

# AOC NEWS



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## NOTES FROM THE A.D.

The proposal for Phase II of the EVLA Project is nearing completion. Associated Universities, Inc. will be reviewing the current version of the proposal over the next month or two, in preparation for sending it forward to the National Science Foundation. Winning funding to implement this proposal will be difficult, since the budget line that would fund Phase II is considerably oversubscribed. Thanks to all the people who participated in making this a very competitive scientific proposal with an excellent technical implementation plan. In addition, everyone should remember that one of the important aspects of getting this proposal funded is that we continue to do an outstanding job on Phase I of the EVLA Project, so that we can deliver on our promised scientific, technical, and schedule deliverables, within budget.

Last week, one of the elevation bearings on the Saint Croix VLBA antenna was replaced during a special site visit. Excess metallic flakes were found in the grease during the site visit earlier in the year; concerns over this bad sign led to a decision to schedule an extra trip in order to replace the bearing in late July. It turned out that the bearing was failing in the same mode as the Los Alamos bearing, which was replaced 2-1/2 years ago. Congratulations on a job well done, to those who discovered the problem and to the team that fixed the antenna.

Please join us for the employee celebration of the 10<sup>th</sup> anniversary of the VLBA dedication. As described elsewhere, this will take place on Thursday, August 21. Almost all NRAO employees have contributed to the VLBA in one way or another; thanks to everybody for playing a part in the success of this unique scientific instrument.

Jim Ulvestad

## WELCOME ABOARD

Wilfred Apachito, Chris Durand, Donna Field, EVLA; Linda Ridgeway, EPO; and Pat Palmer, Basic Res.

## EVLA MILESTONE: THREE COLORS ON A FIBER

The Fiber Optics team recently achieved an important milestone by successfully Wavelength Division Multiplexing (WDM) multiple channels of digital data onto a single fiber. The EVLA plan requires transmitting 96 Gigabits/second of astronomy data from each antenna to the central control building, which will require multiplexing twelve optical channels onto a single fiber. For the first time, the EVLA bench prototype hardware was configured to transmit and receive three channels. Three lasers were passively multiplexed onto a single 22-km length of fiber, amplified with a single Erbium Doped Fiber Amplifier (EDFA) and received with separate PIN receivers. You ask, "Why don't you all just use twelve fibers, twelve optical amplifiers and make a simpler system?" The answer is, optical amplifiers cost approximately \$15,000, so, it is best to capitalize on their ability to amplify multiple channels at once and it is less expensive to install

fewer fibers. This first prototype test verifies the present design is viable and will meet the scientific requirements.

Steven Durand

## VLBA 10<sup>TH</sup> ANNIVERSARY BIRTHDAY PARTY

NRAO is sponsoring a party at the AOC, on Thursday, August 21, 2003, to commemorate the inauguration of the VLBA ten years and a day earlier. All NRAO - New Mexico employees and immediate family members, students and visitors are invited to attend.

The party will be held at the end of normal work hours, from 3:30 - 5:00 p.m. A bus will depart from the VLA site at 2:30 p.m. Return transportation will also be provided for employees who live in Magdalena.

The main venue for the party will be the lawn area just to the east of the AOC building, near Lopezville Road. A tent will be available to provide additional shade and shelter in the event of inclement weather. Refreshments will be served.

The program will include brief addresses by members of NRAO New Mexico management, and some commentaries on the history of the VLBA. A recording of the 1993 opening ceremony, will be available for viewing in the AOC auditorium, and tours of the VLBA operations facilities and the laboratory areas dedicated to VLBA equipment, will be arranged.

We welcome all to attend.

Jon Romney

## VLA FIRE BRIGADE

On the morning of July 16, 2003, the VLA fire brigade responded to a barn fire at the Montosa Camp Ground, which began when bales of hay apparently spontaneously combusted due to extreme heat and tightly-packed bales of hay stacked in the barn. The state fire Marshall examined the fire and reported that the fire had started in the northwest corner of the haystack. The barn belonging to B.W. and Billie Cox, who raise cows on the Montosa Ranch near Monica Cabin, contained over 150 tons of hay and several pieces of ranch equipment.

Volunteer firefighters from the Magdalena Fire Department, the Hop Canyon Fire Department and the fire brigade from the National Radio Astronomy Observatory responded to the fire, a little after 6:00 a.m. The Hop Canyon Fire Department was released at around 9:00 a.m., and the Magdalena Fire Department left around 1:30 p.m. while the VLA crew stayed on until 4:00 p.m., to ensure the bales of hay were doused enough for the rancher to maintain control. The VLA fire truck pumped about 30,000 gallons of water from a stock tank.

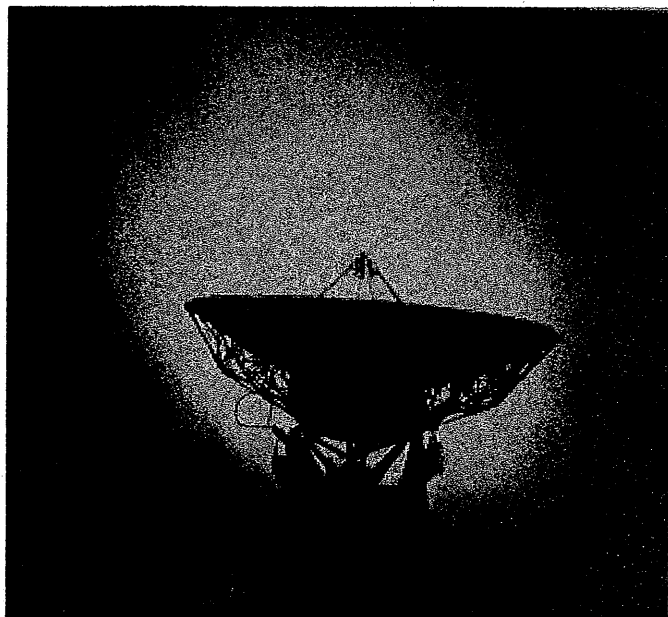
VLA fire responders were: Fire Chief Tom Olney and firefighters Richard Murillo, Wallace Gonzales, Tommy Montoya, Marlin Smith, Gerald O'Connell, James Sullivan and Michael Zamora. VLA backhoe operator Dean Otero, also responded to help separate and scatter the bales of hay with the backhoe in order to water the hay down and completely extinguish the fire. The crew worked for more than eight hours to extinguish the fire.

Fire Chief Tom Olney said that the crew worked hard and congratulates them on a job well done! B.W. Cox also made a grateful call to the VLA, thanking everyone for their help and support.

Lew Serna

## VISITOR CENTER NEWS

**New Exhibit :** A new exhibit case has been installed in the hallway to the theater in the Visitor Center. It is currently a display of pinhole camera images of VLA antennas, made by Michael Mideke, of Hop Canyon (the videographer who made the transporter video). We intend this display to be a changing exhibit of antenna images of all kinds. If you have photographs, drawings, paintings of the VLA, VLBA or other radio astronomy facilities that you would like to display, even if it is not enough to fill the whole case, contact Robyn. Michael's work will



One of the Camera Pinhole Images by Michael Mideke

be on display for the next two months.

**Shopping:** The Gift Shop has managed to meet its restocking challenges and we are now ready to DO BUSINESS! Not all of our merchandise has filtered down to Tami's little steel cabinet yet but take a look at what we have, by going to the VLA web page and clicking on Shopping. If you see something there that Tami doesn't have in stock give Prescilla a call, at ext. 7410 and we'll fill your order. Remember that employees get 10% off the price on the web page.

Robyn Harrison

## Employee Committee

Employee Committee Members are always available to listen to employee suggestions, concerns or questions about improving the work environment. The Committee is a bridge between Employees and Management.

Members of the Employee Committee are: Lori Appel, Laurel Armijo, Tom Baldwin, Claire Chandler, Charley Chavez, Bill Hancock, Wayne Koski, Patty Lindsey, Melcolm Peralta, Peggy Perley, Sheila Reasner, Paul Savedra, Peter Whiteis and Brent Willoughby.

Wayne Koski

## FLOOD TAKES AOC BY SURPRISE

On June 30, 2003, the second floor of the AOC was unexpectedly flooded. A damaged pipe in the men's rest room spewed water horizontally against the bathroom stall door. Since the water was spraying with such intensity, the bathroom drain could not take it all in fast enough, causing a flood in the front lobby and a couple of offices.

The raging waters were finally contained and the commode repaired. Luckily, there was no report of damage. Carpets in the affected offices were shampooed that same evening.

A. Lewis

## ESSENTIAL TO MAINTAIN UP TO DATE RECORDS

Life changes can have a profound impact on your insurance premiums. Neither you nor your dependents want to be caught without insurance coverage. It is important that the Human Resources office be notified if any of the following occur:

- Change of address
- Change in dependent student status
- Change in family status
- Dependent becomes 19 years of age and is NOT enrolled in college

If a dependent is no longer eligible for coverage under the NRAO plans, you or your dependent has the option of continuing coverage through COBRA. For more information on your insurance plan, please visit the HR office.

HR Dept

## AUGUST SKIES

If March brings us "March Madness" then, this year, August surely must be given over to "Mars Madness!" Almost like magic, the skies have cleared of the other planets, to set the stage for Mars' grand performance. And, what a performance it will be!

At the beginning of the month, Mars will rise in the southeast around 10:00 p.m., MDT. By the end of the month, it will rise during evening twilight. In the process it will more than double in brightness to magnitude -2.9.

On August 27, 2003, at 9:51hrs., Universal Time, Mars will be a scant 34,646,418 miles from Earth! At that time it will be closer to the Earth than it has been in 60,000 years!

On August 28, Mars arrives at opposition from the Sun and will be visible all night long. On August 30, Mars will reach perihelion or its closest approach to the Sun of its elongated orbit. If there are no dust storms on Mars' surface, binoculars and small telescopes should reveal many surface features. The best viewing will be when Mars is high in the sky in the middle of the night.

To mark the event, the New Mexico Tech Astronomy Club will hold a "Mars Madness" party on the evening of August 27, beginning around 8:30 p.m., at the Etscorn Campus Observatory. Come and enjoy Mars as seen through the Observatory's telescopes. To reach the Campus Observatory, take Canyon Road past the Golf Course Pro Shop. Turn right on Buck Wolfe Drive and follow the signs to the observatory.

Ordinarily, August also brings us some spectacular viewing in the form of the Perseid meteor shower. Alas, this year a full moon will make viewing difficult at best. Nevertheless, a check of the night skies on August 11 - 13, might allow you a glimpse of a few bright Perseid meteors.

This month, the Moon will be first quarter on the 5th, full on the 12th, last quarter on the 19th and new on the 27th. On the evening of the 13<sup>th</sup>, the Moon will be in close company with Mars and the two together should be an awesome sight!

For more information about Mars I would suggest you visit a web site called "The Nine Planets."

(<http://seds.lpl.arizona.edu/nineplanets/nineplanets/nineplanets.html>).

Click on "Mars" for a wealth of information about the "red" planet including some neat pictures.

Jon Spargo, New Mexico Tech Astronomy