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VLA/VLBA NEWSLETTER

JUL 1 2 2000

WEATHER STATS		
	HIGH	LOW
June	90.9 (15 th)	39.2 (5 th)

VLA Operations

From the World's Premier Centimeter Wave Radio Synthesis Telescopes

AROUND THE VLA

Welcome to our new VLA Operator, Colleen Gino!

Congratulations on the recent promotions of: Richard Murillo to Tech Spec III; Jimmy Sanchez to Senior Telescope Mechanic; Marlin Smith to Tech Spec II; and, Tommy Montoya to Tech Spec III.

Joel Domschot and Brent Avery have recently completed training as First Aid Responders. Also, there is now a first aid station located in Room #3 of the Technical Services building - it's well outfitted with a gurney and medical supplies for minor injuries and illnesses that can be taken care of on site.

ANNUAL NMPRA PICNIC

Steve Aragon and Rich Murillo walked away with the \$20 prize for the horseshoe tournament at the NMPRA company picnic held on June 17. Held at Sedillo Park, the event featured barbeque by K-Bobs, draft beer by Roadrunner Lounge, music by Murillo, hay bales from Lakies' Farms, and old-fashioned contests like pie-eating, egg-tossing, and rope-pulling by various board members. George Martin was last seen headed for the Help Desk with the water cannon he won as a door prize. The weather was great and the PRA thanks Jaime Montero and Tony Guerrero for helping set up the tent early Saturday morning.

C. Janes

SYNTHESIS AND IMAGING TOUR

During the month, a Synthesis and Imaging School was held in Socorro. At this school, graduate students from all over the world learned how to use the VLA and its associated software. The students provided their own travel and paid a small fee to

attend this class. On Sunday, June 25, these students were given a behind the scenes tour of the VLA. Several NRAO Employees gave up their Sunday to give demonstrations or act as tour guides. Raul Armendariz, Terry Bartelt, Bob Broilo, Terry Cotter, Bob Hayward, Clint Janes, Rob Long, Dan Mertely, Mike Revnell and Jon Thunborg gave presentations on various VLA systems. The students were divided into small tour groups that were escorted by local astronomers; Geoff Bower, Mark Claussen, Dave Finley, Dale Frail, Miller Goss, Leonia Kogan, Debra Shepard, Greg Taylor, Jim Ulvestad, Craig Walker and Joan Wrobel.

J. Thunborg

SITE & WYE NEWS

The Track Crew has been trying to complete north arm track repairs from CN-9 to BN-6, but have encountered so many equipment problems, they have decided to move on to the west arm and replace clusters of bad ties. This will give the Auto Shop time to order the proper parts and make the repairs needed.

Construction and renovation is soon to begin on the ALMA office space, mostly in the "Control Building Annex." Old offices will be refurbished and at least two new ones will be added.

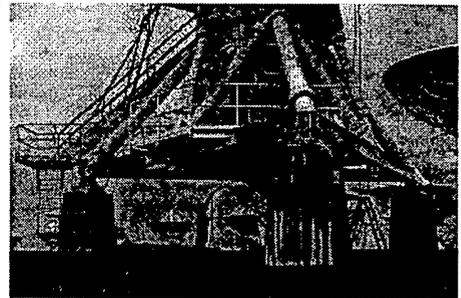
The Grounds Crew has been installing a lightning protection system (LPS) over the wave guide where the original zinc strips have corroded away. The system to install it still needs work (modification), so the trencher has been put back into service. Hopefully, the "bugs" will be eliminated from the installing plow soon.

The Auto Shop has been extremely busy trying to keep the tampers running and trying to work out the problems with the LPS plow, while keeping up with PM's and the usual repairs required on the rest of the site vehicles and equipment.

P. Lewis

ANTENNA PAINTING PROGRESS

You may have noticed the ugly reddish brown antenna on the East Arm. It is Antenna #17 and it is being water blasted in preparation for repainting. This is the second antenna we will paint this summer. Due to a very hardworking Paint Crew and good weather, the painting of Antenna #3 is completely finished.



The Paint Crew Waterblasting Antenna #17

There was only enough money in this year's budget to buy a limited amount of paint, so we will paint only two antennas this summer. We will use any remaining paint and the rest of the summer to touch up bad spots on other antennas.

J. Thunborg

SHIPPING TIPS

A \$9000 tape drive capstan motor was recently lost in shipping. It was en route back to the AOC from one of the VLBA sites. When the box arrived, it was half pulled open and the motor was nowhere to be found. \$9000 is a lot of money; that's half a year's pay for some. Here is the action planned and some things you can do to help, courtesy of Tom Baldwin.

Steve Durand is ordering suit cases with formable foam stuffing for the capstans like the shipping cases we use now for the tape heads. Are there expensive, heavy, and/or delicate components or assemblies in your area that would be better shipped in dedicated

shipping containers? If so, find a catalog and order them!

Are you using a strong enough box? Don't assume the box the item came in is strong enough or that the packing was sufficient. Is the box still in good shape? Is the rated capacity as shown on the box sufficient? Consider that the weight rating is for an evenly distributed weight. Packing material should distribute the weight and eliminate movement inside the box as well as cushion the contents from external blows and high g forces. Styrofoam "popcorn" can shift and fail to distribute weight evenly. If the assembly is too heavy for a cardboard box, ES Division will on request fabricate a wood crate for shipment -- just direct a Mainsaver work order to the Carpenter Shop.

Be generous with packing tape. Tape is cheap. Plastic tape should be applied at least two wraps over the center seam of the box. Be sure to tape down ALL seams and corners. There should be no exposed flap edges. Each VLBA site has a tape dispenser and there is one at the AOC and the Warehouse. Strapping tape adds a level of security, especially for dense objects. At the VLA site, boxes can be metal-banded.

There is an assortment of new and used boxes and packing materials at the Warehouse and at the AOC loading dock. VLBA sites may want to buy packing materials locally to save on shipping. And here is an important point: the Business Division stands ready to help with all your packing needs. At the AOC, Dave Archuleta has the materials and the training to pack your equipment correctly. He needs to have all the pieces for a single shipment together with the paper work and any special packing instructions, and he can take it from there. Dave is also instructed to re-package shipments that he judges to be packed inadequately, but he doesn't have an x-ray machine to catch them all. At the VLA, Brent and Joel will provide the same service. The equipment that was lost was NOT packed by the Business Division.

It is essential that each of us take the time to make sure shipments are packaged adequately.

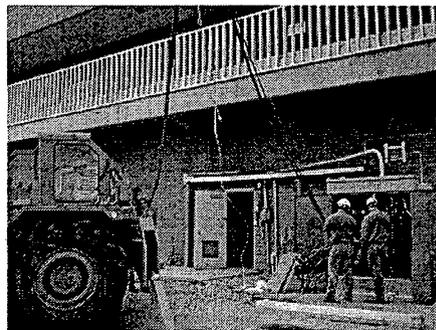
C. Janes

DRIVING TIP: The first rule-of-thumb for backing is not to back up if you can avoid it. While backing, check mirrors frequently. If in doubt about clearances, get out and look. These few seconds of caution may save an accident.

MIRACLE CABLE LASSO

At 10:00 p.m. on June 27th, The lights in the Control Room began to flicker. Then, most of the lights in the Control Building went completely out. The Operator (Terry Bartelt) called Jaime Montero, who drove out to the site and began investigating the problem. Jaime found a blown fuse and evidence of a small fire on the stress cone of the 12,470 Volt primary cable that feeds the Control Building.

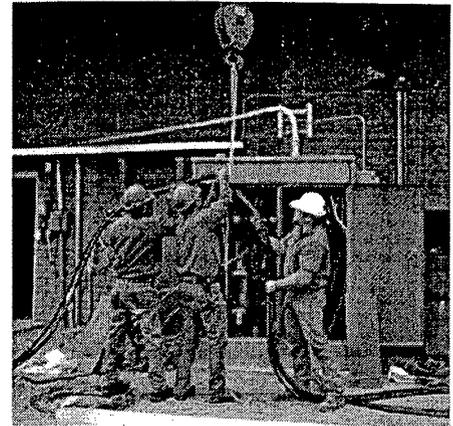
Lew Serna and Ed Gray arrived at the site around 2:30 a.m. and began investigating the problem. Later in the morning, the decision was made to replace the cable. Shane Baca, Richard Murillo, Tony Guerrero, Martin Lopez, Tom Olney, Pat Lewis, Emma Rice, and Marlin Smith were recruited to help with the job. The old cable was pulled from the conduit using a crane and spools of new cable were loaded onto a spool rack and loaded on a trailer.



Richard Murillo Operating the Drott Crane

There are three ninety degree turns in the conduit to the Control Building, so everyone knew that pulling the heavy cable through was going to be hard. Two gallons of pulling lube were dumped down the entrance of the conduit. A pulling noose was then affixed to the cable and the Drott crane was used to pull the new cable into the conduit, as several people (the cable is very heavy) guided the cable.

As the cable went further into the conduit, it became harder to pull. The cable made it through all three ninety degree turns, but then the pulling noose shot high into the air as shouted expletives echoed throughout the site. The pulling noose had slipped off the cable when it was about one foot from the end of the conduit. This was bad news, because we could not pull the cable back without damaging it, and we didn't have enough cable on hand to try again. Our options were to



Martin Lopez, Tom Olney and Shane Baca Pulling Cable

either snag the cable somehow or dig up the conduit.

Digging up the conduit was a bad option. The good backhoe was at the Pie Town VLBA Antenna, and there are a lot of power, water, and phone lines in the ground around the CB transformer. However, snagging the cable was unlikely to work. The conduit was four inch PVC, and the three power cables were each about 1.25 inches in diameter.

Marlin Smith, having experience at such things, tried over and over to "lasso" the end of the cable with ropes, slings, and chains. He had to reach into the gooey conduit up to his elbow and work blindly with almost no room to spare. Miraculously, after many tries, Marlin's attempt to "lasso" the cable was successful and enough cable was pulled through the conduit to make the terminations.

The High Voltage terminations had to be done very carefully and kept very clean, but nearby thunderstorms generated wind that was blowing dust around. Emma was placed on lightning watch to warn the crew if the lightning came within two miles. Working on long conductors during a thunderstorm can be fatal; the job had to be finished before the lightning got too close.

The repair was finished and the power was switched back on at about 2:50 p.m., just as the first few drops of rain began hitting the ground. Everything worked! Buen jale to everyone who worked on this difficult repair. All of the material and equipment necessary to replace the cable was on site and the group pulled together as a team, working long hours without breaks, accomplishing this demanding task in only a few hours.

B. Broilo