

VLA/VLBA NEWSLETTER

From the World's Premier Centimeter Wave Radio Synthesis Telescopes

AROUND THE VLA

So long to Tom Henderson who helped us in the Machine Shop until Garry Morris made it back.

Farewell and good luck to Frank Broaddus, Elaine romero, and Mary Ellen Sanchez who braved the windy and rainy weather to paint VLA antennas this summer.

Congratulations to Dave VanHorn and Steve Aragon for winning mugs in the Engine "2926" raffle.

The Transporter Shop can now transport gas bottles safely with the new rack they constructed for the Shop pickup.

Thanks to Ricky Rael and the Weld Shop for those new covers on the 55 gallon trash barrels around the site. The lids will keep the trash in and the water out.

The Grounds Crew reluctantly pulled out the overgrown evergreens blocking sidewalks in the VSQ and CB area. The plan is to replace the giant bushes with slow-growing low evergreens that will require less care.

Twenty years ago this month VLA antenna 20 was declared operational and antenna station BE6 was occupied for the first time.

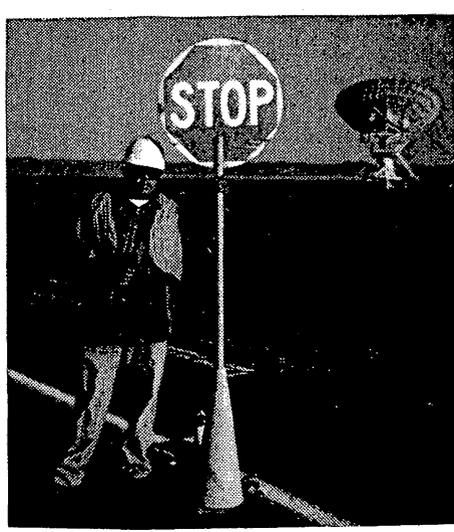
John Haggis, a mechanical engineer at England's Merlin project, and John Brooks, Mike Kestevan, Barry Parsons, and Malcolm "Mel" Sinclair from the Australian Compact Array all visited in August.

BACK TO 5-8'S

It's that time again. A couple more hours of sleep in the morning :) but no more three day weekends :(We go back to winter "normal" hours (8:30-4:30) beginning September 20. Remember to re-set your alarm clocks on Sunday night.

A. Patrick

SITE & WYE NEWS



Fernando Torres Flagging During Work on the Highway 60 Track Crossing

The Highway 60 crossing was rebuilt & elevated to allow for future paving of the roadway. Each half of the crossing takes about fourteen hours, which makes for 2 long, long work days. A lot of prefabrication & preparation of equipment was required prior to starting the actual replacement of the crossing. The VLA Track Crew worked with NMSHTD Datil Yard Crew to accomplish this task.

Not only did the north arm flood in August but leaky waveguide manholes kept Godin Otero and Johnny Gonzalez busy pumping water. One manhole was completely full. Pressurized dry nitrogen in the waveguide has kept water from seeping into the critical communication link so far. Godin even spotted two sand hill cranes at a wet spot on the east arm that Godin refers to as "the refuge."

A pump at CN8 drains the near north arm for 24 hours a day at up to 250 gpm but it needed help from a second pump at 350 gpm. Even then, it took nearly a week to catch up with the flooding at the low spot from CN6 to CN9.

Standing water can weaken the track bed and the antenna foundation. One Track Crew member fell in while deploying the drain hoses and had to swim to shore. Tales of alligators and leeches are unfounded, however.

P. Lewis

THE HOOTIS

The encoders on the VLA antennas are what tell the antenna where it is looking in the sky. Our old encoders are needing a huge repair effort to keep working. We have designed and installed two new encoders on antenna 24. Ron Weimer adapted a design by Dusty Clark at the MMT0 using new chips, then Bob Broilo designed and built two prototype encoders with the help of Dave Alderman, Wayne Koski, and the other Servo dudes.

The new circuit is: cheaper to repair, more reliable, quicker to install, more accurate, more stable, software configurable, has far greater resolution, and uses a fraction of the power of the old circuits. Of course, all this is useless unless it works in the field, so we're watching antenna 24 closely as it works with the new encoders.

B. Broilo

AAB NEWS

With the increased work load in the welding shop such as the fabrication of the new feed cones segments, VLBA platforms, Apex fall arrest systems, encoder housings and numerous other ongoing welding projects, we have decided to appoint a lead person in the Weld Shop. Steve Aragon has been assigned welding shop lead person and will take a leadership role in coordinating the planning, scheduling, fabrication and installation of welding shop projects. And as lead person he will assist the Antenna supervisor in other leadership matters as directed. Please support Steve with his new responsibilities.

Antenna painting was finished on August 25. We lost about 400 man hours due to rain, wind, wind direction and lightning. We used more than 23,000 gallons of water, 80 gallons of Acrylic paint, 66 gallons of Siloxand, 130 gallons of Amerlox 400, and 65 gallons of #12 thinner. This information came from the records Mary Ellen Sanchez kept. Thanks to Jimmy and the Paint Crew for the good work!

R. Molina

TIGER TEAM VISITS

Bad bearings in the azimuth drive wheel assemblies were discovered at both VLBASC and VLBAHN during Maintenance Team visits this summer. The team will change out the wheel assembly at Saint Croix in October. During the visit, the team will take another stab at adjusting the subreflector and correct a long list of deficiencies introduced by corrosion at that seaside site.

The team replaced the window air conditioner at Hancock with a Marvair (TM) unit. So far four VLBA sites, Mauna Kea, Saint Croix, Brewster, and now Hancock, have the new units. The Marvair units provide both heating and cooling, and include an "economizer" mode which vents ambient air when the outside temperature permits. All VLA antennas are already equipped with Marvairs.

Full reports on the VLBA maintenance visits and the corrosion at Saint Croix are in the VLBA Antenna Memo series.

J. Thunborg

WILDFLOWERS!

The rains have transformed the Plains of San Augustin into an enormous garden of flowers. Those fields of solid purple that you see on the way to Datil are asters. There is also an abundant variety of yellow flowers. The native sunflowers, for instance, seem to prefer the area between Montosa and the Highway 52 turnoff. The fields of low-growing 4-petal yellow flowers on the way to Datil may be a member of the mustard family in which case they probably came from Europe. Another plant that Godin Otero calls the "lemoncillo" has tiny yellow flowers and very thin leaves. If crushed, the plant gives off a lemony aroma; and Godin claims the plants make a good tea. Allen Lewis recalls as a boy growing up in Magdalena that all these flowering plants were called "weeds-you-need-to-pull."

C. Janes

TOO SHORT

Jack Meadows dutifully filed a maintenance report and called the VLA Servo Shop after he found a groove on the armature of one of the azimuth drive motors on the VLBA antenna at Kitt Peak. The Servo Shop immediately shipped a replacement armature. All routine so far. Jack, Site Manager at KP, took the motor all apart to put the replacement armature in, and oops, the replacement was 3/4 inch too short. What happened?

Drive motor armatures have been replaced at several VLBA Sites over the last couple of years, and returned to the manufacturer for repair or re-build. For some mysterious reason, when this armature was re-wound and re-built, it came out to be short of the original specs by 3/4 inch. At first it was feared that KP's motors were "special" or non-standard, but subsequent measurements of the motors on the Servo Group's simulator and at VLBA PT, have pretty much convinced us that the problem lies with our replacement armature and not with KP's motors. The Servo Group will be sending a simple procedure to the remaining VLBA Sites to measure their armatures, so we can be certain that indeed there are no special motors lurking out there. The next step will be to return the suspect armature to the manufacturer for replacement.

Because the wrong armature leaves us with no spare, the Servo Shop plans to replace the KP motor with one from the VLBA test stand. The same action will be taken for a non-standard VLA drive motor that was installed on VLA Antenna #9 several years ago.

T. Frost

POWER TEST

At 8 a.m. on August 10th, Ed Gray said, "I hate doing this," and switched off power to the Control Building. Ed turned the power off to test how well we can recover from a power outage. Last April, it took 20 hours to bring the array back on-line after a 2 hour outage.

For the test in August, the UPS batteries were run down so that all the computer systems lost power. Then Ed switched power back on and the recovery began. This time it took only 81 minutes to recover, but we can do better. See VLA Test Memo 221 for details.

L. Serna

LOCKOUT/TAGOUT

Gene Cole reviewed the VLA lockout/tagout requirements during August. Here is a question/answer session to review some of the points:

Q. Are both the LO tag and the information tag required for LO/TO?

A. Only the (ID) tag is required for LO/TO. The information tag keeps others informed when more than one group is working on equipment.

Q. Should ID tags be individualized?

A. Yes, everyone using LO/TO should have their own ID tag.

Q. Should we remove the emergency stop from the antennae?

A. No, there are non-LO/TO jobs that require the use of the e-stops.

Q. Should we stock and issue circuit breaker LO's?

A. No, the shops have equipment disconnect switches to use. In most other cases only electricians need to lockout circuit breakers.

Q. Does the procedure in the Safety Manual for cutting locks need to be clarified or expanded on?

A. Yes, the Safety Department plans to address this issue.

Q. There is concern that trying AZ and EL motion after locking out requires an ACU reset.

A. The posted procedure says what to do.

Q. What is the difference between affected and authorized persons?

A. The authorized employee is "the person" applying the LO/TO. The affected employees are those working in the area affected by the LO. For instance, if three people are working "together" using a single LO, two are considered affected employees. The one who applied the LO is the authorized employee. And all other employees working in the locked-out area are considered affected.

G. Cole

SNOW? BUT IT'S ONLY SEPT!

Well, it's not unheard of. We could get snow in September, But no matter when it happens, remember the number to call at the AOC to find out if the bus will be late....835-7100.

A. Patrick