

# The Village Courier



fermi national accelerator laboratory

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## NEW COSMIC RAY DETECTOR EXHIBIT

Cosmic rays.

The words bring to mind visions of outer space, spaceships and Flash Gordon-type action adventures. Actually, cosmic rays are mysterious sub-microscopic particles. Their origins in space are unknown, but the average person is exposed to about 500,000 cosmic ray particles daily.

A new Fermilab exhibit enables employees and the public to see cosmic rays arriving.

The display is called a spark chamber. Installed on the 15th floor north observation area, the display gets its name from sparks that are seen when cosmic rays are detected. It resembles a six-foot-tall black plastic box, with windows on two sides. The chamber's inner workings are illuminated when a visitor pushes an "X" button.



...M. Atac with new spark chamber exhibit on the Central Laboratory's 15th floor...

Muzaffer Atac, detector development group head in Research Services, created the display. He said its purpose is to give non-scientists a better understanding of Fermilab's research. He noted that spark chambers are "detectors" that physicists use to record results and learn about processes taking place deep inside the atom's nucleus. In addition, other uses range from x-ray and gamma-ray astronomy, to nuclear medicine and biology, to radioactive studies and even archaeology.

Other types of detectors used at Fermilab include drift chambers, proportional wire chambers and bubble chambers. Momentum resolution, data rate expected and estimated cost determine which type of detector will be built for an individual experiment, he said.

The new display was constructed with materials borrowed from Argonne National Laboratory, courtesy of Tom Romanowski, former high energy physics department head. Several months' parttime work by Atac, technicians J. Urish, M. Hrycyk, W. Coleman, artist Angela Gonzales and the model shop went into the project.

Aluminum foils 0.005-inch thick are stretched and positioned on plastic frames. The thin aluminum foils serve as electrodes for each of 20 spark chamber gaps. The active area of each chamber is 20 x 40 inches. An atmosphere of 90% neon and 10% helium fills the gaps.

Long plastic scintillators, light detectors, are placed above and below the frames. When a ray or rays passes through the scintillators, a circuit produces an electronic signal. This triggers a high voltage pulser and 6,000 volts is applied to the chambers.

The electric field accelerates electrons created during the cosmic rays' passage through the chamber. Electrons then colliding with neon-helium atoms produce a ZAP! and an orange spark resembling a mini-lightning bolt. The whole process lasts less than one millionth of a second!

The new display joins an optical/electronic spark chamber on view in the atrium lobby since June, 1975.

Brief non-technical texts attached on both exhibits explain cosmic rays, detectors used in physics and operating information.

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## POPULATION PEAK AT FERMILAB

Like a thermometer, Fermilab's population has risen this summer. In addition to regular employees/users, there has been an influx of experimenters, graduate students, work/study program participants and summer hires in a wide variety of assignments.

According to the Users Office, an estimated 100 new researchers and students have arrived since April. They join about 200 others who are running experiments or doing experiment-related work. Occupancy in Village housing is quite high, and there are numerous family groups spending time at Fermilab.

Personnel Services reports nearly 150 other summer employees added as part of the typical seasonal increase. Included in this group were about 20 young workers who received assignments through an eight-week summer job program funded by a federal summer work program. The program is administered through the Aurora CETA (Comprehensive Employment and Training Act) Office. Participants are paid the minimum wage by the federal government and are assigned to work for various non-profit agencies and tax-supported organizations. The 20 participants at Fermilab this summer were on assignments involving office work and grounds maintenance.

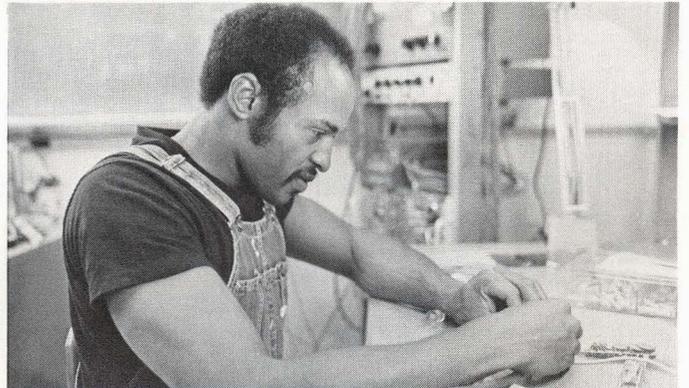
The majority of Fermilab summer employees are young people working on groundskeeping assignments. Additional assignments involve office work and vacation relief in areas where regular employees are off enjoying summer holidays.

The Laboratory also has a group of about 40 physics undergraduates working on various Laboratory assignments. Most of these work situations involve support of experimental activities--testing equipment, building apparatus, and analyzing data for experiments. A lecture series is provided for these students by Fermilab staff members. Scheduled speakers this summer include Alfred Brenner, Francis Cole, Bradley Cox, Edwin Goldwasser and Drasko Jovanovic. The series is coordinated by James Davenport of Virginia State College.

Students represent the following college and universities: Alabama A & M, University of California-Santa Barbara, Caltech, Florida A & M, Grambling State, Howard University, University of Illinois-Chicago Circle, MIT, Morehouse College, New Mexico Highlands, New Mexico State, North Carolina A & T, Ripon College, Southern University, Spelman University, Stanford University, Upsala College, Virginia State, and Yale University.



...J. Woolridge (PIO) is summer receptionist in Central Laboratory atrium...



...W. Council solders a project for the Meson Dept...



...N. Safeblade modifies amplifier boards for Exp. 290...



...Summer groundskeepers include T. Butler (L) and G. Walker...



...Botanical artists A. Tyznik, N. Hart...

## TREES AS ART

Trees, leaves and seeds star in a graphics exhibit at Fermilab. Twenty-four botanical prints, original pen and ink drawings, will be on display for six weeks in the Central Laboratory's second floor lounge. On loan through the generosity of Morton Arboretum, Lisle, the art was created for arboretum publications by Anthony Tyznik, superintendent, and Nancy Hart, staff artist.

Tyznik illustrations depict: Washington Hawthorn, Hackberry, Sycamore, Sumac, Buckeye, Linden, Honey Locust, Kentucky Coffee Tree, Tulip Tree, European Larch, Dotted Hawthorn. Hart illustrations show: Carolina Silverbell, Colorado Fir, Witch Hazel, Carolina Allspice, Eastern Hemlock, Flowering Quince, Sawtooth

Oak, Bottlebush Buckeye, Mountain Rosebay, Leatherwood, American Holly, American Hazelnut, European Black Alder. As superintendent of the Morton Arboretum since 1953, Tyznik is responsible for overall management of the buildings and grounds, including landscape. His series of tree drawings are a regular feature in The Morton Arboretum Quarterly. Hart has taught botanical art at the Arboretum since 1966. She is also curator of the arboretum's historical collection of botanical prints and drawings. Her drawings in the exhibit have been done especially for the covers of The Morton Arboretum Quarterly.

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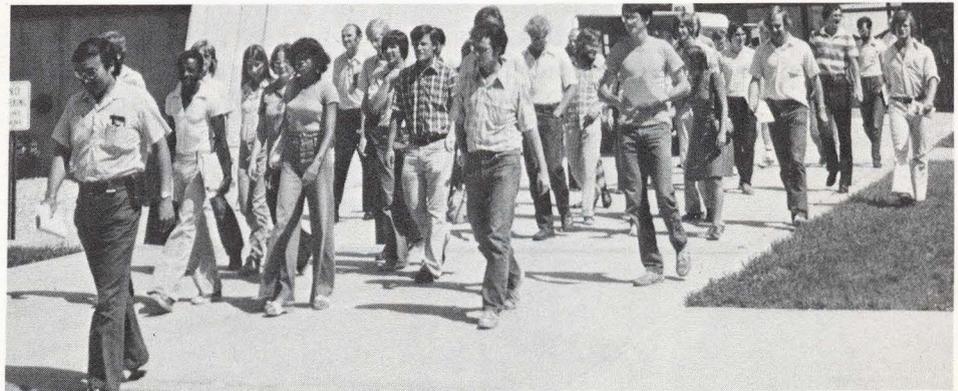
## R & R AT FERMILAB FOR X-COUNTRY BIKERS

70 bicyclists . . . a van . . . mini-truck . . . and one-ton truck with trailer comprised a caravan that arrived at Fermilab July 11. Public Information staffers learned of the surprise visit about 3 p.m. The bikers were members of "Wandering Wheels," a summer cycling program offered by Taylor University, Upland, Ind. Riders included 55 men and 15 women from 16 to 30 years old. A Portland, Me. to Portland, Ore. jaunt--3,350 miles in six weeks--via backroads, was in its 17th day. After ice cream and other refreshments in the cafeteria, visitors took tours conducted by D. Ritchie (Computer), M. Pearson and S. Burton (PIO) before resuming the trek to an overnight stopover in Geneva. The group will return to Indiana by bus.



...R. Armstrong (R) greets visiting bikers...

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...VISITORS...Recent site tourists represented the Argonne National Laboratory and Chicago's Department of Human Services. Left, S. Burton (PIO) escorts DHS visitors. Right, G. Koizumi (Neutrino) leads ANL students...

MEMORIAL NOTICE

In response to many requests, the eulogy to Benjamin W. Lee delivered by Robert R. Wilson at services June 21 has been reproduced for distribution. Copies are enclosed with this issue of The Village Crier. Additional copies are available from the Fermilab Public Information Office, CL-1W, Ext. 3351.

A memorial fund has been established. Contributions may be sent to the Fermilab Directorate, CL-3E.

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COUNTRY JAM SESSION JULY 30

Pickin' and singin'! That's the musical bill of fare set for a country-western/folk/bluegrass jam session on Saturday, July 30. NALREC will sponsor the "open microphone" event from 7 p.m. to ? in the Village Barn. YOUR talent is solicited. Admission is free. Three bands will entertain. They are the Running Fox Bluegrass Band, led by Larry Robinson (Proton); Jackson Creek Bluegrass Band, Elwood, Ill.; and the Porter Brothers Band of Aurora, featuring Darryl Porter (Grounds). Bob Barnhill (Magnet Facility) will perform solo. Hamburgers on the grill will be 50¢ each. A cash bar will be open. For information, phone Jesse Guerra (Ext. 4305) or Larry Robinson (Ext. 3533). Y'all come!

HOW TO HANDLE THE HEAT

Dr. Charles A. Lang, Fermilab physician, has provided some tips for staying well during hot weather. Avoid, he says, prolonged exposure to direct sun and over-exerting at jogging, heavy labor and strenuous exercise; drink plenty of fluids; and protect exposed areas with creams or clothing.

STORK REPORT

[REDACTED], [REDACTED]  
[REDACTED] Congratulations to: Dr. and Mrs. T.Y. Ling (Neutrino Exp. 310)  
[REDACTED]  
Kathy (formerly of Neutrino) and Bill Swedberg (Accelerator)  
[REDACTED]  
Elca and Romesh Sood (Neutrino) [REDACTED]  
[REDACTED]

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DATE TO REMEMBER

Sunday, August 21, will be Fermilab family picnic day. Mark your calendar! Details will be announced.

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TRASH & TRAINING DIVE

Fire department scuba divers conducted a trash cleanup in Casey's Pond while practicing underwater search pattern techniques July 9. Below, L-R are: J. Garry, J. Lill, T. Velasquez and B. Dunne. Right, working the shore, are J. Bailey and J. Steinhoff. R. Divelbiss was also among divers.

