



# AOC NEWS

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## WELCOME ABOARD

Scientific Services: Crystal Brogan, Emmanuel Momjian and Eric Greisen, who transferred from Charlottesville; Electronics: Jack Busboom, Donald Haenichen, Darrell Hicks & Kerry Shores; Array Operations: Alan Kerr and Paul Dyer; Engineering Services: Carl Oler; Fiscal: Christine Wingenter.

## CONGRATULATIONS

In early September, I finished my Ph.D. at UCLA in the Astronomy Dept., where I worked with Mark Morris, and in Socorro my adviser was Miller Goss. My Ph.D. thesis was entitled "A Radio Study of the Galactic Center Arched Filaments Complex." I am heading to the University of Massachusetts Astronomy Dept. in Amherst, MA, where I have an FCRAO Fellowship Postdoctoral position. I will be working with Daniel Wang and we will be studying correlations between X-ray and the radio in trying to put together a complete picture of the interstellar medium. We recently had a proposal accepted to use the Chandra X-ray Observatory to carry out a 30-pointing survey of the Galactic Center region. This study is part of a larger plan to understand the different components of the interstellar medium in the nuclei of our Galaxy and other nearby normal galaxies at many wavelengths.

Cornelia Lang

## NRAO SCIENTIFIC RETREAT

A three-day, long-range planning retreat for NRAO was held in the AOC, Sept. 18-20. More than 80 people from the scientific, engineering, computing, and management staffs from all NRAO sites attended this event. The immediate purpose of the retreat, organized by Ken Kellermann, Frazer Owen, and Tim Bastian, was to focus on the material that must be included in an NRAO Long Range Plan for 2002 through 2006. This plan will be submitted to the National

Science Foundation (NSF) by the middle of 2001. Since this plan will be driven by the view of the future far after 2006, the meeting included discussions of possible new instruments or space missions that would not be in place until well after the five-year period covered by the plan.

At the retreat, at least half of the time was spent on discussions rather than listening to formal presentations. Among the topics discussed were the future of radio astronomy and NRAO, the organization and roles of scientific and data management staffs, the efforts to maintain strong engineering and computing capabilities, our new and future instruments (ALMA, EVLA, GBT, and the future VLBA), various other radio astronomy projects in which NRAO might play a role, spectrum management, and public outreach and education. Each half-day session of the meeting had an individual assigned to keep track of the most important points, priorities, and action items; these issues, and the material presented during the three days, will be used as the starting point for preparation of the Long-Range Plan. A significant part of the effort going into the plan will be the assessment of the resources required to implement the desired activities. This should be an important input to NSF's funding plan for NRAO in the upcoming years.

Jim Ulvestad

## BOB HJELLMING MEMORIAL

Following the Long Range Planning Retreat, the AOC hosted a half-day symposium in honor of Bob Hjellming. Cam Wade opened the proceedings with the tale of their discovery (way back in 1970!) of radio emission from novae, binary star systems where mass transfer from a star to its white dwarf companion results in occasional thermonuclear explosions. After a depressing week observing on the Green Bank Interferometer, with lots of non-detections of ordinary stars, Bob & Cam switched over to novae, and saw two of the first three! Of course they were very excited, and started looking at every nova they could find. At the same time, they asked an optical colleague to check the

positions of those first three, to be sure they were real detections. The answer came back a week later. Nova Her 1934: off by three degrees in declination. Nova Aql 1918: off by one hour in right ascension. Nova Pers 1901: spot on! but that was the non-detection!! Fortunately by then, they had real detections of several other novae, but they might never have looked at those if they hadn't gotten false detections of those first two. So is history made...

Next, Bruce Balick, one of Bob's PhD students, gave a summary of recent puzzles concerning planetary nebulae, showing an impressive series of HST images of these shells of gas, which are ejected from extremely hot stars moving from the red giant to the white dwarf stage of their evolution. The remainder of the talks were devoted to X-ray transients and X-ray binaries, a field in which Bob had been a major player for the past thirty years. Luis Rodriguez came from Mexico to give a summary of recent VLA and VLBA work on GRS 1915+105, an amazing stellar binary which regularly throws off jets which appear to move even faster than the speed of light. Two of Bob's most recent collaborators, Amy Mioduszewski & Michael Rupen, presented two papers that had just been submitted with him, discussing the nature of Cygnus X-3 (one of the first astronomical X-ray sources to be detected) and V4641 Sgr (a variable star which briefly became one of the brightest sources in the X-ray sky last September). Vivek Dhawan gave a summary of the Granada (Spain) conference, and ended the proceedings by presenting Carol Hjellming with a special plaque from the organizers of that conference, which they had renamed in Bob's honor. He is missed; but he has left a legacy, in the articles he wrote and the people he inspired.

Michael Rupen

## HAPPY RETIREMENT

A packed auditorium remembered Jack Campbell's 28 years of service to VLA and VLBA construction and the Electronics Division. Jack retired September 29, 2000.



Bob Stidstone, Clint Janes, Carol Hjellming, Mary Campbell & Jack Campbell pose for camera

## AMBASSADOR AT WORK

Clint Janes recently attended a symposium in Queretaro, Mexico, as a guest of Tec de Monterrey. Queretaro is a picturesque town about 120 miles north of Mexico City, which is proud of its colonial history but also proud of its technology. There are two schools, the University of Queretaro and Queretaro Tech (a diminutive like NM Tech); and of special interest to NRAO is the Center for Advanced Technology (CIATEQ) an initiative by the Mexican equivalent of the NSF. Q. Tech is interesting because of its progressive electronics department which requires every student to own a laptop connected to the school Internet server via a wireless net. CIATEQ is important because of its capabilities in design and fabrication of "special projects." The CIATEQ Machine Shop, for instance, features a TOS CNC Mill with 5 degrees of freedom and a 24 ton capacity 2m x 6m table. In addition, the shop includes 4 CNC lathes and a host of other modern equipment housed in a clean, environmentally controlled building, each machine on its own isolated pad. So, amidst the narrow cobble stone lanes bordered by walls that saw Maximillian pass by and lined with flaming sprays of bougainvillea, may lie the shops that help build the EVLA.

C. Janes

## A PRACTICAL OBSERVATION

Weather stations at each VLBA antenna site record a variety of meteorological changes at each location. The dew point is useful for determining the amount of moisture in the lower atmosphere, and from that knowledge corrections can be made for pointing the antenna at a radio source. Sometimes, exactly when and how to do this can be affected by some surprises.

Peggy Perley noticed unusual behavior in dew point measurements at the VLBA Brewster site in Washington and asked Tom Baldwin, if there could be a malfunction with the dew point instrumentation. Tom and I looked at some graphs for the month of August, and sure enough we saw an interesting pattern. After we concluded the sensor was working properly, Paul Rhodes suggested this was related to agricultural activity in the area, and called Mark Hofmann at Brewster to see if there was anything happening. As it turned out, a nearby hayfield was being irrigated, then mown and left to dry and baled. The cycle was then repeated. We were seeing the farmer's activity as reflected by the dew point measurement!

I then began to think about how the earliest astronomers watched the cycles of the Sun and Moon to regulate their seasons for planting and harvesting. I am reminded of a passage adapted from a translation of the ancient Chinese text, *I Ching*, by Richard Wilhelm, and I would like to share this: The Heavens and Earth unite: the image of PEACE, thus the calendar divides the seasons and completes the course of the heavens and earth; it furthers and regulates the gifts of the heavens and earth, and so aids the people.

G. Duff

## NOTE OF APPRECIATION

A well deserved THANKS goes to Liz Cryer for handling the Socorro Reservations office duties, while Selfa Lucero has been away on leave. Liz not only took care of the usual comings and goings of NRAO employees and visitors but assisted with a VLBA Maintenance Team visit to North Liberty. She was also involved during the many large meetings held in Socorro such as the Gas & Galaxy Evolution Conference, VLA Anniversary VIP visit, and Scientific Staff Retreat. She did a great job and certainly earned her stripes this summer!

Skip Lagoyda

## KNOW-HOWS ON HEALTH INSURANCE

It is each person's responsibility to confirm that their medical provider is contracted with Cigna. Asking the provider if they accept Cigna insurance, isn't enough. **Instead, ask the provider if s/he is contracted with Cigna's**

## PPO (Preferred Provider Organization) plan. Then, confirm with Cigna that provider is recognized as a participant.

To determine if a doctor is a Cigna PPO participant, contact Cigna, by calling 800-982-8958. Be sure to have your insurance card available when you call. Or, use Cigna's Web site: <http://www.cigna.com/healthcare/docdira.html>

If your provider of choice is not contracted with Cigna, benefits will be applied once your deductible is satisfied. The annual deductible amounts are \$400 per person, not to exceed \$800 per family and are only applied for out of network qualifying services. Your portion of co-insurance is 25%, after deductible.

If you need assistance in locating a provider, feel free to contact the Personnel office.

Allen Lewis

## NEW SAFETY POLICY

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 a few modifications. Once determined to be eligible, employee is responsible for eye exam and its cost. 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 completed 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