

Jefferson Lab Weekly Briefs

September 12, 2007

Physics

Hall A is in a period of maintenance and preparation for the next set of experiments starting in October, the first one being E05-110 (Coulomb Sum Rule). Among the activities are: assembly of the NaI (sodium iodide) detector to be used by E05-110, fabrication of an additional tracking chamber and a check of existing BigBite detectors for experiments early in 2008. Other activities include setting up the High Resolution Spectrometers detector stacks for upcoming experiments (detector & trigger electronics changes), HRS magnet cryogenics repairs, installation of spare magnet power supply infrastructure in each HRS, repair of failed magnet power supply, update of FuG electronic schematics as built, and replacement of electronic components known to have their operational lifetime reduced by radiation.

In Hall C, detector checkout continues for the G_E^p experiment. The cryogenic lines, control lines and power cables have been disconnected from the G0 superconducting magnet.

Accelerator

In the Injector, Gun 2 photocathode swap began. Prebuncher low-level radiofrequency controls were upgraded. Installation of the rebuilt cryomodule at SL16 continued with alignment, waveguide hookups and girder bake-out. Preliminary tests (no beam) of NL04 resulted in a one-hour run of cavity five at 14.4 Megavolts per meter (MV/m) and cavity six at 19.75 MV/m. MARC1A magnet supply main contactor was replaced. The beam switchyard dump was brought back online after the water flow restrictor was repaired. The MCC Crosspoint switcher chassis was replaced. A broken lock at Exit Stair #2 delayed work in the North Linac for several hours until a locksmith could be brought in to work on it. Tunnel cleanup was accomplished, thanks to the efforts of many volunteers.

Environment, Safety, Health & Quality

Although Tropical Storm Gabrielle did not have a significant impact on this area, the 2007 tropical storm season is far from over. Our area does not have to experience a hurricane to have severe weather impacts. For instance, tornados may accompany severe thunderstorms, tropical storms and hurricanes. Please review these tornado procedures for what to do:

If you are in:

- Experimental Halls, Tunnel: Stay where you are.
- ARC, VARC, Test Lab, CEBAF Center or EEL: Seek a hallway or windowless area in the center of the building. Lower floors are preferable to upper. Interior stairwells are usually good places to take shelter.
- Normally occupied, permanent buildings within the fence (MCC, FEL, CHL, Counting House, 87 or 89): If you can get to an underground area quickly and safely, do so. Otherwise, follow the instructions above.
- Office trailers or other re-locatable structures: Get out! Seek refuge in one of the recommended areas listed above.

Additional JLab-specific tornado and other severe weather information is available on the [Lab's emergency management Web page](#).

• Sandia Energized Power Strip Event

A Sandia National Lab worker recently cut an energized power cord while replacing laser table power strips that involved cutting power cords to appropriate lengths. The worker forgot to unplug the cord before cutting it with shears. The circuit breaker tripped, and the worker avoided injury. This event brings to mind the need to consider electrical code requirements and needed authorizations before modifying any electrical device. Many equipment supply catalogs carry a wide range of power strip cord lengths; purchase of appropriate new power strips may have been the best course of action.

Free-Electron Laser (FEL)

The Gun Test Stand gun vacuum was completed, and the configuration of a diagnostic test beamline was established. Components for this are now in the test cave. The advanced drive laser was moved into position and prepared for operations so that it could be inspected by the lab laser safety officer.

Theory Center

Deep-inelastic electron-nucleon scattering $eN \rightarrow e'X$ exhibits a subtle dependence on the transverse target polarization due to two-photon exchange between the incident electron and the nucleon. A recent theoretical study ([arXiv:0709.0901 \[hep-ph\]](https://arxiv.org/abs/0709.0901)) shows that this effect can test the physical mechanism of quark spin-flip in QCD ("chiral symmetry breaking"), and relates the observable asymmetry to the transversely polarized quark distributions in the nucleon. A dedicated JLab Hall A experiment (E07-013) plans to measure this polarization asymmetry with a precision of $\sim 10^{-4}$, allowing one to test the proposed physical picture.

Computing and Networking Infrastructure

In order to provide consistent network service in conference rooms, the CNI group has moved the network ports used by existing conference room computers to the Desktop 1 VLAN. These ports are configured to only work with the conference room computer assigned to it. The remaining network ports in each conference room have been moved to the Guest Services VLAN.

What does that mean for you? Use your `jlab_secure` wireless connection and leave the guest connection for non-JLab computers. If you plug your JLab-domain laptop into a conference room open port, there will be a delay of several minutes before your laptop will allow you to log in. If you plug your laptop into the existing port used by the conference room computer, port security will block the network port. In conference rooms where wireless signal is weak, e-mail the helpdesk@jlab.org.

Announcements

• JLab's Safety Numbers (Sept. 12, 2007)

312 Days since Last Recordable Accident (JLab Record: 312) Congratulations, everyone!
312 Days since Last Lost Workday Accident (JLab record: 455)

• Power Outage Scheduled

A brief power outage for CEBAF Center wings A, B and C and the lobby area has been scheduled for 5:30-6:00 a.m. on Friday, Sept. 14. As a precaution, building occupants are asked to log out and power off all equipment located in these areas, including computers, printers, UPS systems and other electronics before leaving on Thursday. For more information, contact Paul Powers, x7258 or powersp@jlab.org.

• E-Commerce Vendors to Tout Their Wares

All staff, users and subcontractors are invited to the JSA Electronic-Commerce Vendor Show on Thursday, Sept. 13 from 9 a.m. – 2 p.m. in CEBAF Center atrium and room F113. Meet the vendors, enjoy give-aways, free samples and refreshments. For more info, contact Renee Carter, x7954 or carter@jlab.org. Visit the [eCommerce Vendor Show Web page](#) for a list of participating vendors and the schedule.

• Women in Science Grants

The [L'Oréal USA Fellowships For Women](#) in Science program announces the 2008 call for applications. This fellowship program grants \$40,000 each year to five female post docs.

• Shoe Truck to Visit ARC Loading Dock

The vendor will fill approved requisitions on Thursday, Sept. 13, from 2-4 p.m. Get your requisitions in via the [Webstock/Stockroom](#). If you need assistance, contact Jill Starling, x7211, or Estelle Seeley, x7238.

JLab Calendar of Events

Sept. 10-14: 12 GeV Upgrade: OECM EIR Review

Sept. 13: Shoe Truck at ARC, 2-4 p.m.

[Sept. 13: JSA's Electronic Commerce Small Business Vendor Show](#)