

VLA/VLBA NEWSLETTER

From the World's Premier Centimeter Wave Radio Synthesis Telescopes

AROUND THE VLA

The ES Division will undergo a reorganization on November 1. Clint Janes has accepted the position of Electronics Division Head. The new ES Division Head will be Lew Serna, with Jon Thunborg taking over the Deputy Division Head duties. Congratulations to all!

This year's "End of the Summer" party will be on October 7 in the cafeteria. We will say goodbye to our summer temporary workers, whose last day will be Friday, October 8. The Track Crew is already preparing for their pit bar-b-que.

Ken Lakies and Emma Rice are the newest members of the NM Personnel Recreation Association. They volunteered to finish out the terms of departing employees. Emma will serve as treasurer.

Martin Lopez attended a review course and passed a test to continue his New Mexico state crane license.

Magdalena High School has provided a student to help with computer data entries. Leo "Yo" Meyer helped Lew Serna with MainSaver entries and is now understudying Emma Rice.

Jack Landes and Nathaniel Dale are two Tech students who will be doing a senior design project on the VLA this academic year. Bob Broilo will be their sponsor.

A site technician from each of the VLBA sites will be here for a Station Technician Workshop October 18 through 21. Attending will be Tony Sylvester (MK), Mike Burgert (NL), Doug Whiton (HK), Herb Winchell (SC), Mark Hofmann (BR), Ray McFarlin (OV), Gene Dunn (LA), Jack Meadows (KP), and John Smith (FD).

Ellen Ary sewed up the cafeteria curtains in time for the end-of-summer party. They look so much better, buen jale, Ellen!

The old brown carryall that used to belong to the Servo Shop needed new mufflers – two of them – at \$250 each. The Auto Shop installed glass packs instead at \$30 each and saved \$440! Vrrrooom.

The Transporter Crew reports "no problems" with the transporters so far during the move thanks to good maintenance and the new Unibomber control panels. Thanks Dave!

Those beautiful pine trees in front of the CB are Ponderosas according to NM Tech Landscape Manager Karyn DeBont. Because the trees look a little brown this year, Karyn sent leaf samples to an expert in Santa Fe for evaluation. She says we are going to have to pull the plastic away from the roots and perhaps improve drainage.

The site belonged to bugs and animals long before the VLA, so swarms of beetles and herds of antelope are common. September saw the Invasion of the Frogs; one morning Alison had 7 little frogs in her office. Another day, a hawk got lost in the CB Electronics Shop, but with a little help, found his way to freedom.

Alison Patrick procured a defibrillator for the sire EMT crew from state funds. Training is planned soon.

The Visitor Center "slide" show entered its fourth generation when the VCRs were replaced this month with a PC and hard drive. Ken Lakies digitized the video and audio from the existing show and proved the concept. The Stephan Witz took over the programming and produced and installed a multimedia system that works great.

ENERGY SURVEY

Energy surveys are nothing new at the VLA. There have been several documents found in the files dealing with conserving energy at the site. We still have old energy stickers by the light switches in some rooms.

In recent years antenna vertex room air conditioning controls have been converted to direct digital controllers (DDC). This upgrade has reduced site kilowatt hour (kwh) consumption by 8-10% or one million kwh per year. Quite a savings; at today's kwh cost about \$70,000 is being saved annually because of this modification.

This year the site energy survey will focus on developing a list of areas and items to address in the coming years and budgets. Payback analyses will be performed on some major items. There are energy savings to be had by just simply upgrading older, inefficient equipment. As an example, the control building chillers are old and replacement compressors cost almost as much as a new chiller. But, the new chillers operate more efficiently, using fewer kilowatts (approximately 10%-20% less at full load or 145,000 kwh/year). The electric savings with the new chillers would translate into about \$10,000 annually at full load.

Some historical usage data is also being collected as part of the survey. You can help by turning off your lights and turning down your thermostats when you go home at night.

G. Stanzione

RETIREMENT

Missed Larry Chadwick's TIAA/CREF retirement presentation? It is never too early to plan your retirement savings. Set your browser to www.tiaa-cref.org for retirement information or borrow some videos to view with your spouse. Ask Theresa McBride or call TIAA direct at 1-800-842-2776 for a list. Also, Roy Norville in Charlottesville has a video of Larry's presentation. You will need a PIN to access your account information via the Web; call the 800 number above to get one.

C. Janes

SITE & WYE NEWS

The Track Crew has been very busy. The Highway 60 crossing had to be replaced and two intersections on the East Arm (AE-8 & 9) had to be rebuilt. The crew moved the equipment onto the east arm because the NMSHD seemed to want to delay the Highway 60 crossing repair. After the equipment was on the East Arm and dismantling of the intersections had begun, the NMSHD District Maintenance Engineer in Milan decided that the crossing should be done. The Track Crew had to move all their equipment back to US 60 and set up for the road crossing job. They set up on Monday, August 30, and replaced the two tracks over the next two days. It took twelve hours each day. Then they moved back to AE-8 and 9 and are in the process of completing the intersections. Hopefully, the North Arm will be dry enough for the crew to finish aligning and tamping the trackage.

The Grounds Crew is still busy pumping out wave guide manholes, some of which have never leaked before. We needed the rain, but for these guys, it has been a lot of work.

P. Lewis

PAINT GUN

We recently purchased a high volume, low pressure paint gun for the paint booth. John Wall had seen one in operation in St. Croix and noticed the difference in the reduction of overspray. The painting was being done in a very confined space, and the amount of overspray would have given the painter zero visibility with an ordinary paint gun. Also, the new paint gun required reduced filter changes in the paint booth and a substantial reduction in paint use. This can add up very quickly with the expensive paints and primers we use at NRAO. In fact, it looks like the savings are one and a half pints per gallon of paint used with the new Brinks HVLP Paint gun. We have both done a fair amount of painting and feel this is a very good investment for NRAO.

M. Smith & J. Wall

WHEEL POPPING/KP

The Kitt Peak VLBA Site technicians Nick Jesch and Jack Meadows noticed popping sounds coming from an azimuth drive wheel. Ramón Gutierrez and Steve Aragon traveled to Kitt Peak to investigate. Ramón and Steve tightened the wheel coupling bolts, but the popping noises persisted. They then did a thorough inspection of the wheel bearings

and found that the race on an outside bearing was pitted. They replaced this bearing and reassembled the wheel. This did not cure the popping noises.

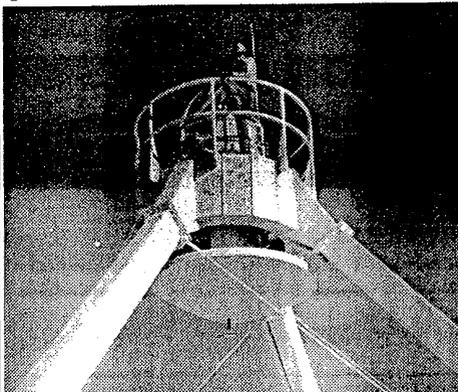
The popping noises persisted even when the rail was greased. This is an indication that the noise is not originating from a poorly aligned wheel sliding on the rail. As a final check, Ramón and Steve jacked up the antenna and ran the wheel and gearbox without a load. The popping sound was not heard when the load was removed.

Popping/pinging in VLBA drive wheels is not new. We have several antennas that have noisy wheels. However, changes in the popping regularity or loudness could be a sign of trouble. VLBA site technicians should always use both their eyes and ears when inspecting the antennas.

R. Gutierrez

APEX RAILING

Jim Ruff and the Antenna Mechanics installed a railing at the apex of antenna 24 for evaluation. Servo, Front End Electronics, Electricians, and Antenna Mechanics all have tasks that require apex and "barrel" access so some sort of protection is required and a good idea. But adding equipment in the apex area can degrade data quality, so further studies are planned before more railings are installed.



Apex railings for the VLA? Ramon Molina ponders the question.

WHAT TIME IS IT?

Those new time displays at the VLA Operator's console are hard to miss, but what is IAT and LST? If you want to set your watch, do not use either one. The best you can do is use the digital display in the maser rack in the CB electronics room which displays UTC, not Mountain Time. Watch out for the clock in the computer room because it might be displaying IAT instead of UTC. The clocks

on the wall in most site buildings display Mountain Time but are controlled from a master at the Cryo Shop, not the clocks used for observing. The master counts cycles from the electrical power lines, so if the site is on generators or power has been off, the clocks can be off several minutes to several hours. Time displays from computer screens can be off, too, because of delays in the computer operation and communication links.

UTC is Universal Time Coordinated. Our local time in New Mexico is UTC - 7 hours in the winter (MST) and UTC - 6 hours in the summer (MDT). UTC is transmitted very accurately on the Global Positioning Satellite (GPS) system. LST is local sidereal time and IAT is International Atomic time. Both are important for astronomy but not for bus departure. For more information on time, see the "Explanatory Supplement to the Astronomical Almanac" in the site library.

C. Janes

NEW SIGN AT AOC

A new sign at the AOC in Socorro announces in large bold letters that NRAO is "a facility of the National Science Foundation." The Division of Astronomical Sciences at NSF recently announced a strategic plan for NSF-funded astronomy which includes NRAO. The report starts with a few "over-arching" scientific questions that provide long-term direction for astronomy:

1. How did the Universe begin, what is its structure and geometry, and what is its ultimate fate?
2. How did galaxies and clusters of galaxies form from the intergalactic medium, and how do they evolve?
3. How are stars and planets -- including the Sun and our Solar system -- formed, and how do they evolve?
4. How can the cross-disciplinary connections between astronomy and physics, biology, chemistry information science, or other areas be explored and exploited for mutual benefit?

The full plan is available at www.nsf.gov/mps/ast/strategicplan/summary.htm. The Director for the NSF Division of Astronomical Sciences is old VLA friend Hugh Van Horn. The new sign at the AOC was professionally installed by Charley Chavez, Godin Otero, and Johnny Gonzalez.

C. Janes