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VLA/VLBA NEWSLETTER

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SOCORRO, NM

JUNE WEATHER STATS	
HIGH	LOW
90.3° (19th)	29.7° (15th)
Total Precipitation: 1.1"	
VLA Operations	

From the World's Premier Centimeter Wave Radio Synthesis Telescopes

AROUND THE VLA

Welcome aboard: Lia Romero, Site Secretary; J.R. Lozano and Anthony Sanchez, Track Crew; Jason Sais, Grounds Crew; and Gerald O'Connell, Carpentry Shop.

A change in our fiscal year has been announced. In October of 2001 NRAO changes its fiscal year to coincide with the federal fiscal year. The new fiscal year will run from October to September instead of January to December.

Mark McKinnon has been appointed Deputy Assistant Director for the Engineering Services and Electronics Divisions. He spent a couple of days reacquainting himself with the VLA Site. He actually began working for NRAO at the VLA in 1986, later transferring to the AOC, and then to Green Bank. He says this is the third time he has moved to New Mexico, and this time he plans to stay. Welcome back!

TIGERS

The Tiger Team hit Owens Valley in June. Site Techs Jim Brown and Bill Robbins were great hosts and helped out a lot. Thanks to the dry climate and the Site Techs' diligence, the antenna was in fine shape.



This picture was taken just before we left. Don't Jim and Bill look happy we're finally leaving?

J. Ruff

TIPS FOR TOUR GUIDES

(Continued)

WORKING WITH GROUPS:

- Safety First. You are responsible for the safety of your group, as well as for the safety of NRAO equipment. You may know all the rules and precautions to take, but those on your tour do not. They need to know what the rules are so that they can act in a safe manner. A lot of this may seem like common sense, but common sense is relative, and people for whom this is a totally new environment need to be told.
- It is important that the group remain together, especially if you are showing the AOC during a weekend when few other employees are around. Even though we don't expect anyone to have devious plans, it is in everyone's best interest that people not wander off. You may have to do a silent headcount now and then to be sure you have everyone.
- It seems logical that we should expect parents and teachers who bring children to the AOC and VLA to be responsible for (and to keep up with) those children. Unfortunately, this is not always the case and in the end it is your responsibility. Kids need to know the rules, and they need to know the consequences if they don't follow the rules. When a participant on your tour violates safety rules, please don't hesitate to stop the tour and ask them to leave, or change your plans so that you go only to the public-access areas. That is, no control room, no antenna, no off-the-path.
- Remember that you know tons more than people on a tour. You needn't try to tell them everything on this tour—it has taken you time to learn it yourself. Be sensitive to your audience and don't overload them. In most cases, less is better. It is easy for them to become saturated quickly, especially if you are conveying technical

information. If their eyes start to glaze over and their attention starts to wander, go on to the next thing and temper your remarks accordingly. If you have a technically advanced audience, by all means, be technical. But for the majority of friends, family and general public who visit the VLA, a few statistics, some well-placed analogies to demonstrate distance and illustrate how an interferometer works, and information about what we are learning from VLA observations will be plenty.

Most importantly, enjoy yourself. The VLA is an extraordinary instrument. Just visiting the site is an awesome experience. Having a guided tour to learn a little bit more about how it works is icing on the cake.

If there is something amiss in the Visitor Center, i.e., the movie isn't working, a display is coming apart, a drinking fountain is on the blink, or the brochure or poster rack is empty, please call Robyn at 7240. Leave a message on her voice mail if she doesn't answer.

Robyn Harrison

ANTENNA POINTING

The position transducers used on the VLA and VLBA antennas are called encoders. A prototype encoder electronics system has been installed on Antenna 24 since November of 1999. The prototype has been working flawlessly since it was installed. It is expected that the new encoder will eliminate 1.3-degree oscillations and reduce the encoder cyclic pointing error contribution to less than 1 arcsecond. While improving performance, reliability and serviceability, it can potentially increase encoder resolution from 21 bits to 25 bits. A new ACU (Antenna Control Unit) design is tentatively planned with EVLA Phase I, which could conceivably take advantage of a higher resolution encoder.

The new encoder system is in-house designed and built. Ron Weimer and Bob Broilo began

the early stages of the new encoder design. Bob completed the design, built and installed the prototype. Bob has designed the new encoder system so that it could someday replace VLBA encoder units as well.

Encoder production began in the latter part of April 2001, with the assembly and "stuffing" of the initial printed circuit boards by Rose Apodaca, in the Electronics Division, at the AOC (gracias Rose!) :0). Final assembly, testing and installation is done by ES Division's Dave Alderman at the VLA Site. The first of the new encoders is planned for installation on Antenna 7 this month.

L. Serna

EXPOSURE!

A film crew from the British Broadcasting Company were visiting the VLA the last week of June in order to interview Dale Frail. They are filming a documentary on Gamma Ray Bursts. Gamma Ray Bursts are, simply speaking, high energy explosions at the edge of our universe. The VLA's role in this research has become very important.

The crew scouted on Monday, taped the interview with Dale on Tuesday, came out Wednesday for some general angle shots (delayed by the best rain we've had this year!), and flew around on a helicopter on Thursday to get some aerial shots of the site.

Dale was amused by the fact that a National Geographic documentary film crew was here doing exactly the same thing about a month ago.

P. Lindsey

JULY SKIES

It will be hard to go out on a clear evening this Summer and not be impressed by Mars, shining brightly in the southern skies near the constellation Scorpius. Mars will continue its domination of the evening skies for most of the Summer. But Summer skies are rich with grand sights, many of which require no telescopic aid to enjoy.

One of my favorites is Sagittarius, a.k.a. the Teapot, which follows close behind Scorpius and the star clouds of our Milky Way. Indeed, the teapot appears to be boiling with the steam escaping from its spout to form the Milky Way itself. Further north, is Cygnus the Swan, a.k.a. the Northern Cross signaling the appearance of the Summer Triangle. The triangle is formed by the bright stars Vega (of "Contact" fame) in Lyra, Deneb in Cygnus

and Altair in Aquila the Eagle. All are very bright and easy to find.

A good pair of binoculars will reveal one of the prettiest binary star systems you can see with a modest amount of magnification. The star Albireo, which forms the head of the swan or the base of the cross, is a beautiful blue/orange pair than never fails to impress when seen through binoculars or a small telescope.

Speaking of telescopes, the New Mexico Tech Astronomy Club will be holding a star party at the Etscorn Campus Observatory on Thursday, July 12 beginning at 8:30 PM. Come join the fun and let club members acquaint you with the Summer sky.

If you are an early riser and a planet hunter then July will hold a treat for you. At early dawn, just before sunrise on the 13th, Venus, Saturn, Jupiter and Mercury should all be visible by looking ENE. On the 18th and 19th, the waning crescent moon joins this impressive show. With evening skies often covered with monsoon clouds, early morning hours are often the only time of the night with clear skies for viewing.

There is also a daytime event this month that will be fun to try and see. On July 17 there will be an occultation of Venus by the waning crescent moon as it overtakes and passes in front of the planet. If you can find the thin sliver of the moon in daylight you should be able to view this event. A good pair of binoculars will make this easy. This celestial coverup begins at 11:46 AM MDT and ends at 1:13 PM when Venus emerges from behind the moon.

Jon Spargo

SLEEP

Drowsiness has become as common to the workplace as file cabinets and water coolers. Sixty three million Americans get sleepy in the afternoon and most of them are sleep deprived.

While eight hours of sack time is about average for most adults, some folks sleep longer while others seem to get by on only a few hours a night.

Most of us spend about a third of our lives in a nighttime slumber. But why do our bodies need sleep? No one really knows for sure. One theory is that sleep helps us conserve energy.

Our bodies may be at rest when we sleep, but our brains are often very active. Lack of sleep is a serious matter for some people. Patients with insomnia report hallucinations, difficulty in concentrating, slurred speech, slower reactions, and memory lapses.

Lack of sleep can cause highway and industrial accidents, as well as poorer performance in school and in the workplace. According to the National Highway Traffic Safety Administration, 13 percent of all fatal accidents are attributed to drivers who fall asleep at the wheel.

G. Morris

BUS ETIQUETTE

NRAO provides bus transportation to the VLA site for employees who work the normal shift. During the winter months only one bus is run while in summer months two buses are running. Two buses run in the summer because of the additional summer temporary employees that are hired. In the summer one bus runs from Socorro and the other bus runs from Magdalena.

There are 45 seats in the large buses and 40 seats in the smaller bus. Approximately 30 regular riders are on the Socorro Bus and about 24 riders take the Magdalena bus into the VLA. On occasion an additional person or two will take the bus to the site or will ride into town from the site.

We ask that all carryon cases or lunch boxes should ride either on the overhead luggage rack or under the seats but never on the seat. Riders should never carry or transport hazardous material or explosive material on the bus. Each employee is responsible for removing all the trash they might produce. Passengers should remain seated while the bus is moving. Care should be taken to protect the upholstery.

Seats are available on a first come first serve basis; however, if a person leaves the bus for any reason his seat is given up. A lunch box or other personal item on a seat does not guarantee a seat for them.

Passengers usually nap, read, converse or play cards during the ride to and from work. Remember to be courteous and ride quietly keeping conversations at a low and normal tone.

L. Serna

HAPPY INDEPENDENCE DAY!