BROOKHAVEN BULLETIN
Vol. 48 - No. 45 November 18, 1994
BROOKHAVEN NATIONAL LABORATORY

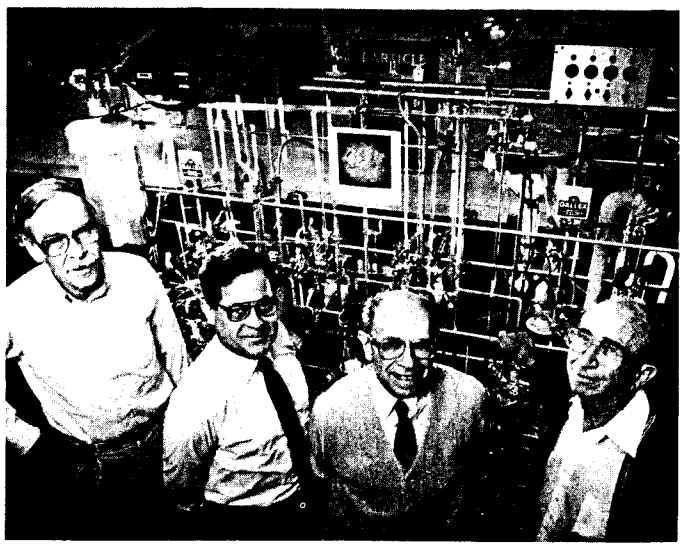
'Artificial Sun' Validates GALLEX Solar-Neutrino Experiment

Preliminary results from a major experiment using chromium-51 as an artificial sun to provide a known number of "substitute solar neutrinos" show that GALLEX, a solar-neutrino experiment run in Italy by an international collaboration of 50 scientists from 10 institutions including BNL, is accurate to within a 10 percent margin of error.

This confirmation validates previous GALLEX findings that only about 60 percent of the number of solar neutrinos predicted by theory arrive on Earth, thus deepening the now well-known "solar-neutrino puzzle." These results have been submitted to *Physics Letters B* in an article by the GALLEX collaboration.

The solar-neutrino puzzle arose from an experiment that started in 1967, when a team of BNL researchers led by Raymond Davis observed far fewer solar neutrinos than had been predicted by the solar model, the theory explaining energy production in the sun. Too few neutrinos indicated that either the solar model should be revised or that new neutrino properties — new physics — might exist.

This motivated researchers to examine other portions of the solar neutrino spectrum. One result is the Japanese water-based experiment at Kamiokande, sensitive only to the highest energy portions of that spectrum. The other, the joint Russian-American SAGE experiment in Russia, is, like GALLEX, based on the use of gallium. Both GALLEX and SAGE are sensitive to a broad spectrum of solar neutrinos, especially those of low energy, which are products of the sun's major nuclear fusion branch. They, too, find deficits of solar neutrinos relative to those predicted by the standard solar model.



Four members of the BNL GALLEX team are: (from left) Keith Rowley, Richard Hahn, Joseph Weneser and Raymond Stoenner. Not pictured is John Boger.

Richard Hahn leads the BNL GALLEX team comprising John Boger, Keith Rowley, Raymond Stoenner, all of the Chemistry Department; Joseph Weneser, Physics Department; and, until last May, Frank Hartmann, now at Princeton University. Their research takes place deep underground in the Gran Sasso Laboratory under Italy's Abruzzi Mountains.

A 'First' in Testing

A variety of tests has been done over the years to check the efficiencies of the different solar-neutrino detectors. "However, this is the first time that neutrinos, produced in known amounts by an intensely radioactive source, or 'artificial sun,' have been used to test the overall operation of a solar-neutrino experiment," said Hahn. "Doing this test was not a simple calibration, but a major experiment in its own right.

"This preliminary result shows that GALLEX detected essentially *all* the expected neutrinos," Hahn continued. "The exact ratio of neutrinos detected compared to those known to be emitted by the source is 1.04 ± 0.12. This 10 percent error margin means that, in the worst case, GALLEX sees more than 90 percent of the available neutrinos."

In sum, Hahn said, "The GALLEX observations of neutrinos from the "real" sun record only 60 percent of what solar theories predict. Forty percent of the expected neutrinos are missing. The new test proves that, to within the 10 percent error margin, *all* of the solar neutrinos should have been detected. In other words, the solar-neutrino deficit seen by GALLEX is not caused by some artifact of the experiment."

The Artificial Sun

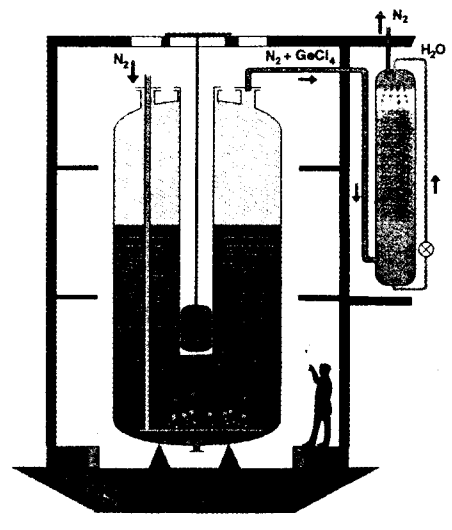
Key to the new GALLEX experiment was the reliability of the neutrino source, the "artificial sun." It was made of Cr-51, a radioactive isotope of the element chromium, which has a half-life of 28 days. Like the nuclear processes in the sun, the decay of Cr-51 produces low-energy neutrinos.

Developing the source was a cooperative effort typical of the GALLEX endeavor. First, the Kurchatov Institute in Russia was enlisted to enrich Cr to contain 38 percent nonradioactive Cr-50, instead of the naturally occurring four percent. By the end of May of this year, 36 kilograms of enriched metal had been taken to Grenoble, France, to be placed in the Siloé nuclear reactor, one of the few in the world able to irradiate such a large amount of material.

On June 20, the newly irradiated Cr-51 was removed from the reactor and immediately placed in specially designed tungsten shielding, provided through funds from the U.S. Department of Energy. "The shielding was not removed during the experiment," noted Hahn. "It was there for protection and did not block the neutrinos, which interact with matter so weakly that they pass right through it."

Then came tests. "As part of the experiment, it was vital to know the exact strength of the source," Hahn explained. "Three different methods were used in Grenoble to measure the level of radioactivity of the Cr-51. Incidentally, we are developing a fourth independent method at BNL, in which we measure the amount of nonradioactive vanadium-51 that is produced

(continued on page 2)



Schematic of the GALLEX tank containing the chromium source inside the central tube. The germanium extraction system is shown at right.

'Outstanding' BNL Scientist Higinbotham Dies

William A. Higinbotham — whose concern with nuclear safeguards and the arms race has been key to much of his work at BNL over the past 47 years and who has been called the grandfather of the modern video game — died on November 10, of emphysema. He was 84 years old.

"Willy was one of the outstanding scientists who shaped and made Brookhaven the great Laboratory that it is today," said BNL Director Nicholas Samios. "His originality, inquisitiveness and contributions will be long remembered."

After earning an A.B. in physics at Williams College in 1932, Higinbotham was a graduate student in physics at Cornell University until 1940, when World War II interrupted his studies and plunged him into the working world of physics. He went first to the Radiation Laboratory at the Massachusetts Institute of Technology, where he worked on radar systems from 1941 to 1943; then, from 1944 to 1945, he was with the Manhattan District Project at Los Alamos National Laboratory, where he headed the Electronics Division in 1945.

Having witnessed the first test detonation of an atomic bomb, Higinbotham became determined to reduce the threat of nuclear weapons. Thus, at war's end, Higinbotham became a founder of the Federation of American Scientists (FAS), serving as its first chairman, 1946-47, and lobbying for nuclear nonproliferation.

Higinbotham remained committed to the FAS, and, at the time of his death, the organization was planning to honor him at its annual meeting by rededicating its Washington, D.C., headquarters as Higinbotham Hall. When this takes place on December 17, the building will bear a plaque citing its new name, Higinbotham's accomplishments and the acknowledgment: "Our efforts to move the planet rest on the fulcrum he fashioned."

William Higinbotham in 1988

Higinbotham joined BNL when the Laboratory was nine months old, on December 8, 1947, as Associate Division Chief in the Physics Department. He became Associate Division Head in June 1948, then Senior Physicist in August 1948. In October 1948, he joined Physics' Electronics & Instrumentation Division, where he was named Senior Physicist and given tenure that November. In 1952, the division was part of the Instrumentation & Health Physics Department, with Higinbotham as Division Head.

When planning his division's exhibit for BNL's visitors' day of 1958, Higinbotham recalled in a Brookhaven Bulletin article of June 3, 1983, he thought, "It might liven up the place to have a game that people could play, and which would convey the message that our scientific endeavors have relevance for society."

So, working with David Potter, who is now retired from the Instrumentation Division, Higinbotham designed a game in which visitors controlled tennis-like action on a five-inch oscilloscope display. It was a real crowd pleaser and very possibly the world's first video game.

Although he has been responsible for over 20 patents on electronic circuits — most notably the "bootstrap" sawtooth generator widely used in oscilloscopes and the Higinbotham Scaler, which made it possible to use electronics to count the random pulses from radiation detectors reliably at high rates — Higinbotham never patented "tennis-for-two." As he said in an interview in *Creative Computing* in October 1982, "We knew it was fun, and saw some potential in it at the time, but it wasn't something the government was interested in. It's a good thing, too. Today all video game designers would have to license their games from the federal government!"

In 1967, Higinbotham and others began exploring the possibility of establishing a safeguards technical group at BNL to support the Safeguards Office of the Atomic Energy Commission. The Technical Support Organization (TSO) in the Department of Nuclear Engineering became a reality in January 1968, and Higinbotham joined its staff as a Senior Physicist, then served as its head from 1973 to 1975. In September 1988, during TSO's 20th Anniversary Symposium, the library in Bldg. 197 was formally dedicated as the Higinbotham Nuclear Safeguards Library.

Higinbotham formally retired at the end of 1984, but had remained a consultant to TSO, which was renamed the Safeguards, Safety & Nonprolif-

(continued on page 3)

Time to Give Thanks and Give to Others

Give From the Heart — the United Way

On hand to congratulate Betty Pergan for being honored by the Long Island United Way (LIUW), are: (from left) James Licari, BNL campaign chair for 1994; LIUW President Jack Sage; and BNL Deputy Director Martin Blume.

This year's United Way fund drive at BNL began on November 10 as an extra-special occasion, as Betty Pergan of the Department of Applied Science received a plaque from the Long Island United Way commemorating her 25 years as financial coordinator for Lab donations to the annual campaign.

Since 1979, Pergan has been responsible for seeing that well over a million dollars —$1,074,819, to be precise, says Pergan — has been sent to the United Way in weekly and monthly payroll deductions and in one-time contributions, all in widely varying amounts.

Chairing this year's United Way effort for BNL is Jim Licari, Relativistic Heavy Ion Collider Project, with Michelle Cummings, Management Information Systems, to assist him — and they have set a goal of $105,000 in donations.

Said Licari, "Last year, generous donors gave $104,000 — so I'm sure we'll make the new goal. Most people know what a good cause United Way is, but not everyone knows that only 15 cents of each contributed dollar pays for administration — 85 percent goes directly to the 160 agencies supported by United Way. And, every dollar given to the Long Island United Way stays right here on Long Island."

Among the agencies depending heavily on United Way is Pederson-Krag, Long Island's largest support organization for mental-health treatment of outpatients. Other organizations help all kinds of people, from the cancer sufferers who are counseled by the American Cancer Society's Suffolk Chapter, to those needing job placement.

Prizes for Early Pledges

As usual, pledge cards will be sent to every employee. Thanks to the generosity of Asociated Universities, Inc., the Long Island Guards Union No. 37; Local 8-431 of the Oil, Chemical and Atomic Workers International Union; and Local 2230 of the International Brotherhood of Electrical Workers, every pledge card received by Pergan will be entered in drawings for prizes, which will be held weekly until the grand drawing at the end of the drive on December 16.

Prizes include dinners for two at local restaurants, gift certificates for shopping, and a grand prize of a weekend for two in New York City, with theater tickets, dinner, and brunch at the Tavern on the Green restaurant.

For further information, call Licari, Ext. 7146, or Cummings, Ext. 2077.

— Liz Seubert

BNL Blood Drive — Give to Get

Last year's blood-drive dinner-certificate winners: (clockwise from lower left) Debbie Botts, Tom VanderPatten, Jack Guthy and Ray Archibold, pictured with BNL Blood Drive Chair Susan Foster.

Photos by Roger Stoutenburgh

Most BNLers who give blood during one of the Lab's semiannual Blood Drives do so simply to give the gift of life to those in need.

However, whether you are a regular donor or new to the blood-donating cause, a material incentive was added two years ago to the altruistic reward of having your blood supply tapped: Since 1992, those who get their pledge cards in by the deadline are entered in a drawing for five $50 gift certificates, each good at a different fine Long Island restaurant.

"I've been giving at BNL since the beginning of the blood drives, and, as soon as I get my pledge card, I return it to get it off my desk and get the p.m. appointment that I want," recalls Jack Guthy, Physics Department, whose winning certificate from the last drive allowed him and his wife to dine alfresco at the Old Inlet in Bellport. "We hadn't eaten there in years and, because we live on the North Shore, might not have gone back, so we would have missed a perfect evening."

This late fall's BNL Blood Drive will take place on Thursday and Friday, December 8 and 9, from 10 a.m. to 3 p.m. in Brookhaven Center. All BNLers will receive two pledge cards — one for themselves and one for a family member or friend — today, and these are due back to Blood Drive Chair Susan Foster, Bldg. 185, by Wednesday, November 30.

"Because I was afraid, I wasn't always a donor — a girlfriend of mine talked me into it," explains Debbie Botts, Division of Contracts & Procurement, who just used her certificate to the Snapper Inn in Oakdale. "So I know how important it is to get over that initial fear. Last blood drive was the second time I've given blood, and now I give because it is a good thing to do — it helps other people."

While late pledges are always welcomed, those who return their cards on time will be eligible for the restaurant-dinner certificate drawing. The drawing will be held the first morning of the drive and winners will be notified as they arrive for their appointments. So, whether or not you are approved to give blood that day, you must keep your appointment to see if you won and, if so, to claim your prize.

"I've always given wherever I've worked because I could, and I feel that I have to give for all those who need blood as well as all those who can't give," explains certificate winner Tom VanderPatten, Plant Engineering Division, who took his wife to the Riverview restaurant in Oakdale. As it turned out, "I didn't know that I couldn't give at that drive and didn't know that I had won until I got there, so I'm glad I went anyway."

As the winners of the last drawing who used their certificates will attest, dining out courtesy of the Blood Drive even beats eating the free post-donation cookies. And those who haven't taken their chance to be wined and dined for free still wouldn't miss the opportunity to give blood this time.

"We'll go to dinner eventually, but, if I'm working one of those days, I won't miss the Blood Drive," says Ray Archibold, Safety & Environmental Protection Division, who, due to busy schedules, has yet to set a date with his wife for their dinner at Bayport House Ristorante. "I've been giving for 30-some years and give every BNL Blood Drive if I'm working because I can, because it helps."

For more information, contact Susan Foster, Ext. 2888, or the Blood Program Captain for your department or division. — Marsha Belford

GALLEX (cont'd)

by the Cr-51 decay. We are hoping to improve the precision of the source strength value by using a few analytical chemical methods, and also, we're testing the feasibility of neutron activation analysis of vanadium at the BNL Medical Research Reactor."

The rate of decay of the Cr-51 source was measured to be 62 thousand trillion bequerel, or disintegrations per second (1.6 million curies). This produces a signal in the experiment that is about 16 times as large as that caused by the sun, making the effect of any solar neutrinos a relatively unimportant background.

Once tests were complete, the shielded source was transported to Italy through the Alpine Frejus tunnel, under the route once taken by Hannibal and his elephants. "On June 23," said Hahn, who had been in one of the two scientist-laden cars following the Cr-51 through the Alps, "we all arrived at Gran Sasso Lab — and, by 10:30 p.m., the source was installed in a tube in the center of the tank."

The GALLEX tank contains 76 metric tons of gallium chloride (30 metric tons of gallium), dissolved in a 25-metric-ton solution of water and hydrochloric acid. A neutrino entering the tank can transform the isotope gallium-71 into radioactive germanium-71 (Ge-71). At suitable intervals, the germanium is removed and purified by intricate chemical manipulation; its radioactive decay is then detected in a miniaturized counter. These measurements yield the number of reactions caused by neutrinos that entered the tank during each cycle.

From June 23 to October 10, the Cr-51 source remained in the GALLEX tank, and a series of experiments was performed to remove the product Ge-71, using exactly the same equipment and methods as in the solar runs. "Since October, we have been examining the data and writing up the experiment," noted Hahn. "Although we pretty well have the answer from these preliminary results, we have some additional data that should give us a complete, more precise result by next spring."

An Extra Puzzle

An interesting facet of this Cr-51 test is related to the fact that the GALLEX solar-neutrino result is essentially the value expected from the known energy output of the sun, the solar luminosity. This energy comes from processes initiated by the primary nuclear reaction in the sun, the so-called "pp branch," in which two protons fuse to form a deuteron, emitting a positron and a neutrino.

There is a secondary reaction in the sun, the so-called "beryllium-7 branch," where Be-7 decays and emits a neutrino.

"It turns out," said Hahn, "that the energies of the neutrinos from the Cr-51 source are very close to those from Be-7. Since we have just shown that we can detect essentially all the neutrinos from Cr-51 in the GALLEX detector, we should also be able to detect the solar Be-7 neutrinos. But, apparently, we don't see them. The Be-7 seem to be missing. In fact, some people have begun to talk about a Be-7 neutrino problem." — Liz Seubert

Calling All Carolers

The BNL Choral Group will present its annual Christmas Concert in the Cafeteria at the special Christmas luncheon scheduled for Wednesday, December 21.

Rehearsals for this concert will be held at Berkner Hall, starting at noon sharp on: Thursday, December 1; Monday, December 5; Thursday, December 8; Tuesday, December 13; Wednesday, December 14; and Tuesday, December 20.

Singers are needed for all parts — soprano, alto, tenor and bass. For more information, call John Weeks, Ext. 2617, or Janet Sillas, Ext. 2345.

Arrivals & Departures

Arrivals

Lisa M. Muench ..... Saf. & Env. Prot.
Gideon Reisfeld ..... Physics
Huan Zhou ..... Adv. Tech.

Departures

This list includes all employees who have terminated from the Lab, including retirees:

Kenneth C. Vogel ..... RHIC

Finish your holiday shopping at the Winter Holiday Sales at the Science Store . . .

Three Fridays — December 2, 9 & 16
10 a.m. to 3 p.m., Bldg. 701

Money Talks — Ideas on Investing

On Wednesday, November 30, a Money Talks lecture entitled "Understanding the Basics of Investing" will be presented from noon to 1 p.m. in Berkner Hall. During the talk, a representative from Fidelity Investments will discuss:

- Common investment concerns —what they are and how to overcome them;
- Investment building blocks stocks, bonds, money market investments, mutual funds, annuities;
- Steps to successful investing; and
- How to track your investments.

For more information, contact Denise DiMeglio, Ext. 2881.

Higinbotham (cont'd)

eration Division in 1992 and is now part of the Department of Advanced Technology. He also continued as technical editor of Nuclear Materials Management, the journal of the Institute of Nuclear Materials Management (INMM), which he began editing in 1975. A nuclear safeguards professional organization, the INMM gave Higinbotham its first Distinguished Service Award, in 1979, as well as its first annual award for contributions to nuclear instrumentation, in 1972.

Higinbotham's alma mater, Williams College, awarded him an honorary doctorate in science in 1963. He was also a Fellow of the American Association for the Advancement of Science, American Nuclear Society, American Physical Society, Institute of Electrical and Electronics Engineers and INMM.

Although he maintained an office on site and his home in Bellport, he and his wife Edna made their secondary residence in Georgia, where he passed away and was cremated.

He is also survived by his three children with his first wife, the late Julie Ann Higinbotham — daughter Julie Schletter and her husband Greg Schletter, of Largo, Florida; daughter Robin Clark and her husband Wayne Clark, of Brookhaven Hamlet; and son William B. Higinbotham, of Bellport, who works in the Computing & Communications Division. Other survivors include a brother, John Higinbotham, a sister, Dorothy Osgood, and two grandchildren, Christopher and Timothy Schletter. He was also predeceased by his second wife, Margaret.

In lieu of flowers and gifts, the family asks that donations be made to favorite colleges or charities.

A memorial service for William Higinbotham will be held at the Brookhaven Center on Saturday, December 3, from 4 to 6 p.m.

BROOKHAVEN BULLETIN

Published weekly
by the Public Affairs Office
for the employees of
BROOKHAVEN NATIONAL LABORATORY

ANITA COHEN, Editor
MARSHA BELFORD, Assistant Editor

Bldg. 134, P.O. Box 5000
Upton NY 11973-5000
Tel. (516) 282-2345; Fax (516) 282-3368

Outreach Workshops
Teen Substance Abuse, Women's Eating Disorders

"Eat, drink, and be merry" is the creed of most people from Thanksgiving through New Year's Day. However, for teenagers with alcohol and drug problems, and for women with eating disorders, this season brings its own imperatives, which will be discussed in the following two Outreach workshops sponsored by the Employee Assistance Program (EAP) of the Occupational Medicine Clinic, and to be held from noon to 1 p.m. in Berkner Hall.

- **Tuesday, November 22, "Parent's Guide to Adolescent Drug and Alcohol Abuse"** — Steven Viani, Administrator and Clinical Director of Cornerstone Alternative Recovery Programs in Garden City, will explain that parents should neither dismiss the prevalence of teenagers' experimenting with drugs as normal or harmless, nor provide opportunities for it. After reviewing the signs and symptoms of substance abuse in adolescents, he will talk about how parents can set enforceable limits for their teenagers and intervene before the problem gets out of hand.
- **Tuesday, November 29, "Love Me Slender—A Guide to Recovering Body, Mind and Soul From Eating Disorders"**—Judith Ruskay Rabinor, Director of the American Eating Disorders Center of Long Island, will explain that eating disorders — especially among women — have become an epidemic and can be life-threatening. After defining anorexia, bulimia and compulsive eating, she will review their origins and explain how these disorders can be overcome through self-help or with professional assistance.

To register for one or both workshops, return the appropriate Outreach flyer to EAP Staff Psychologist Dianne Polowczyk, Bldg. 490, by the Monday before the one you wish to attend. For more information about EAP, call Ext. 4567.

LUG Meeting

The next meeting of the Upton Local Users Group (LUG) will be on Wednesday, November 30, at 11 a.m. in Room B, Berkner Hall. The status of BNL Networking, including the Individual Dialup Access System, will be discussed, as will VMS, UNIX, and World Wide Web/Mosaic.

All computer users are encouraged to attend. For more information, send e-mail to Zohreh Parsa at zohreh @bnlcl7.bnl.gov.

Holiday Notes

In observance of Thanksgiving, the Lab will be closed on Thursday, November 24, and Friday, November 25. As a result, the following schedules will be in effect:

- **Brookhaven Bulletin** — There will be no Bulletin next week; the next issue will be published on Friday, December 2. The classified ad deadline for that issue is 4:30 p.m. on Wednesday, November 23.
- **Credit Union** — The Teachers Federal Credit Union will be closed on November 24, but will be open for normal hours on November 25. The automatic teller machine in the foyer of Berkner Hall will be open throughout the holiday.
- **Food Services** — The Cafeteria will offer snack bar service, Thursday through Sunday, November 27. The Brookhaven Center will be closed Thursday through Saturday, then reopen Sunday from 5 p.m. to 9 p.m. The vended food service in Bldg. 912 will be in operation continually.
- **Gym & Pool** — The swimming pool and gymnasium will both be closed from Thursday through Sunday.
- **U.S. Post Office** — The Upton Branch of the U.S. Postal Service will be closed on Thursday, and window service will be available on Friday, from 8 a.m. to 1 p.m. only.

Master Instrumentation

To acquaint potential applicants with the master's program in physics specializing in instrumentation (MSI) offered by the Physics Department at the State University of New York at Stony Brook, program director Hal Metcalf, will be available for informal discussions in Berkner Hall on Monday, November 21, from 1:30 to 3 p.m.

The program is designed for those interested in learning about the design, construction, testing and operation of sophisticated instrument systems used in scientific research and technology-based industry.

Students are expected to build a state-of-the-art instrument, demonstrate a proficiency in physics, complete 30 credits of graduate courses, and act as a teaching assistant for one semester.

Those holding bachelor's degrees in physical science or engineering, or who have equivalent experience in physics and instrumentation, are invited to inquire about the program. For more information, contact Metcalf at 632-8185.

Dental Plan Enrollment Now Open

As announced last week, regular employees working 20 or more hours per week may enroll until December 2 in either of the two Dental Plans offered at the Lab — the AUI Plan administered by Eastern Benefits Systems or the CIGNA Plan — with coverage effective January 1, 1995.

- **AUI Plan** — Covers preventive, diagnostic, basic and major dental services based on a fee schedule. Patients may choose any dentist. Claim forms required for reimbursement, with $25 annual per person deductible for basic and major dental services, and a family deductible of $75 per year. Covers orthodontia for dependent children at 50 percent of reasonable and customary charges, with no deductible. Pays a maximum of $1,000 in benefits per calendar year per person for non-orthodontic services, with a separate $1,000 lifetime maximum per child for orthodontia.
- **CIGNA Plan** — Has no deductibles, no maximum benefits and no claim forms to submit. Provides dental services through a network of participating dentists, which has expanded since the plan was introduced in 1993. Coverage of certain dental procedures has also been expanded. Many preventive and basic services are covered in full. Restorative and orthodontic services are based on a fee schedule. For a list of participating dentists and covered services, contact Personnel Services, Bldg. 185, Ext. 2877.

Both plans are offered as an employee option. The following required employee contributions may be made on either a before-or after-tax basis:

Coverage	Weekly	Monthly
Employee only	$1.15	$5.00
Employee & one dependent	$2.31	$10.00
Employee & two or more dependents	$4.38	$19.00

Employees who sign up for a Dental Plan must participate until the next open enrollment, effective January 1, 1997. Employees currently eligible who do not elect coverage at this time must wait until the next open enrollment to participate. *Employees who do not wish to make a change to their dental coverage at this time do not have to do anything.*

Application and payroll authorization forms are available at Personnel Services, Bldg. 185, where forms must be returned by December 2. For more information, contact Muriel Pfeiffer, Ext. 2877.

Coming Up

The 1994-95 BERA concert series will feature a performance by the Ravinia Trio in Berkner Hall on Wednesday, December 7, at 8 p.m. The young piano ensemble from Germany has a growing international reputation. Purchase tickets at the door for $14, general admission, and $9, students and seniors.

Basketball

Basketball League team captains must submit their rosters to Ed Gregory, Bldg. 902, Ext. 5383, no later than 4:30 p.m., Friday, December 2. The league is open to BNL and AUI employees, their spouses and contractors employed on site: players not yet on teams who are interested in joining the league must submit their names and life numbers to Gregory by the same deadline.

Toy Drive Begins

For the 11th year, BERA will participate in the toy drive organized by Brookhaven Town to provide happy holidays for needy young people in local communities. The 1994 Toy Drive will run from Monday, November 21, through Friday, December 16.

New toys are needed for children of all ages—infants through teens. Bring donations to the BERA Sales Office in Berkner Hall from 9 a.m. to 1:30 p.m. weekdays. For more information, call Andrea Dehler, Ext. 3347, or M. Kay Dellimore, Ext. 2873.

Benefit Bake Sale

The Upton Nursery School (UNS), a nonprofit cooperative that holds classes on site three mornings a week, will hold a benefit bake sale on Tuesday, November 22, from 11:30 a.m. to 1:30 p.m., in Berkner Hall. Proceeds will be used to purchase school equipment. For more information about UNS or to make donations of baked goods or cash, call Jane Throwe, 929-8513.

Cafeteria Menu

Monday, November 21	
Soup: Spicy potato kale	.90/1.20
A la Carte: Arroz con pollo	3.75
Fitness: Pot roast	4.25
Deli: Pastrami	3.20
Grill: Ham & cheese	3.30
Tuesday, November 22	
Soup: Pilgrim chowder	.90/1.20
A la Carte: Thanksgiving turkey w/dressing	4.75
Fitness: Vegetable lasagna	3.50
Deli: Virginia ham	3.20
Grill: Spanish omelet	3.30
Wednesday, November 23	
Soup: Split pea	.90/1.20
A la Carte: Baked fish	3.95
Fitness: Stuffed shells	3.50
Deli: Roast beef	3.20
Grill: Monte Cristo	3.30

Thursday & Friday, November 24 & 25
Happy Thanksgiving!
Snack bar service — 9 a.m. to 2 p.m.

Classified Advertisements

Placement Notices

The Laboratory's placement policy is to select the best-qualified candidate for an available position. Consideration is given to candidates in the following order: (1) present employees within the department/division and/or appropriate bargaining unit, with preference for those within the immediate work group; (2) present employees within the Laboratory; and (3) outside applicants. In keeping with the Affirmative Action plan, selections are made without regard to age, race, color, religion, national origin, sex, handicap or veteran status.

Each week, the Personnel Division lists new placement notices. The purpose of these listings is, first, to give employees an opportunity to request consideration for themselves through Personnel, and second, for general recruiting under open recruitment. Because of the priority policy stated above, each listing does not necessarily represent an opportunity for all people.

Except when operational needs require otherwise, positions will be open for one week after publication.

For more information, contact the Employment Manager, Ext. 2882, or call the JOBLINE, Ext. 7744 (282-7744), for a complete listing of all openings.

SCIENTIFIC RECRUITMENT - Doctorate normally required. Candidates may apply directly to the department representative named.

POSTDOCTORAL RESEARCH ASSOCIATE - Trained in NMR research, to participate in research at the High-Field MRI Laboratory of the Brookhaven Center for Imaging and Neuroscience. Contact: Charles Springer, Chemistry Department.

LABORATORY RECRUITMENT - Opportunities for Laboratory employees.

DD 2479. SECRETARIAL POSITION - Requires an AAS in secretarial science or equivalent, significant secretarial experience, and excellent written and verbal communication skills. Knowledge of WordPerfect and other applications such as Lotus 1-2-3, dBase, Harvard Graphics etc. is also required. Must show resourcefulness in performing non-routine tasks and in problem solving and have strong organizational skills with an aptitude for accuracy. Responsibilities will include carrying out skilled and complex secretarial duties for the Budget Office. Budget Office.

DD 0794. OFFICE SERVICES POSITION - Requires excellent clerical and communication skills and a knowledge of Laboratory policies and practices. Duties include records and forms processing, file maintenance, report and document preparation, travel arrangements, and preparation of data input. Must be able to obtain and maintain a security clearance. Knowledge of IPAP travel and WordPerfect 5.1 desirable. Safeguards and Security Division.

OPEN RECRUITMENT - Opportunities for Laboratory employees and outside candidates.

DD 6163. PHYSICS ASSOCIATE POSITION - Requires a BS in physics or related field and excellent written and oral communication skills. Background experience in high-power pulsed power supplies, digital electronics, computer controls and programming, as well as laboratory test and measurement techniques is desirable. Primary duties, as part of a rotating shift team, include the operation and troubleshooting of the AGS accelerator complex for the experimental physics program. Alternating Gradient Synchrotron Department.

Motor Vehicles & Supplies

92 HONDA NIGHTHAWK MOTORCYCLE - blue, low mi., excel. cond., looks new, sacrifice, $1,900. Mike, 369-3307 after 6 p.m.

90 MITSUBISHI ECLIPSE - 37k mi., ac, am/fm/cass., a/t, $6,500. Ken, Ext. 5110.

90 VOLVO 240 DL WAGON - gray, 53k mi., a/t, ac, p/w, tilt, cruise, tinted glass, roof rack. George, 588-9459.

89 FLATBED TRAILER - 24', tri-axle, elec. brake, set up for pintle hook, good cond. Bob, Ext. 2350.

88 PONTIAC SUNBIRD - 4-dr., p/s, p/b, cruise, 66k mi., ac, am/fm, silver met. sport mirrors, tilt wheel, fog lights, ask. $5,000. Hankes, 941-4011.

88 FORD FESTIVA - am/fm stereo, 55k mi., v.g. cond., $1,500. Peter, Ext. 4940/1029.

88 CHRYSLER LE BARON - conv., premium ed., pewter, turbo, leather, full power, 39k mi., like new, $7,500 neg. Bob, Ext. 2288 or 273-1808.

87 HYUNDAI EXCEL - 4-dr., moonroof, 54k mi., body excel., needs flywheel, $1,400 neg. Kim, 874-8616.

87 ACURA INTEGRA - red, ac, p/s, $3,000. S. Hayashi, Ext. 2256.

86 OLDS CUTLASS CIERA - 79k mi., 4-dr., V-6, excel. cond., must see. 286-1214.

86 MONTE CARLO - 4.3 liter EFI, v.g. cond., asking $1,500. 286-1097.

85 PLYMOUTH WAGON - 4-cyl., white, ac, a/t, good cond., asking $900. Bawa, Ext. 3357 or 360-8077.

85 CHRYSLER LE BARON - 4-cyl., 4-dr., white, p/s, p/w, ac, am/fm stereo, 36,928 mi., one owner, v.g. cond., $2,400. O. Booker, Ext. 3082 or 727-5912.

84 BUICK SKYHAWK - new motor & tranny, $1,500 or best offer; '83 Mazda B2000, runs well, $150. Doug, Ext. 4484.

84 VOLVO WAGON - good body, tight eng., new tires, brakes, shocks, rear susp. pivots, a/t plus od., 100k mi., $4,000. Ext. 3401 or 744-6229 or SWEET@BNL.GOV.

83 GMC PICKUP - m/t, 6-cyl., cap, ac, good tires, needs clutch, high mi. Jim, Ext. 4843 or 567-6227.

82 KAWASAKI KX125 - sidewinder chain & sprocket, Boyseed reeds, D6 Type II silencer, new tires, rebuilt top end, $650. Dan, Ext. 4605 or 475-3527.

82 BUICK REGAL - set-up for Chevy small block, new dual exhaust w/headers, gauges, clean body, $400. Rich, Ext. 4986 or 589-9103.

81 HONDA ACCORD - h/b, 5-spd., high mi., green, excel. running cond. Gary, 929-4898.

79 MERCEDES BENZ 300 SD - turbo diesel, full power, asking $4,200. Sorin, Ext. 2765.

69 CHEVY C-60 DUMP TRUCK - '85 trailer; '79 John Deere bulldozer/loader, 350-C, all good cond., 325-0447 after 6 p.m.

66 VW - collector's item, ideal for VW buff, best offer. Carl, 928-7154.

FORD RANGER - parting out, long bed, plus many good parts; bed liner for S-10 long bed. Brett, 821-7568.

BUMPERS - front & rear, '95 Chevy van, $100 ea. firm; trailer hitches, class III Draw-Tite, class 1 bolt-on, $20 ea.; radio, $40. Don, Ext. 7237 or 744-2921 after 5:30 p.m.

CARBS - Holley 650 4-barrel single pump, completely rebuilt, $75. Dan, Ext. 4605 or 475-3527 after 5 p.m.

TIRES - Yokohama, 225/50VR16, for Toyota Supra, one day old, $225/pair. Witkover, Ext. 4607.

91 EAGLE TALON - AWD TSI turbo, ABS, alarm sys., moonroof, gar., loaded, excel. cond. Pete, 298-4698.

89 FORD ESCORT WAGON - blue, 5-spd., 60k mi., am/fm stereo, $3,000. Holroyd, Ext. 4329 or 751-6820.

88 HONDA ACORD LX - 4-dr. sedan, 5-spd., 69k mi., reliable, excel., asking $6,500. Ext. 4362 or 7667.

87 CHEVROLET CAVALIER RS - s/w, white, 85k mi., ac, stereo, good cond., $2,800. Jean-Michel, Ext. 2963.

86 HONDA CIVIC - sedan, ac, am/fm, 136k mi., $1,500; '79 Pontiac Bonneville, a/t, 160k mi., runs well, reliable, $450. Stefan, Ext. 3565.

86 MERCURY SABLE WAGON - 104k mi., well maintained, no rust, $2,800 neg. Gerry, Ext. 4841.

84 MAZDA GLC - 2-dr. h/b, 5-spd., m/t, 130k mi., maroon, good gas mileage, maint. records, runs well, $900 neg. W. Guryn, Ext. 3878 or 744-8673.

84 VOLVO WAGON - diesel, m/t, ac, v.g. cond., low mi., $3,400 neg.; '82 Ford Van E-250, 45k mi. on crate motor, many new parts, $2,800. Terry or Tony, 298-1932.

COUNTRY/WESTERN DANCE

Friday, December 16, 1994
7:00-11:00 p.m.
Brookhaven Center North Room

Cash Bar- Hot & Cold Hors d'oeuvres

Dance Instruction 7:00-8:00 p.m.
(with Joel Piereth and Elise Prado)

Door Prizes

$10.00 per person

Sponsored by the BERA Country/Western Dance Club

Buy tickets in advance from: Carmen Falkenbach, Ext. 2663, Bldg. 460; Lois Marascia, Ext. 3315, Bldg. 460; or Ginny Morante, Ext. 3555, Bldg. 460.

82 TOYOTA COROLLA - 97k mi., 4-dr. sedan, a/t, am/fm, $900 neg. Liaw, Ext. 3207 or 471-4062.

79 TRIUMPH BONNEVILLE - 750cc, 10k mi., great bike, $3,000. Ext. 4986 or 821-3169.

72 MONTE CARLO - new paint, 98k orig. mi., 350 eng., ignition/hood lock, looks good & runs well, $2,800. Claudia, Ext. 3467.

71 POP-UP TRAILER - sleeps 6, stove, electric, water, Port-a-Potty, 6" lift, clean, 2 spare tires, $500. Jim, Ext. 7912.

69 MUSTANG - convertible, recent tires, brakes, shocks, exhaust, 3-spd., 6-cyl., low orig. mi., am/fm/cass., asking $4,500. Tirre, Ext. 3282 or 281-0360.

31 CHRYSLER - 3-window, rumble-seated coupe, all orig., low mi., must see, asking $8,000. Ext. 3084.

ABS CARGO BIN - multi-compart., lightweight, removable, heavy-duty, detachable dividers for pickup truck, orig. $40, now $25. 639-9234.

HITCH - heavy-duty class IV, adjustable, removed form '75 Caddy, make offer; factory repair manual for '89 Toyota Camry, make offer. Jim, Ext. 4617.

SKI RACK - Barrecrafters brand, fits cars w/rain gutters, asking $25. Ext. 7573.

STEREO - car audio, Alpine amplifier, 250 watts per channel & Alpine equalizer, w/subwoofer output, $300/both. Chris, Ext. 2326.

TIRES - P225/75R15, excel., $25; P215/70R14, Firestone, excel. $25. 698-9274.

Boats & Marine Supplies

30' BAYLINER BUCCANEER SAILBOAT - 1979, ib. diesel, furling jib, cradle, v.g. cond. Ext. 7699 or 821-1435.

21' RENKEN - 1980, c.c., fwc, 140-h.p. Volvo Penta, excel. running cond., trailer, new winch, extras, $3,100. Patrick, 471-7853.

19' BOAT - fg, 115-h.p., galv. trailer, $2,100. Jim, Ext. 3372 or 821-0250.

CHAIN - 3/8", galv., 40', $40. Bob, Ext. 5314.

OUTBOARD - 60-h.p. Evinrude, V-4, 3 props, controls, tank, runs well, can deliver & install, $350. Joe, Ext. 3464 or 281-7683.

OUTBOARD - electric trolling motor, 2-spd., excel. cond., $50. Dave, 751-3565.

Furnishings & Appliances

BED - oak, full, frame, hdbrd., ftbrd., all slats in excel. cond., $75. 289-8105.

BED - BeautyRest, Simmons, full-size, excel. cond. Milind, Ext. 3327.

BEDROOM SET - dresser, mirror, chest, 2 nightstands, king size hdbrd., 1 yr. old, like new, orig. $1,700, asking $750. Mac, 924-2348.

BEDROOM SET - modern, beige Formica, brass, triple dresser, w/mirror, chest, 2 night tables, full-size mattress set, all new, $950 neg. Bob, 273-1808.

CHAIRS - 4 Ethan Allen, solid cherry, bow-back side chairs, American Impressions collection, never used, orig. $199/ea., now $149/ea. Eric, Ext. 5875.

COFFEE TABLE - Ngouchi, glass top on black free-form base, approx. 3'x4', kidney-shaped, $200 or best offer. Cheryl, Ext. 2272 or 732-7634.

The Brookhaven Bulletin is printed on paper containing at least 50 percent recycled materials, with 10 percent post-consumer waste.

COFFEE TABLE - 2 end tables, luggage, plates, dishes, wooden benches, linens, trunk, mirror, Avon collectibles. Lillian, 286-0376.

COUCH - 7', leather look, den style, good cond., $75; high-riser bed frame, $15. Dennis, 924-3316 after 6.

COUCH & LOVE SEAT - black, good cond., asking $400. 586-5447.

DINETTE SET - butcher-block design, w/4 padded chairs, extension, $30. Peter, 928-2021.

DINING SET - country American, trestle table, 2 leaves, lighted breakfront, 6 chairs, rolling bar, all wood. Fran, Ext. 3309.

GRILL - Farberware, elec., $25; Black & Decker steam iron w/board, $20; elec. can opener, new, $10. Ext. 7573.

REFRIGERATOR - GE, 1.5 cu. ft., self-defrost, 7 yrs. old, dbl. doors, excel. cond., $175. Penny, 929-4014.

ROCKING CHAIR - large pine, excel. Brian, Ext. 2799.

STOVE - countertop, 4 burner, GE, good cond., extra burner, coils, $50 neg. 751-1884.

SOFA & CHAIR - living room, white wicker, green cushions, very sturdy, Henry Link, like new. Steve, Ext. 3822 or 929-6527.

TABLE - trestle, light pine, 1¾"x36"x72", mfg. MLU, custom pad, 2 benches, asking $450. like new. Ext. 7016 or 543-7674.

WATER BED - king, red leather hdbrd., $50; twin bedroom set, $100. 473-2954.

WASHER - GE, heavy-duty, lg. capacity, 6 cycles, works well, $100; dryer, elec., Kenmore, works well, $95. Ext. 5076 or 744-4615.

CHINA - service for 10, 56 pieces, Sango Jamestown pattern, good cond., $25. 286-0263.

COOKTOP - Jenn-Air, elec., 4 burners, grill, also pancake griddle access. 821-0794.

DESK - pine, $30; sewing machine & wooden cabinet, Singer, circa 1960, $30. Ext. 3179.

MICROWAVE - Sanyo, 1991, 1,300W, $60; TV stand, 1 yr. old, $60. Jean-Michel, Ext. 2963.

PATIO SET - wrought iron, 4 swivel chairs, table w/Formica top, indoor, $200 neg.; end tables, oval, dk. walnut, like new, $100. Marty, Ext. 2214.

SOFA - 3-piece sectional, mint cond., $75. 874-4758.

SOFA BED - full-size, like new, dark paisley polished cotton, $350. Lore, Ext. 5125.

WASHING MACHINE - Hotpoint, 6-cycle, large-capacity, used 1 yr., asking $200. Sue, Ext. 3305 eves.

Tools, House & Garden

GENERATOR - Niagara Generac, 4kW, on wagon, extra oil tank, never used, $350. Dimitri, Ext. 4258.

FENCE - good quality wire, 150'x5', $72. 924-0960.

GARAGE DOORS - 9'x7' wood, all hardware. Ken, Ext. 5110.

HOT WATER HEATER - 80 gallons, Rheem, elec., 5 yrs. old, like new, $200. Noy, Ext. 2672.

LAWN MOWER - 21", with bag, $25; lawn sweeper, 30", Sears, $20. Walter, Ext. 4972 or 567-9025.

LAWN MOWER - elec. $20. Don, 821-3320.

STOVE - wood or coal, extra large, Franklin stove, 36"x16", brand-new, excel., $300. Donna, 281-0278.

WATER TANK - Harvard HEC42T, epoxy coated, model, w/new gauge, used 3 mos., asking $60; Scotts drop spreader, excel. cond., $30. Ext. 7713.

ROUTER - Sears Craftsman, router table, extra bit set, $40; leaf blower & attachments, gas, $15. Ext. 3179.

Sports, Hobbies & Pets

BICYCLE - girl's, 10-spd., excel. cond., gray & pink, w/helmet, $70. Eloise, Ext. 4495.

BIKE - child's, 6 mo. old, $30. Peter, Ext. 4940.

DRUM SET - complete, excel. cond., $200. Dennis, 924-3316 after 6 p.m.

EXERCISE BIKE - Tunturi executive, used twice, orig. $250, asking $150. 473-7667.

ICE SKATES - child's, hockey, size 12, $15; child's size 6½, double blade, black, $5; child's bike seats, two, $5/ea.; car booster seat, $10. Don, 821-3320.

KNITTING MACHINE - new, Toyota KS 950, punch cards, many patterns, orig. $550, now $350; Lenox figurine dolls, $75/ea. Cheryl, Ext. 2272 or 732-7634.

PHOTO ENLARGER - Omega Custom Lab a-6, 39" track, for 25-28, 35 & 50 mm film, on 18"x30" stand, $200. Dmitri, Ext. 4258.

PIANO - Baldwin Acrosonic. 286-9158.

POOL TABLE - 4'x8', good cond., pickup in Smithtown, $100. Ext. 2173.

ROWING MACHINE - DP Lifestyler 2500, never used, asking $50; slant board, $10. Ext. 7713.

SKIS - Olin, 180cm, w/Salomon 444 bindings, runaway straps, $20 neg. Don, Ext. 7237 or 744-2921 after 5:30 p.m.

SKIS - boots, poles, for 8-12 yrs. old, $25/all; child's desk with storage, solid wood, $35. Ext. 7699.

SEWING MACHINE - Singer, still in the box, orig. $209, now $150. 924-0960.

TREADMILL - Cadence Fitness, Trek WL 2020, 1.5 h.p., 1.5-5.0 mph, monitors time, speed, distance, $125. Steve, 698-5260.

TROLLING ROD - 7.5', new, custom-made w/Penn 66 reel, orig. $150, now $75. Bob, 689-9234.

Audio, Video & Computer

COMPUTER - Commodore 128, Magnavox color mon., 1571 disk drive, Star Micronics printer, misc. software, $300 or best offer. Sue, Ext. 3492.

COMPUTER - Macintosh, 512K, w/external disk drive, MacWrite, MacPaint, games, $400, Imagewriter printer, $150 or $500/all. Don, 821-3320.

COMPUTER - Abest 286, 12Mhz, 40 MB HD, 1 MB RAM, 3½ drive, two 5¼ drives, 14" mono. mon. w/MGA, mouse, $400 neg. Cheryl, Ext. 2272 or 732-7634.

GAMEBOY - w/6 games, carry case, 2 player cord, light, books, $85; surveillance camera & monitor, excel. cond., $175. Dennis, 924-3316 after 6 p.m.

MOVIE TAPES - orig., 100s to choose from, $1-$2/ea. Ext. 7496.

PRINTER - Panasonic KX-P1124, 24-pin dot matrix, manual, several ribbons. Keith, Ext. 3458 or 369-2504.

RADIOS - Kenwood, model 77A, dual band, $350; HT rapid charger, case, belt clip, $95; Kenwood TK320 radio, 2HTs, VHF, 16 ch., $450 neg.; 698-5260.

RECORD COLLECTION - 33 & 78 rpm, popular, all mint cond. Vita, 277-0464, or Frank, Ext. 4220.

STEREO - Technics, 5 CD, equalizer, tuner, double tape deck, record player, in cabinet, 2 speakers, 2 yrs. old, good cond., asking $750. 586-5447.

TV - 27", color, RCA, maple, console, mint cond., $200. Ext. 7686 or 878-0897.

TV & VCR - Magnavox color TV & VCR, both together, $60. Peter, Ext. 4940 or Ext. 1029.

TV - Sanyo, 19", $70; Epson, 9-pin printer, $100. Tom, Ext. 7899.

VCR - Sony SL5600, Betamax, $20. Ext. 4272.

STEREO - CD, cassette recorder, Goldstar, 2 yrs. old, $80; GE TV, 19", 2 yrs. old, remote, $80; VCR, GE, 2 yrs. old, $80, or $150/both. Jean-Michael, Ext. 2963.

Miscellaneous

BOOTS - men's Western leather boots, 10½D, like new, $50. Pat, Ext. 5406.

CHRISTMAS DECORATIONS - hand-made mini trees, Victorian/traditional style, 6"/$6.50, 12"/$12.50, 3" bells, $3.50 ea. Corinne, Ext. 3662.

COAT - suede, women's size 8, gray, full length, w/lamb's wool lining, made in Scotland, asking $75 or best offer. Cheryl, Ext. 2272 or 732-7634.

FILE CABINET - 4 drawers, $40 neg.; bicycle, 10-spd., $65 neg.; upright freezer, GE, 15 cu. ft., $250 or best offer. Steve, Ext. 3018 or 369-5181.

RESTAURANT EQUIPMENT - contents of coffee shop, Dennis, 924-3316 after 6 p.m.

RING - women's, 14kt gold, 2 carat total diamond weight, cocktail ring, comes w/$3,195 appraisal, size 10, sell for $700. Ruthie, Ext. 3305.

SNOW SKIS - ski boots, wicker storage hamper, back fender, bike basket, bird cage, fold up bed, $20/ea. Kathy, 744-2203.

STERLING SILVERWARE - old, mostly pre-Civil War, 1830s, about 20 pieces. John, Ext. 7882.

TICKETS - gift cert., Radio City, Theatre III, limo service, restaurants, disc. 20%. Tom, 736-6691.

BABY FORMULA - 3 cans, Similac, w/iron, powder; 3 boxes assorted cereal, $35/all. Marie, 475-9883.

BEAVER COAT - full-length, traditional-style, excel. cond., size small, $495 neg. Ext. 7643 or 3179.

CRIB - oak, w/mattress, changing table, cradle, Jenny Lind style, excel. cond., $200/all. Terry, 298-1932.

HIGH CHAIR - Fisher Price; toddler seat, $25; Graco stroller, $25; white wooden crib w/mattress, mint cond., $100. Tim, 331-4683.

PERFUME BOTTLE COLLECTION - Avon; luggage; coffee table, end tables; exercycle; plates; dishes; linens, more. 286-0376.

PIN PENDENT - cameo, antique, white & yellow gold, diamond chip, $335. Kathy, Ext. 4464.

RUG - small, plush; swim fins; new phone; baby swing; baby walker; walnut lamp, $10/ea. Kathy, 744-2203.

ELECTRIC TYPEWRITER - portable, excel. cond., *Consumer Reports* top rating, $125. 473-0963.

WEDDING GOWN - size 12, cathedral train, beading, detail, veil, must see, $500 neg. Angela, 744-1290.

Free

COUCH & COFFEE TABLE - 744-6962 eves. & wknds.

DOG - gentle, medium-sized Lab-mix, needs good home, emergency, cannot keep due to family health problems. Joan, Ext. 5843 or 281-3797 eves.

PING-PONG TABLE - old, poor condition, out in weather, good fire wood, you haul. 286-0376.

TV - Zenith 24" color console, needs power supply unit, you pick up. Bob, Ext. 4260 or 821-5263 eves.

Wanted

BOY'S BEDROOM SET - for 9 yr. old, would especially like set w/desk & bookcase. Pat, 473-8426.

BRIDGE PLAYERS - for an on-site, after-hours game. Morris Strongson, Ext. 4192.

CARS - 2, inexpensive, running, reasonable, for beginning drivers. Lou, 473-8562.

CHAIN-LINK FENCE - 4' high. Edward, Ext. 7502.

DOGHOUSE - for Lab mix, emergency. Joan, Ext. 3843 or 281-3797 eves.

FOOD LABELS - for project, Campbell's, Swanson, Pepperidge Farm. Maryann Maggio, Bldg. 459.

MARINE FISH - looking for healthy, inexpensive, tropical, saltwater fish. Jim, Ext. 4617.

PLAY HOUSE - child's log cabin, in good cond. Diana, Ext. 3681 or 399-3910 after 5 p.m.

SEWING MACHINE - Pierrot Bichoneau, Ext. 3749.

SKI HOUSE - to rent from Christmas to New Year's, for mature family. Steve, Ext. 7236.

Ads left out of this issue due to lack of space need not be resubmitted to appear in the next issue.