



THE POINT SOURCE

A quarterly newsletter for employees of The National Radio Astronomy Observatory

Volume 2, No. 3

Fall 1995

30th Anniversary of the 140 Foot Telescope by Jay Lockman

Thirty years ago, on October 13, 1965, the 140 Foot telescope was dedicated. On September 30 of this year a birthday party for the telescope was held in Green Bank as the culmination of several days of meetings and workshops centered on the 140 Foot and the GBT.

The events started on Thursday September 28, with an all-day meeting of the Green Bank Telescope Advisory Committee. This group consisted of Carl Heiles, Martha Haynes, Jerry Nelson, V. Radhakrishnan, Sebastian von Hoerner, Sandy Weinreb, and Bob Wilson. They met to review progress on the new telescope and our plans for the coming years. As usual, the committee made many comments and suggestions which will be of significant benefit to the project. Most of the committee members were able to stay after the meeting for some or all of the subsequent 140 Foot events.

On Friday and Saturday a Green Bank Workshop was held on the topic of the scientific achievements of the 140 Foot, with a few interspersed talks on potential science with the GBT. This Workshop attracted a capacity crowd of about 60 scientists to Green Bank, completely filling the residence hall, site houses, and nearby motels. Many of the visiting scientists had been present when the 140 Foot was first commissioned and were among the early users of the telescope. At the Workshop there were talks by Peter Mezger and Tom Wilson on the

discovery of recombination lines and subsequent observations. The discovery of formaldehyde and other important molecules with the telescope was covered by Lew Snyder, Pat Palmer, and Barry Turner. There was a session on the development of VLBI that featured reminiscences by Marshall Cohen, Dave Shaffer, and Jim Moran. Dave Heeschen traced the fascinating history of the construction of the 140 Foot, "The First Ten Years, 1955-1965," while Hugh Van Horn described events of that time from the perspective of the NSF. Joe Taylor recounted his early lunar occultation measurements that became his doctoral theses, while Jaap Baars and Sebastian von Hoerner gave presentations about the 140 Foot as a telescope, in comparison with other instruments, and about phases of its development. There were also talks by Tom Bania, Mort Roberts, Dave Wilkinson, Juan Uson, Gerrit Verschuur, Bob Brown, David Nice, Jim Condon, and Seth Shostak. The proceedings of this Workshop will be collected for publication.

On Saturday October 29, there was a special Workshop segment on the chronology of the 140 Foot organized by Fred Crews, Howard Brown, George Liptak, and Bob Vance. They covered all of the technical developments from the debugging of the brakes and the hydraulics, through the arrival of the mighty DDP-116 computer, and on to the installation of the Cassegrain house. Many

employees, former employees, and retirees were present for the session and chipped in with their comments. We had a chance to renew acquaintance with a lot of old friends, among them Herb Hanes, Max Gum Sr., Boyd Wright, Darrel Southern, Bob Viers, Russ and Pearl Clarkson, Neil Horner, Bill Lovelace, Maxine Foe, Irene Varner, Dorsalene Henderson, Wally Oref, Harold Crist, Lake Sipe, Alfred Collins, Bud Arbogast, Thurman Cosner, Harry Payne, Pat Crane, Neil McLaughlin, and Jamie Sheets.

With some reluctance the technical session was adjourned so that everyone could go down to the party at the telescope, where several large tents, a podium/bandstand, and an outdoor kitchen had been assembled. The party began with a few remarks by Hugh Van Horn, who is Director of the Division of Astronomical Sciences of the NSF, and by Bernie Burke, who is an MIT Professor, member of the National Science Board and longtime NRAO friend. Immediately after the speeches were concluded the music began, provided by the Bing Brothers, an outstanding West Virginia band. They gave a concert of traditional fiddle and banjo music while the 140 Foot loomed in the background. At this time the telescope was opened for tours of the control room, deck and spherical bearing, and all points between. The afternoon continued with a barbeque dinner that kept everyone occupied

(continued on back page)

Scientific news

CO Symposium *by Simon Radford* *Discovery of Interstellar Carbon Monoxide Celebrated*

IAU Symposium 170, "CO: Twenty Five Years of Millimeter Wave Spectroscopy," was held from May 28 to June 2 in Tucson to celebrate the 1970 discovery of interstellar carbon monoxide by Robert Wilson, Keith Jefferts, and Arno Penzias, who observed the molecule's 115 GHz spectral line with the NRAO 36 Foot telescope on Kitt Peak.

About 225 researchers from 19 countries participated in the Symposium. Over five days, oral presentations covered all major aspects of Galactic and Extragalactic research involving CO and other molecules. Topics included molecular clouds and the interstellar medium, cloud cores and star formation, starbursts, evolved stars, galactic nuclei, and the molecular gas content and distribution in other galaxies.

In addition, about 150 posters were on display all week and there were two evening sessions, one devoted to instrumentation and the other to the "X factor," the ratio of CO line intensity to molecular hydrogen column density. The URSI/IAU Joint Working Group on a Large Millimeter Array and the Large

Millimeter Telescope Project also held ancillary public sessions on May 27.

The highlight of the Symposium banquet was a delightful account by Robert Wilson of the discovery observations of CO, illustrated with historical slides. To commemorate the occasion, Wilson, Jefferts, and Penzias were awarded plaques bearing small sections of the original surface of the 36 Foot Telescope.

The IAU, URSI, the SMTO, and AUI/NRAO sponsored the Symposium. Several NRAO scientists presented their research results at the meeting. Among the members of the Scientific Organizing Committee were Harvey Liszt and Jaap Baars. Paul Vanden Bout introduced the Symposium. Bill Latter and Simon Radford co-chaired the Local Organizing Committee, which included Darrel Emerson, Phil Jewell, Jeff Mangum, Bob Martin, and Jaap Baars. Jennifer Neighbours did an outstanding job as Symposium Coordinator, ably assisted by Nancy Clarke, Lisa Engel, Bill Hale, Dale Webb, and many other members of the Tucson staff.

The "End Product" of NRAO *by David Nice*

"Publish or perish" is a familiar phrase to everyone in academic circles. Individual researchers have long realized that setting their results in ink serves both themselves (as a form of publicity) and the community at large (by disseminating useful information). It is less often recognized that "publish or perish" applies to institutions like the NRAO as well as individual researchers.

We usually think of the "end product" of the NRAO as astronomical observations, or perhaps scientific insight gained from these observations. However, it is through publication that observational results, as well as technical and instrumental developments, can be disseminated and used by the entire scientific community. Because of the importance of publication, the Observatory allocates substantial resources for the purpose of publishing papers by NRAO staff and by other users of NRAO telescopes. Last year, 462 NRAO-related papers were published in journals and conference proceedings. Of these, about one quarter include an NRAO staff author; the remainder were by visiting astronomers.

(continued on page 5)

New Employees

Charlottesville

Elizabeth Fraser, Sci. Services
Eric Schulman, Research
Jennifer Wiseman, Research

Fort Davis

Gary Tobias, Electronics
Michael Little, Electronics

Green Bank

Anna Dickenson, Admin. Services
John Ford, Electronics
Victoria Lawson, Admin. Services
Anthony Minter, OVLBI
Amy Petticrew, Student Support
Amy Thompson, Admin. Services

Owens Valley

James Brown, Electronics

Socorro

Carey Avery, Admin. Services
David Boboltz, Student Support
Scott Broadwell, Array Operations
Marie Glendenning, Computing
Richard Lively, Computing
Michael Malolepszy, Array Op.
David Medcalf, Array Op.
Glenn Morrison, Student Support
Alan Roy, Sci. Services
Gary Taylor, Sci. Services
Peter Wilkinson, Sci. Services
Fang Zhou, Student Support

Tucson

Frank Gacon, Electronics
Joan Martin, Op. & Maintenance

Departures

Stephen Cowell
Maxine Foe, Retired 32 years
David Frayer
Elizabeth Jo Gonzales
James Guin
Edward Henderson, Jr.
John Holland
James Horstkotte
Shannon Krause
Emily Mathieu, Retired 20 years
Kathryn Mead
Don Phillips

Michael Prater
Loretta Sipe
Mark Swain
Rus Taylor
Christopher Taylor
Zula Taylor, Retired 11 years
Emilio Vallez, Retired 20 years
Qiang Wang
Eric Wilcots
Boyd Wright, Retired 30 years
David Wunker

Transfers

Brian Glendenning, CV to SO
Andrew Lobanov, CV to SO
Juan Uson, SO to CV

5/16/95 - 10/4/95

MMA Science and Technical Workshop

by Bob Brown

The annual review of the MMA project planning by the MMA Advisory Committee (MAC) chaired by Neal Evans (U. Texas) was held this year in Tucson from October 5-7. At the previous year's Advisory Committee meeting the MAC noted that with the prospect for MMA development funding little more than a year away, it would be worthwhile to ask a group of involved scientists and engineers to review the direction the project was taking before firm decisions were made. The realization of this recommendation was the Tucson workshop held in conjunction with the 1995 meeting of the MAC.

The workshop made use of a working group structure, small groups of scientists and engineers concentrating on the pivotal issues facing the MMA design; the working groups daily reported to a meeting of the whole. There were six working groups, a technical working group chaired by Jack Welch (U. Calif., Berkeley) and five topical scientific working groups with their chairs as follows: Extragalactic and Cosmology (John Carlstrom, Caltech), Astrochemistry and Molecular Clouds (Ewine van Dishoeck, Univ. Leiden), Star Formation and Stellar Evolution (John Bieging, U. Arizona), the Sun and Active Stars (Tim Bastian, NRAO), and the Solar System (Pete Schloerb, UMASS). More than 95 individuals participated in the workshop discussions.

The oral reports of the science working groups proposed exciting science directions for the MMA that went far beyond what was anticipated at the time the proposal was written in 1990. In a similar manner, the technical description and goals for the project have evolved in such a way as to increase the power of the instrument by all measures. The MMA project received the firm endorsement of the meeting participants.

The working groups provided extremely useful feedback on the specific capabilities that should be part of the MMA. Design efforts over the next year will be concentrated on this response; it is very helpful to have the issues so carefully laid out. The working group reports and the 1995 report of the MAC will be posted to the MMA section of the NRAO WWW page.

(continued on page 4)

Scoping the sites. . .

Charlottesville

◦ Charlottesville PC users have been attending monthly meetings to learn more about PC technology. Topics have included training in WordPerfect, using borders and graphics, computer security, importing spreadsheets into word processing, and using the scanner. Carolyn White organizes the meetings each month, but topics have been presented by several different users. This meeting time also gives PC users a chance to ask questions and share tips with other users.

◦ Non-scientific employees continue to learn more about astronomy by attending quarterly talks given by members of the scientific staff. These talks are part of an ongoing series geared specifically for non-scientific staff members. In June, employees watched a movie, "A Radio View of the Universe," followed by a short discussion with Mort Roberts. In early October, David Nice spoke to the group about pulsars.

Green Bank

◦ The Charlottesville/Green Bank Semiannual Golf Tournament was held October 3 at the Lewisburg Golf Course. Twenty-four golfers participated in the captain's choice format, many of them from the retirement ranks. Ted Riffe's team won again, an obvious indication that he can hold off on the Geritol for awhile. Teaming with Ted for first place were Don Hovatter, Brian Ellison, and Robert Senter. Second place went to John Ralston, Richard Fleming, Ray Hanshew, and Harold Crist. Third place went to Sid Smith, Monroe Petty, Jim Gibb, and Chuck "they always use my drive" Beverage.

Hawaii

◦ Employees at the Mauna Kea VLBA Station have participated in several rescue missions. For example, in 1994 they were instrumental in rescuing seven people from a helicopter crash. A tour helicopter containing six passengers and a pilot crashed at about 10,500 feet. The pilot made the very difficult climb to the VLBA Station at 12,000 feet, two passengers (one injured) stayed with the helicopter, while the other passengers headed down the mountain. The pilot and the VLBA technicians contacted the Army and Fire Department for help. Two Fire Department emergency crews, the Army, and the VLBA technicians rescued the passengers who

remained at the crash site and conducted a search for the remaining passengers, who were eventually located along a sheep trail. The VLBA's cellular phone served as a contact between the military and Fire Department rescue crews. The Fire Department also used a VLBA vehicle when theirs was disabled in the rugged off-road terrain near the crash site. All the crash victims were rescued. Two suffered minor injuries.

Site manager, Bill Hancock writes, "This was not the first rescue we have been involved with, but it certainly was the most unexpected!"

Socorro

◦ A milestone was reached at the VLA in September. The major antenna overhaul begun in May 1989 was completed. All twenty-eight antennas were cycled through the Antenna Assembly Building for electrical and mechanical maintenance and refits.

Other summertime projects included painting antennas, repairing the railroad track that the antennas are moved on, and rebuilding the waveguide manholes. (The manholes provide access to the waveguide - the "wire" that links all the VLA telescopes to the control building.)

This summer another three antennas were repainted (seven down, twenty-one to go). Ten manholes and 36 track spurs were rebuilt. Maintenance teams visited all 10 VLBA sites this year. Five sites received extensive preventive maintenance work while the other five had repairs made to their azimuth rails.

◦ Socorro WordPerfect users now meet biweekly to learn more about using WordPerfect. Users share tips, ask questions, and solve their WordPerfect problems. Betty Trujillo organizes the meetings based on requested topics and a variety of topics have been covered. Selfa Lucero attended some outside training and is sharing that with the group. Training videos also have been shown, and other participants have shared their expertise with the group.

Tucson

◦ Tucson employees have been busy with meetings. See the articles on the CO Symposium (page 2) and the MMA Workshop (this page).

Partyers See Stars

by Jon Spargo

Dave Finley, Paul Harden, Kevin Healy, and Jon Spargo of Socorro were actively involved in hosting *The Second Annual Enchanted Skies Star Party* of the New Mexico Tech Astronomy Club from September 21-24. The party was a roaring success! The four-day astronomical event featured nighttime (optical) observing, daytime lectures, and an opportunity to tour NRAO's VLA and New Mexico Tech's Campus Observatory. Despite cloudy daytime skies, the evening weather cleared to allow observing.

A lecture was given Friday night about the discovery of comet Hale-Bopp by both Alan Hale, of the Southwest Institute for Space Research in Cloudcroft, New Mexico and Thomas Bopp, an amateur astronomer. Hale and Bopp separately discovered the comet within a few hours of each other, but had not met until this lecture. The Hale-Bopp comet is visible in amateur telescopes. This comet is so bright at 450 million miles from Earth that astronomers hope that, when closer, it will visually surpass the views of Halley Comet's in 1986. It is predicted to make its best appearance in March and April of 1997.

Saturday's highlight was the Dark, Dark Sky Night on the Ranch. About 130 people gathered at a ranch located 14 miles south of Socorro. The ranch offers very dark skies, with no visible light. Following a western chuck wagon barbecue dinner, Ranger G.B. Cornucopia from Chaco Canyon National Park gave a talk on Southwestern Indian astronomy. Silhouetted by the glow of the milky way in the night sky, he told mythical stories of the Indians coming to the earth from the underworld and how some star formations represent portions of this journey. It was a spell-binding tale and he received a standing ovation!

The party was well-attended by the press. An editor from Astronomy Magazine attended and there will be stories and pictures in a future issue of *Astronomy* and *Sky & Telescope* magazines. A film crew from PBS was also on hand. Some of Saturday night's activities will appear as part of a new documentary on astronomy scheduled to be aired in late '96 or early '97. Next year's *Enchanted Skies Star Party* is scheduled for October 10-13.

The Second Annual Enchanted Skies Star Party was sponsored by The New Mexico Tech Astronomy Club, New Mexico Tech, NRAO, The City of Socorro, The Socorro County Chamber of Commerce and The Bureau of Land Management.

MMA Workshop (continued from page 3)

Local organization for the MMA meeting in Tucson was ably handled by Dale Webb and Jennifer Neighbours who receive a well-deserved thank you for their efforts.

At the conclusion of the meeting many of the participants enjoyed the opportunity to share in the NRAO/Tucson annual picnic and to be welcomed as part of the NRAO family. Thanks to everyone involved in making this such a successful and memorable meeting.

Health news

Flu Shot FAQs

(Frequently Asked Questions)

The national campaign for flu shots has become as much a part of fall as back-to-school sales and Halloween. While health officials have long recommended the shots for senior citizens and those with chronic health conditions who are at high-risk of life threatening complications from the flu, more and more doctors are advising younger and healthy people to get vaccinated. Below are some answers to FAQs about flu vaccinations.

Who should get it? Anyone who is not allergic to eggs, egg products, or thimerosal (a mercury derivative), and who wants protection from the flu; adults and children over 2 who have conditions like asthma, diabetes, or chronic lung disease; people over 65; pregnant mothers in their third trimester; brand-new parents; health-care workers; anyone who regularly comes into contact with large groups of people; and foreign travelers visiting the tropics anytime or the Southern Hemisphere during our summer (their winter). If you have questions about influenza or the flu vaccine, consult your personal physician.

Why get it? According to the Centers for Disease Control and Prevention the flu vaccine is the best protection from the flu. The vaccine contains the three flu virus strains that are most likely to circulate in the upcoming winter.

Can the vaccination give me the flu? An injection of the flu vaccine cannot give you the flu because the vaccine is made from killed viruses. Side effects are generally mild in adults and occur at low frequency. Additional information about possible side effects is available at the time of the vaccination. If you have questions, ask the health care professional administering the vaccine or consult your personal physician before receiving the vaccine.

When to get it? The best time to get vaccinated is between October 15 and November 15 to prepare for the peak flu season (usually between late December and early March), but it is available through March.

Where to get it? Each of the major sites offers onsite flu shots for employees. VLA site employees may go to Dr. Markwell's office for their shots. VLBA site employees are reimbursed for their shots. Announcements are made explaining the flu shot procedures at each site. If you are not available when the shot is being given at your own site, contact one of the following individuals for alternatives.

CV	Billie Jo Mattox	(804) 296-0318
GB	Shirley Curry	(304) 456-2240
SO	Ina Cole	(505) 835-7309
TU	Nancy Clarke	(520) 882-8250

The "End Product" of NRAO *(cont. from page 2)*

How does a paper get published? Most papers are written on the initiative of the researchers themselves, who decide if and when they have results of interest to other scientists. The researcher (or, frequently, the group of researchers) draft a paper. Typically the draft text is circulated among a few colleagues for comments before being submitted to a journal; some institutions (not NRAO) require a formal "internal review" before a paper is submitted for publication.

Once the authors are satisfied with their work, they submit it to a journal. Papers based on NRAO work appear in many journals, ranging from the familiar *Astrophysical Journal* to the Chinese-language *Acta Astronomica Sinica*. Historically, papers have been submitted as typed manuscripts, but many journals now accept papers via electronic mail. In addition to saving trees and shortening communication time, electronic submission increases efficiency by allowing the paper to be typeset directly from the authors' computer file.

Upon receipt of a manuscript, a journal editor sends it to one or more referees. Referees are scientists who independently and anonymously evaluate the paper. Normally the referees will suggest some changes in the paper, and the author will revise the text and re-submit it. Once the paper is accepted by the journal, several months will elapse before it appears in print. During this time, the paper will be edited and typeset.

Also during this time, the author must arrange for payment of "page charges." These per-page publication fees (currently \$130/page for the *Astrophysical Journal*) help offset the cost of producing the journal, making it more affordable for libraries and individuals. Because the NRAO pays full page charges for NRAO scientists and partial page charges for work done by visitors using NRAO telescopes, this is a substantial financial outlay.

Because of the long wait, 3 months to 2.5 years, between submission of a paper and its publication, pre-production versions of the paper, called preprints, are often made available. These preprints provide the most up-to-date literature available. The NRAO library distributes preprints of NRAO work to 130 institutions, observatories, and astronomy departments. Recently, the library has begun posting the full text of preprints on the NRAO's World Wide Web server, making them available instantly to scientists throughout the world.

Since preprints are the most current literature in the field, the library also maintains a database of all preprints received from both individual astronomers and from institutions around the world, and tracks the preprints through publication. Biweekly updates from the database are widely distributed in the astronomical community. Because publication plays such an important role for the NRAO, a listing of papers published each year by staff and visitors is extracted from the database and included in our annual report to the NSF.

While most journals are still produced in traditional paper form, this is changing. The Letters portion of the *Astrophysical Journal*, for example, is now available via an experimental server on the World Wide Web. The technical difficulties of producing an on-line journal, as well as issues related to copyright ownership, have slowed the transition to electronic media somewhat, but the transition is definitely underway. The form of dissemination of papers may be changing in the age of the Internet, but the fundamental concept of published papers will live on, and supporting the publication of high-quality papers will continue to be a fundamental aim of the NRAO.

Where are they now?

Gary Burns, son of Bob and Charlotte Burns, was an AUI Trustee Scholarship winner in 1987. Gary attended the University of Virginia, graduating with a degree in Government in 1991. After graduation, he worked as a Press Secretary for George Allen during his run for the House of Representatives. When Congressman Allen went to Washington, Gary worked on his staff as a Systems Manager and Legislative Assistant. When Allen left Washington to become Governor of Virginia, Gary accepted a position with the Honorable John Mica, R. of Florida. He has advanced to Senior Legislative Aide and mainly works on defense, foreign trade, and agriculture projects.

Governor Allen appointed Gary to the Advisory Board for the Virginia Department for the Deaf and Hard of Hearing, and he serves as the Vice-Chairman. Since Gary is hearing impaired, he was honored to have been given this chance to work on behalf of others like himself. Bob was the Deputy Assistant Director of Computer Operations at the time of his retirement last April.

Matthew McKean, son of Bruce and Freda McKean was an AUI Trustee Scholarship winner in 1991. He graduated from Princeton University School of Engineering and Applied Science last spring. Matthew wrote his senior thesis on watershed management for the protection of water supply. After graduation, Matthew began work as a research analyst for an international energy consulting company in Arlington, Virginia.

Many Green Bank employees and visitors will remember Matthew's three summers as a tour guide. He is also an expert spelunker and has led NRAO visitors on tours of local caves. Bruce is a Sr. Systems Analyst in Green Bank.

Readers:

If you know the whereabouts of an AUI Trustee Scholarship winner and would like to share their accomplishments with the readers of *The Point Source*, please contact me at wmahle@nrao.edu or (804) 296-0265.

Personnel news

Save money on taxes Flex Spending Accounts

If you are paying substantial amounts out of your pocket for unreimbursed health care and/or dependent day care expenses you should look into the benefits of Flexible Spending Accounts. These accounts are a perfectly legal way to pay for such expenses on a "before-tax" basis. This reduces your salary for tax purposes and gives you more take-home pay throughout the year. Both types of plans allow you to deposit money through automatic salary reductions. You can then withdraw funds from the appropriate account to reimburse yourself for any health care or dependent day care costs you have incurred.

By reducing your salary to fund these accounts you lower the amount of federal income, state income, and Social Security tax you pay, giving you more spendable income each pay period.

The plan operates on a calendar year basis. You may contribute any amount from \$300 to \$2500 to your Medical Reimbursement Account. To determine the exact amount, you should list all eligible out of pocket medical expenses you anticipate for you and your dependents during 1996. Eligible expenses are those goods and services currently allowed by the IRS as an income tax deduction. Since medical insurance premiums are already paid on a pre-tax basis, these should not be included in your calculation. Eligible expenses are explained in Part VII of the *Insurance and Retirement Program* handbook. It is extremely important that you carefully estimate the amount you choose to contribute since, under IRS regulations, any amount you do not use by the end of the calendar year is **forfeited**.

The same procedure should be followed for the Dependent Care Account. You may contribute from \$300 to \$5000 (\$2500 if you are married and file a separate income tax return). Eligible dependents and expenses are also explained in the handbook.

To participate in either plan, complete an enrollment form and return it to your local Personnel Representative before the deadline. Forms will be distributed in the middle of November and must be turned in by December 8. You must complete a new enrollment form each year, even if you are currently participating in a Flexible Spending Account.

To claim your reimbursement, complete a reimbursement request available from the Personnel Office and mail it to the address on the form. Medical reimbursements are processed on the 16th of each month. Reimbursements requests received by the 5th of the month are processed that month. Dependent Care reimbursements are processed on the 1st and 16th of the month and must be received at least five days prior to the processing date. The deadline for filing claims incurred during the calendar year is March 31st of the following year.

If you have any questions about the Flexible Spending Account plan, consult your *Insurance and Retirement Program* handbook or contact the Personnel Office.

Notes from the Editor

Q&A

If you have a question you would like answered or a topic you would like addressed in this publication, please submit it in writing. All questions and topics will be referred to the appropriate person. Responses will be published in the next issue, as space is available.

Suggestion email Box

If you would like to make a suggestion to improve the operation of the NRAO or to improve worklife, submit the suggestion to me in the Personnel Office or send email to wmahle@nrao.edu.

Wendy Mahle, Editor

30th Anniversary

(continued from front page)

until about sunset, when the telescope returned to its planned program of observations, and the party ended. About 475 employees, former employees, retirees, and friends of the 140 Foot were in attendance.

The final event of the celebration occurred on Monday, October 2, when about 750 West Virginia high school students and their science teachers visited the site. Exhibits and tours were set up in the lab basement, at the 40 Foot Telescope, at the newly refurbished Jansky Telescope, and at the 140 Foot itself. The students were treated to demonstrations of spectroscopy and the operation of the experimental GBT laser ranging system. The students were uninhibited with their questions:

Student: "What will happen if the GBT laser ranging system doesn't work?"

Dave Parker: "They'll throw out the bunch of us and maybe you can take the job and figure out how to do it right."

It was a day that they will all remember.

Throughout the five days the weather was perfect, and everyone seemed to agree that the event was a successful tribute to an old friend and a good welcome to a new one (the GBT). There were many, many people involved in the celebration, but special thanks go to Fred Crews, Richard Fleming, Sue Ann Heatherly, George Liptak, Ron Maddalena, and especially, to Becky Warner who seemed to be everywhere at once, day and night.

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