BROOKHAVEN BULLETIN
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BROOKHAVEN NATIONAL LABORATORY

First RHIC End-of-Run Party

RHIC Commissioning Successes, Start of Operations Give Cause for Laboratory Employees to Celebrate

With gold beam having been circulated, captured, accelerated and stored first in the Blue Ring and, over last weekend, circulated and captured in the Yellow Ring of the Relativistic Heavy Ion Collider (RHIC), some 500 BNLers came out onto the sunny plaza in front of Berkner Hall on Monday, August 16, to celebrate not only the end of RHIC's commissioning run, but also the official start of RHIC operations.

"What a great day this is," said Laboratory Director John Marburger, who had issued the Lab-wide invitation to RHIC's first end-of-run party.

Continued Marburger, "I am particularly lucky to have inherited this wonderful project, which was started by [former BNL Director] Nick Samios and which [RHIC Project Director] Satoshi Ozaki ushered into existence with the help of hundreds of people. This is the peak of accomplishment, so I offer my heartiest congratulations."

The Lab Director concluded, "It is very exhilarating to be part of a team that is the best there is in the world — and to have the whole world know that the collider is here, that it is succeeding in starting up, and that it will explore truly new science." (See story, below.)

For this success, former Lab Director Nicholas Samios credited "the third generation of accelerator physicists at the Lab": Satoshi Ozaki, [RHIC Associate Project Director for Collider] Mike Harrison, and those working with them who brought the machine from conception to commissioning.

As Samios explained to the crowd, these accelerator physicists follow in the footsteps of the Lab's first generation, who built the Cosmotron, and its second generation, who developed the Alternating Gradient Synchrotron (AGS). "Congratulations to you, the administration, and the Department of Energy," he concluded.

Introduced at the gathering was Jim Yeck, who had been the first RHIC Project Manager within DOE's on-site Brookhaven Group (BHG), but who had left the group about a year and a half ago to become DOE's Project Manager for its involvement in the Large Hadron Collider at CERN, the European particle-physics laboratory in Switzerland.

"People are what get a project done, and the people at Brookhaven worked very hard and well together in getting the RHIC Project accomplished," commented Yeck afterwards. "I looked around at the celebration, remembering many people whom I worked with on RHIC, and how each and every one made it happen."

"RHIC has always had strong support from the Lab and the Lab's crucial recognition that RHIC is central to BNL's future," BHG's former RHIC Project Manager added. "And, from the beginning, DOE and BNL have always worked together on RHIC, so I congratulate the Lab on the success of this relationship as represented by the success of RHIC."

BHG's Mike Butler, agreed. "RHIC was always very much a collaboration between the Lab and DOE, so DOE is very pleased with the Project's accomplishments to date, and we look forward to exciting science in the near future," the present BHG Project Manager said later.

CD-4

Actually, the formal approval to start RHIC operations came on Thursday, August 12, when Martha Krebs, who is the Director of DOE's Office of Science, penned her name at the bottom of a memo from Dennis Kovar, who is the Director of the Division of Nuclear Physics, which came through Peter Rosen, who is DOE's Associate Director for High Energy & Nuclear Physics.

Michael Herbert

At the Lab-wide celebration, BNL Director John Marburger congratulates RHIC Project Director Satoshi Ozaki on RHIC's commissioning successes and the start of RHIC operations.

Michael Herbert

At 4 p.m. on Monday, August 16, the crowd begins to gather in front of Berkner Hall for the RHIC festivities.

As Ozaki informed the celebration-goers, Krebs's "approval is based on the fact that 'the Project has successfully met the baseline cost, the baseline schedule, and all environment, safety, and health requirements for commissioning and operation.' "

In his memo, Kovar notes that, since RHIC is ready, Krebs's approval of what is called critical decision 4 (CD-4) is required to authorize routine operation of RHIC. As is described in the memo, that decision required "the achievement of captured, stored and accelerated beam in one ring [which is sufficient to] demonstrate that the collider is capable of meeting the baseline performance goals."

As stated in Kovar's memo, "Commissioning goals to demonstrate that the collider will realize its performance objectives have been achieved. BNL and the DOE Brookhaven Group Manager have requested approval of CD-4, Start of Operations."

In conclusion, Kovar "recommended that [Krebs] approve start of operations CD-4 for the Relativistic Heavy Ion [Collider] construction project.

So, with the sweep of a pen, Krebs changed RHIC from a construction project into an operating facility.

End of Run

The end-of-run celebration, which began at 4 p.m., started some 10 hours after the actual end of RHIC's commissioning run at 6 a.m. last Monday, August 16.

Commissioning the Blue and Yellow Rings, the two accelerators that make up RHIC, began in the evening of June 24 (see Brookhaven Bulletin, July 2, 1999), after BHG granted BNL permission to operate the ring, following the completion of an Accelerator Readiness Review of all environment, safety

(continued on page 2)

Doomsday Will Not Result From RHIC Science

On Monday, at an all-Lab party hosted outside Berkner Hall by Lab Director John Marburger (see story, above), BNLers celebrated commissioning successes at the Relativistic Heavy Ion Collider (RHIC), which is due to start experimental science at year's end.

Yet many Lab employees had just spent the weekend with family and friends who, half-jokingly, were asking about recent media reports on the possible dangers of RHIC science.

"What about these mini-black holes and these things called strangelets that people are saying may end the world?" some employees were asked. "Is RHIC going to make them? Are they for real?"

RHIC is designed to collide heavy ions — atoms stripped of electrons, from heavy elements such as gold — traveling in opposite directions at nearly the speed of light. In those collisions, researchers hope to recreate conditions that last existed just after the Big Bang, the birth of the universe. The goal is to free what are called quarks and gluons from their confinement in the nucleus — to create a "quark-gluon plasma." (See primer, page 3.)

Because RHIC physics is at the frontier of science, RHIC researchers will be boldly going where no accelerator and nuclear physicists have gone before. As has happened at the start of other accelerators in the past, some people have become worried: Could pioneering science go too far? Could RHIC bring about the end of the world?

Paper Trail

The international bang that started the unexpected doomsday publicity exploded on July 18, when the *Sunday Times* of London published a story under the headline "Big Bang Machine Could Destroy Earth."

And the world, if not the Earth, took notice.

BNL's Media & Communications Office staff received anxious calls from Australia that Sunday night. As Tom Ludlam, Associate RHIC Project Director for Detectors & Experiments, describes it, "The phones at BNL began lighting up around the clock, and e-mails came in from all over the world to find out more about this awesome machine."

The next day, July 19, Marburger sent out a statement, which was also e-mailed to all employees, noting, "I am familiar with the issue of possible dire circumstances of experiments at RHIC. . . . These issues have been raised and examined by responsible scientists, who have concluded that there is no chance that any phenomenon produced by RHIC will lead to disaster."

As was apparent to Marburger and others, the *Sunday Times* story appeared to be loosely based on letters to the editor in the July 1999 issue of *Scientific American* that had followed a March news report describing RHIC

(continued on page 2)

Doomsday Not (cont'd)

physics in that magazine by Madhusree Mukerjee. In those letters, several readers wondered if the RHIC experiments were safe.

At *Scientific American* editors' request, theoretical physicist Frank Wilczek of the Institute for Advanced Study at Princeton University had responded to these questions.

Wilczek said that it would be impossible to create black holes in RHIC (see primer, page 3), but that, perhaps, one might be concerned about strangelets, if they started growing by incorporating and transforming ordinary matter. He then concluded that this scenario is not plausible.

Of that time, Marburger says, "I was aware of the exchange of letters in *Scientific American* and thought it was important to have a statement of the arguments that assured that the RHIC experiments would be safe."

Although Marburger was familiar with these arguments, he believed it would be useful to get them reviewed in a single document by "outside opinion" — physicists outside the Lab who are internationally recognized as experts in relevant fields. Marburger therefore asked several well-known specialists to take part in an informal committee for this purpose.

Chaired by Robert Jaffe of the Massachusetts Institute of Technology (MIT), the committee includes: Wit Busza, MIT; Jack Sandweiss, Yale University; and Wilczek. Ludlam serves as BNL's liaison. Even as the committee was getting organized, the July 18 *Sunday Times* article showed the necessity for it.

Definitive Answer

Without delay, therefore, Marburger answered the *Sunday Times* with his July 19 statement, summarizing the two main factors that preclude any danger of RHIC's causing the end of the world.

First is the minuscule scale of RHIC experiments. RHIC will make information available on the interactions of literally thousands of minute subatomic particles at one time. But, to provide these data, just one nucleus of one atom will collide with just one nucleus of one other atom.

"Our universe would have to be extremely unstable in order for such a small amount of energy to cause such a large effect, Marburger wrote. "On the contrary, the universe appears to be quite stable against releases of much larger amounts of energy that occur in astrophysical processes."

The second reason why no catastrophe is believed possible, Marburger explained, is that the energy at which RHIC collisions will be made is within the range of naturally occurring cosmic radiation. Cosmic rays — ions from space — constantly strike the Earth with a wide range of energies.

"The Earth and its companion objects in our solar system have survived billions of years of cosmic ray collisions with no evidence of the instabilities that have been the subject of speculation in connection with RHIC," Marburger concluded.

The committee is expected to complete the report well before RHIC produces the high-energy collisions necessary for any of the purported disaster scenarios. The report's results will be made publicly available.

In the meantime, Jaffe foresees no risk in RHIC from strangelets or mini-black holes. "The idea that scares people is that you are creating an environment [in the collider] that never before has been created," Jaffe is reported by *Newsday* as saying.

Strange Bedfellows

The opinions of Lab Director Marburger and RHIC scientists on the nonexistent danger of strangelets and black holes in RHIC have found support in articles and essays by leading reporters from major, reputable media sources.

Among those who have weighed in on the issue are Earl Lane in *Newsday*, July 21, who also quoted Jaffe as saying that, even if strangelets did exist, they would not cannibalize normal matter.

BBC News Online Science Editor David Whitehouse in *Sci/Tech, BBC Online Network*, opened his July 22 "Not the End of the World" article with "Scientists have quashed suggestions that [RHIC] . . . could cause the destruction of the Earth."

Malcolm Browne, in his essay entitled "Will Brookhaven Destroy the Universe? Probably Not," published in *The New York Times* on August 10, concluded, "The trick will be sorting out the red herrings like accelerator disasters and polywater from the real dangers."

Adam Rogers in *Newsweek*, August 16, assures that, from the RHIC collisions "a new universe will not be born. It won't grow, and it won't destroy the preexisting universe . . . no Big Goodbye."

Most recently, in a local paper, the *Long Island Voice* of August 12-18, Laura Conaway notes, "People who aren't associated with Brookhaven agree that the machine isn't a danger to the Earth."

Meanwhile, as Marburger remarked during the Monday RHIC celebration, he is still getting calls — the latest was from Finland — from people worldwide who have heard of the doomsday scenario and want an explanation.

"It has not been difficult to reassure callers about the safety of the RHIC experiments," said Marburger. "Then, they immediately start asking about the science, and they are exhilarated by the wealth of new opportunities RHIC offers. Out of this situation, we now have many more eyes around the world focused on RHIC at BNL, and they are watching for results from the groundbreaking research that we have ahead." — Liz Seubert

RHIC Celebration (cont'd)

and health issues associated with operating RHIC.

Since the Blue Ring had been at its operating temperature of 4.6 Kelvin since May 28, it was the first to be commissioned with gold beam: On July 3, beam made its first complete lap around the 3.8-kilometer-in-circumference accelerator (see Bulletin, July 16, 1999). Then, on July 16, gold beam circulated readily for multiple turns, and the Blue Ring was considered commissioned (see Bulletin, July 23, 1999).

While beam in the Blue Ring had been "captured" and was being "ramped," or accelerated, and then stored, it was the Yellow Ring's turn — but the definition of "commissioned" changed (see Bulletin, August 13, 1999).

The expectation now was that beam would not only circulate freely within the ring, but the beam would also be "captured" by the rf system, that is, the radio-frequency system would be able to maintain the beam in a tight bunch as it circulated.


Michael Herbert


Michael Herbert


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Michael Herbert


Michael Herbert

And so, on August 15 — just a day before the end of the run — a small amount of captured beam made over 1,000 turns in the Yellow Ring, while it was under the control of the A crew of accelerator physicists headed by Leif Ahrens and staffed by Wolfram Fischer, Pat Thompson, and Johannes van Zeijts.

According to Steve Peggs, who leads RHIC's Accelerator Physics Group which undertook the commissioning, "Unlike in the Blue Ring, in which there appears to be an obstacle in the beam pipe that we must steer the beam around, the Yellow Ring presents no obstacles, but just two tricky points to steer through," namely the area where the beam is injected into RHIC and the area where the beam is purposely aborted.

Those problem areas and others will be subject of intense scrutiny during a by-invitation-only RHIC retreat, which will be held off site on September 16 & 17, and involve 65 physicists and engineers from the RHIC Project and AGS Department.

The purpose of the two days of deliberations is to use the lessons learned from the first commissioning run to plan the maintenance that needs to be performed once the rings are back at room temperature in September and to plan for the operating run beginning on December 15.

"This is the third superconducting collider ever built in the world, the other two being the Tevatron at Fermilab and HERA at DESY in Germany," explained Peggs. "We have learned from them, so we are way ahead of where they were at this stage of the game. But of course, we want to be as far along as possible, so we will use the time at the retreat to figure out what we are doing well and what can do better." — Marsha Belford

Michael Herbert


Michael Herbert

RHIC Physics: A Primer

How Our Universe Began

A generally accepted explanation of the start of the universe billions of years ago is the Big Bang theory. It holds that a few millionths of a second after the Big Bang, all matter consisted of a hot, dense **plasma**, or soup, of **quarks** — the tiniest known particles of matter — and **gluons** — which normally hold quarks together.

As this plasma cooled, it condensed into **protons, neutrons,** and other composite particles made up of quarks and gluons, and held together by what is called the **strong force**. The protons and neutrons then joined together in different combinations — each combination forming a **nucleus**, which then became neutralized with electrons to form an **atom** of an element.

How RHIC Fits In

When the Relativistic Heavy Ion Collider (RHIC) starts experiments, it will collide two beams of heavy ions that will be accelerated at nearly the speed of light in opposite directions around the 3.8-kilometer-in-circumferance collider.

Ions are atoms with their electrons stripped off; a **heavy ion** is an ion that forms the nucleus of a heavy element, such as gold. For instance, a fully stripped gold ion contains 79 protons and 118 neutrons.

When RHIC heavy ions collide head on, the density and temperature at that point are expected to recreate the plasma conditions just after the Big Bang. The energy of the crash should break the power of the strong force binding the quarks and gluons within the nucleus, and they are expected to make a transition into the state called **quark-gluon plasma.**

Strangelets: Welcome Strangers

There are six different types of quarks, but only two types are found in the **neutrons** and **protons** that make up the natural matter in our universe. All neutrons and protons consist of what are called **up** and **down quarks**. Another kind of quark is named the **strange quark,** which is heavier than the up and down quarks.

As Tom Ludlam, Associate Director, RHIC Project, explained, "Neutrons and protons each contain three quarks, in combinations of ups and downs. The strange quark is not involved in matter that we see in the natural universe.

"However," he continued, "if three types of quark were involved, it is possible to think of a particle made up of multiples of three quarks, perhaps six, nine, or 27, with roughly equal numbers of up, down, and strange quarks. If this particle were to exist, it could be what is called a **strangelet**. In the quark-gluon plasma, where we think quarks will combine in new ways, strangelets are among the phenomena we might see."

RHIC physicists would warmly welcome evidence of **strangelets,** which have already been sought in years of experiments at BNL's Alternating Gradient Synchrotron (AGS) and at CERN, the European particle-physics laboratory in Switzerland.

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Life Don't Mean a Thing if You Ain't Got That Swing!

If you have been inspired by a Gap commercial and want to join the retro dance craze that has swept the nation, then here's your chance to learn the American swing.

Beginning Wednesday, September 15, at 6:30 p.m., the BNL Ballroom, Latin & Swing Dance Club will offer a full year of American swing and International jive (a faster version of swing) during its 1999-2000 school of dance (see box, right).

In addition, all are also welcome to join the Dance Club at 5:30 p.m. starting that Wednesday, for a beginner's class in American cha cha and fox trot. During the dance-school year, there will be only two other opportunities for beginners and newcomers to join the club: for the January start of American rumba and waltz at level I, and/or the American mambo and West Coast swing at level I. (Done to jazzier music, West Coast swing is a hybrid of American, or East Coast, swing and Latin hustle.)

Roger Stoutenburgh

Instructor Giny Rae with BNL retiree and Dance Club member Gene Kaplan.

BNL Dance Club
1999-2000 LESSON SCHEDULE

CLASS TIME Wednesdays	SERIES 1 09/15-11/03/99	SERIES 2 11/10/99-01/19/00 no class 11/24, 12/22&29	SERIES 3 01/26-03/15/00	SERIES 4 03/22-05/17/00 no class 04/19
5:30 p.m.	AMERICAN cha cha & fox trot I	AMERICAN cha cha & fox trot II	AMERICAN rumba & waltz I	AMERICAN rumba & waltz II
6:30 p.m.	AMERICAN swing & INTERNATIONAL jive I	AMERICAN swing & INTERNATIONAL jive II	AMERICAN swing & INTERNATIONAL jive REVIEW I & II	AMERICAN swing & INTERNATIONAL jive III
7:30 p.m.	INTERNATIONAL samba & Viennese waltz REVIEW I & II	INTERNATIONAL samba & Viennese waltz III	AMERICAN mambo & West Coast swing I	AMERICAN mambo & West Coast swing II

Held in the North Ballroom of the Brookhaven Center, the Dance Club's four series of three classes are taught by former Empire State Ballroom Champions Giny Rae and Peter Sciurca, with assistance from Sean Breaton, who is an amateur silver and gold National medalist.

Each eight-week class features two dances at a specified level, with level I for beginners and newcomers. The first dance listed in the schedule is taught over the first four weeks, and instruction in the second dance is presented during the last four weeks. Review classes are for those students who have already taken classes at the levels listed.

If a minimum of 40 people sign up for each eight-week class, then the cost per person is $25. BNL employees, retirees, facility-users, on-site contractors, their families, friends, and dance partners are invited to join. If you do not have a partner, then you will be put on a waiting list until a partner is found, as the club only signs up equal numbers of women and men.

Since the beginner's swing class has been very popular each time it has been offered and since it won't be offered again for another three years, those interested are advised to sign up now. To register for this or the other classes, send a check payable to the BNL Dance Club to Marsha Belford, club president, Bldg. 134. Include a note with your name, Bldg., Ext., name of the class, and the name of your partner (partners are advised to sign up together). For more information, call Belford, Ext. 5053.

Penultimate Summer Sunday '99

RHIC Is Featured Facility This Sunday

The Relativistic Heavy Ion Collider (RHIC) is *the* place to visit this Sunday, August 22 — when it is the featured facility of BNL's penultimate Summer Sunday tour of 1999.

Once a construction project and now an operating facility (see story, page 1), RHIC will soon be the world's highest-energy collider of heavy ions. There, the temperature and density conditions of the universe immediately after the Big Bang will be recreated, with the aim of creating what is called quark-gluon plasma (see primer, left).

With the commissioning run just completed and scheduled maintenance about to begin, RHIC awaits everyone's inspection. So bring your family, friends and neighbors to the Lab this Sunday to get an insider's look at this really big machine and its associated detectors. This will be your last chance before RHIC goes back on line this December, when its experiments will be up and running for the first time.

In addition to touring RHIC, visitors may take one of the guided bus tours of the Lab site which run continuously throughout the day, participate in the Whiz Bang Science Show, and view the Camp Upton Historical Collection. This Sunday, Lab-goers will have a special treat, as some of their neighbors will arrive at the Lab by special means of transportation (see caption, page 4).

Fun for children of all ages, the Whiz Bang Science Show is a lively, interactive demonstration of basic scientific principles which is presented at 10:30 a.m., noon, 1:30 p.m. and 3:30 p.m. in Berkner Hall.

Housed in a former Camp Upton chapel, the Camp Upton Historical Collection contains the history of the site during its pre-Lab days as a U.S. Army camp during World Wars I and II.

Offered Sundays through August 29, Summer Sundays are organized by the Museum Program of the Community Relations Office. Sunday tour hours are 10 a.m. to 5 p.m., but participants must arrive before 3 p.m. As well as being fascinating and fun, tours are free and open to the general public, and no reservations are needed.

Strangelets, if they exist, would be very unstable, almost immediately breaking up, or decaying, into other particles.

In a telephone conversation, Robert Jaffe, Director of the Center for Theoretical Physics at Massachusetts Institute of Technology (see story, page 1) and a codeveloper of strangelet theory, said that it is "unlikely in the extreme" that a strangelet would pose any catastrophic risk to the planet.

Jack Sandweiss of Yale University led Experiment 864 at the AGS to look for strangelets. None appeared, leading the experimenters to conclude that, in head-on collisions of heavy ions, a strangelet would occur no more than once in every one billion events.

"In RHIC, there will be so many collisions that a few strangelets might be seen," said Sandweiss in a telephone conversation. "But there is a lot of evidence that the lower energy of the AGS is more suited to making strangelets, which are more likely to break apart at the higher energy and density of RHIC."

Other AGS experiments, such as E885 and E906 (see Brookhaven Bulletin, July 17, 1998, and August 15, 1997, respectively), have kept an eye out for strangelets in addition to their other physics goals. But so far, strangelets remain out of this world.

What About Mini-Black Holes?

Also out of this world are **black holes**. Ludlam describes black holes as extremely strong gravitational fields which require enormous mass to form. "In RHIC, we have collisions of essentially zero mass, so there is no way of making black holes, even mini-black holes," Ludlam says.

Princeton University's Frank Wilczek, in July's *Scientific American* (see story, page 1), wrote, "The energy densities and volumes that will be produced at RHIC are nowhere near large enough to produce strong gravitational fields."

Cosmic Rays

It's news to most nonscientists that the earth is constantly being bombarded with what are called **cosmic rays** from space.

A cosmic ray is an **ion** — the nucleus of an atom, such as hydrogen, iron or another of the many other elements that are out in space.

These rays come down though the atmosphere as a source of natural radiation, the bulk of them arriving at the Earth at energies below about one million billion (10^{15}) electron volts.

On rare occasions, a hydrogen nucleus strikes the Earth at around 100 billion billion (10^{20}) electron volts. RHIC's energy will be at 10^{11} electron volts, in laboratory conditions.

As Ludlam explained, "At energies well beyond the energy of RHIC, the collisions of cosmic rays have been peppering the Earth, the moon and all objects in the universe for billions of years since the formation of the stars and galaxies.

"While RHIC is indeed awesome in its scientific potential, we can be confident that, whatever exotic discoveries there are to be made, we will not be producing phenomena that are not already naturally occurring," Ludlam concluded. — Liz Seubert

Equipment Demo

On Tuesday, August 24, from 10 a.m. to 2 p.m., CTP Wireless will discuss the AT&T corporate cellular rate that it offers BNLers. For more information, call Dennis Lamm, 585-2900.

Upton Nursery School Opens Fall Enrollment

The Upton Nursery School, a small, parent-run, cooperative nursery school that meets in the Recreation Building in the apartment area, is now accepting registration for children two-and-a-half to four years old for the 1999-2000 school year, which runs from September through June.

The school provides small classes and a warm environment in which language, social, and motor skills are developed. Parent involvement gives a student-to-teacher ratio of four to one, and the multicultural atmosphere ensures that children who cannot yet speak English are welcome.

Children of BNL employees, facility users, guests, on-site contractors, and their families are eligible. Classes are held on Mondays, Tuesdays and Thursdays, from 8:30 to 11:30 a.m., and tuition is $110 per month. For more information or to register a child, contact Shelly Shumway, 732-1367, or shellyshumway@yahoo.com.

IBEW Meeting

Local 2230, IBEW, will hold its regular monthly meeting on Monday, August 23, at 6 p.m. in the Knights of Columbus Hall, Railroad Avenue, Patchogue. There will be a meeting for shift workers at 3 p.m. at the union office. The agenda includes regular business, committee reports and the president's report.

BNL Cycletrons Host Annual Family Picnic

Mark your calendars: Saturday, September 11, is the day of the BNL Cycletrons' second annual Family Picnic, which will be held from noon until sundown around the gazebo at the BNL ball field. The rain date is Saturday, September 18. Activities for the day will include bike games, horseshoes, volleyball, softball, relays, three-legged races, and water play.

All are invited. While children of 12 and under will be admitted free, the fee of $5 entitles participants to hamburgers, hot dogs, salads, sodas, and more. Purchase tickets by September 1 from: Chuck Baldwin, Ext. 4688; Rich DiFranco, Ext. 3868; Frank Dusek, Ext. 2022; or Charles Gardner, Ext. 5214.

Computer Training

The Information Technology Division (ITD) will offer a three-day, hands-on, introductory class to C^{++} programming from 9 a.m. to 4:30 p.m. on Monday through Wednesday, September 13-15. To register, submit an ILR for $310 per student to Pam Mansfield, Bldg. 515, by August 30.

A few seats remain in ITD's FrontPage class on August 31. For more information on this and other training classes, go to www.ccd.bnl.gov/bnl/training.

Amateur Radio Club

The BERA Amateur Radio Club will next meet at noon on Thursday, August 26, in Berkner Hall, Room D (note change of day and room). All Lab employees, guests and licensed amateur radio operators are invited to attend. For more information, contact Chris Neuberger, Ext. 4160, or Ron Dobert, Ext. 4175.

Arrivals & Departures

Arrivals

Roger P. Hancock ..... Plant Eng.
Alejandro A. Sonzogni ..... Adv. Tech.
Dwight L. Van Duyne ..... Plant Eng.
Melvin J. Van Essendelft ..... AGS

Departures

Jaehoon Park ..... NSLS
Calvin A. Lom ..... RHIC

Sunday in the Park With Antique Cars

Roger Stoutenburgh

John Castro, an architect in the Plant Engineering Division, and former Lab employee Harriet Castro are a picture come to life, with their 1931 Ford Model A parked in the background. The Castros' dark blue roadster is one of the many antique cars that will transport their owners to BNL's Summer Sunday on August 22. Among the vintage-car clubs that will be coming to the Lab for this Sunday's tour of the Relativistic Heavy Ion Collider (see notice, page 3) are: the Model A Club of Long Island, to which the Castros belong; the Peconic Bay Region of the Antique Automobile Club of America; and BNL's own Antique & Classic Car Club. That Sunday, other Lab-goers will have the opportunity to look at (but not touch) the club members' vehicles, which will be parked in a cordoned-off area in front of the Science Education Center, Bldg. 438.

Classified Advertisements

LABORATORY RECRUITMENT - Opportunities for Laboratory employees.

MK8451. FIREFIGHTER/EMT-D POSITION - (temporary, one-year opening) Requires five years of progressive experience in a fire department, qualifications as a motor-pump operator on a Class A pumper, and possession of a current NYS EMT-D certificate. In descending order of importance, the following criteria will be used for selection in the event that two or more individuals meet the above criteria: certification as a OSHA Hazardous Materials Technician; certification in Confined Space Rescue; current status as a line officer in home department; and possession of an associate degree or higher in fire-protection technology. Must be willing to work shifts at the completion of training period. Emergency Services Division.

DD8437. SECRETARIAL POSITION - Requires an AAS in secretarial science or equivalent work experience, with a thorough knowledge of Lab practices, policies and procedures, including knowledge of IPAP and the processing of foreign- and domestic-travel vouchers. Must possess excellent communication and office-management skills, with the ability to work independently. Must be proficient in Microsoft Office products and Corel WordPerfect. Experience with PaintShop Pro and FrontPage is desired, as is WWW design, posting, and management experience, and EXCEL spreadsheet management. Experience in arranging conferences and workshops a plus. Will provide secretarial support to the Experimental Systems Group and Mechanical Engineering Group, and will coordinate extensive travel arrangements, along with processing technical specifications and procedures. National Synchrotron Light Source Department.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside candidates.

DD8722. TECHNICAL POSITION - (term appointment, reposting) Requires an AAS in electrical technology or equivalent, and some relevant work experience. Under the direct supervision of an electrical engineer, will perform a variety of evaluating, fabricating, testing, troubleshooting, modification, and maintenance operations on electronic and electromechanical equipment associated with the LEGS beam line at the NSLS. Requires a working knowledge of and experience with analog electronics (DC to RF), digital electronics, basic test equipment, printed-circuit layout from schematics, elementary electronic design, and basic mechanical fabrication techniques. Experience in computer programming, control systems, CAMAC and NIM electronics, or electro-optics is desirable. Physics Department.