

The Village Courier



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NEW PARTICLE DISCOVERED AT FERMLAB



...Irwin Gaines discussing mass distribution chart for E-87...

Experimenters working at Fermilab have announced the discovery of a new nuclear particle at a press conference in New York City Thursday. John Peoples, along with Wonyong Lee of Columbia, the spokesman for E-87, and Bruce Knapp, Columbia University, explained that more than fifty examples of the new particle have been found in a search of over fifteen million nuclear collisions. The new particle is a cousin of the proton and neutron that make up the core of an atom. Many scientists have suggested that the new particle is the first example of a particle similar to a proton carrying the long sought property "charm." The events found here are very consistent with the charm picture. Earlier this summer researchers at the Stanford Linear Accelerator Center reported evidence for a different type of particle, a meson - sometimes referred to as the nuclear glue - that also may be a charmed particle.

The new particle, more than twice as heavy as a proton, breaks into four fragments in this experiment -- a fragment with no electric charge and three mesons, each with electrical charge. A few billionths of a second later, having moved several feet at nearly the speed of light, the uncharged particle splits into two electrically charged particles. It is this special combination of five particles, two coming from a point several feet away from the other three that gives the new particle a unique signature.

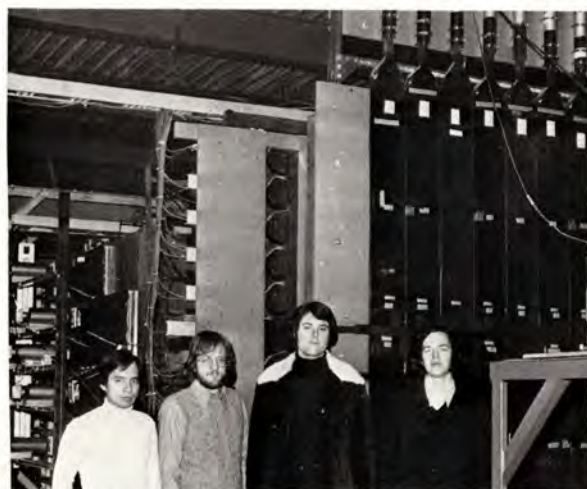
The research team, consisting of experimenters from Columbia University, Fermilab, the University of Hawaii and the University of Illinois, has worked for more than five years to build the apparatus employed for the experiment. The group was the first to make the important demonstration that an unusual new meson, discovered in late 1974, could be made with photons. The unique experimental equipment consists of a special magnet capable of snatching most of the shards of a nuclear collision and a series of computer coupled detector planes to track and analyze the particles as they pass through the magnet. The ability to catch a large number of the fragments was especially important in detecting the new particle since it ultimately splits into five pieces. The new particle was produced with an unusual beam of photons filtered through more than one hundred feet of liquid deuterium to remove other particles.

The team is now planning additional investigations and experiments to look at the

(Continued on Page 2)



...(L-R) D. Smith, Columbia Univ.; W. Lee, Columbia, spokesman for the experiment; J. Peoples, Fermilab; A. Wijangco, Columbia; D. Nease, Fermilab (presently with Neutrino); J. Knauer, U/Hawaii; M. Gormley, Fermilab; R. Coleman, U/Illinois; L. Read, Fermilab (presently with Neutrino); and J. Bronstein, U/Illinois, of E-87...



...(L-R) A. Wijangco, Columbia; G. Gladding, U/Illinois; L. Cormell, presently with U/Pennsylvania; and R. Coleman, U/Illinois...



...A. Wijangco, Columbia, with large proportional wire chamber used by Experiment #87...

properties of the new particle.

The search for the new particle had its roots in a series of startling experimental developments that have occurred in high energy physics in the last two years. The developments began with the discovery of what amounted to a new form of radioactivity in Europe and at Fermilab. In this form some radioactive or weak processes occur effectively without the emission of an electrically charged particle. This discovery suggested that electricity and some forms of radioactivity might be linked as "unified" theories had suggested. It also suggested that a new property of matter or "quantum number" called "charm" might exist. Ben Lee, Mary K. Gaillard, and Jon Rosner working at Fermilab were among the first to emphasize the importance of thorough experimental searches for charm. The striking discovery in 1974 of the new meson, now thought to be a special mixture of charm-anti charm states, started a frantic eighteen month search for charm that may have been climaxed with the discoveries at the Stanford Linear Accelerator Center and at Fermilab. More than fifteen experiments have been done at Fermilab in the intervening period to search for charm. Several experiments using neutrinos have presented tantalizing suggestions of charmed particles. One event found earlier at Brookhaven National Laboratory seems to fit into the picture of the new particle now discovered at Fermilab.

The personnel involved in the experiment include Bruce Knapp, Wonyong Lee, Pat Leung, David Smith, Antonio Wijangco from Columbia University; Morris Binkley, Irwin Gaines, Mike Gormley, John Peoples of Fermilab; James Knauer, David Yount, the University of Hawaii; and John Bronstein, Rick Coleman, Gary Gladding, Maury Goodman, Thomas O'Halloran, and Albert Wattenberg from the University of Illinois.

NALREC PICNIC '76

The NALREC Picnic Committee chaired by Chuck Grozis and Liz Foster, along with chairpersons Mary Luba, Keith Schuh, Don Sorenson, Barb Schluchter, Dennis Borree, Ed LaVallie, Jesse Guerra, NALREC president Helen Ecker and approximately 100 volunteers are to be congratulated on the unquestioned success of the Family Picnic held August 15. It is important to realize that many hours of knowledgeable planning and dedicated work after regular working hours are required to make an event of this magnitude a success. It simply could not have been handled in a smoother more professional manner.



Photographs for The Village Crier
by Fermilab Photography Dept.

EMPLOYEE NEWS AND NOTES

The periodic examination offered by the Medical Department to employees at this time consists of: (1) a chest x-ray (lungs), (2) electrocardiogram (heart), (3) pulmonary function test (lungs), (4) tonometry for glaucoma (eyes), (5) urinalysis for complete exam, (6) complete blood count, (7) blood chemistry for 12 separate substances, (8) a physical examination by a physician. Scheduling is necessary to insure that all preliminary tests are completed before the final exam by the doctor at which time any abnormalities are discussed and evaluated. All findings are available for transfer to the employee's own physician if the screening indicates follow-up is indicated. Employees will be notified by the Medical Department when they are due for a physical according to the following schedule: under 40 years of age - every 5 years; 50 to 60 years of age - every 2 years; 60 and over - every year. The schedule can vary depending upon the employee's location.

SIGN-UP FOR GOLF TOURNAMENT

It is time to get ready for the Fermilab Golf League Tournament. Where: Fox Valley Country Club, Route 25, 3 mi. south of Batavia. When: Saturday, September 18, first tee-off at 10:30 a.m. Entry fee of \$8.50, dinner cost of \$6.50 (\$1.50 for league members). Contact Bud Stanley, Ext. 3862; Bill Bielefeldt, Ext. 3534; Hugh Christ, Ext. 3720; or Ellery Cook, Ext. 4420. All Fermilab, ERDA, experimenters, MM & MSI personnel at Fermilab and their families are invited to play.

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DUPLICATE BRIDGE could begin again this fall if there is enough interest. Contact Marv Warner, Ext. 4430, if you are interested and indicate how often you would like such a group to meet.

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CLASSIFIED ADS

PLEASE NOTE - Citizens Committee to work independently for candidates supporting ERA will hold first meeting Aug. 26, 8 p.m. Rubinstein home, 21 W 454 Fairway St., Glen Ellyn. For information call 858-9443 after August 21.

MOVING SALE - August 28 to 31 - beds, crib, elec. stove, furniture, plates, clothes, P. Mine, 520 E. Seminary, Wheaton, 665-3997.

FOR SALE - 8 piece living room set, sofa, 2 chairs, 2 end tables, cocktail table & 2 lamps. \$500 or best offer. R. Gibbons, Ext. 3190 or 879-7182.

FOR SALE - Black male min. poodle pup, \$80. AKC w/papers, 5 mo. old. Call Ron Lesniak, 231-6412 after 5 p.m.

WANTED - Reliable babysitter for two children ages 1 yr. & 4½ yrs; 8:30 a.m. to 5 p.m., Mon. thru Fri., Sept. 1 - Sept. 30. Call S. Grillo, Ext. 4241.

WANTED - Ride to/from lab, approx. 8 a.m. & 5 p.m., from 1 mi. so. of tollway on Rt. 59. Will share expenses. Fred Gardner, Ext. 3165.

FOR SALE - New 7' counter top w/hole for double sink \$10; range hood w/light & 2 speed fan, \$10. G. Lawrence, Ext. 3677, 232-6514.

FOR SALE - 1967 Ford Country Squire Wagon, AC, P/S/B, runs good, \$375. Call M. Palmer, X3734.

FOR SALE - Nylon tent 9' x 12', \$100; 1976 Chevy Van camping interior, \$6800; 10' x 15' gold shag rug \$60; 20 gal. aquarium w/fish stand, filters & pump \$40. J. Arko, Ext. 3701.

FOR SALE - 1975 Opel Manta, Rallye Gold, \$3000. 1973 Honda 350 4 piston \$700. Ernie, X3210.

FOR SALE - Bolens Riding Mower, needs some work \$50; Hoover spin dry washer, good cond. \$50; B. Kastner, Ext. 3841, Mon., Tues., Wed., or 898-7831.

FOR SALE - Bicycle child carrier, rear mounted, exc. cond. \$9. Jim Ext. 4293, 815-725-1258.

FOR SALE - 1969 VW Squareback, rotten but runs, \$100/offer. Ext. 4405, 879-1810, R. Johnson.

FOR SALE - Magnovox solid state stereo w/two speakers & stand. \$60. D. Johnson, 879-3357 after 5 p.m.