



THE POINT SOURCE

An informational newsletter for employees of The National Radio Astronomy Observatory

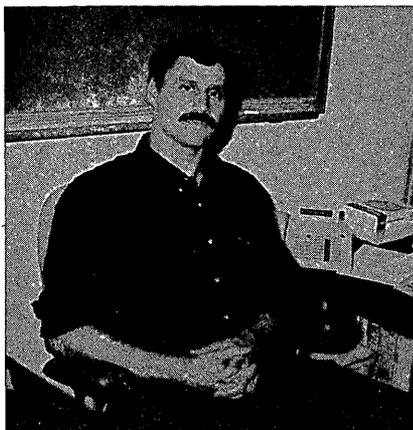
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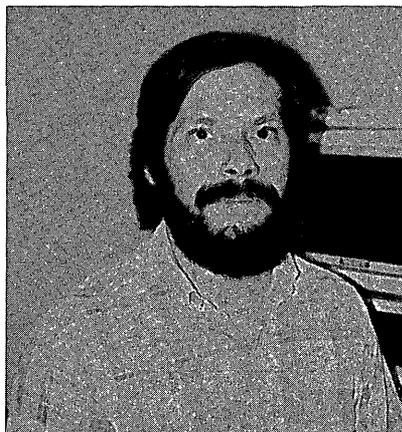
And the winner is...

In the first issue of this newsletter, employees were asked to submit suggestions for the **Name that Newsletter** contest. A total of 33 employees responded to the challenge of the contest, submitting 62 different names. The selection committee consisted of members from each of the sites. Two names were selected for use in the newsletter.

The Point Source, submitted by Bob Treacy of the AOC, was selected as the newsletter name. A point source is a point of light in the sky that does not change in size under different magnification levels, and therefore, can be used to focus the telescope. Since the goal of this newsletter is to give employees a focal place to receive information, the name ties in nicely. Bob received \$50 for his winning entry.



Chuck Beverage submitted the second place entry "Scoping the Sites"



Bob Treacy submitted the winning entry "The Point Source"

A second prize was awarded to Chuck Beverage of Green Bank for the name *Scoping the Sites* which will be used as the title for the regular feature which focuses on happenings at the individual sites. Chuck received \$25 for his second place entry.

Thanks to all of you who submitted entries. There were many good choices, so the final selection was not easy.

Employees honored for years of service

The following employees are being honored this year at Service Awards Ceremonies for either 10, 20, or 30 years of service to the Observatory and AUI:

Charlottesville

James Desmond	30
Anthony Thompson	20
William Wireman	20
Richard Bradley	10
Mary Jo Hendricks	10
William Porter	10
Marian Pospieszalski	10
Warren Richardson	10
Vincent Summers	10

Green Bank

James Gibb	20
William Lambert	20
Felix J. Lockman	20
Dotty McLaughlin	20
Bedford Taylor, II	20
Rosalie Slaven	10

Socorro

Charles Broadwell	20
Frazer Owen	20
James Rexrode	20
Richard Sramek	20
Andres Gutierrez	10
Wotan Heatwole	10
Margaret Perley	10
Jonathan Romney	10
John Sanchez	10

Tucson

Dennis Chase	10
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Scientific news...

John Findlay

It is with great sorrow that we say good-bye to John Findlay, who died on March 22. John came to AUI in 1957 as one of the first employees of the Observatory (RAO No. 5) and played a major role in planning for the development of NRAO. He started the NRAO Electronics Division and later served as Deputy Director and as Assistant Director for Green Bank.

Until his retirement in 1985, John led the NRAO efforts in the design of new antennas. He planned and supervised the design and fabrication of the 300 Foot Telescope in Green Bank as well as the 36-foot millimeter telescope on Kitt Peak, and later its upgrading to the current 12-meter configuration. Even after his formal retirement from the Observatory, he continued his efforts to further improve the performance of the Kitt Peak antenna. He also was the leader of the technical group responsible for the design and construction of the 28 VLA antennas. During the 1960's he led a small team investigating the design of the Largest Feasible Steerable Telescope, and later led the group's designing of the 65-meter and 25-meter millimeter radio telescopes.

John also contributed in many ways to astronomy through his activities outside of NRAO. Throughout his career he was involved in the international effort to protect radio astronomy frequencies from

interference from the expanding use of radio communications. For many years he was Chairman of the U.S. Committee on Radio Frequencies (CORF) and the IAU-URSI-COSPAR Inter Union Committee on the Allocation of frequencies. During the 1960's and 1970's, John was a member of the national Academy of Sciences Space Science Board and Chairman of the Lunar and Planetary Missions Board which advises NASA on the planning and conduct of all missions to the moon and planets, including the manned Apollo missions to the moon.

John received his Ph.D. in 1950 from Cambridge University. During WWII he served in the Royal Air Force, where he supervised the installation of radar stations throughout the Middle East and Asia. Following the War, he led a radar development group in Britain and did research on ionospheric physics. Perhaps John's best known research contribution to astronomy is his effort to establish an absolute calibration at 21 cm, for which he constructed the Little Big Horn, which still stands in Green Bank.

John was a Fellow of Queens College at Cambridge University, as well as a Fellow of the IEEE and AAAS. He is survived by his wife Jean, his two married sons, Stuart and Richard, and their families.

Discovery of Planets Confirmed

For the first time there is irrefutable evidence that planets exist outside our solar system. In 1991, using precise timing of fluctuations in natural radio signals, Alexander Wolszczan of Penn State University and our own Dale Frail in Socorro found the first evidence of two or possibly three objects circling the dense spinning remnant of an exploded star known as a neutron star or a pulsar. Observations were made by the Arecibo radio telescope in Puerto Rico. Further research by Dr. Wolszczan has now confirmed the existence of these planets.

The pulsar, known as PSR1257+12 is a dense object only about 12 miles in diameter. It is located in the constellation of Virgo, about 1,200 light-years from Earth. As it spins on its axis 161 times a second, the pulsar sends out radio waves that sweep the Earth in regular pulses.

The times that these pulses arrived at the Earth changed in a regular and predictable way. The variations amounted to plus or minus 0.002 seconds in the arrival time of the radio pulses. They matched the variations that would be caused by the gravitational forces of two planets orbiting the pulsar at different speeds.

The planets are in orbit about the same distance from the pulsar as Mercury is from the sun, 33.5 million and 44 million miles out. They orbit the pulsar in 67 and 98 days respectively. Other variations in the data indicate the presence of a much smaller third planet about the size of the Earth's moon, plus a possible fourth object.

New Employees

Green Bank

Roger Dickenson, Telescope Serv.
Gregory Morgan, Admin. Serv.
Christopher Norris, Student Support
Harry Sipe, GB Antenna & Systems

Socorro

J. Robert Gallagher, Electronics
Elizabeth Gonzales, Admin. Serv.
Scott Foster, MMA Project
Kevin Healy, Scientific Services
Chester Moeller, E & S
Margaret Tongue, Array Operations
Michael Torres, E & S
Stephan Witz, Array Operations

Departures

2/26/94 - 5/31/94

Socorro

Daniel Briggs
Shane Combs
Stephen C. Cook
Ketan M. Desai
Emory Egler, Retired

Randall Jones
John Lewis, III
Elisa Weeber
Eric Wollman

1994 Summer REU Students (Staff Advisors)

Charlottesville

Jacob Callcut, Michigan State (Alan Bridle)
Sarah Winfrey, U. of Michigan (Cecilia Barnbaum)
Eric Anderson, U. of Virginia (Jim Condon)
April Peterson, James Madison (Brian Glendenning)
Gretchen Williams, West Virginia U. (Rich Bradley)

Green Bank

Brennan Cropper, Southwestern Louisiana (Aron Benet)
Jennifer Hand, U. of Kansas (Mark McKinnon)
Christi Eixenberger, U. of Idaho (Ed Meinfelder)
Ryan Neaderhiser, Kansas State (Sue Ann Heatherly)
Aaron Swecker, West Virginia U. (Mike Masterman)

Socorro

Chad Cook, Dartmouth (John Conway)
Leslie Simon, U. of Iowa (Jim Higdon)
Philip Choi, Wesleyan (Claire Chandler)
Britt Scharringhausen, U. of Iowa (Dale Frail)
Gabriel Farris, Southwestern U. (Ruth Milner)
Cornelia Lang, Vassar (Miller Goss)
Christopher Palma, Penn State (Robert Hjellming)
Catherine Lehman, Rensselaer Polytechnic (Eric Wilcoits)

Tucson

Pamela Gay, Michigan State (Jeff Hagen and Phil Jewell)
Alvin Essenburg, Calvin College (Jinquan Chen)

Scoping the sites...

Charlottesville

○ Employees in Charlottesville were honored for the highest participation rate in the American Lung Association's program, **Give Air a Brake!** The goal of the program is to reduce the number of single passenger cars commuting to and from work for at least one day a year. NRAO took top honors for the under 100 local employees category.

Edgemont Road challenged Ivy Road to see which location could have the greatest percentage of participation, a breakfast of bagels at stake. Employees carpooled, walked, and biked to work that day. When the final results were tallied, ER had 33.7% participation and IR had 33.3%! The count was too close to call, so, bagels were provided for all.



Employees at Charlottesville enjoyed a delicious and healthy picnic lunch as part of the Wellness Program.

○ Eating healthy is the focus of the Charlottesville Wellness Program in June. Volunteers cooked a delicious and healthy picnic lunch on June 1 from recipes provided by Martha Jefferson Hospital Healthworks. Attendees received a packet of the healthy recipes to try at home. Thanks to the chefs who volunteered and made this both a fun and healthy event.

Green Bank

○ The Green Bank - Charlottesville Golf Challenge took place on May 13 at Lake View Golf Course in Harrisonburg. GB rallied to overtake CV for the fourth time in seven matches. The popularity of this event has grown to 28 participants which enlivens the camaraderie but impacts the production in the GB Machine Shop. Newcomers included Vince Summers, Chuck Beverage. Too bad Jim Desmond can't play golf as well as his son.

○ The Navy has announced plans to resume work on the addition to the Jansky Lab in Green Bank. According to the Naval Facilities Engineering Command, the project will go out for bid in the next few months.

The Jansky Lab addition will contain offices, labs, and equipment rooms that will support a number of U.S. Navy activities at Green Bank, primarily for the Naval Observatory, as well as NRAO activities. The new 20 USNO meter telescope that is under construction there will be operated from the Lab addition. The building will also house the tape recorders for the 20 meter telescope in a special environmentally-controlled room. It will be the location of the USNO maintenance center for the Green Bank and Kokee Park (Hawaii) antennas, as well as the maintenance center for their electronics and receivers. In time, the USNO masers and other frequency standards may be located in the addition, creating a high-quality timing center.

The building addition will also have a small auditorium, several shielded rooms that can be used for operations or equipment development, and offices for visitors.

Socorro

○ The semiannual NRAO vs. New Mexico State University soccer match was held March 26th in Socorro. This was the fifth in a series of grudge matches pitting NRAO employees against the astronomy graduate students from Las Cruces.

Playing for NRAO were Tony Beasley, John Conway, Phil Diamond, Dale Frail, Bill Junor, Leonid Kogan, Andrew Lobanov, Gustaaf van Moorsel, Nick Smallridge, Arturo Velazquez and Angelos Vourlidas. Risking great injury to himself, Tim Roberts (NRAO) graciously played sweeper for NMSU.

The final score was 2-1, giving NRAO the New Mexican Astronomy Football Cup title once again.



Socorro soccer players beat the NMSU Astronomy students.

○ Fourteen temporary employees began work at the VLA in May on "warm weather" repairs such as track maintenance and manhole replacement.

○ Several VLBA site technicians visited the VLA in May for a "Station Technician Workshop" which included familiarization and training on different systems used by the VLBA Antennas.

○ The VLA has added a stationary bicycle and treadmill for use by employees during lunch times and by visitors. These will be located in the cafeteria area, along with the ping pong tables.

Tucson

○ Tucson hosted the Multi-feed Systems Workshop from May 16-18. Ninety-six participants attended from 14 countries. Comments on the workshop were highly favorable regarding both the scope and the content of the sessions, as well as tours offered to Kitt Peak, the U. of Arizona Mirror Lab, and the Submillimeter Telescope Observatory on Mt. Graham. Dinner on the Ironwood Terrace at the Desert Museum provided participants with a good opportunity for social interaction and an excellent Mexican Fiesta buffet.

Personnel news...



CREF to add new fund choices

Employees at NRAO will have two new CREF funds in which to invest their retirement contributions starting in July. CREF has recently informed us that they intend to introduce a growth stock fund and an equity index fund. This will give CREF investors a total of five different stock funds to choose from.

The CREF Growth Account will concentrate on stocks that have superior growth and earnings prospects. CREF's analysts will select stocks of companies that have the potential for strong sales growth, or those which are currently undervalued in relation to their current earnings or anticipated growth. This means that the portfolio will be weighted with small and medium-size companies in emerging areas of the U.S. economy. In addition, the fund may also invest up to 40% of its portfolio in foreign stocks. Because of the nature of these investments there is a greater amount of risk involved and participants should expect more price fluctuation than is customary with other CREF funds. Conversely this type of fund should offer the potential for greater capital gains.

CREF's other new offering, the Equity Index Account, will be constructed to match the weighting of the stocks in the Russell 3000, a broadly-based index of domestic common stocks. The 3000 stocks in this index represent 98% of the common stocks traded in the United States. Thus the performance of this fund will closely parallel the experience of the overall U.S. stock market. The transaction expenses of index stock funds are generally lower than most other types of stock funds, a factor that should contribute to higher total returns.

Employees should receive information on these investment alternatives direct from CREF later this month. Those who wish to begin allocating regular or supplemental retirement contributions to either or both funds may do so by using CREF's automated telephone service (1-800-842-2252) or by contacting a CREF representative at 1-800-842-2776.

For information on any of the retirement investment choices available at NRAO contact the Personnel Office. We will be happy to explain your alternatives and assist you in completing the necessary applications.

Access your Fidelity account by phone

Employees who are making retirement contributions to Fidelity Investments should have received notification that they now can access their accounts using F.I.R.S.T. (Fidelity Investment Retirement Services Telephone).

Letters were recently sent to all NRAO employees informing them of the new feature. If your letter bore the salutation, "Dear Brookhaven National Lab Plan Participant", not to worry; Brookhaven and NRAO employees are both in the Associated Universities, Inc. Retirement Plan. Since Brookhaven employees make up over 80% of the total AUI participation in Fidelity, they get most of the name recognition.

In any case, the new system works for NRAO. We've tried it. If you have experience with the TIAA-CREF automated access system you will be comfortable with this one. Using a memo-driven format, you can set up your personal identification number (PIN) and then obtain total account balances, individual fund balances, and price and yield information on your fund investments.

If you have not received your notification letter from Fidelity, please contact the Personnel Office.

Notes from the Editor Suggestion email Box

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

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. Their responses will be published in the next issue, as space is available.

You may request that your question or suggestion be submitted confidentially. If you do, only I will know who sent the question. However, I do ask that you include your name with your question/suggestion.

Q&A Newsletter paper

In the first issue, employees were requested to send questions to the editor. In response, several employees inquired about the paper that was used for the first issue of the newsletter.

One employee asked about the cost of the glossy paper used in the first issue. The total cost difference for the glossy paper was \$10.

Most of the other questions asked by employees dealt with the recyclability of the newsletter. One employee questioned why the newsletter was not printed on recycled paper. Recycled paper was not used because it would have cost more than the glossy paper. Several employees questioned whether the glossy paper could be recycled. In fact, glossy paper is recycled in the same way as magazines. Because there is not as much call by the recycling industry for this type of paper, some of our sites do not recycle it, therefore, it will not be used for the newsletter in the future.

It was also asked whether the newsletter could be distributed electronically. Since there are many employees who do not have access to email or a computer, this does not seem like a viable alternative at this time.

Henceforth, this newsletter will be printed on plain white, recycled paper. When you are finished with your copy, you may put it in the white paper recycling bin. Thank you for your environmental concerns.

Wendy Mahle, editor