

The Village Courier



national accelerator laboratory

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U. OF CHICAGO SYNCHROCYCLOTRON TO FIND NEW HOME AT NAL NEUTRINO LAB

To date, 155 proposals have been received from the high energy physics community to conduct experiments on NAL's accelerator system. Of these, 52 have been approved by the program advisory committee.

One approved research effort is designated as Experiment No. 98. It will be a complex endeavor involving, literally, some of the heaviest equipment on the NAL site. Scientists from Oxford University, Harvard, the University of Chicago and NAL will be involved, as well as distinguished physicists from the United States and Great Britain.

So that Experiment No. 98 and others can be conducted here, the 2,500-ton magnet from the University of Chicago synchrocyclotron, built nearly two decades ago, is being moved nearly 45 miles from the University campus to NAL. Sometime this Fall, the heavy magnet will be placed in the muon experimental area of the NAL Neutrino Laboratory. A special building will be constructed to house the magnet near the "Wonder Building," not far from Wilson and McChesney roads.

Experiment No. 98 is scheduled to begin July 1, 1972. However, it is expected that the magnet, and supporting facilities, will be in place by late next Spring.

"We will be very happy to have this valuable piece of equipment available at NAL since it would cost much money and involve a great deal of time to duplicate it."

With those words, Taiji Yamanouchi, physicist on the NAL Neutrino Laboratory staff, greeted the news that the University of Chicago's synchrocyclotron, was being moved to NAL.

A main part of the early model particle accelerator will be used as an analyzing magnet to study the structure of the proton using muons as a probe.

It will be a heavy moving job from the synchrocyclotron's present home near 57th Street and Ellis Avenue in Chicago's Hyde Park district to the NAL site, a distance of about 45 miles.

The Experiment No. 98 team will study the scattering of high-energy muons from targets made of liquid hydrogen and other materials. The experiments will utilize the proton beam from the NAL accelerator.

Dismantling of the synchrocyclotron began July 12 under the direction of Leroy Schwarcz, the chief mechanical engineer who built it in 1950-52. Schwarcz is now a senior staff member at Stanford Linear Accelerator Center (SLAC).

S. Courtenay Wright, Professor, Department of Physics, the Enrico Fermi Institute, and the College of the University of Chicago, helped make plans for moving the magnet to NAL.

Schwarcz is now directing the removal of 3,700 tons of concrete shielding that protected staff and researchers from radioactivity from the synchrocyclotron when it was in operation. The concrete rests in two layers of concrete beams that weigh 80 tons each,

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....Workmen at the University of Chicago, getting the giant synchrocyclotron ready for moving to the NAL Neutrino Laboratory.... Photo by the University of Chicago

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covering most of the pit containing the synchrocyclotron.

It is expected that the synchrocyclotron will be totally dismantled at the University about October 15. Shipping of the components of the magnet are scheduled to start that day. It will require 22 truckloads, with one 90-ton segment magnet on each truck, to accomplish the transfer, according to Robert G. Sachs, Professor in the Department of Physics and Professor and Director of the Fermi Institute.

Sachs noted that some of the synchrocyclotron's greatest work was being done right up until the last minute of its operation, 8 a.m., July 12, on an experiment involving muonium by Valentine L. Telegdi, Professor in the Department of Physics and the Institute, and his collaborators. Muonium is a man-made atom of a fleeting life consisting of a positive mu meson and an electron. Telegdi's experiment involved ultra-high precision measurements which give new information on the fundamental constants of physics.

In the early 1950's, the synchrocyclotron's 450 MeV (450 million electron volt) proton beam was one of the world's prime sources of mu and pi mesons (muons and pions), opening up a whole new field of science--particle physics.

Since then, a bewildering variety of "new" subatomic particles has been discovered in research using particle accelerators.

Purpose of the experiment at NAL is to investigate the basic structure of the proton, one of the basic building blocks of matter. High energy muons produced at NAL will be used, much as X-rays are used by physicians, as the probe.

KEN WILLIAMS ON MISSION TO AFRICA FOR STATE OF ILLINOIS

Kennard Williams, of NAL's Equal Employment Opportunity Office, is a member of a special mission to Ghana and Nigeria, sponsored by the Illinois Department of Business and Economic Development, to initiate discussions on joint economic ventures, to identify products that could be traded between those countries and the United States, and to exchange business and cultural information. On his return, Williams plans to stop at CERN in Geneva, Switzerland, to discuss the possibility of an exchange program involving U. S. minority groups members for summer work and study there.

Williams and his wife, Barbara, departed last week by plane for Africa. Also a member of the group is Walter H. Sanderson, of Chicago, President, Sanderson Industries, Inc., which has been one of the major minority-owned firms involved in the construction of NAL.

NAL SCIENTISTS ATTEND MEETINGS IN SWITZERLAND, ITALY

The VIIIth International Conference on High Energy Accelerators is being held at CERN, Geneva, Switzerland, this week (September 20 to 24). As in the past, it is being sponsored by the Particles and Fields Commission of the International Union for Pure and Applied Physics (IUPAP). Participation is world-wide and is by personal invitation only, with about 350 in attendance. Representatives from NAL are Lee Teng and Stanley Snowden (Accelerator Theory), Donald Young and Cyril Curtis (Operations), Quentin Kerns (Radio Frequency), Richard Cassel (Main Ring), Edwin L. Goldwasser and Robert R. Wilson (Director's Office). In addition, Ned Goldwasser and Jim Sanford (Director's Office) attended the week-long study session of the European Committee on Future Accelerators at Tirrenia, Pisa, Italy, last week. The purpose of that meeting was to enable European physicists to start thinking about the problems and possibilities of the new 300 BeV accelerator to be built at CERN. Dr. J. B. Adams, director of the 300 BeV project, who visited NAL some months ago, reported on the characteristics of the proposed machine as directly related to physics as well as on possible future options. The NAL representatives reported on the present status of the NAL accelerator system, experimental areas and beams.

NATURE NOTES....

Bird watchers on the NAL site may be able to spot the migrating teal ducks this weekend. The teals are among the first birds to head south in the Fall and will probably be attracted to the Law Lake in back of Sauk Circle west of Batavia Road.

Rudy Dorner, NAL Site Manager, reports that mourning doves in loose flocks have also been reported near the site. Also, it may be possible to see red-winged blackbirds and grackles heading south in enormous flocks, often numbering in the thousands.

Dorner also reports that two pet ducks have been added to the flock in the Fire Pond and he hopes that the interbreeding will result in some tame ducks in the pond. The present flock can now be observed waddling back and forth between the Fire Pond and the pond behind the buildings on Nequa.

Meanwhile, back at the buffalo range, the new additions during the past summer now number five--three in the Colorado herd and two in the Illinois herd. Two more are expected in the next month or so, bringing the total count to twenty-five!!! Plans are underway to construct a larger pasture for the animals and, possibly, to combine the two herds this Fall.

FISHING DERBY TO BE HELD AT FIRE POND SATURDAY, SEPTEMBER 25

NAL employees and their families are invited to participate in a Fishing Derby, to be held on Saturday, September 25 at the Fire Pond behind the Curia in the NAL Village, from noon until 4:00 p.m.

When registering at a table near the Curia, contestants will be given a set of rules for the competition which will be judged by age groups -- 0 to 7; 8 to 11; 12 to 16; 17 and above. At 4 p.m. judges will pick the winners; prizes will be awarded. Bring your own fishing gear; worms will be furnished.

(A tip for Derby fishermen comes from Rudy Dorner, NAL Site Manager, who notes that plastic worms are very successful for this type of fishing. "The fire pond is 10-12 feet deep," he reports. "If it's a warm day, fish deep. But fish slowly and patiently," he advises.)

To register early or for information, call George Nosal, Ext. 781. IN CASE OF RAIN, THE EVENT WILL BE HELD ON SUNDAY, SEPTEMBER 26, SAME TIME.

NAL CAMPERS who wish to do so may set up their camping equipment at the corner of Blackhawk and Shabbona during the Derby. Under the direction of George Doyle, information will be exchanged on good camp sites, equipment maintenance, and towing requirements. Doyle plans to cook his own breakfast on the site that day and will also supervise the campfire. If you want to exhibit or for further information, call George Doyle on Ext. 421.

IN THE CLASSROOM....Charles Marofske, Personnel Manager, is teaching a course titled "Wage and Salary Administration" in the Aurora College's Department of Economics and Business Administration. About 17 "junior executives" are enrolled in the class. "Planning my lectures and my tests keeps me busy on the weekends," says Chuck. His first class spent much of the time discussing the wage-price freeze. The class meets Thursday Evenings from 7-10:00 p.m.

Mrs. Mildred Meyer, Administrative Assistant in Marofske's office, is teaching a course in shorthand in the Joliet adult education program. Mrs. Meyer's class is held on Monday and Thursday evenings and runs for ten weeks.

NALWINGS TO MEET IN VILLAGE THURSDAY NIGHT

More than 30 NAL employees attended the first meeting of NALWINGS, the recently-formed flying club. Membership is still open and anyone wishing to join is urged to come to the next meeting which will be held on Thursday, September 23rd, at 5:30 p.m. in the Village Barn.

Permanent officers of the group were elected at the recent meeting. They are: Miguel Awschalom, President; Richard Andrews, Vice-President; Jerry Reid, Secretary, and Tony Frelø, Treasurer. Jim Griffin was also elected to serve on the Board of Directors.

Club members fly at a reduced rate, currently out of the Village Airways at the DuPage County Airport, St. Charles. New students as well as licensed pilots can take advantage of the FAA-approved flight and ground school. For additional information, call Tony Frelø, Ext. 350 or 354.

PLAN TO FORM SCUBA CLUB AT NAL

Anyone interested in forming a Scuba club should contact Bill Beckley, Ext. 413. The proposed club would meet at NAL monthly. Activities would include lessons leading to certification, group diving, ice diving and other club-sponsored activities.

REMINDERS: The DUPLICATE BRIDGE CLUB meets the second and fourth Thursday of every month at 8:00 p.m. in the NAL Cafeteria. (The big winners on September 9th were Bill and Nita Wisniski of Aurora. Bill is an Engineering Inspector with DUSAF and you can believe he inspects those cards well!) The Club is open to NAL, AEC and DUSAF employees and their guests who like to play bridge. A cordial invitation is especially extended to visitors who happen to be at the Laboratory on "duplicate" nights. The group will meet next on Thursday, September 23rd - please call Spike, Ext.351, for further information.

.....Tickets are still available for the Sunday evening trips to see the Chicago Blackhawks hockey team play in the Chicago Stadium. For further information, call Peaches on Ext. 470 or 479.

.....HAPPY HOURS scheduled for the month of October have been cancelled pending a review of their staffing.

CLASSIFIED ADS

FOR SALE-'69 VW Bug, excellent condition. \$1,300. Call D. Fleischer, 469-8659.

FOR SALE-'62 Ford Galaxy 2dr. 6 cyl. Auto., \$75 or best offer. Call Ken Fleischer, Ext. 555.

FOR SALE-'68 'Vette, 427, 290 HP, Turbo, ps, pb, pw, new blk.pt.job, 2 tops, \$3,100. D.Hartman, Ext. 555.

FOR SALE-30-Gal.seamless fish tank w/acces.; 2 15-gal.fish tanks w/acces. Call after 4 p.m., J. Woronicz, 834-8306.

STUD SERVICE-AKC Reg. Airedale. No fee but would like 1 puppy. A.Mitchell, Argonne, Ext. 62195.

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