FAMILY DAY THIS SATURDAY

A day of barbequed lunches, movies, sports, an art show, and tours of the Accelerator Laboratory is scheduled for Family Day on Saturday, August 11 from 11 a.m. to 4 p.m., and is officially proclaimed Family Day 1973. The Family Day Committee, consisting of Al Ashley (Personnel), Pat Dohrer (Fabrication Shop), Kathleen Medcalf (Public Information), and 142 others, has invited Stanford University faculty, students, and their families to spend the day at SLAC. The committee has guaranteed a rainless day for all programs throughout the day.

Steve Koorl (Public Information), William Roberts (High Energy Physics), and Glenn Snowbock (Data Analysis), expects a good-sized group to take advantage of the guaranteed rainless day to partake of free lunches, inexpensive beer, entertaining movies, and tours of the site.

A number of groups will be helping SLACers show how the facility operates. Chief Land tells us that the SLAC Fire Department will put on a number of fire-fighting displays. The SHAR ring and the large detector in the west interaction region will be open to people, and people will be on hand to answer questions. Ron Seefred of Group E will have an optical spark chamber set up and triggering on cosmic rays in the Central Lab. Tom Stinchcomb (Standard Center for Information Processing) is planning some "handicap" displays at the Computer Center. An art show is planned for the Auditorium-Octavia breezeway. Other displays and open areas are planned.

A variety of movies will be shown in the SLAC auditorium continuously from 11:00 a.m. to 4:00 p.m. These include cartoons, nature films, and a popular movie on high energy physics.

During the previous Family Day in September, 1971, over 1,500 people attended. The organizers hope to see you at this event. Programs, telling you exactly what's going to be happening when, will be available at the SLAC Main Gate at 11:00 on Family Day Saturday.

A number of groups will be helping SLACers to partake of free lunches at the SLAC Main Gate. During the previous Family Day in September, 1971, over 1,500 people attended. We hope to see you at this event. Programs, telling you exactly what's going to be happening when, will be available at the SLAC Main Gate at 11:00 on Family Day Saturday.

The 1971 Family Day Committee welcomed any kind of help. This year the committee is being run by a group of enthusiastic SLACers.

New Evidence for Quarks?

There is increasing evidence that the proton and neutron, long regarded as the fundamental building blocks of atomic nuclei, are themselves composed of smaller building blocks called "quarks" or "partons..." Speaking at the American Physical Society meeting in Washington, D.C., in April, Dr. Jim Balis of SLAC's Group E said that "...These experiments provide the simplest explanation for some new experimental results from SLAC..."

High-energy electrons bouncing off of protons and neutrons were observed to knock out energetic particles which were more often positively charged than negatively charged. This positive charge excess is most surprising in the case of the neutron target, whose total charge is zero. If the neutron is made of two quarks with charge -1/3 and one quark with charge 2/3, then the electron would only strike the positive one. Because the charge is two times larger, it is a four-fold more attractive target than either negative quark. Single quarks have never been observed directly in experiments. It is assumed that when a quark has been struck, it must pair up with another quark before leaving the neutron or proton.

High-energy electrons are ideal tools for this type of experiment because they can bounce off of one quark within the neutron or proton without disturbing the other quarks. Quarks were first hypothesized a decade ago by M. Gell-Mann and G. Zweig to explain the then prevailing theory of the nobel prize.

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Evidence for Quarks

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The SLAC experiment which produced these results was difficult because billions of electrons can be heard at some of the international physics conferences in which SLAC participates. The last big gathering of physics tribes was at the 1973 Particle Accelerator Conference (PAC) organized by SLAC and held in San Francisco in March. It drew 160 participants from 26 foreign countries, 25% of the total attendance, and there were more foreign participants at this conference than at any of the previous conferences of this series. In May of 1973 SLAC hosted an International Conference on High Energy Accelerators which formally opened the year. The conference was sponsored by the International Union of Pure and Applied Physics, and 1000 attendees at this Conference will be from other countries.

We wish Howard a happy retirement. Mr. Hooper retired from the Atomic Energy Commission on June 15, 1973, after 34 years of government service. He joined the AEC, then known as the Atomic Energy Commission, in 1940 and was named Director of the Atomic Energy Commission's Area Office on July 1, 1967. During his tenure, the Area Office was reorganized into a smaller group and expanded its responsibilities.

The SLAC experiment was performed by a team of scientists from Stanford University and the University of California at San Francisco. The experimenters were involved in several experiments here and at other institutions, including the University of California at Berkeley, the University of California atDavis, and the University of California atLos Angeles.

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