

VLA/VLBA NEWSLETTER

AUGUST WEATHER STATS

HIGH	LOW
91.8° (3rd)	41.9° (31st)
August Rain Total 2.48"	
VLA Operations	

From the World's Premier Centimeter Wave Radio Synthesis Telescopes

AROUND THE VLA

Welcome to Carl Oler, who has been hired as a part time custodian, and has been helping the Carpenter Shop full time for a while with sidewalk repairs at the Control Building and the renovations in the Control Building Annex, including creating five new offices.

Welcome to Orlando Chaparro, who is a third year Mechanical Engineering Student at NMIMT. He'll be working in the drafting department converting rasterized drawings to useable autocad drawings.

Our "summer schedule" of four 10 hour days each week will come to an end on September 22. Most site based employees will return to the 8:30 to 4:30 Monday through Friday schedule on September 25.

Since VLA Operators usually only see each other during shift change, they regularly get together for meetings. On August 30, their regular meeting was held at the VLA Site so that Bob Broilo could demonstrate some of the equipment they operate when they push buttons from the Control Room. The Operators, Phillip Hicks, Joan Wrobel, and Dave VanHorn were given a tour of the chillers and the Generator Room.

Ricky Rael spent the last couple of weeks doing some much needed heavy duty cleaning on the kitchen area in the Cafeteria. He and Carl Oler also waxed and buffed the floors in the Dining Room and Conference Room areas of the Cafeteria. It looks great!

DISTINGUISHED VISITORS IN AUGUST

NSF Director Rita Colwell and Jim Breckinridge (NSF) "Program Manager, National Radio Astronomy Observatory" toured the VLA Site on August 23. The tour

group consisted of Rita Colwell, Jim Breckinridge, Paul Vanden Bout, Miller Goss, Peter Napier, Claire Chandler, Dave Finley, Jim Ulvestad, Joan Wrobel, Debra Shepherd and Lew Serna. The tour began with a visit to Antenna 17, which is freshly painted and has most of the latest modifications and retrofits. Rita took several pictures from the edge of the dish.

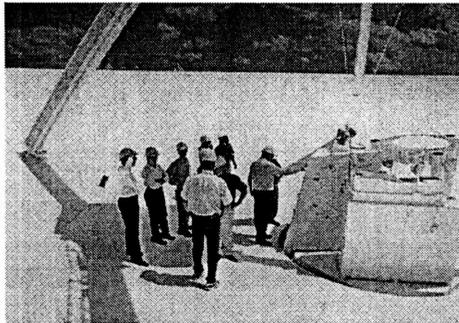


Photo by K. Gatlin

The Antenna tour was followed by a brief visit to the Control Building where Joan Wrobel and Larry Brothers eloquently explained the Operations of the VLA. Jim Ulvestad articulated the Pie Town Fiber Link hookup while Paul VandenBout and Ray Ferraro summarized the intricacies of the Correlator.

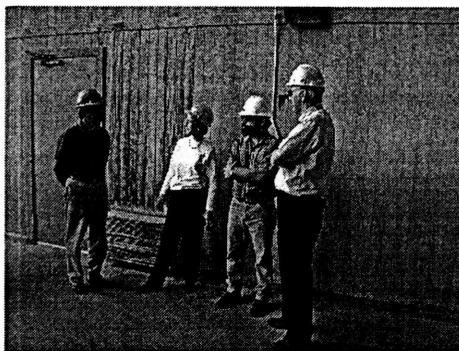


Photo by K. Gatlin

A trip to the Antenna Assembly Building was next, where Ramon Molina greeted the group. Transporters, track, overhaul schedules and

maintenance activities were discussed. Even the famous Barn Owl was spotted (seen).

Finally, the tour wrapped up at the Visitor Center where Dave Finley explained the public relations side of the VLA. It was a privilege to have Rita Colwell visit the VLA. Miller Goss thanks everyone for a job well done.

L. Serna

TRANSPORTER PUMPS

Three hydraulic pumps on each transporter are used to transfer energy from the diesel engine into hydraulic power on the VLA Transporters. These pumps are getting old and failures are becoming more common. Replacing pumps only after they completely fail is very risky, as metal particles from a broken pump can contaminate the oil and destroy the remaining operable pumps and other hydraulic components.

A pump test stand was assembled in the Transporter Shop by Martin Lopez, Marlin Smith and Tom Olney using flow meters built in the Machine Shop by Garry Morris. This test stand allows pumps to be isolated and tested individually on the transporter. Flow meters were also installed in the case drain line of each pump so that the internal pump leakage could be monitored. Internal leakage is a very good indicator of pump wear. If the leakage gets too high, the pump case will break and completely destroy the pump.

The test stand was used to evaluate the condition of all three pumps on Transporter #1 and two pumps that were previously removed from transporters. The news was not good. Of the five pumps tested, two are totally unacceptable and a third is badly in need of a rebuild. (We have not yet tested the three pumps on Transporter #2.) The first pump, a rebuilt spare nicknamed

"Frankenstein" because it was assembled out of scavenged parts, was not working but may be repairable by precision lapping several of its parts back into specification. Lapping is a process where the part is rubbed over a flat cast iron block charged with diamond dust until its surface is extremely smooth and flat. The other spare pump has a damaged valve plate, so is not cost effective to repair. The third pump, currently in use on the transporter, has excessive case drain leakage and is not pumping at full capacity. This pump is in need of a rebuild.

The pumps cost about \$18,000 each to replace and up to \$15,000 each to rebuild depending on which parts need to be replaced. The company that makes the pumps is phasing out production of this style pump. Each transporter requires three pumps, plus we need to keep at least one spare on hand. Since we are nearing the lifetime of our existing pumps, we must decide whether we should stockpile a few of the old style pumps before they go out of production, or retrofit the transporters with newer model pumps. If we go with the newer model pumps, we will have to buy three pumps at a time to avoid compatibility problems between the new and the older pump controls.

Mark Hlad, from Sunsource Hydraulics (the distributor for both the old and new style pumps), visited the VLA and determined that the pumps failed for two reasons. The first is oil contamination. The galvanized steel pipe and tubing used to plumb the transporters began to flake off and damage the internal components of the pumps. This was realized several years ago and all of the galvanized tubing was replaced, and modern oil filtration systems were added. The second reason for the pump failures is that the hydraulic pumps are used as brakes when decelerating or going down hills, which causes the oil to cavitate on the low pressure side of the pump. This erodes the pump valve plate. The newer model pumps eliminate this cavitation with a combination of internal check valves.

J. Thunborg

SAFETY COMPUTER GLASSES

NRAO has announced a new program to supply qualified employees with a pair of glasses suitable for use at a computer terminal, workstation or PC. The program will work essentially like the current Safety Glasses program with of couple of

modifications. Once determined to be eligible, the employee will be responsible for an eye examination. The glasses will be provided by NRAO and will be paid for out of appropriate Division budgets. To qualify for and obtain computer glasses please use the following procedure.

1. Contact the Safety Officer to set up an ergonomic evaluation of your computer work area.
2. If the evaluation indicates the need for computer glasses, obtain an authorization form from the Safety Officer and have it approved by your Division Head.
3. Have an eye examination. Be sure to tell the doctor that it is for computer glasses. The Safety Officer will give you some measurements to show the doctor. Have the eye doctor measure your pupillary width as part of the exam.
4. Take your completed authorization form and prescription to the Safety Officer. The Safety Officer will assist you with frame and lens selection and then order your glasses.

NRAO will only cover the cost for frames, single-strength lenses or bifocals designed for the distance from the computer. This means the upper part of the lens is for the computer screen while the bifocal segment is for normal reading. Normal distance vision bifocals, trifocals and progressive lenses are not approved for this program.

Jon Spargo

MISSION SAN JUAN CAPISTRANO AT THE VLA

If you have visited the site lately, you will have noticed many birds with a white stomach, a red throat and a long forked tail, flying around the Control Building. These birds would be "Swallows" (*Hirundo rustica*). Swallows are a variety of cliff dwelling birds and well known migratory birds. When Swallows migrate in spring, they immediately begin looking for textured surfaces to attach their nests to. A nest is built out of mud and blades of grass, usually under the eaves of houses and buildings for protection from rain and such. At the VLA the VSQ's, Cafeteria and Control Building offer the proper textured surface and protection for their mud nests.

Keeping nests from being built involves dealing with each nest as it's constructed, or denying the birds access to the location before they begin building. At the VLA we usually use a hose to wash nests out, or knock them down with a long-handled pole or broom. We

make sure nests are just being built and don't contain eggs or young. Once swallows have laid eggs or have young in a nest, it is against federal law to destroy or disturb the nest in any way. Shooting or otherwise harming Swallows is against federal law.

This year we failed to take adequate measures to prevent their nest building and in gratitude they have destroyed thousands of annoying insects and graciously decorated our windows and sidewalks. Next year, in order to avoid possible health risk, we plan to begin Swallow control measures before the birds begin to breed.

L. Serna

THE NRAO/NM HELP DESK

In an effort to provide prompt computer service, the NM Computing Systems Group has a Help Desk that can be reached in the following two ways.

1. Room 267 at the AOC is the Help Desk office and its phone number is 7213. This office is staffed Monday - Friday, 9:00 a.m. - 12:00 p.m. and 1:00 - 4:00 p.m. For immediate or in-person assistance, please direct Windows or Unix computing problems here first.

- If you require immediate assistance before 9 a.m. on weekdays, please see James Robnett in room 258 at the AOC, phone number 7226.

2. We also have a simple 'Ticket System' software available to assist in tracking problem reports and computer work requests. Help Desk tickets can be created in the following two ways:

- By emailing helpdesk@aac.nrao.edu and
- By pointing a web browser at <http://helpdesk/>

The Help Desk system is intended to provide computer support for *both* the VLA and the AOC. We ask that all computing problems be directed to the NM Help Desk. This will free up the off-duty system administrators to work on assigned projects.

- Help Desk Staff Schedule:

Monday - Thursday, 9 a.m. - 12 p.m.:

George Martin

Monday - Friday, 1 p.m. - 4 p.m.:

Allan Poindexter

Friday, 9 a.m. - 12 p.m.: Stephan Witz

NRAO/NM Computing Systems Group

REMINDER: Vehicles are allowed inside the Antenna Assembly Building ONLY for loading and unloading.