISGO FOMISGO NFRA JIVE Jodrell Bank Jodrell Bank	SS433		1.3, 2, 3.6, 6 w/VLA Single antenna	16	5.0
BP044	Palen, S. Fix, J.D. Claussen, M.J.	Iowa Iowa NRAO-Socorro	Main line OH emission in R Aql and WX Psc		18 With VLA single antenna	22	9.0
BR055	Rantakyro, F.T. Baath, L.B. Valtaoja, E. Tornikoski, M. Wiik, K.	Bologna Halmstad Tuorla Metsahovi Metsahovi	Dual frequency studies of the core of CTA 102		0.7, 1.3	24	8.0
BR058	Rupen, M. Hjellming, R.M. Mioduszewski, A.	NRAO-Socorro NRAO-Socorro NRAO-Socorro	Target of Opportunity Observations of CI Cam:Radio Afterglow		20,6,2	14,19,21,23	43
BT036	Taniguchi, Y. Ohyama, Y. Kaburaki, O. Inoue, M. Kameno, S. Sato, S.	Tohoku Tohoku Tohoku NAO-Nobeyama NAO-Nobeyama NAO	NGC 6251		1.3, 6	2	10.0
BT037	Tingay, S.J.	JPL	Nearby gamma ray AGN, PKS 0521-365		1.3, 3.6, 6	17	7.0
BT040	Taylor, G. Silver, C. Giovannini, G.	NRAO-Socorro Columbia Bologna	Searching for milli-halos in active galactic nuclei		90	20	12.0
BW038	Wrobel, J.M. Conway, J.E. Terlevich, R.	NRAO-Socorro Onsala RGO	Testing the starburst model for NGC 5548's Seyfert 1 nucleus		3.6	12, 25	14.0
BW039	Wilson, A.S. Ulvestad, J.S. Mundell, C. Roy, A.	Maryland NRAO-Socorro Maryland NRAO-Socorro	Accretion disks in Seyfert galaxies		3.6	12, 14	20.0
BW040	Wilson, A. Greenhill, L. Mundell, C. Braatz, J. Herrnstein, J. Moran, J.	Maryland Cfa Maryland Cfa NRAO-Socorro Cfa	Water masers in NGC 2639 and Mrk 1210		1.3	3	10.0
BW041	Wilson, A.S. Ulvestad, J.S. Mundell, C. Roy, A.	Maryland NRAO-Socorro Maryland NRAO-Socorro	Free-free absorption in megamaser galaxies		2, 6, 18	12, 15	16.0
BX003	Xanthopoulos, E. Browne, I. Porcas, R. Patnaik, A. Wilkinson, P.	Jodrell Bank Jodrell Bank MPIFR MPIFR Jodrell Bank	Search for extended radio structure in the JVAS lens B1030+074		2, 3.6, 18 With Eb	10	14.0
GB027	Bartel, N.	York	Supernova 1993J in M81		3.6, 6, 18, 90 With Y27-EbJbMc NtOnRo	1, 2	21.2
GP017	Paragi, Z. Fejes, I. Vermeulen, R. Schilizzi, R. Spencer, R. Stirling, A.	FOMISGO FOMISGO NFRA JIVE Jodrell Bank Jodrell Bank	SS 433		18 With Y1-EbJbWbM cNtOnTr	7	10.5
V015	Vestrand, W.T.	New Hampshire	Variable CGRO blazars: 0208-512	M	6 Mk only - Penticton correlator	10	5.0
V022	Wilkinson, P.	Jodrell Bank	Gravitational milli lens candidates: 1809+568		6 With phased VLA	15	10.5
V047	Gurvits, L.I.	JIVE	Structure of extremely high redshift quasars: 1937-101		6, 18 With Y27 or Go	17, 18	19.0
V049	Rioja, M.J.	JIVE	"New" point source 1308+328 near 1308+326		6 With Eb	29	6.0
V080	Wehrle, A.	JPL-IPAC	Gamma ray blazars: 1739+522		6	14	11.0
V085	Schilizzi, R.T.	JIVE	GPS galaxies and quasars: 1333+459 & 1404+286		6 With Tr Eb	22, 30	20.0
V131	Edwards, P.	ISAS	1928+293			19	6.0

VLBA Utilization Report June 1998

Progm	Observer	Affiliation	Program Title	Stns	Bands cm	Observing Date	Sched Hours
	Staff	NRAO	Maintenance Software				92.0 12.0

The average downtime was 2.0% (9 hours)

Actual observing time was 460.0 hours

The VLBA was scheduled 86% of the time (460.0 hours of a possible  
744 hours)

Astronomical Observations = 63% (469.0 hours)

Tests and Calibrations = 14% (107.0 hours)

Maintenance = 09% ( 75.0 hours)

Total Number of astronomical programs was 35

## VLBA Utilization Report May 1998

Progm	Observer	Affiliation	Program Title	Stns	Bands cm	Observing Date	Sched Hours
BA027	Alef, W. Preuss, E. Kellermann, K.I.	MPIfR MPIfR NRAO-CV	7mm polarimetric monitoring of the outburst in 3C111		0.7 With Eb	14	15.0
BA029	Alberdi, A. Gomez, J.L. Marcaide, J.M. Perez-Torres, M. Marscher, A.P.	IAA, Granada IAA, Granada Valencia Valencia Boston	Superluminal source 4C39.25		0.7, 1.3, 2	29	14.0
BA032	Aaron, S. Lobanov, A. Wardle, J. Roberts, D.	MPIfR MPIfR Brandeis Illinois	Mrk 501		1.3, 2, 3.6, 6, 18 With Eb	15, 20	28.0
BB086	Bartel, N. Sorathia, B. Bietenholz, M.F. Carilli, C.L.	York York York NRAO-Socorro	Proper motion of the nuclear jet and counterjet in Cygnus A		2, 3.6, 6	3	16.0
BB088	Brisken, W. Dewey, R. Thorsett, S. Beasley, A. Benson, J.	Princeton Princeton Princeton NRAO-Socorro NRAO-Socorro	Proper motions of pulsars in supernova remnants		18 With phased VLA	28	12.0
BB089	Barvainis, R. Lonsdale, C.	Haystack Haystack	Extremely steep spectrum components in OW 637		13, 6, 3.6, 2, 1.3 With Eb	18	15.0
BC066	Claussen, M.J. Diamond, P.J. Braatz, J.A. Wilson, A.S. Henkel, C.	NRAO-Socorro Jodrell Bank Cfa Maryland MPIfR	Water masers in elliptical galaxy NGC 1052		1.3 With phased VLA, Eb, Gb	23	13.0
BC075	Combes, F. Baudry, A. Wiklind, T. Desmurs, J.-F.	Paris Obs. Bordeaux Onsala OAN	Mapping C3H2 absorption toward the gravitational lens PKS 1830-211		0.7, 1.3	14, 16	10.0
BC079	Cotton, W.D. Owen, F.N.	NRAO-CV NRAO-Socorro	Mapping the faraday screen in M87		18 With phased VLA	25	12.0
BD046	Diamond, P.J. Kemball, A.J. Boboltz, D.A.	Jodrell Bank NRAO-Socorro Haystack	Monitoring SiO masers through a cycle of Mira TX Cam		0.7 With VLA single antenna	10, 22	16.0
BD051	Dhawan, V. Mirabel, I.F. Rodriguez, L.F.	NRAO-Socorro Saclay UNAM	GRS1915+105 on AU scales; exploring the disk/jet connection		1.3, 2	2	8.0
BF040	Fomalont, E.B. Beasley, A.J. Goss, M.	NRAO-CV NRAO-Socorro NRAO-Socorro	VLBA pulsar astronomy - pilot observations in 1998		18	1, 3	12.0
BG059	Guirado, J.C. Gomez, J.L. Marscher, A.P. Alberdi, A. Marcaide, J.M.	Valencia IAA, Granada Boston IAA, Granada Valencia	BL Lac object 0735+178		0.7, 3.6	24	12.0
BG073	Gomez, J.L. Marscher, A.P. Alberdi, A.	IAA, Granada Boston IAA, Granada	3C 120 rapid variations		0.7, 1.3	9	12.0
BG078	Greenhill, L. Herrnstein, J. Reid, M. Moran, J. Argon, A.	Cfa NRAO-Socorro Cfa Cfa Cfa	Measuring the rotation of the spiral arms of M33		1.3	4, 11	24.0
BG082	Greenhill, L.J. Herrnstein, J.R. Moran, J.M. Henkel, C.	Cfa NRAO-Socorro Cfa MPIfR	Water maser in TXFS22265-1826		1.3	27	9.0
BH047	Hagiwara, Y. Kawabe, R. Diamond, P.J. Herrnstein, J. Kameno, S. Nakai, N.	Graduate University NAO-Nobeyama Jodrell Bank NRAO-Socorro NAO-Nobeyama NAO-Nobeyama	H2O megamaser in NGC 5793		1.3	10	8.0

## VLBA Utilization Report May 1998

Progm	Observer	Affiliation	Program Title	Stns	Bands cm	Observing Date	Sched Hours
BI008	Imai, H. Shibata, K.M. Migenes, V. Inoue, M. Sasao, T. Miyoshi, M. Murata, Y. Marvel, K.B. Diamond, P.J.	Tohoku NAO-Nobeyama Guanajuato NAO-Nobeyama NAO-Mizusawa ISAS Caltech Jodrell Bank	Monitoring of stellar water maser RT Vir		1.3	11, 31	8.0
BK053	Krichbaum, T.P. Lobanov, A. Britzen, S. Witzel, A. Zensus, J.A.	MPIfR MPIfR Dwingeloo MPIfR MPIfR	Broad band variability and jet bending in PKS 0528+134		0.7, 1.3, 3.6 With Eb	19	14.0
BL059	Ludke, E. Cotton, W.D. Sanghera, H. Dallacasa, D.	Santa Maria NRAO-CV JIVE Bologna	Faraday rotation and depolarization in CSS jets		3.6, 6	8	24.0
BM095	Marscher, A.P. Cawthorne, T.V. Gear, W.K. Stevens, J.A. Marchenko, S.G. Yurchenko, A.V. Gabuzda, D.C. Lister, M.L. Forster, J.R.	Boston Lancashire MRAO MRAO St. Petersburg St. Petersburg Lebedev Boston Calif.-Berkeley	Monitoring bright AGNs at 7mm		0.7	31	17.0
BP042	Paragi, Z. Fejes, I. Vermeulen, R. Schilizzi, R. Spencer, R. Stirling, A.	FOMISGO FOMISGO NFRA JIVE Jodrell Bank Jodrell Bank	SS433		1.3, 2, 3.6, 6 With VLA single antenna	22	5.0
BR054	Romney, J.D. Dhawan, V. Kellermann, K.I. Alef, W.	NRAO-Socorro NRAO-Socorro NRAO-CV MPIfR	Kinematics of the NGC 1275 nucleus		2 With Eb, VLA single antenna	17	16.0
BT034	Taylor, G.	NRAO-Socorro	Gamma Ray Bursters		1	10	5
GL034	van Langevelde, H.J. Phillips, C.J. Garrett, M.A. Schilizzi, R.T.	JIVE Tasmania JIVE JIVE	3C 380 test observation for JIVE correlator		6	27	8.0
GM035	Marcaide, J.M. Perez-Torres, M.A. Guirado, J.C. Alberdi, A. Ros, E. Diamond, P.J. Shapiro, I.I. Preston, R.A. Schilizzi, R.T. Mantovani, F. Trigilio, C. Van Dyk, S. Weiler, K.W. Sramek, R.A. Whitney, A.R.	Valencia Valencia Valencia IAA, Granada MPIfR Jodrell Bank CfA JPL JIVE Bologna Noto UCLA NRL NRAO-Socorro Haystack	Monitoring of the expansion of SN 1993J at 6 and 18cm		6, 18	30	14.0
V008	Linfield, R.	JPL	Brightness temperature of compact sources: 1519-273		18, 6	5, 6	21.0
V010	Marscher, A.P.	Boston	Relativistic jets: 1807+698		6	16	8.5
V012	Lara, L.	IAA, Granada	Quasar 3C395		6	1	11.0
V019	Rantakyro, F.T.	Bologna	Structural variability in quasar CTA 102		6	25	12.0
V029	Gwinn, C.R.	Calif.-Santa Barbara	Nanoarcsecond study of the vela pulsar	M	18 Pent. corr.	2	4.0
V032	Guirado, J.C.	Valencia	Quasar phase-reference mapping and astronomy: 1342+662		6	7	9.0
V054	Porcas, R.W.	MPIfR	Cores of lobe-dominated quasars: 3C 263		6	18	10.0
V085	Schilizzi, R.T.	JIVE	GPS galaxies and quasars: 1622+663		6	24	10.5
V090	Kus, A.	Torun	CSS source 3C 309.1		6	11	12.0
V123	Kameno, S.	NAO-Nobeyama	Cygnus A		6	28	16.0
CMVA	Phillips, R.B. Staff	Haystack NRAO	Coordinated Millimeter VLBI Array Maintenance Software	KLP	0.3	5	63.0 94.0 28.5

The average downtime was 4.0% (19 hours)  
Actual observing time was 457.0 hours  
The VLBA was scheduled 87% of the time (644.0 hours of a possible  
744 hours)  
Astronomical Observations = 64% (476.0 hours)  
Tests and Calibrations = 13% ( 96.0 hours)  
Maintenance = 10% ( 72.0 hours)  
Total Number of astronomical programs was 37

## VLBA Utilization Report March 1998

Progm	Observer	Affiliation	Program Title	Stns	Bands cm	Observing Date	Sched Hours
BA030	Attridge, J.M. Roberts, D.H. Wardle, J.F.C.	Brandeis Brandeis Brandeis	Blazar 1055+018		2, 3.6, 6, 18 With VLA single antenna	12, 24	24.0
BA031	Anantharamaiah, K.R. Mohan, R.N. Goss, M. Subrahmanyan, R.	Raman/NRAO-Socorro IIS NRAO-Socorro Raman	Structure of PKS 1830-311 at 327 MHz		90 With VLA single antenna	9	8.0
BC077	Charlot, P. DeGrange, B. Gabuzda, D. Pare, E. Sol, H.	Paris Obs Ecole Polytechnique Lebedev Ecole Polytechnique Meudon	Simultaneous VLBI polarization and TEV gamma ray observations		1.3, 2, 3.6, 6	4, 28	24.0
BC078	Chatterjee, S. Cordes, J. Arzoumanian, Z. Goss, M. Beasley, A.J. Benson, J. Lazio, T.J. Xilouris, K.	Cornell Cornell Cornell NRAO-Socorro NRAO-Socorro NRAO-Socorro NRL NAIC	Neutron star kinematics: gated VLBA pulsar astrometry		18	26, 30	12.0
BC080	Campbell, D. Black, G. Butler, B. Ostro, S.	Cornell Cornell NRAO-Socorro JPL	VLBA radar observations of asteroid 1988 EG		3.6	2	5.5
BD046	Diamond, P.J. Kemball, A.J. Boboltz, D.A.	Manchester NRAO-Socorro Haystack	Monitoring SiO masers through a cycle of Mira TX Cam		0.7 With VLA single antenna	5	7.0
BD052	Diamond, P.J.	Jodrell Bank	Target of Opportunity: New Flare in H2O Supermaser region of Orion Nebula		1.3	21	9.0
BG070	Gallimore, J.F. Mundell, C. Pedlar, A. Baum, S. O'Dea, C.	MPE Maryland Jodrell Bank STScI STScI	Imaging the ionized Torus in NGC 4151		3.6 With phased VLA	27	12.0
BG073	Gomez, J.L. Marscher, A.P. Alberdi, A.	IAA, Granada Boston IAA, Granada	3C 120 rapid variations		0.7, 1.3	9	12.0
BK052	Kellermann, K. Zensus, J.A. Vermeulen, R. Cohen, M.	NRAO-CV MPIfR NFRA Caltech	Kinematics of quasars and AGN		2	7, 19	48.0
BL064	Lazio, T.J.W. Mutel, R.L. Kassim, N.E. Molnar, L.A.	NRL Iowa NRL Iowa	Interstellar scattering observations of 1849+005		2, 3.6, 6, 18 With VLA single antenna	29	10.0
BM079	Mioduszewski, A.J. Rupen, M.P. Hjellming, R.M.	JIVE-Socorro NRAO-Socorro NRAO-Socorro	VLBI observations of x-ray binary SS 433		6, 18 With VLA single antenna	5, 6, 7	36.0
BM095	Marscher, A.P. Cawthorne, T.V. Gear, W.K. Stevens, J.A. Marchenko, S.G. Yurchenko, A.V. Gabuzda, D.C. Lister, M.L. Forster, J.R.	Boston Lancashire MRAO MRAO St. Petersburg St. Petersburg Lebedev Boston Calif.-Berkeley	Monitoring bright AGNs at 7mm		0.7	25, 28	24.0
BP036	Polatidis, A.G. Conway, J.E. Murphy, D.W.	Onsala Onsala JPL	Coordinated monitoring of 1928+738 from VSOP and mm-VLBI		0.7	31	12.0
BP041	Peck, A. Taylor, G. Goss, M.	NRAO-Socorro NRAO-Socorro NRAO-Socorro	CSO candidates at 8 and 15 GHz		2 With VLA single antenna	16	24.0
BP042	Paragi, Z. Fejes, I. Vermeulen, R. Schilizzi, R. Spencer, R. Stirling, A.	FOMISGO FOMISGO NFRA JIVE Jodrell Bank Jodrell Bank	SS433		1.3, 2, 3.6, 6 With VLA single	26	5.0
BP044	Palen, S. Fix, J.D. Claussen, M.J.	Iowa Iowa NRAO-Socorro	Main line OH emission in R Aql and WX Psc		18 With VLA single antenna	27	6.0

VLBA Utilization Report March 1998

Progm	Observer	Affiliation	Program Title	Stns	Bands cm	Observing Date	Sched Hours
BR052	Reid, M.J. Eubanks, M.	CfA USNO	Trigonometric parallax to Sgr A*		0.7, 3.6	13, 19, 23	30.0
BR053	Ratner, M.I. Bartel, N. Lebach, D.E. Lestrade, J-F. Shapiro, I.I.	CfA York CfA Meudon CfA	Astrometry of HR 8703 in 1998 for the gravity probe-b mission		3.6	2, 1	18.5
V010	Marscher, A.P.	Boston	Comparison of observed and simulated relativistic jets:1807+698		6 With Nt	11	10.0
V030	Preston, R.A.	JPL	Pearson-Readhead survey from space:0016+731		6 with Ud	2	12.0
V053	Witzel, A.	MPIfR	Polarization variability of intraday variable sources:2007+777		6 polr with phased VLA	10, 14	28.0
V064	Zensus, J.A.	MPIfR	Physics of the jet in quasar 3C345 at light year resolution		6 polr with Eb, 18 polr with phased VLA	21, 22	25.0
V115	Tingay, S.	JPL	Gamma ray loud and quiet AGN with VSOP and SHEVE at 5 GHz:0438-436, 0537-441		6 Mitaka correlator	1, 7	13.0
	Staff	NRAO	Maintenance Software				93.0 20.5

The average downtime was 3.0% (12 hours)

Actual observing time was 381.0 hours

The VLBA was scheduled 76% of the time (564.0 hours of a possible 744 hours)

Astronomical Observations = 53% (393.0 hours)

Tests and Calibrations = 14% (102.0 hours)

Maintenance = 9% (69.0 hours)

Total Number of astronomical programs was 24

## VLBA Utilization Report February 1998

Progm	Observer	Affiliation	Program Title	Stns	Bands cm	Observing Date	Sched Hours
BB078	Bradshaw, C. Fomalont, E.B. Geldzahler, B.	George Mason NRAO-CV George Mason	Sco x-1		6, 18 With VLA single antenna	27, 28	12.0
BD046	Diamond, P.J. Kemball, A.J. Boboltz, D.A.	Jodrell Bank NRAO-Socorro Haystack	Monitoring SiO masers through a cycle of Mira TX Cam		0.7 With VLA single antenna	5, 22	12.0
BF028	Fey, A. Gaume, R. Eubanks, M. Ma, C.	USNO USNO USNO NASA-GSFC	Southern hemisphere astronomy for the celestial reference frame	FS	3.6	4	12.0
BF034	Furuya, R. Kawabe, R. Saito, M. Wootten, H.A. Claussen, M.J. Marvel, K.B. Umemoto, T. Kitamura, Y.	Graduate University NAO-Nobeyama Cfa NRAO-CV NRAO-Socorro Caltech NAO-Nobeyama ISAS	Proper motion of H2O masers in the Class 0 protostar S106FIR		1.3	1	6.0
BF039	Falcke, H. Bower, G.C. Zensus, J.A. Aller, M. Aller, H.D. Terasranta, H.	MPIfR MPIfR MPIfR Michigan Michigan Metsahovi	7mm VLBA observations of extremely variable spiral galaxy III Zw 2		0.7	16	8.0
BG073	Gomez, J.L. Marscher, A.P. Alberdi, A.	IAA Boston IAA	3C 120 rapid variations		0.7, 1.3	7	12.0
BJ027	Johnston, K. Fey, A. Gaume, R. Eubanks, M. Kingham, K. Clark, T. Ma, C. Ryan, J. Vandenberg, N. Himwich, E. Shaffer, D. Gordon, D. Fomalont, E. Walker, C.	USNO USNO USNO USNO USNO NASA-GFSC NASA-GSFC NASA-GSFC NVI-GSFC NVI-GSFC Radiometrics Hughes-GSFC NRAO-CV NRAO-Socorro	VLBA Geodesy/Astrometry observations for 1998		3.6 Scheduled as RDV07	9	25.0
BM085	Miyoshi, M. Imai, H. Deguchi, S.	NAO-Mitzuzawa NAO-Mizusawa NAO-Nobeyama	SiO masers in M supergiant IRC-10414		0.7 With VLA single antenna	23	6.0
BM088	Mantovani, F. Junor, W. Saikia, D.J. Salter, C.J.	Bologna New Mexico NCRA Arecibo	Rotation measures of compact steep spectrum sources		6 With VLA single antenna	15	24.0
BT032	Taylor, G. Vermeulen, R.	NRAO-Socorro NFRA	Measuring absolute motions in the bi-directional jets of 1946+807		3.6	6	13.0
BV024	Vermeulen, R.C. van Langevelde, H.- Kellermann, K.I. Zensus, J.A. Cohen, M.H.	NFRA JIVE NRAO-CV MPIfR Caltech	Shroud around the twin jets of NGC 1052		0.7, 1.3, 2, 3.6, 6, 18 With VLA single antenna	1	14.0
BV025	Vermeulen, R.C. Britzen, S. Taylor, G.B. Wilkinson, P.N. Pearson, T.J. Readhead, A.C.S.	NFRA Dwingeloo NRAO-Socorro Jodrell Bank Caltech Caltech	Caltech Jodrell snapshot survey of superluminal motion - 3rd Epoch		6	8, 12, 20	120.0
GC020	Campbell, R.M. deBruyn, A.G. Vermeulen, R.C. Verbunt, F. Lestrade, J.F. Schilizzi, R.T. vanden Heuvel, E.P. Galama, T.	NFRA NFRA NFRA Utrecht Meudon JIVE Amsterdam Amsterdam	Pulsar parallax and proper motion determination		18 Correlatio n at Bonn	22, 24, 25	42.5
GG034	Garrett, M.A. Garrington, S.T. Polatidis, A.	JIVE Jodrell Bank Onsala	Global VLBI Survey of faint, compact radio sources		6 With EVN	14	10.0



VLBA Utilization Report February 1998

Progm	Observer	Affiliation	Program Title	Stns	Bands cm	Observing Date	Sched Hours
GL022	Lal, D.V. Shastri, P. Gabuzda, D.	IIA IIA Lebedev	Global observations of a matched sample of Seyfert galaxies		6 With TrEbNt	17	24.0
GM030	Marcaide, J.M. Ros, E. Guirado, J.C. Perez-Torres, M.A. Alberdi, A. Diamond, P.J. Shapiro, I.I. Preston, R.A. Jones, D. Schilizzi, R.T. Mantovani, F. Trigilio, C. VanDyk, S. Weiler, K.W. Whitney, A.R.	Valencia Valencia Valencia Valencia ESA-LAEFF Jodrell Bank Cfa JPL JPL JIVE Bologna Noto UCLA NRL Haystack	Monitoring the expansion of SN 1993J at 6cm		6 With EbNt	18	14.0
V030	Preston, R.A.	JPL	Pearson-Readhead survey from space		6	7	4.0
V061	Romney, J.D.	NRAO-Socorro	Core of 3C84		18 with EVN	23	10.0
V112	Reynolds, J.	ATNF	High resolution imaging of nearby lobe-dominated radiogalaxies		6	27	5.0
V140	Fujisawa, K.	ISAS	Study of AGN jet acceleration by monitoring of Cen A		6 correlation at Mitaka	7, 16	12.0
CMVA			Combined Millimeter VLBI Array		0.3	4, 6	42.0
	Staff	NRAO	Maintenance Software				93.5 13.0

The average downtime was 3.0% (11 hours)

Actual observing time was 371.0 hours

The VLBA was scheduled 74% of the time (496.0 hours of a possible 672 hours)

Astronomical Observations = 57% (382.0 hours)

Tests and Calibrations = 7% (46.0 hours)

Maintenance = 10% (68.0 hours)

Total Number of astronomical programs was 21

## VLBA Utilization Report January 1998

Progm	Observer	Affiliation	Program Title	Stns	Bands cm	Observing Date	Sched Hours
BA026	Aaron, S. Wardle, J. Roberts, D. Paragi, Z. Fejes, I. Murphy, D.	MPIFR Brandeis Brandeis FOMISGO FOMISGO JPL	Imaging of misaligned jets at 327 MHz		90	10	9.0
BA029	Alberdi, A. Gomez, J.L. Marcaide, J.M. Perez-Torres, M. Marscher, A.P.	LAEFF IAA, Andalucia Valencia Valencia Boston	Superluminal source 4C39.25		0.7, 1.3, 2	19	14.0
BB070	Blundell, K.M. Beasley, A.J. Lacy, M.	Oxford NRAO-Socorro Oxford	Are the jets in radio quiet quasars relativistic?		3.6 With phased VLA	31	6.0
BB091	Braatz, J. Wilson, A.	CfA Maryland	The flaring H2O megamaser in IC 2560		1.3 With phased VLA	6	5.5
BC070	Charlot, P. Sol, H. Vicente, L.	Paris Obs Meudon Meudon	Multi-frequency monitoring of BL Lac object OJ287		1.3, 3.6, 6	20	7.5
BD046	Diamond, P.J. Kemball, A.J. Boboltz, D.A.	Manchester NRAO-Socorro Haystack	Monitoring SiO masers through a cycle of Mira TX Cam		0.7 With VLA single antenna	13, 25	12.0
BF034	Furuya, R. Kawabe, R. Saito, M. Wootten, H.A. Claussen, M.J. Marvel, K.B. Umemoto, T. Kitamura, Y.	Graduate University Nobeyama CfA NRAO-CV NRAO-Socorro Caltech NAO ISAS	Proper motion of H2O masers in the Class 0 protostar S106FIR		1.3	8	6.0
BG073	Gomez, J.L. Marscher, A.P. Alberdi, A.	IAA, Andalucia Boston IAA, Andalucia	3C 120 rapid variations		0.7, 1.3	11	12.0
BH040	Hough, D.H. Cross, L.L. Readhead, A.C.S.	Trinity Texas Caltech	Second epoch imaging of four lobe dominated quasars		3.6	30	12.5
BH045	Homan, D.C. Wardle, J.F.C. Roberts, D.H. Aller, H.D. Aller, M.F.	Brandeis Brandeis Brandeis Michigan Michigan	Survey for circular polarization in AGN at 8 and 15 GHz		2, 3.6	3, 7	48.0
BI007	Imai, H. Sasao, T. Kameya, O. Miyoshi, M. Deguchi, S. Asaki, Y.	Mizusawa Mizusawa Mizusawa Mizuzawa Nobeyama NAO	Proper motions of water masers in W3 IRS 5		1.3	5	10.0
BL038	Lestrade, J.F. Phillips, R.B. Jones, D.I. Preston, R.A.	Meudon Haystack JPL JPL	Search for extra solar planets by VLBI astrometry		3.6 With phased VLA	25, 28, 30	18.0
BL059	Ludke, E. Cotton, B. Sanghera, H. Dallacasa, D.	Santa Maria NRAO-CV JIVE Bologna	Faraday rotation and depolarization in CSS jets		3.6, 6	21	24.0
BL061	Laurent-Muehleisen, Taylor, G.B. Becker, R.H. Brotherton, M. Gregg, M.	Lawrence Livermore NRAO-Socorro Calif.-Davis LLNL LLNL	Radio bright broad absorption line quasars		18 With phased VLA	25	12.5
BL062	Lobanov, A. Gurvits, L. Rioja, M.	MPIFR JIVE JIVE	Frequency dependence of the VLBI core position in 3C 345		2, 3.6, 6	29	14.0
BM080	Moellenbrock, G. Roberts, D.H. Wardle, J.F.C.	ISAS Brandeis Brandeis	Polarization structure monitoring of gamma ray blazars		0.7, 1.3, 2, 3.6	2	28.0

## VLBA Utilization Report January 1998

Progm	Observer	Affiliation	Program Title	Stns	Bands cm	Observing Date	Sched Hours
BM081	Moran, J.M. Herrnstein, J.R. Greenhill, L.J. Trotter, A. Miyoshi, M. Inoue, M. Nakai, N. Diamond, P.J. Henkel, C.	CFA NRAO-Socorro CFA CFA Mitzuzawa Nobeyama Nobeyama Manchester MPIFR	Dynamics and distance of water masers in NGC 4258		1.3 With phased VLA and Eb	27	14.0
BN006	Nakai, N. Inoue, M. Miyoshi, M. Hagiwara, Y. Diamond, P.	Nobeyama Nobeyama Mitzuzawa Graduate University Manchester	Water vapor megamaser in the Seyfert IC 2560		1.3 With phased VLA	2	7.0
BP038	Pihlstrom, Y. Conway, J.	Onsala Onsala	HI Absorption/OH maser observations of 4C12.50		3.6, 6, 18	11	11.0
BT032	Taylor, G. Vermeulen, R.	NRAO-Socorro NFRA	Absolute motions in the bi-directional jets of 1946+708		2, 3.6	16	13.0
BU009	Ulvestad, J. Roy, A. Beasley, A.J.	NRAO-Socorro NRAO-Socorro NRAO-Socorro	Compact radio sources in NGC 253		18 With phased VLA	13	8.5
BV024	Vermeulen, R.C. van Langevelde, H.- Kellermann, K.I. Zensus, J.A. Cohen, M.H.	NFRA JIVE NRAO-CV MPIFR Caltech	Shroud around the twin jets of NGC 1052		0.7, 1.3, 2 With VLA single	31	3.0
BZ019	Zhao, J.H. Lo, K.Y. Shen, Z. Ho, P.T.P.	CFA Illinois Shanghai CFA	Superluminal expansion in M104?		0.7, 3.6 With phased VLA	13	9.0
V016	Cotton, W.D.	NRAO-CV	VSOP Polarimetric observations of NGC 315		18 w/Go, Ro	22	12.0
V018	Giovannini, G.	Bologna	4 low power radio galaxies: 3C465, NGC 315		6 w/phased VLA, Eb, Nt	5, 23	27.0
V110	Nicolson, G.D.	Hartebeesthoek	High resolution imaging of rapid variations in the BL Lac objects:1144-379	FKM	6 to Mitaka	8, 12, 19	5.4
V140	Fujisawa, K.	ISAS	Study of AGN jet acceleration by monitoring of Cen A	FKM	6 to Mitaka	17, 26	4.5
V147	Hirabayashi, H.	ISAS	Determining the emission mechanism of the OVV quasar 3C279		6, 18 with Go, Ti, At, Ud	9, 10	19.0
VT833	Edwards, P.	ISAS	HALCA IOC		6	18	9
	Staff	NRAO	Maintenance Software				101.0 20.5

The average downtime was 6.7% (24.8 hours)

Actual observing time was 345.2 hours

The VLBA was scheduled 68% of the time (505.0 hours of a possible 744 hours)

Astronomical Observations = 50% (370.0 hours)

Tests and Calibrations = 10% (76.0 hours)

Maintenance = 08% (59.0 hours)

Total Number of astronomical programs was 29