

# VLA/VLBA

# NEWSLETTER

From the World's Premier Centimeter Wave Radio Synthesis Telescopes

## PERSONNEL

Sue Peirick and Mary Finnell, NM Tech electrical engineering students, are working with Bill Erickson, Namir Kassim, Rick Perley, Gerry Petencin, and Jim Ruff to propose and build a prototype 75 MHz deployable dipole for the VLA.

Andre Baca has received a temporary, part time appointment to assist Chris Garcia in vectorizing drawings. Andre is also an engineering student at Tech.

Bob Brown, NRAO Associate Director, has approved the funds for a cooperative education student to begin work at the VLA in January 1998. An announcement has been distributed at NM Tech for an engineering student to work for Bob Broilo.

Jon Spargo will assume the responsibility of full time Safety Officer on January 1. Gene Cole will continue to assist ½ time. Jon already has an office at the Control Building.

## END OF THE SUMMER

Our annual farewell to the summer temporary workers and celebration of the summer's accomplishments took place on September 25. An estimated 93 people attended and enjoyed bar-b-qued beef, goat, salad, Ellen's rolls, and apple pie. We enjoyed green chile from the Molina kitchen, red chile from the Ary's, and bar-b-que sauce from the Lewis' Lisa Foley, Bertha Guzman, Chris Garcia and Shella Lewis prepared delicious salads. Richard Murillo provided music, Pat Lewis and the Track Crew cooked the meat underground, and the supervisors served the meal. Finally, Jacque Janes provided the goat.

Special guests for the party were visitors from nearby Double H Ranch, Nick and Amy Auker, and Cat Mountain Ranch, Ken and Jo Cason. Awards were presented to many employees and

our temporary workers were saluted for their contributions. Everyone enjoyed a great meal.

P. Lindsey

## NMVFO

Many thanks to Sandy Underwood and her friends at the New Mexico Volunteers for the Outdoors. The group cheerfully trimmed trees and bushes, weeded, painted parking barriers, and picked up trash on Sunday, September 7th, in return for an antenna tour. Godin Otero, Pete Zamora, and crew followed up with more tree trimming, cleanup of the master pad, and other work that has left the site looking as pretty as it has ever been.

C. Janes

## SCHEDULE

The VLA site has returned to the winter schedule. Most employees will be working 8:30 a.m. to 4:30 p.m., Monday through Friday. The bus will leave Socorro at 7:30 a.m. and arrive back at 5:30 p.m.. The noon shuttle leaves Socorro each weekday at 9:00 a.m. except for Mondays when it leaves at 9:30. It leaves the Control Building at 12:00 noon. The Operator shuttle leaves the site seven days a week at 8:00 a.m., 4:00 p.m., and midnight, leaving Socorro at 6:45 a.m., 2:45 p.m., and 10:45 p.m. There is an extra shuttle on VLA maintenance days, leaving the AOC at 8:15 a.m. and returning at 3:00 p.m., but is often full.

## LIGHTNING

Dave VanHorn produced a list of failures thought to be the result of a lightning strike at or near the Control Building on September 14. The bulk of the damage appears to be with equipment connected to telephone or other signal transmission lines leading outside the Control Building. One theory is that the strike at the Control Building caused a "ground lift" that in turn caused damaging voltage potentials across unprotected signal

lines. Lew Serna, Bill Brundage, and this writer are investigating and planning installation of additional protective equipment. NM Tech has been alerted to provide adequate protection on telephone lines during the installation of the new telephone switch.

C. Janes

## VLBA AZ WHEELS

Problems with premature bearing failure on the VLBA AZ wheel are thought to be caused by excessive thrust and under-rated bearings. We are building two spare drive wheels with half-flex couplings to protect gear boxes from excessive thrust and larger bearings better suited for the load. Drive wheels will be replaced on an as-needed basis. For idler wheels that slip radially, a locking collar has been designed that can be field installed. The wheel bearing problems were discovered during regularly scheduled VLBA maintenance visits.

J. Ruff

## VLA AZ BEARING

A fourth VLA AZ bearing was changed out, this one on Antenna 1, the oldest of the VLA antennas. In fact, Manuel Montoya remembers helping to paint this antenna in 1976. The bearing taken from Antenna 1 had a larger chord diameter than the AZ bearings replaced to date. Though the outer race of the Antenna 1 bearing was ruined, the inner race, spacers, and rollers were in good shape. Since a sizeable number of spacers on the previous three replaced bearings were broken but no spacers on the older Antenna 1 bearing were damaged, we are studying the differences in the two bearing designs to see if anything can be learned to reduce future bearing wear. Fortunately, a spare refurbished bearing with the larger chord diameter was available. Measurements are planned for all VLA AZ bearings to see if there are others with the non-standard dimensions.

The AZ bearing "pocket mill" was used for the first time to level the bearing support surface to within the 0.012"/90° tolerance. Use of the instrument saved \$30,000 over contracting with a vendor. New strain gauges made this year's procedure safer. Also, Transporter #2, with the modified wheel truck hydraulics transporter was used during the bearing change without incident. Before the modification, one of the trucks would lower unexpectedly.

L. Serna

## BUSES

Thanks to Richard Murillo, Art Pino, and Paul Savedra for driving two surplus MCI busses down from Idaho. One of the buses will be taken to Greenbank later in October to be traded for dump trucks.

P. Lewis

## COMPUTER NETWORK

Visiting from Greenbank was Ed Childers to advise Fred Dunn and Bob Broilo on the installation of a new fiber optic data communications network for the site. Installation of the new network is scheduled for December '97.

C. Janes

## POLICY ON SPILLS

Spills or overflows of gasoline, diesel fuel or any hazardous material liquid must be avoided. When they do occur, any liquid spill that is more than one gallon will be immediately reported to the deputy safety officer and in his absence to the fire brigade chief.

Topping off all fuel tanks every day and using authorized fuel tanks will help reduce contamination of fuel that can lead to a spill. Storage of flammable and combustible liquids, such as gasoline and diesel fuel, in open containers shall not be permitted. Approved containers for flammable liquids shall be of the type specified by NFPA and DOT standards. If you are not sure of what to use, contact the safety officer.

G. Cole

## SNOW DAYS

On snowy mornings, a message will be available by 6:30 a.m. advising of a delayed start and bus times by calling 835-7100. Clint Janes will call Pat Lewis, Ramon Molina, and Alison Patrick by 7:00 a.m. if there will be a delayed departure. Pat and Ramon will disseminate the information in Magdalena..

Alison will call those who come in from Datil. We will be following the same Emergency Operations Status procedures we used last year pending a final decision by NRAO management.

A. Patrick

## VLA UPGRADE

The AAB is assisting Rick Perley in measuring the effect on VLA antenna performance of adding weight at the subreflector. Upgrade plans call for a revised subreflector and FRM design which will add weight. Rick reports "no effect" on pointing of adding 600 pounds weight, which agrees with Jon Thunborg's Finite Element Analysis (see Newsletter, April 2, 1997).

Also, funding has been approved for adding VLBA Pie Town to the array using an existing WNM fiber cable. The addition will double the resolution of the VLA for certain observations.

C. Janes

## SAFETY REMINDER

Passengers must use an "authorized seat" when traveling in an NRAO vehicle, says paragraph 2.13 of the Safety Manual. Also, with all the emphasis on vehicles and seat belts, don't forget lock out/tagout!

C. Janes

## CYCLISTS

**YOUR BRAIN IS WORTH READING THIS!** Since some of you are considering using bicycles as an alternative method of traveling around the VLA central site, it is expected that you wear a helmet when doing so. Nobody expects to fall while riding a bicycle, but statistics show that in time you will. When you do, you must have head protection, since head injury causes 75% of all annual deaths from bicycle crashes.

To select the right helmet, look for a standards sticker inside. It should meet either Snell, ASTM or CPSC standards. If you find one with the ANSI Z90.4 standard, make sure it meets the updated 1996 version.

To use the helmet properly, it must stay on your head during an eventual fall, even when you hit more than once. It needs to have a strong strap and equally strong fastener that cannot be jiggled open. Above all, with the strap fastened, you should not be able to get the helmet off your head.

Also keep in mind that a bicycle helmet is strictly for falls. It does not make one immediately invincible, so don't take more risks just because you wear a helmet. And remember to obey all traffic and safety rules. Have a nice ride!

G. Cole

## FUEL CARDS

The new credit cards for refueling GSA vehicles have caused some problems for traveling employees. One problem was entering the access code and odometer reading into the electronic transaction system. The access code is always "00" plus the first four digits of the vehicle card number. For the odometer reading, use whole numbers, no tenths. If you still have problems and the station attendant is no help, dial 800-492-0669 for customer service. This number is listed on the back of the card, and is a 24-hour service to assist you at purchase or to locate a vendor.

S. Lagoyda

## OPERATOR MAINTENANCE

Recent incidents point out the need to report equipment that doesn't work right or procedures that are not safe. If the emergency brake or other safety equipment on your vehicle does not work, report it on the weekly Operator Maintenance Report. If you are using unauthorized containers for fuel, order the correct container. You owe it to yourself and your fellow workers to report unsafe conditions.

C. Janes

## DECISION DRIVING

All ES Division employees will be required to take the Decision Driving training either on October 14, or later in 1997 by scheduling another time with Gene Cole.

G. Cole

## JURY DUTY

If you report for jury duty, you must obtain a certificate from the court showing the times that you were present which must be attached to your time card. Fiscal will not accept reported "JD" time without a certificate, and the reported time must agree with the certificate. If you are released from jury duty early, check with your supervisor (see Newsletter June 4, 1997).

C. Janes