

VLA Utilization Report December 1998

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AB875	Bennett, P.D. Harper, G.M. Brown, A. Bauer, W.H.	Colorado Colorado Colorado Wellesley	1997/98 Eclipse of VV Cephei	1.3, 2, 3.6, 6	9	3.0
AB882	Butler, B. Stern, S.A.	NRAO-Socorro Southwest Research	7mm observations of Pluto/Charon	0.7	19, 20	16.0
AB885	Bastian, T.S. Aschwanden, M.J.	NRAO-Socorro Lockheed-Martin	High spatial and temporal resolution studies of flares	1.3, 2	11, 18, 21, 23	16.0
AB889	Barlow, T. Lonsdale, C.J. Xu, C. Hacking, P. Shupe, D. Condon, J.J.	Caltech-IPAC Caltech-IPAC Caltech-IPAC Vanguard Research Caltech-IPAC NRAO-CV	Radio survey of WIRE mid-infrared fields	20	19, 20	14.0
AC516	Cassaro, P. Stanghellini, C. Dallacasa, D. Bondi, M. Zappala, R.A.	Catania Noto Bologna Bologna Catania	Extended emission from gamma ray sources	3.6, 20	28	1.5
AD419	Dennett-Thorpe, J. Barthel, P.D. van Bemmel, I.M. Corbett, E.	Lisbon Groningen Groningen Hertfordshire	Radio asymmetries in 3CR broadline radio galaxies	6	1	12.0
ADHOC	Frail, D.A.	NRAO-Socorro	Adhoc Proposal		3	2.7
AE125	Edge, A.C. Allen, S.W. Crawford, C.S. Fabian, A.C.	Durham Cambridge Cambridge Cambridge	Radio properties of central galaxies in x-ray selected clusters	2, 3.6, 6, 20	5, 22	7.0
AF346	Fich, M.	Waterloo	Structure of HII regions and measuring elemental abundances	6, 20	13	6.5
AF349	Feretti, L. Giovannini, G. Tordi, M.	Bologna Bologna Bologna	Observations of new radio halos and relics from NVSS	20	7, 30	7.5
AF350	Falcke, H. Lobanov, A. Wright, M. Bower, G. Aller, M. Terasranta, H. Patnaik, A.	MPIfR MPIfR Calif.-Berkeley MPIfR Michigan Metsahovi MPIfR	Monitoring extremely variable spiral III Zw 2	1.3, 2, 3.6, 6, 20, 90	23	1.0
AF352	Fabian, A. DiMatteo, T. Rees, M. Carilli, C.	Cambridge Cambridge Cambridge NRAO-Socorro	Radio emission from hot ion tori	0.7, 1.3, 3.6	29	6.0
AH628	Hjellming, R.M. Mioduszewski, A.J. Rupen, M.P.	NRAO-Socorro JIVE-Socorro NRAO-Socorro	Radio and x-ray activity in galactic black holes	1,6,28,31	11.5	2.0
AH639	Herrnstein, J. Greenhill, L. Moran, J. Blackman, E. Diamond, P.	NRAO-Socorro Cfa Cfa Cambridge NRAO-Socorro	VLA Polarimetry of the masers in NGC 4258	1.3 line w/BD46	6	13.0
AH656	Hoffman, G.L. van Gorkom, J.H. Salpeter, E.	Lafayette Columbia Cornell	High resolution HI study of DDO 154	20	24	12.5
AH658	Hjellming, R.M. Narayan, R. Rupen, M.P.	NRAO-Socorro Cfa NRAO-Socorro	Characterizing the quiescent radio emission of black hole binary V404 cyg	20,6,3.6,2 ,1.3	13	2.0
AH660	Hankins, T.H. Weatherall, J.C. Kern, J.S. Moffett, D.A.	NMINT NMINT NMINT Tasmania	Bandwidth of the emission mechanism of Crab pulsar giant pulses	2, 3.6, 6, 20, 90 HTRP	11, 19, 26	15.5
AJ267	Jauncey, D.	CSIRO	Target of Opportunity		8	4.0
AK456	Kulkarni, S.R. Bloom, J.S. Djorgovski, S. Vakil, D. Frail, D.A.	Caltech Caltech Caltech Caltech NRAO-Socorro	Radio afterglows of gamma ray bursters	2, 3.6, 6, 20	1,8,10,12,26 ,29,30	10.2
AK461	Kassim, N. Perley, R. Erickson, W. Lazio, J. Feretti, L.	NRL NRAO-Socorro Maryland NRL Bologna	74 MHz observations of bright sources	90	3	6.0

## VLA Utilization Report December 1998

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AK471	Kornreich, D.A. Haynes, M.P. van Zee, L. Lovell, R.V.E.	Cornell Cornell NRAO-Socorro Cornell	Kinematic studies of optically asymmetric disk galaxies	20 line	3,5	9.0
AK472	Kulkarni, S.R. Frail, D.A.	Caltech NRAO-Socorro	Radio counterpart to SGR 1900+14	20, 90	26	9.5
AK474	Knezek, P. Sembach, K. Gallagher, J.	Johns Hopkins Johns Hopkins Wisconsin	Neutral gas content of "transition" dwarf galaxies	20 line	30, 31	12.0
AK475	Keto, E. Ho, P.	CfA CfA	Disk or envelopes around Herbig Ae/Be stars	0.7	5	5.0
AK477	Kurtz, S. Watson, A. Hofner, P.	UNAM UNAM Arecibo/UPR	Extended emission near ultracompact HII regions	3.6	1, 13	5.0
AL439	Leahy, J.P. Spencer, R.E. Garrington, S.T.	Jodrell Bank Jodrell Bank Jodrell Bank	Prototype classical double 3C 295	0.7, 1.3	7	3.0
AL441	Ludke, E. Katz-Stone, D.	Santa Maria USNA	Spectral analysis of CSS galaxies	0.7, 1.3, 2, 6	11, 17	8.0
AL442	Lara, L. Cotton, W.D. Feretti, L. Giovannini, G. Marcaide, J.M. Venturi, T.	IAA NRAO-CV Bologna Bologna Valencia Bologna	New sample of large angular size radio sources	6, 20	28	8.0
AL459	Lebron, M. Gomez, Y. Rodriguez, L.F. Escalante, V. Lizano, S. Garay, G.	UNAM UNAM UNAM UNAM UNAM Chile	Photodissociated HI gas in GGD 12-15	20 w/BD46	22	5.0
AL462	Lim, J. Ho, P.T.P.	Academia Sinica CfA	HI Environment of low redshift quasars	20 line	12, 13, 16	28.0
AL467	Lehar, J. Falco, E. Kochanek, C. Munoz, J. Mediavilla, E. Oscoz, A. Serra, M.	CfA CfA CfA CfA IAC IAC IAC	Redshift survey of faint, flat spectrum radio sources	6	8, 9	25.0
AL470	Lee, S-W. Gao, Y. Lo, K.Y. Wang, W-H.	Academia Sinica Illinois Academia Sinica Academia Sinica	Early stage merging or pre-merging luminous IR galaxies	20 line	14	8.5
AM602	Mirabel, F. Rodriguez, L.F. Dhawan, V.	Saclay UNAM NRAO-Socorro	Radio, infrared and x-ray observations of microquasar 1915+105	2, 3.6, 6	5	2.5
AN081	Niruj Mohan, R. Anantharamaiah, K.R. Goss, M.	Raman Raman/NRAO-Socorro NRAO-Socorro	Radio recombination lines from starburst galaxies	3.6 line	27	4.0
AN083	Nindos, A. Kundu, M.	Maryland Maryland	Search for microwave emission from solar Ellerman bombs	2, 3.6, 6	12, 17	21.0
AO136	Owen, F.	NRAO-Socorro	330 MHz observations of M87	90	21	6.0
AP375	Pedani, M. Grueff, G.	Bologna Bologna	Observations of new and complete sample of ultra steep spectrum	6 w/BD46	18,23	13.0
AR386	Rudnick, L. Treichel, K. Mack, K.-H. Klein, U. Katz-Stone, D.	Minnesota Minnesota Bologna/Bonn Bonn Univ. USNA	Electron populations and ages in radio galaxies	6, 20, 90	4, 10	30.0
AR402	Rudnick, L. Treichel, K. Katz-Stone, D. Giovannini, G.	Minnesota Minnesota USNA Bologna	Non-relativistic sheaths around extragalactic jets	3.6, 6, 20	20	4.0
AS568	Sramek, R. Weiler, K. Vandyk, S. Panagia, N.	NRAO-Socorro NRL UCLA STScI	Properties of radio supernovae	1.3, 2, 3.6, 6, 20	17, 23	3.5
AS632	Sahu, K.C. Baum, S. Kaiser, M.E. O'Dea, C. Shaw, R.A.	STScI STScI NASA-GSFC STScI STScI	The most luminous X-ray cluster RXJ 1247.5-1145	20	23	2.0

VLA Utilization Report December 1998

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AS645	Stanghellini, C. Dallacasa, D. Fanti, R. Centonza, M.	Noto Bologna Bologna Bologna	High frequency peakers at higher frequency	1.3, 2, 3.6, 6, 20	19	4.0
AU076	Urbanik, M. Chyzy, K. Soida, M. Beck, R.	Jagiellonian Jagiellonian Jagiellonian MPIfR	Polarization in the perturbed face on spiral NGC 4254	20	13	6.5
AW489	Wilner, D. Ho, P. Rodriguez, L. Zhang, Q.	Cfa Cfa UNAM Cfa	7mm continuum studies of T-Tauri disks	0.7 w/BD46	1, 18	18.6
AW498	Wilcots, E.M. Bershady, M.A. Jangren, A.	Wisconsin Wisconsin Penn State	HI observations of a sample of compact, luminous star forming galaxies	20 line	31	10.0
AW504	Wilson, T.L. Gaume, R.A. Megeath, S.T.	MPIfR USNO Haystack	7mm observations of W3 IRS5	0.7	10	4.0
AZ107	van Zee, L. Salzer, J.J. Skillman, E.D.	NRAO-Socorro Wesleyan Minnesota	Kinematic constraints on BCD to dE evolutionary scenarios	20 line	7, 11, 21	17.9
AZ108	van Zee, L. Haynes, M.P.	NRAO-Socorro Cornell	HI in five nearby dwarf irregulars, and relation to chemical enrichment	20 line	2, 5	15.5
AZ112	Zhu, M. Sequist, E.	Toronto Toronto	HI Mapping of interacting galaxies	20 line	14	6.5
BC087	Carilli, C. Menten, K. Reid, M.	NRAO-Socorro MPIfR CFA	Imaging the HC3N absorption in 1830-211	1.3, 2 Phased array VLBI	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 Single antenna VLBI w/adhoc, AL459, AP375	5,6,2	16.0
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, 20 Phased array VLBI	17	10.0
BM106	Mutel, R.L. Molnar, L.A.	Iowa Iowa	Astrometric mapping of HR 1099: test of polar emission model	3.6 Phased array VLBI	27, 30	13.0
BM110	Mutel, R.L. Denn, G.R.	Iowa Iowa	Monitoring BL Lac	0.7, 1.3, 2	13	2.5
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-CV Onsala JPL MPIfR Bologna Noto	VLBI imaging of Supernova 1993J in M81	3.6, 6, 20 Phased array VLBI	6	11.9
GG038	Giovannini, G. Feretti, L. Venturi, T. Cotton, W.D. Lara, L. Taylor, G.B.	Bologna Bologna Bologna NRAO-CV IAA NRAO-Socorro	Symmetrically expanding FRI radio galaxy 3C338	2, 3.6 Phased array VLBI	2	11.6
	Staff	NRAO	Baselines, Pointing, Delays Maintenance New Years Shutdown Software Standard Field observation General tests Christmas Shutdown		31 8 24	50.0 55.6 2.5 25.4 5.0 49.5 34.6

The average downtime was 2.5%.

The array was scheduled for 95.4% (711.5 hours)  
523.6 hours (70.2% of time) for astronomical programs  
107.0 hours (14.3% of time) for tests/calibration  
80.9 hours (10.8% of time) for maintenance  
Total 711.5 hours (80.9%) scheduled.

Array was in the C configuration from December 1 through December 31.

The following independent proposals shared simultaneous observing time (13.9 hours total simultaneous observing):

Projects	Hours
Adhoc/BD46	0.0
AH639/BD46	2.8
AL459/BD46	5.0
AP375/BD46	0.9
AZ108/BD46	5.2

## VLA Utilization Report November 1998

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AA232	Aparicio, A. Dalcanton, J. Gallart, C. Martinez-Delgado, D Skillman, E.	IAC Carnegie Obs. Carnegie Obs. IAC Minnesota	Detailed HI Study of Antlia Dwarf Galaxy	20 line w/BD55	2, 13	11.9
AA233	Anantharamaiah, K.R. DePree, C.G. Goss, M.	Raman/NRAO-Socorro Agnes Scott NRAO-Socorro	C92 alpha in W49A	2, 3.6 line	22	8.0
AB875	Bennett, P.D. Harper, G.M. Brown, A. Bauer, W.H.	Colorado Colorado Colorado Wellesley	1997/98 Eclipse of VV Cephei	1.3, 2, 3.6, 6	10	3.0
AB883	Beck, R.	MPIFR	Magnetic fields in Barred galaxy NGC 1097	3.6 w/BC89	10, 12, 13, 14	21.9
AB890	Bhatnagar, S. Anantharamaiah, K.R. Roshi, A.D. Rao, A.P.	NCRA-Pune Raman/NRAO-Socorro NCRA NCRA	Low density ionized gas in directions of galactic SNRs	90 line	15	8.5
AC516	Cassaro, P. Stanghellini, C. Dallacasa, D. Bondi, M. Zappala, R.A.	Catania Noto Bologna Bologna Catania	Extended emission from gamma ray sources	3.6, 20 w/BM111	3,19	7.0
AC521	Cote, S. Broadhurst, T. Carignan, C. Freeman, K. Wyse, R.	DAO Calif.-Berkeley Montreal Mt. Stromlo Johns Hopkins	Search for HI emission associated with very nearby Ly absorbers	20 line w/BB103	7, 8	13.0
AD419	Dennett-Thorpe, J. Barthel, P.D. van Bemmel, I.M. Corbett, E.	Lisbon Groningen Groningen Hertfordshire	Radio asymmetries in 3CR broadline radio galaxies	6	30	3.0
ADHOC	Hjellming, R.M.	NRAO-Socorro	Adhoc Proposal One		30	0.7
AE123	Eyres, S.P.S. Richards, A.M.S. Evans, A. Bode, M.F. Smalley, B. Bains, I.	Keele Jodrell Bank Keele John Moores Keele Manchester	Planetary nebula associated with V4334 Sgr	20	6	7.9
AE125	Edge, A.C. Allen, S.W. Crawford, C.S. Fabian, A.C.	Durham Cambridge Cambridge Cambridge	Radio properties of central galaxies in x-ray selected clusters	2, 3.6, 6, 20	22	3.0
AF349	Feretti, L. Giovannini, G. Tordi, M.	Bologna Bologna Bologna	Observations of new radio halos and relics from NVSS	20	25, 29	8.0
AF350	Falcke, H. Lobanov, A. Wright, M. Bower, G. Aller, M. Terasranta, H. Patnaik, A.	MPIFR MPIFR Calif.-Berkeley MPIFR Michigan Metsahovi MPIFR	Monitoring extremely variable spiral III Zw 2	1.3, 2, 3.6, 6, 20, 90	3, 29	2.5
AG516	Gao, Y. Lo, K.Y. Gruendl, R. Hwang, C-Y.	Illinois Illinois Illinois IAA, Taiwan	Luminous IR galaxies in a merger sequence	20 w/BB103	8	4.0
AG546	Gaume, R. Martin-Pintado, J.	USNO Yebes	NH3 Masers in sgr B2?	1.3	2	4.5
AG547	Gallimore, J.F. Thornley, M.D. Baum, S. O'Dea, C. Kukula, M. Axon, D. Pedlar, A. Thean, A.	MPE MPE STScI STScI STScI Jodrell Bank Jodrell Bank Jodrell Bank	Star forming regions in active and normal spiral galaxies	6	9, 13	3.2
AG548	van Gorkom, J. Szomoru, A. Verheijen, M. Schiminovich, D. Poggianti, B.	Columbia Calif.-Santa Cruz NRAO-Socorro Caltech Cambridge	Cluster evolution as probed in HI	20 line w/BD55, AA232, BB103	1, 4, 5, 6, 7, 8	36.6

## VLA Utilization Report November 1998

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AH628	Hjellming, R.M. Mioduszewski, A.J. Rupen, M.P.	NRAO-Socorro JIVE-Socorro NRAO-Socorro	Radio and x-ray activity in galactic black holes	2, 3.6, 6, 20 w/BM111, BR57	4, 13, 19, 23, 24,30	15.7
AH648	Harris, D.E. Leahy, J.P. Leighly, K.M.	CfA Jodrell Bank Columbia	X-ray emitting radio hotspot in 3C390	0.7, 2 w/GP18	28	10.5
AH657	Han, J-L. Beck, R.	Beijing MPIfR	Magnetic field in NGC 2997; coherent or not?	22, 18	12	6.0
AH658	Hjellming, R.M. Narayan, R. Rupen, M.	NRAO-Socorro CfA NRAO-Socorro	Characterizing the quiescent radio emission of the black hole binary V404 cyg	20	18, 19	7.5
AH660	Hankins, T.H. Weatherall, J.C. Kern, J.S. Moffett, D.A.	NMIMT NMIMT NMIMT Tasmania	Bandwidth of the emission mechanism of Crab pulsar giant pulses	2, 3.6, 6, 20, 90 HTRP	19	5.0
AK453	Kassim, N. Lazio, J. Anantharamaiah, K. Goss, M. Falcke, H.	NRL NRL Raman/NRAO-Socorro NRAO-Socorro MPIfR	74 MHz imaging of the galactic center	90	29	8.0
AK456	Kulkarni, S.R. Bloom, J.S. Djorgovski, S. Vakil, D. Frail, D.A.	Caltech Caltech Caltech Caltech NRAO-Socorro	Radio afterglows of gamma ray bursters	2, 3.6, 6, 20 w/BR57	9, 14, 23	12.0
AK461	Kassim, N. Perley, R. Erickson, W. Lazio, J. Feretti, L.	NRL NRAO-Socorro Maryland NRL Bologna	74 MHz observations of bright sources	90 w/BM111	21	6.0
AK462	Kronberg, P. Ensslin, T. Biermann, P. Feretti, L. Giovannini, G. Perley, R. Hanish, B.	Toronto MPIfR MPIfR Bologna Bologna NRAO-Socorro STScI	The coma cluster at 74MHz	90	22	7.0
AK472	Kulkarni, S.R. Frail, D.A.	Caltech NRAO-Socorro	Radio counterpart to SGR 1900+14	20, 90 w/BM111	1, 18	5.0
AK476	Kurtz, S. Carral, P. Rodriguez, L.F. Hofner, P. DePree, C.	UNAM Guanajuato UNAM Arecibo/UPR Agnes Scott	Possible hot core near NGC 6334F	0.7, 3.6	1	2.0
AL451	Laine, S. Gottesman, S.	Herfordshire Florida	Anomalous radio continuum in NGC 7479	20	29	1.0
AL457	Lebron, M. Rodriguez, L.F. Lizano, S.	UNAM UNAM UNAM	Kinematical study of compact HII region G111.61+0.37	3.6	25	4.0
AL460	Lacey, C.K. Goss, W.M. Duric, N. Pannuti, T.	UNAM NRAO-Socorro New Mexico New Mexico	Supernova remnant search in M83	6	1	6.0
AL462	Lim, J. Ho, P.T.P.	Academia Sinica CfA	HI Environment of low redshift quasars	20 line	1	5.0
AL464	Leighly, K. van Gorkom, J.H. Harris, D.E.	Columbia Columbia CfA	HI in a galaxy near BLRG 3C 390.3	20 line w/BB103	7	8.0
AL466	Law-Green, D. Zezas, A. Ward, M.J. Hirst, P.	Leicester Leicester Leicester Leicester	Radio imaging of x-ray selected starbursts and composite galaxies	3.6, 6, 20	14	5.0
AL472	Lang, C.C. Morris, M. Goss, M.	NRAO/UCLA Calif.-Los Angeles NRAO-Socorro	H92 observations of unusual arched filaments	3.6 line w/BB103	5, 8, 9,12,14	33.6
AL473	Lang, C.C. Anantharamaiah, K.R.	NRAO/UCLA Raman/NRAO-Socorro	Radio polarimetric study of filamentary source G359.8+0.2	3.6, 6	10	5.0
AM573	Miller, S. Veilleuz, S. Wilson, A.	Maryland Maryland Maryland	Radio halos of edge-on spiral galaxies	20	5	3.0
AM602	Mirabel, F. Rodriguez, L.F. Dhawan, V.	Saclay UNAM NRAO-Socorro	Radio, infrared and x-ray observations of microquasar 1915+105	2, 3.6, 6 w/BM111	4, 21	6.0

## VLA Utilization Report November 1998

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AM604	Molnar, L. Dunn, D. Fix, J. dePater, I. van der Tak, F.	Iowa Iowa Iowa Calif-Berkeley Calif-Berkeley	Coordinated, multi-wavelength observations of Saturn near opposition	0.7, 1.3, 2	2,11	17.0
AM609	McLaughlin, M. Cordes, J. Lazio, J. Iyudin, A. Diehl, R. Bennett, K. Schoenfelder, V.	Cornell Cornell NRL MPIAP MPIAP ESTEC MPIAP	Search for radio emission from a young galactic SNR	20, 90	1	3.0
AN081	Niruj Mohan, R. Anantharamaiah, K.R. Goss, M.	Raman Raman/NRAO-Socorro NRAO-Socorro	Radio recombination lines from starburst galaxies	3.6 line	9, 15	14.0
A0139	Oosterloo, T. Morganti, R. Caldwell, N. Vergani, D. van Moorsel, G.	Milano Bologna Whipple Bologna NRAO-Socorro	Mass distribution in NGC 3108	20 line	9, 15	10.5
AR400	Roy, A.L. Anantharamaiah, K.R. Goss, M.	NRAO-Socorro Raman/NRAO-Socorro NRAO-Socorro	Radio recombination lines from NGC 3256	3.6 line	5, 6	5.0
AR402	Rudnick, L. Treichel, K. Katz-Stone, D. Giovannini, G.	Minnesota Minnesota USNA Bologna	Non-relativistic sheaths around extragalactic jets	3.6, 6, 20 w/GP18	27, 28	10.0
AS644	Scuderi, S. Stanghellini, C. Panagia, N.	Catania Noto STScI	Survey of radio emission from O and B supergiants	2, 3.6, 6 w/BD55	2, 11	5.5
AS645	Stanghellini, C. Dallacasa, D. Fanti, R. Centonza, M.	Noto Bologna Bologna Bologna	High frequency peakers at higher frequency	1.3, 2, 3.6, 6, 20 w/BC89	7, 14	5.0
AS648	Shibata, K.M. Sato, S.	NAO-Mitaka NAO-Mitaka	HI absorption survey of megamaser sources	20 line	11, 27	5.5
AT211	Taylor, G. Fabian, A.	NRAO-Socorro Cambridge	X-ray to radio correlations in cooling flow clusters	6, 20	6	2.5
AT220	Thornley, M.D.	MPE	Weak spiral density waves in flocculent spiral NGC 7331	20 line	27	4.0
AW489	Wilner, D. Ho, P. Rodriguez, L. Zhang, Q.	Cfa Cfa UNAM NRAO-CV	7mm continuum studies of T-Tauri disks	0.7 w/BR57	23	18.5
AY085	Yun, M. Hibbard, J.	NRAO-Socorro NRAO-CV	Tidal HI in IR luminous mergers	20	27	1.9
AY105	Yun, M. Butler, B.	NRAO-Socorro NRAO-Socorro	Stars of large angular size at 7mm	0.7	30	3.6
AZ097	van Zee, L.	NRAO-Socorro	Gas distributions and kinematics of isolated irregular galaxies	20	20	2.0
AZ108	van Zee, L. Haynes, M.P.	NRAO-Socorro Cornell	Testing Closed-Box Chemical Evolution: Controlling the Dark Matter and Neutral Gas Content	20 line w/BM111	21	8.0
AZ112	Zhu, M. Seagquist, E.	Toronto Toronto	HI Mapping of interacting galaxies	20 line	12	4.0
BB103	Blundell, K. Close, L. Leahy, P.	Oxford Oxford Jodrell Bank	Low frequency study of hotspots in powerful radio sources	90 Single antenna VLBI w/AG548, AL464, AC521	7	24.3
BC089	Claussen, M.J. Wooten, A. Marvel, K.B. Wilking, B.A.	NRAO-Socorro NRAO-CV Caltech Missouri	Proper motions of water masers in NGC 1333	1.3 Single antenna VLBI w/test, AB883, AS645	13	10.5
BD046	Diamond, P.J. Kemball, A.J. Boboltz, D.A.	NRAO NRAO-Socorro Haystack	Monitoring SiO masers through a cycle of Mira TX Cam	0.7	15	2.0
BD055	Doeleman, S. Barvainis, R. Lonsdale, C. Greenhill, L. Phillips, R.	Haystack Haystack Haystack Cfa Haystack	SiO masers in Orion Nebula	0.7 Single antenna VLBI w/AG548, AS644	1	10.0
BG073	Gomez, J.L. Marscher, A.P. Alberdi, A.	IAA, Granada Boston IAA, Granada	3C 120 rapid variations	0.7, 1.3 w/GP18	27	2.0

VLA Utilization Report November 1998

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BI010	Imai, H. Sasao, T. Kameya, O. Miyoshi, M. Horiuchi, S. Asaki, Y. Deguchi, S.	NAO-Mizusawa NAO-Mizusawa NAO-Mizusawa NAO-VSOP NAO-VSOP NAO-Nobeyama	Water masers in W3 IRS 5	1.3	27	2.0
BM011	Mioduszewski, A.J. Hjellming, R.M. Rupen, M.	JIVE/NRAO-Socorro NRAO-Socorro NRAO-Socorro	VLBI Obs. of x-ray binary SS433 during a flare	18 w/AK472, BM111, AH658	18, 19, 21	23.0
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 Single antenna VLBI w/AH628, Test, AK456, AW489	23	12.0
BS044	Satoh, S. Inoue, M. Nakai, N. Shibata, K.M. Migenes, V. Kameno, S. Fujisawa, K.	NAO NAO-Nobeyama NAO-Nobeyama NAO-Mitaka Guanajuato NAO-Nobeyama ISAS	Monitoring of the continuum and H2O maser emission in NGC 3079	1.3, 2, 3.6 Phased array VLBI	18	12.0
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	20 Phased array VLBI	27	7.1
GB033	Bartel, N. Rupen, M.P. Bietenholz, M.F. Beasley, A.J. Conway, J. Altunin, V. Graham, D. Venturi, T. Umaña, G.	York NRAO-Socorro York NRAO-Socorro Onsala JPL MPIfR Bologna Noto	VLBI imaging of Supernova 1993J in M81	3.6, 6, 20 Phased array VLBI	20	11.5
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, 20 Phased array VLBI	22, 29	22.4
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, 20 Single antenna VLBI w/BG73, AR402, GP18	28	12.0
GP019	Peck, A. Taylor, G.	NRAO-Socorro NRAO-Socorro	Observations of HI in absorption toward NGC 3894	21	28	10.5
	Staff	NRAO	Baselines, Pointing, Delays Holiday Maintenance Move/Operations Software General tests Thanksgiving Shutdown			55.4 24.1 45.1 9.0 27.2 71.1 0.7
					25	



The average downtime was 3.8%.

The array was scheduled for 96.7% (697.9 hours)  
492.2 hours (68.2% of time) for astronomical programs  
133.4 hours (18.5% of time) for tests/calibration  
72.3 hours (10.0% of time) for maintenance  
Total 697.9 hours ( 96.7%) scheduled.

Array was in the CnB configuration from November 1 through November 16.

Array was in the C config. from November 16 through November 31.

The following independent proposals shared simultaneous observing time (89.8 hours total simultaneous observing):

Projects	Hours
AA232/BD55	3.6
AB883/BC89	5.5
AC516/BB103	4.0
AC516/BM111	2.5
AC521/BB103	6.0
AG548/BB103	6.5
AG548/BD55	2.9
AH628/BM111	2.0
AH628/BR57	0.0
AH648/GP18	3.3
AH658/BM111	0.3
AK456/BR57	4.0
AK461/BM111	5.4
AK472/BM111	2.0
AL464/BB103	1.7
AL472/BB103	6.1
AM602/BM111	3.0
AR402/GP18	8.0
AS644/BD55	3.5
AS645/BC89	2.4
AW489/BR57	5.0
AZ108/BM111	3.8
BG73/GP18	0.7
BM111/BM111	2.0
Test/BC89	2.6
Test/BR57	3.0

VLA Utilization Report October 1998

Low

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AB856	Biretta, J. Owen, F. Zhou, F.	STScI NRAO-Socorro NMIMT	VLA Monitoring of M87 Jet at 15 GHz	2	15	4.0
AB860	Bietenholz, M.F. Frail, D.A. Weiler, K.W.	York NRAO-Socorro NRL	Low frequency observations of 3C58 and Vela X	90	1	6.5
AB875	Bennett, P.D. Harper, G.M. Brown, A. Bauer, W.H.	Colorado Colorado Colorado Wellesley	1997/98 Eclipse of VV Cephei	1.3, 2, 3.6, 6	1, 21	4.5
AB876	Bietenholz, M.F. Frail, D.A. Hester, J.J.	York NRAO-Socorro Arizona	Time-variability in the radio structure of the Crab nebula	6	12	10.5
AB879	Becker, R.H. White, R.L. Helfand, D.J.	Calif.-Davis STScI Columbia	FIRST survey	20	1,2,5,6,9,11, 15-17	90.0
AC508	Cooray, A.R. Carlstrom, J.E. Holzapfel, W.L. Joy, M.	Chicago Chicago Chicago NASA-MSFC	Radio sources in galaxy clusters	2, 3.6, 6	17	7.8
AD419	Dennett-Thorpe, J. Barthel, P.D. van Bemmel, I.M. Corbett, E.	Lisbon Groningen Groningen Hertfordshire	Radio asymmetries in 3CR broadline radio galaxies	20	3	15.0
ADHOC	Dennett-Thorpe, J.	Lisbon	Adhoc Proposal 1		6	0.6
ADHOC	Goss, M.	NRAO-Socorro	Adhoc Proposal 2		7	2.0
ADHOC	Hjellming, R.M.	NRAO-Socorro	Adhoc Proposal 3		20, 21, 22	1.6
AE120	Eales, S. Lilly, S. Bond, D. Gear, W. Hammer, F. Le Fevre, O.	Cardif Toronto CITA MRAO Paris Obs Marseille	Sources detected in a sub-millimeter survey	20	2, 2, 5	17.5
AF337	Frail, D.A. Kulkarni, S.R. Vakil, D.	NRAO-Socorro Caltech Caltech	Late time radio emission from well localized gamma ray bursts	3.6, 6, 20	18	3.0
AF340	Fassnacht, C. Pearson, T. Readhead, T. Browne, I. Wilkinson, P. Myers, S.	Caltech Caltech Caltech Jodrell Bank Jodrell Bank Pennsylvania	VLA Monitoring of gravitational lens 1608+656	3.6	1,3,6,10,13, 15,18	7.0
AF354	Furuya, R. Wootten, H.A. Claussen, M.J. Saito, M. Kitamura, Y. Marvel, K.B. Kawabe, R.	Graduate University NRAO-CV NRAO-Socorro CfA ISAS Caltech NAO-Nobeyama	VLA multi-epoch H2O maser survey toward Class 0/I protostars	1.3 line w/BM99	24	4.0
AG539	Cruz-Gonzalez, I. Salas, L. Porras, A. Rodriguez, L.F.	UNAM UNAM INAOE UNAM	Exciting source of the curved molecular hydrogen jet near S187	3.6	16	3.0
AH628	Hjellming, R.M. Mioduszewski, A.J. Rupen, M.P.	NRAO-Socorro JIVE-Socorro NRAO-Socorro	Radio and x-ray activity in galactic black holes	2, 3.6, 6, 20	6,11,12,15,1 8,23,30	12.4
AH658	Hjellming, R.M. Rupen, M.P. Narayan, R.	NRAO-Socorro NRAO-Socorro CfA	Quiescent radio emission of blackhole binary V404 Cyg	1.3, 2, 3.6, 6, 20	25	12.0
AH659	Hoare, M.G. Hartquist, T.W. Dyson, J.E.	Leeds Leeds Leeds	Probing the cometary tails in the Helix	20	31	5.0
AH660	Hankins, T.H. Weatherall, J.C. Kern, J.S. Moffett, D.A.	NMIMT NMIMT NMIMT Tasmania	Bandwidth of the emission mechanism of Crab pulsar giant pulses	2, 3.6, 6, 20, 90 HTRP	11,17,26,28, 30	21.7
AK452	Koopmans, L. deBruyn, A.G. Jackson, N. Wilkinson, P. Fassnacht, C. Myers, S.	Groningen NFRA Jodrell Bank Jodrell Bank Caltech Pennsylvania	Time delay monitoring of the CLASS gravitational lens B1600+434	3.6	...	7.0

VLA Utilization Report October 1999

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AH669	Hjellming, R.M. Rupen, M.P. Mioduszewski, A.J.	NRAO-Socorro NRAO-Socorro JIVE-Socorro	Galactic black hole X-ray transients	1.3, 2, 3.6, 6, 20 w/BB109	1,4,5,7,12,1 3,15,18-20,2 5,26,29	21.1
AH685	Haarsma, D.B. Hewitt, J. Langston, G. Moore, C.	Haverford MIT NRAO-GB Groningen	Time delay monitoring of gravitational lens 2016+112	3.6, 6	19	1.5
AH691	Hibbard, J.E. Higdon, J. Charlton, J.	NRAO-CV Groningen Pennsylvania	Interacting/merging pairs with extensive tidal tails	20 line	9, 10, 11, 19, 23	31.0
A1078	Impey, C.D. Peng, C.Y.	Arizona Arizona	Dark gravitational lenses or binary quasars?	3.6 w/BD62	14, 15, 17	16.5
AJ270	Jura, M. Turner, J. Kahane, C.	UCLA UCLA Grenoble	NVSS radio star HD 188037	3.6, 6, 20	2	3.5
AK485	Kulkarni, S.R. Frail, D.A. Bloom, J.S. Djorgovski, S.G. Harrison, F.A.	Caltech NRAO-Socorro Caltech Caltech Caltech	Radio afterglows of gamma ray bursts	2, 3.6, 6, 20 BB109	1, 2, 9,19,25-27,2 9	24.0
AK495	Keenan, F.P. Smoker, J.V. Irwin, M.J. Watson, D. Marcha, M.J.	Queens-Belfast Queens-Belfast Cambridge University College Lisbon	Optically detected blue objects in the halo of M31	6, 20	24	8.0
AK497	Kokkonen, K.K. Lehto, H.J. Johnson, D.	Tuorla Tuorla Charterhouse	R Aquarii Jet	1.3, 2, 6	11, 12	14.5
AL494	Lang, C. Goss, M. Rodriguez, L.F.	UCLA NRAO-Socorro UNAM	Radio observations of the ionized winds of the massive stars in the arches cluster	7, 3.5	21	3.0
AL508	Lovell, J. Jauncey, D. Edwards, P. Reynolds, J. Tzioumis, A.	ATNF ATNF ISAS ATNF ATNF	GLASS-2: gravitational lens and astrometric southern survey	3.6	12, 14, 17	31.0
AM603	Morganti, R. Oosterloo, T. van Moorsel, G. Killeen, N. Tadhunter, C.	Bologna Milano NRAO-Socorro ATNF Sheffield	HI absorption in radio galaxies	20 line	30	7.0
AM626	Miller, N.A. Owen, F.	New Mexico State NRAO-Socorro	Search for dust-obscured star formation in E+A galaxies	20	13	3.0
AM627	Mirabel, F. Dhawan, V. Gerard, E. Hjellming, R. Martí, Josep Ogley, R. Pooley, G. Rodriguez, L.F.	Saclay NRAO-Socorro Meudon NRAO-Socorro Jaen Saclay Cambridge UNAM	Search for new microquasars	3.5	27	1.1
AN087	Neff, S.G. Ulvestad, J.S.	NASA-GSFC NRAO-Socorro	HII regions in NGC 4038/9 ("the Antennae")	2	21, 25	8.5
AP389	Peck, A. Taylor, G. O'Dea, C. Giovannini, G.	NRAO/NMIMT NRAO-Socorro STScI Bologna	Searching for HI absorption in 2 nearby radio galaxies	20 line	2	6.5
AR412	Rottgering, H. De Breuck, C. van Breugel, W. Miley, G.	Leiden Lawrence Livermore Lawrence Livermore Leiden	Search for z=5 radio galaxies from the WISH and NVSS radio surveys	20	16, 19	14.5
AR420	Rodriguez, L.F. Reipurth, B. Martí, J.	UNAM Colorado U. Jaen	Do all Class 0 objects have centimeter radio continuum	3.6 w/baseline	26	9.0
AR422	Rosati, P. Shaver, P. Kellermann, K. Fomalont, E.	MPIE ESO-Garching NRAO-CV NRAO-CV	Radio observations of the deep AXAF X-ray field	20	21, 22, 23	21.5

## VLA Utilization Report October 1998

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AK456	Kulkarni, S.R. Bloom, J.S. Djorgovski, S. Vakil, D. Frail, D.A.	Caltech Caltech Caltech Caltech NRAO-Socorro	Radio afterglows of gamma ray bursters	2, 3.6, 6, 20	6,10,29	8.5
AK461	Kassim, N. Perley, R. Erickson, W. Lazio, J. Feretti, L.	NRL NRAO-Socorro Maryland NRL Bologna	74 MHz observations of bright sources	90 w/BC89	4	24.0
AK462	Kronberg, P. Ensslin, T. Biermann, P. Feretti, L. Giovannini, G. Perley, R. Hanish, B.	Toronto MPIfR MPIfR Bologna Bologna NRAO-Socorro STScI	The coma cluster at 74MHz	90	18	12.0
AK466	Gopal Krishna Bhatnagar, S. Wisotzki, L.	NCRA-Pune NCRA-Pune Hamburg Obs.	Search for radio continuum from QSOs in the Hamburg-ESO-Survey	6	26	21.0
AK469	Kameno, S. Hamaguchi, K. Umemoto, T. Tsuboi, Y. Koyama, K. Fomalont, E.	NAO-Nobeyama Kyoto NAO Kyoto Kyoto NRAO-CV	Jet ejection from protostar R1 in R CrA star forming region	3.6 w/BC89	5	1.0
AK473	Krishnamurthi, A. Linsky, J.L. O'Neal, D.	Colorado Colorado Colorado	Radio emission from very late M dwarfs and brown dwarfs	3.6 w/BM99	23, 24	20.0
AL442	Lara, L. Cotton, W.D. Feretti, L. Giovannini, G. Marcaide, J.M. Venturi, T.	IAA NRAO-CV Bologna Bologna Valencia Bologna	New sample of large angular size radio sources	6, 20	6	11.0
AL460	Lacey, C.K. Goss, M. Duric, N. Pannuti, T.	UNAM NRAO-Socorro New Mexico New Mexico	Supernova remnant search in M83	6	31	6.0
AL462	Lim, J. Ho, P.T.P.	Academia Sinica CfA	HI Environment of low redshift quasars	20 line	31	1.5
AM585	Marti, J. Mirabel, F. Rodriguez, L.F. Chaty, S.	Saclay Saclay UNAM Saclay	Monitoring the radio outbursts of GX 354-00	3.6, 6	2, 18, 29	3.0
AM596	Menten, K.M. Neuhauser, R. Preibisch, T.	MPIfR MPIE Wurzburg	Class I protostars in R CrA	3.6	1, 10, 13, 22	8.6
AM601	Marcha, M. Dennett-Thorpe, J. Browne, I.	Lisbon Lisbon Jodrell Bank	Extended emission in flat radio spectrum sources	20 w/BC89	3	11.5
AM602	Mirabel, F. Rodriguez, L.F. Dhawan, V.	Saclay UNAM NRAO-Socorro	Radio, infrared and x-ray observations of microquasar 1915+105	2, 3.6, 6	7, 16, 27	10.5
AM604	Molnar, L. Dunn, D. Fix, J. dePater, I. van der Tak, F.	Iowa Iowa Iowa Calif.-Berkeley Calif.-Berkeley	Coordinated, multi-wavelength observations of Saturn near opposition	3.6, 6, 20 w/BD46	13, 14	16.5
AM609	McLaughlin, M. Cordes, J. Lazio, J. Iyudin, A. Diehl, R. Bennett, K. Schoenfelder, V.	Cornell Cornell NRL MPIAP MPIAP ESTEC MPIAP	Search for radio emission from a young galactic SNR	20, 90	31	3.0
AP361	Pooley, G.G. Alexander, P. Gilbert, G. Hardcastle, M.J. Riley, J.M.	MRAO MRAO MRAO Bristol MRAO	Properties of Jets in FR II radio sources	3.6	10, 13	8.8
AR398	Roy, A.L. Anantharamaiah, K.R. Verheijen, M.A.W.	NRAO-Socorro Raman/NRAO-Socorro NRAO-Socorro	Molecular absorption in two type 2 Seyfert galaxies	20 line	18	11.0

VLA Utilization Report October 1999

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
V026	Walker, R.C.	NRAO-Socorro	3C 120	18 Phased array VLBI	31	1.5
VC993	Doeleman, S.	MIT	VSOP Proposal		22	9.1
W016	Gabuzda, D.C. Pushkarev, A.B. Kochanov, P.Y. Cawthorne, T.V.	JIVE Lebedev Moscow Univ. Lancashire	Polarization of BL Lac objects	6 Phased array VLBI	26	11.0
	Staff	NRAO	Baselines, Pointing, Delays Maintenance Move/Operations Software General tests			70.2 39.4 18.2 26.5 37.9

The average downtime was 3.1%.

The array was scheduled for 100.0% (747.1 hours)  
 568.0 hours (76.0% of time) for astronomical programs  
 115.3 hours (15.4% of time) for tests/calibration  
 63.8 hours ( 8.5% of time) for maintenance  
 Total 747.1 hours (100.0%) scheduled.

Array was in the BnA configuration from October 1 through October 4.

Array was in the B configuration from October 4 through October 31.

The following independent proposals shared simultaneous observing time (42.3 hours total simultaneous observing):

Projects	Hours
AB922/BB109	2.0
AD427/VC993	0.2
AD428/BD62	3.9
AG580/BD62	2.5
AH669/BB109	0.5
A178/BD62	1.6
AK485/BB109	2.0
AR420/Baselines	5.0
AS568/BB109	0.9
AT233/BB109	0.8
AT236/VC993	5.9
AW362/Test	1.9
Baselines/BB109	4.5
Maintenance/Test	2.3
Move/op/BB109	3.2
Test/Maintenance	1.9
Test/VC993	3.2

## VLA Utilization Report October 1998

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AR399	Rector, T.A. Stoeke, J.T.	Colorado Colorado	Parsec and kpc-scale jets in x-ray selected BL Lac objects	3.6, 20	10	11.9
AS568	Sramek, R. Weiler, K. VanDyk, S. Panagia, N.	NRAO-Socorro NRL UCLA STScI	Properties of radio supernovae	1.3, 2, 3.6, 6, 20	19	6.0
AS638	Siysh, V.I. Val'tts, I.E. Kalensky, S.V. Golubev, V.V.	Lebedev Lebedev Lebedev Lebedev	Methanol masers in star forming regions	0.7 line	6	2.0
AT210	Thorsett, S.E. Taylor, J.H. Nice, D.J. Briskin, W.F.	Princeton Princeton Princeton NRAO-Socorro	Timing fast pulsars at the VLA	6, 20, 90	9	3.0
AT221	Taylor, G.B. Vermeulen, R.C.	NRAO-Socorro NFRA	Searching for HI in the CSOs 1826+796 and 2021+614	20 line	24, 26	14.6
AW362	White, S.	Maryland	The stellar activity cycle on active stars	3.6, 6, 20 w/BD46	29	3.4
AW489	Wilner, D. Ho, P. Rodriguez, L. Zhang, Q.	Cfa Cfa UNAM NRAO-CV	7mm continuum studies of T-Tauri disks	0.7	8	9.0
AX004	Xanthopoulos, E. Browne, I. Wilkinson, P. Patnaik, A. Porcas, R. King, L.	Jodrell Bank Jodrell Bank Jodrell Bank MPIFR MPIFR Jodrell Bank	Monitoring the CLASS gravitational lenses B1030+074 and B1933+503	3.6 w/BC89	4, 8, 9, 11, 16	4.8
AY100	Yun, M. Carilli, C. Verheijen, M.	NRAO-Socorro NRAO-Socorro NRAO-Socorro	Search for new HI 21cm quasar absorption line systems	20 line	29, 30	10.0
AZ106	Zhang, Q. Hunter, T. Sridharan, T.K. Cesaroni, R.	NRAO-CV Cfa Cfa Arcetri	High mass protostar 20126+4104	1.3 line w/BE17	8	12.0
AZ107	van Zee, L. Salzer, J.J. Skillman, E.D.	NRAO-Socorro Wesleyan Minnesota	Kinematic constraints on BCD to dE evolutionary scenarios	20 line	9	12.0
AZ115	Zijlstra, A.A. Dudziak, G.	ESO ESO	Planetary He2-426 in the Sagittarius Dwarf galaxy		1	1.5
BA030	Attridge, J. Roberts, D.H. Wardle, J.F.C.	Brandeis Brandeis Brandeis	Multi-frequency VLBA imaging of the Blazar 1055+018	18	23	1.5
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	20 HTRP	22	3.5
BC089	Claussen, M.J. Wooten, A. Marvel, K.B. Wilking, B.A.	NRAO-Socorro NRAO-CV Caltech Missouri	Proper motions of water masers in NGC 1333	1.3 Single antenna VLBI w/AM601, AX4, AK461, AK466	3, 26	20.2
BD046	Diamond, P.J. Boboltz, D.A. Kemball, A.J.	NRAO-Socorro USNO NRAO-Socorro	Monitoring SiO masers through a cycle of Mira TX Cam	0.7 Single antenna VLBI w/move/op, AW362, BG73, test	20, 14, 28	16.4
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	20 Phased array VLBI	12	13.6
BE017	Engels, D. Winnberg, A. Yie, J.	Sternwarte Onsala Onsala	Structure of H2O Masers in OH/IR Stars		8 w/AZ106, AT210	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	20 Phased array VLBI	11, 21	22.5
BG073	Gomez, J.L. Marscher, A.P. Alberdi, A.	IAA, Granada Boston IAA, Granada	3C 120 rapid variations	0.7, 1.3 w/BD46	29	1.0

VLA Utilization Report October 1998

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
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 Phased array VLBI w/move/op	15, 19, 22	17.6
BM099	Miyoshi, M. Imai, H. Ukita, N. Diamond, P.J. Hagiwara, Y. Morimoto, M.	NAO-Mitzuzawa NAO-Mizusawa NAO-Nobeyama NRAO-Socorro Graduate University Kogoshima	Astrometry with different transitions of SiO masers	0.7 Single antenna VLBI w/AF354, BM99	24	7.0
	Staff	NRAO	Baselines, Pointing, Delays Maintenance Move/Operations Software General tests			42.0 43.2 43.7 31.4 39.2

The average downtime was 4.7%.

The array was scheduled for 100.0% (747.1 hours)  
 556.6 hours (74.5% of time) for astronomical programs  
 116.5 hours (15.6% of time) for tests/calibration  
 74.0 hours ( 9.9% of time) for maintenance  
 Total 747.1 hours (100.0%) scheduled.

Array was in the B configuration from October 1 through October 19.

Array was in the CnB config. from October 19 through October 31.

The following independent proposals shared simultaneous observing time (64.8 hours total simultaneous observing):

Projects	Hours
AF354/BM99	4.0
AK461/BC89	2.8
AK466/BC89	10.1
AK473/BM99	2.5
AM604/BD46	5.7
AZ106/BE17	9.0
BG073/BD46	1.0
Move/Op/BF42	7.9
Move/Op/BL38	5.7
Test/BM99	0.5
Test/Maint/BD46	1.1

VLA Utilization Report September 1998

Progrm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
ABB50	Barvainis, R. Antonucci, R.	Haystack Calif.-Santa Barbara	Search for absorption from the molecular torus of AGNs	1.3 line	26	8.0
ABB60	Bietenholz, M.F. Frail, D.A. Weiler, K.W.	York NRAO-Socorro NRL	Low frequency observations of 3C58 and Vela X	90	30	1.5
ABB69	Black, G. Campbell, D. Nicholson, P.	Cornell Cornell Cornell	Radio source occultation by Saturnian Ring system	20	4	5.9
ABB74	Brown, A. Osten, R.A. Pallavicini, R. Ayres, T. Jones, K. Harper, G.	Colorado Colorado Palermo Colorado Queensland Colorado	Multi-wavelength study of flaring and coronal structure on HR1099	2, 3.6, 6, 20 w/BM113, BC81	7, 8, 9, 10	47.5
ABB75	Bennett, P.D. Harper, G.M. Brown, A. Bauer, W.H.	Colorado Colorado Colorado Wellesley	1997/98 Eclipse of VV Cephei	1.3, 2, 3.6, 6	4	3.0
ABB78	Bauer, F. Condon, J.J. Thuan, T.X.	Virginia NRAO-CV Virginia	Energy sources and beaming in the brightest x-ray galaxies	6 w/BM113, BB82	9, 20	6.0
ABB79	Becker, R.H. White, R.L. Helfand, D.J.	Calif.-Davis STScI Columbia	FIRST survey	20  w/BB82	1,3,4,6,8,11 -13,16-19,24 ,25,29	108.6
ADHOC	Perley, R.A.	NRAO-Socorro	Adhoc Proposal 1	 w/V093	1	0.6
ADHOC	Hjellming, R.M.	NRAO-Socorro	Adhoc Proposal 2		9	1.0
AE118	Erickson, B. Gergely, T. Bastian, T. Vourlidis, A.	Tasmania NSF NRAO-Socorro George Mason	Solar active regions	90 w/BR56	26, 27	16.0
AE119	Erickson, B. Webber, B. Duric, N. Perley, R.	Tasmania New Mexico State New Mexico NRAO-Socorro	74 MHz observations of edge-on galaxies	90 w/BB82	20	8.0
AE120	Eales, S. Lilly, S. Bond, D. Gear, W. Hammer, F. Le Fevre, O.	Cardif Toronto CITA MRAO Paris Obs Marseille	Sources detected in a sub-millimeter survey	20	29	6.0
AF340	Fassnacht, C. Pearson, T. Readhead, T. Browne, I. Wilkinson, P. Myers, S.	Caltech Caltech Caltech Jodrell Bank Jodrell Bank Pennsylvania	VLA Monitoring of gravitational lens 1608+656	3.6	2,6,9,13,19, 24,28	7.5
AF350	Falcke, H. Lobanov, A. Wright, M. Bower, G. Aller, M. Terasanta, H. Patnaik, A.	MPIfR MPIfR Calif.-Berkeley MPIfR Michigan Metsahovi MPIfR	Monitoring extremely variable spiral III Zw 2	1.3, 2, 3.6, 6, 20, 90	4, 30	2.5
AH628	Hjellming, R.M. Mioduszewski, A.J. Rupen, M.P.	NRAO-Socorro JIVE-Socorro NRAO-Socorro	Radio and x-ray activity in galactic black holes	2, 3.6, 6, 20 w/move/op/BR56	4, 14, 21, 26	10.0
AH648	Harris, D.E. Leahy, J.P. Leighly, K.M.	CfA Jodrell Bank Columbia	X-ray emitting radio hotspot in 3C390	2	3	9.1
AH651	Herrnstein, J.R. Ransom, S. Greenhill, L.J. Eikenberry, S. Anderson, S. Lorimer, D. Kramer, M. Backer, D.	NRAO-Socorro CfA CfA Caltech Caltech MPIfR MPIfR Calif.-Berkeley	Search for steep spectrum sources in northern globular clusters	6, 20	27, 28	13.0
AK453	Kassim, N. Lazio, J. Anantharamaiah, K. Goss, M. Falcke, H.	NRL NRL Raman/NRAO-Socorro NRAO-Socorro MPIfR	74 MHz imaging of the galactic center	90	25	8.0



VLA Utilization Report September 1998

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AK456	Kulkarni, S.R. Bloom, J.S. Djorgovski, S. Vakil, D. Frail, D.A.	Caltech Caltech Caltech Caltech NRAO-Socorro	Radio afterglows of gamma ray bursters	2, 3.6, 6, 20	4,6,7,13,25, 29,30	21.1
AK468	Koerner, D.W. Millares, R. Chandler, C.J. Sargent, A.I.	JPL Pennsylvania Cambridge Caltech	Radial structure of circumstellar disks	0.7, 1.3, 2, 3.6 w/BD46	25, 26	16.0
AK469	Kameno, S. Hamaguchi, K. Umemoto, T. Tsuboi, Y. Koyama, K. Fomalont, E.	NAO-Nobeyama Kyoto NAO Kyoto Kyoto NRAO-CV	Jet ejection from protostar R1 in R CrA star forming region	3.6	6	1.0
AL441	Ludke, E. Katz-Stone, D.	Santa Maria USNA	Spectral analysis of CSS galaxies	1.3, 2 w/BC81, BA35	11, 17	9.0
AL443	Lynds, R. O'Neil, E.J.	NOAO NOAO	VLA 20cm and 6cm continuum observations of NGC 6745	20	24	8.0
AL448	Lacey, C.K. Goss, M.	UNAM NRAO-Socorro	Search for 1720 MHz OH masers in the nearby irregular galaxy NGC 4449	20 line	14	12.0
AL449	Lebron, M. Rodriguez, L.F. Lizano, S.	UNAM UNAM UNAM	Neutral flows from compact HII regions: 21cm HI observations	20 line	23	8.0
AL452	Law-Green, D. Hirst, P. Ward, M.J. O'Brien, P.T.	Leicester Leicester Leicester Leicester	PDS 456, a nearby radio quiet quasar	6, 20 w/BR56	26	1.5
AL453	Law-Green, D. Zezas, A. Ward, M.J. Hirst, P.	Leicester Leicester Leicester Leicester	Radio imaging of x-ray selected starbursts and composite galaxies	6, 20	6, 16	7.9
AL454	Law-Green, D. Hirst, P. Ward, M.J. O'Brien, P. Bleackley, P. Thean, A.H.C.	Leicester Leicester Leicester Leicester Leicester Jodrell Bank	Radio structures of narrow-line Seyfert 1's	6, 20	2	4.0
AM596	Menten, K.M. Neuhauser, R. Preibisch, T.	MPIfR MPIE Wurzburg	Class I protostars in R CrA	3.6 w/BR56	5, 26	8.0
AM602	Mirabel, F. Rodriguez, L.F. Dhawan, V.	Saclay UNAM NRAO-Socorro	Radio, infrared and x-ray observations of microquasars 1915+105	2, 3.6, 6	13, 28	6.0
AM603	Morganti, R. Oosterloo, T. van Moorsel, G. Killeen, N. Tadhunter, C.	Bologna Milano NRAO-Socorro ATNF Sheffield	HI absorption in radio galaxies	20 line	29	7.1
AN079	Neff, S.G. Ulvestad, J.S. Smith, D.A. Fanelli, M.N.	NASA-GSFC NRAO-Socorro NASA-GSFC NASA-GSFC	SNR and HII regions in NGC 4038/9 ("the Antennae")	2, 3.6	7	8.0
AP370	dePater, I. Sault, R.J.	Calif-Berkeley ATNF	Jupiter patrol at the VLA	20, 90 w/move/op,	14, BC89	13.1
AP371	dePater, I. Butler, B.	Calif-Berkeley NRAO-Socorro	Jupiter's radio spectrum from 74 up to 8000 MHz	90	18, 19	18.0
AR396	Rupen, M. Anantharamaiah, K.R.	NRAO-Socorro Raman/NRAO-Socorro	Radio recombination lines and OH in NGC 1052	3.6, 20 line	3	5.0
AS568	Sramek, R. Panagia, N. Van Dyk, S. Weiler, K.	NRAO-Socorro STScI UC-Berkeley NRL	Properties of Radio Supernovae	90, 20, 6, 3.5, 2, 1.3	6	2.5
AS637	Stanghellini, C. Dallacasa, D. O'Dea, C.P. Baum, S. Fanti, R. Fanti, C.	Noto Bologna STScI STScI Bologna Bologna	Extended emission, polarization and variability in GPS sources	1.3, 2, 3.6, 6, 20, 90	10, 21	13.5
AS638	Slysh, V.I. Val'tts, I.E. Kalensky, S.V. Golubev, V.V.	Lebedev Lebedev Lebedev Lebedev	Methanol masers in star forming regions	0.7 line	6	2.0

## VLA Utilization Report September 1998

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AS640	Slee, O.B. Roy, A.L. Andernach, H. Reynolds, J.	ATNF NRAO-Socorro ESA-Madrid ATNF	Structure in steep spectrum relics near cluster centres	20	1	8.5
AT210	Thorsett, S.E. Taylor, J.H. Nice, D.J. Briskin, W.F.	Princeton Princeton Princeton Princeton	Timing fast pulsars at the VLA	6, 20, 90	17, 20	12.5
AW489	Wilner, D. Ho, P. Rodriguez, L. Zhang, G.	Cfa Cfa UNAM NRAO-CV	7mm continuum studies of T-Tauri disks	0.7 w/BA35	18	9.0
AW492	Wyrowski, F. Schilke, P. Walmsley, C.M.	MPIfR MPIfR Arcetri	Vibrationally excited cyanoacetylene in G10.47+0.03	0.7 line	10	6.0
AW495	White, S. Kundu, M.	Maryland Maryland	Stellar flares and the solar analogy: an XTE/EUVE/VLA campaign	3.6, 20	11, 12	24.0
AX004	Xanthopoulos, E. Browne, I. Wilkinson, P. Patnaik, A. Porcas, R. King, L.	Jodrell Bank Jodrell Bank Jodrell Bank MPIfR MPIfR Jodrell Bank	Monitoring the CLASS gravitational lenses B1030+074 and B1933+503	3.6	8, 10, 17, 21, 27	5.0
AZ104	Zhao, J.-H. Goss, M.	Cfa NRAO-Socorro	Proper motions of ionized gas near Sgr A*	1.3	8	6.0
BA035	Anantharamaiah, K.R. Romney, J.D. Walker, R.C.	NRAO-Socorro NRAO-Socorro NRAO-Socorro	Radio recombination lines towards 3C84	1.3 w/BA035, AL441, AW489	17	12.0
BB082	Blundell, K. Rawlings, S. Beasley, T.	Oxford Oxford NRAO-CV	Gravitational lens candidates	20 Single antenna VLBI w/AB878, AE119, AB879, Software	20, 24	16.0
BC081	Cotton, W.D. Fanti, C. Fanti, R. Dallacasa, D. Foley, A.R. Schilizzi, R.T. Spencer, R.E.	NRAO-CV Bologna Bologna Bologna NFRA JIVE Jodrell Bank	Faraday rotation in the core of 3C138	6 Single antenna VLBI w/AB874, AL441	10, 14	14.2
BC089	Claussen, M.J. Marvel, K.B. Wilking, B.A. Wootten, H.A.	NRAO-Socorro OVRO UMSL NRAO-CV	Proper motions of water masers in NGC 1333	1.3	14	9.1
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 Single antenna VLBI w/AK468	24, 25	8.8
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	20 Phased array VLBI w/move/op	20	12.0
BG073	Gomez, J.L. Marscher, A.P. Alberdi, A.	IAA, Granada Boston IAA, Granada	3C 120 rapid variations	0.7, 1.3	19	2.0
BM096	Mantovani, F. Cotton, W.D. Fanti, R.	IRA, Bologna NRAO-CV IRA, Bologna	Search for Faraday Effects in 3C99	18, 6 w/test	27	10.8
BM110	Mutel, R.L. Denn, G.R.	Univ. of Iowa Univ. of Iowa	High resolution of polarized structure of BL Lac	2, 1.3 w/BR56	26	2.0
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 Phased array VLBI	5	13.5
BM113	Mioduszewski, A.J. Hjellming, R.M. Rupen, M.P.	NRAO-Socorro NRAO-Socorro NRAO-Socorro	High sensitivity observation of the radio afterglow of x-ray transient CI Cam	18 w/AB878, AB874	9	10.5

VLA Utilization Report September 1998

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
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 Phased array VLBI	16	12.6
BR056	Roberts, D.H. Moellenbrock, G.A. Wardle, J.F.C. Gabuzda, D.C. Brown, L.F.	Brandeis ISAS/Brandeis Brandeis Lebedev Connecticut	Multi-wavelength polarization sensitive VLBA observations of 3C345	0.7, 1.3, 2, 3.6 Single antenna VLBI w/AE118, AL452, AH628, AM596, BM110	26	11.9
	Staff	NRAO	Baselines, Pointing, Delays Maintenance Move Software General tests			48.4 55.1 10.4 24.7 28.4

The average downtime was 3.6%.

The array was scheduled for 100.0% (722.0 hours)  
570.1 hours (79.0% of time) for astronomical programs  
75.4 hours (10.4% of time) for tests/calibration  
76.5 hours (10.6% of time) for maintenance  
Total 722.0 hours (100.0%) scheduled.

Array was in the B configuration from September 1 through September 1 .

The following independent proposals shared simultaneous observing time (100.3 hours total simultaneous observing):

Projects	Hours
AB874/BC81	10.5
AB874/BM113	10.1
AB878/BB82	3.7
AB878/BM113	0.4
AB879/BB82	1.9
Adhoc/V93	0.6
AE118/BR56	5.8
AE119/BB82	6.8
AH628/BR56	1.5
AH628/move/op	1.5
AK468/BD46	6.8
AL441/BA35	3.0
AL441/BC81	1.7
AL452/BR56	1.5
AL453/move/op	2.9
AM596/BR56	2.0
AP370/BC89	3.6
AP370/move/op	1.0
AW489/BA35	9.0
BM110/BR56	1.1
Maint/BC89	2.3
Maint/BC89	0.7
Move/op/BF42	5.0
Software/BB82	3.6
Test/BC89	2.5
Test/BM96	9.0
Test/BM96	1.8

Aug. missing

The average downtime was 4.7%.

The array was scheduled for 100.0% (746.1 hours)  
585.6 hours (78.5% of time) for astronomical programs  
86.8 hours (11.6% of time) for tests/calibration  
73.7 hours ( 9.9% of time) for maintenance  
Total 746.1 hours (100.0%) scheduled.

Array was in the B configuration from August 1 through August 31 .

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

Projects	Hours
AB870/MOVE/OP	5.0
AB876/BD046	8.0
AB879/BB094	2.1
AC507/BB082	4.7
AG539/BB094	1.9
AH628/BB094	2.0
BB094/BB094	2.0
Tests/BB082	1.1
Tests/V064	1.8

VLA Utilization Report July 1998

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AB872	Butler, B. Palmer, P.	NRAO-Socorro Chicago	An OH Occultation event by short period comet Giacobini-Zinner	20 line	31	10.0
AB873	Briggs, F.H.	Groningen	Confirming possible OH Mega maser at z=0.17	20 line	13	4.3
AB875	Bennett, P.D. Harper, G.M. Brown, A. Bauer, W.H.	Colorado Colorado Colorado Wellesley	1997/98 Eclipse of VV Cephei	1.3, 2, 3.6, 6	15	3.0
AB879	Becker, R.H. White, R.L. Helfand, D.J.	Calif.-Davis STScI Columbia	FIRST survey	20	5,6,10,11,14 ,16-19,21,23 -27	153.3
AC507	Cooray, A.R. Grego, L. Carlstrom, J.E. Joy, M. Holzapfel, W.L.	Chicago Chicago Chicago NASA-MSFC Chicago	Radio source contamination in Sunyaev-Zeldovich Effect observations	1.3, 2, 3.6	4, 25, 31	28.0
AD415	Devereux, N. Hameed, S. Miller, N. Churchwell, E.	New Mexico State New Mexico State New Mexico State Wisconsin	Infrared luminous early type spiral galaxies	6	6, 18, 29	3.0
AD417	Dallacasa, D. Tschager, W. Grueff, G. Mack, K.-H.	Bologna Leiden Bologna Bologna	New sample of GHz-peaked spectrum radio sources	1.3, 2, 3.6, 6, 20, 90	16	2.0
AD420	DiFrancesco, J. Myers, P. Williams, J. Wilner, D.	CfA CfA CfA CfA	Detecting a very young protostar in L1544	3.6	5	3.1
ADHOC	Hjellming, R.M.	NRAO-Socorro	Adhoc Proposal 1		1	6.2
ADHOC	Frail, D.A.	NRAO-Socorro	Adhoc Proposal 2		4,8	3.7
ADHOC	Becker, R.H.	Calif., Davis	Adhoc Proposal 3		19	0.5
ADHOC	Dhawan, V.	NRAO-Socorro	Adhoc Proposal 4		27	0.5
ADHOC	Blundell, K.	Oxford	Adhoc Proposal 5		30	0.9
AF337	Frail, D.A. Kulkarni, S.R. Vakil, D.	NRAO-Socorro Caltech Caltech	Late time radio emission from well localized gamma ray bursts	3.6, 6, 20	12,15,17,19, 21,24,26-28	26.3
AF339	Falcke, H. Zensus, J.A. Ho, L.C.	MPIfR MPIfR CfA	Compact radio cores in nearby galaxies	2	13	2.0
AF340	Fassnacht, C. Pearson, T. Readhead, T. Browne, I. Wilkinson, P. Myers, S.	Caltech Caltech Caltech Jodrell Bank Jodrell Bank Pennsylvania	VLA Monitoring of gravitational lens 1608+656	3.6	1,2,8,10,14, 17,21,24,27	10.9
AF346	Fich, M.	Waterloo	Structure of HII regions and measuring elemental abundances	6, 20 w/move/op	7, 10	12.0
AG535	Greenhill, L. Menten, K.	CfA MPIfR	SiO masers in regions of massive star formation	0.7, 1.3 line	25	3.0
AG543	van Gorkom, J. Valluri, M. Duc, P.-A. Reichborn-Kjennerud, James, E.	Columbia Rutgers ESO Columbia Columbia	An HI selected dwarf sample in hydra	20 line	3	5.0
AH628	Hjellming, R.M. Mioduszewski, A.J. Rupen, M.P.	NRAO-Socorro JIVE-Socorro NRAO-Socorro	Radio and x-ray activity in galactic black holes	2, 3.6, 6, 20 w/BR058	3,6,11,16,22 ,30	16.1
AH649	Harper, G. Brown, A. Bennett, P. Hummel, C. Baade, R. Kirsch, T. Reimers, D.	Colorado Colorado Colorado USRA Hamburg Hamburg Hamburg	Monitoring the Eclipse of Zeta Aurigae's B Star HII region	2, 3.6, 6	6, 26	8.0
AI075	Ivison, R.J. Smail, I. Blain, A.W. Kneib, J.-P.	Edinburgh Durham Cambridge Toulouse	Deep imaging of a new population of intensely star forming galaxies	6, 20	11, 13	16.0
AK452	Koopmans, L. deBruyn, A.G. Jackson, N. Wilkinson, P. Fassnacht, C. Myers, S.	Groningen NFRA Jodrell Bank Jodrell Bank Caltech Pennsylvania	Time delay monitoring of the CLASS gravitational lens B1600+434	3.6	...	11.5

## VLA Utilization Report July 1998

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AK456	Kulkarni, S.R. Bloom, J.S. Djorgovski, S. Vakil, D. Frail, D.A.	Caltech Caltech Caltech Caltech NRAO-Socorro	Radio afterglows of gamma ray bursters	2, 3.6, 6, 20	7, 15, 19, 20	11.8
AK469	Kameno, S. Hamaguchi, K. Umamoto, T. Tsuboi, Y. Koyama, K. Fomalont, E.	NAO-Nobeyama Kyoto NAO Kyoto Kyoto NRAO-CV	Jet ejection from protostar R1 in R CrA star forming region	3.6	18	1.5
AK470	Kurtz, S. Watson, A. Hofner, P.	UNAM UNAM Arecibo	Multi-configuration imaging of extended ultracompact HII regions	3.6	15	2.0
AL444	Alberto-Lopez, J. Rodriguez, L.F.	UNAM UNAM	Search for proper motions in core of remarkable object K1Pn 8	3.6	17	5.0
AL445	Lacey, C.K. Goss, M. Duric, N. Pannuti, T.	UNAM NRAO-Socorro New Mexico New Mexico	SNRs in nearby galaxies	6, 20	27	6.0
AL450	Lonsdale, C.J. Barvainis, R.E. Donovan, D.	Haystack Haystack Boston	A new population of quasar related radio sources	6, 20	9	12.0
AL451	Laine, S. Gottesman, S.	Hertfordshire Florida	Anomalous radio continuum in NGC 7479	20	10	2.0
AL456	Liszt, H. Lucas, R.	NRAO-CV IRAM	OH in clouds with CH+	20 line	24	6.4
AM585	Marti, J. Mirabel, F. Rodriguez, L.F. Chaty, S.	Saclay Saclay UNAM Saclay	Monitoring the radio outbursts of GX 354-00	3.6, 6	15, 25	2.0
AM599	Miller, N.A. Owen, F.	New Mexico State NRAO-Socorro	Large scale surveys of Abell 2255 and 2256	20	7, 9	21.5
AO136	Owen, F.	NRAO-Socorro	330 MHz observations of M87	90	12	8.0
AP369	Parma, P. de Ruiter, H.R.	Bologna Bologna	New sample of weak nearby radio galaxies	6, 20	27	4.0
AP373	Paredes, J.M. Ribo, M. Marti, J.	Barcelona Barcelona Saclay	Radio emitting x-ray binaries from NRAO VLA sky survey	3.6, 6, 20	8	3.0
AR386	Rudnick, L. Treichel, K. Mack, K.-H. Klein, U. Katz-Stone, D.	Minnesota Minnesota Bologna Bonn USNA	Electron populations and ages in radio galaxies	20, 90 w/BD046	22	12.0
AR395	Rodriguez, L.F. Torrelles, J.M.	UNAM IAA	Search for maser radio recombination lines from thermal jet source	3.6 line	3	6.5
AS599	Stockton, A. Ridgway, S.E.	Hawaii Oxford	Radio optical alignment in z~1 quasars	3.6, 6	6	1.0
AS642	Smith, B.J. Struck, C. Higdon, J.	Colorado Iowa State ATNF	High resolution HI Mapping of NGC 7828/9 (Arp 144)	20 line	18	10.0
AS643	Sridharan, T.K. Menten, K.M. Ramesh, B. Schilke, P.	CfA MPIFR NAO-Nobeyama MPIFR	Systematic search for high mass protostars	3.6 w/BR058	1	15.0
AT206	Thilker, D.A. Braun, R. Walterbos, R.	New Mexico State NFRA New Mexico State	HI Shells in M33	20 line	14, 16, 20, 21	32.0
AX004	Xanthopoulos, E. Browne, I. Wilkinson, P. Patnaik, A. Porcas, R. King, L.	Jodrell Bank Jodrell Bank Jodrell Bank MPIFR MPIFR Jodrell Bank	Monitoring the CLASS gravitational lenses B1030+074 and B1933+503	3.6 w/BD046	3, 7, 9, 13, 20, 28	5.7
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 Phased array VLBI	24	6.0



VLA Utilization Report July 1998

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
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 Single antenna VLBI w/AR395, Tests, AX004	17, 3, 23	15.0
BG073	Gomez, J.L. Marscher, A.P. Alberdi, A.	IAA, Granada Boston IAA, Granada	3C 120 rapid variations	0.7, 1.3	11	2.5
BR053	Ratner, M.I. Bartel, N. Lebach, D.E. Lestrade, J-F. Shapiro, I.I.	CfA York CfA Neudon CfA	Astrometry of HR 8703 in 1998 for the gravity probe-b mission	3.6 Phased array VLBI	11	13.0
BR058	Rupen, M. Mioduszewski, A. Hjellming, R.	NRAO-Socorro JIVE-Socorro NRAO-Socorro	The radio afterglow of CI Cam	6, 3.6, 2 Single antenna VLBI w/AH628, Test	2	11.9
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	20 Phased array VLBI	19	12.3
V047	Gurvits, L.I.	JIVE	High redshift quasars: 2126-158	6 Phased array VLBI	12	7.7
V057	Gabuzda, D.	Lebedev	VSOP monitoring of BL lacertae objects: 1803+784	20 Phased array VLBI	20	9.7
V064	Zensus, J.A.	MPIfR	Physics of the jet in quasar 3C345 at light year resolution	6 Phased array VLBI	28	14.3
V125	Kameno, S.	NAO-Nobeyama	Distribution of spectral index in the CSS 3C380	20 Phased array VLBI	4	15.4
	Staff	NRAO	Baselines, Pointing, Delays Maintenance Move/Operations Software Student observations General tests		7, 14	63.5 50.4 9.6 31.1 3.0 28.5

The average downtime was 6.4%.

The array was scheduled for 100.0% (746.1 hours)  
 565.7 hours (75.8% of time) for astronomical programs  
 98.8 hours (13.2% of time) for tests/calibration  
 81.6 hours (10.9% of time) for maintenance  
 Total 746.1 hours (100.0%) scheduled.

Array was in the B configuration from July 1 through July 31 .

The following independent proposals shared simultaneous observing time (29.3 hours total simultaneous observing):

Projects	Hours
AF346/MOVE/OP	4.5
AG543/BD046	0.6
AH628/BR058	0.5
AR386/BD046	5.0
AR395/BD046	1.4
AS643/BR058	9.1
AX004/BD046	1.0
TEST/BD046	5.0
TEST/BR058	2.3

## VLA Utilization Report June 1998

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AA227	Acord, J.M. Churchwell, E.	Illinois Wisconsin	Proper motions in two ultracompact HII regions	3.6 w/BR058	23	8.0
AA228	Appleton, P.N. Norris, R. Heisler, C. Dopita, M. Bransford, M. Marston, A.P.	Iowa State ATNF Mt. Stromlo Mt. Stromlo Iowa State Drake	Search for compact cores in low power AGNs	3.6, 6 w/BR058	22	15.0
AB808	Blundell, K. Rawlings, S.	Oxford Oxford	Complete sample of z>2 radio sources at high frequency and resolution	1.3,2,3.5	10,17	2.9
AB854	Brotherton, M. Smith, R.J. van Breugel, W. Miller, L. Boyle, B.	LLNL AAO Lawrence Livermore Oxford AAO	The NVSS/UVX quasar sample	6, 20 w/BP042	15, 16	20.0
AB866	Best, P. Rottgering, H. Lehnert, M. Kurk, J.	Leiden Leiden Leiden Leiden	Powerful southern radio sources	6 w/BE017	19, 28	5.0
AB871	Barthel, P.D. Hunstead, R.W. Schilizzi, R.T. Bland-Hawthorn, J.	Groningen Sydney JIVE AAO	Radio morphologies of southern 3CR quasars and radio galaxies	3.6	23, 26	11.0
AB875	Bennett, P.D. Harper, G.M. Brown, A. Bauer, W.H.	Colorado Colorado Colorado Wellesley	1997/98 Eclipse of VV Cephei	1.3, 2, 3.6, 6	14	3.0
AB878	Bauer, F. Condon, J.J. Thuan, T.X.	Virginia NRAO-CV Virginia	Energy sources and beaming in the brightest x-ray galaxies	6 w/BD046	6	10.0
AC504	Curiel, S. Rodriguez, L.F. Moran, J. Canto, J.	UNAM UNAM CfA UNAM	Monitoring the Serpens Radio jet	2, 3.6, 6	1	5.5
AD417	Dallacasa, D. Tschager, W. Grueff, G. Mack, K.-H.	Bologna Leiden Bologna Bologna	New sample of GHz-peaked spectrum radio sources	1.3, 2, 3.6, 6, 20, 90	13	6.0
ADHOC	Kupen, M.	NRAO-Socorro	Adhoc 1		2	0.2
ADHOC	Dhawan, V.	NRAO-Socorro	Adhoc 2		4	1.9
ADHOC	Hjellming, R.M.	NRAO-Socorro	Adhoc 3		4	1.9
ADHOC	Frail, D.A.	NRAO-Socorro	Adhoc 4		11	1.3
ADHOC	Claussen, M.	NRAO-Socorro	Adhoc 5		19	0.4
AF336	Fruchter, A.S. Thorsett, S.E. Goss, M. McGary, R.S.	STScI Princeton NRAO-Socorro Furman	Pulsar velocities	20 HTRP w/AF336	2, 5, 8, 12	27.6
AF337	Frail, D.A. Kulkarni, S.R. Vakil, D.	NRAO-Socorro Caltech Caltech	Late time radio emission from well localized gamma ray bursts	3.6, 6, 20 w/BD046, GP017, BR058	2, 6, 7, 12, 21, 24	18.6
AF338	Falcke, H. Wilson, A.S. Axon, D.	MPIfR Maryland STScI	Radio outflows in Seyfert galaxies	3.6 w/BM102	26	4.0
AF339	Falcke, H. Zensus, J.A. Ho, L.C.	MPIfR MPIfR CfA	Compact radio cores in nearby galaxies	2	29	3.5
AF340	Fassnacht, C. Pearson, T. Readhead, T. Browne, I. Wilkinson, P. Myers, S.	Caltech Caltech Caltech Jodrell Bank Jodrell Bank Pennsylvania	VLA Monitoring of gravitational lens 1608+656	3.6 w/BR058, BM102	10	8.8
AF347	Florkowski, D.	USNO	Monitoring the radio variations from Wolf-Rayet star HD 19264	1.3, 2, 3.6, 6 w/BM102	27	4.0
AG537	Garrington, S. Garrett, M. Polatidis, A.	Jodrell Bank Dwingeloo Onsala	VLBI Survey of Faint, compact radio sources	20, 3.6	3	4.2
AG541	Gabuzda, D.C. Pushkarev, A.B.	Lebedev Lebedev	Rotation measure of BL lacertae object 0119+115	3.6, 6, 20	29	3.0

## VLA Utilization Report June 1998

Prog#	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AG543	van Gorkom, J. Valluri, M. Duc, P.-A. Reichborn-Kjennerud, James, E.	Columbia Rutgers ESO Columbia Columbia	An HI selected dwarf sample in hydra	20 line w/BD045, BM102	20-23, 26-28	35.6
AH628	Hjellming, R.M. Mioduszewski, A.J. Rupen, M.P.	NRAO-Socorro JIVE-Socorro NRAO-Socorro	Radio and x-ray activity in galactic black holes	2, 3.6, 6, 20 w/BR058, GP017, move/op	7,10,14,16,18, 19-21,25	12.2
AH637	Ho, L.C. Ho, P.T.P.	CfA CfA	Starburst environments: M83	1.3, 2, 3.6, 6	25	9.0
AH649	Harper, G. Brown, A. Bennett, P. Hummel, C. Baade, R. Kirsch, T. Reimers, D.	Colorado Colorado Colorado USRA Hamburg Hamburg Hamburg	Monitoring the Eclipse of Aurigae's B Star HII region	2, 3.6, 6 w/BD046	18	4.0
AH650	Hofner, P. Kurtz, S. Watson, A. Lizano, S. Testi, L. Cesaroni, R.	Arecibo UNAM UNAM UNAM Caltech Arcetri	Ammonia (4,4) in hot molecular core G9.62+0.19-F	1.3 line w/BR058	19, 20	12.0
AH652	Higdon, J.L. Londish, D.	ATNF Sydney	Does the Cartwheel possess a radio jet?	20	22	6.0
AK456	Kulkarni, S.R. Bloom, J.S. Djorgovski, S. Vakil, D. Frail, D.A.	Caltech Caltech Caltech Caltech NRAO-Socorro	Radio afterglows of gamma ray bursters	2, 3.6, 6, 20 w/BD046	4, 16, 18, 26	9.7
AK457	Koratkar, A. Gallimore, J.F. Antonucci, R.	STScI MPE Calif.-Santa Barbara	Radio jets in UV polarized QSOs	3.6	1	2.5
AK460	Kaplan, D. Cordes, J. Condon, J. Arzoumanian, Z. McLaughlin, M. Chatterjee, S.	Cornell Cornell NRAO-CV Cornell Cornell Cornell	Complete sample of sources with extremely steep spectra	6, 20 w/BR058	21	4.0
AK469	Kameno, S. Hamaguchi, K. Umemoto, T. Tsuboi, Y. Koyama, K. Fomalont, E.	NAO-Nobeyama Kyoto NAO Kyoto Kyoto NRAO-CV	Jet ejection from protostar R1 in R CrA star forming region	3.6 w/BM102	27	1.5
AL445	Lacey, C.K. Goss, M. Duric, N. Pannuti, T.	UNAM NRAO-Socorro New Mexico New Mexico	SNRs in nine nearby galaxies	6, 20	13, 14	21.5
AL446	Ludke, E. Pastoriza, M. Adornes, R.	Santa Maria Rio Grande do Sul Rio Grande do Sul	Nature of stellar bars in mildly active galactic nuclei	6, 20 line w/BM102	27	4.0
AL458	Lewis, G.F. Ibata, R.A. Kuncic, Z. Irwin, M.J.	Washington ESO Victoria RGO	APM 08279+5255 - an ultraluminous BAL quasar at z=3.87	3.6 w/BD046	18	3.0
AM582	Miranda, L.F. Torrelles, J.M.	IAA IAA	Changes in the variable, extremely young planetary IC 4997	0.7, 3.6	13	1.0
AM585	Marti, J. Mirabel, F. Rodriguez, L.F. Chaty, S.	Saclay Saclay UNAM Saclay	Monitoring the radio outbursts of GX 354-00	3.6, 6 w/BM102	27	1.0
AM598	Meier, D. van Dyk, S. Turner, J.	UCLA UCLA UCLA	RSNe in M83 and NGC 4826?	2, 6, 20	16	2.5
AM605	Meehan, L. Wilking, B. Claussen, M. Wootten, A.	Missouri Missouri NRAO-Socorro NRAO-CV	Water masers and collimated outflows	1.3 line w/BP042	15	5.5
AN078	Neuhauser, R. Sterzik, M. Menten, K.M.	MPIE MPIE MPIFR	X-ray emitting PMS stars	3.6 w/BM102	27	4.0
AP372	Peck, A. Taylor, G.	NMINT NRAO-Socorro	Searching for HI gas in 3 new compact symmetric radio sources	20 line w/BR058	14, 29	13.0

VLA Utilization Report June 1998

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AR396	Rupen, M. Anantharamaiah, K.R.	NRAO-Socorro Raman/NRAO-Socorro	Radio recombination lines and OH in NGC 1052	3.6, 20 line w/BR058	20	9.5
AR397	Rottgering, H. Best, P. da Costa, L. Rengelink, R. Slijkhuis, R. Wall, J.	Leiden Leiden ESO Leiden ESO RGO	Radio sources in ESO survey area for 2df spectroscopy	20 w/BR058	15, 19	13.0
AS568	Sramek, R. Weiler, K. VanDyk, S. Panagia, N.	NRAO-Socorro NRL UCLA STScI	Properties of radio supernovae	1.3, 2, 3.6, 6, 20	8, 9	15.6
AS629	Smith, D.A. Frail, D.A. Kulkarni, S.R.	MIT NRAO-Socorro Caltech	Search for radio afterglows from gamma ray bursts	6, 20 w/BR058	14	4.0
AS638	Slysh, V.I. Val'tts, I.E. Kalensky, S.V. Golubev, V.V.	Lebedev Lebedev Lebedev Lebedev	Methanol masers in star forming regions	0.7 line w/BE017	27	5.0
AS640	Slee, O.B. Roy, A.L. Andernach, H. Reynolds, J.	ATNF NRAO-Socorro ESA-Madrid ATNF	Structure in steep spectrum relics near cluster centres	20	25	10.0
AS641	Sterzik, M. Neuhauser, R. Menten, K.M.	MPIE MPIE MPIFR	Nearby young cool stars with strong x-ray emission	3.6	11	8.0
AT210	Thorsett, S.E. Taylor, J.H. Nice, D.J. Briskin, W.F.	Princeton Princeton Princeton NRAO-Socorro	Timing fast pulsars at the VLA	6, 20, 90	8, 10	12.0
AT211	Taylor, G. Fabian, A.	NRAO-Socorro Cambridge	X-ray to radio correlations in cooling flow clusters	6, 20	18	5.3
AT217	Trigilio, C. Leto, P. Leone, F. Umana, G. Buemi, C.	Noto Noto Catania Noto Catania	Phase modulation of a CP star: HD 124224	2, 3.6, 6, 20 w/move/op,	1, 6, 11 GP017	24.5
AT218	Thompson, M.A. Gibb, A.G. Macdonald, G.H.	Kent Leeds Kent	15NH3 towards ultracompact HII regions	1.3 line	25, 28	6.0
AT219	Testi, L. Hofner, P. Kurtz, S. Rupen, M.	Caltech Arecibo UNAM NRAO-Socorro	Deep radio continuum imaging of G9.62+0.19 F hot core	0.7, 1.3, 3.6	5, 15, 16	11.0
AV234	Venturi, T. Dallacasa, D. Bardelli, S.	Bologna Bologna Trieste	J1332-3308 in the dominant galaxy of A3650	6, 20 w/BR058	19	1.0
AW362	White, S.	Maryland	The stellar activity cycle on active stars	3.6, 6, 20 w/BR058	15, 21	3.0
AW488	Waters, L.B.F. van der Ancker, M.E. Dougherty, S.M. Bouwman, J. de Koter, A.	Amsterdam Amsterdam DRAO/Calgary Amsterdam Amsterdam	Dust disk of Herbig Ae system HD 163296	1.3, 3.6, 6, 20 w/move/op	5	4.0
AW490	Willson, R.F. Lang, K.R.	Tufts Tufts	Solar noise storms and decimetric bursts	6, 20, 90	12, 28	8.5
AW491	Wang, J. Lazio, J. Ray, P. Cadwell, B.	Maryland NRL NRL NRL	Search for slow pulsations from the isolated neutron star RX J0720	20, 90 HTRP	12	2.5
AX004	Xanthopoulos, E. Browne, I. Wilkinson, P. Patnaik, A. Porcas, R. King, L.	Jodrell Bank Jodrell Bank Jodrell Bank MPIFR MPIFR Jodrell Bank	Monitoring the CLASS gravitational lenses B1030+074 and B1933+503	3.6 w/move/op	4,6,8,11,16, 20,25	6.9
AY098	Yusef-Zadeh, F. Shure, M. Biretta, J.	Northwestern Georgia State STScI	High resolution radio continuum observations of M20	2, 6, 20 w/BP044	21	7.0
BD045	Dhawan, V.	NRAO-Socorro	Monitoring the accelerating, bent jet in 3C84 at 7mm	7 w/AK456, AB871, BD046	26	13.8

VLA Utilization Report June 1998

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
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 Single antenna VLBI w/AK456, AH649, BD045	8	18.2
BE017	Engels, D. Winnberg, A. Yie, J.	Hamburg Onsala Onsala	Structure of H2O masers in OH/IR stars	1.3 Single antenna VLBI w/tests, AS638, AB866	27	8.0
BG073	Gomez, J.L. Marscher, A.P. Alberdi, A.	IAA, Granada Boston IAA, Granada	3C 120 rapid variations	0.7, 1.3	9	2.0
BG079	Gabuzda, D.C. Kochenov, P. Cawthorne, T.V.	Lebedev Lebedev Lancashire	Polarization observations of extraordinary intraday variable 0716+714	3.6, 6, 20	7	23.9
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	20 Single antenna VLBI w/AG543, AF338, AF340, AM585, AK469, AF347, AL446, AN78	26	24.3
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 Single antenna VLBI w/AM605, AB854	15	5.3
BP044	Palen, S. Fix, J.D. Claussen, M.J.	Iowa Iowa NRAO-Socorro	Main line OH emission in R Aql and WX Psc	20 Single antenna VLBI w/AY98, AH652, Tests	22	9.2
BR058	Rupen, M.	NRAO-Socorro	Target of Opportunity Observations of CI Cam, w/AK460, AW362, AA228	18, 16, 3.6 w/AS629, AP372, M/O/T, AR397, AV2 34, AF340, AH628, AH650, AR396	14, 19, 21, 23,	42.7
GB027	Bartel, N. Rupen, M. Bietenholz, M. Beasley, A.J. Conway, J. Altunin, V. Graham, D. Venturi, T. Umana, G.	York NRAO-Socorro York NRAO-Socorro Onsala JPL MPIfr Bologna Noto	Supernova 1993J in M81	3.6, 6, 20, 90 Phased array VLBI	2	11.2
GB029	Bartel, N. Bietenholz, M.F.	York York	VLBI imaging of Supernova 1986J in NGC 891	6	5	1.5
GP017	Paragi, Z. Fejes, I. Vermeulen, R. Schilizzi, R. Spencer, R. Stirling, A.	FOMISGO FOMISGO NFRA JIVE Jodrell Bank Jodrell Bank	SS 433	20 Single antenna VLBI w/AT217, AH628, GP017	6	10.0
V047	Gurvits, L.I.	JIVE	Structure of extremely high redshift quasars at 1.6 and 5 GHz	6 Phased array VLBI	17	9.6
V131	Edwards, P.	ISAS	Bright quasar 1921-293	6 Phased array VLBI	18	6.8
	Staff	NRAO	Baselines, Pointing, Delays Maintenance Move/Operations Software General tests			53.3 55.7 28.3 22.1 35.6

The average downtime was 4.1%.

The array was scheduled for 100.0% (722.0 hours)  
536.6 hours (74.3% of time) for astronomical programs  
108.3 hours (15.0% of time) for tests/calibration  
77.0 hours (10.7% of time) for maintenance  
Total 722.0 hours (100.0%) scheduled.

Array was in configuration BnA from June 1 through June 29 .

and in Configuration B from June 29 through June 30.

The following independent proposals shared simultaneous observing time (144.0 hours total simultaneous observing):

Projects	Hours
AA228/BR058	4.0
AB854/BP042	2.0
AB866/BE017	2.0
AB871/BD045	9.5
AB878/BD046	5.1
AF337/BD046	2.8
AF337/BR058	0.8
AF337/GP017	2.8
AF340/BM102	1.0
AF340/BR058	1.0
AF347/BM102	4.0
AG543/BD045	2.5
AG543/BM102	1.5
AG543/BM102	3.2
AH628/BR058	0.5
AH628/GP017	2.0
AH628/move/op	2.0
AH650/BR058	6.0
AH652/BP044	6.0
AK456/BD045	1.8
AK460/BR058	4.0
AK469/BM102	1.5
AL446/BM102	4.0
AM585/BM102	1.0
AM605/BP042	3.3
AN078/BM102	4.0
AR396/BR058	8.0
AR397/BR058	6.0
AS629/BR058	3.9
AS638/BE017	5.0
AS640/move/op	6.0
AT217/GP017	5.2

AT217/move/op	2.2
AV234/BR058	1.0
AW362/BR058	2.0
AW488/move/op	4.0
AX004/move/op	0.4
AY098/BP044	2.8
BM102/AF338	4.0
Move/op/BR058	1.6
Tests/BE017	0.7
Tests/BE017	0.2
Tests/BP044	0.4
Tests/BR058	2.0

07/15/98

## VLA Utilization Report May 1998

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AA218	Anglada, G. Rodriguez, L.F. Torrelles, J.M.	IAA UNAM IAA	Variations in thermal radio jets in YSOs	3.6	26	9.0
AA220	Anantharamaiah, K.R. Niruj Mohan, R. Goss, M.	Raman/NRAO-Socorro IIS NRAO-Socorro	Recombination lines from PKS 1830-211	20 line	15	9.0
AA222	Arzoumanian, Z. Xilouris, K. Hankins, T. McKinnon, M.	Cornell Arecibo NMIMT NRAO-GB	High precision polarimetry of relativistic binary pulsars	20, 90 HTRP	7	5.3
AA226	Antonucci, R. Kinney, A. Schmitt, H. Pringle, J.	Calif.-Santa Barbara STScI Rio Grande do Sul Cambridge	Properly matched Seyfert Sample to test the unified model	3.6	3, 13	5.0
AB808	Blundell, K. Rawlaings, S.	Oxford Oxford	Complete sample of $z > 2$ radio sources at high frequency and resolution	1, 3, 2, 3.5 VLA	30	0.5
AB852	Butler, B. Stern, S.	NRAO-Socorro Southwest Research	Detecting OH in the Lunar atmosphere by radio occultation	20 line	1	4.5
AB854	Brotherton, M. Smith, R.J. van Breugel, W. Miller, L. Boyle, B.	Lawrence Livermore AAO Lawrence Livermore Oxford AAO	The NVSS/UVX quasar sample	6, 20	1, 2	20.0
AB858	Browne, I.W.A. Jackson, N.J.F. Marlow, D.R. Wilkinson, P.N. Phillips, P.M.	Jodrell Bank Jodrell Bank Jodrell Bank Jodrell Bank Jodrell Bank	Search for arc-minute scale gravitational lenses	6, 20	6	2.0
AB862	Becker, R. White, R. Laurent-Muehleisen,	Calif.-Davis STScI Lawrence Livermore	24 Radio selected BAL quasars	3.6, 6, 20	2, 4	12.0
AB864	Black, G. Campbell, D. Nicholson, P.	Cornell Cornell Cornell	Position and structure of Saturn radio occultation candidates	3.6, 20	13, 28	4.0
AB875	Bennett, P.D. Harper, G.M. Brown, A. Bauer, W.H.	Colorado Colorado Colorado Wellesley	1997/98 Eclipse of VV Cephei	1.3, 2, 3.6, 6	29	3.1
AC500	Cooray, A.R. Grego, L. Carlstrom, J.E. Joy, M. Holzapfel, W.L.	Chicago Chicago Chicago NASA-MSFC Chicago	Radio source contamination in Sunyaev-Zeldovich Effect Observation	2, 3.6, 6 w/BA032, BR054	15, 17	27.0
AC502	Curiel, S. Rodriguez, L.F. Pedlar, A. Canto, J.	UNAM UNAM Jodrell Bank UNAM	On the nature of double radio source associated with L1551 IRS5	2, 3.6	31	6.0
AC504	Curiel, S. Rodriguez, L.F. Moran, J. Canto, J.	UNAM UNAM Cfa UNAM	Monitoring the Serpens Radio jet	2, 3.6, 6	9, 29, 31	12.0
AC513	Carilli, C. Verheijen, M. Yun, M. Menten, K.	NRAO-Socorro NRAO-Socorro NRAO-Socorro MPIFR	$z=0.19$ absorption toward 1830-211	20 line	3	4.5
ADHOC	Hjellming, R.M.	NRAO-Socorro	Adhoc Proposal 1		6	1.1
ADHOC	Taylor, G.	NRAO-Socorro	Adhoc Proposal 2		20	1.0
AF328	Feretti, L. Giovannini, G. Arnaud, M. Rusco-Femiano, R.	Bologna Bologna Saclay Frascati	Cluster-wide radio halo in A2163	20	20	1.0
AF337	Frail, D.A. Kulkarni, S.R. Vakil, D.	NRAO-Socorro Caltech Caltech	Late time radio emission from well localized gamma ray bursts	3.6, 6, 20	5, 22	4.0
AF339	Falcke, H. Zensus, J.A. Ho, L.C.	MPIFR MPIFR Cfa	Compact radio cores in nearby galaxies	2	21	7.5
AF341	Frail, D.A. Kulkarni, S.R.	NRAO-Socorro Caltech	Continued radio monitoring of the May 8, 1997 Gamma Ray Burst	6, 20, 90	24	4.0
AG465	Dhawan, V. Frail, D.A. Goss, M. Rodriguez, L.F.	NRAO-Socorro NRAO-Socorro NRAO-Socorro UNAM	Target of Opportunity: HI Obs. of Future Outburst GRS 1915+105	20	8, 13	2.3



## VLA Utilization Report May 1998

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AG529	Gregory, P.C. Poller, B.J.	UBC CfA	Possible new galactic jet source	3.6, 6	9	1.5
AG534	Greenhill, L. Herrnstein, J. Reid, M. Moran, J. Argon, A.	CfA NRAO-Socorro CfA CfA CfA	H2O maser survey of spiral arms of M 33	1.3, 3.6, 6, 20 line	25	11.0
AG538	Garay, G. Rodriguez, L.F. Mardones, D.	Chile UNAM Chile	Thermal jet within the S68N region	1.3, 2, 3.6, 6	2	4.0
AH603	Harper, G. Brown, A. Bennett, P. Hummel, C. Walder, R.	Colorado Colorado Colorado USRA ETH	Radio modulation of Zeta Aur's orbitally varying HII region	3.6, 6	18	4.0
AH628	Hjellming, R.M. Mioduszewski, A.J. Rupen, M.P.	NRAO-Socorro JIVE-Socorro NRAO-Socorro	Radio and x-ray activity in galactic black holes	2, 3.6, 6, 20 w/BR054	3, 10, 13, 17, 22, 30	8.0
AH638	Harper, G. Brown, A. Baade, R. Kirsch, T. Reimers, D.	Colorado Colorado Hamburg Hamburg Hamburg	Imaging the wind and ionization cavity of Antares	1.3, 2, 3.6, 6, 20	28	7.9
AH640	Hewitt, J.N. Schechter, P.L.	MIT MIT	MIT-VLA-Magellan Southern Gravitational lens survey	3.6 w/BR054	17, 18, 22, 29	41.2
AH641	Hjellming, R.M. Rupen, M.P. Narayan, R.	NRAO-Socorro NRAO-Socorro CfA	Search for quiescent radio emission from black hole x-ray transients	3.6	4	10.0
AH642	Habbal, S.R. Gonzalez, R. Woo, R.	CfA Arecibo JPL	Coronal transient events and the solar wind	6, 20, 90	9	8.5
AH644	Hofner, P. Baan, W. Takano, S.	Arecibo Arecibo Cologne	The water masers in NGC 253	1.3 line	8	6.0
AI073	Irwin, J.A. Saikia, D.J. English, Y.	Queen's NCRA-Pune Queen's	Edge-on galaxies with possible outflow features	3.6, 20	13	10.0
AJ265	Jackson, N.	Jodrell Bank	Complex FIRST source J0825+3147	20	14	2.0
AK456	Kulkarni, S.R. Bloom, J.S. Djorgovski, S. Vakil, D. Frail, D.A.	Caltech Caltech Caltech Caltech NRAO-Socorro	Radio afterglows of gamma ray bursters	2, 3.6, 6, 20 w/BR054	2, 4, 7, 8, 13, 17, 21, 24, 31	16.1
AK460	Kaplan, D. Cordes, J. Condon, J. Arzoumanian, Z. McLaughlin, M. Chatterjee, S.	Cornell Cornell NRAO-CV Cornell Cornell Cornell	Complete sample of sources with extremely steep spectra	6, 20	1	3.1
AL430	Lucas, P. Blundell, K.M. Roche, P.F.	Oxford Oxford Oxford	VLA and IR mapping of low mass young stellar objects	2, 3.6	29	10.5
AL434	Lehar, J. Buchalter, A. McMahon, R. Kochanek, C.	CfA Columbia Cambridge CfA	Candidate gravitationally lensed radio lobes	6	26	8.0
AL436	Lim, J. Carilli, C.L. White, S.M.	Academia Sinica NRAO-Socorro Maryland	Structure and evolution of Betelgeuse's atmosphere	0.7, 1.3	3	8.0
AL441	Ludke, E. Katz-Stone, D.	Santa Maria USNA	Spectral analysis of CSS galaxies	6	24	1.5
AM582	Miranda, L.F. Torrelles, J.M.	IAA IAA	Changes in the variable, extremeley young planetary IC 4997	0.7, 3.6	1	1.0
AM587	Marti, J. Rodriguez, L.F. Reipurth, B. Torrelles, J.M.	Saclay UNAM Grenoble IAA	The HH 80-81 thermal radio jet	1.3 line	14, 21	11.0
AM588	Mirabel, F. Rodriguez, L.F. Dhawan, V.	Saclay UNAM NRAO-Socorro	Monitoring of the microquasar GRS 1915+105	3.6	1	3.0

VLA Utilization Report May 1998

Program	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AM591	Mundell, C.G. Shone, D.L. Wilson, A.S. Brinks, E. Pedlar, A.	Maryland NRAL Maryland Guanajuato Jodrell Bank	HI Absorption in Seyferts	20 line  w/BR054	8, 11, 17, 19	29.1
AM592	Menten, K.M. Reid, M.J.	MPIFR CfA	Deep survey for stellar SiO and H2O masers within 1pc of Sgr A*	0.7, 1.3 line	20, 24, 27, 31	19.9
AM593	Myers, S.T. Jackson, N.J. Fasnacht, C.D. Koopmans, L. Marlow, D.R. Rusin, D.	Pennsylvania Jodrell Bank Caltech Groningen Jodrell Bank Pennsylvania	Continuation of the CLASS VLA search for gravitational lenses	3.6	10, 21	12.5
A0137	Owen, F. Dwarakanath, K.S. Ledlow, M. Keel, B.	NRAO-Socorro Raman New Mexico State Alabama	Deep 21cm continuum image of A2125	20  w/BA032	10, 12, 14, 16	23.9
AP357	Paredes, J.M. Martí, J.	Barcelona Saclay	New radio emitting x-ray binary from the NVSS survey	1.3, 2, 3.6, 6, 20	12	2.0
AP361	Pooley, G.G. Alexander, P. Gilbert, G. Hardcastle, M.J. Riley, J.M.	MRAO MRAO MRAO Bristol MRAO	Properties of Jets in FR II radio sources	3.6	16	13.5
AP366	Patnaik, A. Porcas, R. Menten, K. Kemball, A.	MPIFR MPIFR MPIFR NRAO-Socorro	Faraday rotation in gravitationally lensed images	0.7, 1.3, 2, 3.6, 6 w/BP042, BD046	22	24.0
AP367	Pedelty, J.A. Hollis, J.M.	NASA-GSFC NASA-GSFC	The R Aquarii binary system: orbit and kinematics	0.7, 3.6	14	6.0
AS568	Sramek, R. Weiler, K. VanDyk, S. Panagia, N.	NRAO-Socorro NRL UCLA STScI	Properties of radio supernovae	1.3, 2, 3.6, 6, 20	9, 12, 30	6.6
AS629	Smith, D.A. Frail, D.A. Kulkarni, S.R.	MIT NRAO-Socorro Caltech	Search for radio afterglows from gamma ray bursts	6, 20 w/BD046	10	10.0
AS634	Sarma, A.P. Troland, T.H. Crutcher, R.M. Roberts, D.A.	Kentucky Kentucky Illinois Illinois	Zeeman survey of 22 GHz H2O masers	1.3 line	1, 11	10.0
AT219	Testi, L. Hofner, P. Kurtz, S. Rupen, M.	Caltech Arecibo UNAM NRAO-Socorro	Deep radio continuum imaging of G9.62+0.19 F hot core	0.7, 1.3	12	1.5
AW461	Winnberg, A. Engels, D.	Onsala Hamburg	OH/IR star OH26.5+0.6		31	1.6
AW482	Wills, B.J. Brotherton, M.S. Dey, A. Antonucci, R.	Texas LLNL NOAO Calif.-Santa Barbara	Free-free absorption in the core of quasar 3C 68.1?	1.3, 2, 3.6, 6, 20, 90	24	5.0
AW485	Wrobel, J.M. Carilli, C.L.	NRAO-Socorro NRAO-Socorro	Angular expansion of protoplanetary nebula CRL 618 at 7mm	0.7, 1.3, 2, 3.6, 6, 20	2	8.0
AX004	Xanthopoulos, E. Browne, I. Wilkinson, P. Patnaik, A. Porcas, R. King, L.	Jodrell Bank Jodrell Bank Jodrell Bank MPIFR MPIFR Jodrell Bank	Monitoring the CLASS gravitational lenses B1030+074 and B1933+503	3.6  w/BA032, BR054	1, 4, 7, 12, 14, 15, 17, 20, 24, 26, 28, 29, 31	21.0
AY092	Yun, M. Carilli, C.	NRAO-Socorro NRAO-Socorro	Search for HI absorption in a z=3.5 radio galaxy	90 line	6	12.0
AZ104	Zhao, J.-H. Goss, M.	CfA NRAO-Socorro	Proper motions of ionized gas near Sgr A*	1.3	8	7.3
BA032	Aeron, S. Lobanov, A. Wardle, J. Roberts, D.	MPIFR MPIFR Brandeis Illinois	Mrk 501	1.3, 2, 3.6, 6, 20 Single antenna VLBI AX4, A0137, AC500	23, 14	17.4

VLA Utilization Report May 1998

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
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	20 Phased array VLBI	27	13.7
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 Phased array VLBI	23	10.2
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	3	2.0
BC079	Cotton, W.D. Owen, F.N.	NRAO-CV NRAO-Socorro	Mapping the faraday screen in M87	20 Phased array VLBI	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 Single antenna VLBI w/AS629	28, 10, 22	17.6
BG050	Greenhill, L. Chernin, L.	Cfa Calif.-Berkeley	Collimation and launch of protostellar outflows	1.3	13	1.0
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 Phased array VLBI	9	8.0
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	3	2.0
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 Single antenna VLBI w/AH628, AP366, AM593, AH640, AF337	22	5.1
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 Single antenna VLBI w/AX4, AH628, AM591, AC500, AK456, AH640	17	16.0
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 Bologna UCLA NRL NRAO-Socorro Haystack	Monitoring of the expansion of SN 1993J at 6 and 18cm	6, 20 Phased array VLBI	30	13.9
V085	Schilizzi, R.T.	JIVE	Morphological and spectral study of GPS galaxies and quasars	6 Phased array VLBI	23	10.5
	Staff	NRAO	Baselines, Pointing, Delays			32.2
			Maintenance			45.1
			Move/Operations			5.1
			Software			23.3
			General tests			32.8

The average downtime was 4.1%.

The array was scheduled for 100.0% (746.1 hours)  
610.1 hours (81.8% of time) for astronomical programs  
67.6 hours ( 9.1% of time) for tests/calibration  
68.4 hours ( 9.2% of time) for maintenance  
Total 746.1 hours (100.0%) scheduled.

Array was in configuration A from May 1 through May 31 .

The following independent proposals shared simultaneous observing time (56.7 hours total simultaneous observing):

Projects	Hours
AC500/BA032	5.9
AC500/BR054	9.0
AF337/BP042	2.0
AH628/BP042	1.5
AH628/BR054	1.5
AH640/BP042	0.5
AH640/BR054	0.2
AK456/BR054	0.3
AM591/BR054	4.0
AM593/BP042	0.8
AO137/BA032	6.0
AP366/BD046	8.0
AP366/BP042	0.3
AS629/BD046	8.1
AX004/BA032	1.0
AX004/BA032	1.5
AX004/BR054	1.0
BB088/move/op	5.1

VLBA Utilization Report April 1998

Progm	Observer	Affiliation	Program Title	Stns	Bands cm	Observing Date	Sched Hours
BB092	Braatz, J. Greenhill, L. Moran, J. Herrnstein, J. Wilson, A.	Cfa Cfa Cfa NRAO-Socorro Maryland	Nearby Seyfert 2 galaxy NGC 1386		6	11, 18	12.0
BC070	Charlot, P. Sol, H. Vicente, L.	Bordeaux Meudon Meudon	Multi-frequency monitoring of BL Lac object OJ287		1.3, 3.6, 6	12	7.0
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	26	12.0
BD037	Denn, G. Mutel, R.	Iowa Iowa	Polarized VLB jet of BL Lac		1.3, 2, 6	13	14.0
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.	Jodrell Bank NRAO-Socorro Haystack	Monitoring SiO masers through a cycle of Mira TX Cam		0.7 With VLA single antenna	7, 19	12.0
BD047	Doeleman, S. Lonsdale, C. Greenhill, L. Kemball, A. Diamond, P.	Haystack Haystack Cfa NRAO-Socorro Jodrell Bank	SiO masers in VX Sgr		0.7 with VLA single antenna	4	9.0
BD051	Dhawan, V.	NRAO-Socorro	GRS 1915+105 on AU scales: exploring the disk/jet connection, and monitoring the secular parallax		7	11,19,20	2.6
BF028	Fey, A. Gaume, R. Eubanks, M. Ma, C.	USNO USNO USNO NASA-GSFC	Southern hemisphere astrometry for the celestial reference frame		3.6 Washington Correlator	2	24.0
BG073	Gomez, J.L. Marscher, A.P. Alberdi, A.	IAA Boston IAA	3C 120 rapid variations		0.7, 1.3 w/Go	10	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-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 RDV08	15	25.0
BL048	van Langevelde, H. Schilizzi, R. Diamond, P.	JIVE JIVE Jodrell Bank	Parallax of nearby Miras		18	15	6.0
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	27	28.0
BM103	Mioduszewski, A.	NRAO-Socorro	X-ray burster		6	1,4	14.5
BP040	Polatidis, A.G. Wilkinson, P.N.	Onsala Jodrell Bank	3C380		0.7, 2, 3.6	9	12.0
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	18	5.0
BR043	Roy, A.L. Claussen, M.J. Diamond, P.J. Wrobel, J.M. DePree, C. Greenhill, L.J. Herrnstein, J.R. Moran, J.M.	NRAO-Socorro NRAO-Socorro Jodrell Bank NRAO-Socorro Agnes Scott Cfa NRAO-Socorro Cfa	Nonthermal nucleus of NGC 4258		2, 6	12	12.0

VLBA Utilization Report April 1998

Progm	Observer	Affiliation	Program Title	Stns	Bands cm	Observing Date	Sched Hours
BS061	Satoh, S. Inoue, M. Nakai, N. Shibata, K.M. Kameno, S. Migenes, V. Diamond, P.J.	NAO NAO NAO NAO Guanajuato Jodrell Bank	HI and OH absorption towards the nuclear region of NGC 3079		18 With phased VLA and Gb	9	12.0
BT028	Tingay, S.J. Preston, R.A. Jones, D.L. Murphy, D.W. Meier, D.L. Jauncey, D.L. Reynolds, J.E. Tzioumis, A.K. McCulloch, P. Lovell, J.E.J. Costa, M.E.	JPL JPL JPL JPL ATNF ATNF ATNF Tasmania ISAS Tasmania	Monitoring of Centaurus A at 8.4 and 22 GHz		1.3, 3.6	14	8.0
BT034	Taylor, G.	NRAO-Socorro	VLBA observataions of Gamma-ray bursters		4	3	5.5
V017	Giovannini, G.	Bologna	BL-lac type objects: Mrk 501		18 With Ro, Go	8	10.0
V029	Gwinn, C.R.	Calif.-Santa Barbara	Nanoarcsecond study of the vela pulsar		18 Mk only; Penticton Correlator	11	5.5
V030	Preston, R.	JPL	Pearson-Readhead Sources: 1637+524		6	21	10.0
V034	Murphy, D.W.	JPL	Continuous monitoring of 1928+739		6 With Eb, Ud, Nt	29	15.0
V053	Witzel, A.	MPIfr	Intraday variable sources: 2007+777		6	1, 5 With phased VLA	25.0
V077	Booth, R.S.	Onsala	OH masers - OH45.5+0		18	25	9.0
V105	Taniguchi, Y.	Tohoku	Radio cores: NGC 6251		6 With Eb	30	16.0
V123	Kameno, S.	NAO	Cygnus A		6 With phased VLA, Eb, Ud	17	16.0
V130	Edwards, P.	ISAS	TeV gamma ray emitting AGN: Mkn 501		6 With Eb	7	13.0
VT835	VSOG	ISAS	HALCA In Orbit Checkout		1.3 With phased VLA	19	6.0
VT837	VSOG	ISAS	HALCA In-Orbit Checkout		1.3 With phased VLA, RoGoNo	20	6.5
CMVA			Combined Millimeter VLBI Array		0.3, 0.2, 0.1 Haystack Correl	3, 2	136.0
	Staff	NRAO	Maintenance Software				110.0 14.0

The average downtime was 3.0% (12 hours)  
 Actual observing time was 376.0 hours  
 The VLBA was scheduled 87% of the time (622.0 hours of a possible 744 hours)  
 Astronomical Observations = 54% (388.0 hours)  
 Tests and Calibrations = 10% ( 70.0 hours)  
 Maintenance = 23% (164.0 hours)  
 Total Number of astronomical programs was 31

VLA Utilization Report April 1998

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AA222	Arzoumanian, Z. Xilouris, K. Hankins, T. McKinnon, M.	Cornell NAIC NMINT NRAO-GB	High precision polarimetry of relativistic binary pulsars	20, 90 HTRP	24	7.5
AA226	Antonucci, R. Kinney, A. Schmitt, H. Pringle, J.	Calif.-Santa Barbara STScI Rio Grande do Sul Cambridge	Properly matched Seyfert Sample to test the unified model	3.6	12	24.0
AB849	Bondi, M. Dallacasa, D. Marcha, M. Polatidis, A. Conway, J.E. Stanghellini, C.	Bologna Bologna Lisbon Onsala Onsala Noto	Search for HI absorption in flat spectrum FR I sources	20 line	20	15.0
AB857	Backer, D. Sramek, R.	Calif.-Berkeley NRAO-Socorro	Proper motion of Sgr A*	3.6, 6 w/BPO42	10, 18, 24	15.0
AB858	Browne, I.W.A. Jackson, N.J.F. Marlow, D.R. Wilkinson, P.N. Phillips, P.M.	Jodrell Bank Jodrell Bank Jodrell Bank Jodrell Bank Jodrell Bank	Search for arc-minute scale gravitational lenses	6, 20	1, 6	21.5
AB859	Braatz, J.A. Greenhill, L. Moran, J.	CfA CfA CfA	Continuum in maser line emitting AGNs	1.3 line	5, 6	23.5
AC467	Colina, L. Alberdi, A. Torrelles, J.M. Panagia, N. Wilson, A.	STScI ESA-LAEFF IAA STScI Maryland	Search for radio supernovae in luminous Seyfert galaxies	2, 3.6	8	6.0
AC505	Chandler, C.J. Herrnstein, J.R. Greenhill, L.J.	Cambridge NRAO-Socorro CfA	Orion-IRc2 SiO masers	0.7 line	20	6.0
AD413	Dougherty, S.M. Moffat, A.F.J. Williams, P.M.	DRAO Montreal RO Edinburgh	Binarity and non-thermal emission in WR stars: WR 86	1.3, 3.6, 6, 20	29	4.0
AD414	DePree, C.G. Gaume, R.A. Goss, M.	Agnes Scott USNO NRAO-Socorro	7mm continuum observations of HII region W49A	0.7	11	10.0
AD415	Devereux, N. Hameed, S. Miller, N. Churchwell, E.	New Mexico State New Mexico State New Mexico State Wisconsin	Infrared luminous early type spiral galaxies	20	20, 25	3.5
ADHOC	Hjellming, R.A.	NRAO-Socorro	Adhoc Proposal 1	w/BM103	2-4, 6, 9, 14	5.2
ADHOC	Taylor, G.	NRAO-Socorro	Adhoc Proposal 2		2, 6, 7	3.2
ADHOC	Frail, D.A.	NRAO-Socorro	Adhoc Proposal 3		10, 22, 29	3.8
ADHOC	Anantharamaiah, K.	NRAO-Socorro/Raman	Adhoc Proposal 4		16	2.0
AE117	Edge, A.C. Allen, S.W. Crawford, C.S. Fabian, A.C. Taylor, G.B.	Cambridge Cambridge Cambridge Cambridge NRAO-Socorro	Radio sources in cooling flows	3.5, 20	12	12.0
AF308	Fiebig, D.	Heidelberg	Maser background source in IRAS 00338+6312	1.3 line	25	1.5
AF337	Frail, D.A. Kulkarni, S.R. Vakil, D.	NRAO-Socorro Caltech Caltech	Late time radio emission from well localized gamma ray bursts	3.6, 6, 20	19	3.0
AF339	Falcke, H. Zensus, J.A. Ho, L.C.	MPIfR MPIfR CfA	Compact radio cores in nearby galaxies	2	11	1.0
AF341	Frail, D.A. Kulkarni, S.R.	NRAO-Socorro Caltech	Continued radio monitoring of the May 8, 1997 Gamma Ray Burst	6, 20, 90	18	4.5
AG465	Goss, M. Dhawan, V. Frail, D.A. Rodriguez, L.F.	NRAO-Socorro NRAO-Socorro NRAO-Socorro NRAO-Socorro	HI Observations of future outburst in GRS1915+105	20	14-16, 20	6.4
AG529	Gregory, P.C. Poller, B.J.	UBC CfA	Possible new galactic jet source	3.6, 6	10	1.5
AG533	Garcia-Barreto, J.A. Rudnick, L.	UNAM/Minnesota Minnesota	A possible AGN in barred, Seyfert-like galaxy NGC 3367	3.6, 20	23	9.0
AH628	Hjellming, R.M. Mioduszewski, A.J. Rupen, M.P.	NRAO-Socorro JIVE-Socorro NRAO-Socorro	Radio and x-ray activity in galactic black holes	2, 3.6, 6, 20	1, 9, 15, 22, 26	9.9

## VLA Utilization Report April 1998

Progrm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AH637	Ho, L.C. Ho, P.T.P.	CfA CfA	Very young "super star clusters" in starburst environments	1.3, 2, 3.6, 6 w/BD047	3	6.0
A1072	Iverson, R.J. Smail, I. Blain, A.W. Kneib, J.-P.	Edinburgh Durham Cambridge Toulouse	Distant, dusty galaxies from a sub-mm survey	6, 20	19, 26	20.3
AK456	Kulkarni, S.R. Bloom, J.S. Djorgovski, S. Vakil, D. Frail, D.A.	Caltech Caltech Caltech Caltech NRAO-Socorro	Radio afterglows of gamma ray bursters	2, 3.6, 6, 20 w/BM103	1,4,17,21,25 ,26,27	18.5
AK457	Koratkar, A. Gallimore, J.F. Antonucci, R.	STSci MPE Calif.-Santa Barbara	Radio jets in UV polarized QSOs	3.6	7, 19, 30,	9.5
AK460	Kaplan, D. Cordes, J. Condon, J. Arzoumanian, Z. McLaughlin, M. Chatterjee, S.	Cornell Cornell NRAO-CV Cornell Cornell Cornell	Complete sample of sources with extremely steep spectra	6, 20 w/BP042	18, 30	12.9
AL439	Leahy, J.P. Spencer, R.E. Garrington, S.T.	Jodrell Bank Jodrell Bank Jodrell Bank	Prototype classical double 3C 295	0.7, 1.3	18	9.0
AL441	Ludke, E. Katz-Stone, D.	Santa Maria USNA	Spectral analysis of CSS galaxies	6	8	6.0
AM582	Miranda, L.F. Torrelles, J.M.	IAA IAA	Changes in the variable, extremely young planetary IC 4997	0.7, 3.6	25	2.0
AM590	McLaughlin, M. Arzoumanian, Z. Cordes, J. Lazio, J.	Cornell Cornell Cornell NRL	Search for radio counterparts to unidentified EGRET sources	20, 90 w/BD047	4	5.0
AM593	Myers, S.T. Jackson, N.J. Fassnacht, C.D. Koopmans, L. Marlow, D.R. Rusin, D.	Pennsylvania Jodrell Bank Caltech Groningen Jodrell Bank Pennsylvania	Continuation of the CLASS VLA search for gravitational lenses	3.6 w/BM103	2, 4	39.0
AM597	Menten, K.M. Greenhill, L.J. Reid, M.J.	MPIfR CfA CfA	Radio recombination lines from the BN object	0.7	11	10.0
AM602	Mirabel, I.F. Dhawan, V. Rodriguez, L.F.	Saclay NRAO-Soc UNAM	Coordinated radio, infrared and x-ray observations of microquasar GR 1915+105	6,3.5,2 VLA	19,20	3.9
AN076	Nath, B. Anantharamaiah, K.R. Srianand, R.	Raman Raman/NRAO-Socorro IUCAA	Recombination lines from damped Lyman systems	20 line	1	3.1
A0136	Owen, F.	NRAO-Socorro	330 MHz observations of M87	90	14	12.5
A0137	Dwarakanath, K.S. Owen, F. Keel, B. Ledlow, M.	Raman Institute NRAO-Soc Alabama UNM	Deep 21cm continuum image of A2125	20	8	6.0
A0138	Olmi, L. Cesaroni, R. Walmsley, M.	Massachusetts Arcetri Arcetri	Search for non thermal continuum towards H20 masers: is W3 unique?	6, 20	10	10.0
AP357	Paredes, J.M. Marti, J.	Barcelona Saclay	New radio emitting x-ray binary from the NVSS survey	1.3, 2, 3.6, 6, 20	9	2.0
AR386	Rudnick, L. Treichel, K. Mack, K.-H. Klein, U. Katz-Stone, D.	Minnesota Minnesota Bologna Bonn USNA	Electron populations and ages in radio galaxies	6, 20, 90	28	24.0
AR391	Rudnick, L. Dickel, J.	Minnesota Illinois	Asymmetric expansion of kepler SNR Shells	20,6	8	3.5
AS568	Sramek, R. Weiler, K. VanDyk, S. Panagia, N.	NRAO-Socorro NRL UCLA STSci	Properties of radio supernovae	1.3, 2, 3.6, 6, 20	15,16,24,26	9.0
AS632	Sahu, K.C. Baum, S. Kaiser, M.E. O'Dea, C. Shaw, R.A.	STSci STSci NASA-GSFC STSci STSci	The most luminous X-ray cluster RXJ 1247.5-1145	3.6, 20	21	5.0



VLA Utilization Report April 1998

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AS633	Seaquist, E.R. Frayer, D.T. Frail, D.A.	Toronto Caltech NRAO-Socorro	OH Satellite masers in Seyfert and related galaxies	20 line	13,14	23.0
AT210	Thorsett, S.E. Taylor, J.H. Nice, D.J. Briskin, W.F.	Princeton Princeton Princeton Princeton	Timing fast pulsars at the VLA	6, 20, 90	25, 27	12.0
AT211	Taylor, G. Fabian, A.	NRAO-Socorro Cambridge	X-ray to radio correlations in cooling flow clusters	6, 20	22	10.1
AT215	Turner, J.L. Ho, P.T.P. Beck, S.C.	UCLA Cfa Tel Aviv	Compact radio source in NGC 5253: AGN or super star cluster	1.3, 2	9	2.0
AV231	Van Bemmell, I.M. Barthel, P.D. De Graauw, M.W.M.	Kapteyn Kapteyn Kapteyn	Core spectra of 3CR quasars	0.7, 2, 6	17	5.0
AW486	Wilner, D. Ho, P. Rodriguez, L.	Cfa Cfa UNAM	7mm continuum studies of T Tauri disks	0.7	24, 25	21.5
AX004	Xanthopoulos, E. Browne, I. Wilkinson, P. Patnaik, A. Porcas, R. King, L.	Jodrell Bank Jodrell Bank Jodrell Bank MPIfR MPIfR Jodrell Bank	Monitoring the CLASS gravitational lenses B1030+074 and B1933+503	3.6  w/BD047	1,4,6,7,9,11 ,12,18,20-22 ,24,25,28-30	22.4
AY096	Yusef-Zadeh, F. Roberts, D.A. Biretta, J.	Northwestern Illinois STScI	Proper motion study of ionized gas and stars at the galactic center	0.7, 1.3, 2	30	8.0
BD037	Denn, G. Mutel, R.	Iowa Iowa	Polarized VLB jet of BL Lac	1.3, 2, 6	24	1.5
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 Single antenna VLBI	26	15.0
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 Single antenna VLBI w/AI072	6, 19	8.3
BD047	Doeleman, S. Lonsdale, C. Greenhill, L. Kemball, A. Diamond, P.	Haystack Haystack Cfa NRAO-Socorro Jodrell Bank	SiO masers in VX Sgr	0.7 Single antenna VLBI w/AH637, AM590, BD047	4	8.5
BG073	Gomez, J.L. Marscher, A.P. Alberdi, A.	IAA, Granada Boston IAA, Granada	3C 120 rapid variations	0.7, 1.3	8	2.5
BM103	Mioduszewski, A.	NRAO-Socorro	X-ray Nova 0421+560		4 w/AM593, adhoc, AK456	9.2
BP042	Paragi, Z. Fejes, I. Schilizzi, R. Spencer, R. Stirling, A. Vermeulen, R.	FOMI FOMI JIVE NRAL NRAL JIVE	Observations of complex environment and jets of SS433 I	3.6 w/AB857	18	5.2
BS061	Sato, S. Inoue, M. Nakai, N. Shibata, K.M. Kameno, S. Migenes, V. Diamond, P.J.	NAO NAO NAO NAO NAO Guanajuato Jodrell Bank	HI and OH absorption towards the nuclear region of NGC 3079	20 Phased array VLBI	9	11.0
BT034	Kulkarni, S. Taylor, G. Beasley, T. Frail, D.	Caltech NRAO-Socorro NRAO-Socorro NRAO-Socorro	VLBA observations of Gamma-ray bursters		3	5.3
V053	Witzel, A.	MPIfR	Polarization variability of intraday variable sources	6 Phased array VLBI	1	10.0
V077	Booth, R.S.	Onsala	VSOP Observations of OH masers & interstellar scattering: OH 34.3+0	20 Phased array VLBI	9	4.3
V123	Kameno, S.	NAO	VSOP continuum and absorption study of Cygnus A	6 Phased array VLBI	17	14.6
VT835	VSOG	ISAS	HALCA In-Orbit Checkout	1.3 Phased array VLBI	19	2.2
VT837	VSOG	ISAS	HALCA In-orbit checkout	1.3 Phased array VLBI	20	5.3

VLA Utilization Report April 1998

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
	Staff	NRAO	Baselines, Pointing, Delays			41.1
			Maintenance			51.0
			Move/Operations			5.1
			Software			21.0
			General tests			32.0

The average downtime was 3.0%.

The array was scheduled for 100.0% (721.0 hours)  
 573.4 hours (79.5% of time) for astronomical programs  
 75.6 hours (10.5% of time) for tests/calibration  
 72.0 hours (10.0% of time) for maintenance  
 Total 721.0 hours (100.0%) scheduled.

Array was in configuration D from April 1 through April 30 .

The following independent proposals shared simultaneous observing time (34.2 hours total simultaneous observing):

Projects	Hours
Adhoc/BM103	0.5
AH637/BD047	2.9
A1072/BD046	6.3
AK456/BM103	2.0
AK460/BP042	0.6
AM590/BD047	5.0
AM593/BM103	4.9
AM593/BM103	1.7
AT211/Move/OP	5.1
AX004/BD047	0.6
AB857/BP042	4.6

VLA Utilization Report March 1998

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AA216	Anantharamaiah, K.R. Niruj Mohan, R. Goss, M. Zhao, J.H.	Raman/NRAO-Socorro IIS NRAO-Socorro CfA	Recombination lines from starburst galaxies	20 line	21, 24, 25	19.5
AA218	Anglada, G. Rodriguez, L.F. Torrelles, J.M.	IAA, Spain UNAM IAA, Spain	Short time-scale variations in thermal radio jets: nature of outflows in young stellar objects	3.5 w/BP044	27	9.0
AA221	Athreya, R.M. Bhatnagar, S.	NCRA-Pune NCRA-Pune	Low frequency radio spectra of high redshift radio galaxies	90, 400 w/BP041	16	15.0
AA224	Argon, A.L. Reid, M.J. Menten, K.M.	CfA CfA MPIfR	Completion of high quality galactic OH database	20 line w/BP042	26	5.0
AA225	Aaquist, O. Kwok, S.	Keyano College Calgary	Expansion of compact planetary nebulae	2 w/BA030	12	8.0
ABB08	Blundell, K. Rawlings, S.	Oxford Oxford	Complete sample of z>2 radio sources at high frequency and resolution	1.3, 2, 3.5	1	0.5
ABB56	Biretta, J. Owen, F. Zhou, F.	STScI NRAO-Socorro Maryland	VLA Monitoring of M87 Jet at 15 GHz	2	27	12.0
AB860	Bietenholz, M.F. Frail, D.A. Weiler, K.W.	York NRAO-CV NRL	Low frequency observations of 3C58 and Vela X	90, 400	13	8.5
AB862	Becker, R. White, R. Laurent-Muehleisen,	Calif.-Davis STScI Lawrence Livermore	24 Radio selected BAL quasars	3.6, 6, 20	14	1.5
AB863	Becker, R. Schechter, P. White, R. Helfand, D.	Calif.-Davis MIT STScI Columbia	Two new gravitationally lensed quasars	3.6	13	3.5
AB865	Bennett, P.	Colorado	VV Cephei		28	1.5
ADHOC	Hjellming, R.M.	NRAO-Socorro	Adhoc Proposal		11, 18	2.0
ADHOC	Taylor, G.	NRAO-Socorro	Adhoc Proposal		29	1.0
AE118	Erickson, B. Gergely, T. Bastian, T. Vourlidis, A.	Tasmania NSF NRAO-Socorro NRL	Solar active regions	90, 400	2	7.7
AE119	Erickson, B. Webber, B. Duric, N. Perley, R.	Tasmania New Mexico State New Mexico NRAO-Socorro	74 MHz observations of edge-on galaxies	90, 400 w/BM079	6	8.5
AF336	Fruchter, A.S. Thorsett, S.E. Goss, M. McGary, R.S.	STScI Princeton NRAO-Socorro Furman	Pulsar velocities	20 HTRP	17, 19	28.5
AF337	Frail, D.A. Kulkarni, S.R. Vakil, D.	NRAO-CV Caltech Caltech	Late time radio emission from well localized gamma ray bursts	3.6, 6, 20 w/Iridium test, BM079, move/op	6, 17, 21, 24	12.0
AF338	Falcke, H. Wilson, A.S. Axon, D.	MPIfR Maryland STScI	Radio outflows in Seyfert galaxies	3.6 w/move/op	20	12.0
AF339	Falcke, H. Zensus, J.A. Ho, L.C.	MPIfR MPIfR CfA	Compact radio cores in nearby galaxies	2	2, 4	20.2
AF341	Frail, D.A. Kulkarni, S.R.	NRAO-CV Caltech	Continued radio monitoring of the May 8, 1997 Gamma Ray Burst	6, 20	13	5.0
AG529	Gregory, P.C. Poller, B.J.	UBC CfA	Possible new galactic jet source	3.6, 6	10	1.5
AG535	Greenhill, L. Menten, K.	CfA MPIfR	S10 masers in regions of massive star formation	0.7, 1.3 line	30	10.0
AH603	Harper, G. Brown, A. Bennett, P. Hummel, C. Walder, R.	Colorado Colorado Colorado USRA ETH	Radio modulation of Zeta Aur's orbitally varying HII region	3.6, 6 w/BDO46	5	4.0
AH628	Hjellming, R.M. Mioduszewski, A.J. Rupen, M.P.	NRAO-Socorro JIVE-Socorro NRAO-Socorro	Radio and x-ray activity in galactic black holes	2, 3.6, 6, 20 w/BM079, BL064	1, 7, 13, 19, 23, 29	9.1
AH633	Hirabayashi, H. Inoue, M. Kimura, M. Sato, S. Fomalont, E.B. Gurvits, L.I.	ISAS NAO NAO NAO NRAO-CV JIVE	Continuum spectral properties of the VSOP survey sources	2, 6, 20	10, 21	7.0

## VLA Utilization Report March 1998

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AH636	Hunter, T.R. Testi, L. Sridharan, T.K. Saito, M.	CfA Caltech CfA CfA	Proper motion of H2O maser/outflow system in AFGL 5142	1.3 line	27	1.5
AH645	Hoare, M.G.	Leeds	Ionized winds of luminous YSOs	0.7, 2, 3.6, 6	24, 26	5.1
AJ265	Jackson, N.	Jodrell Bank	Complex FIRST source J0825+3147	20	24	2.0
AK453	Kassim, N. Lazio, J. Anantharamaiah, K. Goss, M. Falcke, H.	NRL NRL Raman/NRAO-Socorro NRAO-Socorro MPIfR	74 MHz imaging of the galactic center	90, 400	14	8.0
AK454	Kassim, N. Lazio, J. Perley, R. Erickson, W. Hankins, T. Moffett, D. McLaughlin, M. Cordes, J.	NRL NRL NRAO-Socorro Maryland NMIMT Tasmania Cornell Cornell	74 MHz VLA Deep Fields	90, 400	8, 9	16.0
AK456	Kulkarni, S.R. Bloom, J.S. Djorgovski, S. Vakil, D. Frail, D.A.	Caltech Caltech Caltech Caltech NRAO-CV	Radio afterglows of gamma ray bursters	2, 3.6, 6, 20 w/BM079, BL064	1, 5, 8, 22, 29, 31	17.0
AK461	Kassim, N. Perley, R. Erickson, W. Lazio, J. Feretti, L.	NRL NRAO-Socorro Maryland NRL Bologna	74 MHz observations of bright sources	90, 400 w/BM079, Iridium test	7	24.0
AK464	Kenny, H.T. Davis, R.J. Dougherty, S.M. Eyres, S.P.S. Richards, A.M.S. Taylor, A.R. Watson, S.K.	Canadian Military Manchester DRAO Keele University John Moores Universi Calgary Manchester	Stellar orbital motion in symbiotic novae	1.3, 6	28	4.5
AL432	Lazio, T.J.W. Mutel, R.L. Kassim, N.E. Molnar, L.A.	NRL Iowa NRL Iowa	Interstellar scattering observations of 1849+005	6, 20, 90, 400	19	8.5
AL436	Lim, J. Carilli, C.L. White, S.M.	Academia Sinica NRAO-Socorro Maryland	Structure and evolution of Betelgeuse's atmosphere	0.7, 1.3	28, 29	20.0
AM582	Miranda, L.F. Torrelles, J.M.	IAA IAA	Changes in the variable, extremeley young planetary IC 4997	0.7, 3.6	10	1.0
AM583	Menon, T.K.	British Columbia	A gravitational lens candidate from the Ooty sample	3.6, 6	18	3.0
AM590	McLaughlin, M. Arzoumanian, Z. Cordes, J. Lazio, J.	Cornell Cornell Cornell NRL	Search for radio counterparts to unidentified EGRET sources	20, 90	12	4.9
AM593	Myers, S.T. Jackson, N.J. Fassnacht, C.D. Koopmans, L. Marlow, D.R. Rusin, D.	Pennsylvania Jodrell Bank Caltech Groningen Jodrell Bank Pennsylvania	Continuation of the CLASS VLA search for gravitational lenses	3.6 w/BP041	14	57.5
AM595	Mioduszewski, A.J. Blundell, K. Rupen, M.P. Hjellming, R.M.	JIVE-Socorro Oxford NRAO-Socorro NRAO-Socorro	VLA observations of SS 433 to complement simultaneous VLBA + MERLIN	6, 20 w/BM079	5, 6, 7	12.0
AM598	Meier, D. van Dyk, S. Turner, J.	UCLA UCLA UCLA	RSNe in M83 and NGC 4826?	2, 6, 20 w/BM079	5	2.5
AN076	Nath, B. Anantharamaiah, K.R. Srianand, R.	Raman Raman/NRAO-Socorro IUCAA	Recombination lines from damped Lyman systems	20 line	30, 31	29.9
AP357	Paredes, J.M. Marti, J.	Barcelona Saclay	New radio emitting x-ray binary from the NVSS survey	1.3, 2, 3.6, 6, 20	10	2.0

VLA Utilization Report March 1998

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AP360	Pentericci, L. Carilli, C. Rottgering, H. Miley, G. DeBreuck, C. van Breugel, W.	Leiden NRAO-Socorro Leiden Leiden Lawrence Livermore Lawrence Livermore	High redshift radio galaxies	3.6, 6 w/BA030	23	14.0
AR378	Rudnick, L. Koralesky, B. Kassim, N. Perley, R.A.	Minnesota Minnesota NRL NRAO-Socorro	Dynamical evolution and current particle acceleration in Cas A	6, 20, 90, 400 w/BA030	21, 23	24.0
AR392	Rodriguez, L.F. Cernicharo, L. LeFloch, B.	UNAM CSIC Grenoble	Exciting source of the optical jet in the trifold nebula (M20)	3.6	13	4.5
AR393	Reid, R.I. Kronberg, P.P. Perley, R.A. Dyer, C.C.	Toronto Toronto NRAO-Socorro Toronto	Investigation of weak gravitational lensing in Southern radio jets	3.6, 6	1	12.3
AS616	Shepherd, D. Kurtz, S.	Caltech UNAM	Molecules and continuum in the G192 massive molecular outflow	0.7, 1.3, 3.6 line	19	2.0
AW481	White, S. Ray, T. Muxlow, T. Davis, R. Davis, C. Mundt, R.	Maryland Dublin Jodrell Bank Jodrell Bank Dublin MPIA	Joint VLA/MERLIN observations of the T Tauri system	3.6, 6, 20	6, 22	11.2
AW483	Weiler, K.W. Bietenholz, M.F. Frail, D.A. Spencer, J.H.	NRL York NRAO-Socorro NRL	SN 1604 (Kepler)	90, 400	9	9.0
AW484	Willson, R.F. Lang, K.R. Redfield, S.	Tufts Tufts Tufts	VLA-SOHO Observations of coronal mass ejections and other transients	90, 400 w/BM079	6, 8, 9	15.0
AX004	Xanthopoulos, E. Browne, I. Wilkinson, P. Patnaik, A. Porcas, R. King, L.	Jodrell Bank Jodrell Bank Jodrell Bank MPIFR MPIFR Jodrell Bank	Monitoring the CLASS gravitational lenses B1030+074 and B1933+503	3.6  w/Iridium test, BM079, BP044, AA218	1,5,6,10,13, 18,19,22,24, 27,29	18.4
AY095	Yusef-Zadeh, F. Cotton, W.	Northwestern NRAO-CV	G359.87+0.18: a young SNR candidate	2, 3.6, 6, 20 line w/BL064	29	5.5
BA030	Attridge, J.M. Roberts, D.H. Wardle, J.F.C.	Brandeis Brandeis Brandeis	Blazar 1055+018	2, 3.6, 6, 20 Single antenna VLBI w/BA030, Startup, Test, AA225, AR378, AP360	11,23	24.2
BA031	Anantharamaiah, K. Goss, M. Mohan, N. Subrahmanyan, R.	NRAO-Socorro NRAO-Socorro IIS RRI	Radio structure of PKS 1831-211 at 327 MHz	w/AW483	9	8.3
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	28	1.5
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 Single antenna VLBI w/AH603, Test	5, 21	5.3
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 Phased array VLBI	26	12.0
BG073	Gomez, J.L. Marscher, A.P. Alberdi, A.	IAA Boston IAA	3C 120 rapid variations	0.7, 1.3	6	2.0
BL064	Lazio, J. Kassim, N.E. Molnar, L.A. Mutel, R.L.	NRL NRL Iowa Iowa	Interstellar scattering of 1849+005	2,3.6,6,18 Single antenna VLBI w/test, AH628, AY095, AK456	29	9.9

VLA Utilization Report March 1998

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
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, 20 Single antenna VLBI w/AF339, AM595, Irid test, AM598, AF337, AX4, AW484, AE 119, AH628, AM595	5, 6, 7	34.8
BP041	Peck, A. Taylor, G. Goss, M.	NRAO-Socorro NRAO-Socorro NRAO-Socorro	CSO candidates at 8 and 15 GHz	2 Single antenna VLBI W/AM593	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 Single antenna VLBI w/AA224, Test	25	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	20 Single antenna VLBI W/AX4	27	10.2
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 Phased array VLBI	1	13.2
V053	Witzel, A.	MPIFR	Polarization variability of intraday variable sources	6 Phased array VLBI	10	12.0
V064	Zensus, J.A.	MPIFR	Physics of the jet in quasar 3C345 at light year resolution	20 Phased array VLBI	22	8.8
	Staff	NRAO	Baselines, Pointing, Delays Maintenance Move/Operations Software General tests			40.9 42.3 8.9 29.7 40.0

The average downtime was 3.7%.

The array was scheduled for 100.0% (746.1 hours)  
600.3 hours (80.5 of time) for astronomical programs  
73.8 hours ( 9.9% of time) for tests/calibration  
72.0 hours ( 9.7% of time) for maintenance  
Total 746.1 hours (100.0%) scheduled.

Array was in configuration D from March 1 through March 31 .

The following independent proposals shared simultaneous observing time (134.4 hours total simultaneous observing):

Projects	Hours
AA218/BP044	8.7
AA221/BP041	7.3
AA224/BP042	4.4
AA225/BA030	0.2
AE119/BM079	3.2
AF337/BM079	3.0
AF337/BM079/IRID. TEST	1.7
AF337/MOVE/OP	3.9
AF338/MOVE/OP	5.0
AF339/BM079	4.8
AF339/IRID. TEST/BM079	3.1
AH603/BD046	4.0
AH628/BL064	1.5
AH628/BM079	1.5
AK456/BL064	2.3
AK461/BM079	3.3
AM593/BP041	16.7
AM595/BM079	4.0
AM595/BM079	4.0
AM595/BM079	4.0
AM598/BM079	0.3
AP360/BA030	5.5
AR378/BA030	0.8
AW483/BA031	8.3
AW484/BM079	3.2
AX4/BM079	1.5
AX4/BP044	1.5
AX4/IRIDIUM TEST	0.3
AY095/BL064	5.5
BA030/BA030	2.5
IRIDIUM TEST/BM079	1.7
IRIDIUM TEST/AK461	1.7
STARTUP/BA030	3.2

TEST/BA030	7.4
TEST/BA030	2.0
TEST/BD046	1.2
TEST/BL064	0.6
TEST/BP042	0.6

04/02/98



VLA Utilization Report February 1998

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AA214	Akeson, R. Blitz, L.	Calif.-Berkeley Calif.-Berkeley	HI spin temperature in high velocity clouds	20 line	7	7.0
AA223	Anantharamaiah, K.R. Carilli, C.L. Wrobel, J.M. Ulvestad, J. Goss, M.	Raman/NRAO-Socorro NRAO-Socorro NRAO-Socorro NRAO-Socorro NRAO-Socorro	Stimulated recombination lines from Mk 231	3.6 line	3, 8, 19	5.0
AB808	Blundell, K. Rawlings, S.	Oxford Oxford	Complete sample of z>2 radio sources at high frequency and resolution	1.3,2,3.5	22	0.5
AB844	Bastian, T.S. Gary, D.E. Vourlidas, A. Kassim, N.	NRAO-Socorro New Jersey Tech NRL NRL	VLA/SOHO observations of coronal mass ejections	20, 90, 400	1	6.0
AB853	Bower, G.	MPIFR	Identification of MeV blazar GRO J1753+57	0.7, 1.3, 3.6, 6, 20	14	2.0
AB867	Boboltz, D. Marvel, K.	Haystack Caltech	SiO from NML Cyg	0.7	16	1.5
AC495	Churchwell, E. Hofner, P. Shepherd, D. Faison, M.	Wisconsin Arecibo Caltech NRAO-Socorro	Search for massive protostars and ionizing star(s) of UCHII regions	2, 3.6	18	5.5
AD409	Dulk, G.A. Leblanc, Y. Bastian, T.S. Sault, R.J.	Paris Obs Paris Obs NRAO-Socorro ATNF	Search for 74 MHz cyclotron masers of extrasolar planets	90, 400 w/BM088	13, 15	24.0
AD411	Duric, N. Perley, R. Kassim, N.	New Mexico NRAO-Socorro NRL	74 MHz observations of the galactic supernova remnant W49B	90, 400 Iridium test	22	8.0
AD412	Dennett-Thorpe, J. deBruyn, G. Marcha, M.	Lisbon NFRA Lisbon	Study of >10 GHz peakers	0.7, 2, 3.6, 6	11, 16	15.0
ADHOC	Ulvestad, J.	NRAO-Socorro	Adhoc Proposal 1		11	3.5
ADHOC	Wurnig, J.	NRAO-Socorro	Adhoc Proposal 2		11	1.0
ADHOC	Markowitz, A.	NRAO-Socorro	Adhoc Proposal 3		11	0.8
ADHOC	Hjellming, R.A.	NRAO-Socorro	Adhoc Proposal 4		12, 25	2.4
ADHOC	Moore, C.	Groningen/Kapteyn	Adhoc Proposal 5		19	1.3
ADHOC	Hale, A.	NRAO-Socorro	Adhoc Proposal 6		22	3.0
AE117	Edge, A.C. Allen, S.W. Crawford, C.S. Fabian, A.C. Taylor, G.B.	Cambridge Cambridge Cambridge Cambridge NRAO-Socorro	Resolving radio sources in cooling flows	3.6, 20	22, 28	4.0
AF328	Feretti, L. Giovannini, G. Arnaud, M. Rusco-Femiano, R.	Bologna Bologna Saclay Frascati	Cluster-wide radio halo in A2163	6, 20	2	3.0
AF333	Fiebig, D.	Heidelberg	Water masers and a possible disk in Orion A west	1.3 line	23	1.1
AF335	Fanti, C. Fanti, R. Gregorini, L. Vigotti, M. Dallacasa, D. Stanghellini, C.	Bologna Bologna Bologna Bologna Bologna Noto	The sub-arcsec structure of new large sample of CSS/GPS	3.6, 6	21	9.0
AF337	Frail, D.A. Kulkarni, S.R. Vakil, D.	NRAO-Socorro Caltech Caltech	Late time radio emission from well localized gamma ray bursts	3.6, 6, 20 w/BM085	7, 13, 23	11.0
AF340	Fassnacht, C. Pearson, T. Readhead, T. Browne, I. Wilkinson, P. Myers, S.	Caltech Caltech Caltech Jodrell Bank Jodrell Bank Pennsylvania	VLA Monitoring of gravitational lens 1608+656	3.6 w/AX4,AK452,MOVE/OP,BM085	13, 16, 18, 21, 23, 26	8.5
AF341	Frail, D.A. Kulkarni, S.R.	NRAO-Socorro Caltech	Continued radio monitoring of the May 8, 1997 Gamma Ray Burst	6, 20	16	4.0
AF344	Florkowski, D.	USNO	Stellar wind collision in the Wolf-Rayet Binary HD192641	2, 3.6, 6	13	2.0
AG527	Gallimore, J.F. Pedlar, A. Thean, A.	MPE Jodrell Bank Jodrell Bank	Search for flat spectrum sources in Seyfert nuclei	0.7, 1.3 w/BB078	24, 25, 27, 28	31.8
AG529	Gregory, P.C. Poller, B.J.	UBC CfA	Possible new galactic jet source	3.6, 6 w/BM088	15	1.5
AG530	Gudel, M.	Paul Scherrer	Solar analog 47 Cas B	2, 3.6, 6	14	15.0

VLA Utilization Report February 1998

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AG536	Gopalswamy, N. Schmahl, E.J. Kaiser, M.L. Robinson, R.D. Gurman, J.B. Thompson, B. Michels, D. Plunkett, S. Hudson, H. Nitta, N.	Catholic Univ. NASA-GSFC NASA-GSFC Catholic Univ. NASA-GSFC NASA-GSFC NRL NRL ISAS ISAS	Radio emission associated with coronal mass ejections	90, 400 W/BM085, Iridium test, BB078	21, 23, 24, 28	34.0
AH628	Hjellming, R.M. Mioduszewski, A.J. Rupen, M.P.	NRAO-Socorro NRAO-Socorro NRAO-Socorro	Radio and x-ray activity in galactic black holes	2, 3.6, 6, 20	1, 7, 14, 21	6.0
AH642	Habbal, S.R. Gonzalez, R. Woo, R.	CfA NAIC JPL	Coronal transient events and the solar wind	6, 20, 90, 400	26	8.0
A1071	Ivison, R.J. Mikolajewska, J. Kenny, H.T. Eyres, S.P. Evans, A. Bode, M.F.	Edinburgh Copernicus Canadian Military Keele Keele John Moores	Symbiotic stars	0.7, 1.3, 3.6, 6 w/BM088	15, 20	16.0
AK446	Kawabe, R. Ohta, K. Yamada, T. Kohno, K. Nakashiki, K. Akiyama, M.	NAO-Nobeyama Kyoto IPCR NAO-Nobeyama Kyoto Kyoto	CO(2-1) Imaging of third highest redshift quasar BR1202-0725	0.7 line	1, 2	11.0
AK448	Koralesky, B. Green, A.J. Frail, D.A. Goss, M.	Minnesota Sydney NRAO-Socorro NRAO-Socorro	SNR/Molecular cloud interactions - 1720 MHz masers	20 line	5, 6, 13	8.5
AK452	Koopmans, L. deBruyn, A.G. Jackson, N. Wilkinson, P. Fassnacht, C. Myers, S.	Groningen NFRA Jodrell Bank Jodrell Bank Caltech Pennsylvania	Time delay monitoring of the CLASS gravitational lens B1600+434	3.6 w/AX4, AF340, move/op, BM084	13, 16, 18, 21, 23, 26	8.5
AK456	Kulkarni, S.R. Bloom, J.S. Djorgovski, S. Vakil, D. Frail, D.A.	Caltech Caltech Caltech Caltech NRAO-Socorro	Radio afterglows of gamma ray bursters	2, 3.6, 6, 20	2, 8, 21	7.5
AK458	Kern, J. Hankins, T. Rankin, J.	Vermont NMIMT Vermont	Multi-frequency polarimetry of the Vela pulsar	3.6, 6, 20 HTRP w/BDO46	5, 8, 10	30.0
AK459	Kulkarni, S.R. Frail, D.A.	Caltech NRAO-Socorro	RXJ 0720.4-3125: a magnetar?	3.6, 20 w/move/op	6	5.5
AK462	Kronberg, P. Ensslin, T. Biermann, P. Feretti, L. Giovannini, G. Perley, R. Hanish, B.	Toronto MPIFR MPIFR Bologna Bologna NRAO-Socorro STSci	The coma cluster at 74MHz	90, 400	23	12.0
AM574	Minter, A. Lockman, F.J.	NRAO-GB NRAO-GB	Turbulence spectrum of HI emission	20 line	1, 1	12.9
AM589	McLaughlin, M. Arzoumanian, Z. Cordes, J. Hankins, T. Lazio, J. Moffett, D.	Cornell Cornell Cornell NMIMT NRL Tasmania	Search for radio pulsations from Geminga	90 HTRP	2	11.2
AN078	Neuhauser, R. Sterzik, M. Menten, K.M.	MPIE MPIE MPIFR	X-ray emitting PMS stars	3.6	28	2.0
AP357	Paredes, J.M. Marti, J.	Barcelona Saclay	New radio emitting x-ray binary from the NVSS survey	1.3, 2, 3.6, 6, 20	11	2.5
AP368	Pihlstrom, Y. Conway, J. Black, J. Polatidis, A.	Onsala Onsala Onsala Onsala	Search for excited OH in compact symmetric objects	3.6, 6 line w/BB078	26	17.9

VLA Utilization Report February 1998

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AR393	Reid, R.I. Kronberg, P.P. Perley, R.A. Dyer, C.C.	Toronto Toronto NRAO-Socorro Toronto	Investigation of weak gravitational lensing in Southern radio jets	3.6, 6 w/iridium test	22	3.5
AS568	Sramek, R. Weiler, K. VanDyk, S. Panagia, N.	NRAO-Socorro NRL UCLA STScI	Properties of radio supernovae	1.3, 2, 3.6, 6, 20 w/move/op	9, 13	29.0
AS639	Somers, A. Backer, D. Zepka, A. Cordes, J.	Calif.-Berkeley Calif.-Berkeley Hitachi Cornell	A new millisecond pulsar	20	23, 26	2.0
AT210	Thorsett, S.E. Taylor, J.H. Nice, D.J. Briskin, W.F.	Princeton Princeton Princeton Princeton	Timing fast pulsars at the VLA	6, 20, 90	8, 9	12.0
AW362	White, S.	Maryland	The stellar activity cycle on active stars	3.6, 6, 20	20, 22	3.8
AW487	Wilner, D. Ho, P.	Cfa Cfa	PMS star TX Hya	0.7	3	1.3
AX004	Xanthopoulos, E. Browne, I. Wilkinson, P. Patnaik, A. Porcas, R. King, L.	Jodrell Bank Jodrell Bank Jodrell Bank MPIfR MPIfR Jodrell Bank	Monitoring the CLASS gravitational lenses B1030+074 and B1933+503	3.6 w/AF340, AK452, move/op, BM085	13, 16, 18, 19, 21-23, 26	10.5
AY085	Yun, M. Hibbard, J.	NRAO-Socorro Ifa	Tidal HI in IR Luminous Mergers	20	6, 10	6.5
AY093	Yun, M. Carilli, C.	NRAO-Socorro NRAO-Socorro	Redshifted CO emission in z=4.4 QSO host galaxy	0.7 line	5, 7	14.0
BB078	Bradshaw, C. Fomalont, E.B. Geldzahler, B.	George Mason NRAO-CV George Mason	Sco x-1	6, 20 Single antenna VLBI w/AP36B, BB078, AG527, AG536	27, 28	13.8
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 Single antenna VLBI w/software, AK458	5, 7	7.0
BG073	Gomez, J.L. Marscher, A.P. Alberdi, A.	ESA-LAEFF Boston ESA-LAEFF	3C 120 rapid variations	0.7, 1.3	11	2.7
BM085	Miyoshi, M. Imai, H. Deguchi, S.	NAO-Mitzuzawa NAO-Mizusawa NAO-Nobeyama	SiO masers in M supergiant IRC-10414	0.7 Single antenna VLBI w/AX4/AK452/AF340, AG536	23	6.1
BM088	Mantovani, F. Junor, W. Saikia, D.J. Salter, C.J.	Bologna New Mexico NCRA-Pune Arecibo	Rotation measures of compact steep spectrum sources	6 Single antenna VLBI w/move/op, A1071, AG529, Test, AD409	14	23.7
BR052	Reid, M. Eubanks, M.	Cfa USNO	Astrometry of Sgr A*	0.7	16	1.5
GL022	Lal, D.V. Shastri, P. Gabuzda, D.	IIA IIA Lebedev	Global observations of a matched sample of Seyfert galaxies	6 Phased array VLBI	17	24.5
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 Phased array VLBI w/move/op	18	17.0

VLA Utilization Report February 1998

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
GM033	Marcaide, J.M. Guirado, J.C. Perez-Torres, M.A. Ros, E. Alberdi, A. Diamond, P. van Dyk, S.D. Weiler, K.	Valencia Valencia Valencia Valencia ESA-LAEFF Jodrell Bank UCLA NRL	Young radio remnant of SN 1979C	20 Phased array VLBI	22	3.0
STUDE	Westpfahl, D. Reid, M. DePree, C.	NMIMT Cfa Agnes Scott	Student observations		20, 24, 26	8.0
	Staff	NRAO	Baselines, Pointing, Delays Maintenance Move/Operations Software General tests			42.4 30.0 43.7 19.2 75.1

The average downtime was 7.0%.

The array was scheduled for 100.0% (673.9 hours)  
473.2 hours (70.2% of time) for astronomical programs  
151.6 hours (22.5% of time) for tests/calibration  
49.1 hours ( 7.3% of time) for maintenance  
Total 673.9 hours (100.0%) scheduled.

Array was in configuration D from February 1 through February 3.

Array was in configuration A from February 3 through February 28.

Total Number of astronomical programs was 57.

The following independent proposals shared simultaneous observing time (92.8 hours total simultaneous observing):

Projects	Hours
AD409/BM088	8.6
AD411/Iridium Test	4.0
AF337/move/op	3.0
AF340/AK452/AX4	3.0
AF340/AK452/AX4	2.0
AF340/AX4/AK452	3.0
AF340/AX4/AK452	3.0
AG527/BB078	3.1
AG529/BM088	1.5
AG536/BB078	1.5
AG536/BM085	3.5
A1071/BM088	8.0
AK458/BD046	5.9
AK459/MOVE/OP	5.2
AP368/BB078	6.3
AR393/Iridium test	0.4
AS568/MOVE/OP	6.3
AX4/AF340/AK452	3.0
AX4/AK452/AF340	3.0
AX4/AK452/AF340/BM085	2.6
BB078/BB078	1.5
MOVE/OP/AF340/AX4/AK452	1.5
MOVE/OP/BM088	2.6
MOVE/OP/GM033	3.1
SOFTWARE/BD046	0.1
Student/Iridium Test	2.1
Test/BM088	3.0
AG536/Iridium Test	2.0

VLA Utilization Report January 1998

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AA211	Aparicio, A. Dalcanton, J. Gallart, C. Martinez-Delgado, D. Skillman, E.	IAC Carnegie Obs. Carnegie Obs. IAC Minnesota	Search for HI associated with Antlia dwarf galaxy	20 line	8	6.0
ABB40	Beck, R. Shoutenkov, V. Shukurov, A. Sokoloff, D.	MPIfR Lebedev Newcastle Moscow U.	Magnetic fields in barred galaxies	3.6	9, 10, 22	12.6
ABB44	Bastian, T.S. Gary, D.E. Vourlidas, A. Kassim, N.	NRAO-Socorro New Jersey Tech NRL NRL	VLA/SOHO observations of coronal mass ejections	20, 90, 400	30, 31	12.1
ABB46	Balser, D.S. DePree, C.G. Goss, M.	NRAO-GB Agnes Scott NRAO-Socorro	4He imaging of galactic HII regions	3.6 line	8	11.0
ABB65	Bennett, P.	Colorado	VV Cephei		26	2.5
AC308	Condon, J. Cotton, W. Perley, R.	NRAO-CV NRAO-CV NRAO-Socorro	All sky survey	20	3, 4, 10, 12	70.6
AC493	Cotter, G. Baker, J. Grainge, K.J.B. Jones, M.E. Rawlings, S. Saunders, R.	RG0 MRAO MRAO MRAO Oxford MRAO	Measuring the structure of high redshift CMB decrements	3.6	17, 19	24.0
AD405	Dickey, J.M.	Minnesota	HI absorption of linear polarization of galactic nonthermal background	20 line	10	7.0
AD408	Dubner, G. Frail, D. Giacani, E. Goss, M. Holdaway, M. Velasquez, P.	IAFE NRAO-Socorro IAFE NRAO-Socorro NRAO-Tucson IAFE	Study of centrally influenced supernova remnants	90, 20	9	2.5
ADHOC	Frail, D.	NRAO-Socorro	Adhoc Proposal 1		5, 13	0.6
ADHOC	Rudnick, L.	Minnesota	Adhoc Proposal 2		28	3.0
ADHOC	Butler, B.	NRAO-Socorro	Adhoc Proposal 3		28	2.0
AF316	Fabian, A. DiMatteo, T. Alamaini, O. Carilli, C.	Cambridge Cambridge Cambridge NRAO-Socorro	X-ray emitting galaxies with hard spectra - hot ion tori?	0.7, 3.6	16, 20	12.0
AF326	Frail, D.A. Kulkarni, S.R.	NRAO-Socorro Caltech	Search for radio counterparts of gamma ray bursters with BeppoSAX	20	1,3,7,13,17, 18,20,27,28, 31 w/BV024	22.8
AG523	Gopalswamy, N. Hanaoka, Y. Shibasaki, K. Lemen, J.R. Howard, R. Gurman, J.B.	Catholic Univ. Nobeyama Nobeyama Lockheed-Martin NRL GSFC	The onset phase of CMEs	2, 3.6, 6, 20, 90	20, 22, 23, 26	24.0
AG525	Dunlop, S. Goldschmidt, P. Kukula, M. Miller, L.	Edinburgh Imperial College Edinburgh Oxford	Fraction of radio-loud quasars in optically selected surveys	6	16	5.0
AH603	Harper, G. Brown, A. Bennett, P. Hummel, C. Walder, R.	Colorado Colorado Colorado USRA ETH	Radio modulation of Zeta Aur's orbitally varying HII region	3.6, 6	26	4.0
AH604	Haarsma, D.B. Hewitt, J.N. Lehar, J. Burke, B.F.	MIT MIT Cfa MIT	Monitoring gravitational lens 0957+561	3.6, 6	19	1.0
AH627	Heiles, C. Young, L. Normandeau, M.	Calif.-Berkeley New Mexico State Calif.-Berkeley	HI Emission and Zeeman splitting in one of the spider's legs	20 line	11, 13, 14	24.0
AH628	Hjellming, R.M. Mioduszewski, A.J. Rupen, M.P.	NRAO-Socorro NRAO-Socorro NRAO-Socorro	Radio and x-ray activity in galactic black holes	2, 3.6, 6, 20	9, 16, 26	6.0

VLA Utilization Report January 1998

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AK446	Kawabe, R. Ohta, K. Yamada, T. Kohn, K. Nakashii, K. Akiyama, M.	Nobeyama Kyoto IPCR Nobeyama Kyoto Kyoto	CO(2-1) Imaging of third highest redshift quasar BR1202-0725	0.7 line	3	8.0
AL425	Lisenfeld, U. Dahlem, M.	Granada ESTEC	Continuum and polarization of interacting galaxies NGC 5426/27	6	30	5.0
AL427	Lim, J. Ho, P.T.P. Choi, M.	Academia Sinica Cfa Academia Sinica	The molecular outflow from the young massive star in Onsala 1	0.7, 1.3 line	3	5.5
AL428	Lane, W. Briggs, F. Smette, A.	Groningen Groningen Groningen	HI 21cm observations of a z=0.09 damped Ly absorber	20 line	2	4.0
AM556	McGaugh, S. Pildis, R. deBlok, E.	DTM Cfa Kapteyn	Kinematics of extremely gas rich low surface brightness dwarf galaxies	20 line	4	4.0
AM568	Mirabel, F. Rodriguez, L.F.	Saclay UNAM	HI absorption to IRAS 19132+1035; is it associated with GRS 1915+105?	3.6 line	15	5.0
AM574	Minter, A. Lockman, F.J.	NRAO-GB NRAO-GB	Turbulence spectrum of HI emission	20 line w/BV024	29, 30, 31	23.1
AM578	Murphy, E. Sembach, K. Friedman, S.	Johns Hopkins Johns Hopkins Johns Hopkins	HI distribution in galactic high velocity clouds	20 line	28	15.0
AM579	Miralles, M.P. Kurtz, S. Pratap, P.	Cfa UNAM Haystack	Ammonia in an outflow in the S255 IR complex	1.3 line	19	3.0
AP331	Pooley, G.G. Hardcastle, M.J. Riley, J.M. Alexander, P.	MRAO Bristol MRAO MRAO	Constraining the luminosity function of jets in FR II radio galaxies	3.6	24, 28	6.0
AP334	Perley, R.A. Carilli, C. Dreher, J.	NRAO-Socorro NRAO-Socorro SETI Inst.	VLA Observations of Cygnus A at 43 GHz	0.7	2	12.5
AP353	Pisano, D.J. Wilcots, E.M.	Wisconsin Wisconsin	Survey to detect extended HI around isolated galaxies	20 line	23	6.0
AR382	Richer, J. Chandler, C.	Cambridge Cambridge	SiO imaging of the jet from the driving source of HH211	0.7 line	2, 21, 27	10.5
AR387	Reipurth, B. Chini, R. Rodriguez, L.F.	Grenoble MPIFR UNAM	A string of Class 0 sources in OMC 2/3	3.6 w/BD046	12	6.0
AR388	Rosenberg, J. Schneider, S.	Massachusetts Massachusetts	High resolution studies of galaxies discovered at 21cm	20 line	20, 23	24.0
AS568	Sramek, R. Weiler, K. VanDyk, S. Panagia, N.	NRAO-Socorro NRL UCLA STSci	Properties of radio supernovae	1.3, 2, 3.6, 6, 20	16	1.0
AS625	Schulman, E. Brinks, E.	NRAO-CV Guanajuato	Nature and origin of high velocity clouds in disk galaxies	20 line w/BD046	15, 17, 18, 19, 22, 24	37.0
AW472	Wilner, D. Zhang, Q. Ho, P.	Cfa Cfa Cfa	Continuum survey of Taurus Disks	0.7	8	6.5
AW479	Wiseman, J.J. Zinnecker, H. McCaughrean, M. Wootten, A.	NRAO-CV Potsdam MPIFR NRAO-CV	Ammonia core of the HH 212 protostellar jet	1.3	25	8.0
AY088	Yun, J.L. Moreira, M.C. Torrelles, J.M.	Lisbon Lisbon IAA	Nature of radio continuum sources seen toward Bok globules	3.6	1	3.0
AY089	Young, L.	New Mexico State	Search for HI in and around two dwarf spheroidal galaxies	20 line	8	5.0
AZ097	van Zee, L.	NRAO-Socorro	Gas distributions and kinematics of isolated irregular galaxies	20 line	9	11.0
AZ101	Ho, P.T.P. Wilner, D. Zhang, Q.	Cfa Cfa Cfa	Kinematics of protoplanetary disks	7, 1.3	16	9.5
AZ102	Zhang, Q. Ho, P.	Cfa Cfa	0.7 and 1.3cm recombination lines in ultra compact HII regions	0.7, 1.3 line	18	3.3
BB070	Blundell, K.M. Beasley, A.J. Lacy, M.	Oxford NRAO-Socorro Oxford	Are the jets in radio quiet quasars relativistic?	3.6 Phased array VLBI	31	5.9
BB091	Braatz, J. Wilson, A.	Cfa Maryland	The flaring H20 megamaser in IC 2560	1.3 Phased array VLBI	6	5.9

VLA Utilization Report January 1998

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
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 Single antenna VLBI w/AS625, BL061	12,24	12.1
BG073	Gomez, J.L. Marscher, A.P. Alberdi, A.	IAA, Andalucia Boston IAA, Andalucia	3C 120 rapid variations	0.7, 1.3	14	1.9
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	5	3.0
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 Phased array VLBI	25, 27, 30	18.5
BL049	Lestrade, J-F. Phillips, R.B. Jones, D.L. Preston, R.A.	Meudon Haystack JPL JPL	A possible Jupiter-mass planet orbiting Sigma 2 CrB	3.6 Phased array VLBI	24	12.0
BL061	Laurent-Muehleisen, Taylor, G.B. Becker, R.H. Brotherton, M. Gregg, M.	LLNL NRAO-Socorro Calif.-Davis LLNL LLNL	Radio bright broad absorption line quasars	20 Phased array VLBI w/BD046	24	12.0
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	7	2.0
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 Phased array VLBI	26	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 Phased array VLBI	1	7.0
BU009	Ulvestad, J. Roy, A. Beasley, A.J.	NRAO-Socorro NRAO-Socorro NRAO-Socorro	Compact radio sources in NGC 253	20 Phased array VLBI	13	8.1
BV024	Vermeulen, R.C. van Langevelde, H.-J 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 Single antenna VLBI w/AB844, AF326, AM574	31	7.9
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 Phased array VLBI	13	8.7
V018	Giovannini, G.	Bologna	VSOP Observations of low power radio galaxies: 3C465	6 Phased Array VLBI	5	10.7
VT833	Edwards, P.	ISAS	HALCA IOC	6	18	5.9
	Staff	NRAO	Baselines, Pointing, Delays Maintenance New Years Shutdown Operations Training Software General tests			49.3 42.4 15.8 2.5 21.5 43.8

Alex -



The average downtime was 2.1%.

The array was scheduled for 97.9% (730.3 hours)  
575.7 hours (77.2% of time) for astronomical programs  
90.7 hours (12.2% of time) for tests/calibration  
63.9 hours ( 8.6% of time) for maintenance  
Total 730.3 hours (97.9%) scheduled.

Array was in configuration D from January 1 through January 31 .

Total Number of astronomical programs was 58.

The following independent proposals shared simultaneous observing time (29.0 hours total simultaneous observing):

Projects	Hours
AB844/BV024	0.4
ADHOC/TEST	0.3
AF326/BV024	1.0
AM574/BV024	6.6
AR387/BD046	5.3
AS625/BD046	5.9
BL061/BD046	0.1
BZ019/TEST	8.7
TEST/BD046	0.7