

Jefferson Lab Weekly Briefs

June 27, 2007

Physics

Hall A experiment E03-101, proton pair production in photodisintegration of helium-3, has been running very smoothly for the past two weeks, producing high-quality data at a better than expected efficiency.

Hall C experiments E04-110/E06-009 successfully concluded data taking last Thursday, June 21. The target was then switched from liquid deuterium to liquid hydrogen for the second part of E05-017, which aims to explore the Q^2 dependence of two-photon exchange contributions in electron-proton scattering. This experiment requires frequent linear accelerator energy and pass changes over the coming weeks, with corresponding challenges in scheduling and coordination. So far, the experiment is proceeding smoothly.

Accelerator

The accelerator ran very well during this time period, with the experimental halls receiving large amounts of beamtime; as a result, the accelerator beam (in) use times, or ABU's, were at very high levels. Thus, it was a very successful week! There were a few minor events, such as the cooling blower failure in the magnet MYYAT01 power supply and a previously experienced problem of three injector input/output couplers (IN1, IN3 and IN6) failing at the same time. These problems, as well as a cooling tower low-conductivity water problem, were quickly brought under control, and the accelerator returned to quality beam delivery. The halls continued with their series of pass changes, with Hall C going to five-pass beam on June 19. On June 22, Hall A went to three-pass and Hall C went to two-pass beam.

- **JLab's Safety Numbers** (June 27, 2007)
235 Days since Last Recordable Accident (JLab Record: 251)
235 Days since Last Lost Workday Accident (JLab record: 455)

Environment, Safety, Health & Quality

National Safety Month wraps up this week with a focus on home safety. A National Safety Council survey found that Americans tend to feel safer at home than at work. In reality, well over half of all injury-related deaths and 75 percent of all disabling injuries occur in our homes and communities. Since 1992, the death rate from these injuries in home and community settings increased 30 percent, largely driven by unintentional poisonings and falls. Simple preventive measures can improve home and community safety. Proper lighting, working smoke detectors, stairway handrails, bathroom grab bars and careful reading of over-the-counter and prescription medication labels can mean the difference between life and death. Additional home and community safety information is available on the National Safety Month website at: <http://www.nsc.org/nsm/>

- **Fermilab Material Handling "Near Miss"** - A Fermilab material handling "near miss" event in early June shows the importance of proper work planning for all activities. A Fermilab forklift operator was working with a lab truck driver to relocate an empty air vessel to another building. Upon reaching the delivery site, the truck driver removed the strap from the front of the load. While positioning the forks under the vessel, the forklift operator bumped the load, causing it to shift slightly toward the driver. After an exchange of differing opinions between the driver and the forklift operator, the second strap was unfastened. As the forklift operator proceeded to tilt and raise the forks to pick up the tank, the vessel rolled off of the fork tines and into a nearby ditch; there were no injuries.

The forklift operator's supervisor was informed of the event by building occupants. The supervisor instructed the operator to perform the required written task hazard analysis before moving the fallen vessel. Lab safety staff found the forklift operator using a mobile crane to move the vessel out of the ditch without having

first performed the analysis. The forklift operator was sent home and allowed to retire the following day. This “near miss” event was the result of two workers not properly coordinating their activities in a safe manner, improper work planning, and a failure to adhere to safety policy.

Free-Electron Laser (FEL)

FEL staff got power into the Gun Test Stand High Voltage Power supply this week, drilled the concrete core for the SF₆, and moved the gun into the oven for a vacuum bake to continue good progress on assembling the system. FEL staff also completed cryotesting of the mirrors used in the high-power loading tests and confirmed theories on the performance factors involved in mirror loading.

Theory Center

In a series of papers, members of the Excited Baryon Analysis Center have succeeded in extracting information on the nucleon resonances (N^{*}) from pion-nucleon scattering and single pion electroproduction data within a dynamical coupled-channel approach. The results are challenging the theoretical community to understand the structure of N^{*}s within quantum chromodynamics. The analysis is now being extended to analyze all meson production data from the CEBAF Large Acceptance Spectrometer (CLAS), with the aim of discovering or confirming N^{*} states in the poorly understood region where the excitation energies are larger than about 1.7 GeV. The papers are: Phys. Rept. 439, 193 (2007); Phys. Rev. C75, 015205 (2007); and arXiv:0704.1615 [nucl-th]).

Announcements

• **The semi-annual TLD changeout will take place this weekend.** If you have a JLab radiation badge, be sure to place your badge in its designated badge rack slot before you leave work on Friday, June 29. If you have questions, contact Becky Mosbrucker, x7236, or Justine Jackson, x6127.

• **The Safety Shoe Truck** will be adjacent to the ARC loading dock, Thursday, June 28, from 2-4 p.m. to fill approved purchase requisitions. Put PRs in as soon as possible through the Stockroom/Webstock. Individuals requiring protective or safety footwear need to get their PRs in and signed before the vendor arrives. Contact Jill Starling, x7211, with questions.

• **American Red Cross Blood Drive** to take place 10 a.m.-4 p.m. on Friday, July 6. Give the gift of life at the Summer Blood Drive. To make an appointment, call Johnie Banks, x7539. Walk-ins are also welcome.

JLab Calendar of Events

June 26-28: DOE SC OPA Independent Project Review of the 12 GeV CEBAF Upgrade Project
June 28: Safety Shoe Truck onsite
July 4: Independence Day holiday
July 6: American Red Cross Blood Drive
July 11: Workers Safety Committee public comment period, 10:30 a.m., CC F326-327
July 23-25: DOE S&T Review

JLab 2007 Summer Education Calendar

May 29: Science Undergraduate Laboratory Internship (SULI) begins
June 18: High School Summer Honors Program (HSSHP) begins
July 9: Academies Creating Teacher Scientists (DOE ACTS) begins
Aug. 3: Summer Poster Session/last day for SULI, HSSHP and DOE ACTS