

# THE POINT SOURCE

Volume 3, No. 3

Summer/Fall 1996

## **Looking Ahead To 1997**

**by Paul Vanden Bout**

Every year at this time the Observatory submits a Program Plan to the National Science Foundation which outlines the activities expected to occur during the upcoming new year. I'd like to briefly describe the major themes the NRAO intends to pursue in 1997.

Much of our Program Plan for next year concerns the core of our mission - providing quality observing time to the astronomical community. The focus is on the science we expect to be conducted by visiting astronomers and by our own staff. Building and maintaining the capability that enables our users to perform forefront research in astronomy is the ultimate driving force behind every activity at the Observatory.

A new aspect of NRAO operations in 1997 will involve the support of the VSOP orbiting very long baseline interferometry mission. This is an international collaboration, organized around a Japanese satellite telescope to be launched early next year. It involves the use of the VLBA, VLA, and 140 Foot Telescope. Observational data will be relayed from the satellite through a dedicated ground station in Green Bank and NASA's Deep Space Network. Much of this data will be processed on the VLBA correlator in Socorro.

In addition to outlining our plans for scientific programs, our Program Plan also describes how we intend to upgrade our instrument capabilities. This includes the Central Development Laboratory's ongoing work to produce state-of-art electronic devices for use in receivers and signal processors. That effort will be boosted over the next few years by the CDL's invitation to participate in the Microwave Anisotropy Probe (MAP) mission. This is a NASA funded satellite experiment to map the cosmic microwave background. The CDL has been selected to build the low-noise amplifiers needed for this project. Our participation will bring in much needed new equipment as well as a development base for the future amplifier needs of the Observatory.

Our 1997 Program Plan also include plans for the improvement of the various data analysis software

*(continued on page 2)*

## **Jansky Lecture in Tucson**

**by Jennifer Neighbours**

Tucson was pleased to host the first of the four Jansky Lectures to be held site-wide this year, and the first of the Lecture series ever to be held in Tucson. Dr. James M. Moran of Harvard University and the Smithsonian Astrophysical Observatory is the thirty-first recipient of the Jansky award. His lecture "Brilliant Masers and Mysterious Black Holes" was presented to an enthusiastic audience that filled the Steward Lecture Hall on the University of Arizona campus. The subject attracted a cross section of the community: high school students, amateur astronomy club members, journalists, undergrad and grad students, postdocs, researchers, faculty and folks just plain interested and curious.

Dr. Moran's early interest in radio astronomy was inspired by a copy of Jansky's 1933 paper. While still in high school, he built his own radio telescope and won first prize at the local science fair. In his junior year in college, he participated in the summer intern program with NRAO in Green Bank. This experience set him on a course toward a career in astronomy.

Dr. Moran outlined the basic principles of VLBI spectral line observations as a way of measuring Doppler shift and velocities, and Kepler's and Newton's laws of planetary motion and gravitation. He then showed how all of these factors came together in some VLBA observations of the inner core of the galaxy NGC4258. Using the measured Doppler shifts of astronomical water masers in NGC4258 and their distribution within the core of this galaxy, the velocities were found to agree precisely with Kepler's laws; which implies a centralized mass. It is then easy to calculate the mass. The measured angular distribution of the masers gives an upper limit to the volume inside which this concentrated mass must be confined. The derived mass density is so high that the almost inevitable conclusion is that the concentrated mass must be in the form of a black hole. Although other observations have previously suggested evidence of black holes, these VLBA observations represent by several orders of magnitude, the most compelling evidence yet found of the existence of a black hole.

*(Looking Ahead . . . continued from page 1)*

systems that NRAO supports and the ongoing development of AIPS++, our newest software system.

Lastly, the Program Plan details the current status and future plans for projects we have either underway or in late term planning stages. These are the Green Bank Telescope, the Millimeter Array, and the Very Large Array Upgrade. Next year will be a big year for all three of these projects. The GBT will be nearing completion and we are hopeful that funding for development and prototyping of the MMA will be approved by the new Congress. And we expect to have a fully completed design plan for the VLA Upgrade.

The key to success in obtaining funding for projects like these is having solid support from the community of scientists who use the NRAO. That support is directly related to our performance in operating our telescopes, planning for the future, and doing our own science. Over the years NRAO has received high marks in each of these areas. It's important that every employee realize that he or she plays an important role in this effort, and that everyone's contribution is appreciated.

## **Congratulations!**

Nancyjane Bailey, Electronics Engineer 1, CDL, CV, received her MSEE from the University of Virginia this summer.

Bob Broilo, Engineer II has assumed supervisory responsibilities as group leader for HVAC, electrical and SERVO in addition to his other engineering duties in the ES Division, VLA, SO.

Ramon Gutierrez, Technical Specialist II, has assumed additional supervisory responsibilities to include all antenna mechanics in the ES Division, VLA, SO.

Billie Rodriguez has become Administrative Assistant to Dr. Vanden Bout, Director's Office, CV.

## **Scoping the Sites . . .**

### **Charlottesville**

In the spirit of the Southwest, Charlottesville's Edgemont Road Site hosted a Mexican Fiesta lunch on Wednesday, August 21. Many employees from both Charlottesville locations attended, and a good time was had by all. The variety and quantity of food provided was impressive, the majority of which had been homemade by our own employees.

We thank all those who participated and especially extend our thanks to the Business, Fiscal, and Personnel Department staff members who hosted the fiesta lunch and worked hard to make it a success!

### **Green Bank**

In partnership with our local school system, Green Bank NRAO staff have volunteered to mentor interested high school seniors. The mentorship program is similar to the REU program for college students. High school seniors apply to spend part of their school week "working" alongside professionals in the community to explore potential careers or areas of interest.

This year, so far, five students have signed up to work at NRAO; four students are interested in engineering careers, one in astronomy. Each student spends 2-3 half days each week at the Observatory with their mentor. Some students will spend a year with us, some just a semester.

All of the students will develop skills not taught in high school classes, such as: autocad drafting, circuit building and testing, and data reduction. These students are participating in real projects that will be useful to the Observatory down the road.

NRAO mentors this year are: John Ford, Wes Grammar, Dave Seaman, Ron Maddalena and Mike Stennes. Mentor responsibilities include: providing the student with a more in-depth study in the area of interest; setting and informing the student of goals and expectations; and evaluating the student's progress.

Mentorship students will receive elective credit. They must have at

least a 3.0 GPA and must submit a portfolio stating internship goals. They will keep a daily log of activities and summarize their learning in a presentation at the conclusion of the mentorship.

### **Socorro**

The Third Annual Enchanted Skies Star Party drew amateur astronomers from coast to coast to Socorro for lectures, nighttime observing, and a Southwest barbeque at the Pound Ranch southwest of town. Dave Finley, Jon Spargo and Paul Harden are on the ESSP Organizing Committee. Rick Perley was one of the lecturers, along with AOC students Tracey DeLaney, Alison Peck and Jordan Alexander. Attendance at the star party rose again this year. Perfect weather greeted the attendees, who got to visit with comet expert Jack Brandt from the University of Colorado and Comet Hale-Bopp co-discoverer Tom Bopp of Phoenix. The public was invited to an evening lecture by Apollo 17 scientist-astronaut Harrison H. "Jack" Schmitt, who delighted a large crowd with tales of his visit to the moon in 1972.

### **Tucson**

The NRAO-Arizona Operations' Fall Picnic was held on September 28. Jack Cochran and John Fitzner were the Chefs of the Day. In addition to the main courses of steak and chicken, employees were treated to Dale and Judy Webb's baked beans. Jeff and Connie Mangum led the children's entertainment which included a Jumping Castle (a huge success!) and a pinata. As usual, the picnic was a smashing success.

**Reminder:** It's that time of year when visitors from all over the country flock to Tucson to enjoy the pleasant weather. Unfortunately, this can spell trouble for visiting NRAO employees who wait until the last minute to make a hotel reservation. To avoid the hassle during the December - April "Snow Bird Season", please give the Tucson staff at least three weeks notice of an upcoming trip. This is usually sufficient to guarantee visitors the hotel they want. (Sorry, we can't do anything about the rates!)

# **Job Safety Analysis Helps Improve Site Safety** *by Eugene Cole*

The VLA track crew maintains some 38 miles of double track which involves a lot of physical work. Due to the nature of this work, there are numerous hazards associated with it. Such toil over the years has generated an alarming frequency of accidents.

Much of the work the crew does takes place outdoors and sometimes in either very hot or extremely cold weather. Nearly every task has the potential of slips, trips and falls, being struck by tools and flying objects or caught in, by or between an object, or straining oneself by lifting, pulling, pushing, bending or twisting. In one way or another, these hazards have all resulted in reported injuries.

This past winter of 1996, the crew members, which consist of Chester Moeller, Paul Savedra, Michael Torres and Pat Trujillo decided it was time to review their job methods and uncover all those hazards that exist with their work. The crew focused on hazards that: 1) may have been overlooked in the work processes or planning or tools used to do the work, or 2) may have developed from habits, or 3) have resulted from changes in work procedures or personnel.

With some help from the safety officer on site, Gene Cole, the crew began writing a Job Safety Analysis (JSA) for every track maintenance job they perform. Each member of the crew participated in all phases of its development. The first step was to select the job to be analyzed, next they broke the job down into successive steps or activities and observed how each crew member's actions were performed. Third, they identified the hazards and potential accidents (this was the critical step because they could eliminate only an identified problem). The fourth step involved developing safe job

procedures to eliminate the hazards and prevent potential accidents.

The track crew members participated in each meeting and offered many good ideas for improving their work processes.

The manner in which a Job Safety Analysis is written is to make up three columns of information. In the first column, the basic steps of the job are listed in the order in which they occur. The next column describes all hazards, both produced by the environment and those connected to the job procedure. The third column gives the safe procedures that should be followed to guard against the hazards and prevent potential accidents.

Two months later, the crew put together a complete JSA for station spur alignments, intersection alignments, mainline track repair, gates and fences, road crossings, rain and switch inspections, and for transport and maintenance of their equipment. Four full-time temporary employees were hired this summer to help with track maintenance. The JSA procedures were given to each of them. They were taught how to recognize the hazards associated with each job step and were instructed in how to use the necessary precautions.

The major benefits of their efforts came after each JSA was completed. However, benefits were also gained from the development work of identifying specific job actions. Their supervisor, Pat Lewis, learned more about the job he supervises. Since each crew member was encouraged to participate in the job safety analysis, their safety attitude improved and their safety knowledge increased. The most valuable aspect of the whole exercise was that the track crew did most of the work themselves. As one crew member put it "we sort of retrained ourselves on how to perform our jobs". Since implementing the JSA into the track work in early 1996, the crew reduced the number of reported incidents by 78% over the last two years. Their safety record improved by 73% over the past twelve months!

The crew's lead person, Paul Savedra, attributes their success to teamwork. "We would not have accomplished much without everyone making a contribution," he reports. The crew plans to continue making improvements by looking at and reevaluating the procedures on a periodic basis. Seeing that much can be gained from this, other work groups at the VLA are planning to develop job safety analyses for their jobs as well.

*Track crew left to right:  
Adrian Pino (temp),  
Chester Moeller,  
Jimmy Latasa (temp),  
James Julian (temp),  
Paul Savedra (lead person),  
Leandro Esquivel (temp),  
Michael Torres. (not shown)  
Patrick Trujillo)*



## ***News from the Central Development Lab by John C. Webber***

### **BIG CHANGES**

Midsummer saw Mike Balister's retirement as head of the CDL after many years of excellent work overseeing development of amplifiers, mixers, correlators, and other projects for NRAO and the astronomical community outside. He is finishing up the 86 GHz receiver prototypes for the VLBA before leaving for good. Mike will be sorely missed and we hope he continues to drop in and advise us as often as he can. He was replaced by John Webber. John came to NRAO from Interferometrics Inc.; he was previously at Haystack Observatory and was part of the VLBA development team, responsible for the tape recorder.

### **MICROWAVE ANISOTROPY PROBE (MAP)**

The MAP project is a joint effort of Princeton and the NASA Goddard Space Flight Center, with NRAO responsible for developing and building the wide bandwidth, low-noise amplifiers crucial to radiometer operation. This 700-kilogram satellite, costing \$100 million, is intended as a follow-on to the highly successful COBE satellite, which detected fluctuations in the cosmic microwave background radiation (CMBR). MAP intends to map the temperature of the background sky with an angular resolution of 0.3 degrees and an accuracy of 40 microKelvins! The objective is to get a handle on the characteristics of the early universe, at a time when matter and radiation became uncoupled. MAP should permit distinguishing among many cosmological models and will give measurements of such quantities as the Hubble constant and the baryon density.

For interested parties, there is a lot of information on the Internet at <http://map.gsfc.nasa.gov>. MAP will observe at center frequencies of 22, 30, 40, 60, and 90 GHz, and many of the amplifier designs will be directly useful in NRAO receivers.

The single element which makes MAP possible is the cooled HEMT amplifiers developed by Marian Pospieszalski at the CDL. Using new Hughes-built indium phosphide transistors, Marian and his group have managed to produce one amplifier

design which covers 63-88 GHz with >30 dB of gain and only 50K of noise. Another design covers 75-110 GHz with >25 dB of gain and about 60-70K of noise (measurements above 90 GHz are pending arrival of new test equipment). Furthermore, the gain and phase match of different amplifiers is good enough to permit the elegant Princeton radiometer designs to work properly.

The MAP group includes Ed Wollack, a recent product of the Princeton CMBR group with lots of experience in amplifier measurement as well as electromagnetics. Ed was a post-doc at NRAO for two years and has just joined the full-time staff. Bill Lakatos is the expert at fabricating these tiny structures; each of the 75-110 GHz amplifiers has 180 bond wires! Skip Thacker has recently joined the group as the guru of space qualified hardware and will be in charge of setting up a smooth manufacturing process for the 80 flight amplifiers (plus spares). Nancyjane Bailey will be responsible for bias and illumination components and will be heavily involved in flight hardware fabrication. John Webber is serving as Principal Investigator and general coordinator.

MAP is on a tight schedule: all amplifiers must be completed by April 1998, and launch of the spacecraft is scheduled for September 2000. The MAP team is concerned about the schedule but ready to meet the challenge.



*MAP Project Members (left to right): John Webber, Ed Wollack, Nancyjane Bailey, Bill Lakatos, Skip Thacker and Marian Pospieszalski*

## ADASS '96 by Richard Simon

ADASS stands for "Astronomical Data Analysis Software and Systems". It's an international conference that brings together a variety of astronomers, programmers, computer scientists, and software engineers. The conference focuses on the software and programs that astronomers must use. This past September, NRAO Charlottesville was the local host for the 6th Annual ADASS meeting. Roughly 250 participants from dozens of countries descended upon Charlottesville for the 3-1/2 day conference.

ADASS is an unusual astronomy meeting, with its emphasis on computing. Besides the usual needs for a big international meeting, ADASS has its own requirements. ADASS traditionally provides a number of computer demonstrations and makes computers available for Internet access, email, etc.

This year's conference highlighted the process of calibration modeling and reduction of data from scientific instruments, including one session focusing on Radio Astronomy. Several speakers stressed the importance of modeling both the data as well as the instrument when reducing data. There was also an entire session and an evening discussion devoted to the FITS standard for images and data, including changes in FITS needed in the near future.

Particularly striking at the conference was how much use of the Internet and on line interaction has increased within the astronomical community. Numerous large databases are now accessible through the World Wide Web, and significant web-based and Java-based applications are starting to appear. Another highlight was a talk on the software used to search spectral data for the signatures of planets, which included a pre-announcement of a newly discovered planet around a sun-like star. There was significant interest

in NRAO software at ADASS. Over 40 people attended an evening session devoted to AIPS and AIPS++.

Fortunately for ADASS, many Charlottesville employees really came through for the Conference. Gene Runion did a superb job organizing the facilities at the hotel. He worried about everything from finding an Internet connection to arranging the space for nearly 100 posters and demonstrations. Dave Brown, Gareth Hunt, Warren Richardson, and Jeff Uphoff also put in long hours getting things ready. Perhaps the most complicated part of the job was getting an entire computer network with 21 workstations up and running at the hotel, with full Internet connectivity.

The other people essential to the success of ADASS were Carolyn White and Pat Murphy. Carolyn kept track of all the details to keep the meeting set up and running smoothly. Only a few times did Carolyn threaten to change her name to halt the flood of thousands of ADASS related email messages. Pat provided magic and wizardry for the ADASS pages on the Web, even including a survey of the meeting attendees. Many other NRAO employees, too numerous to list here, also assisted with the conference, helping to make it a success. On behalf of the ADASS Conference, I want to express my thanks to all of them.

Finally, have you ever tried predicting the weather 6 months in advance? With a bit of luck, the suggestion of Phyllis Jackson that we hold our banquet outdoors at Ash Lawn/Highland (the historic home of James Monroe) worked out wonderfully. As we hoped, Charlottesville delivered perfect weather. All our visitors had a memorable evening, including a performance of "The Ballad of Phyllis Jackson" by a local bluegrass band.



## Be On The Lookout . . .

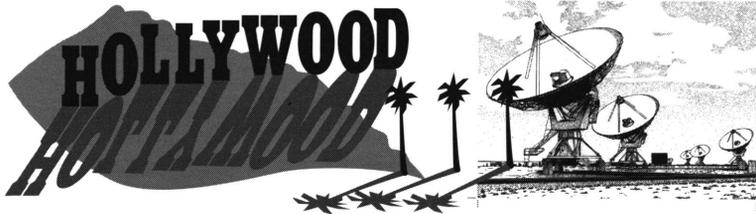
Everyone makes mistakes occasionally, including hospital and laboratory billing departments. So it is important to pay close attention to the services you receive while you're in the hospital **AND** review any statements you receive. Always ask for an itemized bill and take the time to go over each line to be sure you received the service, product, or test you've been charged for. If you find an error, let the billing department know in writing. If a charge remains in dispute, ask your doctor to verify that the item was ordered for you. Another option is a chart audit, in which a line-by-line comparison is made of your medical chart.

If errors do arise in your hospital or laboratory bill, be sure to inform your specified insurance office so we can be sure that the correct payment is made. For all Virginia, West Virginia, and Arizona employees contact Billie Jo Mattox in Charlottesville. For all New Mexico and VLBA Site employees contact Judi Lowell at the AOC.

### **Fiscal Notes . . .**

#### **Travel Suggestion Reminder:**

When traveling on business (or pleasure, for that matter), be sure to verify that the rate paid for a rental car at turn-in is the agreed-upon rate at the time of reservation. Recently, a receipted amount was higher by \$53 than the agreed-upon rate. The error was corrected when the voucher was reviewed. It's a good idea to include the agreed-upon rate in a personal travel itinerary for easy reference.



# COMES TO THE VLA

By  
Dave Finley

For a week in September, the VLA was transformed into a movie set, as more than 200 members of a Warner Brothers crew descended on the Plains of San Agustin to film portions of *Contact*. Normally a relatively quiet and orderly place, the VLA became a bustling center of frantic, nearly nonstop activity involving not only the movie crew itself but also U.S. Army helicopters, numerous area residents serving as extras, and many of the NRAO staff.

The movie *Contact* is based on a novel by famous Cornell astronomer Carl Sagan. The plot revolves around the fictional reception of radio signals from an extraterrestrial civilization, and in both the novel and the movie, those signals are first received at the VLA. The film stars Jodie Foster, Matthew McConaughey, James Woods, Tom Skerritt, Angela Bassett and John Hurt. It is directed by Robert Zemeckis, the Oscar-winning director of *Forrest Gump* and *Back to the Future*. Foster, Woods and Skerritt were among the actors who came to the VLA.

To say the filming had a major impact at the VLA would be a tremendous understatement. During the filming, the site was constantly swarming with people. Dozens of Warner Brothers vehicles were moving people and equipment around. A huge "base camp" behind the Antenna Assembly Building included cast trailers, wardrobe trailers, restroom trailers that could only be described as luxurious, a large kitchen trailer, and a dining tent capable of feeding the whole movie crew at once. Movie equipment included large-capacity generating plants, crane-mounted lights that turned night into day, rainmaking apparatus, high-tech motion picture/video camera assemblies and audio systems.

Prior to filming, a construction crew had erected an elevated platform alongside the VLA's West Arm that served as the movie version of the VLA Control Room.

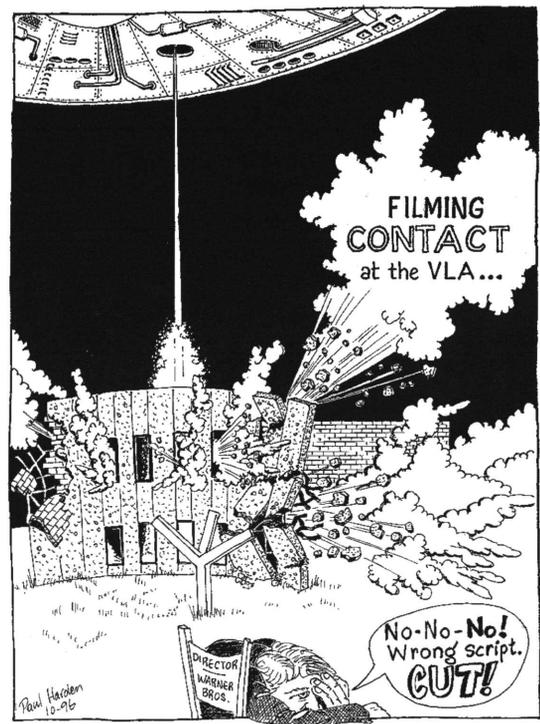
For months before the filming, NRAO people had assured the Warner Brothers staff that "the weather always is clear here in September". So, of course, the week of filming brought rain, fog, thick clouds, hail and abnormally cold temperatures. Despite these difficulties, the *Contact* crew managed to film every scene they needed. Both the movie crew and many of the NRAO-New Mexico staff working with them put in some extremely long hours to make up for time lost to the weather. For the NRAO staff, the Hollywood catering firm and their excellent, varied menu helped make up for the long hours.

In addition to the temporary structure serving as a "VLA Control Room", movie scenes were shot alongside the VLA's North Arm, behind the Control Building, at the "visitor antenna" on the public walking tour, and at the Visiting Scientist Quarters. Warner Brothers took over the VLA cafeteria building as an office and screening room during the filming.

Despite the inevitable distractions caused by the filming activity, the VLA maintained a full observing schedule throughout the week. Some visiting observers enjoyed the added entertainment of watching the film crews.

Though the VLA site was closed to the public during filming, at the request of the movie studio, the large influx of people caused quite a stir in Socorro. The local newspaper reported numerous sightings of movie people in local restaurants and stores.

The real influx, however, may not yet have begun. Once filming and editing are finished and *Contact* hits theaters across the country, the VLA and Socorro will become household words. We can expect a large increase in tourism at the VLA after *Contact's* release, scheduled for next summer. We can use this as an opportunity to explain to the tourists, as well as to our friends and relatives, about what we all do at NRAO and why astronomy is important to society.



Cartoon by Paul Harden

## ***The Trouble With Computers is . . . Part 2 by Jon Spargo***



### **VISION**

In this installment we will explore vision problems as related to video monitors used with PCs and Workstations. For the moment we'll assume that you are in front of your monitor and **SITTING UP STRAIGHT** and that your monitor is positioned so that your head is tilted forward slightly (see Part 1).

As you look at your monitor the first thing to consider is its placement with regard to any windows or sources of light in the room. The most obvious problem is that of glare and reflections on your monitor screen. If you can see anything on the screen, other than what the monitor is displaying, you are creating a situation that will eventually result in eyestrain.

If at all possible, rearrange your work area to minimize any glare and reflections on your screen. Any artificial lighting in the room should cast a diffuse glow. Most modern offices have such ceiling fixtures. Whatever lighting you use, try to avoid harsh light or a light source that is concentrated from a small area.

Glare and reflections from windows also contribute to eyestrain. Avoid placing the video monitor so that it faces the window or such that the window is directly behind the monitor. In the first case you will have to contend with reflections. In the second, the difference between daytime outdoor light level and the brightness of your monitor will be considerable and you'll have to turn up your monitor brightness. Even so, your eyes will still have to deal with extremes in contrast.

Brightness from windows can be controlled by a good set of blinds or curtains. If you cannot avoid reflections on your screen, I suggest that you consider a polarized filter screen in front of your monitor. These are readily available through many computer supply catalogs.

A bit more about contrast. Nowadays we mostly have color monitors that can reproduce a staggering range of colors. Yet, for most of the work we do on computers, we still use the old standard of black characters on a white or light background. The vast majority of documents that we read, refer to or type from are just the same way, that is, black characters on white paper.

If you are using any printed material while working at your computer, the screen should essentially use the same contrast as the document you are working from. When your screen is set with white or light characters on a dark background, you are asking a lot of your eyes. They have to deal with reverse contrast as you move your head back and forth between document and screen. For the least eyestrain, set your monitor for dark characters on a light background.

When you type from existing documents, place them at the same height as the screen. There are many different types of inexpensive brackets that you can attach to your monitor

to accomplish this. They are better than the stand alone type because they generally keep the document closer to the screen, which minimizes the amount of head and eye movement. The bracket moves with the monitor any time you make an adjustment.

Some video monitor specifications may be an area of concern. One problem that contributes to eyestrain is flickering on the display screen. A number of things can cause flickering. Without going into a lot of technical detail, most flickering can be avoided if you use an NI (non-interlaced) monitor with a refresh rate of 72 Hz or higher. Also, avoid placing your monitor near a source of strong magnetic fields. We had a case here in the AOC Building where monitor screen flickering was being caused by the field from a large power distribution transformer just on the other side of the wall from the monitor!

Finally, we come to the problem for those of us who must wear glasses or contacts. If you are sitting correctly at your workstation with a standard keyboard in front of your monitor, the distance from your eyes to the screen will be in the range of 24 to 26 inches. You should do nothing to change this. If you are having trouble reading the screen, try adjusting the size of the typed characters. If the characters are still unreadable or blurred, chances are you need to visit your eye doctor.

If the doctor determines that you need bifocals or reading glasses, **BEWARE!** There is a potential problem! When you are prescribed bifocals or reading glasses you should know that such lenses are set so that things are in focus 16 to 18 inches from your eyes. But remember, the video monitor is 24 to 26 inches away! Therefore, standard bifocals or reading glasses will have you leaning in closer to the monitor. This will adjust your posture and lead to other problems.

I have this very problem and solved it by having the doctor prescribe single vision lenses that focus my vision at 25 inches. I bought a cheap pair of glasses, with no fancy coatings, and keep them right by my computer. I use them nowhere else, and I soon got used to putting them on when I have to work at my workstation for more than a couple of minutes. For you contact wearers, the same trick can be used if you ask for a prescription that can be used with your contacts still in place.

You should also be wary of the claims of eyeglass manufacturers for a wide variety of coatings designed to relieve eyestrain while using computers. My experience is that the price to benefits ratio for these coatings is not good. Setting up your monitor correctly will be far more cost effective and be much more beneficial.

In the next installment we'll talk about Cumulative Trauma Disorder, better known as Carpal Tunnel Syndrome. There will also be a short summary of the first two installments.

# Personnel News . . .

## New Medical Care Plan

Beginning January 1, 1997, NRAO will introduce a new medical insurance program for active employees and retirees not yet covered by Medicare in Arizona, New Mexico and Virginia. CIGNA, the Observatory's insurance carrier, has established networks of physicians, hospitals and other medical care providers in these locations which will enable our employees and their dependents to receive quality medical care at discounted prices. These networks are known as Preferred Provider Organizations, or PPO's. The PPO program will take the place of the current indemnity programs and be the only health care option to employees in these areas. Employees at Green Bank and at most of the VLBA stations will continue their coverage under the existing indemnity programs until PPO networks are established at those locations. All retired employees who are enrolled in Medicare will remain covered by their current indemnity plan.

Under the PPO you will be able to choose any provider within your network. Unlike a health maintenance organization or HMO, you will not need to have treatment "approved" by a primary care physician. PPO members may also use medical services outside the network, however, out-of-pocket costs will be higher.

Rising health care costs have prompted NRAO's move to the PPO program and have made it necessary to increase employee premiums for the first time in five years. Our new PPO plan will provide the same breadth of coverage as our indemnity plan and, in most cases, will result in less out-of-pocket expenses to employees. These changes will have no effect on the dental assistance plan administered by Eastern Benefit Systems, Inc.

### Following are highlights of the new PPO plan:

- \*No claim forms to submit when "in-network"
- \*No "primary care provider" is required
- \*May choose doctors from a wide network
- \*Prescription Drug Card
- \*\$10.00 co-payment per doctor's visit
- \*No annual deductible when "in-network"
- \*Emergency care away from home covered as "in-network"
- \*Automatic enrollment in the PPO plan

Informational meetings will be held early in December at each site involved. Representatives from the Personnel office and CIGNA will be on hand to answer your questions and provide complete details on the PPO program. Through these meetings and the information packet provided earlier, we hope to fully inform every employee and make the transition to the new health care plan as smooth as possible. Questions regarding the new program may be directed to the Personnel Office in Charlottesville at (804) 296-0318.

## Promotions

(6/1/96 - 9/30/96)

Clint Janes to Division Head, ES Div., SO  
Billie Rodriguez to Administrative Assistant, CV  
Lew Serna to Deputy Division Head, ES Div., SO

## New Employees

### CHARLOTTESVILLE

Eric Richards, Student Support  
Tessy Schlemmer, Personnel  
Dorothy Tarleton, Personnel  
Dorsey "Skip" Thacker, MAP Project  
John C. Webber, Central Development Laboratory

### GREEN BANK

Nellie Rose Galford, Administrative Services/Cafeteria

### SOCORRO

Miguel Gutierrez, Jr., Array Operations  
Andrew Hale, Array Operations  
William Ketzeback, II, Array Operations  
Kathleen LeFebre, Observatory Services/Library  
Alex Markowitz, Array Operations  
Amy Jo Mioduszewski, Scientific Services  
James Ulvestad, OLVBI  
Liese van Zee, Basic Research

### TUCSON

Mark Metcalfe, Operations and Maintenance

## Departures

David Adler	Thomas Bania, Visiting Scientist
Legena Briest	Andrea Cox
Lisa Engel	Scott Foster
Phillip Green	Kevin Healy
Leonard Howell, retired 34 years	Phyllis Jackson, retired 37 years
Randall Jones	Andrew Lobanov
Wendy Mahle	Kevin Marvel
Ernest McBride	Jose Navarro
David Nice	Christopher Norris
Amy Petticrew	Patrick Palmer, Visiting Scientist
Timothy Roberts	Arthur Sittler
Edward Treiber	Angelos Vourlidis

## Transfers

Ketan Desai, CV to SO

John Payne, TU to CV

### Notes from the Editor

With this issue, the Point Source has a new look! Special thanks to Patricia Smiley and George Kessler for artistic and layout assistance. Thank you to the many folks who contributed time and energy to this issue. Your help is appreciated! *Dot Tarleton, Editor*

### Questions & Suggestions

Have an idea for a Point Source article? Do you know of a workgroup that deserves some recognition? What suggestions do you have to improve work life at NRAO? Responses to your questions will be published in the next issue, as space permits. Send your thoughts to the editor: dtarleto@nrao.edu or phone (804) 296-0265.

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