

## VLA Utilization Report December 1999

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AB879	Becker, R.H White, R.L. Helfand, D.J.	Calif.-Davis STSci Columbia	FIRST survey	20 w/BR57	5-7,9,12-14, 16-18	166.4
AB922	Browne, I. Marlow, D.R. Myers, S. Wilkinson, P. Fassnacht, C. Readhead, A. Xanthopoulos, E. Rusin, D. Biggs, A. Blandford, R. de Bruyn, G. Jackson, N. Koopmans, L.V.E. Norbury, M. Pearson, T.	Jodrell Bank Pennsylvania NRAO-Socorro Jodrell Bank NRAO-Socorro Caltech Jodrell Bank Pennsylvania Jodrell Bank Caltech NFRA Jodrell Bank Groningen Jodrell Bank Caltech	Gravitational lens monitoring combined program	3.6, 6, 20 w/BN12	3,7,10,13,20 ,24,27,28,31	14.3
AB925	Bondi, M. Gregorini, L. Vettolani, G. Parma, P. DeRuiter, H. Zamorani, G. Ciliegi, P. LeFevre, O. Mazure, A. Guzzo, L. Arnaboldi, M. Scaramella, R.	Bologna Bologna Bologna Bologna Bologna Bologna Marseille Marseille Milano Napoli Rome	Sub-mJy observations of VLT VIRMOS Deep Field	20 w/BN12	3, 4, 5, 6, 7, 10, 11	42.2
AC524	Cartwright, J.K. Taylor, G.B. Readhead, A.C.S. Pearson, T.J.	Caltech NRAO-Socorro Caltech Caltech	Polarization monitoring observations of 3C273	0.7, 1.3	26	2.0
AC538	Carilli, C. Menten, K. Yun, M.S.	NRAO-Socorro MPIfr NRAO-Socorro	Imaging the CO Emission from the z=4.4 QSO BRI 1335-0417	0.7, 3.6	3	8.0
AF350	Falcke, H. Lobanov, A. Wright, M. Bower, G. Aller, M. Terasranta, H. Patnaik, A.	MPIfr MPIfr Calif.-Berkeley NRAO-Socorro Michigan Metsahovi MPIfr	Monitoring extremely variable spiral III Zw 2	1.3, 2, 3.6, 6, 20, 90	5	1.5
AF365	Faison, M. Churchwell, E.	NRAO/Wisconsin Wisconsin	Accretion disk of massive protostar IRAS 20126+4014	2, 3.6 w/BR57	12	3.0
AG575	Greenhill, L.J. Chandler, C.J. Herrnstein, J.R. Reid, M.J.	CfA Cambridge Renaissance Tech CfA	Orion BN/KL: the maser shell around source I	0.7 line	31	2.0
AG579	Gurwell, M. Butler, B.	Caltech NRAO-Socorro	Observing C3H2 in the atmosphere of Titan	0.7 line	1	1.5
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	7, 13, 27	5.8
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 w/BR57	12	2.0
AJ269	Jamrozny, M. Machalski, J.	Jagiellonian Jagiellonian	Detection of a radio core in "Giant" radiogalaxy candidates	6	13	3.0
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 w/BN12	4,9-11,13,15 ,17-21,23,26 -30	16.3
AK496	Kronberg, P.P. Sramek, R.A. Allen, M.A. Birk, G.T.	Toronto NRAO-Socorro Toronto Munich	Extending the M82 compact source monitoring to 19 years	2	4	7.5
AK500	Kurtz, S. Carral, P. Hofner, P.	UNAM Guanajuato Arecibo/UPR	Supercompact HII region ON-2 (H20)	0.7	5	4.5

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AL484	Ledlow, M. Owen, F.	UNM NRAO-Socorro	1 Mpc scale FRI radio galaxy B2 1108+27	20, 90	26	4.0
AL494	Lang, C. Goss, M. Rodriguez, L.F.	NRAO-Socorro NRAO-Socorro UNAM	Radio observations of ionized winds of massive stars in the arches cluster	7	26	2.5
AL500	Laing, R.A. Parma, P. de Ruiter, H.R. Bridle, A.H. Fanti, R.	Oxford Bologna Bologna NRAO-CV Bologna	Decelerating relativistic jets in FRI radio galaxies	3.6	19	23.8
AM629	Miranda, L.F. Gomez, Y. Lopez, A. Rodriguez, L.F. Torrelles, J.M.	IAA UNAM UNAM UNAM Catalunya	Jet like features in planetary nebula IC 4997	0.7 w/BN12	11	5.0
AR419	Rodriguez, L.F. Avila, R.	UNAM UNAM	7mm observations of HH 211-mm: a "dust only" source	0.7, 3.6	2	5.1
AS568	Sramek, R. Weiler, K. VanDyk, S. Panagia, N.	NRAO-Socorro NRL UCLA STSci	Properties of radio supernovae	1,12,26 w/move/op	1,12,26	6.0
AS670	Spangler, S.R. Mutel, R.L. McCullough, P.R.	Iowa Iowa Illinois	Faraday rotation variations in the ISM	6	13	8.0
AS673	Skinner, S.L. Zhekov, S.	Colorado Colorado	Radio emission of Wolf-Rayet stars	1.3, 2, 3.6, 6, 20	26	3.0
AS675	Saito, M. Kawabe, R. Ho, P.T.P.	CfA NAO-Nobeyama CfA	Continuum emission toward low mass protobinaries in Taurus	3.6, 6 w/move/op	22	3.0
AT232	Thompson, D. Fassnacht, C. Soifer, B.T. Beckwith, S.	Caltech NRAO-Socorro Caltech STSci	Extremely red galaxies	20 w/BD62	16, 17, 18, 20	31.7
AT235	Trinidad, M.A. Curiel, S. D'Alessio, P. Rodriguez, L.F.	UNAM UNAM UNAM UNAM	Circumbinary disk structures around Binary YSOs	0.7, 3.6 w/BD62	28	7.0
AW524	Wyrowski, F. Schilke, P. Menten, K.M. Thorwirth, S. Muller, H.S.P. Winnewisser, G.	Maryland MPIFR MPIFR Cologne Cologne Cologne	Vibrationally excited carbon chain molecules in CRL 618	0.7, 6	8, 13, 17, 18	16.0
AY109	Yan, L. Chapman, S. Owen, F. McHardy, P. Oemler, G. Persson, S.E.	Carnegie Obs. Carnegie Obs. NRAO-Socorro Carnegie Obs. Carnegie Obs. Carnegie Obs.	Deep 20cm imaging of the field from Las Campanas near IR Survey	20 w/BR57	12, 23, 26, 27	25.8
AY111	Yin, Q.-F. Huang, J.H. Zheng, W.	NRAO-CV Nanjing Johns Hopkins	Two newly discovered Wolf-Rayet Galaxies	20	1	2.0
AZ122	van Zee, L. Salzer, J.J. Skillman, E.D.	DRAO Wesleyan Minnesota	BCD Rotation curves: is the mass distribution centrally concentrated	20 line w/BN12	10, 11	24.0
BB112	Benz, A. Pestalozzi, M. Conway, J. Gudel, M. Smith, K.	ETH Onsala Onsala Paul Scherrer ETH	Imaging single T Tau star coronae and the jet/disk interface	3.6 Phased array VLBI	14	11.9
BB116	Beasley, A.J. Herrnstein, J.R.	NRAO-CV Renaissance Tech	Non-thermal emission from O supergiants	3.6 Phased array VLBI	4	10.0
BB117	Beasley, A.J. Herrnstein, J.R.	NRAO-CV Renaissance Tech	Monitoring of WR 140	2, 3.6, 6	3,27,28	3.6
BD062	Diamond, P.J. Kemball, A.J.	Jodrell Bank NRAO-Socorro	TX Cam: the sequel	0.7 Single antenna VLBI w/AT232, BP61, AW524, AK485	29, 18	10.4
BF055	Faison, M. Goss, M.	NRAO/Wisconsin NRAO-Socorro	Neutral hydrogen absorption towards 3C 138	20 Phased array VLBI	21	11.7
BL058	Lonsdale, C. Diamond, P. Smith, H. Lonsdale, C.	Haystack Jodrell Bank Calif.-San Diego Caltech-IPAC	Radio supernovae in OH megamaser galaxy Arp220	3.6, 6, 20 Phased array VLBI	19	10.7

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Progrm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
BM108	Moellenbrock, G. Roberts, D.H. Wardle, J.F.C.	ISAS/Brandeis Brandeis Brandeis	Polarization monitoring of gamma ray blazars	0.7, 1.3, 2, 3.6	7	2.0
BM120	Mundell, C.G. Wilson, A.S. Ulvestad, J.S. Roy, A.L.	Maryland Maryland NRAO-Socorro MPIfR	Thermal (?) nuclear emission in NGC 4388	20 Phased array VLBI	23	11.6
BN012	Norbury, M. Jackson, N. Browne, I. Wilkinson, P. Marlow, D. Myers, S. Rusin, D. Koopmans, L. Readhead, T. Pearson, T. Blandford, R.	Jodrell Bank Jodrell Bank Jodrell Bank Jodrell Bank Pennsylvania NRAO-Socorro Pennsylvania Groningen Caltech Caltech Caltech	Long track observations of top CLASS lens candidates	6, 20 Single antenna VLBI w/AB922,AK485,Tst,AB925,AZ122 ,AM629	10	24.1
BP061	Phillips, R.B. Boboltz, D.A.	Haystack USNO	Monitoring of 43 GHz SiO maser emission towards MIRA	0.7 w/BD62	18	1.0
BR057	Roberts, D.H. Moellenbrock, G.A. Wardle, J.F.C. Gabuzda, D.C. Brown, L.F.	Brandeis ISAS/Brandeis Brandeis JIVE Connecticut	Four 3C quasars with VSOP observations	0.7, 1.3, 2, 3.6 Single antenna VLBI w/AB879,AF365,AH685,AY109	12	12.9
BR063	Ratner, M.I. Bartel, N. Bietenholz, M.F. Lebach, D.E. Lestrade, J-F. Ransom, R.R. Shapiro, I.I.	CfA York York CfA Meudon York CfA	Astrometry of HR 8703 in 1999 for the gravity probe B mission	3.6, 6 Phased array VLBI	9	12.0
	Staff	NRAO	Baselines, Pointing, Delays Maintenance Move/Operations Shutdown Software General tests Christmas shutdown		24	65.0 63.2 6.0 2.5 29.3 30.4 32.2

The average downtime was 14.4%.

The array was scheduled for 95.7% (713.9 hours)  
521.5 hours (69.9% of time) for astronomical programs  
100.0 hours (13.4% of time) for tests/calibration  
92.4 hours (12.4% of time) for maintenance  
Total 713.9 hours ( 95.7%) scheduled.

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

The following independent proposals shared simultaneous observing time (51.4 hours total simultaneous observing):

Projects	Hours
AB897/BR57	2.2
AB922/BN12	2.0
AB925/BN12	6.0
AF365/BR57	3.0
AH685/BR57	2.0
AK485/BD62	0.5
AK485/BN12	2.0
AM629/BN12	0.1
AS568/MOVE/OP	3.0
AS675/MOVE/OP	3.0
AT232/BD62	1.8
AW524/BD62	4.0
AY109/BR57	5.7
AZ122/BN12	12.0
BP61/BD62	1.0
TEST/BD62	1.2
TEST/BN12	2.0

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AB879	Becker, R.H. White, R.L. Helfand, D.J.	Calif.-Davis STSci Columbia	FIRST survey	20	5,6,8,9,11-14, 16,19,21,24,26-30	174.0
AB922	Browne, I. Marlow, D.R. Myers, S. Wilkinson, P. Fassnacht, C. Readhead, A. Xanthopoulos, E. Rusin, D. Biggs, A. Blandford, R. de Bruyn, G. Jackson, N. Koopmans, L.V.E. Norbury, M. Pearson, T.	Jodrell Bank Pennsylvania NRAO-Socorro Jodrell Bank NRAO-Socorro Caltech Jodrell Bank Pennsylvania Jodrell Bank Caltech NFRA Jodrell Bank Groningen Jodrell Bank Caltech	Gravitational lens monitoring combined program	3.6, 6, 20 w/BB109, GR19, BB117	1,5,8,11,13,17,20,23,26,28	20.1
AB924	Bransford, M.A. Appleton, P.N. Gao, Y. Freeman, K.C.	New Mexico State Iowa State IPAC Mt. Stromlo	HI Observations of Seyfert galaxy Arp 118	20 line	11	7.0
AB925	Bondi, M. Gregorini, L. Vettolani, G. Parma, P. DeRuiter, H. Zamorani, G. Ciliegi, P. LeFevre, O. Mazure, A. Guzzo, L. Arnaboldi, M. Scaramella, R.	Bologna Bologna Bologna Bologna Bologna Bologna Marseille Marseille Milano Napoli Rome	Sub-mJy observations of VLT VIRMOS Deep Field	20 w/BC96	26, 27	12.0
AC536	Carral, P. Kurtz, S. Rodriguez, L.F.	Guanajuato UNAM UNAM	Search for new thermal jets from young massive stars	3.6	10	4.1
AC538	Carilli, C. Menten, K. Yun, M.S.	NRAO-Socorro MPIfR NRAO-Socorro	Imaging the CO Emission from the z=4.4 QSO BRI 1335-0417	0.7, 3.6 w/BK71, BB117	15, 20	16.0
AC541	Kaspi, V. Cordes, J. Gaensler, B. Hankins, T. Kern, J. McLaughlin, M.	MIT Cornell MIT NMIMT NMIMT Cornell	X-ray point source in Cass A		28	4.0
AF350	Falcke, H. Lobanov, A. Wright, M. Bower, G. Aller, M. Terasranta, H. Patnaik, A.	MPIfR MPIfR Calif.-Berkeley NRAO-Socorro Michigan Metsahovi MPIfR	Monitoring extremely variable spiral III Zw 2	1.3, 2, 3.6, 6, 20, 90	11	1.0
AG567	Giovannini, G. Treves, A. Falomo, R. Govani, F. Scarpa, R. Urry, C.M.	Bologna Milan Padova Padova STSci STSci	Two new graviational lens candidates	0.7, 1.3	11, 14	4.0
AG579	Gurwell, M. Butler, B.	Caltech NRAO-Socorro	Observing C3H2 in the atmosphere of Titan	0.7 line	28, 29, 30	17.4
AG580	Govoni, F. Taylor, G. Dallacasa, D. Feretti, L. Giovannini, G.	Bologna NRAO-Socorro Bologna Bologna Bologna	Faraday rotation in clusters A2255 and A514	3.6, 6	14	9.0
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/BC96	2,3,7-9,16,21,27,30	18.1
AH678	Horellou, C.	Onsala	Magnetic fields in the ring galaxy Arp 147	6 w/BK71, BB117	18, 19, 20	21.0

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
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	11	2.0
AH687	Hughes, V.A.	Queens	An investigation of Class 00 protostars	0.7	21	4.0
AH688	Hollis, J.M. Pedeltry, J.A. Koupelis, T.	NASA-GSFC NASA-GSFC Wisconsin-Marathon	Shock induced polarization of R Aqr Jet	3.6, 6	1, 4, 6	24.5
AH691	Hibbard, J.E. Higdon, J. Charlton, J.	NRAO-CV Groningen Pennsylvania	Four interacting/merging pairs with extensive tidal tails	20 line w/BC96	4, 7	18.0
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 w/GR19, BK71	5,7-9,11,12, 15,17,20,22, 23,27 BC96	17.2
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	1	1.5
AK500	Kurtz, S. Carral, P. Hofner, P.	UNAM Guanajuato Arecibo/UPR	Supercompact HII region ON-2 (H2O)	0.7	30	4.5
AL490	Laine, S. Kotilainen, J.K. Norris, R.P. Reunanen, J. Ryder, S.	Hertfordshire Tuorla ATNF Tuorla Hawaii	Seyfert and starburst galaxies with IR line images	6	26	3.0
AL494	Lang, C. Goss, M. Rodriguez, L.F.	NRAO-Socorro NRAO-Socorro UNAM	Radio observations of the ionized winds of the massive stars in the arches cluster	7, 3.5	8,9	5.4
AL499	Lacy, M. Ridgway, S.	Oxford Johns Hopkins	Radio optical alignments in less luminous radio sources	3.6, 20 w/BC96	3, 7, 7	6.0
AL506	Linden-Vornle, M.J.D. Norgaard-Nielsen, H. Jorgensen, H.E. Hansen, L.	Danish Space Res. Danish Space Res. Copenhagen Copenhagen	VLA Survey of deep ISO survey area in selected area 57	20 w/BB109	1	7.5
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 w/BC96	3	3.0
AM635	Mohan, N.R. Rottgering, H. Cimatti, A. Andreani, P. Eisenhardt, P. Stanford, A. Elston, R. Carilli, C. Anantharamaiah, K.R.	Raman Leiden Arcetri Padova JPL Lawrence Livermore Florida NRAO-Socorro Raman/NRAO-Socorro	Radio continuum of extremely red galaxies	20	5, 12	16.0
AM637	McLaughlin, M. Cordes, J. Arzoumanian, Z.	Cornell Cornell Cornell	Astrometry of four recently discovered pulsars	20, 90	6, 7	3.0
A0145	Olmi, L. Cesaroni, R. Walmsley, M.	Massachusetts Arcetri Arcetri	Search for non-thermal continuum towards H2O masers	6, 20	18, 19	10.0
AR419	Rodriguez, L.F. Avila, R.	UNAM UNAM	7mm observations of HH 211-mm: a "dust only" source	0.7, 3.6	21	5.0
AS673	Skinner, S.L. Zhekov, S.	Colorado Colorado	Radio emission of Wolf-Rayet stars	1.3, 2, 3.6, 6, 20 w/BB117, BC96	20, 27	3.5
AS674	Sage, L.J. Higdon, J.L.	Maryland Groningen	Neutral hydrogen in the ring galaxy Arp 147	20 line	7, 9	20.5
AS675	Saito, M. Kawabe, R. Ho, P.T.P.	CfA NAO-Nobeyama CfA	Continuum emission toward low mass protobinaries in Taurus	3.6, 6	13	2.0
AW519	Wilcots, E.M. Bershady, M.A. Jangren, A.	Wisconsin Wisconsin Penn State	Low redshift, luminous, compact star forming galaxies	3.6	24	5.0

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AW522	Wilner, D. Ho, P. Rodriguez, L. Beltran, M. Kastner, J.	CfA CfA UNAM CfA Haystack	7mm continuum studies of T-Tauri disks	0.7 w/GR19	14, 16, 17	19.9
AW523	van der Walt, J. Churchwell, E. Gaylard, M. Goedhart, S.	Potchefstroom Wisconsin Hartebeesthoek Hartebeesthoek	Search for methanol masers around massive protostars	1.3 line	13	10.0
AX006	Xu, C. Condon, J.J.	IPAC NRAO-CV	Intracluster starburst in Stephan's Quintet	20	15	6.0
AZ119	Zhao, J.-H. Goss, M.	Shanghai NRAO-Socorro	Proper motions of radio components near Sgr A*	1.3 w/GR19	16	5.0
BB109	Beasley, A.J. Herrnstein, J.H.	NRAO-CV NRAO-Socorro	VLBA Monitoring of WR 140 (HD 193793)	2, 3.6, 6 Single antenna VLBI w/AS568, Software, AB922, AL506	1	10.4
BB117	Beasley, A.J. Herrnstein, J.R.	NRAO-CV Renaissance Tech.	Monitoring of WR 140	20, 6, 3.6 Single antenna VLBI w/BB117, AC538, AB922, AS673, AH678	5, 20, 20	10.3
BC096	Cohen, A.S. Hewitt, J.N.	MIT MIT	Determining a model of gravitational lens 0218+357	20 Single antenna VLBI w/AH669, AS568, AL499, AM603, Test, AH691, AS673, AK485, AB925	3, 5, 27	26.1
BD061	Doeleman, S.S. Boboltz, D.A. Lonsdale, C.J.	Haystack USNO Haystack	7mm and 3mm imaging of SiO masers around Chi Cygni	0.7	1	2.0
BK071	Kowatsch, P. Krichbaum, T.P. Roy, A. Zensus, J.A. Witzel, A. Fricke, K.J.	MPIfR MPIfR MPIfR MPIfR MPIfR Gottingen	Two-sided jet in Seyfert 2 galaxy NGC 3079	3.6, 6, 20 single antenna VLBI w/AH678, Test, AK485, AC538	19	12.1
BP061	Phillips, R.B. Boboltz, D.A.	Haystack USNO	Monitoring of 43 GHz SiO maser emission towards MIRA	0.7 w/GR19	17	2.0
BS076	Strelitski, V. Benson, P. Kogan, L. Salter, D.	Maria Mitchell Obs Wellesley NRAO-Socorro Wellesley	Imaging of VX U Ma in the 1.35 cm H2O maser line	1.3	9	0.6
GB035	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	Evolving spectral index distribution in images of SN 1993J	6, 20 Phased array VLBI	23	12.5
GP022	Peck, A. Taylor, G. Giovannini, G.	NRAO/NMIMT NRAO-Socorro Bologna	HI gas toward the core of 3C 293	20 Phased array VLBI	18	11.1
GP024	Pihlstrom, Y. Conway, J. Vermeulen, R.	Onsala Onsala NFRA	HI absorption in the FRII galaxy 3C321	20 Phased array VLBI	17	12.0
GR019	Rioja, M. Colomer, F. Porcas, R. Fomalont, E. Gurvits, L. Schilizzi, R. Sasao, T. Asaki, Y. Mantovani, F.	OAN OAN MPIfR NRAO-CV JIVE JIVE NAO-Mizusawa NAO-Mizusawa Bologna	Phase referencing at L-band using cluster-cluster mode	20 Four antenna VLBI w/AZ119, Test, AW522, AB922, AK485, Test, BP61	16, 17	12.2
W044	Krichbaum, T.P. Witzel, A. Kraus, A. Lobanov, A. Zensus, J.A.	MPIfR MPIfR MPIfR MPIfR MPIfR	Intraday variables	6 Phased array VLBI	8, 10, 13, 15	42.0

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
	Staff	NRAO	Move/Operations			0.9
			Baselines, Pointing, Delays			29.5
			Maintenance			34.8
			Shutdown			1.4
			Software			27.4
			General tests			27.2
			Thanksgiving Shutdown		24	25.0



The average downtime was 3.4%.

The array was scheduled for 96.5% (697.0 hours)

583.0 hours (80.8% of time) for astronomical programs

53.8 hours ( 7.5% of time) for tests/calibration

60.2 hours ( 8.3% of time) for maintenance

Total 697.0 hours ( 96.6%) scheduled.

Array was in the B configuration from November 1 through November 30.

The following independent proposals shared simultaneous observing time (71.0 hours total simultaneous observing):

Projects	Hours
AB922/BB109	1.5
AB922/BB117	2.0
AB922/GR19	1.4
AB925/BC96	5.5
AC538/BB117	3.2
AC538/BK71	3.3
AH669/BC96	0.3
AH678/BB117	1.6
AH678/BK71	5.3
AH688/BB109	4.8
AH691/BC96	0.6
AK485/BC96	2.0
AK485/BK71	1.5
AK485/GR19	1.0
AL499/BC96	1.0
AL506/BB109	0.0
AM603/BC96	3.0
AM635/BC96	7.8
AS568/BC96	1.5
AS673/BB117	1.5
AS673/BC96	1.4
AW522/GR19	1.6
AZ119/GR19	1.0
BB117/BB117	2.0
BB117/BC96	1.0
BP61/GR19	0.7
SOFTWARE/BB109	4.0
TEST/BC96	2.0
TEST/BK71	2.0
TEST/GR19	3.5
TEST/GR19	3.0

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AB879	Becker, R.H. White, R.L. Helfand, D.J.	Calif.-Davis STScI Columbia	FIRST survey	20	30	12.0
AB908	Brogan, C.L. Frail, D.A. Goss, M. Troland, T.H.	Kentucky NRAO-Socorro NRAO-Socorro Kentucky	Zeeman measurements of 1720 MHz OH masers in supernova remnants	20 line	24	4.0
AB922	Browne, I. Marlow, D.R. Myers, S. Wilkinson, P. Fassnacht, C. Readhead, A. Xanthopoulos, E. Rusin, D. Biggs, A. Blandford, R. de Bruyn, G. Jackson, N. Koopmans, L.V.E. Norbury, M. Pearson, T.	Jodrell Bank Pennsylvania NRAO-Socorro Jodrell Bank NRAO-Socorro Caltech Jodrell Bank Pennsylvania Jodrell Bank Caltech NFRA Jodrell Bank Groningen Jodrell Bank Caltech	Gravitational lens monitoring combined program	3.6, 6, 20 w/BB109	4,7,12,14,18 ,21	18.5
AB929	Black, G. Campbell, D. Nicholson, P.	NRAO-GB Cornell Cornell	Radio source occultation by Saturn's ring system	20, 90	10, 21	16.0
AB930	Beuther, H. Menten, K.M. Schilke, P. Sridharan, T.K. Wyrowski, F.	MPIFR MPIFR MPIFR Cfa Maryland	Water maser emission in candidate high mass protostars	1.3 line	25	9.0
AC524	Cartwright, J.K. Taylor, G.B. Readhead, A.C.S. Pearson, T.J.	Caltech NRAO-Socorro Caltech Caltech	Polarization monitoring observations of 3C273	0.7, 1.3	26	2.5
AC531	Carilli, C. Fan, X. Strauss, M. Rupen, M. Schneider, D. Yun, M.	NRAO-Socorro Princeton Princeton NRAO-Socorro Penn. State NRAO-Socorro	Search for radio emission from high redshift QSOs from the SDSS	20	1, 4, 7	27.6
AC541	Cordes, J. Kaspi, V. Gaensler, B. Hankins, T. Kern, J. McLaughlin, M.	Cornell MIT MIT NMIMT NMIMT Cornell	Search for pulsations from Cas A neutron star	HTRP	23, 31	6.0
AD427	De Breuck, C. Carilli, C. van Breugel, W. Rottgering, H. Miley, G. Stanford, A. Stern, D.	Lawrence Livermore NRAO-Socorro Lawrence Livermore Leiden Leiden Lawrence Livermore Calif.-Berkeley	The most distant radio galaxy	2 w/VC993	22	6.5
AD428	Dallacasa, D. Stanghellini, C. Fanti, R. Centonza, M.	Bologna Noto Bologna Bologna	High frequency peakers	1.3, 2, 3.6, 6, 20 w/BD62	15	4.0
AD431	Dennett-Thorpe, J. deBruyn, A.G.	Groningen NFRA	Determining the structure of microarcsecond sources	2, 3.6, 6	3, 29	12.0
AF350	Falcke, H. Lobanov, A. Wright, M. Bower, G. Aller, M. Terasranta, H. Patnaik, A.	MPIFR MPIFR Calif.-Berkeley NRAO-Socorro Michigan Metsahovi MPIFR	Monitoring extremely variable spiral III Zw 2	1.3, 2, 3.6, 6, 20, 90	18	1.5
AG571	Gaensler, B.M. Frail, D.A. Kulkarni, S.R.	MIT NRAO-Socorro Caltech	The Duck and the Mouse - second epoch proper motion measurements	3.6, 6 HTRP w/BD62	7,23	10.0
AG580	Govoni, F. Taylor, G. Dallacasa, D. Feretti, L. Giovannini, G.	Bologna NRAO-Socorro Bologna Bologna Bologna	Faraday rotation in clusters A2255 and A514	3.6, 6	15, 16, 17	18.0

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AR424	Rupen, M. Fan, X. Strauss, M. Carilli, C. Schneider, D. Yun, M.	NRAO-Socorro Princeton Princeton NRAO-Socorro Penn. State NRAO-Socorro	High redshift QSOs from the SDSS	20	3, 8	25.0
AR425	Roberts, D.A. Yusef-Zadeh, F.	Illinois Northwestern	Acceleration of high velocity gas in Sgr A West	3.6 line	17, 18	17.0
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 w/BB109	1,27,28	13.0
AS671	Sarma, A.P. Troland, T.H. Crutcher, R.M. Roberts, D.A.	Kentucky Kentucky Illinois Illinois	OH Zeeman observations toward NGC 6334	20 line	10, 11	10.0
AS673	Skinner, S.L. Zhekov, S.	Colorado Colorado	Radio emission of Wolf-Rayet stars	1.3, 2, 3.6, 6, 20	19, 22, 24	7.0
AS676	Saito, M. Kawabe, R. Beltran, M.T.	CfA NAO-Nobeyama CfA	Variable thermal emission from low mass Protostars L1551 NE	3.6, 20	27	3.0
AT233	Trigilio, C. Leone, F. Umana, G. Leto, P.	Noto Catania Noto Noto	Search for coherent emission from Sigma Ori E	6, 20 w/BB109	2, 4, 7, 10	33.0
AT236	Troland, T.H. Crutcher, R.M. Plante, R.L. Roberts, D.A.	Kentucky Illinois Illinois Illinois	OH Zeeman measurements in the central few parsecs of galaxy	20 line w/VC993	9, 15, 16, 22	28.0
AU079	Ulvestad, J.S. Ho, L.C.	NRAO-Socorro Carnegie Obs.	The Palomar sample of Seyfert galaxies	6	30	22.0
AW362	White, S.	Maryland	The stellar activity cycle on active stars	3.6, 6, 20 w/test/Bower	13, 25	3.5
AW521	Wilson, A.S. Greenhill, L.J.	Maryland CfA	Quasars near NGC 1068	3.6, 20	28	7.0
AW522	Wilner, D. Ho, P. Rodriguez, L. Beltran, M. Kastner, J.	CfA CfA UNAM CfA Haystack	7mm continuum studies of T-Tauri disks	0.7	2, 24	7.5
AY108	Yusef-Zadeh, F. Biretta, J. Roberts, D.	Northwestern STScI Illinois	Proper motion of Sgr A West at 2cm	2	26	8.0
BA037	Aller, H.D. Aller, M.F. Hughes, P.A. Wardle, J.F.C. Homan, D.C.	Michigan Michigan Michigan Brandeis Brandeis	Sources with rapidly variable polarization	0.7, 2	9, 13	5.0
BB109	Beasley, A.J. Herrnstein, J.H.	NRAO-CV NRAO-Socorro	VLBA Monitoring of WR 140 (HD 193793)	2, 3.6, 6 Single antenna VLBI w/AS568, AB922, AH669, Baselines , AK485, AT233	1,20	12.6
BB117	Beasley, A.J. Herrnstein, J.R.	NRAO-CV NRAO-Socorro	Monitoring of WR 140	2,3,6,6	2	2.0
BC098	Claussen, M.J. Wootten, H.A. Marvel, K.B. Wilking, B.A.	NRAO-Socorro NRAO-CV AAS Missouri	Zeeman measurements of water masers in YSO Jets	1.3	27	1.0
BD062	Diamond, P.J. Kemball, A.J.	Jodrell Bank NRAO-Socorro	TX Cam: the sequel	0.7 Single antenna VLBI w/A178, AG570, AD428	15	8.0
BP055	Peck, A.B. Taylor, G.B. Vermeulen, R.C.	NRAO/NMIMT NRAO-Socorro NFRA	HI in compact symmetric object J1816+3457	20 Single antenna VLBI	17, 18	16.0
BW043	Walker, R.C. Kellermann, K.I. Romney, J.D. Vermeulen, R.C. Alef, W. Benson, J.M.	NRAO-Socorro NRAO-CV NRAO-Socorro NFRA MPIFR NRAO-Socorro	Changes in the 3C84 accretion region	1.3, 2, 3.6, 6 Single antenna VLBI	7, 8, 9	42.0

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AB908	Brogan, C.L. Frail, D.A. Goss, M. Troland, T.H.	Kentucky NRAO-Socorro NRAO-Socorro Kentucky	Magnetic field measurements in supernova remnants	18 w/AJ268	13	2.5
AB909	Bower, G.C. Moscadelli, L.	NRAO-Socorro Cagliari	Scattering sizes of OH masers in the galactic center	20 line	7	5.0
AB910	Bower, G.C. Falcke, H. Backer, D.C.	NRAO-Socorro MPIfR Calif.-Berkeley	Spectrum of circular polarization in Sagittarius A	2, 3.6, 6, 20	3, 21	8.1
AB912	Browne, I.W.A. Jackson, N.J.F. Wilkinson, P.N. Phillips, P.M. Marlow, D.R. Rusin, D.	Jodrell Bank Jodrell Bank Jodrell Bank Jodrell Bank Pennsylvania Pennsylvania	Possible lenses from JVAS/CLASS with separations > 6''	2, 20	3	1.5
AB914	Brotherton, M. Smith, R.J. van Breugel, W. Miller, L. Boyle, B.	Lawrence Livermore AAO Lawrence Livermore Oxford AAD	The NVSS/UVX quasar sample	20	13	2.5
AB922	Browne, I. Marlow, D.R. Myers, S. Wilkinson, P. Fassnacht, C. Readhead, A. Xanthopoulos, E. Rusin, D. Biggs, A. Blandford, R. de Bruyn, G. Jackson, N. Koopmans, L.V.E. Norbury, M. Pearson, T.	Jodrell Bank Pennsylvania NRAO-Socorro Jodrell Bank NRAO-Socorro Caltech Jodrell Bank Pennsylvania Jodrell Bank Caltech NFRA Jodrell Bank Groningen Jodrell Bank Caltech	Gravitational lens monitoring combined program	3.6, 6, 20	2,4,5,9,11,1 6,19,21,24,2 8,30	21.7
AC467	Colina, L. Alberdi, A. Torrelles, J.M. Panagia, N. Wilson, A.	STSci IAA Catalunya STSci Maryland	Search for radio supernovae in luminous Seyfert galaxies	2, 3.6	8	5.0
AC530	Contreras, M.E. Rodriguez, L.F.	UNAM UNAM	Structure and behavior of ionized stellar winds at 7mm	0.7, 3.6, 6	2	6.5
AC531	Carilli, C. Fan, X. Strauss, M. Rupen, M. Schneider, D. Yun, M.	NRAO-Socorro Princeton Princeton NRAO-Socorro Penn. State NRAO-Socorro	Search for radio emission from high redshift QSOs from the SDSS	20	30	2.5
AD425	Drake, J. Brown, A. Brickhouse, N. Osten, R. Harper, G.	CfA-AXAF Colorado CfA-AXAF Colorado Colorado	Simultaneous radio observations with AXAF of HR 1099	2, 3.6, 6, 20	15	10.0
AD427	De Breuck, C. Carilli, C. van Breugel, W. Rottgering, H. Miley, G. Stanford, A. Stern, D.	Lawrence Livermore NRAO-Socorro Lawrence Livermore Leiden Leiden Lawrence Livermore Calif.-Berkeley	The most distant radio galaxy	3.6, 6, 20	19	7.5
AD428	Dallacasa, D. Stanghellini, C. Fanti, R. Centonza, M.	Bologna Noto Bologna Bologna	High frequency peakers	1.3, 2, 3.6, 6, 20	25	4.0
ADHOC	Rawlings, S.	Oxford	Adhoc Proposal	20	17	1.6

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AE128	Eyres, S.P.S. Bode, M.F. O'Brien, T. Davis, R.J. Richards, A.M.S. Watson, S.K. Crocker, M. Taylor, R.A. Dougherty, S.M. Iverson, R.J. Kenny, H.T.	John Moores John Moores John Moores Jodrell Bank Jodrell Bank Jodrell Bank Jodrell Bank Calgary DRAO/Calgary University College Canadian Military	Contemporaneous VLA-HST observations of symbiotic stars	1.3, 3.6, 6	26	11.9
AE131	Edge, A.C. Smail, I. Davies, R. Bower, R.G. Zielger, B.	Durham Durham Durham Durham	Low x-ray luminosity clusters with HST imaging	20 w/BR57	27	7.1
AF350	Falcke, H. Lobanov, A. Wright, M. Bower, G. Aller, M. Terasranta, H. Patnaik, A.	MPIfR MPIfR Calif.-Berkeley NRAO-Socorro Michigan Metsahovi MPIfR	Monitoring extremely variable spiral III Zw 2	1.3, 2, 3.6, 6, 20, 90	20	1.5
AF366	Fey, A.L. Boboltz, D.A. Johnston, K.J. Gaume, R.A.	USNO USNO USNO USNO	Lens candidate 1445-161	3.6	24	1.0
AG572	Gomez, Y. Miranda, L.F. Torrelles, J.M. Anglada, G.	UNAM IAA Catalunya IAA	Water and OH maser emission toward planetary nebula K 3-35	1.3, 20 line w/BB109	6	10.0
AG573	Gomez, Y. Rodriguez, L.F. Moran, J.M.	UNAM UNAM CfA	Angular expansion of compact planetary nebulae	3.6	19	10.0
AG574	Gregg, M.D. Becker, R.H. Laurent-Muehleisen, W. White, R.L.	Calif.-Davis Calif.-Davis Lawrence Livermore STSci	Bright quasar lensing search	3.6	11, 11, 12, 25	14.0
AG576	Gibb, A.G. Hoare, M.G.	Leeds Leeds	Precessing jet from high-mass YSO G35.2-0.7N	3.6, 6	14	3.0
AG578	Greenhill, L.J. Moran, J.M. Reid, M.J. Holder, B.P.	CfA CfA CfA CfA	Water masers in the Orion BN/KL region	1.3 line	10	7.9
AH663	Harper, G. Brown, A. Ayres, T. Osten, R. Drake, J. Brickhouse, N.	Colorado Colorado Colorado Colorado CfA-AXAF CfA-AXAF	Observations of Capella during an AXAF observation	1.3, 2, 3.6, 6, 20	12, 13	18.0
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/BH63	4,10,13,15-17,22,23,29	15.3
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	24	1.5
AJ268	Janardhan, P. Balasubramanian, V. Ananthakrishnan, S.	Phys. Research Lab TIFR TIFR	Low frequency compact sources from Ooty IPS survey	3.6, 20	25	3.0
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	3,9,11,14,20,24	13.0
AK490	Kurtz, S. Carral, P. Rodriguez, L. Hofner, P.	UNAM Guanajuato UNAM Arecibo/UPR	Nature and evolutionary state of ON-2 (H2O)	1.3, 3.6	12	8.5
AL434	Lehar, J. Buchalter, A. McMahon, R. Kochanek, C.	CfA Columbia Cambridge CfA	Candidate gravitationally lensed radio lobes	6	6	2.5

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AL491	Lara, L. Giovannini, G. Cotton, W.D. Feretti, L. Venturi, T.	IAA Bologna NRAO-CV Bologna Bologna	Radio optical jet of 3C 264	0.7, 1.3, 6, 20	6	6.0
AL496	Lim, J. Kwok, S.	Academia Sinica Calgary	The fast wind of the central post AGB star in the bipolar PN M2-9	1.3, 2	20	6.0
AL497	Lim, J. Carilli, C.L. White, S.M.	Academia Sinica NRAO-Socorro Maryland	Structure and evolution of Betelgeuse's atmosphere	0.7, 1.3	11	7.0
AL500	Laing, R.A. Parma, P. de Ruiter, H.R. Bridle, A.H. Fanti, R.	Oxford Bologna Bologna NRAO-CV Bologna	Decelerating relativistic jets in FRI radio galaxies	3.6	17	24.2
AL501	Law-Green, J.D. Hirst, P. Reeves, J. O'Brien, P.T. Ward, M.J. Simpson, C.	Leicester Leicester Leicester Leicester NAO	PDS 456, a nearby radio quiet quasar	2, 3.6, 6, 20	11	2.5
AL504	Lang, C.C. Anantharamaiah, K.R. Kassim, N.E. Lazio, T.J.W.	NRAO/UCLA Raman/NRAO-Socorro NRL NRL	Substructure in a recently discovered galactic center filament	20	4	3.0
AM620	McHardy, I. Cordova, France Muxlow, T.	Southampton UC, Santa Barbara Jodrell Bank	Sub-mJy radio galaxies and the xray background	20	15	1.3
AM621	Mioduszewski, A.J. Rupen, M.P. Hjellming, R.M.	JIVE-Socorro NRAO-Socorro NRAO-Socorro	X-ray Nova CI Cam	2, 3.6	24	10.0
AM639	Monnier, J.D. Greenhill, L.J. Tuthill, P.G. Danchi, W.C.	Calif.-Berkeley CFA Calif.-Berkeley Calif.-Berkeley	IR Bright Wolf-Rayet Stars	1.3, 2, 3.6, 6, 20 w/BR57/move/op	27, 28	16.1
AN085	Nagar, N.M. Wilson, A.S. Falcke, H.	Maryland Maryland MPIFR	Low-luminosity AGN	0.7, 2, 3.6, 6	5,10	13.0
A0141	Ohta, K. Kawabe, R. Kohno, K. Tutui, Y.	Kyoto NAO-Nobeyama NAO-Nobeyama Tokyo U.	High redshift radio-quiet quasars	3.6, 20	4, 5	8.0
A0142	Owen, F.N. Carilli, C.L. Iverson, R.J. Cooray, A.R.	NRAO-Socorro NRAO-Socorro University College Chicago	Deep 20 cm a-array image of A370 and its lensed background	20	2, 3, 4, 5, 6, 7, 20	43.0
AP383	Pedelty, J.A. Hollis, J.M.	NASA-GSFC NASA-GSFC	Additional constraints on the R Aquarii binary system's orbit	0.7, 3.6	22	6.5
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	28	6.0
AR402	Rudnick, L. Treichel, K. Katz-Stone, D. Giovannini, G.	Minnesota Minnesota USNA Bologna	Non-relativistic sheaths around extragalactic jets	20	20	5.5
AR410	Rector, T.A. Stoche, J.T.	NOAO Colorado	Checking for gravitational lensing in the 1Jy BL Lac Object sample	2, 3.6, 6	20, 24	6.4
AR416	Rusin, D. Myers, S.T. Marlow, D.R. Browne, I.W.A. Jackson, N. Wilkinson, P. Norbury, M. Readhead, A.C.S. Fassnacht, C. Koopmans, L. deBruyn, A.G.	Pennsylvania NRAO-Socorro Pennsylvania Jodrell Bank Jodrell Bank Jodrell Bank Jodrell Bank Caltech NRAO-Socorro Groningen NFRA	Searching for variability in new CLASS lens systems	3.6	2,5,7,11,21, 22,23,30	8.2
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	24	1.5

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AS663	Sahai, R. Claussen, M. Morris, M. te Lintel Hekkert, P Zijlstra, A.	JPL NRAO-Socorro UCLA ATNF UMIST	Probing the kinematical structure of protoplanetary nebulae imaged with HST	18	16	1.0
AS665	Stern, D. van Breugel, W.	Calif.-Berkeley Lawrence Livermore	Highest redshift radio loud quasars	3.6, 6, 20	1, 4	6.5
AS666	Stern, D. Eisenhardt, P. Elston, R. Spinrad, H. Stanford, S.A.	Calif.-Berkeley JPL Florida Calif.-Berkeley Calif.-Davis	A luminous, narrow-lined high-redshift galaxy	20	14	1.0
AS673	Skinner, S.L. Zhekov, S.	Colorado Colorado	Radio emission of Wolf-Rayet stars	1.3, 2, 3.6, 6, 20 w/move/op	4, 11, 23, 24, 28	6.5
AW516	Winn, J.N. Hewitt, J.N. Schechter, P.L.	MIT MIT MIT	MIT-VLA-Magellan southern gravitational lens survey	1.3, 2, 3.6	7, 24	2.5
AW519	Wilcots, E.M. Bershady, M.A. Jangren, A.	Wisconsin Wisconsin Penn State	Low redshift, luminous, compact star forming galaxies	6, 20	25	10.0
AY106	Yun, M.S. Carilli, C. Ulvestad, J.	NRAO-Socorro NRAO-Socorro NRAO-Socorro	Resolution of the HI absorption system at z=3.4 in B2 0902+34	90 line with PT	3, 7, 26	21.0
AY113	Young, C. Brogan, C. Taylor, G.	Mississippi State Kentucky NRAO-Socorro	HI absorption in PDS 456	20 line	22	3.0
BB109	Beasley, A.J. Herrnstein, J.H.	NRAO-CV NRAO-Socorro	VLBA Monitoring of WR 140 (HD 193793)	2, 3.6, 6 Single antenna VLBI w/ag572/a0142	6	10.3
BG086	Gomez, J.L. Marscher, A.P. Alberdi, A. Gabuzda, D.C.	IAA Boston IAA JIVE	Lac object 0735+178	0.7, 1.3, 2	2	2.0
BH063	Hjellming, R.H. Mioduszewski, A.J. Rupen, M.P.	NRAO-Socorro NRAO-Socorro NRAO-Socorro	TOO VLBA observations of SAX J1819.3-2525	w/AH669	17	6.8
BM108	Moellenbrock, G. Roberts, D.H. Wardle, J.F.C.	ISAS/Brandeis Brandeis Brandeis	Polarization monitoring of gamma ray blazars	0.7, 1.3, 2, 3.6	30	2.0
BR057	Roberts, D.H. Moellenbrock, G.A. Wardle, J.F.C. Gabuzda, D.C. Brown, L.F.	Brandeis ISAS/Brandeis Brandeis JIVE Connecticut	Four 3C quasars with VSOP observations	0.7, 1.3, 2, 3.6 Single antenna VLBI w/AE131/test/software/AM639	27	9.7
BR063	Ratner, M.I. Bartel, N. Bietenholz, M.F. Lebach, D.E. Lestrade, J-F. Ranson, R.R. Shapiro, I.I.	CfA York York CfA Meudon York CfA	Astrometry of HR 8703 in 1999 for the gravity probe B mission	3.6, 6 Phased array VLBI	18	12.0
BS071	Stockdale, C. Cowan, J. Rupen, M. Chu, Y.-H.	Oklahoma Oklahoma NRAO-Socorro Illinois	Imaging SN 1961V: is it a supernova?	20 Phased array VLBI	23	12.0
BU012	Ulvestad, J.S. Vestrand, W.T. Stacy, J.G. Biretta, J.A.	NRAO-Socorro New Hampshire New Hampshire STScI	Flaring CGRO Blazar 2255-282	0.7, 1.3, 2 w/move/op	27	2.5
GB035	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	Evolving spectral index distribution in images of SN 1993J	6, 20 Phased array VLBI w/move/op	28	12.0

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
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 MPIfR Jodrell Bank CfA JPL JIVE Bologna Noto UCLA NRL NRAO-Socorro Haystack	Monitoring of the expansion of SN 1993J at 6 and 18cm	6, 20 Phased array VLBI	21	13.9
V021	Minter, A.	NRAO-GB	Orbiting VLBI observations of the pulsar 0329+54	20 Phased array VLBI	29	8.6
V026	Walker, R.C.	NRAO-Socorro	3C120 structure from 0.1 to 250 pc	6 Phased array VLBI	21	8.8
W048	Taylor, A.R. Dougherty, S.M. Peracaula, M. Paredes, J.M.	Calgary DRAO/Calgary Barcelona Barcelona	The core of radio star LSI + 61 303	6 Phased array VLBI w/move/op	15,16	44.2
W069	Zensus, J.A. Lobanov, A.P. Unwin, S.C. Cohen, M.H.	MPIfR MPIfR JPL Caltech	Jet in quasar 3C345	6 Phased array VLBI	10	12.7
	Staff	NRAO	Baselines, Pointing, Delays Maintenance Move/Operations Software General tests			51.3 51.0 21.6 27.4 27.5



The average downtime was 6.4%.

The array was scheduled for 100.0% (722.0 hours)  
558.6 hours (77.4% of time) for astronomical programs  
85.2 hours (11.8% of time) for tests/calibration  
78.2 hours (10.8% of time) for maintenance  
Total 722.0 hours (100.0%) scheduled.

Array was in the A configuration from September 1 through September 27.

Array was in the BnA configuration from September 27 through September 30.

The following independent proposals shared simultaneous observing time (50.1 hours total simultaneous observing):

Projects	Hours
AE131/BR57	2.9
AG572/BB109	9.2
AH669/BH63	1.3
AL500/BH63	5.5
AM639/BR57	4.3
AM639/MOVE/OP	2.8
AM639/MOVE/OP	2.0
A0142/BB109	1.1
AS673/MOVE/OP	1.0
Baselines/TEST	5.0
BU12/MOVE/OP	2.5
GB35/MOVE/OP	4.9
SOFTWARE/BR57	0.3
SOFTWARE/BR57	0.2
TEST/BR57	2.0
W48/MOVE/OP	5.1

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AA240	Anantharamaiah, K.R. Goss, M.	Raman/NRAO-Socorro NRAO-Socorro	Orthogonal rotating gaseous disks in NGC 253	3.6 line	8	7.0
AB908	Brogan, C.L. Frail, D.A. Goss, M. Troland, T.H.	Kentucky NRAO-Socorro NRAO-Socorro Kentucky	Magnetic field measurements in supernova remnants	18	3	2.5
AB910	Bower, G.C. Falcke, H. Backer, D.C.	NRAO-Socorro MPIfR Calif.-Berkeley	Spectrum of circular polarization in Sagittarius A	2, 3.6, 6, 20 w/move/op	4, 9, 17, 23, 28	20.0
AB911	Brisken, W. Fruchter, A.S. Goss, M. McGary, R. Thorsett, S.E.	Princeton STScI NRAO-Socorro Harvard Princeton	Improper motions; a study of pular velocities	20	5	0.5
AB912	Browne, I.W.A. Jackson, N.J.F. Wilkinson, P.N. Phillips, P.M. Marlow, D.R. Rusin, D.	Jodrell Bank Jodrell Bank Jodrell Bank Jodrell Bank Pennsylvania Pennsylvania	Possible lenses from JVAS/CLASS with separations > 6"	2, 20	14	2.0
AB917	Blundell, K. Close, L. Leahy, P. Beasley, T.	Oxford Oxford Jodrell Bank NRAO-CV	Multi-frequency high resolution study of hotspots	0.7, 1.3, 2, 90 w/BB109	12	21.0
AB922	Browne, I. Marlow, D.R. Myers, S. Wilkinson, P. Fassnacht, C. Readhead, A. Xanthopoulos, E. Rusin, D. Biggs, A. Blandford, R. de Bruyn, G. Jackson, N. Koopmans, L.V.E. Norbury, M. Pearson, T.	Jodrell Bank Pennsylvania NRAO-Socorro Jodrell Bank NRAO-Socorro Caltech Jodrell Bank Pennsylvania Jodrell Bank Caltech NFRA Jodrell Bank Groningen Jodrell Bank Caltech	Gravitational lens monitoring combined program	3.6, 6, 20 w/BR57, BB109, move/op	2,3,5,7,8,11,14,17,21,23,26,28,30,31	27.7
AC524	Cartwright, J.K. Taylor, G.B. Readhead, A.C.S. Pearson, T.J.	Caltech NRAO-Socorro Caltech Caltech	Polarization monitoring observations of 3C273	0.7, 1.3	22	2.0
AC526	Carilli, C. Verheijen, M. Yun, M. Menten, K.	NRAO-Socorro NRAO-Socorro NRAO-Socorro MPIfR	Imaging the z=0.19 HI 21cm absorption in 1830-211	20 line with PT	20	6.4
AC528	Caccianiga, A. Della Ceca, R. Maccacaro, T. Wolter, A. Gioia, I.M.	Lisbon Brera Brera Brera Bologna	Radio/Xray selected BL Lacs and radio galaxies	6, 20	22	13.0
AC529	Cassaro, P. Stanghellini, C. Dallacasa, D. Bondi, M. Zappala, R.A.	Catania Noto Bologna Bologna Catania	The unbeamed emission of gamma ray sources	20	10	5.5
AC531	Carilli, C. Fan, X. Strauss, M. Rupen, M. Schneider, D. Yun, M.	NRAO-Socorro Princeton Princeton NRAO-Socorro Penn. State NRAO-Socorro	Search for radio emission from high redshift QSOs from the SDSS	20	14, 28	10.5
AD426	Dougherty, S.M. Williams, P.M.	DRAO/Calgary RO Edinburgh	The OB type companion in WR 146	0.7	25	3.0
AF350	Falcke, H. Lobanov, A. Wright, M. Bower, G. Aller, M. Terasranta, H. Patnaik, A.	MPIfR MPIfR Calif.-Berkeley NRAO-Socorro Michigan Metsahovi MPIfR	Monitoring extremely variable spiral III Zw 2	1.3, 2, 3.6, 6, 20, 90 w/BM118	1, 28	3.5

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AF360	Ferruit, P. Mundell, C.G. Nagar, N. Wilson, A.W.	Maryland Maryland Maryland Maryland	Comparing radio and NLR in Seyferts	3.6 w/test	20, 21	35.1
AG568	Gallimore, J.F. Pedlar, A. Thean, A.	NRAO-CV Jodrell Bank Bologna	High frequency radio imaging of Seyfert Nuclei	0.7, 1.3, 2, 3.6 line	15	17.0
AG571	Gaensler, B.M. Frail, D.A. Kulkarni, S.R.	MIT NRAO-Socorro Caltech	The Duck and the Mouse - second epoch proper motion measurements	20 HTRP w/BR57	8	1.0
AG575	Greenhill, L.G. Chandler, C.J. Herrnstein, J.R. Reid, M.J.	CfA Cambridge NRAO-Socorro CfA	Orion BN/KL: the maser shell around source I	0.7 line with PT	28	8.1
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,move/op	2, 12, 21, 31	8.5
AH682	Homan, J. Fender, R.P. Wijnands, R. van der Klis, M. Hjellming, R.M.	Amsterdam Amsterdam Amsterdam Amsterdam NRAO-Socorro	Simultaneous VLA/RXTE observations of GX 13+1	3.6 w/BM118	1, 3	11.6
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	8, 30	3.0
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	3,6,9,14,16, 17,19,22,27	25.9
AK489	Kotaro, K. Ryohei, K. Yoshinori, T. Kouji, O. Toru, Y. Carilli, C.	NAO-Nobeyama NAO-Nobeyama Tokyo Kyoto Tohoku NRAO-Socorro	Continuum emission from forming galaxy 1202-0725	6, 20	28	6.9
AK491	Kukula, M. Dunlop, J.S. McLure, R.J. O'Dea, C.P. Baum, S.A.	Royal Obs. Edinburgh Edinburgh STScI STScI	Detecting the radio cores of radio-quiet quasars	6	5	12.0
AK492	Kaiser, M.B. Baan, W. Bradley, L.	Johns Hopkins NFRA Johns Hopkins	Resolved Narrow line region in M51	3.6	14	10.0
AL489	Lazio, T.J.W. Cordes, J.M. Kassim, N.E.	NRL Cornell NRL	Steep-spectrum sources toward the galactic center: radio pulsars?	6	22	8.0
AL497	Lim, J. Carilli, C.L. White, S.M.	Academia Sinica NRAO-Socorro Maryland	Structure and evolution of Betelgeuse's atmosphere	0.7, 1.3	26	7.0
AL499	Lacy, M. Ridgway, S.	Oxford Johns Hopkins	Radio optical alignments in less luminous radio sources	3.6, 20	19, 27	9.5
AL502	Law-Green, D. Hirst, P. Ward, M.J. O'Brien, P. Bleackley, P. Thean, A.H.C.	Leicester Leicester Leicester Leicester Leicester Bologna	Radio structures of narrow-line seyfert 1's	3.6, 6, 20	2, 26	5.5
AM620	McHardy, I. Muxlow, T. Cordova, F.	Southampton Jodrell Bank Calif.-Santa Barbara	Faint X-ray galaxies	20	2, 6, 7	42.0
AM621	Mioduszewski, A.J. Hjellming, R.M. Rupen, M.P.	NRAO-Socorro NRAO-Socorro NRAO-Socorro	VLA observations of x-ray nova CI cam	2,4	31	10.0
AM623	Myers, S.T. Jackson, N.J. Marlow, D.R. Rusin, D. Fassnacht, C.D.	NRAO-Socorro Jodrell Bank Pennsylvania Pennsylvania NRAO-Socorro	Supplementary observations for CLASS: CLASS-4	3.6	16,17	23.9
AO143	Owen, F.N. Carilli, C.L. Iverson, R.J.	NRAO-Socorro NRAO-Socorro University College	Steep spectrum submm sources and A370	90	26, 27, 30	13.0

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AO146	Osten, R.A. Brown, A.	CASA CASA	Time-resolved coronal radio and x-ray observations of the RS CVn Binary ER Vul	3.5, 6, 20	24, 26, 27, 30	19.0
AP380	Pooley, G.G. Hardcastle, M.J. Riley, J.M. Alexander, P. Gilbert, G.	MRAO Bristol MRAO MRAO MRAO	Radio jets of FR II radio sources	3.6, 6 w/BM118	1	23.0
AR413	Reid, M. Wilner, D. Zhang, Q.	Cfa Cfa Cfa	Radio continuum emission from the High mass protostar 20126+4104	3.6, 20	6	3.0
AR414	Rawlings, S. Dalton, G. Olding, E. Wegner, G.	Oxford Oxford Oxford Dartmouth	Primeval ellipticals and distant starbursts from Oxford WFC survey	20 w/BR57	8, 11, 15	30.0
AR415	Richards, G.T. Laurent-Muehleisen, York, D. Becker, R.	Chicago Lawrence Livermore Chicago Calif.-Davis	Quasars with known absorption line properties	3.6, 20	9	5.0
AR416	Rusin, D. Myers, S.T. Marlow, D.R. Browne, I.W.A. Jackson, N. Wilkinson, P. Norbury, M. Readhead, A.C.S. Fassnacht, C. Koopmans, L. deBruyn, A.G.	Pennsylvania NRAO-Socorro Pennsylvania Jodrell Bank Jodrell Bank Jodrell Bank Jodrell Bank Caltech NRAO-Socorro Groningen NFRA	Searching for variability in new CLASS lens systems	3.6	5, 7, 19, 21, 22, 30	8.0
AR418	Richards, E. Cowie, L. Barger, A. Fomalont, E. Kellermann, K. Partridge, B. Windhorst, R.	NRAO-CV Hawaii Hawaii NRAO-CV NRAO-CV Haverford Arizona State	A 20cm deep field	20	30	12.0
AS658	Sahai, R. Claussen, M. Morris, M.	JPL NRAO-Socorro Calif.-Los Angeles	Bipolar protoplanetary nebulae IRAS16342-3814 and IRAS19134+2131	1.3	31	5.0
AS663	Sahai, R. Claussen, M. Morris, M. Zijlstra, A. te Lintel Hekkert, P.	JPL NRAO-Socorro Calif.-Los Angeles UMIST ATNF	OH masers in protoplanetary nebulae imaged by HST	20 line	26	6.0
AT226	Tschager, W. Schilizzi, R.T. Snellen, I.A.G. Rottgering, H.J.A. Miley, G.K.	Leiden JIVE Cambridge Leiden Leiden	New sample of faint compact steep-spectrum radio sources	2 w/BR57	8	10.0
AT227	Turner, J.L. Beck, S.C. Crosthwaite, L. Meier, D.	UCLA Tel Aviv UCLA UCLA	Search for compact HII regions in starburst galaxies	1.3, 2, 3.6	23	14.0
AU079	Ulvestad, J.S. Ho, L.C.	NRAO-Socorro Carnegie Obs.	The Palomar sample of Seyfert galaxies	20 w/BB113	29	22.0
AW514	Wendker, H.J. Dougherty, S.M. Higgs, L.A. Landecker, T.L.	Hamburg DRAO/Calgary DRAO DRAO	High resolution observations of the LBV in G79.29+0.46	3.6	18	6.0
AY106	Yun, M.S. Carilli, C. Ulvestad, J.	NRAO-Socorro NRAO-Socorro NRAO-Socorro	Resolution of the HI absorption system at z=3.4 in B2 0902+34	90 line with PT	27	10.0
AZ119	Zhao, J.-H. Goss, W.M.	Shanghai NRAO-Socorro	Proper motions of radio components near Sgr A*	1.3	19	8.1
BB109	Beasley, A.J. Herrnstein, J.H.	NRAO-CV NRAO-Socorro	VLBA Monitoring of WR 140 (HD 193793)	2, 3.6, 6 Single antenna VLBI	12	11.8
BB111	Brisken, W. Dewey, R. Thorsett, S. Beasley, A. Benson, J.	Princeton Princeton Princeton NRAO-CV NRAO-Socorro	Proper motions of pulsars in supernova remnants	20 Phased array VLBI	24	12.9

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
BB113	Backer, D.C. Bower, G.C. Sramek, R.A.	Calif.-Berkeley NRAO-Socorro NRAO-Socorro	Imaging of galactic center proper motion calibrator sources	3.6, 6 Single antenna VLBI w/AU79	29	6.2
BC098	Claussen, M.J. Wootten, H.A. Marvel, K.B. Wilking, B.A.	NRAO-Socorro NRAO-CV AAS Missouri	Zeeman measurements of water masers in YSO Jets	1.3 w/BB109	12, 25	3.1
BD057	Diamond, P.J. Kemball, A.J.	Jodrell Bank NRAO-Socorro	Continuation of the VLBA monitoring of SiO masers around TX Cam	0.7 Single antenna VLBI	8, 24	10.7
BM118	Marlow, D. Myers, S. Rusin, D. Blandford, R. Wilkinson, P. Browne, I. Jackson, N. Norbury, M. de Bruyn, G. Koopmans, L.	Pennsylvania NRAO-Socorro Pennsylvania Caltech Jodrell Bank Jodrell Bank Jodrell Bank Jodrell Bank NFRA Groningen	CLASS 3 candidate gravitational lenses	6 Single antenna VLBI w/AH682, AF350, AP380	1	14.0
BR057	Roberts, D.H. Moellenbrock, G.A. Wardle, J.F.C. Gabuzda, D.C. Brown, L.F.	Brandeis ISAS/Brandeis Brandeis JIVE Connecticut	Four 3C quasars with VSOP observations	0.7, 1.3, 2, 3.6 Single antenna VLBI w/AT226, AG571, AB922, AR414	8	9.0
V085	Schilizzi, R.T.	JIVE	Morphological and spectral study of GPS galaxies and quasars	6	5	12.0
	Staff	NRAO	Baselines, Pointing, Delays Maintenance Move/Operations Software General tests			44.2 42.0 4.6 23.9 55.7

The average downtime was 4.7%.

The array was scheduled for 100.0% (746.1 hours)  
583.2 hours (78.2% of time) for astronomical programs  
97.0 hours (13.0% of time) for tests/calibration  
65.9 hours ( 8.8% of time) for maintenance  
Total 746.1 hours (100.0%) scheduled.

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

The following independent proposals shared simultaneous observing time (55.5 hours total simultaneous observing):

Projects	Hours
AB910/MOVE/OP	4.0
AB917/BB109	5.5
AB922/BB109	0.8
AB922/BR57	1.0
AB922/MOVE/OP	0.2
AF350/BM118	1.5
AF360/TEST	6.0
AG571/BR57	1.0
AH669/BB109	2.0
AH669/MOVE/OP	0.4
AH682/BM118	1.1
AP380/BM118	11.5
AR414/BR57	1.9
AT226/BR57	5.3
AT226/BR57	1.7
AU079/BB113	6.2
BC98/BB109	1.0
TEST/BB109	1.5
TEST/BD57	2.9

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AA239	Anglada, G. Rodriguez, L.F. Torrelles, J.M.	IAA UNAM Catalunya	Watching evolution of thermal radio jets from YSOs	3.6	3	9.0
AA240	Anantharamaiah, K.R. Goss, M.	Raman/NRAO-Socorro NRAO-Socorro	Orthogonal rotating gaseous disks in NGC 253	3.6 line w/BD57	9, 12	14.0
AB908	Brogan, C.L. Fraill, D.A. Goss, M. Troland, T.H.	Kentucky NRAO-Socorro NRAO-Socorro Kentucky	Zeeman measurements of 1720 MHz OH masers in supernova remnants	20 line	7, 8, 12, 15	22.1
AB910	Bower, G.C. Falcke, H. Backer, D.C.	NRAO-Socorro MPIFR Calif.-Berkeley	Spectrum of circular polarization in Sagittarius A	2, 3.6, 6, 20	1, 7, 14, 21, 27	18.7
AB911	Brisken, W.F. McGary, R.S. Goss, M. Fruchter, A.S. Thorsett, S.E.	Princeton Harvard NRAO-Socorro STSci Princeton	Pulsar proper motions	20 HTRP w/BD57	3,26,27,29,3 0	39.5
AB912	Browne, I.W.A. Jackson, N.J.F. Wilkinson, P.N. Phillips, P.M. Marlow, D.R. Rusin, D.	Jodrell Bank Jodrell Bank Jodrell Bank Jodrell Bank Pennsylvania Pennsylvania	Possible lenses from JVAS/CLASS with separations > 6''	2, 20	2	4.0
AB915	Butler, B. Slade, M. Haldemann, A. Muhleman, D.	NRAO-Socorro JPL Caltech Caltech	Goldstone/VLA Radar observations of Mars	3.6 line	9, 10, 11	24.0
AB920	Baum, S. Xu, C. O'Dea, C. Verdes, G.	STSci STSci STSci STSci	Jets in nearby UGC galaxies	6, 20	18, 26	24.0
AB922	Browne, I. Marlow, D.R. Myers, S. Wilkinson, P. Fassnacht, C. Readhead, A. Xanthopoulos, E. Rusin, D. Biggs, A. Blandford, R. de Bruyn, G. Jackson, N. Koopmans, L.V.E. Norbury, M. Pearson, T.	Jodrell Bank Pennsylvania Pennsylvania Jodrell Bank NRAO-Socorro Caltech Jodrell Bank Pennsylvania Jodrell Bank Caltech NFRA Jodrell Bank Groningen Jodrell Bank Caltech	Gravitational lens monitoring combined program	3.6, 6, 20 w/BB109,BC96	1,3,5,7,8,12 ,15,18,20,22 ,24-26,29	28.6
AB932	Browne, I.W. Jackson, N.	Jodrell Bank Jodrell Bank	CLASS non-detections	3.6	6	1.5
AC531	Carilli, C. Fan, X. Strauss, M. Rupen, M. Schneider, D. Yun, M.	NRAO-Socorro Princeton Princeton NRAO-Socorro Penn. State NRAO-Socorro	Search for radio emission from high redshift QSOs from the SDSS	20 w/BC96	8	10.0
AC534	Curjel, S. Trinidad, M.A.	UNAM UNAM	The powerful thermal HW2 radio jet	0.7, 1.3, 3.6	18	4.0
AD429	Dennett-Thorpe, J. Best, P.N. Kaiser, C.R.	Groningen Leiden MPIAP-Munich	Depolarization in FR II radio sources	20 w/BU17, BM18	31	10.0
ADHOC	Fraill, D.A.	NRAO-Socorro	Adhoc Proposal One		3,12	3.8
ADHOC	Schwartz, C.		Adhoc Proposal Two		22	3.0
AF350	Falcke, H. Lobanov, A. Wright, M. Bower, G. Aller, M. Terasranta, H. Patnaik, A.	MPIFR MPIFR Calif.-Berkeley NRAO-Socorro Michigan Metsahovi MPIFR	Monitoring extremely variable spiral III Zw 2	1.3, 2, 3.6, 6, 20, 90	7	1.5
AF361	Falcke, H. Wilson, A.S.	MPIFR Maryland	HST and VLA imaging of radio-quiet quasars	3.6, 6	24, 25	31.1

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AF362	Furuya, R. Wootten, H.A. Claussen, M.J. Kitamura, Y. Kawabe, R.	Graduate University NRAO-CV NRAO-Socorro ISAS NAO-Nobeyama	Search for Central star in the Class 0 source S106 FIR	0.7, 3.6	6	3.0
AG570	Gudel, M. Smith, K.W. Benz, A.O.	Paul Scherrer ETH ETH	Probing the inner regions of naked protostellar jets	2, 3.6	6	3.0
AG574	Gregg, M.D. Becker, R.H. Laurent-Muehleisen, White, R.L.	Calif.-Davis Calif.-Davis Lawrence Livermore STScI	Bright quasar lensing search	3.6	12, 16, 30	6.5
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	4, 13, 20, 26, 27	10.9
AH678	Horellou, C.	Onsala	Magnetic fields in the ring galaxy Arp 147	20	16, 17	10.9
AH680	Hunter, T.R. Zhang, Q. Sridharan, T.K.	Cfa Cfa Cfa	OH Masers around high mass protostar 20126+4104	20 line	11	3.5
AH682	Homan, J. Fender, R.P. Wijnands, R. van der Klis, M. Hjellming, R.M.	Amsterdam Amsterdam Amsterdam NRAO-Socorro	Simultaneous VLA/RXTE observations of GX 13+1	3.6	31	5.5
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	15	1.5
AJ268	Janardhan, P. Balasubramanian, V. Ananthakrishnan, S.	Phys. Research Lab TIFR TIFR	Low frequency compact sources from Ooty IPS survey	3.6, 20	2, 26	6.0
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 w/BD60	5,7-11,15,28	24.4
AL490	Laine, S. Kotilainen, J.K. Norris, R.P. Reunanen, J. Ryder, S.	Hertfordshire Tuorla ATNF Tuorla Hawaii	Seyfert and starburst galaxies with IR line images	20	25, 27	6.5
AL494	Lang, C. Goss, M. Rodriguez, L.F.	NRAO/UCLA NRAO-Socorro UNAM	Massive stars in the Arches cluster	0.7, 3.6	3	4.0
AL497	Lim, J. Carilli, C.L. White, S.M.	Academia Sinica NRAO-Socorro Maryland	Structure and evolution of Betelgeuse's atmosphere	0.7, 1.3	11	8.0
AL503	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 w/BB109	22, 27	7.5
AM640	McLaughlin, M. Cordes, J. Arzoumanian, Z.	Cornell Cornell Cornell	Pulsar 1740+09	20	25	1.0
AP381	Paredes, J.M. Ribo, M. Marti, J.	Barcelona Barcelona U. Jaen	New radio emitting x-ray binary candidates from NRAO VLA sky survey	3.6, 6 w/BD57	9, 22, 30	8.0
AR415	Richards, G.T. Laurent-Muehleisen, York, D. Becker, R.	Chicago Lawrence Livermore Chicago Calif.-Davis	Quasars with known absorption line properties	3.6, 20	31	4.0
AR416	Rusin, D. Myers, S.T. Marlow, D.R. Browne, I.W.A. Jackson, N. Wilkinson, P. Norbury, M. Readhead, A.C.S. Fassnacht, C. Koopmans, L. deBruyn, A.G.	Pennsylvania Pennsylvania Pennsylvania Jodrell Bank Jodrell Bank Jodrell Bank Jodrell Bank Caltech NRAO-Socorro Groningen NFRA	Searching for variability in new CLASS lens systems	3.6 w/BB109	4,5,15,17,18 ,27,29	8.5



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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AR418	Richards, E. Cowie, L. Barger, A. Fomalont, E. Kellermann, K. Partridge, B. Windhorst, R.	NRAO-CV Hawaii Hawaii NRAO-CV NRAO-CV Haverford Arizona State	A 20cm deep field	20 w/BB109	2, 4, 5, 16, 17	82.3
AR426	Reid, M.	Cfa	SiO masers in Mira	0.7 line	26	1.0
AS651	Sault, R.J. Dulk, G.A. Leblanc, Y. Bastian, T.S. Bolton, S.J.	ATNF Paris Obs Paris Obs NRAO-Socorro JPL	Jupiter's synchrotron radiation belts at 74 MHz	90 w/BB109	4, 5	17.0
AS659	Scheuer, P. Laing, R.	MRAO Oxford	Detailed spectral distributions in hotspots	20 w/BD060	10	11.5
AS660	Sjouwerman, L.O. van Langevelde, H.J. Lindqvist, M.	JIVE JIVE Onsala	Water masers in GMC M-0.13-0.08	1.3 line	28	4.0
AS667	Sarma, A.P. Troland, T.H. Crutcher, R.M. Roberts, D.A.	Kentucky Kentucky Illinois Illinois	VLA Zeeman survey of 22 GHz water masers	1.3 line w/BB109, BD57	12, 21, 22, 29, 30	29.5
AW516	Winn, J.N. Hewitt, J.N. Schechter, P.L.	MIT MIT MIT	MIT-VLA-Magellan southern gravitational lens survey	1.3, 2, 3.6	18, 20	27.0
AW518	Wall, J. Blundell, K. Kassim, N. Lazio, J. Peck, A.	Oxford Oxford NRL NRL NRAO/NMIMT	Search for 74 MHz halos around CSO/GPS sources	400	1	24.0
BB105	Blundell, K. Beasley, T.	Oxford NRAO-CV	Motion in a radio quiet quasar	3.6 Phased array VLBI	20	6.0
BB109	Beasley, A.J. Herrnstein, J.H.	NRAO-CV NRAO-Socorro	VLBA Monitoring of WR 140 (HD 193793)	2, 3.6, 6 Single antenna VLBI w/AL503, AS667, AR418, AB922, AR416, AS651	4, 6, 13, 22, 31	38.3
BC096	Cohen, A.S. Hewitt, J.N.	MIT MIT	Determining a model of gravitational lens 0218+357	20 Single antenna VLBI w/AB922, AC531, Software	8	11.6
BD057	Diamond, P.J. Kemball, A.J.	Jodrell Bank NRAO-Socorro	Continuation of the VLBA monitoring of SiO masers around TX Cam	0.7 Single antenna VLBI w/AA240, AS667, BD57, AS667, AP381, AB911	12, 12, 30	24.5
BD060	Dhawan, V. Kellermann, K.I. Romney, J.D.	NRAO-Socorro NRAO-CV NRAO-Socorro	Monitoring the accelerating, bent jet in 3C84	0.7 Single antenna VLBI w/AS659, AK485	10	13.8
BM118	Marlow, D. Myers, S. Rusin, D. Blandford, R. Wilkinson, P. Browne, I. Jackson, N. Norbury, M. de Bruyn, G. Koopmans, L.	Pennsylvania Pennsylvania Pennsylvania Caltech Jodrell Bank Jodrell Bank Jodrell Bank Jodrell Bank NFRA Groningen	CLASS 3 candidate gravitational lenses	6 Single antenna VLBI w/AD429, AH682	31	8.0
BN010	Nakai, N. Ishihara, Y. Inoue, M. Hagiwara, Y. Miyoshi, M. Diamond, P.	NAO-Nobeyama NAO-Nobeyama NAO-Nobeyama NAO-Nobeyama NAO-Mitzuzawa Jodrell Bank	H2O Megamaser in LINER IC1481	1.3 Phased array VLBI	24	11.9
BU017	Uson, J. Beasley, T.	NRAO-CV NRAO-CV	Spatial and spectral resolution of HI Absorption in 0902+343	90 Single antenna VLBI w/AD429	31	5.9

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
W079	Meier, D.L. Tingay, S.J. Preston, R.A. Murphy, D.W. Jones, D.L. Fujisawa, K. Hirabayashi, H. Kobayashi, H. Edwards, P.	JPL JPL JPL JPL JPL NAO ISAS ISAS ISAS	Centaurus A	6 Phased array VLBI	3	5.2
W094	Hirabayashi, H. Wehrle, A. Unwin, S. Makino, F. Kii, T. Kobayashi, H. Edwards, P. Okayasu, R. Valtaoja, E.	ISAS JPL JPL ISAS ISAS ISAS ISAS ISAS Tuorla	3C279	6 Phased array VLBI	6	9.2
	Staff	NRAO	Baselines, Pointing, Delays Maintenance Software Student Observations General tests		16	42.8 46.2 21.9 3.0 25.6

The average downtime was 6.4%.

The array was scheduled for 100.0% (746.1 hours)  
606.8 hours (81.3% of time) for astronomical programs  
71.5 hours ( 9.6% of time) for tests/calibration  
67.7 hours ( 9.1% of time) for maintenance  
Total 746.0 hours (100.0%) scheduled.

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

The following independent proposals shared simultaneous observing time (72.9 hours total simultaneous observing):

Projects	Hours
AA240/BD57	2.8
AB911/BD57	1.9
AB922/BB109	2.0
AB922/BC96	0.8
AC531/BC96	10.0
AD429/BM118	2.6
AK429/BU17	5.9
AH682/BM118	5.5
AK485/BD60	4.5
AL503/BB109	1.1
AP381/BD57	2.0
AR416/BB109	1.0
AR418/BB109	3.6
AS651/BB109	2.3
AS659/BD60	3.3
AS659/BD60	6.0
AS667/BB109	9.2
AS667/BD57	1.5
AS667/BD57	4.2
BD57/BD57	1.9
SOFTWARE/BC96	0.8

## VLA Utilization Report June 1999

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AA240	Anantharamaiah, K.R. Goss, M.	Raman/NRAO-Socorro NRAO-Socorro	Orthogonal rotating gaseous disks in NGC 253	3.6 line w/BD057	26, 27	13.9
AB908	Brogan, C.L. Frail, D.A. Goss, M. Troland, T.H.	Kentucky NRAO-Socorro NRAO-Socorro Kentucky	Zeeman measurements of 1720 MHz OH masers in supernova remnants	20 line	22	6.5
AB910	Bower, G.C. Falcke, H. Backer, D.C.	NRAO-Socorro MPIfR Calif.-Berkeley	Spectrum of circular polarization in Sagittarius A	2, 3.6, 6, 20	23, 30	5.4
AB911	Brisken, W.F. Fruchter, A.S. Goss, M. McGary, R.S. Thorsett, S.E.	Princeton STScI NRAO-Socorro Harvard Princeton	Improper motions: a study of pulsar velocities	20	15,17,20	11.9
AB912	Browne, I.W.A. Jackson, N.J.F. Wilkinson, P.N. Phillips, P.M. Marlow, D.R. Rusin, D.	Jodrell Bank Jodrell Bank Jodrell Bank Jodrell Bank Pennsylvania Pennsylvania	Possible lenses from JVAS/CLASS with separations > 6"	2, 20	29	2.0
AB915	Butler, B. Slade, M. Haldemann, A. Muhleman, D.	NRAO-Socorro JPL Caltech Caltech	Goldstone/VLA Radar observations of Mars	3.6 line	24, 25	17.0
AB916	Biretta, J. Perley, R.	STScI NRAO-Socorro	Search for kiloparsec-scale motion in 3C 273 and 3C 279	2, 6	19	10.0
AB922	Browne, I. Marlow, D.R. Myers, S. Wilkinson, P. Fassnacht, C. Readhead, A. Xanthopoulos, E. Rusin, D. Biggs, A. Blandford, R. de Bruyn, G. Jackson, N. Koopmans, L.V.E. Norbury, M. Pearson, T.	Jodrell Bank Pennsylvania Pennsylvania Jodrell Bank NRAO-Socorro Caltech Jodrell Bank Pennsylvania Pennsylvania Caltech NFRA Jodrell Bank Groningen Jodrell Bank Caltech	Gravitational lens monitoring combined program	3.6, 6, 10	14,17,20,22, 25,28,29	16.1
AC527	Contreras, M.E. Rodriguez, L.F.	UNAM UNAM	Time variations in the binary system WR 147	3.6	28	2.5
AC533	Curiel, S. Trinidad, M.A. Torrelles, J.M. Canto, J. Rodriguez, L.F. Gomez, J.F. Ho, P.T.P.	UNAM UNAM Catalunya UNAM UNAM LAEFF CfA	Radio jet/H2O maser systems around YSOs	1.3 line	28	15.0
AD428	Dallacasa, D. Stanghellini, C. Fanti, R. Centonza, M.	Bologna Noto Bologna Bologna	High frequency peakers	1.3, 2, 3.6, 6, 20	14, 21, 25	12.1
ADHOC	Saxton, R.	NRAO-Socorro	Adhoc Proposal One		2,14	5.0
ADHOC	Hale, A.	NRAO-Socorro	Adhoc Proposal Two		14	2.0
AE130	Edge, A.C. Carilli, C. Crawford, C.S. Fabian, A.C. Allen, S.W. Augusto, P.	Durham NRAO-Socorro Cambridge Cambridge Cambridge Madeira	Survey of HI in cooling flow clusters	20 line	8, 9, 11	26.0
AF350	Falcke, H. Lobanov, A. Wright, M. Bower, G. Aller, M. Terasranta, H. Patnaik, A.	MPIfR MPIfR Calif.-Berkeley NRAO-Socorro Michigan Metsahovi MPIfR	Monitoring extremely variable spiral III Zw 2	1.3, 2, 3.6, 6, 20, 90	22	1.0

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AF359	Fassnacht, C. Blandford, R. Browne, I. Myers, S. Pearson, T. Readhead, A. Wilkinson, P.	NRAO-Socorro Caltech Manchester Pennsylvania Caltech Caltech Manchester	VLA Monitoring of the gravitational lens 1608+656	3.5	4	2.0
AF363	Farrell, W.M. Desch, M.D. Kassim, N. Zarka, P. LeBlanc, Y. Dulk, G. Bastian, T.	NASA-GSFC NASA-GSFC NRL Paris Obs Paris Obs Paris Obs NRAO-Socorro	Search for extrasolar planet emission at 74 MHz		7	6.0
AG567	Giovannini, G. Treves, A. Falomo, R. Govani, F. Scarpa, R. Urry, C.M.	Bologna Milan Padova Padova STScI STScI	Two new gravitational lens candidates	0.7, 1.3, 2, 3.6, 6	21, 23	4.0
AG574	Gregg, M.D. Becker, R.H. Laurent-Muehleisen, White, R.L.	Calif.-Davis Calif.-Davis Lawrence Livermore STScI	Bright quasar lensing search	3.6	5, 30	12.5
AG577	Gower, A.C. Patton, D.R.	Victoria Victoria	Radio galaxies identified in CNOC2 field galaxy redshift survey	3.6, 20 w/BD057	12, 27	10.5
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	5, 15, 20, 27	9.7
AH684	Helbig, P. Browne, I. Jackson, N. Wilkinson, P. Xanthopoulos, E. Blandford, R.D. Fassnacht, C.D. deBruyn, A.G. Koopmans, L. Marlow, D. Myers, S. Rusin, D.	Jodrell Bank Jodrell Bank Jodrell Bank Jodrell Bank Caltech NRAO-Socorro NFRA Groningen Pennsylvania Pennsylvania Pennsylvania	Sample of weak flat-spectrum radio sources	3.6	29, 30	5.0
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	23	2.0
AI063	Iverson, R.J. Seaquist, E.R.	Royal Observatory Toronto	Third epoch imaging of RX Puppis during a phase of low excitation	3.6	14	1.0
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 w/BA36, GB33, BD57	3, 5-7, 11-13, 15, 17, 19, 24- 26	32.8
AK489	Kotaro, K. Ryohei, K. Yoshinori, T. Kouji, O. Toru, Y. Carilli, C.	NAO-Nobeyama NAO-Nobeyama Tokyo Kyoto Tohoku NRAO-Socorro	Continuum emission from forming galaxy 1202-0725	6, 20	20	5.5
AK494	Kurtz, S. Hofner, P.	UNAM Arecibo/UPR	Water masers at molecular cloud velocity in HH80-81	1.3 line w/BA36	3	2.0
AL418	Lehar, J. Falcke, H. Barvainis, R. Menten, K. Birkinshaw, M. Elvis, M. Blundell, K.	CfA MPIfR Haystack MPIfR Bristol CfA Oxford	Variability of radio quiet quasars	3.6 w/BA36	3	4.0
AL494	Lang, C. Goss, M. Rodriguez, L.F.	NRAO/UCLA NRAO-Socorro UNAM	Massive stars in the Arches cluster	0.7, 3.6	29	4.0
AM602	Mirabel, I.F. Dhawan, V. Rodriguez, L.F.	Saclay NRAO-Socorro UNAM	Coordinated radio, infrared and x-ray observations of microquasar GRS1915+105	6, 3.5, 2	2	3.0

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AM621	Mioduszewski, A.J. Rupen, M.P. Hjellming, R.M.	JIVE-Socorro NRAO-Socorro NRAO-Socorro	X-ray Nova CI Cam	2, 3.6	20, 25	20.0
AM624	Miller, N.A. Owen, F.	New Mexico State NRAO-Socorro	High resolution imaging of starburst/AGN Transition sources in A1367	3.6	21	12.0
AR416	Rusin, D. Myers, S.T. Marlow, D.R. Browne, I.W.A. Jackson, N. Wilkinson, P. Norbury, M. Readhead, A.C.S. Fasnacht, C. Koopmans, L. deBruyn, A.G.	Pennsylvania Pennsylvania Jodrell Bank Jodrell Bank Jodrell Bank Jodrell Bank Caltech NRAO-Socorro Groningen NFRA	Searching for variability in new CLASS lens systems	3.6	19, 27	3.0
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	13, 16	27.0
AW362	White, S.	Maryland	The stellar activity cycle on active stars	3.6, 6, 20	16, 29	4.1
AW505	Wrobel, J.M. Taylor, G.B. Gregory, P.C.	NRAO-Socorro NRAO-Socorro UBC	Search for phase calibration sources at low galactic latitudes	3.6	18	14.0
AW512	Wiseman, J.J. Fuller, G. Wootten, A.	Johns Hopkins Univer UMIST NRAO-CV	Dense circumstellar gas in HH 111 and HH 211	1.3	1	3.5
AW515	Williams, P.M. Dougherty, S.M.	RO Edinburgh DRAO/Calgary	Imaging non-thermal emission in O-star systems	1.3, 2, 3.6, 6 w/move/op	8	5.5
AW516	Winn, J.N. Hewitt, J.N. Schecter, P.L.	MIT MIT MIT	MIT-VLA-Magellan southern gravitational lens survey	1.3, 2, 3.6	30	6.0
AW520	Willson, R.F. Lang, K.R.	Tufts Tufts	Metric and decimetric observations of nonthermal solar radio processes	90, 400	18	4.0
BA036	Augusto, P. Browne, I. Wilkinson, P.	Madeira Jodrell Bank Jodrell Bank	B2114+022, a gravitational lensing candidate	90 single antenna VLBI w/move/op,	2 AK494, AK485, AL418	10.7
BC090	Carilli, C. Taylor, G. Wrobel, J. Ulvestad, J.	NRAO-Socorro NRAO-Socorro NRAO-Socorro NRAO-Socorro	Ultra-luminous infrared galaxies	20, 90 Phased array VLBI w/move/op	1, 6	16.4
BD057	Diamond, P.J. Kemball, A.J.	Jodrell Bank NRAO-Socorro	Continuation of the VLBA monitoring of SiO masers around TX Cam	0.7 single antenna VLBI w/move/op, AG577, AK485, AA240, AR416, AG577	6, 12, 27	18.2
BH042	Herrnstein, J.R. Moran, J.M. Greenhill, L.J.	NRAO-Socorro CfA CfA	Are quasars being ejected from the Nucleus of NGC 4258?	20 Phased array VLBI w/move/op	3	10.1
BM106	Mutel, R.L. Molnar, L.A.	Iowa Iowa	Astrometric mapping of HR 1099: test of polar emission model	3.6 Phased array VLBI	19	9.0
BU012	Ulvestad, J.S. Vestrand, W.T. Stacy, J.G. Biretta, J.A.	NRAO-Socorro New Hampshire New Hampshire STSci	Flaring CGRO Blazar 2255-282	0.7, 1.3, 2	1	1.0
GB033	Bartel, N. Rupen, M.P. Bietenholz, M.F. Beasley, A.J. Conway, J. Altunin, V. Graham, D. Venturi, T. Umana, G.	York NRAO-Socorro York NRAO-CV Onsala JPL MPIfR Bologna Noto	VLBI imaging of Supernova 1993J in M81	6, 20 Phased array VLBI w/AK485, Test	5, 16	21.9
GF007	Fomalont, E.B. Bradshaw, C.F. Geldzahler, B.J. Waltman, E.B.	NRAO-CV George Mason George Mason NRL	Rapid variability of hot spots in SCO X-1	6, 20 Phased array VLBI w/move/op	10, 11, 12	27.3

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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 MPIfR IAA Jodrell Bank UCLA NRL	Young radio remnant of SN 1979C	20 Phased array VLBI	4	6.7
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 MPIfR Jodrell Bank Cfa JPL JIVE Bologna Noto UCLA NRL NRAO-Socorro Haystack	Monitoring of the expansion of SN 1993J at 6 and 18cm	6, 20 Phased array VLBI w/move/op	10	11.1
GR016	Ros, E. Marcaide, J.M. Guirado, J.C. Perez-Torres, M.A. Lara, L. Alberdi, A.	MPIfR Valencia Valencia Valencia IAA IAA	Proper motions in quad gravitational lenses	3.6 Phased array VLBI	8	14.0
W023	Jones, D.L. Wehrle, A.E.	JPL JPL	NGC 4261	6 Phased array VLBI	27	7.8
W088	Roberts, D.H. Moellenbrock, G.A. Wardle, J.F.C. Gabuzda, D.C. Brown, L.F.	Illinois ISAS/Brandeis Brandeis Lebedev Connecticut	Polarization monitoring of four bright quasars at 5 and 1.6 GHz	6, 20 Phased array VLBI	6, 21, 26	23.7
	Staff	NRAO	Baselines, Pointing, Delays Maintenance Move/Operations Software General tests			55.9 56.4 84.1 31.1 63.3

The average downtime was 6.4%.

The array was scheduled for 100.0% (722.0 hours)  
467.1 hours (64.7% of time) for astronomical programs  
167.4 hours (23.2% of time) for tests/calibration  
87.5 hours (12.1% of time) for maintenance  
Total 722.0 hours (100.0%) scheduled.

Array was in the A configuration from June 1 through June 30.

The following independent proposals shared simultaneous observing time (96.3 hours total simultaneous observing):

Projects	Hours
AA240/BD57	3.0
AG577/BD57	5.5
AG577/BD57	4.2
AK485/BA036	2.0
AK485/BD57	1.2
AK485/GB33	7.7
AK494/BA36	2.0
AL418/BA36	3.8
AR416/BD57	1.0
AW515/MOVE/OP	4.6
Baselines/Test	6.0
BH42/MOVE/OP	5.1
BH42/MOVE/OP	2.0
MOVE/OP/BA36	2.9
MOVE/OP/BC90	3.2
MOVE/OP/BD57	1.3
MOVE/OP/GF7	8.6
MOVE/OP/GF7	8.8
MOVE/OP/GM35	8.5
MOVE/OP/GR16	3.0
MOVE/OP/GR16	6.0
TEST/GB33	3.2
TEST/GB33	2.7



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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AB881	Brunetti, G. Bondi, M. Dallacasa, D. Fanti, R. Feretti, L.	Bologna Bologna Bologna Bologna	FR II radiogalaxy 3C219	6	18	4.0
AB897	Bhatnagar, S. Rao, A.P.	NCRA-Pune NCRA-Pune	Galactic SNR at low frequencies	90	2	8.5
AB899	Bregman, J.N. Wakkar, B.P. Miller, E.	Michigan Wisconsin Michigan	High velocity cloud complexes in Milky Way type galaxies	20 line	23, 24	12.0
AB903	Brosius, J. White, S. Thompson, B.	NASA-GSFC Maryland NASA-GSFC	Coronal magnetography using radio and EUV data	2, 3.6, 6, 20	13, 23	20.0
AC308	Condon, J. Cotton, W. Perley, R.	NRAO-CV NRAO-CV NRAO-Socorro	All sky survey	20	30	3.0
AD421	Dahlem, M. Ehle, M. Haynes, R. English, J. Lisenfeld, U.	ESTEC MPE ATNF STScI Granada	Search for radio halos in late-type spiral galaxies	20	27	5.5
ADHOC	Taylor, G.	NRAO-Socorro	Adhoc Proposal One	w/AK483	7,8	16.0
ADHOC	Butler, B.	NRAO-Socorro	Adhoc Proposal Two		14	0.7
ADHOC	Frail, D.	NRAO-Socorro	Adhoc Proposal Three		20, 21	1.8
ADHOC	Beasley, A.J.	NRAO-CV	Adhoc Proposal Four		19	1.2
AF350	Falcke, H. Lobanov, A. Wright, M. Bower, G. Aller, M. Terasranta, H. Patnaik, A.	MPIfR MPIfR Calif.-Berkeley NRAO-Socorro Michigan Metsahovi MPIfR	Monitoring extremely variable spiral III Zw 2	1.3, 2, 3.6, 6, 20, 90	13	1.0
AG563	Gibb, A.G. Hoare, M.G.	Leeds Leeds	SiO imaging of three outflow sources	0.7, 1.3	1, 1	7.5
AG564	Gottesman, S.T. Malphrus, B.K. Simpson, C.E. Laine, S.L.	Florida Morehead NAO Hertfordshire	A sample of interacting galaxies	20 w/BR057	14, 16, 17, 18	28.5
AH666	Hoffman, G.L. Brosch, N. Salpeter, E.	Lafayette Tel Aviv Cornell	Neutral hydrogen envelopes of Virgo cluster BCDs	20 line	28, 29	14.5
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/AS652	1,4,15,21-23 28	18.6
AH672	Harris, D.E. Walker, R.C. Leeuw, L.L.	CfA NRAO-Socorro Hawaii	25'' knot in the radio jet of 3C 120	0.7, 2	30	6.5
AH673	Helbig, P. Browne, I. Jackson, N. Wilkinson, P. Xanthopoulos, E. Blandford, R.D. Fassnacht, C.D. de Bruyn, A.G. Koopmans, L. Marlow, D. Myers, S. Rusin, D.	Jodrell Bank Jodrell Bank Jodrell Bank Jodrell Bank Caltech NRAO-Socorro NFRA Groningen Pennsylvania Pennsylvania Pennsylvania	Study of the source population that forms CLASS gravitational lenses	6	21	12.0
AH674	Herrnstein, J.R. Wrobel, J. Mahadevan, R.	NRAO-Socorro NRAO-Socorro Cambridge	Nearby quiescent ellipticals	3.6	6	10.1
AH676	Hameed, S. Young, L.	New Mexico State New Mexico State	HI Imaging of six early-type spirals with active star formation	20 line	18, 20	6.0
A1076	Irwin, J.A. Saikia, D.J. English, J.	NCRA/Queen's NCRA-Pune STScI	HI Observations of 11 edge on spiral galaxies	20 line	3	10.0
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	30	8.0

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AK462	Kronberg, P. Biermann, P. Ensslin, T. Feretti, L. Giovannini, G. Hanisch, B. Perley, R.	Toronto MPIFR MPIFR IRA IRA STScI NRAO-Socorro	Mapping the coma cluster and its environs at 74 MHz with sub-arcminute resolution	400, 90	30	3.0
AK483	Kawabe, R. Ohta, K. Yamada, T. Kohno, K. Tutui, Y. Carilli, C.	NAO-Nobeyama Kyoto Tohoku NAO-Nobeyama Tokyo U. NRAO-Socorro	CO Imaging of third highest redshift quasar BR 1202-0725	0.7 line w/BR057,AK485	7, 8, 14, 16, 17, 20	56.5
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 w/AK383	1, 6, 7, 20, 21, 27	25.0
AK487	Kundu, M.R. Nindos, A. White, S.	Maryland Maryland Maryland	Mapping of flaring loops on the sun	2, 3.6, 6, 20	1, 8, 24, 31	23.5
AL379	Lara, L. Cotton, W.D. Feretti, L. Giovannini, G. Marcaide, J.M. Venturi, T.	IRA NRAO-CV IRA IRA Valencia IRA	Large angular size radio sources from NRAO VLA Sky Survey	6,20	26	5.0
AL451	Laine, S. Gottesman, S.	Hertfordshire Florida	Anomalous radio continuum in NGC 7479	2	23	1.0
AL477	Lara, L. Mack, K.-M. Alberdi, A. Feretti, L. Klein, U. Rioja, M.J.	IAA Bologna/Bonn IAA Bologna Bonn Univ. OAN	Lobes of the giant radio galaxy 3C 326	3.6, 6, 20	25	10.5
AL480	Lang, C.C. Yusef-Zadeh, F. Goss, M.	NRAO/UCLA Northwestern NRAO-Socorro	Kinematics of the Quintuplet/Pistol/Sickle Complex	3.6 line	9, 18	8.0
AL505	Leighly, K. Laurent-Mueleisen, S.	Columbia Lawrence Livermore	A possible radio bright Seyfert	6	7	1.1
AM599	Miller, N.A. Owen, F.	New Mexico State NRAO-Socorro	Large scale surveys of Abell 2255 and 2256	20	19	11.0
AM611	Molinari, S. Rodriguez, L.F. Testi, L.	IPAC UNAM Caltech	Continuum from massive protostar candidate IRAS 23385+6053	0.7, 3.6	24	9.0
AM614	Niruj Mohan, R. Anantharamaiah, K.R. Goss, M.	Raman Raman/NRAO-Socorro NRAO-Socorro	Radio recombination lines towards the starburst galaxies IC 694	2 line	1, 10, 29	12.3
AM625	Mirabel, F. Ogley, R.	Saclay Open Univ.	XTE J1723-376		4, 24	2.0
AO136	Owen, F.	NRAO-Socorro	330 MHz observations of M87	90	5	4.0
AP378	Pooley, G.G. Bell Burnell, J. Fender, R.P.	MRAO Open University Amsterdam	Simultaneous observations of GR51915+105 at cm, mm and IR wavelengths	1.3, 2	18,22,23	6.0
AP379	Pisano, D.J. Wilcots, E.M.	Wisconsin Wisconsin	Extended HI and the formation of isolated galaxies	20	13, 26	8.0
AR405	Rawlings, S. Croft, S. Peacock, J. Meisenheimer, K.	Oxford Oxford Edinburgh MPIA-Heidelberg	Search for CO from protogalaxies at z=13	3.6 line	10, 12, 13	30.6
AR408	Richards, E.	NRAO-CV	50 UGC galaxies: the local 8 & 15 GHz luminosity function	2, 3.6	7, 30	7.9
AR409	Rottgering, H. Cimatti, A. Andreani, P. Eisenhardt, P. Stanford, A. Elston, R.	Leiden Arcetri Padova JPL Lawrence Livermore Florida	Ultrared galaxies	3.6	28, 29	28.5
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	7, 23	3.5

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AS644	Scuderi, S. Stanghellini, C. Panagia, N.	Catania Noto STScI	Survey of radio emission from O and B supergiants	2, 3.6, 6	3	5.7
AS652	Sjouerman, L. Lindqvist, M. van Langevelde, H.J. Diamond, P. Winnberg, A.	JIVE Onsala JIVE Jodrell Bank Onsala	SiO masers in Galactic Center OH/IR stars	0.7 w/AH669	19, 22, 23	15.0
AU078	Urbanik, M. Chyzy, K. Soida, M.	Jagiellonian Jagiellonian Jagiellonian	Magnetic fields in perturbed galaxies: NGC 4254	6	9	8.5
AV237	Verheijen, M. Tully, B. Trentham, N. Zwaan, M.	NRAO-Socorro Hawaii Cambridge Groningen	The HI Mass function in Ursa Major	20	1, 22	16.2
AW507	Welch, G.A. Sage, L.J.	St. Mary's Maryland	Search for HI in SO galaxies	20 line	15	4.0
AW511	White, S. Lee, J. Mikic, Z.	Maryland New Jersey Tech. SAIC	Coronal currents, magnetic fields and heating in the solar corona	2, 3.6, 6, 20	9	10.1
AW512	Wiseman, J.J. Fuller, G. Wootten, A.	Johns Hopkins Manchester NRAO-CV	Ammonia gas in HH 111 and H211	1.3 line	2,4,8,14,15, 16	23.6
AZ113	Zhang, Q. Hunter, T. Sridharan, T.K.	CfA CfA CfA	Ammonia in high mass protostar IRAS 20126+4104	1.3 line	29	9.0
AZ116	van Zee, L.	NRAO-Socorro	HI in interacting dwarf galaxies UGC 5205 and CGCG 007-025	20 line	24	3.5
BC090	Carilli, C. Taylor, G. Wrobel, J. Ulvestad, J.	NRAO-Socorro NRAO-Socorro NRAO-Socorro NRAO-Socorro	Ultra-luminous infrared galaxies	20, 90 Phased array VLBI	31	7.5
BC098	Claussen, M.J. Marvel, K.B. Wilking, B.A. Wootten, H.A.	NRAO-Socorro AAS Univ. Missouri NRAO-CV	Magnetic fields in YSO jets		12	1.1
BD057	Diamond, P.J. Kemball, A.J.	Jodrell Bank NRAO-Socorro	Continuation of the VLBA monitoring of SiO masers around TX Cam	0.7 Single antenna VLBI w/AK487	27, 31	8.2
BM110	Mutel, R.L. Denn, G.R.	Iowa Iowa	Monitoring BL Lac	0.7, 1.3, 2	27	1.5
BM112	Moran, J.M. Greenhill, L.J. Herrnstein, J.R. Diamond, P.J. Bragg, A. Trotter, A.S. Henkel, C.	CfA CfA NRAO-Socorro Jodrell Bank Harvard CfA MPIfr	Next generation study of NGC 4258 accretion disk physics	1.3 Phased array VLBI	26	14.0
BP051	Paredes, J.M. Massi, M. Marti, J. Ribo, M.	Barcelona MPIfr U. Jaen Barcelona	X-Ray binary LS 5039	6 Phased array VLBI	8	3.9
BR057	Roberts, D.H. Moellenbrock, G.A. Wardle, J.F.C. Gabuzda, D.C. Brown, L.F.	Brandeis ISAS/Brandeis Brandeis ASC Connecticut	Four 3C quasars with VSOP observations	0.7, 1.3, 2, 3.6 Single antenna VLBI w/AG564, AK483, Baselines	16	24.1
BR059	Reid, M. Wilner, D. Menten, K.	CfA CfA MPIfr	Synchrotron jet in the star forming region W30H	20 Phased array VLBI	22	8.8
BR063	Ratner, M.I. Bartel, N. Bietenholz, M.F. Lebach, D.E. Lestrade, J-F. Ranson, R.R. Shapiro, I.I.	CfA York York CfA Meudon York CfA	Astrometry of HR 8703 in 1999 for the gravity probe B mission	3.6, 6 Phased array VLBI	15	12.0
BT045	Thorsett, S. Dewey, R. Briskin, W.	Princeton Princeton Princeton	Orbital phase - resolved measurements of PSR B1534+12	90 Phased array VLBI	2	11.7

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
W008	Ulvestad, J.S. Wrobel, J.M. Carilli, C.L.	NRAO-Socorro NRAO-Socorro NRAO-Socorro	Seyfert Galaxy Mrk 231	6 Phased array VLBI	15	7.8
W056	Bartel, N. Bietenholz, M.	York York	Structural variability in the core-jet of the Galaxy M81	6 Phased array VLBI	6	11.9
W094	Hirabayashi, H. Wehrle, A. Unwin, S. Makino, F. Kii, T. Kobayashi, H. Edwards, P. Okayasu, R. Valtaoja, E.	ISAS JPL JPL ISAS ISAS ISAS ISAS ISAS ISAS Tuorla	3C279	6 Phased array VLBI w/move/op	11	9.3
	Staff	NRAO	Baselines, Pointing, Delays Maintenance Software General tests			41.2 42.9 21.4 45.3

The average downtime was 7.9%.

The array was scheduled for 100.0% (746.1 hours)  
 597.3 hours (80.1% of time) for astronomical programs  
 11.3 hours (84.6% of time) for tests/calibration  
 64.3 hours ( 8.6% of time) for maintenance  
 Total 672.9 hours (100.0%) scheduled.

Array was in the D configuration from May 1 through May 31.

The following independent proposals shared simultaneous observing time (72.7 hours total simultaneous observing):

Projects	Hours
AG564/BR057	3.1
AG564/BR057	8.0
AK483/Adhoc	8.0
AK483/Adhoc	8.0
AK483/BR057	8.0
AK483/AK485	8.0
AK487/BD057	5.9
AP378/Test	1.5
AS652/AH669	5.0
AS652/AH669	5.0
Baselines/BR057	5.0
Test/BD057	2.2
W94/Move/Op	4.9

## VLA Utilization Report April 1999

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AB896	Beck, R. Dumke, M. Golla, G.	MPIfR IRAM-Grenoble Bochum	Magnetic fields in the halo of NGC 4631	6	13	9.0
AB898	Beck, R. Shoutenkov, V. Shukurov, A. Sokoloff, D.	MPIfR Lebedev Newcastle Moscow U.	Magnetic fields in barred galaxies	3.6, 6	2, 9	12.0
AB921	Bregman, J.	Michigan	Galactic hydrogen in front of the Perseus cluster	line	2	1.5
AC308	Condon, J. Cotton, W. Perley, R.	NRAO-CV NRAO-CV NRAO-Socorro	All sky survey	20 w/BR57	4, 30	8.5
AC522	Clarke, T. Ensslin, T. Thierbach, M. Deiss, B. Klein, U. Kronberg, P.P.	Toronto MPIfR MPIfR Cologne Bonn Univ. Toronto	Merging cluster Abell 2256	6, 20	27, 28	26.0
AD421	Dahlem, M. Ehle, M. Haynes, R. English, J. Lisenfeld, U.	ESTEC MPE ATNF STSci Granada	Search for radio halos in late-type spiral galaxies	20	2, 4	16.5
AD422	Dickey, J.M. McClure-Griffiths, N.	Minnesota Minnesota	21cm absorption of linear polarization of the galactic background	20 line	15	7.0
AD423	DiFrancesco, J. Myers, P.C. Lee, C. Wilner, D.J. Williams, J.P.	CfA CfA CfA CfA CfA	A Short VLA search for youngest protostellar sources	3.6	26	9.0
AE124	Eyres, S. Evans, A. Bode, M. O'Brien, T. Davis, R. Iverson, R.	John Moore Keele John Moores John Moores Jodrell Bank University College	Recurrent nova U Sco	1.3, 2, 3.6, 6, 20 w/BR57	4, 14, 25	4.0
AF349	Feretti, L. Giovannini, G. Tordi, M.	Bologna Bologna Bologna	Observations of new radio halos and relics from NVSS	20	10	3.0
AF350	Falcke, H. Lobanov, A. Wright, M. Bower, G. Aller, M. Terasranta, H. Patnaik, A.	MPIfR MPIfR Calif.-Berkeley NRAO-Socorro Michigan Metsahovi MPIfR	Monitoring extremely variable spiral III Zw 2	1.3, 2, 3.6, 6, 20, 90	23	1.0
AF356	Frail, D.A. Kulkarni, S.R.	NRAO-Socorro Caltech	Search for faint nebulae powered by magnetars	20	26	2.6
AG552	Gomez, Y. Rodriguez, L. Marti, J.	UNAM UNAM U. Jaen	Ammonia emission toward the exciting source of HH80-81	1.3	12	5.0
AG558	Gudel, M. Audard, M. Guinan, E.F.	Paul Scherrer Paul Scherrer Villanova	High-frequency spectra of two active dMe flare stars	0.7, 2, 3.6, 6	29	10.1
AG559	Green, D.A. Thomas, H. Alexander, P. Eales, S.	MRAO MRAO MRAO Cardiff	HI observations of galaxies in the JCMT/SCUBA galaxy survey	20 line	25	6.5
AH662	Hunter, T.R. Zhang, Q. Churchwell, E.	CfA CfA Wisconsin	Formaldehyde absorption in massive submillimeter protostar G12.20-0.12	6 line	9	4.0
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	7,8,17,24	6.0
AH670	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	10	23.9
AH672	Harris, D.E. Walker, R.C. Leeuw, L.L.	CfA NRAO-Socorro Hawaii	25" knot in the radio jet of 3C 120	0.7, 2 w/BD57	17, 24	13.0

## VLA Utilization Report April 1999

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AH673	Helbig, P. Browne, I. Jackson, N. Wilkinson, P. Xanthopoulos, E. Blandford, R.D. Fassnacht, C.D. de Bruyn, A.G. Koopmans, L. Marlow, D. Myers, S. Rusin, D.	Jodrell Bank Jodrell Bank Jodrell Bank Jodrell Bank Caltech NRAO-Socorro NFRA Groningen Pennsylvania Pennsylvania Pennsylvania	Study of the source population that forms CLASS gravitational lenses	6	1	3.0
AK456	Kulkarni, S.R. Bloom, J.S. Djorgovski, S. Frail, D.A. Vakil, D.	Caltech Caltech Caltech NRAO-Socorro Caltech	Radio afterglows of Gamma-Ray Bursters	20,6,3.5,2	26	0.4
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	4, 19, 29	6.0
AL418	Lehar, J. Falcke, H. Barvainis, R. Menten, K. Birkinshaw, M. Elvis, M. Blundell, K.	CfA MPIfR Haystack MPIfR Bristol CfA Oxford	Variability of radio quiet quasars	3.6	15	4.0
AL457	Lebron, M. Rodriguez, L.F. Lizano, S.	UNAM UNAM UNAM	Kinematical study of compact HII region G111.61+0.37	1.3	17	6.5
AL476	Lopez, J.A. Rodriguez, L.F. Gomez, Y.	UNAM UNAM UNAM	Search for atomic hydrogen in the remarkable planetary nebula KJpn 8	20 line	27	4.0
AL483	Looney, L. Mundy, L. Welch, W.J. Volgenau, N.	Maryland Maryland Calif.-Berkeley Maryland	Separating the envelope and disk in embedded stellar systems	0.7	18	6.0
AL484	Ledlow, M. Owen, F.	UNM NRAO-Socorro	1 Mpc scale FRI radio galaxy B2 1108+27	20, 90	17	4.0
AL485	Laurent-Muehleisen, Becker, R.H. Brotherton, M. Gregg, M.	Lawrence Livermore Calif.-Davis Lawrence Livermore Calif.-Davis	Radio spectral indices of a complete sample of radio-selected quasars	3.6	12, 16, 18, 23	48.0
AM602	Mirabel, F. Dhawan, V. Rodriguez, L.F.	Saclay NRAO-Socorro UNAM, Mexico	Coordinated radio, infrared and x-ray observations of microquasar GRS1915+105	6,3.5,2	13	2.5
AM610	Molinari, S. Rodriguez, L.F. Zhang, Q.	IPAC UNAM CfA	Continuum survey in massive protostars	2, 3.6	7	3.5
AM614	Niruj Mohan, R. Anantharamaiah, K.R. Goss, M.	Raman Raman/NRAO-Socorro NRAO-Socorro	Radio recombination lines towards the starburst galaxies IC 694	2 line	21, 30	16.5
AN081	Niruj Mohan, R. Anantharamaiah, K.R. Goss, M.	Raman Raman/NRAO-Socorro NRAO-Socorro	Radio recombination lines from starburst galaxies	3.6 line	3, 23	11.2
AO135	Osorio, M. Lizano, S. Kurtz, S. Rodriguez, L. Carral, P.	UNAM UNAM UNAM UNAM Guanajuato	Millimeter continuum search for new galactic hot cores	0.7, 1.3	14,20	2.3
AP379	Pisano, D.J. Wilcots, E.M.	Wisconsin Wisconsin	Extended HI and the formation of isolated galaxies	20	1, 8	13.1
AR402	Rudnick, L. Treichel, K. Katz-Stone, D. Giovannini, G.	Minnesota Minnesota USNA Bologna	Non-relativistic sheaths around extragalactic jets	3.6, 6, 20	13, 14	6.0
AR408	Richards, E.	NRAO-CV	50 UGC galaxies: the local 8 & 15 GHz luminosity function	2, 3.6	3, 9	8.5
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	6, 24	6.1

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AS632	Sahu, K.C. Baum, S. Kaiser, M.E. O'Dea, C. Shaw, R.A.	STScI STScI Johns Hopkins STScI STScI	The most luminous X-ray cluster RXJ 1247.5-1145	6	1	1.1
AS644	Scuderi, S. Stanghellini, C. Panagia, N.	Catania Noto STScI	Survey of radio emission from O and B supergiants	2, 3.6, 6 w/BD57	18, 24, 25	11.5
AS668	Straus, M. Carilli, C. Fan, M. Rupen, M. Schneider, D.	Princeton NRAO-Socorro Princeton NRAO-Socorro Penn State	Two high redshift quasars from the SDSS	6	3	4.0
AT220	Thornley, M.D.	MPE	Weak spiral density waves in flocculent spiral NGC 7331	20 line	4	3.0
AT224	Tahmoush, D.A. Hewitt, J.N.	MIT MIT	Survey of 21 gravitational lenses at high frequencies	0.7, 2, 3.6	7	5.5
AV237	Verheijen, M. Tully, B. Trentham, N. Zwaan, M.	NRAO-Socorro Hawaii Cambridge Groningen	The HI Mass function in Ursa Major	20	8, 19, 20, 24	31.1
AW506	Wilcots, E.M. Armandroff, T. Caldwell, N.	Wisconsin NOAO Whipple	HI in F8D1, a low surface brightness galaxy in the M81 group	20 line	3	8.0
AW507	Welch, G.A. Sage, L.J.	St. Mary's Maryland	Search for HI in SO galaxies	20 line w/BR57	7, 9, 11	24.5
AW508	Welch, G.A. Sage, L.J.	St. Mary's Maryland	Search for HI in M32	20 line	7,13	7.0
AW510	Watt, S. Mundy, L.	Maryland Maryland	Ammonia (3,3) toward ultra-compact HII regions and their precursors	1.3 line	19	12.0
AW511	White, S. Lee, J. Mikic, Z.	Maryland New Jersey Tech. SAIC	Coronal currents, magnetic fields and heating in the solar corona	2, 3.6, 6, 20 w/BD57	12	10.0
AW512	Wiseman, J.J. Fuller, G. Wootten, A.	Johns Hopkins Manchester NRAO-CV	Ammonia gas in HH 111 and H211	1.3 line w/BD57	22	10.5
AY101	Yusef-Zadeh, F. Anantharamaiah, K.R. Melia, F.	Northwestern Raman/NRAO-Socorro Arizona	Search for positronium line toward Sgr A East arc at 20cm	20 line	1	9.0
AY102	Yun, M. Hibbard, J.	NRAO-Socorro NRAO-CV	Giant radio plumes around IR luminous galaxies	6	4	10.0
AZ111	Zwaan, M. Briggs, F. Franx, M. van Kokkum, P. Verheijen, M.	Kapteyn Kapeyn Leiden Leiden NRAO-Socorro	HI imaging of galaxy cluster Abell 1689 at z=0.181	20	11	12.1
AZ117	Zhang, J. White, S. Kundu, M.R.	Maryland Maryland Maryland	Large scale features of the solar atmosphere	2, 3.6, 6, 20	11	12.0
AZ118	Zabludoff, A. Mulchaey, J. Wilcots, E. Williams, B. van Gorkom, J.	Calif.-SC Carnegie Obs. Wisconsin Delaware Columbia	The HI content of loose groups of galaxies	20 line	1	10.0
BD057	Diamond, P.J. Kemball, A.J.	Jodrell Bank NRAO-Socorro	Continuation of the VLBA monitoring of SiO masers around TX Cam	0.7 Single antenna VLBI w/AW511,AL485,AS568,AH672,AS644	8, 12, 24	18.2
BF052	Faison, M. Goss, M. Marscher, A.	NRAO/Wisconsin NRAO-Socorro Boston	Imaging small scale structure in galactic molecular gas	6 Phased array VLBI	26	16.0
BL058	Lonsdale, C. Diamond, P. Smith, H. Lonsdale, C.	Haystack Jodrell Bank Calif.-San Diego Caltech-IPAC	Radio supernovae in OH megamaser galaxy Arp220	3.6, 6, 20 Phased array VLBI	22	10.8
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 w/AW506,AE124/AC308	2	12.2
W040	Junor, B. Biretta, J.	New Mexico STScI	Proper motion in the Vir A jet	6 Phased array VLBI	6,25	16.7

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
W056	Bartel, N. Bietenholz, M.	York York	Structural variability in the core-jet of the Galaxy M81	6 Phased array VLBI	21, 30	21.9
W079	Meier, D.L. Tingay, S.J. Preston, R.A. Murphy, D.W. Jones, D.L. Fujisawa, K. Hirabayashi, H. Kobayashi, H. Edwards, P.	JPL JPL JPL JPL JPL NAO ISAS ISAS ISAS	Centaurus A	6 Phased array VLBI	6	6.5
	Staff	NRAO	Baselines, Pointing, Delays Calibrator flux ratio determination Maintenance Software Student observation General tests		15    17	42.8 24.0 45.0 21.9 1.5 24.2

The average downtime was 9.4%.

The array was scheduled for 100.0% (721.0 hours)

563.1 hours (78.1% of time) for astronomical programs

91.0 hours (12.6% of time) for tests/calibration

67.0 hours (9.3% of time) for maintenance

Total 721.0 hours (100.0%) scheduled.

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

The following independent proposals shared simultaneous observing time (28.4 hours total simultaneous observing):

Projects	Hours
AC308/BR57	4.2
AE124/BR57	1.5
AH672/BD57	6.0
AL485/BD57	0.7
AS568/BD57	1.5
AS644/BD57	0.5
AW506/BR57	6.5
AW511/BD57	7.5



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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AB893	Brogan, C.L. Troland, T.H.	Kentucky Kentucky	HI Zeeman Observations toward W49	20 line	12	7.0
AB897	Bhatnagar, S. Rao, A.P.	NCRA NCRA	Galactic SNR at low frequencies	90	27	8.5
AB899	Bregman, J.N. Wakkar, B.P. Miller, E.	Michigan Wisconsin Michigan	High velocity cloud complexes in Milky Way type galaxies	20 line	1	3.5
AB900	Bravo-Alfaro, H. Brinks, E. Andernach, H.	Guanajuato Guanajuato Guanajuato	Dwarf galaxies in clusters	20 line w/BD57	25, 29	15.0
AB902	Browne, I.W.A. Wilkinson, P.N. Garrington, S.T. Wrobel, J. Dennett-Thorpe, J.	Jodrell Bank Jodrell Bank Jodrell Bank NRAO-Socorro Lisbon	Selection of high frequency phase calibration sources	0.7, 2	1,2	15.1
AC308	Condon, J. Cotton, W. Perley, R.	NRAO-CV NRAO-CV NRAO-Socorro	All sky survey	20	15, 16, 21, 31	13.6
AC515	Coil, A.L. Ho, P.T.P.	CfA CfA	The circumnuclear disk in ammonia emission	1.3 line	1	8.0
AC525	Carilli, C. Menten, K.	NRAO-Socorro MPIFR	CO Emission from a z=4 source	0.7, 1.3, 3.6 line	6, 8	15.0
AD421	Dahlem, M. Ehle, M. Haynes, R. English, J. Lisenfeld, U.	ESTEC MPE ATNF STScI Granada	Search for radio halos in late-type spiral galaxies	20 w/BE17, BD57	25, 29	11.0
AD423	DiFrancesco, J. Myers, P.C. Lee, C. Wilner, D.J. Williams, J.P.	CfA CfA CfA CfA CfA	A Short VLA search for youngest protostellar sources	3.6 w/BK56	6	5.0
ADHOC	Frail, D.A.	NRAO-Socorro	Adhoc Proposal One		8	7.0
ADHOC	Hjelming, R.M.	NRAO-Socorro	Adhoc Proposal Two		28	3.0
AE124	Eyres, S. Bode, M. Davis, R. Evans, A. Iverson, R. O'Brien, T.	Keele John Moores Universi Jodrell Bank Keele Royal Observatory John Moores Universi	Target of Opportunity and monitoring observations of recurrent and classical novae	20,6,3.5,2 1.3	4-6,8,10,18	19.5
AE126	Estalella, R. Beltran, M.T. Ho, P.T.P. Anglada, G. Sepulveda, I.	Barcelona Barcelona CfA IAA, Andalucia Barcelona	The double H2 bipolar jet in L1634	0.7	19	8.0
AF349	Feretti, L. Giovannini, G. Tordi, M.	Bologna Bologna Bologna	Observations of new radio halos and relics from NVSS	20	18, 19, 26, 27	13.1
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	1.5
AG556	Grosso, N. Feigelson, E. Montmerle, T. Tsuboi, Y. Palazzi, E.	Saclay Penn State Saclay Kyoto Bologna	VLA-SAX coordinated observations of the flaring protostar YLW 15	3.6	5, 6	14.0
AG557	Gaensler, B.M. Gotthelf, E.V. Vasisht, G.	MIT Columbia JPL	Environment of anomalous x-ray pulsar AX J18448-0258	3.6, 6	26	6.5
AG565	van Gorkom, J. Bravo-Alfaro, H.	Columbia Guanajuato	E+A galaxies in Coma	20 line	8, 10, 13, 16, 17	42.0
AH664	Hoffman, G.L. Soares, D. Salpeter, E.	Lafayette UFMG Cornell	Tidally interacting pair UGC 4703A/B	20 line	20	2.0
AH665	Hoffman, G.L. Soares, D. Salpeter, E.	Lafayette UFMG Cornell	Tidal interactions in the NGC 2782 Group	20 line w/BK56	6, 8, 14, 31	6.6
AH667	Hardcastle, M.J.	Bristol	Wide angle tail galaxy 3C 130	2	11	3.6
AH668	Huttemeister, S. Aalto, S.	Bonn Univ. Onsala	HI in the UGC 2855/UGC 2866 galaxy system	20 line	15	10.0

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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	7, 14, 24, 31	8.5
AH673	Helbig, P. Browne, I. Jackson, N. Wilkinson, P. Xanthopoulos, E. Blandford, R.D. Fassnacht, C.D. de Bruyn, A.G. Koopmans, L. Marlow, D. Myers, S. Rusin, D.	Jodrell Bank Jodrell Bank Jodrell Bank Jodrell Bank Caltech NRAO-Socorro NFRA Groningen Pennsylvania Pennsylvania Pennsylvania	Study of the source population that forms CLASS gravitational lenses	6 w/move/op,	1,4,5 BV30,BK56	13.0
AH675	Hofner, P. Kurtz, S. Cordero, Y.	Arecibo/UPR UNAM Puerto Rico	Search for methanol masers in hot molecular cores	0.7, 1.3 line	23	7.5
AK456	Kulkarni, S. Bloom, J.S. Djorgovski, S. Frail, D.A. Vakil, D.	Caltech Caltech Caltech NRAO-Socorro Caltech	Radio afterglows of gamma ray bursters	20,6,3.6,2	8	2.0
AK472	Kulkarni, S.R. Frail, D.A.	Caltech NRAO-Socorro	Radio counterpart to SGR 1900+14	90,20	9	1.0
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 w/GJ9,BK56	3-15, 12, 20, 22 move/op,BD57	24.2
AK486	Kurtz, S.	UNAM	Massive star formation in W75N	1.3 line w/BE17	29	8.5
AL475	Lucas, P. Blundell, K.M. Roche, P.F.	Oxford Oxford Oxford	Search for a radio counterpart to HH30	3.6	16	4.5
AL478	Lim, J. Nung, S.Y. White, S.M.	Academia Sinica NCU Taiwan Maryland	Ammonia of the molecular core around UC HII region G45.07+0.13	1.3 line	22	9.0
AL481	Lefloch, B. Cernicharo, J. Anglada, G.	OAN OAN IAA, Andalucia	Ammonia observation of the quiescent SiO emission region in NGC 1333	1.3 line	7	10.5
AM616	McHardy, I. Cordova, F.	Southampton Calif.-Santa Barbara	Radio spectral indices of sources in a deep X-ray survey	6 w/move/op,	12, 14 BD57	14.0
AP379	Pisano, D.J. Wilcots, E.M.	Wisconsin Wisconsin	Extended HI and the formation of isolated galaxies	20	14, 22, 26	7.5
AR403	Rivers, A. Henning, T. Kraan-Korteweg, R.C.	UNM UNM Guanajuato	Galaxies discovered by the Dwingeloo Obscured Galaxies Survey	20 line	20	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	6	31	1.4
AS644	Scuderi, S. Stanghellini, C. Panagia, N.	Catania Noto STScI	Survey of radio emission from O and B supergiants	2, 3.6, 6 w/BV30, BK56	6, 7, 8, 19, 20, 23	13.5
AV237	Verheijen, M. Tully, B. Trentham, N. Zwaan, M.	NRAO-Socorro Hawaii Cambridge Groningen	The HI Mass function in Ursa Major	20 w/BD57	11, 12, 18, 22	33.0
AW500	Williams, B. Verdes-Montenegro, L. Yun, M.	U. Delaware IAA NRAO-Socorro	HI synthesis of three compact groups of galaxies	21	16	3.0
AW509	Wilner, D. Downes, D. Ho, P.	CfA IRAM-Grenoble CfA	Molecular gas in APM 08279+5255 at z=3.9	1.3, 6 line	21, 23	24.5
AW513	Willson, R.F. Lang, K.R.	Tufts Tufts	VLA/TRACE observations of blinkers and microflares on the sun	2, 3.6	8, 11	8.0
AY102	Yun, M. Hibbard, J.	NRAO-Socorro NRAO-CV	Giant radio plumes around IR luminous galaxies	6	28	2.0
AZ114	Zhang, Q. Hunter, T. Sridharan, T.K. Ho, P.	CfA CfA CfA CfA	Ammonia near four high mass young stars	1.3 line	27	8.0

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AZ118	Zabludoff, A. Mulchaey, J. Wilcots, E. Williams, B. van Gorkom, J.	Calif.-SC Carnegie Obs. Wisconsin Delaware Columbia	The HI content of loose groups of galaxies	20 line	20, 24, 26, 27, 28, 30	67.1
BB102	Beasley, A.J. Herrnstein, J.R.	NRAO-CV NRAO-Socorro	VLBA monitoring of WR140	2, 3.6, 6, 20 Phased array VLBI	3	8.0
BB105	Blundell, K. Beasley, A.J.	Oxford NRAO-CV	Superluminal motion in a radio quiet quasar	3.6 Phased array VLBI	19	8.0
BD046	Diamond, P.J. Kemball, A.J. Boboltz, D.A.	Jodrell Bank NRAO-Socorro USNO	Monitoring SiO masers through a cycle of Mira TX Cam	0.7	8	2.0
BD057	Diamond, P.J. Kemball, A.J.	Jodrell Bank NRAO-Socorro	Continuation of the VLBA monitoring of SiO masers around TX Cam	0.7 Single antenna VLBI w/AM616,AK485,AV237,AD421,AB9 00	12, 29	16.1
BE017	Engels, D. Winnberg, A. Yie, J.	Hamburg Onsala Onsala	Structure of H2O masers in OH/IR stars	1.3 Single antenna VLBI w/AK486,AD421	29	7.6
BG073	Gomez, J.L. Marscher, A.P. Alberdi, A.	IAA, Granada Boston IAA, Granada	3C 120 rapid variations	0.7, 1.3	16	2.0
BG086	Gomez, J.L. Alberdi, A. Gabuzda, D.C. Marscher, A.P.	IAA, Granada IAA, Granada Lebedev Boston University	Mapping the twisted parsec-scale structure of BL Lac object 0735+178	2, 1.3	1	0.1
BK056	Kemball, A. Patnaik, A. Porcas, R.	NRAO-Socorro MPIfR MPIfR	Faraday rotation in the gravitational lens system B0218+35.7	0.7, 1.3, 2, 3.6 Single antenna w/AH673,AK485,BK56,test,point ing,baselines,AS644,AD423,AH6 65	5, 5, 6	12.0
BL074	Lazio, J. Cordes, J.	NRL Cornell	G359.28-0.92, the Mouse	6 Phased array VLBI	15	2.5
BR063	Ratner, M.I. Bartel, N. Bietenholz, M.F. Lebach, D.E. Lestrade, J-F. Ranson, R.R. Shapiro, I.I.	CfA York York CfA Meudon York CfA	Astrometry of HR 8703 in 1999 for the gravity probe B mission	3.6, 6 Phased array VLBI	13	12.5
BV030	Venturi, T. Morganti, R. Spagnesi, S.	Bologna Bologna Bologna	Low luminosity radiogalaxy 3C 317	3.6, 6, 20 Single antenna VLBI w/AH673,AE124,AS644	4	11.2
GJ009	Junor, B. Biretta, J.A. Livio, M.	New Mexico STScI STScI	Structure on light week scales in the Nucleus of 3C274	0.7 Phased array VLBI w/AK485	3	12.8
W022	Reid, M.J. Greenhill, L.J. Argon, A.L. Moran, J.M.	CfA CfA CfA CfA	Nuclear Jet in M87	18 Phased array VLBI	15	9.4
W094	Hirabayashi, H. Wehrle, A. Unwin, S. Makino, F. Kii, T. Kobayashi, H. Edwards, P. Okayasu, R. Valtaoja, E.	ISAS JPL JPL ISAS ISAS ISAS ISAS ISAS Tuorla	3C279	6 Phased array VLBI	14	9.5
	Staff	NRAO	Baselines, Pointing, Delays Maintenance Move/Operations Software General tests			46.4 54.5 26.2 28.4 38.7

The average downtime was 3.0%.

The array was scheduled for 100.0% (746.1 hours)  
561.4 hours (75.3% of time) for astronomical programs  
101.8 hours (13.6% of time) for tests/calibration  
82.8 hours (11.1% of time) for maintenance  
Total 746.1 hours (100.0%) scheduled.

Array was in the DnC configuration from March 1 through March 3.

Array was in the D configuration from March 3 through March 31

The following independent proposals shared simultaneous observing time (81.1 hours total simultaneous observing):

Projects	Hours
AB900/BD57	0.3
AD421/BD57	7.7
AD421/BE17	0.3
AD423/BK56	5.0
AE124/BV30	4.0
AH665/BK56	0.8
AH673/BV30	4.0
AH673/BV30	0.2
AH673/BV30	2.8
AH673/move/op	5.0
AK485/BD57	2.5
AK485/BK56	4.0
AK485/GJ9	11.0
AK485/pointing	1.4
AK486/BE17	7.3
AM616/BD57	4.4
AM616/pointing	4.4
AS644/BK56	1.5
AS644/BV30	3.0
AV237/BD57	1.2
Baselines/BK56	5.1
BK56/BK56	2.0
Pointing/BK56	0.2
Test/BK56	3.0

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AA235	Alvarez, H. May, J.	Chile Chile	Mapping Centaurus A at low frequencies	90	16	1.0
AA237	Arzoumanian, Z. Yusef-Zadeh, F.	Cornell Northwestern	Search for 1720 MHz OH masers towards unidentified EGRET sources	0.7, 20 line	1, 3	6.6
ABB94	Brogan, C.L. Troland, T.H. Roberts, D.A. Crutcher, R.M.	Kentucky Kentucky Illinois Illinois	VLA H110 Zeeman Recombination line observations toward M17	6 line	25	9.0
ABB98	Beck, R. Shoutenkov, V. Shukurov, A. Sokoloff, D.	MPIfR Lebedev Newcastle Moscow U.	Magnetic fields in barred galaxies	6 w/BD46	19	5.5
ABB99	Bregman, J.N. Wakkar, B.P. Miller, E.	Michigan Wisconsin Michigan	High velocity cloud complexes in Milky Way type galaxies	20 line	24, 28	11.5
AB901	Blomme, R. Prinja, R.K. Runacres, M.C.	Royal Obs Belgium University College Royal Obs Belgium	Radio monitoring of hot-star winds	3.6, 6 w/BD46	4-8,11,12	13.5
AB904	Brown, A. Harper, G. Carpenter, K. Robinson, R.	Colorado Colorado NASA-GSFC Catholic Univ.	Mass loss from the K supergiant Lambda Vel	2, 3.6, 6 w/BD46	5, 6, 7	9.0
AC308	Condon, J. Cotton, W. Perley, R.	NRAO-CV NRAO-CV NRAO-Socorro	All sky survey	20	13, 19	3.0
AC515	Coil, A.L. Ho, P.T.P.	Cfa Cfa	The circumnuclear disk in ammonia emission	1.3 line	22, 26	18.0
AC523	Costa, M.E. Ellingsen, S.P. Beasley, A.J.	Tasmania Tasmania NRAO-CV	Positions of and continuum emission near Class I methanol masers	0.7	5	8.0
AD421	Dahlem, M. Ehle, M. Haynes, R. English, J. Lisenfeld, U.	ESTEC MPE ATNF STScI Granada	Search for radio halos in late-type spiral galaxies	20	16, 17	8.5
ADHOC	Frail, D.A.	NRAO-Socorro	Adhoc Proposal One		16	1.0
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	1	2.0
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	22	1.5
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	12, 25	10.5
AF356	Frail, D.A. Kulkarni, S.R.	NRAO-Socorro Caltech	Search for faint nebulae powered by magnetars	20, 90	17	1.5
AF358	Fomalont, E. Goss, M. Briskin, W. Chatterjee, S. Cordes, J. Kaplan, D.	NRAO-CV NRAO-Socorro NRAO/Princeton NRAO/Cornell Cornell Cornell	Checking on inbeam sources for VLBA pulsar calibrators	6	7	3.0
AG544	Gaensler, B.M. Frail, D.A. Stappers, B.W. Moffett, D.A. Johnston, S.	MIT NRAO-Socorro Amsterdam Tasmania Sydney Univ.	Survey for pulsar wind nebulae using pulsar-gating	20 HTRP	2	7.5
AG561	Gaidos, E.J. Gudel, M. Blake, G.A.	JPL Paul Scherrer Caltech	Two young nearby solar analogs	3.6	14, 15	16.5
AG562	Gibb, A.G.	Leeds	High mass protostar candidate L379-IRS1	2, 3.6, 6	7	1.0

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AG566	Golub, L. DeLuca, E. Bastian, T. Aschwanden, M.	Cfa Cfa NRAO-Socorro Lockheed-Martin	VLA/TRACE observations of solar active regions	2, 3.6, 6, 20	13,15,19,20, 27, 28	23.8
AH628	Hjellming, R.M. Mioduszewski, A.J. Rupen, M.P.	NRAO-Socorro NRAO-Socorro NRAO-Socorro	Continuation of the study of radio and x-ray activity in galactic black hole x-ray transient events	20,6,3.6,2	11	2.0
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	4, 7, 8, 28	20.6
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	11, 28	4.0
AH671	Henning, P.A. Staveley-Smith, L.	New Mexico ATNF	Galaxies from Parkes multibeam zone of avoidance survey	20 line	26, 27, 28	11.0
AH676	Hameed, S. Young, L.	New Mexico State New Mexico State	HI Imaging of six early-type spirals with active star formation	20 line	14	3.0
AH677	Han, J.L. Yin, Q.F. Condon, J.J. Menten, K.M.	Beijing NRAO-CV NRAO-CV MPIFR	Magnetic structure in the galactic halo through Faraday rotation	20	4,6,8	16.0
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 w/BC84, VC129	4,6,7,11,12, 14,18,21,25, 27	33.2
AL472	Lang, C.C. Morris, M. Goss, M.	NRAO/UCLA Calif.-Los Angeles NRAO-Socorro	H92 observations of unusual arched filaments	3.6 line	13, 14, 15, 16, 18	37.5
AL479	LaRosa, T.N. Kassim, N.E. Anantharamaiah, K.R. Lazio, T.J.W. Lang, C.C.	Kennesaw NRL Raman/NRAO-Socorro NRL NRAO/UCLA	New candidate galactic radio sources near the Galactic Center	6, 20	27	8.0
AL486	Lang, C.C. Anantharamaiah, K.R. Kassim, N.E. Lazio, T.J.W.	NRAO/UCLA Raman/NRAO-Socorro NRL NRL	Polarization of the recently discovered filament G359.83+0.48	3.6	20	7.0
AM610	Molinari, S. Rodriguez, L.F. Zhang, Q.	IPAC UNAM Cfa	Continuum survey in massive protostars	2, 3.6 w/BC84	6, 28	12.1
AM613	Martin-Pintado, J. Gaume, R.A. deVicente, P. Rodriguez, N. Wilson, T.L. Huttemeister, S.	OAN USNO OAN OAN MPIFR Bonn Univ.	High excitation ammonia in Sgr B2	1.3 line	21	5.5
AM615	Malhotra, S. Rupen, M.P. Helou, G.	IPAC NRAO-Socorro IPAC	HI in the elliptical galaxy NGC 1155	20 line	14	5.0
AN081	Niruj Mohan, R. Anantharamaiah, K.R. Goss, M.	Raman Raman/NRAO-Socorro NRAO-Socorro	Radio recombination lines from starburst galaxies	3.6 line	18, 20	17.0
AP379	Pisano, D.J. Wilcots, E.M.	Wisconsin Wisconsin	Extended HI and the formation of isolated galaxies	20	23	5.5
AR406	Rosati, P. Shaver, P. Kellermann, K. Fomalont, E.	MPIE ESO-Garching NRAO-CV NRAO-CV	Survey of the AXAF Deep Field	6	22	8.0
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 move/op	8, 26	4.5
AS644	Scuderi, S. Stanghellini, C. Panagia, N.	Catania Noto STScI	Survey of radio emission from O and B supergiants	2, 3.6, 6 w/BD46	5, 19	9.5
AS649	Sancisi, R. Oosterloo, T. van Moorsel, G.	Bologna Milano NRAO-Socorro	Vertical structure of the HI disk of the spiral galaxy NGC 2403	20 line	1, 1	17.4
AT224	Tahmoush, D.A. Hewitt, J.N.	MIT MIT	Survey of gravitational lenses at high frequencies	0.7, 2, 3.6	2	8.5
AW362	White, S.	Maryland	The stellar activity cycle on active stars	3.6, 6, 20	8, 13	4.5

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AW500	Williams, B. Verdes-Montenegro, L Yun, M.	Delaware IAA NRAO-Socorro	HI Synthesis of three compact groups of galaxies	20 line	8	7.0
AZ111	Zwaan, M. van Dokkum, P. Verheijen, M. Briggs, F. Franx, M.	Groningen Leiden/Groningen NRAO-Socorro Groningen Leiden	HI imaging of galaxy cluster ABell 1689 at z=0.181	20 line	3, 5	10.5
BC084	Cotton, W.D. Saslaw, W.C.	NRAO-CV Virginia	Search for gravitational lensing of 3C 455B by stellar object	3.6 Single antenna VLBI w/AM610	6	7.1
BD046	Diamond, P.J. Kemball, A.J. Boboltz, D.A.	Manchester NRAO-Socorro USNO	Monitoring SiO masers through a cycle of Mira TX Cam	0.7 Single antenna VLBI w/AS644, AB901, AB904, AB898, Test	6, 5, 19	18.3
BG073	Gomez, J.L. Marscher, A.P. Alberdi, A.	IAA, Granada Boston IAA, Granada	3C 120 rapid variations	0.7, 1.3	16	4.0
BG086	Gomez, J.L. Marscher, A.P. Alberdi, A. Gabuzda, D.C.	IAA, Granada Boston IAA, Granada Lebedev	Lac object 0735+178	0.7, 1.3, 2	28	1.9
BM106	Mutel, R.L. Molnar, L.A.	Iowa Iowa	Astrometric mapping of HR 1099: test of polar emission model	3.6 Phased array VLBI	1	3.0
GB029	Bartel, N. Bietenholz, M.F.	York York	VLBI imaging of Supernova 1986J in NGC 891	6 Phased array VLBI	21	13.0
GP021	Peck, A. Taylor, G.	NRAO/NMIMT NRAO-Socorro	HI in absorption toward 1946+708	20 Phased array VLBI	23	16.5
V026	Walker, R.C.	NRAO-Socorro	3C120 structure from 0.1 to 250 pc	6 Phased array VLBI	11	11.0
V129	Inoue, M. Inoue, M.	NAO-Nobeyama NAO-Nobeyama	Obscuring system in 3C84	6 Phased array VLBI	12	10.2
VT741	VSOG	ISAS	Test observations of Orion Maser	1.3 Phased array VLBI	20	7.3
STUDE	Reid, M	Harvard	Student observation		28	1.5
	Staff	NRAO	Baselines, Pointing, Delays			40.2
			Maintenance			25.6
			Control Room Modifications			33.6
			Move/Operations			25.9
			Software			28.3
			General tests			42.3

The average downtime was 4.1%.

The array was scheduled for 99.7% (672.3 hours)  
482.8 hours (71.6% of time) for astronomical programs  
135.6 hours (20.1% of time) for tests/calibration  
53.9 hours ( 8.0% of time) for maintenance  
Total 672.3 hours (99.7%) scheduled.

Array was in the C configuration from February 1 through February 2.

Array was in the DnC configuration from February 2 through February 28

The following independent proposals shared simultaneous observing time (33.3 hours total simultaneous observing):

Projects	Hours
AB898/BD46	5.5
AB901/BD46	1.0
AB901/BD46	2.4
AK485/test	2.9
AM610/BC84	7.1
AS658/move/op	6.5
AS644/BD46	4.6
Test/BD46	3.3



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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AA231	Anantharamaiah, K.R. Kassim, N.E. Lazio, T.J.W. Goss, M. Lang, C.	Raman/NRAO-Socorro NRL NRAO-Socorro NRAO/UCLA	Possible new filament near the Galactic Center	20	10	4.0
AA234	Aschwanden, M.J. Bastian, T.S.	Lockheed-Martin NRAO-Socorro	Active region anatomy with TRACE, SOHO, YOHKOH, and VLA	2, 3.6, 6, 20	17, 23	9.5
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 w/BD046	4	3.0
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	26	4.0
AB881	Brunetti, G. Bondi, M. Dallacasa, D. Fanti, R. Feretti, L.	Bologna Bologna Bologna Bologna	FR II radiogalaxy 3C219	6, 20	2	8.0
AB882	Butler, B. Stern, S.A.	NRAO-Socorro Southwest Research	7mm observations of Pluto/Charon and Triton	0.7	20	8.5
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	26	3.0
AB907	Beck, R. Kruegel, E.	MPIfR MPIfR	An IR variable compact HII region in M17	1.3	15	1.5
AC517	Cilieggi, P. Zamorani, G. Grupponi, C. Giacconi, R. Hasinger, G. Schmidt, M. Trumper, J.	Bologna Bologna Imperial College ESO Potsdam Caltech MPE	Deep VLA survey at 6cm in Lockman Hole	6	15, 16, 18	33.0
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	7, 9	19.5
ADHOC	Verheijen, M.	NRAO-Socorro	Adhoc Proposal One		6	0.5
ADHOC	Frail, D.A.	NRAO-Socorro	Adhoc Proposal Two		23	0.5
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, 16	4.0
AF328	Feretti, L. Giovannini, G. Arnaud, M. Rusco-Femiano, R.	Bologna Bologna Saclay Frascati	Cluster-wide radio halo in A2163	20	2	4.5
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	8	2.0
AG544	Gaensler, B.M. Frail, D.A. Stappers, B.W. Moffett, D.A. Johnston, S.	MIT NRAO-Socorro Amsterdam Tasmania Sydney Univ.	Survey for pulsar wind nebulae using pulsar-gating	20 HTRP w/BD046	3, 4	11.0
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	4, 9, 13, 21, 24 w/BV32, BB103	4, 9, 13, 19, 24, 31	10.3
AH635	Hong, X.Y. Jiang, D.R. Shen, Z.Q. Venturi, T.	Shanghai Shanghai Academica Sinica Bologna	Large scale structure in gamma ray quasars	6	21, 29	2.0

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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 w/BV32, BB103	3,7,10,15,18 ,21,24-27,30	32.1
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	8	8.0
AK471	Kornreich, D.A. Haynes, M.P. van Zee, L. Lovelace, R.V.E.	Cornell Cornell NRAO-Socorro Cornell	Kinematic studies of optically asymmetric disk galaxies	20 line	4, 10	16.0
AK475	Keto, E. Ho, P.	Cfa Cfa	Disk or envelopes around Herbig Ae/Be stars	0.7	14	9.1
AL471	Lo, K.Y. Young, L. van Zee, L.	Academia Sinica New Mexico State NRAO-Socorro	Phase structure of the HI medium and its effect on star formation	20 line w/BV32	24, 24, 25	32.0
AN080	Nordgren, T.E. Cote, S.	USNO DAO	Probing the dark halo of NGC 3800A at very large radii	20 line w/BV32	26	13.0
AO140	O'Neil, K. McGaugh, S. Verheijen, M.	Oregon Maryland NRAO-Socorro	HI Distribution and kinematics in UGC 12695	20	15, 16	15.5
AR402	Rudnick, L. Treichel, K. Katz-Stone, D. Giovannini, G.	Minnesota Minnesota USNA Bologna	Non-relativistic sheaths around extragalactic jets	3.6, 6, 20	18	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	6, 21	5.6
AS644	Scuderi, S. Stanghellini, C. Panagia, N.	Catania Noto STScI	Survey of radio emission from O and B supergiants	2, 3.6, 6	10	3.5
AS649	Sancisi, R. Oosterloo, T. van Moorsel, G.	Bologna Milano NRAO-Socorro	Vertical structure of the HI disk of the spiral galaxy NGC 2403	20 line	1, 28, 31	31.5
AS653	Saito, M. Kawabe, R.	Cfa NAO-Nobeyama	Continuum emission toward low-mass protostars in Taurus	3.6 w/BB103, BV32	25	31.6
AT211	Taylor, G. Fabian, A.	NRAO-Socorro Cambridge	X-ray to radio correlations in cooling flow clusters	6, 20	22	4.5
AT219	Testi, L. Hofner, P. Kurtz, S. Rupen, M.	Caltech Arecibo/UPR UNAM NRAO-Socorro	Deep radio continuum imaging of G9.62+0.19 F hot core	0.7, 1.3	26	5.7
AU072	Uson, J.M. van Gorkom, J.H. Shambrook, A.	NRAO-CV Columbia Calif.-Santa Cruz	HI Mapping of Abell 2029	20 line w/BB103	5, 7, 14, 28, 31	49.7
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	2, 9	20.5
AW500	Williams, B. Verdes-Montenegro, L. Yun, M.	Delaware IAA NRAO-Socorro	HI Synthesis of three compact groups of galaxies	20 line	10, 10, 13	18.0
AY099	Yusef-Zadeh, F. Wardle, M. Roberts, D.	Northwestern Sydney Illinois	7mm continuum study of IRS 7 and OH 359.88-0.08	0.7	8	8.0
AZ097	van Zee, L.	NRAO-Socorro	Gas distributions and kinematics of isolated irregular galaxies	20	6	5.0
AZ107	van Zee, L. Salzer, J.J. Skillman, E.D.	NRAO-Socorro Wesleyan Minnesota	Kinematic constraints on BCD to dE evolutionary scenarios	20 line w/BD046	22	6.1
AZ108	van Zee, L. Haynes, M.P.	NRAO-Socorro Cornell	HI in five nearby dwarf irregulars, and relation to chemical enrichment	20 line w/BD046	19, 22	16.0
AZ111	Zwaan, M. van Dokkum, P. Verheijen, M. Briggs, F. Franx, M.	Groningen Leiden/Groningen NRAO-Socorro Groningen Leiden	HI imaging of galaxy cluster ABell 1689 at z=0.181	20 line	3,13,15,22,2 3,30	27.5
BB102	Beasley, A.J. Herrnstein, J.R.	NRAO-CV NRAO-Socorro	VLBA monitoring of WR140	2, 3.6, 6, 20 Phased array VLBI	4	8.0

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
BB103	Blundell, K. Close, L. Leahy, P.	Oxford Oxford Jodrell Bank	Low frequency study of hotspots in powerful radio sources	90 Single antenna VLBI w/test, AK456, AU72, AH628, Test, AS649	30	24.0
BC087	Carilli, C. Menten, K. Reid, M.	NRAO-Socorro MPIFR CfA	Imaging the HC3N absorption in 1830-211	1.3, 2 Phased array VLBI	29	7.8
BD046	Diamond, P.J. Kemball, A.J. Boboltz, D.A.	Jodrell Bank NRAO-Socorro USNO	Monitoring SiO masers through a cycle of Mira TX Cam	0.7 Single antenna VLBI w/AB875, AG544, Test, AZ107, AZ108	4	19.9
BM106	Mutel, R.L. Molnar, L.A.	Iowa Iowa	Astrometric mapping of HR 1099: test of polar emission model	3.6 Phased array VLBI Move/op	3, 16, 19	8.9
BM108	Moellenbrock, G. Roberts, D.H. Wardle, J.F.C.	ISAS/Brandeis Brandeis Brandeis	Polarization monitoring of gamma ray blazars	0.7, 1.3, 2, 3.6	3	2.6
BM109	Molnar, L.A. Mutel, R.L.	Iowa Iowa	Coordinated VLBA and X-ray observations of Algol	3.6 Phased array VLBI	17, 20, 23	33.9
BP050	Peck, A. Rupen, M. Mioduszewski, A.	NRAO/NMIMT NRAO-Socorro JIVE-Socorro	HI absorption towards SS 433	20 Phased array VLBI	30	12.0
BU012	Ulvestad, J.S. Vestrand, W.T. Stacy, J.G. Biretta, J.A.	NRAO-Socorro New Hampshire New Hampshire STSci	Flaring CGRO Blazar 2255-282	0.7, 1.3, 2	5	3.2
BV032	Vermeulen, R.C. Taylor, G.B.	NFRA NRAO-Socorro	Neutral hydrogen in CSO 0831+557	20 Single antenna VLBI w/AL471, Test, AH628, AK456, AS653, AN80	24, 25	22.3
W016	Gabuzda, D.C. Pushkarev, A.B. Kochanov, P.Y. Cawthorne, T.V.	Lebedev Lebedev Moscow Univ. Lancashire	Polarization of BL Lac objects	6 Phased array VLBI	29	8.0
W079	Meier, D.L. Tingay, S.J. Preston, R.A. Murphy, D.W. Jones, D.L. Fujisawa, K. Hirabayashi, H. Kobayashi, H. Edwards, P.	JPL JPL JPL JPL JPL NAO ISAS ISAS ISAS	Centaurus A	20 Phased array VLBI	21	4.1
	Staff	NRAO	Baselines, Pointing, Delays Maintenance Move/Operations New Years Shutdown Software Standard Field Observation General tests			46.3 42.5 1.2 16.0 29.9 5.0 50.0

The average downtime was 3.3%.

The array was scheduled for 97.8% (730.1 hours)  
559.1 hours (74.9% of time) for astronomical programs  
98.6 hours (13.2% of time) for tests/calibration  
72.4 hours (9.7% of time) for maintenance  
Total 730.1 hours (97.8%) scheduled.

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

The following independent proposals shared simultaneous observing time (64.4 hours total simultaneous observing):

Projects	Hours
ABB75/BD46	3.0
AG544/BD46	4.0
AH628/BB103	2.0
AH628/BV32	0.5
AK456/BB103	2.0
AK456/BV32	2.5
AL471/BV32	3.2
AL471/BV32	3.0
AL471/BV32	1.9
AN080/BV32	1.7
AS649/BB103	5.5
AS653/BV32	4.5
AU072/BB103	10.0
AZ107/BD46	3.6
AZ108/BD46	5.0
MOVE/OP/BM106	1.2
TEST/BB103	0.5
TEST/BB103	4.0
TEST/BD46	1.3
TEST/BV32	5.0