NRAO NEWSLETTER

1 April 1995 No. 63

GREEN BANK

GBT NEWS

At the GBT site, COMSAT/RSI's main thrust has been continued trial erection of the elevation box structure. Work was slowed recently due to a question which arose over the joint fabrication and welding. Following a thorough review and analysis, the problem is solved and work again is moving ahead. Preparations are being made to lift the elevation shaft onto the alidade later this month. In the fabrication shop, CRSI has continued fabrication of the main reflector panels, frames, and details and has completed testing of the impact of using powder paint on the panel manufacturing accuracy. Fabrication has begun on the horizontal and upper vertical feed arm joints as well as the upper feed arm beams.

Three of the GBT receivers are now available for routine use on the 140 Foot Telescope. This work has been useful, because a few minor interface problems have been discovered and corrected.

Assembly of the 3.95-5.85 GHz front-end is complete. Testing has been delayed due to our personnel being otherwise occupied. Shop fabrication of the L-band receiver OMT is complete, and testing has begun. Construction of the dewar fabrication parts is underway. Assembly of the L-band feed was completed. Tests show that the ohmic losses in the horn are acceptable. However, the horn needs to be stiffened; the techniques to do so are being investigated.

A digital step attenuator has been received as a possible replacement for the units that were found to have stability problems. Tests have begun.

Testing of the initial 1-8 GHz Converter was completed with only minor problems found. Construction of the next eight units is underway. Eight of the synthesizers which will serve as the system LO2 were received. Testing identified a phase stability problem which has been corrected. Assembly of the Converter Rack A is underway. This rack will be installed at the 140 Foot Telescope this summer for use in system tests and evaluation.

Development of the continuum backend continues. The circuit cards have been completed and tested with development software. Mechanical integration of the system in the VME chassis is proceeding. System programming for this backend has begun.

Work on the new GBT spectrometer continues. Parts for the correlator are being ordered, and selection of components for the 1.6 GHz filter modules is nearing completion. Design work continues on the LO Reference distribution system and the fixed 10.50 GHz LO3 source. All components for the first LO3 source have been ordered. Components for the LO Reference system are being ordered; some have been received and are being tested.

The following applications have been completed to the extent they are in use at the 140 Foot Telescope or on site: site timing Registry, weather station Registry, and receiver Managers and Registries.

Tests of GBT software for data collection on the Spectral Processor and 140 Foot Telescope were successful to the extent that a script iterating between five sources ran for 12 hours on two separate nights of observing.

All key libraries were checked over and documented as consistent with the AIPS++ document extractor, except for the Control classes.

Initial versions of the data collector and Registry Managers were written and tested.

Analysis for achieving task independence among the various control programs in the monitor and control distributed system was completed. The goal is to be able to individually bring programs and computers up or down without having to restart associated processes. Implementation will begin in the spring.

Work continues on the Spectral Processor and message system.

W.H. PORTER, R.D. NORROD, AND M. CLARK

The NRAO Newsletter is published quarterly by the National Radio Astronomy Observatory, 520 Edgemont Road, Charlottesville, VA 22903-2475, USA NRAO is operated by Associated Universities, Inc , under cooperative agreement with the National Science Foundation [Contact Joanne Nance (804) 296-0323, if you wish to receive mailings of the Newsletter]

GBT SYSTEMS ON THE 140 FOOT TELESCOPE

During 1995 and 1996 a concerted effort will be made to equip the 140 Foot Telescope with a number of GBT hardware and software systems in order to verify their performance and shorten the commissioning time of the GBT once construction is finished. The project has three phases.

By July 1995 the goal is to coordinate antenna motion and data acquisition using the spectral processor, so that routine pulsar observations can be done using GBT software alone. At this same time, the new GBT continuum backend will be installed at the 140 Foot, and will be brought into use for pointing and flux density calibration observations. A minimal user interface to the Monitor and Control system will be required.

By October 1995 there will be an improved user interface and additional antenna control software to allow the 140 Foot to do position switching and observations over a regular grid.

By March 1996, the GBT Local Oscillator system will be installed and brought under software control for frequency switching and Doppler tracking. At this stage the spectral processor could be used for most spectral line observations.

As part of this integration plan, the 1PPS pulse derived from the Timing Center in the Interferometer Control Building will be delivered to the 140 Foot control room for use by the continuum receiver, VLBA DAR, and spectral processor. The LO reference signal from the timing center will also be installed along with a round-trip-phase delay monitor. By July 1995, two optical fiber IF links will be established between the Cassegrain house of the 140 Foot Telescope and the control room, using GBT equipment. Finally, in early 1996 an LO synthesizer will be installed in the 140 Foot control room to be used with the GBT receivers and software.

We will ask certain observers to participate in this program by using these systems for their 140 Foot observations. For the near future most visiting observers will not use the GBT systems (except for the Cassegrain front ends), but we plan to expand their use gradually to allow them to be evaluated under realistic observing conditions.

F.J. LOCKMAN

GBT SPECTROMETER CHIP

NRAO is about to place orders for the 1024-lag correlator chip to be used in the GBT spectrometer. This chip is also available to other interested organizations, but for a limited time. Hewlett Packard is being used as a silicon foundry for the production of wafers for the chip, and HP has announced that they will not accept orders for wafer runs after June 1996. Anyone interested in buying any of the correlator chips should get orders in before this deadline.

The correlator chip has 1024 lags; 1024 32-bit integrators; 1 32-bit integration count integrator; 1025 32-bit secondary storage registers for results shift-out; and works with clock rates up to 100 MHz. The correlators accept 2-bit 3-level or 1-bit input signals. The cost of the chip is not guaranteed and depends on chip yield in the manufacturing process. A typical cost is $200 to $250 per working chip.

Inquiries may be made of:

ICS
2650 Yale SE, Suite 101
Albuquerque, NM 87106
505-247-1713
Fax: 505-277-9719

R.P. ESCOFFIER

OVLBI EARTH STATION MILESTONES

NRAO is building, with NASA funding, a tracking station in support of the Japanese and Russian space radio telescope projects. The Green Bank Earth Station has passed several major milestones. In September 1994, the Japanese space agency, ISAS, sent two engineers to Green Bank with an engineering model of the VSOP space radio telescope. The tracking station transmitted the timing tone to the satellite model, and the model transmitted simulated downlink data about 30 meters to the antenna where the data were demodulated, decoded, and interpreted. The error rate on the short transmission length was higher that expected, but was sufficient for the mission requirements. The tests were considered mostly successful, and work is underway to reduce the data error rate.

Similar tests are scheduled with the Russian space agency for later this year.

In January 1995, a Japanese research satellite, called Geotail, was tracked. This satellite transmits data at 8.475 GHz, which is in the band where the Russian space radio telescope, RadioAstron, will return the timing tone from the tracking station. The modulated data signal from Geotail was detected, although the satellite was slowly spinning and not intentionally transmitting data toward Green Bank. This test proved the correct interpretation of the JPL satellite orbit file, which is used to command the antenna to track the satellite.

L.R. D'ADDARIO AND G.I. LANGSTON

NEW 20 METER VLBI TELESCOPE

There is a new 20 meter telescope at Green Bank, located across the road from the Tatel Telescope. It was funded by the United States Naval Observatory (USNO) to be used as part of a VLBI network for monitoring the earth's rotation and polar motion. Small wobbling motions of the earth's polar axis and irregularities in the earth's rate of rotation with reference to positions of quasars are measured in one or two 24-hour observing sessions per week. Additional short (1-2 hour) observing sessions on other days of the week monitor rotation almost daily. The resulting data are used for high accuracy navigation systems, and also for studies of continental drift and of atmospheric and oceanic currents. For example, "El Nino" events in large-scale weather patterns correlate with about a 1 millisecond increase in the length of the day.

Other telescopes used in this network are in Kauai (Hawaii) where a twin of the Green Bank 20 meter began operation in 1993, Fairbanks (Alaska), Wetzell (Germany), and Richmond (Florida).

The USNO has been doing these measurements at Green Bank for the past six years with one of the 85-foot telescopes (85-3). The new 20 meter has an alt-az mounting and can observe down to the horizon in all directions, an improvement over the polar-mounted 85-foot which has limited sky coverage at low elevations in the north. Its faster slew rate of 2 degrees per second permits rapid observations of widely spaced sources, which is important in correcting for atmospheric effects.

There is a WWW page describing the 20 meter and its current schedule and status, referenced in the Green Bank homepage.

A few words about the fate of antenna 85-3 may also be of interest. Its pulsar observing program, previously scheduled only during free time between VLBI runs, will be expanded to full time, funded by and coordinated through the Naval Research Lab.

F.D. GHIGO

JANSKY LAB ADDITION

Observers coming to Green Bank will notice the diesel car parking spaces have been moved out of the way of construction of the Jansky Lab addition. The parking lot to the west of the Jansky Lab has been removed in preparation for foundation and footer excavation. Steel will be erected in June, followed by the pouring of the first and second concrete floors.

New parking lots will be constructed this summer. The building exterior will be completed before winter, and the interior finished before next summer.

R.L. FLEMING

140 FOOT BIRTHDAY PARTY

In 1965 the 140 Foot Telescope was first used for astronomical observations. To mark the 30th anniversary of this occasion, NRAO will host a Green Bank Workshop and birthday party later this year. The tentative dates for the Workshop are September 29-30 and for the party, the afternoon of Saturday, September 30. The Workshop will be divided between talks about the history and accomplishments of the 140 Foot and the prospects for the future with the Green Bank Telescope. More information on these events will appear in the next Newsletter and on the Green Bank homepage of the World Wide Web.

F.J. LOCKMAN

CYGNUS A WORKSHOP

The NRAO will host a workshop in Green Bank on Cygnus A. The workshop is being organized by the Center for Astrophysics in Cambridge, MA, and will be held on May 1 - 4, 1995. The workshop will consider all aspects of Cygnus A: the galaxy, the various radio features, and the cluster gas. A cd-rom will be made from images contributed to the workshop, and proceedings of the workshop will be published. Registration information and a preliminary program can be found on the World Wide Web at http://hea-www.harvard.edu/CYGNUS_A/CYG_A.html. For additional information, send e-mail to Dr. Dan Harris at harris@head-cfa.harvard.edu or me at mmckinno@nrao.edu.

M.M. MCKINNON

STUDENT RATES IN THE RESIDENCE HALL

We have recently established a schedule of reduced rates for students staying in the residence hall. The rates apply to full-time students who are visiting Green Bank to use one of the telescopes as part of requirements for completion of a degree. When you make room reservations please inform Becky Warner in the Administrative Services office if you are eligible for this program.

F.J. LOCKMAN

IN GENERAL

STATUS OF THE AIPS++ PROJECT

The AIPS++ Project is in the midst of a major reorganization. Both NRAO and the AIPS++ consortium are strongly committed to the continuation of the AIPS++ Project. However, as was clear from the Project review conducted in December 1994, substantial changes in management are required. Within NRAO, the Project will be treated as a construction project with budget and manpower separate from other parts of the Observatory. Tim Cornwell was appointed AIPS++ Project Manager in mid-March. NRAO's partners in the AIPS++ consortium will continue to provide support for the development of AIPS++.

AIPS++ is an ambitious project, advancing on many different fronts at once: management of a large collaborative software project, adoption of object-oriented software methods, and a push to a new level of complexity in radio astronomical applications. In recognition of the difficulties that the project has encountered and can expect to encounter in the future, we have chosen to sharpen our focus to a few simple short-term goals. We will endeavor to test and validate the infrastructure library code by building two to three applications, one in single-dish processing and one or two in interferometric imaging. These applications will be chosen to test a wide range of infrastructure capabilities. Time scales are difficult to estimate at this early stage of the re-organization, but this phase may be expected to last a year or more. Once the viability of the infrastructure library has been demonstrated in this way, other, more complex applications will be added. The strategy is first to build unique applications and then to expand out to completeness.

Part of NRAO's work will shift to being located in Socorro, directed toward the infrastructure code and applications for interferometric imaging. Development of single-dish capabilities will continue in Charlottesville and Green Bank. In the short-term, there will be less emphasis on the utilization of manpower at the non-NRAO consortium sites.

Despite the severe disruption due to these management changes, the project has made substantial progress recently in a number of technical areas. The AIPSView visualization tool developed as part of the BIMA contribution is being tested now in anticipation of a release in the near future. An AIPS++ tool for "On-The-Fly" imaging using the 12 Meter has been developed and will be tested at the telescope in early April. Foundation classes for interferometric applications have been written using personnel from the ATNF and NRAO. A major effort at improving the documentation is nearing completion.

T.J. CORNWELL, R.S. SIMON, AND P.A. VANDEN BOUT

MMA

After a hiatus of nearly eight months, the 225 GHz tipping radiometer is again operational on the potential site for the MMA near the VLBA telescope on Mauna Kea. Also in routine operation on the Mauna Kea VLBA site is an atmospheric phase monitoring interferometer that is observing a 12 GHz beacon on a geostationary satellite; the interferometer baseline is 300 meters. With the combination of data from these two instruments operating simultaneously, we expect that it will be possible to characterize in detail the atmospheric properties on Mauna Kea. In particular, we intend to use the data to estimate the fraction of time it will be possible to observe with the MMA as a function of frequency, baseline length, and for a variety of phase calibration techniques, each of given efficacy.

Similar measurements of atmospheric transparency and phase stability will be made on a potential MMA site in northern Chile. Here the logistical problems in making the measurements are compounded by the fact that there is no electrical power or access to communications on the Chilean site. To surmount these difficulties, we built a solar power and battery system capable of providing 500 watts continuously, and mounted the system in a 20 foot shipping container. The electrical power will be used for a tipping radiometer and interferometer identical to the systems on Mauna Kea. Communications with the Chilean system will be via a satellite telephone. With the considerable assistance of our colleagues at the University of Chile, a site has been prepared for the containerized equipment east of the village of San Pedro de Atacama at an elevation of 16,400 feet (5000 meters). We have benefitted by the generous assistance of the staff of NOAO/CTIO in helping us with the logistics of shipping and operating the test equipment in Chile. If all goes well we should see the first data by the end of April.

Meanwhile technical work on two of the more challenging aspects of the MMA, the antenna design and specification of the correlator design, continues through the efforts of the Millimeter Array Development Consortium. Presently working groups on these two topics meet monthly; other MDC working groups will begin work soon.

A scientific workshop to review the scientific requirements of the MMA will be held October 4, 5, and 6 in Tucson. Meeting details will be available shortly and will be presented in future editions of the NRAO Newsletter.

R.L. BROWN

VLBA

VLBA STATUS

During the first quarter of 1995 (period ending March 20) 58 projects were correlated (41 VLBA, eight Tests and nine Global). The current throughput has remained about the same as that achieved in the last quarter of 1994. There is essentially no backlog for VLBA (plus VLA) only observations. Projects from the global backlog are run through the correlator at a steady pace of one every ten days on average. The need for clock searches, the different flavors of log files and sometimes the poor recording quality at some antennas, make this labor intensive. However, following the previously stated policy of working backwards in time through the queue, we have now reached the oldest problem-free project dating from November 1992.

The remainder of the global backlog contains 22 MkIII projects that require correlator modes that are not yet implemented. We are working on handling Mode C logs and correlator job scripts and also are looking for solutions to deal with sub-arraying, in order to make sure we can continue to release old projects at the current rate. PIs of projects that contain source sub-arraying are given the opportunity to have their projects processed if they agree that the data in the minority sub-arrays can be dropped. If PIs agree, then the projects will be processed in reverse chronological order; if they don't, then the projects must wait until the software upgrades discussed below are implemented. Measures to increase the efficiency for processing global projects include software for interactive fringe searching at the correlator, and a project to collect GPS clock information from EVN stations.

Development of the correlator has reached a stable and relatively robust operational state. The number of bugs being found, and their severity, has decreased markedly. The correlator has operated at 49 percent efficiency over the last four months (i.e., that fraction of scheduled production time leading directly to finished results). After correcting for the effects of the playback speedup and part-time production schedule, this has yielded a 34 percent net operational efficiency of the VLBA instrument over the same interval. We have been able to include most of the capabilities originally planned for the correlator in this initial operational system. Two important exceptions could not be included: narrowband (< 250 kHz bandwidth) spectroscopy and various forms of sub-arraying. On the other hand, two capabilities not planned until later have been achieved: cross-polarized correlation and an extremely accurate fringe model.

As this initial system has come together, as the software has stabilized, and as operations have become more routine, it has become possible for the correlator software team to concentrate increasingly on the vital task of rewriting parts of the code. The design stage of this effort has been completed and implementation of some sections is well under way. With the period of most intense concentration having passed, software updates were resumed, at a longer interval than previously. These served mainly to implement bug fixes at first, but now increasingly are bringing new code into the operational system. The goals of the rewrite project (expected to be completed later this year) are both scientific, including support for the narrowband and sub-arrayed observations mentioned above, and technical, providing a more secure basis for development of additional capabilities in future phases.

The outstanding closure properties of the correlator have been demonstrated by a series of tests having the goal of producing a noise-limited image of the mildly resolved source DA193 at 5 GHz (dynamic range about 120,000:1 peak to rms noise). During this series of tests, a number of causes of closure error were identified and rectified by corrections in AIPS. There remains an as yet not fully understood decorrelation at very low levels, which produces a practical dynamic range limit of 30,000:1. Tests to determine the origin of this decorrelation are proceeding.

About 40 percent of the final shipment of thin tapes has been received, inspected, and transferred to self-packing reels. The remainder of the thin tapes will be received and transferred in the second quarter of this year. The VLBA was scheduled for 60 percent of the time during March. The amount of astronomical observing will be increased during the next quarter as both the supply of thin tapes increases and the efficiency of the VLBA correlator improves.

One important and very welcome development was the successful use of the Effelsberg Telescope in a VLBA compatible mode.

P. J. DIAMOND

FIRST SUCCESSFUL OBSERVATIONS WITH EFFELSBERG-VLBA IN "VLBA-FORMAT"

The MPIfR and NRAO are pleased to report "first fringes" between the VLBA and the Effelsberg 100 meter telescope using the MPI's new VLBA recording terminal. Following the installation of equipment in Effelsberg last year, and initial tests in MkIII format (announced on the VLBI exploder), the first real observation (BG34) took place on February 13th this year. This was a 6.5 hour observation at 8.4 GHz of galaxies in Abell 2634. Two 8 MHz channels with 2-bit sampling were recorded in

VLBA format, and correlated in Socorro on 27 February (Carnival "Rose Monday" in Germany !).

As announced in NRAO Newsletter #54, MPIfR and NRAO have agreed to allocate up to twenty days per year for VLBI observations which require the extra sensitivity and resolution which the addition of the 100 meter telescope can bring to the VLBA, particularly at high frequencies. In order to ensure that such observations can be carried out as smoothly as possible (especially as seen by the investigator), the MPI has endeavored to provide equipment as compatible as possible with the VLBA's. The record terminal is driven by the same computer and control program as the VLBA antennas, and receives schedules in the same format, as derived, e.g., from the CIT/Walker SCHED program. Continuous calibration (noise injection at 80 Hz) is used to monitor the system temperature, and a GPS receiver monitors the formatter clock offset. A standard log is written and sent to the Socorro correlator.

Proposals for using Effeslberg together with the VLBA should be submitted to NRAO and MPIfR. All the Effelsberg VLBI receivers will be available for observation in this VLBA observing mode. Frequency-agile observations are not yet supported, but work in progress should allow this in the near future. VLBA modes which use up to eight channels (four BBCs) can be recorded. Normal practice will be to use "thick" rather than "thin" tape, although the Effelsberg recorder can support the latter if tapes are provided. Up-to-date information about the Effelsberg receivers and terminal can be obtained from the WWW:

http://www.mpifr-bonn.mpg.de/hp56/p062gra/www/vlbpage.html

Enquiries about the availability of VLBA recording in Effelsberg may be addressed to Richard Porcas (porcas@mpifr-bonn.mpg.de) and detailed technical questions and advice on preparation of observing schedules can be addressed to the VLBI technical friend, Dave Graham (graham@mpifr-bonn.mpg.de).

R.W. PORCAS(MPIfR, Bonn) AND P.J. DIAMOND

VLBI NETWORK CALL FOR PROPOSALS

Proposals for VLBI network observing are handled by the NRAO. In particular, the network sessions for 1995 and 1996 are expected to be as follows:

Session	Dates	Bands	Proposal Deadline
2	03 May to 24 May	6, 18/21, (50)	1 October 1994
3	December	1.3, 6, 18/21	1 June 1995
1	07 Feb to 28 Feb	0.7, 3.6, 13, 50	1 October 1995

The original October date for Session 3 will be delayed due to the delay of azimuth track repair work at Effelsberg. New dates in December have not yet been set.

Proposers should note that Mark II format recording is supported neither on the VLBA nor on the EVN.

It is recommended that the proposers use a standard coversheet for their VLBI proposals. The EVN program committee has indicated that they will accept proposals for EVN-only observation and correlation for the May session up to a February 1 deadline. VLBA-only proposals submitted for the February 1 deadline will be scheduled after June 1.

Any proposal requesting antennas from two or more institutions in the European VLBI network constitutes a Global proposal. Global proposals MUST reach BOTH Networks' Schedulers on or before the proposal deadline date; allow sufficient time for mailing. In general, fax submissions of Global proposals will not be accepted. Proposals requesting use of the Socorro correlator must be sent to NRAO even if they do not request the use of NRAO antennas; proposals for the use of the Bonn correlator must be sent to the EVN even if they do not request the use of any EVN antennas. For Global proposals, or those to the EVN alone, send proposals to:

R. Schwartz
Max-Planck-Institut für Radioastronomie
Auf dem Hugel 69
D 53121 Bonn
Germany

For proposals to the VLBA, or global network proposals, send proposals to:

Director, National Radio Astronomy Observatory
520 Edgemont Road
Charlottesville, VA 22903-2475
USA

B.G. CLARK

12 METER

DEVELOPMENT PROJECTS FOR THE 12-M TELESCOPE

The NRAO has a number of equipment and computing projects under development for the 12 Meter Telescope. Several of these are listed below. Comments and suggestions are welcomed.

• 8-Beam, 1.3 mm SIS Receiver. This project is nearing completion. The receiver will be tested on the Telescope this spring and is expected to be available to observers on a regular basis beginning in the fall of 1995. Observing proposals for this receiver are being accepted now. The receiver consists of a 2x4 array with a beam separation of about 87". The array can be rotated to an arbitrary orientation angle and can track parallactic angle. We expect the receiver to tune from at least 215 to 245 GHz.

• 4-Beam, Dual-Polarization, 3 mm Receiver. We are beginning development of a 90-116 GHz, 8-channel SIS receiver. The array configuration will be a 4-point cross with dual polarization channels at each point. The orientation and separation of one arm of the cross will correspond to the beam throw of the subreflector so that dual-polarization, double-Dicke switching can be employed for point sources, using four of the eight receivers. Other improvements in receiver optics and LO injection should lower the noise temperatures compared to the present generation of receiver. Thus, we expect this receiver to be a significant improvement for point source and wide-field imaging work. We are just beginning this project; completion is anticipated in one and a half years.

• On-the-Fly Observing Enhancements. OTF spectral line observing should be available with the hybrid spectrometer by the fall 1995. Heretofore, spectral line OTF was available only with the filter banks. The hybrid spectrometer is an autocorrelation device. The correlations will be done in real-time, 10 per second, using a digital signal processing card. This project is well along toward completion. Other OTF upgrades are planned, including more sophisticated scanning modes.

D.T. EMERSON, J.M. PAYNE, AND P.R. JEWELL

IAU SYMPOSIUM 170
"CO: TWENTY-FIVE YEARS OF MILLIMETER-WAVE SPECTROSCOPY"
LAST ANNOUNCEMENT

Conference Dates: 29 May - 2 June 1995
Location: Loews Ventana Canyon Resort, Tucson, AZ, USA

Final preparations for the IAU CO conference are underway, and the conference program is nearing completion. Judging from the registration list, this will be a major symposium with a very large attendance. There is still time to register and rooms are still available—don't miss it!

Information about the conference can be found on the NRAO WWW homepage, http://info.aoc.nrao.edu/ (click on Tucson), by e-mail to symp95@nrao.edu, or by calling Simon Radford or Darrel Emerson at 520-882-8250.

IAU 170 LOCAL ORGANIZING COMMITTEE

TELEPHONE NUMBER CHANGES FOR TUCSON AND KITT PEAK

The telephone area code for Tucson and Kitt Peak has been changed to 520. This change applies to all of Arizona except for metropolitan Phoenix. Both the new and old area codes will be honored until July 23, 1995; thereafter, only the new code will work. In addition, all phone numbers on Kitt Peak, including the 12 Meter site, have been changed completely. A list of some key telephone numbers for the downtown and mountain sites follows:

NRAO Tucson Downtown Headquarters:	520-882-8250
Downtown Fax:	520-882-7955
12 Meter Operator (Kitt Peak):	520-318-8670*
12 Meter Observer's Console:	520-318-8671*

* Completely new number.

P.R. JEWELL

VLA

VLA CONFIGURATION SCHEDULE

Configuration	Starting Date	Ending Date	Proposal Deadline
D	24 Feb 1995	05 Jun 1995	03 Oct 1994
A	23 Jun 1995	04 Sep 1995	01 Feb 1995
BnA	15 Sep 1995	02 Oct 1995	01 Jun 1995
B	06 Oct 1995	08 Jan 1996	01 Jun 1995
CnB	19 Jan 1996	05 Feb 1996	02 Oct 1995
C	09 Feb 1996	15 Apr 1996	02 Oct 1995
DnC	26 Apr 1996	27 May 1996	01 Feb 1996

The VLA currently is scheduling two large surveys. One will be done at night in the DnC and D configurations (10 LST-24 LST and 14 LST-04 LST, respectively, for the 1996 DnC and D configuration), and one in the north galactic cap (07 LST-17 LST) in the B configuration. Observing time in those configurations and LSTs will be much reduced over past practice. On the other hand, observations disjoint with the surveys in those configurations will have more time available for scheduling than has previously been the case.

The maximum antenna separations for the four VLA configurations are: A-36 km, B-11 km, C-3 km, D-1 km. The BnA, CnB, and DnC configurations are the hybrid configurations with the long north arm, which produce a round beam for southern sources (south of about -15 degrees declination).

Approximate Long-Term Schedule

	Q1	Q2	Q3	Q4
1995	D	D,A	A,B	B
1996	C	D	D,A	A,B
1997	B	C	D	D,A
1998	A,B	B	C	D
1999	D,A	A,B	B	C

Observers should note that some types of observations are significantly more difficult in daytime than at nighttime. These include observations at 327 MHz (solar and other interference; disturbed ionosphere, especially at dawn), line observations at 18 and 21 cm (solar interference), polarization measurements at L-band (uncertainty in ionospheric rotation measure), and observations at 2 cm and shorter wavelengths in B and A configurations (tropospheric phase variations, especially in summer). They should defer such observations for a configuration cycle to avoid such problems. In 1995, the B configuration daytime will be about 17^h RA and the C configuration daytime in 1996 will be about 23^h RA.

Time will be allocated for the VLBA on intervals approximately corresponding to the VLA configurations, from those proposals in hand at the corresponding VLA proposal deadline.

B.G. CLARK

Q-BAND

Users of the 7 mm system should be aware that for line observations with 25 MHz bandwidth certain sky frequencies cannot be tuned. These "notches" occur at 42997.6 to 43002.4 MHz and 43047.6-43052.5 MHz and at intervals of 100 MHz from these frequencies, e.g., the next notches are at 43097.6 to 43102.4 MHz and 43147.6 to 43152.5 MHz.

D.O.S. WOOD

COMPUTING AT NRAO-NEW MEXICO

The VLA archive database can now be inspected via the WWW. It is accessible on the NRAO homepage, or directly using URL:

http://info.aoc.nrao.edu/doc/vladb/VLADB.html

It allows querying the VLA database using various user supplied criteria. The program will display a list of observations satisfying the selection criteria. The user can click on an item in this list to obtain a detailed view of the header information for that particular observation.

The database is a product of the tape archiving project, in which all VLA data are converted to the current data format and copied to high density Exabyte tape. To date, all observations from 1976 to 1983 and those from 1992 to present have been converted, and the VLA archive database is complete for these years only. At the current rate, it will take several more years before the whole history of VLA observing is available this way. Currently, data from 1991 are being converted and their header information is being added to the VLA database.

We strongly encourage you to try out this archive querying system; there is a "feedback" option which allows you to forward your comments and suggestions to us.

G.A. VAN MOORSEL

VLA DATA ARCHIVE UPDATE

"VLASORS," a program for IBM PC compatible computers, is available. It allows the user access to a list of all sources (excluding calibrators) observed with the VLA. Information on observing frequency, position, modes, proposal code, observer, number of antennas, total observing time, and other details about proposals are available through the program.

Included are observations up to the end of 1994. The user can search by source position, source name, and a few other parameters. Only observations longer than ten minutes are in the database. In addition, the program allows the user to search the standard VLA Calibrator list by position and name.

The current version of the program and data can be obtained from the anonymous ftp area (zia.aoc.nrao.edu) (sub-directory pub/vlasors) on zia at the AOC in Socorro, NM. Alternatively, you may request the update on a 3.5" high density only floppy. Contact Lori Appel at lappel@nrao.edu or NRAO, P. O. Box O, Socorro, NM 87801. In addition, available on anonymous ftp at the AOC in the subdirectory pub/vlaarchive are text versions of this archive and proposal information.

R.C. BIGNELL

OBSERVE

The most current version of OBSERVE is 3.2.13, dated 1995.03.20. Please use this version especially if you are performing Q-band observations. It is available via anonymous ftp from ftp.aoc.nrao.edu.

W.K. YOUNG

NRAO GUEST HOUSE

March 1995 completed the first year of the NRAO Guest House's occupancy. Comments from visitors during the first year indicate that the facility is a success. New landscaping of the courtyard and the surrounding grounds added the finishing touch to the house. A telephone being installed outside the front gate of the facility should be useful for the occasional calls of, "I locked myself out of my room!"

M.T. ROMERO

VLA/VLBA PROPOSAL INFORMATION

We recommend electronic submission of VLA and VLBA proposals. The experience with e-mail proposals has made this form of submission very reliable, with fast response from NRAO upon their receipt. This is in contrast to proposals sent by postal carriers which can be unexpectedly delayed, sometimes arriving in Charlottesville past the deadline. If you do send your proposal to NRAO by a postal carrier, please allow sufficient time for delivery.

The proposals, in Adobe Postscript format, should be sent by e-mail to "propsoc@nrao.edu." The deadline (the time when they are received in the "propsoc@nrao.edu" account) is the same as that for paper copies. To be acceptable, these postscript files must be printable on our printers; first time users (and all cautious users) should submit their proposals well before the deadline to allow time for iteration if your first version will not print properly. You will then receive an acknowledgment of the receipt of the proposal (and its status) within one working day.

Most proposals are successfully printed out on the first try. Some of the problems are caused by the assumption of DIN A-4 paper in our printer which results in pages that are chopped at the top. Please remember that our printers use the standard USA paper (8.5" x 11.0"). Another problem can occur when separate postscript files are concatenated to form the entire proposal. Do not place any non-postscript text between the files because this will cause printing errors. Also, it is simpler if the entire postscript file is sent in one e-mail message. More information is on the WWW.

Please send only one copy of your proposal to NRAO, unless requested to do otherwise. Unanticipated multiple copies of proposals by e-mail and surface mail cause confusion. Contact Joanne Nance at (804) 296-0323 (jnance@nrao.edu) for information about the receipt of a proposal.

Cover sheets are available as before via anonymous ftp from ftp.cv.nrao.edu. Both TeX template and postscript file are available with the command "get" after changing directory with the command "cd proposal" (see the file "instructions" in that directory).

M.J. USON

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