

VLA/VLBA NEWSLETTER

AOC LIBRARY
SOCORRO, NM

WEATHER STATS		
	HIGH	LOW
April	81.1 (27th)	20.7 (20th)
Record breaking winds up to 94.5 mph on April 18.		
T. Barlett		

From the World's Premier Centimeter Wave Radio Synthesis Telescopes

AROUND THE VLA

Congratulations to Frank Broaddus, who has been hired as a regular, full time Telescope Mechanic.

Congratulations to this year's AUI Scholarship winners: Phillip Grayson, Daniel Perley, and Jessica Ryan.

NMIMT is awarding Jon Spargo an honorary Master's degree in Astronomical Instrumentation for all that he has done at the Etscom Campus Observatory. The award will be presented at the graduation ceremony just south of Brown Hall. It should be presented near the beginning of the ceremony, which starts at 11:00 on May 13. NRAO employees are welcome to attend graduation, and a reception afterward on the other side of Brown Hall.

Reminder: Each Thursday at 3:30 time should be set aside for general shop cleanup. At the same time, please go through your vehicle checklists and turn them in. GSA checklists should go to the Warehouse and NSF checklists should go to the Auto Shop. Copies of the checklist forms are available from the form cabinet in the Control Building and from the Auto Shop. All vehicles on site should have the forms on clipboards. All vehicles should be checked and maintained often, and problems reported to Patty (GSA) or the Auto Shop (NSF).

Effective May 1, the amount of reimbursement to employees for the purchase of safety work shoes increased to \$85.00.

VLA MILESTONE

The VLA was dedicated on October 10, 1980, so will be officially 20 years old this year. This anniversary will be celebrated on May 24 with a bar-b-que and tours for employees, visiting scientists, and area

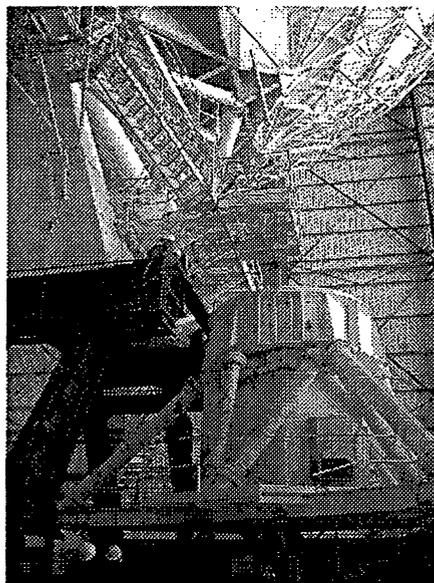
neighbors. The date was chosen to coincide with the "Gas and Galaxy Conference" taking place in Socorro. VLA Employees will do much of the work involved, from preparing the buildings, to setting up tables and chairs, to directing traffic for up to 500 visitors.

Another celebration for the VLA 20th Anniversary, followed by a tour of the VLA, is scheduled to take place on May 30 at the AOC with U. S. Senator Pete Domenici and Dr. Rita Colwell, NSF Director, attending.

P. Lindsey

GEARBOX REPAIR

The repair of the azimuth gearbox on Antenna #1 occurred flawlessly with the exception of a minor donut procurement problem and a one-day delay due to a foot of fresh snow. The yoke and dish were separated from the lower pedestal on March 23rd. The azimuth bearing was then removed and the gearbox was cut free from the antenna using an air arc metal removing process.



Separated Antenna

The gearbox had to be very precisely located with respect to the antenna azimuth gear. If the backlash (gap between the gear teeth) is less than 0.016", the gear teeth will interfere with one another. If the backlash exceeds 0.050", extreme forces will develop and damage the gearbox. Martin Lopez, who worked with E-Systems during the construction of the VLA, knew that the gearbox would pull toward the azimuth gear as it was welded to the antenna wall. This information was invaluable, enabling us to initially position the gearbox so that it would remain within tolerance after it was welded. Dial indicators verified that the gearbox did indeed move toward the azimuth gear 0.025" during welding. Because we were prepared for this movement, we ended up with a final backlash of 0.023", well within the specification. Buen jale, for having such a great memory, Martin.

This repair required cooperation from several different groups, including the Weld Shop, Transporter Shop, Antenna Mechanics, Servo Shop, Electricians and engineering staff. Thanks to the multitude of people involved in the antenna separation and gearbox repair.

J. Thunborg

NEWFANGLED PRINTING PRESS

We have installed a new printer for the VLA Site. It is a Color LaserJet 4500N, for all employees to use. We bought this printer to help take the load off of our aging collection of small printers and to save on printing costs. The new printer does both color and B&W (Black-and-White) printing, on both ordinary paper and copier-safe transparencies, up to 8.5x14". It is rated at 12 pages-per-minute B&W and 4 pages-per-minute color. It is capable of 35,000 pages per month, making it a true workhorse. We also hope to put a flatbed scanner nearby for color copies or photographic documentation.

I recommend using this printer for many-page printouts and color as it is faster, cheaper, and a higher-quality image than using a bubble-jet or small laser printer. For short, B&W jobs there is no advantage to using this printer unless you need the exercise walking to it! And engi-nerds will be disappointed that it doesn't do 11x17".

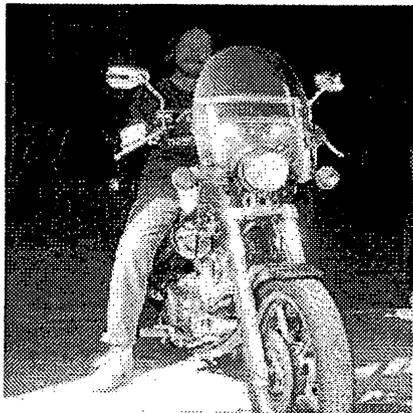
The new printer will be located in the Control Building next to the copy machine and fax. Thanks to Fred, Roy, and Lothar, it can be reached over the network as //paola/cbprint. The drivers are available on //paola/pub/cbprint-drivers. Eventually these locations will change when we get a real server.

This printer is for NRAO work-related jobs only. Don't send pictures of motorcycles, cars, elk, attractive human beings, you-know-what ;-) etc. Be aware that all print jobs sent to this printer will be logged. Also, don't use the color capabilities unless you need them. Color printing is much slower and more expensive.

B. Broilo

NLVLBA INVADED!!

D.J. Beard and Mike Burgert at North Liberty recently suffered an invasion. For 7 days, they played host to the most demanding guests around - the VLBA Tiger Team. We found plenty to do at NL, including a new apex handrail, two new azimuth wheel bearings, and new pedestal room HVAC unit.



D.J. Beard in Macho Mode

It wasn't all work. Mike had the whole crew over to his house one evening for a barbeque. His wife Natalie won the hearts of the whole bunch when she came up with a can of green chile for our steaks! Buen jale, Natalie!

J. Ruff

WHAT'S NEW IN CRYOGENICS?

Flexible helium line repairs and/or modification. In 1999, Cryo placed an order for ten flexible helium lines to be used on new installations and as spares on the VLA and VLBA antennas. The purchase price for the flexible lines totaled \$3,443.00. After some discussion with Tommy Montoya and Michael Zamora, they decided that with the right equipment, they could learn to weld and repair these lines. NRAO has a surplus of 150 flexible helium lines due to the modification of the helium plumbing on the antennas.

After comparing the cost of the new equipment versus the cost of new lines, we decided to purchase the equipment so they could give it a try. The initial investment to NRAO was \$4,000.00. As of this writing, they have repaired 27 lines of various lengths. If NRAO had purchased these lines from a vendor, we would be paying around \$7,800.00. Next on the equipment list will be a cut-off saw and a belt sander, which will save even more time and money.

R. Latasa

INSURANCE NEWS

Effective April 1, the Magdalena Area Medical Center was accepted in the Cigna PPO network as a preferred provider. Claims incurred on or after April 1 will be considered and paid by Cigna as in-network; those incurred prior to April 1 will be treated as out-of-network.

Effective June 30, Big Value Pharmacy will no longer be a member of the Cigna Preferred Provider Organization network. At that point, Furrs Pharmacy will be the only local provider participating in our network. Lists of providers in Belen and Los Lunas are posted on bulletin boards.

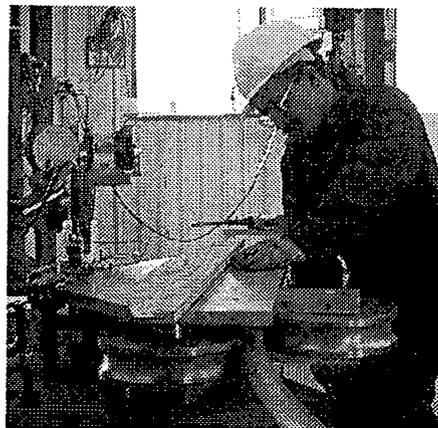
Also, the Personnel Office has done a survey of local dentists' charges for a number of procedures and what is allowed by Eastern Benefits. You may find this useful in making a decision regarding your family's dental care.

A. Lewis

SPAGHETTI MACHINE

Several curved sections of 1½" aluminum pipe are required to fabricate the VLA and

VLBA apex rails. The lowest vendor quote to roll the pipes into the correct radius was over \$1600. Jim Ruff designed a machine capable of rolling these pipes using almost all scrap material that was here on site. The dies that shape and bend the pipe were made by Don Ellis from discarded VLBA wheel assembly hubs.



Mel Rolling Pipe

Melcolm Peralta combined these dies with some discarded transporter parts to make a machine that successfully rolled all the tubes we need this year in less than three hours. Buen jale guys; we saved over \$1500 dollars and now have a new rolling machine. As more VLBA wheels fail, we will eventually be able to make dies capable of rolling other sections like steel angles and flat bar.

J. Thunborg

SITE & WYE NEWS

The Track Crew continues to make headway on the north arm drainage. If the rain will hold off just a little while longer, they will be done. As of this writing, the decision to drain the track from CN9 to BN5 has been approved and the crew is working on getting the whole nine yards done.

The Grounds Crew is still trying to finish the waveguide lightning protection check. However, no one is allowed to enter a manhole without first reading the oxygen content and all of the oxygen sensors on site have failed.

Charley has been asked for input regarding the cost of providing office space for ALMA. Wherever the offices are placed, Charley will have a great deal of work to do.

The Auto Shop is staying very busy. They try to keep up with PM's between repairs.

P. Lewis