

# **Jefferson Lab Weekly Briefs**

July 18, 2007

**Major Central Systems outage to take place at 6 a.m. on July 28.** The central file servers for home, group, apps, site, wbs, etc., will be taken offline for the installation of new hardware. The process should take about 24 hours. All central computing services will be unavailable, including e-mail, calendar, centrally stored files, printing, web pages, and MIS applications. E-mail sent to JLab addresses during this outage will queue.

## **12 GeV Upgrade**

Daniel Lehman, Director of the Office of Project Assessment in the DOE Office of Science, led a team of 27 experts in the DOE Office of Science Independent Project Review of the 12 GeV CEBAF Upgrade at JLab on June 26-28. This was the first of two reviews necessary to determine project readiness for Critical Decision 2, Approve Performance Baseline. Generally, the project received high marks for the technical plan, the cost and schedule estimates, and for meeting all 16 CD-2 requirements. Concern was raised about an inadequate level of cost contingency. An updated project plan addressing this concern has been developed and accepted by DOE-NP. The second CD-2 review is planned for mid-September.

## **Physics**

In Hall A, experiment E04-018, elastic scattering off helium-3 and helium-4 up to large values of momentum transfer, has been successfully completed. The data accumulated will provide results for all three form factors of the helium isotopes with much higher accuracy and extending to significantly higher  $Q^2$ -values than the existing data.

In Hall C, E05-017, E04-001 and E06-009 were successfully completed. For the upcoming experiments (E04-108, E04-019 and E07-002), installation of a stand-alone large calorimeter and a focal plane polarimeter in the High Momentum Spectrometer started on Monday, July 16.

## **Environment, Safety, Health & Quality**

Lightning can occur at any time of the year, but it's much more frequent during the summer months. Here are some tips from the National Lightning Safety Institute for lightning safety:

- Plan your safety measures and escape route in advance. When you first see or hear lightning, get into a fully enclosed building or a vehicle with the windows rolled up. Lightning often precedes rain, so don't wait for the rain to begin before stopping your outdoor activities.
- If outdoors, make sure that you avoid water, high ground and open spaces. Avoid all metal objects, including electric wires, fences, machinery, power tools and motors.
- If indoors, avoid water. Make sure that you stay away from doors and windows. Do not use the telephone; a cell phone may be used. Turn off, unplug and stay away from appliances, computers, power tools and televisions.
- Do not resume outdoor activities until at least 30 minutes after the last observed lightning or thunder.

More lightning and other severe weather safety information is available in Chapter 3510-T4, Severe Weather Procedures in the JLab EH&S Manual at:

<http://www.jlab.org/ehs/manual/PDF/3510T4SevereWeather.pdf>

- **Lead Safety Awareness** - JLab and other DOE facilities have considerable quantities of lead in use and in storage for radiation shielding purposes. It is important for those who work in and around the various JLab lead shielding locations to periodically review lead safety basics. DOE recently developed a Lead Awareness Safety bulletin that covers important information on lead handling safety. The bulletin can be accessed at:  
[http://www.hss.energy.gov/CSA/csp/safety\\_bulletins/SB\\_2007-03a.pdf](http://www.hss.energy.gov/CSA/csp/safety_bulletins/SB_2007-03a.pdf)

Additional JLab specific lead handling

information is available in the ES&H Manual Chapter 6680, Lead Handling, at:  
<http://www.jlab.org/ehs/manual/PDF/6680Lead.pdf>

## Accelerator

This week started with a CAMAC (computer-aided measurement and control) crate failure in the Central Helium Liquefier, which in turn caused a 2 Kelvin Coldbox trip. After replacing the failed crate, the Cryogenics group worked very hard and restored the supercooled helium supply to the accelerator cryomodules in just a few hours. Unfortunately, a beam loss monitor high-voltage power supply located in the injector also failed and required replacement. After a series of beam studies and some accelerator operator training, the Accelerator was shut down July 13 for the start of a scheduled accelerator down (SAD). This extended period is for repairs to the Accelerator and many upgrades to its capabilities.

## Free-Electron Laser (FEL)

A major activity for the group this week was a design review of the Florida State University Big Light FEL. FEL staff also supported the JLab Facility Safety Analysis Document and Safety Envelope review through interviews.

## Theory Center

A global analysis of the world's data on elastic electron-proton scattering has just been performed, arXiv:0707.1861v1 [nucl-ex], in a collaboration between the Theory Center and JLab (experimental and theory) Users. This analysis combines Rosenbluth cross section and polarization transfer data, and is the first extraction of the proton's electric and magnetic form factors which explicitly includes from the outset two-photon exchange corrections and their associated uncertainties. Convenient parameterizations of the form factors, both with and without two-photon corrections, are also given.

## Announcements

- **SNS call for proposals.** The Neutron Scattering Science Division at the Department

of Energy's Oak Ridge National Lab has announced a call for proposals for experiments at both the High Flux Isotope Reactor (HFIR) and the Spallation Neutron Source (SNS). For more information, visit the ORNL Neutron Sciences website at: <http://neutrons.ornl.gov/>

- **Bottled drinks on sale.** The Quark Cafe is selling cases of Coca-Cola Company beverages. A case includes 24, 20-ounce bottles for the sale price of \$15. To place your order, notify the Quark Cafe staff member at the register or call Chris Thornhill, x7370.

- **JLab's Safety Numbers** (July 18, 2007)  
256 Days since Last Recordable Accident (new JLab Record: 256) Congratulations, everyone!  
256 Days since Last Lost Workday Accident (JLab record: 455)

## JLab Calendar of Events

July 23-25: DOE S&T Review  
Aug. 3: Summer Poster Session  
Aug. 6-10: PAC 32  
Sept. 3: Labor Day holiday  
Sept. 7: United Way Day of Caring  
Sept. 13: JSA's Electronic Commerce Small Business Vendor Show

## 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