

# VLA/VLBA NEWSLETTER

From the World's Premier Centimeter Wave Radio Synthesis Telescopes

OCTOBER WEATHER STATS	
HIGH	LOW
83.1° (1st)	-0.4° (17th)
Total Rain 3.11 (1.24" on the 12th)	
VLA Operations	

## AROUND THE VLA

Congratulations to those who completed the twelve hour rescue training courses conducted at the VLA on October 17 and 18. Those who completed the entire courses and received certificates for Confined Space Rescue were: Garry Morris, Shane Baca, Ed Gray, Rey Serna, Jaime Montero, Godin Otero, Johnny Gonzalez, Linds Major, Pat Lewis, and Bob Broilo. Completing and receiving certificates for High Angle Training were: Garry Morris, Phillip Sanchez, Steve Aragon, Shane Baca, Jim Ruff, Ken Lakies, and Marlin Smith.

On October 23 through 25, Bob Broilo traveled to Phoenix to attend classes on Electromagnetic Compatibility. The first day, the subject was "Systems Grounding and Shielding." The next two days covered "Designing for EMC."

Joe Sanchez has completed 32 hours training in the Dozer Course at the New Mexico Tech Equipment Training Program.

Patty Lindsey recently attended a two day seminar on business writing and grammar skills in Albuquerque.

To find the most current shipping and mailing addresses for all VLBA sites, click on: Network Neighborhood; Dusty; Sites; then the appropriate VLBA site. To use your web browser, go to: \\dusty.aoc.nrao.edu, then double click on Sites. You will need to have Microsoft Word installed on your PC.

Marie Glendenning and Lothar Dahlmeyer plan to be at the VLA site on Tuesdays for Personal Computer support. If you are having computer problems or need to have software installed, please let them know or email "helpdesk" with your request.

The AUI Trustees and the NSF/AFRL (Air Force Research Labs) toured the VLA in October. Ten NSF/AFRL members with Jim Breckinridge (NSF) toured on October 13.

About 28 Trustees and 12 spouses from various universities around the country toured on October 20. The tour consisted of visiting the Control Building and climbing an antenna. Refreshments were served after both tours.

## TREE CLIMBING K-9

The VLA seems to have a new resident. We always have many rabbits in residence, of both cottontail and jack persuasions. We have had many owls, cats, dogs, an antelope, a bat or two, and even a badger visit on occasion! Recently, what we have been calling a Kit Fox has been seen on a number of occasions "toodling" past the Control Building. It has been spotted climbing straight up a Ponderosa Pine tree. Those not witnessing this activity had trouble believing that it actually happened. A cat, maybe, but not a fox! Now we have photographic evidence!



Cat or Fox in the Tree?

Upon doing some research, it was decided that our new friend is most likely a Gray Fox. This is the only member of the dog family that can climb trees, usually to seek refuge or in search of food. It can reach a speed of 28 mph for short distances. The Gray Fox is usually 32 to 45 inches long, and weighs 7 to 11 pounds. It is peppery gray on top, with a

white throat, and reddish-brown on its sides. It has a long, bushy tail with a dark tip, pointed ears, a long pointed muzzle, and long, hooked claws. They eat mice, rabbits, birds, insects, and plants like corn, apples, nuts, berries, and grass. All in all, it seems this little guy is not a bad guest!

## WEATHER DELAYS

If the weather or road conditions between Socorro and the VLA Site are hazardous, Lew Serna (or, in his absence Jon Thunborg) will consult with Skip Lagoyda to decide whether or not to delay the departure of the bus from the AOC and postpone or cancel work for the day at the VLA Site. This decision will be made before 0630. A message will be posted on the 835-7100 number at the AOC.

Call chains will be initiated for employees living in Magdalena and Datil. The chains have been updated and distributed.

P. Lindsey

## RESCUE TRAINING

Maintenance personnel who conduct routine preventive and corrective maintenance on the antennas can be assured of a more successful rescue should the need arise. Maintenance groups like Servo, HVAC, Electricians, and the Antenna Mechanics must climb over all parts of the antennas - inside and out to perform their work. Painters use a dual lanyard fall protection system, which from the highest point would be approximately 100 feet off the ground. If workers were to slip while moving about the dish and their lanyard systems arrested their fall, they would start losing circulation to their legs in approximately 8-10 minutes. After 30-40 minutes permanent damage to their legs would begin to occur. Getting an incapacitated patient down from an object more than 100 feet off the ground is no easy task.

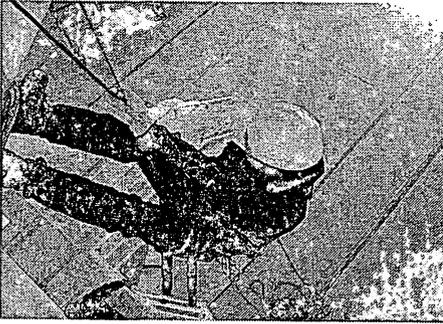
Three members of the WIPP External Emergency Management (ExEM) section's

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training team, Roy Burkham, David Lewis, and Jim Ammons, recently conducted special rescue training at the VLA. The training was conducted at the site in a cooperative effort between the VLA and WIPP, both of which are considered federal sites. The training is to assure that VLA maintenance personnel are capable of conducting timely rescues as required by Occupational Safety and Health Administration standards.



The ExEM staff at WIPP were contacted by Garry Morris, our VLA EMT Chief, because of the reputation the ExEM staff has acquired over the years. They conduct training for the New Mexico Firefighters Training Academy and for fire departments around New Mexico. Prior to the actual training, the WIPP trainers traveled to the VLA in June and conducted a site survey with Garry Morris and Gene Cole to determine the type of training and equipment that would be needed. The VLA then requested that the training be held after receiving new equipment, to ensure immediate timely rescues and excellent care of anyone who may be injured on the VLA antennas.

The training was conducted as a formal course in Confined Space Rescues and High Angle Rope Rescues. Cooperation between DOE and the National Science Foundation in providing this training has saved taxpayers thousands of dollars and enhanced the safety of workers at the VLA.

L. Serna

## BIG BAD BEARINGS

Earlier this month, Gene Dunn and Paul Johnson heard a loud pop as they were greasing the azimuth bearings on the Las Alamos VLBA antenna. They also noticed metal flakes in the grease that was extruded from an outside azimuth drive bearing. On October 17, Ramon Molina, Guy Stanzione, Jon Thunborg and John Wall traveled to Las Alamos and replaced the outside drive bearing. The bearing race and two rollers had shattered. Buen Jale to Gene and Paul for catching this problem early and shutting down the antenna before serious damage occurred.

Gene and Paul also noticed metal flakes in the grease on an elevation bearing. We have no way to inspect this bearing, but metal flakes in the grease always indicate severe bearing damage. This means that this bearing will need to be replaced as soon as possible. This is the first VLBA elevation bearing to fail, so we have no experience with this type of repair. The engineering staff at the VLA has been very busy trying to develop a procedure for the bearing changeout. The most daunting part of the task is to jack up the 200 ton 25 meter dish so that the bearing can be removed. There is no convenient place to position hydraulic jacks under the axle. Additional structure will need to be attached to the antenna to support the jacks. After consulting with some of our local experts, Steve Aragon, Ramon Gutierrez, Ramon Molina and John Wall, the engineering staff (Guy Stanzione, Jim Ruff and Jon Thunborg) has been generating solid models of the antenna and using finite element analysis to design this additional structure and evaluate the stresses that will develop within the existing antenna structure.

Items will need to be procured and fixtures built in order to complete this repair. Therefore, the repair will not be attempted until early December when the weather is at its coldest.

J. Thunborg

## THE "helpmain" COMPUTER ACCOUNT

Mainsaver is a commercial software package available in NRAO-NM for computerized maintenance management. The Operations, Electronics, and Engineering Services Divisions depend heavily on Mainsaver to track hardware problems affecting data quality on the VLA and VLBA.

Hardware problems are documented in Mainsaver by opening an appropriate work order. These work orders are reviewed in a daily maintenance meeting chaired by the maintenance coordinator, Dave VanHorn, or his backup, Tom Baldwin. This daily review ensures that hardware problems are rapidly resolved by the appropriate staff.

To maximize data quality on the VLA and VLBA, it is essential that "all" problems with hardware be documented in Mainsaver and discussed at the maintenance meeting.

If you have discovered a hardware problem, but you are not familiar enough with Mainsaver to use it to document that problem, we encourage you to email a description of

the problem to: [helpmain@aoc.nrao.edu](mailto:helpmain@aoc.nrao.edu). This new computer account is read regularly by the maintenance coordinator or his backup.

The helpmain account should also be used for all messages to Dave VanHorn that pertain to maintenance coordination. Thank you for your cooperation.

J. Wrobel, et al.

## WATER, WATER EVERYWHERE!

The storm began around 8:00 a.m. Wednesday, November 1st, in Hilo, Hawaii, and didn't begin to taper off until late Thursday. The heavy rains and thunderstorms moved in from the south, sending water raging through roads and neighborhoods. Flood canals overflowed and many clogged with debris, forcing water onto streets. Some homes, like two just down the road from my own, were swept off their foundations and carried across the street. I experienced some minor flooding in my basement. I did lose some lawn equipment and farming supplies in and around my barn, which was two feet under water. My family and animals were very fortunate since the major flood waters passed through the middle of my pasture, which is about 150 feet from my house. We had a river of water eight feet deep and 200 feet wide that tore through my fences and ripped apart my neighbor's greenhouses. I live in the upper Waiakea Uka district of Hilo and had a little over 29 inches of rain in 24 hours.

In lower Hilo, forced evacuations and heavily damaged houses were scattered throughout. Some homes had rivers three feet deep flowing through them. Most roads were inaccessible. Some roads will take weeks to reopen. No immediate assessments of the damages yet. Hilo airport recorded 27.8 inches of rain in a 24 hour period, passing a record set in 1979 of 22.3 inches. Electricity was out for about 12 hours due to lightning strikes and power poles washing out.

Janis Hamersma lives just southeast of Hilo in the Puna district. They were cut off from town for most of the day due to a damaged bridge. They didn't experience much flooding due to the volcanic nature of the area, although they were without power or water for 18 hours.

Bill Hancock got his yard watered for free with only about an inch on the west side of the island.

T. Sylvester